



THE GREAT SHOHOLA TRAIN WRECK:

HOW TOPOGRAPHY AND GEOLOGY CONTRIBUTED TO THE UNFOLDING OF A CIVIL WAR TRAGEDY



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ABSTRACT

On 15 July 1864, a head-on collision between a W-bound 15-car prisoner-of-war train and an E-bound 50-car coal train occurred along the Erie Railway's single-track main-line between Shohola and Lackawaxen in Pike County, PA. The prison train, carrying 833 Confederate prisoners and 122 Union soldiers, was en route to the Civil War Prison Camp at Elmira, NY. At least 50 of the Confederate prisoners, as well as 17 Union guards and 4 trainmen, lost their lives. While the major cause of the accident was failure to hold the E-bound train at Lackawaxen pending safe passage of the W-bound train, the topography and geology at the site of the crash certainly contributed to the magnitude of the tragedy.

The Erie's predecessor, the New York & Erie RR was chartered in 1832 with the initial condition that it be confined to New York State. But in the section north of Port Jervis, NY, in the late 1840's it was forced to the PA side of the Delaware River because of the presence of the Delaware & Hudson Canal on the E-side. It crossed the river 5 mi N of Port Jervis and continued for 30 mi in PA through terrain of the glaciated Allegheny Plateau underlain by gently N-dipping strata of the U. Devonian Catskill Fm. Construction there required the blasting of numerous rock cuts, one of the longest and deepest being King and Fuller's cut in the braided-stream strata of the Delaware River Mbr. just upstream of the curve where the collision occurred. The combination of sharp curve, deep cut, and single-track mainline was a recipe for disaster.

The SE-flowing Delaware River in the plateau above Port Jervis probably came into existence no later than the Miocene (c. 20 Ma). Since that time of reduced topographic relief, the river has cut down 500+ ft through a belt of hills irregularly cresting at 1100-1200 ft in the vicinity of Shohola and Lackawaxen. Underlain by sandstones and conglomerates of the Delaware River and Lackawaxen Mbrs., these resistant hills restricted the widening of the valley upriver from Shohola. Extreme vigilance and strict adherence to operating rules would have been required to avoid head-on wrecks on a single-track railroad through such country.

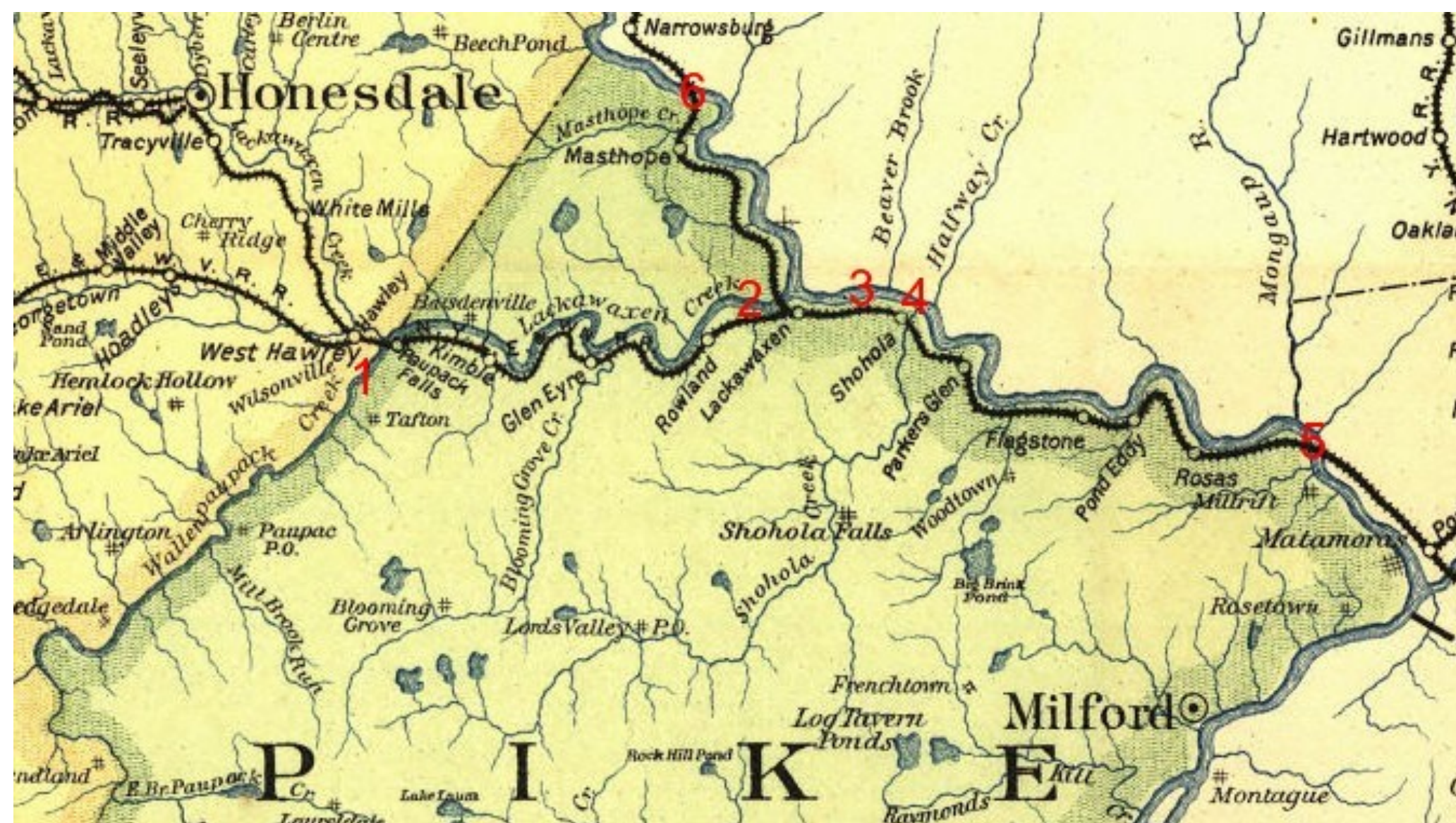
Aftermath: On 16-17 July a 76-ft-long trench was dug between the railroad and the river for the burial of the wreck's victims. There they remained until 1911 when the bodies were exhumed and taken to Elmira for final burial.



PHMC Historical Marker on PA 434 at the north end of Shohola, Pike County, Pennsylvania.



Topographic map showing location of the Great Shohola Train Wreck (X) (Shohola 7 1/2 quadrangle).



Map showing location of significant sites related to the Great Shohola Train Wreck. 1 = Hawley; 2 = Lackawaxen; 3= site of the wreck at King and Fuller's cut; 4 = Shohola ; 5 = Erie RR crossing from New York into Pennsylvania; 6 = Erie RR crossing from Pennsylvania back into New York.

