Carolina Conductor

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Preserving the Past
Active in the Present
Planning for the Future

Web Site: hubcityrrmuseum.org
Facebook: Carolina Railroad Heritage Association & Hub City RR Museum

Meeting Site:
Woodmen of the World Building
721 East Poinsett Street
Greer, SC 29651-6404
Third Friday of the Month at 7:00 p.m.

Hub City Railroad Museum and SOU Rwy Caboose #X3115:
Spartanburg Amtrak Station
298 Magnolia Street
Spartanburg, SC 29301-2330
Wednesday 10-2 & Saturday 10-2

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Blue Ridge Railroad

Chartered in 1852, the Blue Ridge Railroad revived earlier plans to connect Charleston to the Midwest by rail, a scheme first put forth by the failed Louisville, Cincinnati, and Charleston Railroad in the 1830s. The proposed route of the Blue Ridge commenced at Anderson, then passed through Pendleton and the new settlement of Walhalla before passing into Rabun County, Georgia, on its way to Knoxville, Tennessee, and points beyond. The new town of Belton would arise at the junction of the Blue Ridge with the Greenville and Columbia Railroad.

Primarily supported by Charleston merchants and built by Irish and German immigrants and local slaves, the Blue Ridge Railroad was intended to return the port city to commercial prominence in the region. Funding was problematic, however, with investors outside of Charleston displaying little interest in the project. Only a massive infusion of state funds in the mid-1850s kept the Blue Ridge Railroad alive, but it was not enough to complete the line. Districts not connected by the route and competing railroad projects bitterly opposed additional funding by the General Assembly, forcing the company to cease construction in 1859 due to financial troubles and mismanagement. The thirty-three-mile line cost almost $2.5 million, with the most costly and famous portion of the route being the uncompleted Stumphouse Mountain Tunnel. The German settlement of Walhalla became the terminus of the unfinished route.

After the Civil War, the idea of finishing the railroad was revived, but financial

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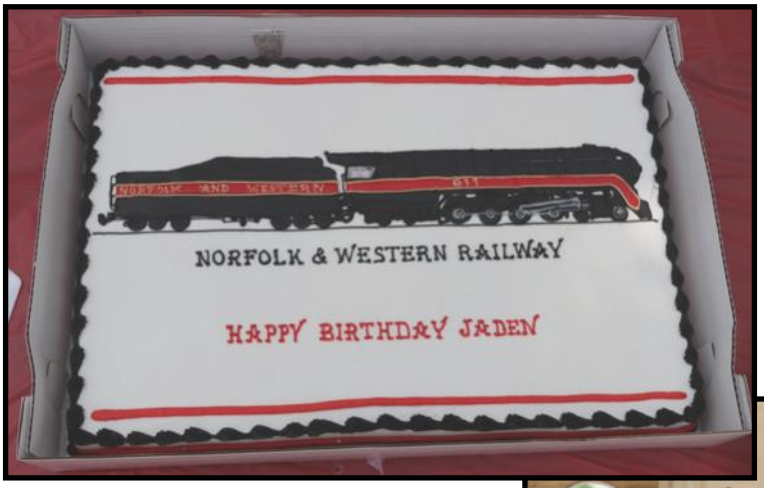
FATAL ACCIDENT.

The train on the Blue Ridge Railroad, on Monday morning last, ran over two women named *Chastain* and *Lawson*, who had fallen asleep on the track. One of them had a leg broken, with other injuries, from the effects of which she has since died, and the other was badly bruised. They had been in town for several days, and left on Sunday night, according to their statement, and not knowing that the train came down on Monday before day, they fell asleep on the track and met this horrible fate.

The Intelligencer May 6, 1866

Caboose Happenings!



N&W #611 visited the caboose one Saturday morning!

↑ Newly retired Bob Klempner assembles the new outdoor speakers.
← Bob scraping off the foam overspray.

Foam Insulation Co. applying the closed cell foam to the interior of the caboose.

Pat and Bruce → work on wiring the electrical panel. Some of us have been working here too long and need a haircut.

Wanted—Articles for the Carolina Conductor

Submit an article of 200 words or more with some photos and captions and see them in print. Every one of us has some unique railroad experience that would make interesting reading for our membership. Your editor always needs more contributions of local railway history and news.