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HISTORICAL CHRONOLOGY OF THE ERIE RAILROAD

- 1832 (24 April) The New York & Erie Railroad is chartered to connect the Hudson River at Piermont north of New York City with Lake Erie at Dunkirk south of Buffalo.
- 1838 Construction begins. Tracks are laid on a 6-ft, wide-gauge
- 1841 (23 September) First train runs on newly completed section from Piermont to Goshen, NY.
- 1847 (31 December) Railroad reaches Port Jervis, NY, on the Delaware River, 74 mi from Piermont.
- 1848 (23 November) Construction of the monumental Starrucca Viaduct completed on the east bank of the North Branch Susquehanna River at Lanesboro, PA. The first locomotive crosses on 9 December.
- 1849 (December) Railroad construction completed as far as Binghamton, NY. (October) New York & Erie Railroad reaches Elmira.
- 1851 Entire railroad from Piermont to Dunkirk opened—with inspection trip for dignitaries, including U.S. President Millard Fillmore and Secretary of State Daniel Webster.
- 1852 NY & Erie gains access to Buffalo, a better terminal than Dunkirk.
- 1853 (November) After acquiring several connections, the railroad begins operating out of Jersey City.
- 1859 NY & Erie Railroad enters receivership and is reorganized as the Erie Railway.
- 1864 (15 July) The Great Shohola Train Wreck occurs on the Pennsylvania side of the Delaware River between Shohola and Lackawaxen (see Poster 2).
- 1868 (Summer) Financier Jay Gould becomes president of the Erie.
- 1874 Steered into bankruptcy by Gould, Hugh Jewett becomes president of the Erie, which is reorganized as the New York, Lake Erie & Western Railroad.
- 1880 Entire system is converted to standard gauge (4 ft 8.5 in).
- 1888 Railroad goes into bankruptcy again,
- 1895 NY, Lake Erie & Western reorganized as the Erie Railroad.
- 1899 Frederick Underwood begins 25-year term as president of the Erie.
- 1960 (October 17) The Erie merges with the Delaware, Lackawanna & Western Railroad to form the Erie-Lackawanna Railroad.
- 1976 Erie-Lackawanna absorbed into Conrail.



View of the Elmira Prison Camp in operation during the Civil War.

THE WRECK!

CHRONOLOGY OF THE GREAT SHOHOLA TRAIN WRECK

1864	<p>(19 May) Military post on the Chemung River is designated as a depot for Confederate prisoners of war.</p> <p>(1-3 June) Battle of Cold Harbor in Virginia, where many of the Confederate prisoners were reportedly captured. Some were certainly taken in the earlier battle of Spotsylvania and the later skirmishes and battles preliminary to the siege of Petersburg.</p> <p>(2 July) First shipment of prisoners of war (400) from Point Lookout, MD, for Elmira (to New York by steamer, then by the Erie RR at Jersey City). They reach Elmira on the 6th.</p> <p>(12 July) 833 Confederate prisoners leave Point Lookout, arriving in New York on the 14th</p> <p>(15 July) At 6:00 am a train consisting of 3 boxcars and 12 coaches leaves Jersey City for Elmira, carrying the 833 prisoners and 122 Union soldiers. It reaches Port Jervis, NY, at 1:00 pm and leaves there at 2:00, crossing the Delaware River into Pennsylvania. At 2:45, the train, averaging 20 mi/hr, passes through Shohola, PA. At 2:50 in King and Fuller’s cut, 1.5 mi NW of Shohola, occurs the Great Shohola Train Wreck. The prisoner train collides with a 50-car coal train heading south from Lackawaxen Junction, PA, 3 mi to the northwest (up-river).</p> <p>(16 July) Replacement train arrives at site to transport uninjured prisoners to Elmira, where it arrives at 9:30 pm.</p> <p>(16-17 July) Trench 76 feet long dug between the railroad and the river for the burial of the wrecks victims, both Union and Confederate.</p> <p>(18 July) 2 prisoners injured at Shohola die and are buried at Barryville across the river.</p>
1877	(17 January) Another train wreck occurs at the same site.
1911	Bodies of the Union and Confederate soldiers buried in the trench at the site of the train wreck are exhumed and taken to Elmira for final burial in Woodlawn National Cemetery, where they are commemorated on the “Shohola Monument”.



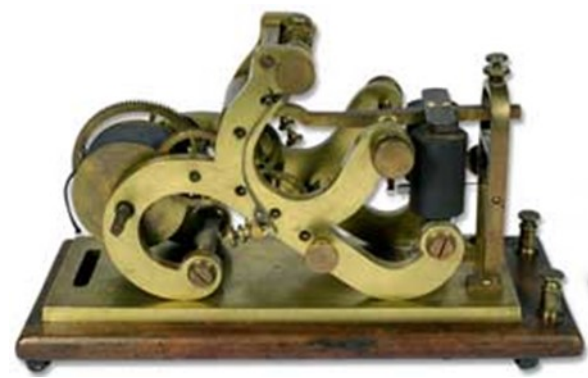
Wartime Shohola train station (Payne, 2014).



Site of the Great Shohola Train Wreck on the old Erie Railroad about 1.5 mi. north of Shohola, PA (Payne, 2014).



Jupiter 1864 Train Engine, typical of the type of engine used during the Civil War era (Payne 2014).



Early Telegraph Registry, circa 1855



Key on Board (KOB) consisting of camelback key and sounder, circa 1860.

Civil War telegraph instruments typical of those in service at the time of the wreck.

The blame for the tragic accident that Friday afternoon July 15th, 1864, was initially placed on alcoholic operators who allegedly allowed the ill-fated 50-car, mine train to proceed eastbound on the mainline. Engineer **Sam Hoitt**, the only survivor of the two engine crews, reportedly testified that he was never told about the opposing prisoner train. Engineer Hoitt escaped death by jumping from his engineer just before impact. Testimony from John Martin, surviving conductor of the coal train, is noticeably absent.

Both Hoitt and Martin should have received written orders from a competent authority prior to entering the mainline; however, written documentation of any kind is absent. Station records from intermediate telegraphic operators are also missing. In their place, local accounts claim either an intoxicated dispatcher (Fluhr 2013, p.13) or intoxicated telegrapher (Garborro, 2014) at Lackawaxen allowed the coal drag to proceed. Neither claim is validated to a reasonable degree of certainty.

Review of available timetable information suggests traffic density over the single track mainline was substantial, including eleven scheduled passenger trains as well as scheduled and unscheduled freights, mine runs and extra trains. With breakdowns, delays and poor communication complicating public and freight schedules, dispatching could have been a formable task. By comparison, the westbound prisoner extra was run during a lull in afternoon traffic. It appears the eastbound coal train attempted to utilize the same lull.

While the exact causes behind the debacle may never be known, influences of the Great War far removed from Shohola and the Delaware Valley may have influenced train crews that faithful day. In July 1864, the Philadelphia and Reading Railroad (P&R) was seized by the War Department to end delays in strategic coal deliveries caused by striking railroad crews. The occasion marked the first intervention of the federal government into a union labor dispute. Workers from the Orange & Alexandria Railroad, idled by successful conquests of Confederate General Jubal Early, were brought to replace striking P&R crews. No doubt, news of the takeover spread like wildfire across the anthracite carriers, creating fears of additional interventions and related job losses.

The railroad also faced daunting economic pressures driven by high prices for coal delivered to the ports of Philadelphia and New York. In 1864, the price of coal delivered to Philadelphia increased from \$7.25/ton in January to \$11.00/ton in August. Likewise, coal delivered to the New York port brought \$13 to \$14.00/ton in August 1864. In light of market prices, the railroad had clear incentive to increase tonnage eastward to reap economic bounty assured by summertime rates.

Earnings in 1863 were \$10,469,000 against \$8,460,000 in 1862 and \$5,343,000 in 1860. The ERIE was positioned to gain considerable wealth during the Great War. In that light, movement of coal to eastern ports may have had greater priority to company dispatchers, perhaps higher than prisoner transportation which contributed relatively less to company coffers. The financial strength and growth of the enterprise is astounding. It explains excessive railway construction, route duplications by competing roads and other matters that plagued the industry in years to come.

Finally, whatever operational flaw lead to the disaster, there is no evidence the Shohola wreck resulted from a geologic hazard, such as rock fall, landslide, slumping or related failure of roadbed and track structures. The accident occurred on an outside curve of a sinuous right-of-way hugging the valley of an ancient river incised into the folded Appalachians, no different than the Canyon of the Lehigh or other valleys providing natural access for westward growth and the commerce it provided.

As tragic as the Shohola incident was it hallmarks technical limitations in the industry more than musing on geologic issues. The locomotives had become so powerful, yet their control remained so poor – effective means of slowing and braking their trains lied decades in the future. Likewise, traffic control was in its infancy. Irishman William Robertson, father of the track circuit, just graduated from Wesleyan University in 1865. His work with electric relays, the root of elementary railway signal systems, lied decades in the future. If anything, the Shohola disaster and similar incidents forced the railway industry, government and American leaders to search for safety, a quest that has continued to the present day. Perhaps therein lies the most important lessons learned from the victims of Shohola.



Some contemporary illustrations of the Wreck.

How the Government Gets its Coal.
SEIZURE OF THE READING RAILROAD.
From the Philadelphia Press, July 18.
The almost total stoppage of the coal trade for the last two weeks from the Pottsville region will be used as an excuse for advancing again the price of coal. Until the Government is supplied, no steamboat, broken or egg coal can be shipped to regular dealers from Pottsville. We hope that every effort will be made to prevent any further suspension of the trade for the balance of the season. It is a fearful responsibility to assume on the part of the employed or employees, when it results in heaping so heavy a tax on the whole community.
The officers of the Reading Railroad Company, says the *Miner's Journal*, have failed to come to terms with their employees on the different branches. This is greatly to be regretted, as the men have conducted themselves in a very orderly manner, and they seem to think they asked no more wages than what they were entitled to, with the present advanced prices of everything. The Reading Company, however, on the other hand, state that, if they had yielded everything that was demanded, there was no security that they would not have had another demand made upon them in a short time.
In the meantime, the Government supply of coal was rapidly diminishing, and the Reading Road, with all its branches, were seized for Government uses. A new set of hands were also sent up from Washington and vicinity to work the laterals. As these hands are new at the business, it will take some time before the trade is resumed in full.
The following order was issued on the 11th inst. :
HEADQUARTERS, PHILADELPHIA, July 11, 1864.
To *Chas. E. Smith, President Reading Railroad* :
SIR: The Reading Railroad and its branches are hereby seized for the military service of the United States.
Its operations will be conducted under my directions solely for military purposes until further orders.
GEO. CADWALADER, Maj.-Gen. Com'g.

Was the coal train in a hurry?

Was the lax manner in which the coal train from Honesdale was cleared to proceed down the single track from Lackawaxen due in part to the shortage of coal caused by the government’s problems with the Reading Railroad Company in Pottsville, PA (Gasbarro, 2014).

GEOLOGY AND TOPOGRAPHY OF THE ERIE RAILROAD IN THE DELAWARE RIVER VALLEY: DEVELOPMENT OF THE LANDSCAPE THAT CONTRIBUTED TO THE DISASTER

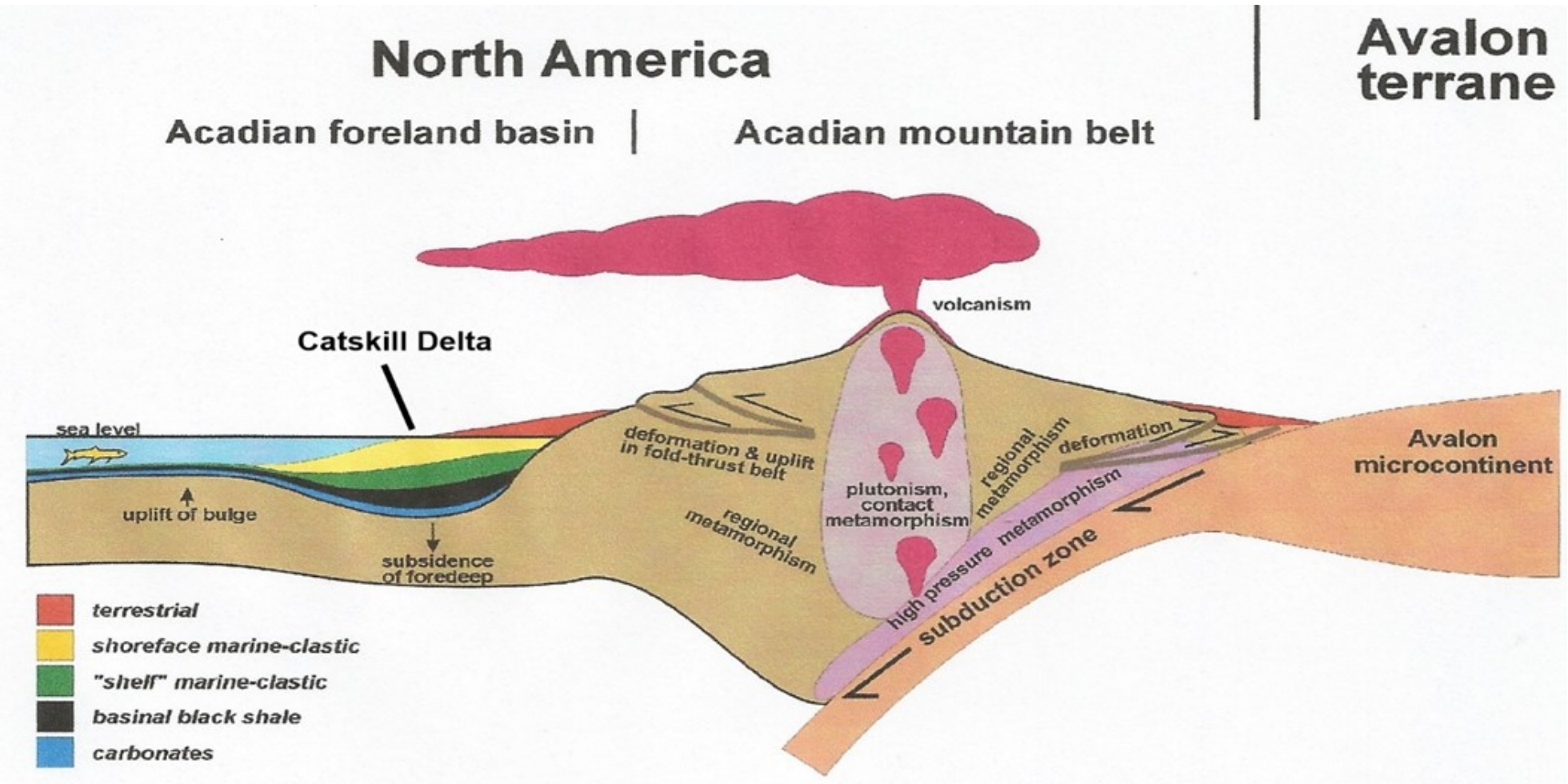
The Great Shohola Train wreck of 1864 is, perhaps, a notable example of Carl Jung’s concept of synchronicity; the acausal connection of two or more physical phenomena. On can argue that but for the geology of that particular stretch of the Erie Railroad along the Delaware River, Engine 171 would have delivered its consignment of Confederate prisoners to the former Camp Rathbun at Elmira, New York, with out incident. And perhaps, whereas it is too much to argue that geology caused the tragedy, it is certainly a principle contributing factor. The unique events that first created the bedrock of the region in Devonian times and the subsequent development of the landscape during the Cenozoic era set the state for the ultimate drama.