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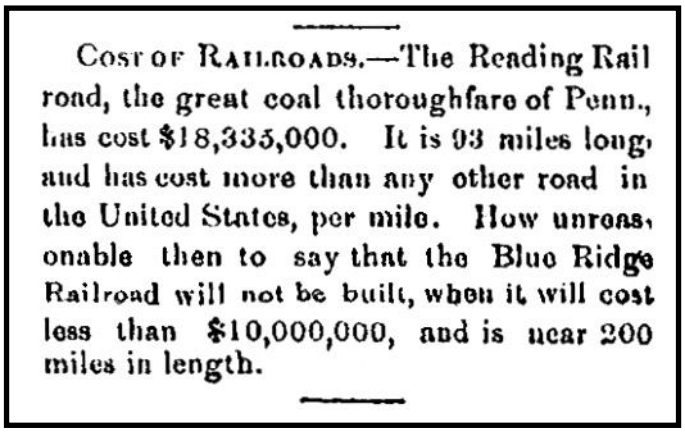
difficulties quickly overtook the company. In 1868 Governor Robert Scott persuaded the General Assembly to issue bonds to pay for the completion of the route. The attempt was usurped by corrupt legislators



Cost of Railroads.—The Reading Rail road, the great coal thoroughfare of Penn., has cost $18,335,000. It is 93 miles long, and has cost more than any other road in the United States, per mile. How unreasonable then to say that the Blue Ridge Railroad will not be built, when it will cost less than $10,000,000, and is near 200 miles in length.

Pickens Keowee Courier May 9, 1857

of both parties, who worked to have the state sell its interest in the Blue Ridge to private interests at greatly reduced prices. The corruption of the Blue Ridge "ring" became one of the most notorious examples of the fiscal misconduct of the Reconstruction era. Despite the initial postwar interest, the Blue Ridge Railroad added no more track to its antebellum line. In October 1874, the assets of the controversial company were broken up, and the completed portion of the track was eventually incorporated into the Southern Railway System.

The Old Blue Ridge Railroad

Pickens Keowee Courier June 1, 1882

Columbia, May 19 – In September last, under instructions from Col. R.L. McCaughrin, President of the Columbia and Greenville Railroad Company, Mr. J.W. Fry, chief engineer of the Blue Ridge Railroad, began a resurvey of the Blue Ridge Road, from Walhalla, S.C., to Clayton, Georgia. Mr. Charles J. Ellis, Jr, of Virginia, was the engineer in charge of the work which has been completed. The results of his observations are given in a full and exhaustive report, showing the present condition of the work which has already been done on the Blue Ridge Road, the character of the obstacles yet to be overcome before the line can be completed, the confirmation of the country from Walhalla to its junction with the Northeastern Railroad, of Georgia to Clayton.

In his report Mr. Fry says: "I have not attempted to find an entirely new line between points named, as too much work has been done on the old line for it to be abandoned even though a more favorable line could have been found, but have had the old line retraced and other lines run where it was thought possible that permanent changes could be made to advantage, or where the work was of such magnitude as to justify the adoption of temporary tracks with steeper grades.

Mr. Ellis says: "The old work, although the greater part of it was done more than twenty years ago, has stood remarkably well, there being only three or four slides of any considerable extent along the entire line. It is surprising to find what a small percentage of rock there is when it is considered what rugged country the line of road passes through. In South Carolina, the earth to be removed is composed principally of sand. In Georgia there is more clay in the soil, but not enough to make its removal difficult at any point. There are several deep ravines encountered in the main and alternate lines, all of which are estimated to be crossed on embankments. There are five streams to be crossed which will require open bridges. The other streams are crossed with box culverts., many of which are built. In South Carolina they are generally badly constructed and need repairs. In Georgia, the square drain masonry is of a much better class and, but little repairs are needed. The bridge masonry that has been done is in excellent condition. There will be no difficulty in getting good foundations for all the bridges and culverts, and good stone can be found at convenient distances and along the entire line."