LATE DEVONIAN ~350 Mya

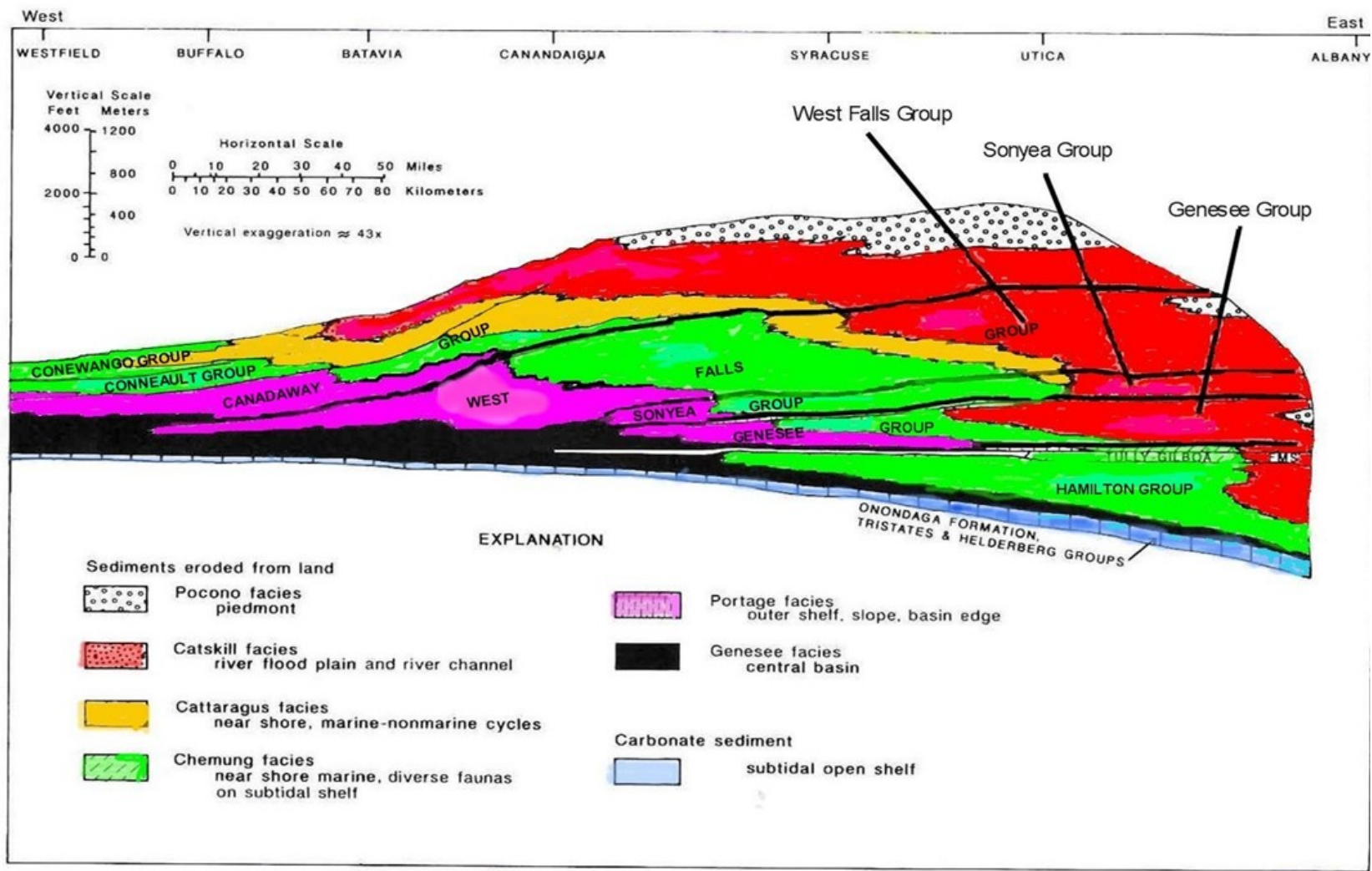
Some 350 million years ago, the region of North America that is now the upper Delaware River valley of northeastern Pennsylvania and southeastern New York was a portion of a vast wedge of clastic sediments known

ACADIAN FORELAND BASIN

The Catskill sediments were deposited in a shallow, inland sea that developed in a foreland basin adjacent to the rising Acadian mountains, a consequence of tectonic plate movement and terrane displacement during the Devonian when, simply put, the Gondwanan plate converged on the Euramerican plate. The result was a succession of facies from basinal black shales, (Genesee); slope and shelf marine shales and siltstones (Portage and Chemung); delta front, gray shales and sandstones (Cattaraugus); to subaerial, alluvial plain, red and gray shales, sandstones and conglomerates (Catskill, including the Delaware River and Lackawaxen Members of the Catskill Formation, and Pocono).

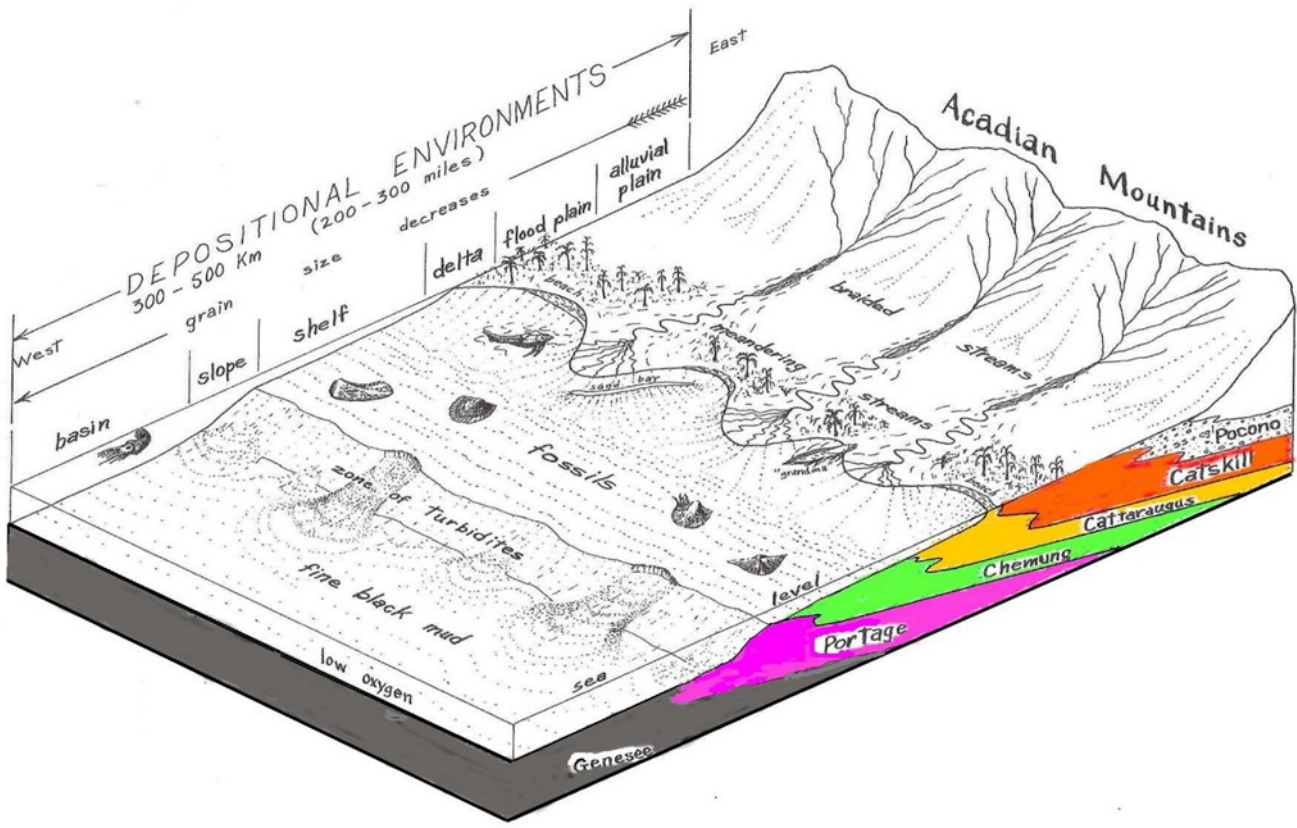


ACADIAN FORELAND BASIN
Idealized cross-section of the Acadian orogen and foreland basin. Original diagram courtesy of Charles ver Straeten.



SEDIMENTARY FACIES OF THE CATSKILL DELTA

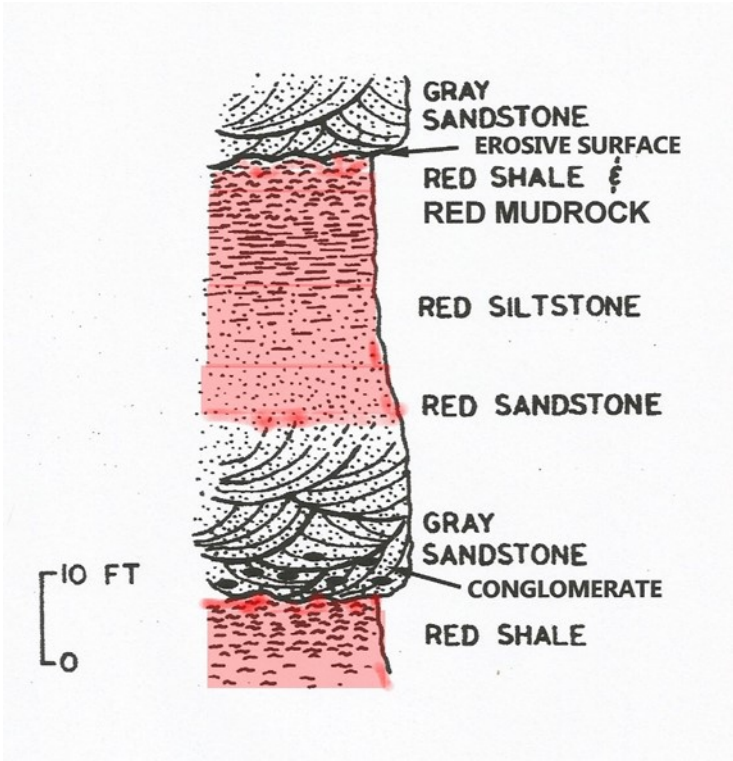
Diagrammatic cross section of the Catskill Delta east-west across New York State. [Modified from Y. W. Isachsen, 2000. Geology of New York: A Simplified Version. N. Y. State Museum Educational Leaflet 28.](#)



DEPOSITIONAL ENVIRONMENTS OF THE CATSKILL FACIES

Diagram of the depositional environments of the Catskill Delta and the facies that were deposited in them. *Modified from Y. W. Isachsen, 2000. Geology of New York: A Simplified Version. N. Y.*

The Catskill facies of northeastern Pennsylvania and southeastern New York features strata that were formed by braided and meandering streams which left behind stacked, upward-fining sequences of gravels, sands, and silty muds characteristic of bars, channels, and interfluvies, respectively.