The First Tunnel

on the road passes through Saddle Mountain about eight miles from Walhalla by the line. Some work has been done in the Eastern approach of this tunnel, and at the Western end the approach has been taken out and the tunnel driven full size for some distance. This tunnel has yet to be driven about 415 feet through solid rock. Middle tunnel has been driven through. There are 870 cubic yards of stone to be taken out of the bottom of the tunnel. The stump House tunnel comes next. It is 5,864 feet long and has already had about $475,000 expended upon it. There yet remains 25,180 cubic yards of earth and stone to be excavated at this tunnel. The old work here is in a remarkably good state

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of preservation. "The adoption of this tunnel," Mr. Ellis says, "involving a total cost of some $750,000, was not the most practicable line, but now that so much work has been done, I am not prepared to recommend any change. I have plotted a location which shows that by lengthening the line about two and two-thirds miles, and by a considerable addition of curvature and increasing the maximum curve to ten degrees in two places, but increasing the maximum grades, the tunnel could have been avoided at a cost of not more than $150,000. The character of the work to be done on this line, from a point where it leaves the main line to where Cane creek is crossed will be comparatively light; there the line passes through Popular Gap with a cut of forty-two feet. The work is then light until the middle tunnel ridge is struck, which it passes through with a tunnel of 150 to 200 feet. Then at the ridge running up from Smith's Cut another tunnel of 850 feet will have to be made. The work will then be light until the line crosses itself in Popular Gap, which is crossed a second time on a bridge of fifty-foot span at an elevation of sixty-seven feet above the first crossing." Two locations for

A Temporary Track

over this tunnel have been made. In the first case, on the East side of the mountain the track would have a maximum grade of 155.66 feet per mile and on the West side of the mountain a maximum grade of 106 feet per mile. The maximum curve going West on ascending grade is two degrees per 100 feet and descending is nine degrees per 100 feet. The total length of this line in 18,892 feet and would cost $63,404.46 and although 9,525 feet longer than the tunnel or main line, could be constructed for $201,494.64 less than the main line.

A temporary track has also been located to avoid the Chauga tunnel and to be used in connection with the line above described. It is 474 feet longer than the main line and will be $25,997.32 cheaper. The total length of this track is 4,613 feet and the total cost of construction would be $14,380.30.

The second line over

Stump House Mountain

avoids both the Stump House tunnel and Chauga tunnel. The maximum grade on this line going West is 255 feet per mile and Going East 150 feet per mile. This line is 3,328 feet longer than the main line. Mr. Ellis says: "I am not inclined to recommend either of these temporary lines, unless the object is to save first cost in cost for building the road; for if the tunnel is pushed with proper energy, it could be completed within sixteen months."

Chauga tunnel is about 2,500 feet West of the Stump House Mountain. No work has been done on it except the approaches. The next tunnel in the Dick's Creek Tunnel, in Georgia. It is 2,367 feet long, and there remains to be done on it 1,053 feet. The last tunnel on the line is

The War Woman Tunnel

is 1,753 feet long and 1,250 feet of it remains to be done. With a view of saving first cost a temporary track has been located over this tunnel. Its total cost would be $22,200.83. It is 224 feet longer than the main line but is $140,424.92 cheaper. It has a maximum ascending grade going West of 211.2 feet per mile and going East of 158 feet per mile, with maximum curves on either line of eight degrees per 100 feet.

One the main and alternate lines estimates have been made for all earth cuts to be taken out eighteen feet wide and rock cuts sixteen feet wide. The maximum grade on the main and alternate lines is 70 feet per mile going West and 45 feet per mile going East. Three alternate lines have been located, the first to avoid the first and second crossings of Whetstone Creek, which can be built at a saving over the main line of the $22,004.15; the second to avoid the two crossings of War Woman creek in Georgia, which can be built at a saving of $34,237.12 over the main line, and the third to connect with the Northeastern Railroad, of Georgia, about one half mile from Clayton, instead of joining it near Rabun Gap as the main line does, and which can be constructed at a saving of $30,369.95 over the main line or original survey.

The Total Cost

of gradation and masonry on the main line of the road from Walhalla to its junction with the Northeastern road in Georgia, is estimated at$1,316,011: of superstructure, $211,750; of depots, and c., $14,800; of side tracks and c., $21,500; and the total cost of the main line is placed at $1,564,453.93. Deducting from this amount the saving effected by the construction of temporary tracks and alternate lines and total cost of building the road is placed at $1,101,537.05. A still further saving could be affected by substituting trestle work

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for embankments at various points along the line.