ALLUVIAL UPWARD-FINING SEQUENCE

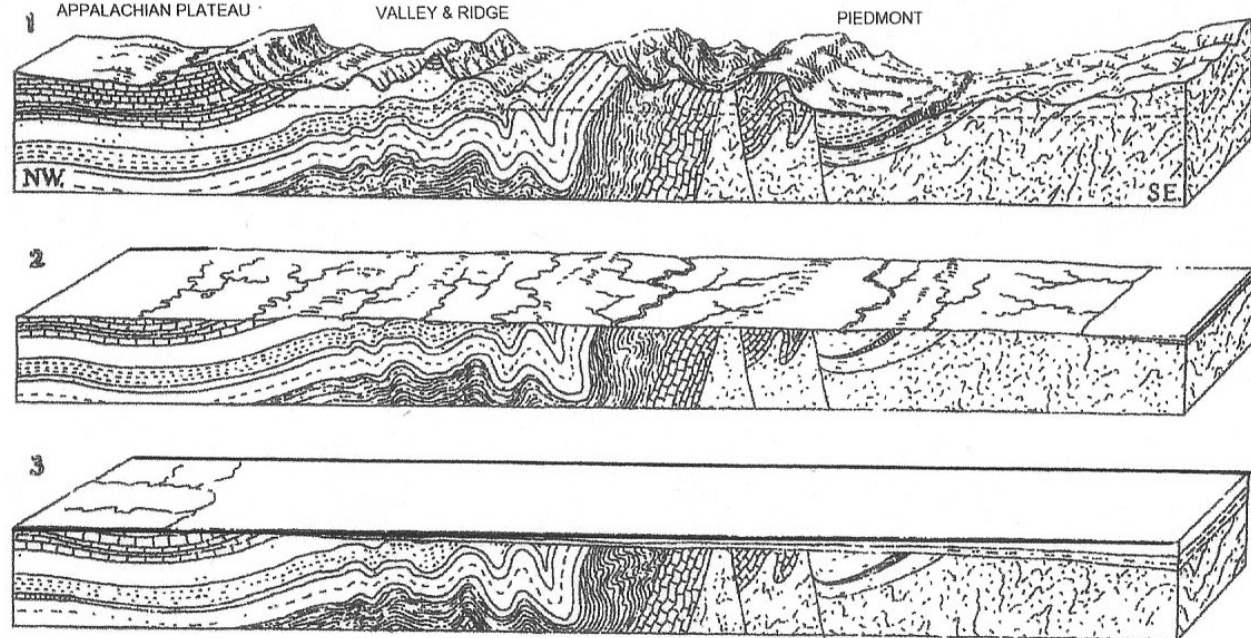
Idealized upward-fining sequence of the Catskill facies. *Modified from F. W. Fletcher, 1967, Middle and Upper Devonian clastics of the Catskill Front, New York, in Guide Book New York State Geological Association 37th Annual Meeting, ed. R. H. Wainnes.*

LATE PENNSYLVANIAN-PERMIAN ~280 Mya

Roughly 280 million years ago, Africa crashed into North America, as part of the collision of Gondwana and Laurussia during the Alleghanian orogeny. The result was the closing of the Proto-Atlantic/Rheic Oceans and the emplacement of massive thrust sheets and widespread folding throughout eastern North America—except in the Appalachian plateau which had been part of the Acadian foreland and had experienced only modest deformation. By the Late Pennsylvanian Period, one supercontinent called Pangea had formed and a high range of mountains had riven where the Acadian hinterland and orogenic wedge were situated.

EARLY-MIDDLE MESOZOIC ~160 Mya

The Supercontinent, built during the Alleghanian orogeny, began to pull apart by the early Jurassic. Pangea fragmented and oceanic crust formed as the Atlantic opened. The remnant African terrane of the North American margin, which had been thrust westward, now pulled apart, forming a series of rift basins. The strata of the Acadian foreland basin Appalachian Plateau Province, including those of the former Catskill delta, escaped the severe effects of these tensile now part of the forces. By the end of the Mesozoic Era, erosion had largely leveled the Appalachian orogenic belt.



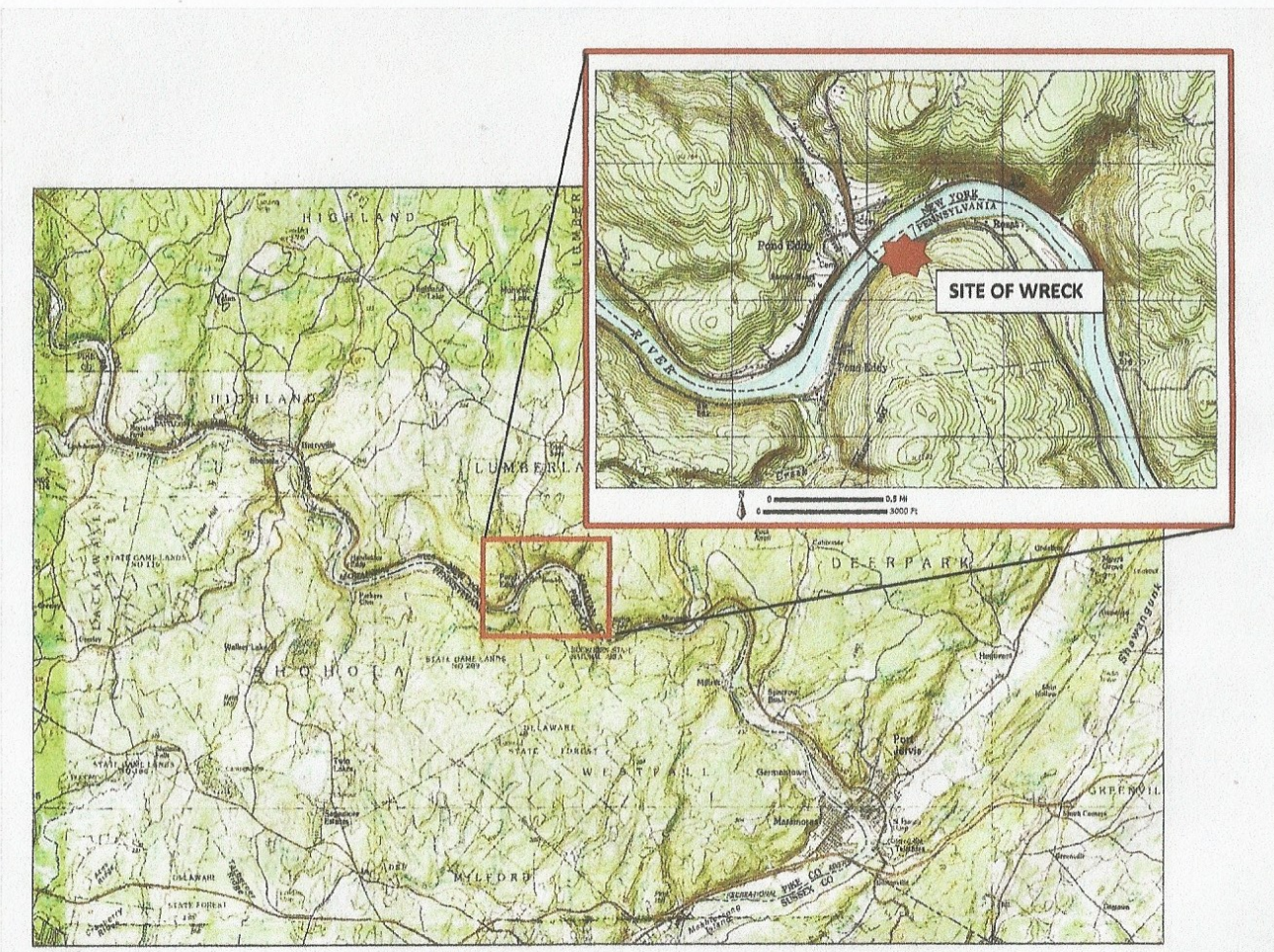
1. Present day topography. 2. Uplift and stream rejuvenation. 3. Erosive leveling and transgression.