The report of Col. H.E. Coleman, topographer of the Blue Ridge surveys, shows that the road passes through as country well stocked with

Valuable Minerals

and that of gold, silver, copper, iron ores, asbestos and corundum have been discovered in paying quantities and comparatively easy access. His report also shows the wealth of timber which abounds in the country opened by this line, which could be developed at a large profit if the means of cheap and expeditious transportation were at hand.

In commenting on the report of Mr. Ellis, Mr. Fry says: "It is highly desirable that the permanent way be built at first, and to this end I would recommend at the present advanced state of the work, that

The Old Line Be Adopted

except for the alternate lines in Georgia, avoiding the crossings of War Woman Creek and changing the point of junction with the Northeastern Road, which would save $94,607.07 over the old line at a total cost of $1,469,453.98, including cost of tracks, depot buildings, water stations, and c. If, however, it is deemed advisable to build temporary tracks avoiding the heaviest work, I would recommend the adoption of the lines avoiding Stump House and Chauga tunnels in South Carolina and War Woman tunnel in Georgia and substituting trestlework at the points indicated be the engineer, at a cost of $1,043,537.05, and which could be operated economically and to advantage until business of the road became heavy enough to justify the completio9n of these tunnels.

The Stump House Tunnel

has cost, up to this time, as near as I can find, from old records, $473,078.50, and will cost to complete it $239,210, making a total of $712,288,.50, The loop line (the tracks located around the mountain to avoid this tunnel) will cost not exceeding $150,000 leaving a balance of $562,288.50 in its favor. While it is 2.68 miles longer than the tunnel line and has two ten-degree curves, on it the grades are no steeper than those on the main line and are equated on the ten-degree curves. It may be said that the extra length of the loop lone is very objectionable. In reply to this I would say that I thoroughly appreciate the desirability of having the line as straight and short as possible and can as well appreciate the disadvantages of operating 2.68 miles of extra track; but, when it is necessary to save this distance to expend over half a million dollars in the first instance, and many thousands annually afterwards, I would strongly favor the longer line. In this case of excess of the cost of the tunnel line over the loop line is $565,288.50, which would necessitate an annual interest charge of $33,737.31. The cost of maintaining and operating the Columbia and Greenville Railroad for the fiscal year ending 30th September 1881, was $1,801 per mile and for the same period on the main line of the Richmond Railroad was $3,072 per mile. On the basis of cost on the Columbia and Greenville Railroad, the cost for maintaining and operating the 2.68 miles of extra track would be $4,846.86 annually, as against $33,737.21 annual interest charges on the tunnel line, a saving annually of $28,890.63 in favor of the loop line. Or if the business became as heavy as that on the main line of the Richmond and Danville Railroad the cost of the 2.68 miles extra tracks would be $8,232.96 annually against $33,737.31 annual interest charges on the tunnel line, a saving of $25,504.35 in favor of the loop line. The amount which could have been saved by building the loop line instead of Stump House Tunnel would complete all the grading now to be for a permanent track from Walhalla to within five miles of Clayton. "The importance of

The Completion of This Great Work

has been looked forward to with eager interest for many years. The road now connects at Anderson with the Columbia and Greenville railroad, at Seneca City with the Atlanta and Charlotte Air Line Railway, and if completed will connect at Clayton with the Northeastern Railroad of Georgia, which is a part of the Old Blue Railroad now in course of construction, which in turn will connect at Franklin with the Ducktown branch of the Western North Carolina Railroad, also in course of construction, and through that at Chattanooga with the Louisville and Nashville, the Erlanger and East Tennessee, Virginia and Georgia Systems. At Knoxville it would connect with the East Tennessee, Virginia, and Georgia system, and through the Knoxville and Kentucky branch with the Louisville and Nashville and through Emory Gap with the Erlanger system. These connections will put South Carolina, now without such means, into direct com-

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munication with Cincinnati, Louisville, Chicago, St. Louis, Memphis and the entire West and Northwest, and would be the shortest line for the transportation of bacon, corn, wheat, and other Western produce, not only for consumption in the State, but would give Charleston a decided advantage and point of export and import.

Stumphouse Tunnel

Stumphouse Mountain Tunnel located in Oconee County, South Carolina is an incomplete railroad tunnel for the Blue Ridge Railroad of South Carolina in the Sumter National Forest. The tunnel, along with nearby Issaqueena Falls, are now a Walhalla city park. It was listed on the National Register of Historic Places in 1971.

The tunnel was first proposed in 1835 by residents of Charleston, South Carolina as a new and shorter route for the Blue Ridge Railroad between Charleston and the Ohio river valley area which until then was only accessible by bypassing the mountains entirely to the South and then traveling up north through Georgia and middle Tennessee. In 1852, 13 miles of tunnel were proposed to cross the Blue Ridge Mountains through South Carolina, North Carolina, and into Tennessee. Construction on the railway was begun in the late 1850s and was successful through most of South Carolina until hitting the mountains around Walhalla in Oconee County. There Stumphouse tunnel along with three other tunnels was to be built.

Construction on Stumphouse tunnel began in 1856 when the George Collyer Company of London brought many Irish workers into the area for this project. Many of the workers lived in housing on top of Stumphouse mountain called Tunnel Hill. By 1859, the State of South Carolina had spent over a million dollars on the tunnel and refused to spend any more on the project, therefore the tunnel work was abandoned. The tunnel had been excavated to a length of 1,617 feet of the planned 5,863 total feet. Today, where the tunnel was meant to end on the other side of the mountain, there remains a mound of earth (intended for the railway tracks) submerged during the summer months under Crystal Lake, located just west of Highway 28.

As a part of the planned Blue Ridge Railroad, two other tunnels were begun in the 1850s and are all connected by terrain at railroad grade. Middle Tunnel, a quarter mile from Stumphouse Tunnel was successfully completed but mostly collapsed and was partially sealed off in the mid-1900s. It is only accessible by foot. Saddle Tunnel, the last of the South Carolina complex was also begun for a short distance 1.5 miles north of Middle Tunnel. Saddle is partially completed yet is mostly submerged by a small lake. Only the entrance to the tunnel is visible.

Beginning in the 1950s Stumphouse tunnel was used by Clemson University to grow blue cheese until the 1970s when the blue cheese operation was relocated to air-conditioned cheese ripening rooms where the tunnel environment was duplicated.

Today, Stumphouse tunnel is operated as a public park along with nearby Isaqueena Falls by the city of Walhalla. It is open daily except Christmas Day and during inclement weather from 10am until 5pm. Inside the tunnel the temperature is a constant 50 degrees with humidity of 85%. The tunnel is easily accessible by foot, a few yards from a gravel parking lot. The structural integrity of the tunnel is solid and almost no cracking is apparent minus an enlarged vent halfway through the tunnel. In 1999 this vent was impacted by a rockslide, however in 2000 the town of Walhalla re-

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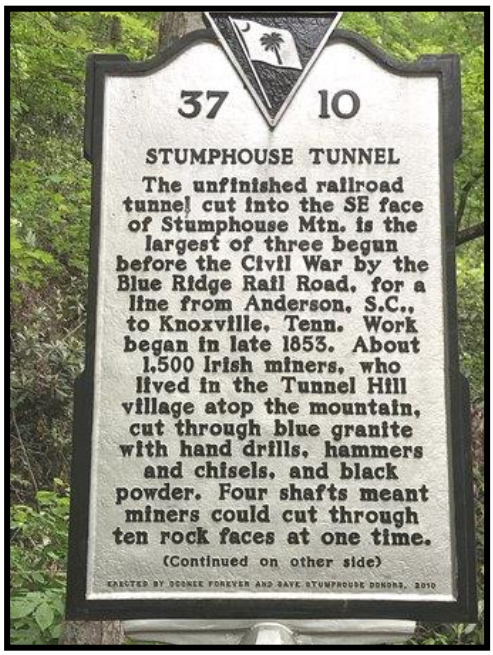

Historical marker at tunnel entrance.

excavated the tunnel and safely returned it to public use.

After a developer attempted to purchase the property from the City of Walhalla in 2007, Naturaland Trust, a conservation agency created by C. Thomas Wyche, pledged about

Tunnel entrance.

$2 million to protect the surrounding property; and a consortium of non-profit conservation groups, private individuals, and the state of South Carolina provided the money and resources to preserve the mountain for public use.