EPISODIC UPLIFT AND EROSION OF THE APPALACHIANS

Idealized block diagrams of episodic uplift and erosion of the Appalachian orogen during the Cenozoic Era. *After D. W. Johnson, 1931, Stream Sculpture of the Atlantic Slope, Columbia University Press.*

CENOZOIC ~20 Mya to present

In the Cenozoic Era, the eastern margin of the continent now comprising the Mid-Atlantic region was uplifted and erode, perhaps as many as three or more times. The region experienced gentle uplift not involving plate boundary processes. Base level changes also resulted from glaciation in the Northern Hemisphere. The lowering of base level rejuvenated the streams and created a topography that included entrenched rivers bounded by steep, sandstone cliffs reaching heights of several hundred feet.



THE ENTRENCHED MEANDERS OF THE UPPER DELAWARE VALLEY

Map of the entrenched stream meanders of the upper Delaware River Valley.

The scene was set for a disaster at a blind curve along a single-track railroad.

AFTERMATH

Immediately after the wreck a messenger was dispatched to Shohola for assistance, and a party consisting of doctors and over 50 railroad employees was dispatched from Port Jervis in a relief train. They worked until nightfall removing the dead and injured and clearing the track. Over 100 injured as well as the uninjured prisoners and guards were taken to Shohola, where they were put up in the railroad station and in Chauncey Thomas' Shohola Hotel (the latter still standing and housing Rohman's Inn and Pub). Five Confederate prisoners reportedly escaped.

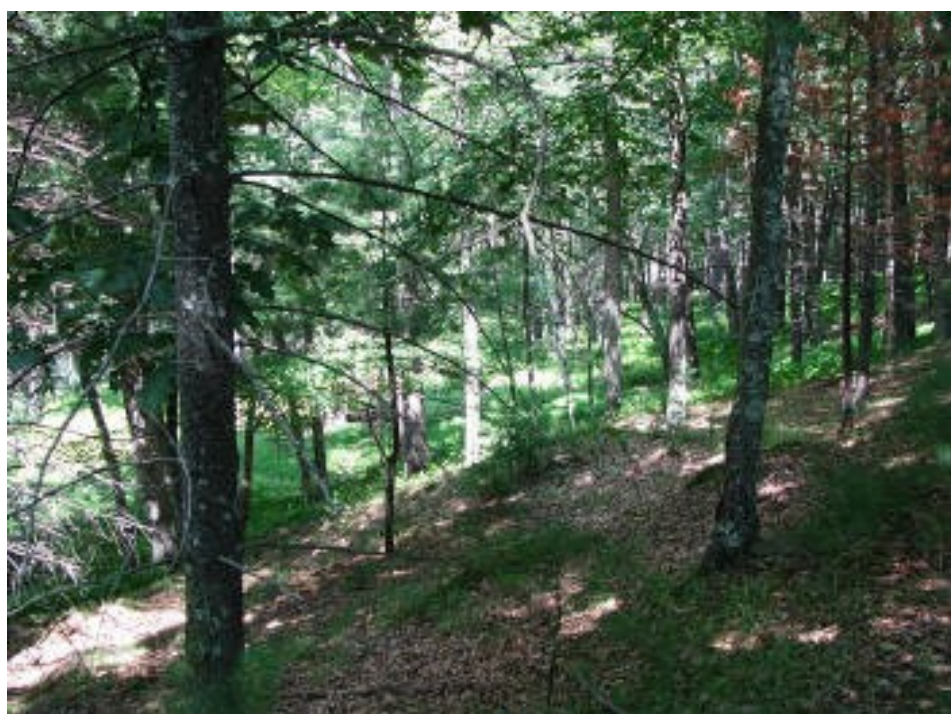
A decision was made to bury the dead beside the track without further delay. Railroad men, assisted by rebel prisoners, dug a trench, 76' long, 8' wide, and 6' deep between the railroad and the river. Other men hammered together rough coffins, using wood from the smashed cars. Shortly before midnight railroad employees arrived with plane pine boxes for the Union dead. Mass burial then proceeded by light of huge fires fed with wreckage, four Confederates in each coffin and a single pine box for each Union soldier.

During the night the railroad was opened for traffic with the first train passing through at 9 AM the next day (16 July). At 11 AM surviving prisoners and guards, including most of the injured, were loaded onto a new train, consisting of 20 cars provided by the Erie. Word was telegraphed ahead to the Elmira Prison Camp, where preparations began to receive it. Proceeding through Hancock and Deposit, NY, Susquehanna, PA (just beyond where it crossed the historic Starrucca Viaduct), and Binghamton, NY, the train pulled into Elmira at 9:30 PM. Col. Seth Eastman, camp commander, and his medical staff arranged for a dozen army wagons to carry the injured from the station on Railroad Avenue to the prison camp. The prisoners were then confined in the "hell" of Elmira until the end of the war, some of them undoubtedly being among the last released in July 1865. And some of them were certainly among the 2,933 prisoners who died at the camp during its 14-month existence—its death rate of 24.3 percent being the worst of any Northern prison camp.

Weather and railroad construction soon erased all signs of the accident, and the makeshift wooden markers of the mass grave site rotted away. The disastrous "pumpkin flood" on the Delaware River in October 1903 eroded part of the bank where prisoners and Union Soldiers were buried. Finally, in 1911, under order from the U.S. Government, the bodies were exhumed and taken to Elmira for final burial in a mass grave in Woodlawn National Cemetery, where they are commemorated on the "Shohola Monument." One side of the monument bears the names of the Southern soldiers, the other those of the Union soldiers. Considering the magnitude of the tragedy and the fact that five rebels are believed to have escaped, some inaccuracies on the monument are likely.



Rohman's Inn and Pub, Shohola, PA. Originally built in 1849, it was the Shohola Hotel in Civil War times.



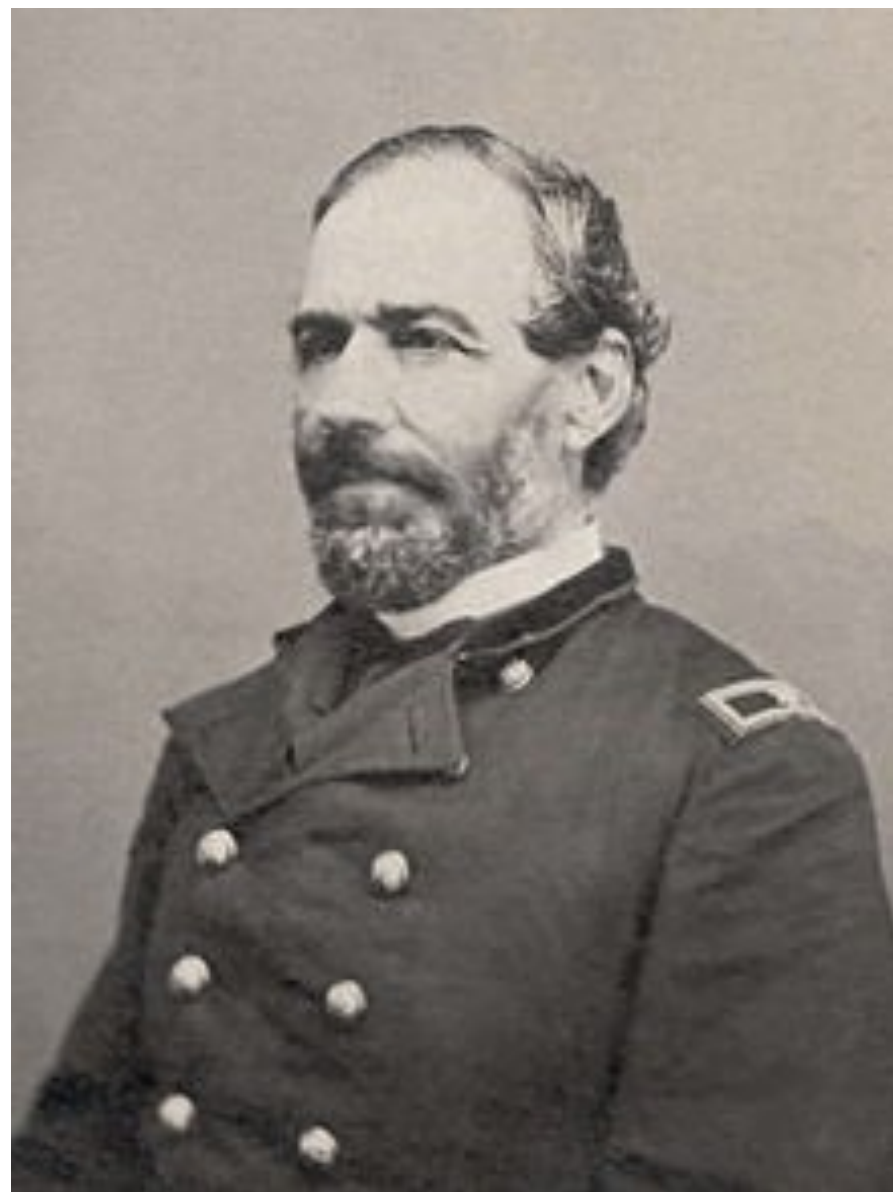
Views of the possible location of burial trenches between the railroad grade and the Delaware River (Payne, 2014).



Barryville Congregational Church, where two Confederate prisoners killed in the Shohola train wreck are buried.



Graves of Confederate soldiers John and Michael Johnson in the churchyard at Barryville, New York across the Delaware River from Shohola. (Payne, 2014).



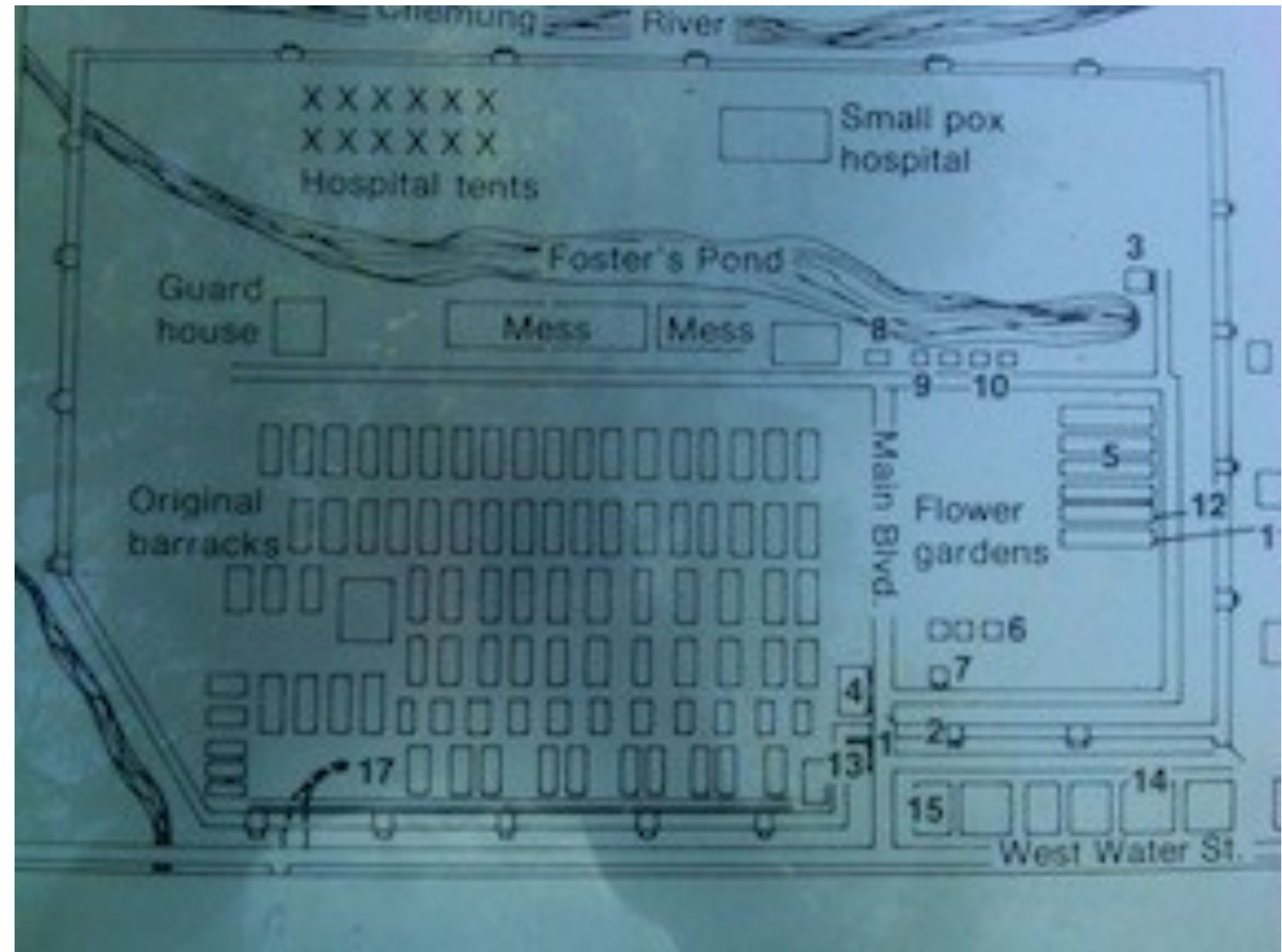
Lt. Col. Seth Eastman, post commander of the Elmira Prison Camp at the time of the train wreck.



Woodlawn National Cemetery, Elmira, New York, final resting place of most of the Confederate prisoners and Union guards killed in the Great Shohola Train Wreck.



Monument erected in 1911 in Woodlawn National Cemetery in Elmira, containing the names of the Confederate and Union soldiers who died as a result of the train wreck (Gasbarro, 2014).



Layout of the "Hellmira" Prison Camp, ultimate destination of the Confederate prisoners who survived the train wreck.

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