The Clemson University Cheese Research Project

The unfinished Stumphouse Mountain Tunnel lay idle for 80 years, visited by tourists and picnickers through the years, serving no useful purpose. In 1940, an alert Clemson A&M College professor recognized the possibilities of curing blue mold cheese in the tunnel. With this thought in mind, the Clemson A&M College Dairy Department began experimenting with the manufacture of blue cheese and curing it in the tunnel. The debris that had accumulated during three quarters of a century was cleared out, equipment for cheese curing was moved in, and the project was off to a successful beginning.

Beautiful Issaqueena Falls near the tunnel.

The outbreak of World War II in 1941 limited production, and the work was discontinued in 1944. Clemson lost skilled specialists; the milk used for cheese was needed for aviation cadets quartered on campus; and litigation arose as to the ownership of the tunnel. In 1951 Clemson A&M College was successful in purchasing the tunnel. With adequate milk supplies again available, Operation Blue Cheese was re-initiated. Operations were resumed on an experimental basis in 1953. Selected Brown Swiss and Holstein milk from Clemson's dairy herd consisting of 680 animals was used to make the Roquefort-style blue mold cheese. The cheese was manufactured on campus, transported 30 miles, and cured in the tunnel. In October 1953, some 2500 pounds of blue cheese was curing in the depths of Stumphouse Mountain Tunnel. The production was directed by D.H. Graham, a native of Mississippi and a recent Ph.D. from Iowa State College. He joined the Clemson Dairy staff in August 1953 to initiate the manufacture of blue cheese and carry on other dairy products research. Indications were that the product would be ready for market in April or May 1954.

The Clemson Dairy Department was pleasantly anticipating the time when cheese con-

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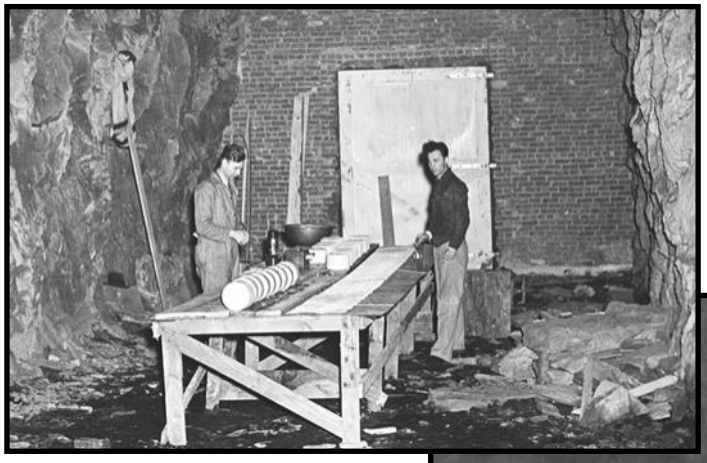

noisseurs over the country could again enjoy the tangy, piquant flavor of Clemson Blue Cheese. Blue cheese was cured in the tunnel from 1953 to 1956. The environmental conditions in the tunnel were carefully analyzed, mold strains suited for these conditions were developed, and curing procedures were investigated. Curing in the tunnel was suspended during the summer months because of the warm temperature.

The Agricultural Center in Newman Hall was built at Clemson in 1956. Air-conditioned cheese ripening rooms were designed to duplicate the tunnel's high humidity and temperature. Research studies were begun on the campus early in 1956. The air-conditioned rooms have eliminated the need for suspending operations during the warm summer months, which was necessary in the tunnel. In 1958, all manufacturing and curing of blue cheese was conducted on campus. The continuing search for new and more efficient methods is a contribution of modern agriculture to our nation's economy. In 1964 the college was renamed Clemson University as the state Legislature formally recognized the school's expanded academic offerings and research pursuits.

In 1970, the tunnel was leased to the Pendleton Historical District Commission, which converted the area into a picnic spot and tourist attraction. The south entrance of the tunnel was a historic landmark in South Carolina for many years. After a rockslide inside the tunnel in the mid 1990's, the tunnel was closed to visitors. After strenuous safety testing, the city of Walhalla has reopened the tunnel as a landmark site.

Clemson Blue Cheese is an artisan cheese, made the old-fashioned way. Each 288-gallon vat makes a batch of about 240 lbs., which is then salted, waxed, and aged for 6 months. When it is ready, each hoop is scraped and packaged by hand. Each lot is kept separate, and strenuous record keeping assures quality at every step.

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