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At Melrose, N.C., F7s approach the bottom of Saluda Grade with a freight in the early 1950s. Safety Track No. 2 heads toward the photographer while the main track diverges to the right.
Linn H. Westcott

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America's steepest mainline grade challenged generations of Southern Railway men

By **Frank Clodfelter**

The nation's steepest standard-gauge mainline railroad, over Saluda Mountain, is a part of the Southern Railway's Carolina Division, with headquarters in my hometown of Asheville, N.C. This division, extending from Charleston, S.C., to Asheville, ranges in terrain from sea level to the highest mountains in the East. Asheville sits in a bowl surrounded by the Appalachian chain of mountains; a few miles west lies Great Smoky Mountains National Park. This western North Carolina region has 223 peaks higher than 5,000 feet in elevation and 49 above 6,000 feet. Nearby Mount Mitchell, 6,684 feet, is the tallest mountain in the eastern U.S.

Railroading for locomotive engineers in such a setting presents many problems, such as inordinate slack action, the balancing of a train over Saluda Hill, and proper use of dynamic brakes in conjunction with the air brakes to prevent a train from stalling or running away.

Asheville is served by only one railroad, the Southern, with four routes converging on the city:

1. Asheville–Spartanburg, S.C.: The timetable lists the distance as 67.4 miles to the freight yard at Hayne, S.C, adjacent to Spartanburg on SR's Washington–Atlanta main line. The route's most notable feature is Saluda, 32.3 miles south (east by timetable direction) of Asheville. Publications for years have described Saluda Mountain as having a maximum grade of 4.7 percent, although the slope actually reaches 5.1 percent for 100 feet.

2. Asheville–Salisbury, N.C.: This run is 141 miles east to the old Salisbury station and 8.8 additional miles north to the new Spencer Yard on the Washington–Atlanta line. The maximum grade is 2.2 percent over the Blue Ridge Mountains between Old Fort and Ridgecrest. This 12-mile stretch is generally regarded as the most scenic portion of Asheville's four rail outlets. The track curls back on itself to gain elevation, passes through seven tunnels, crosses Mill Creek 11 times, and rounds a vast horseshoe curve overlooking a spectacular geyser.

3. Asheville–Murphy, N.C.: Balsam Mountain, with a 4.3-percent grade, and Red Marble Mountain, with its 4.2-percent grade up the Nantahala Gorge, are close rivals of Saluda Mountain. The Murphy Branch is non-signaled territory that we railroaders term the "wagon-wheel line" of the Carolina Division. In a race with the Louisville & Nashville to reach Murphy, the railroad was hastily constructed along ancient Indian trails or cow paths. During steam days, only small engines such as Consolidations were used because of restricted bridges, curvature, and light rails.

4. Asheville–Knoxville, Tenn.: This is the water-level route along the French Broad River and the gateway to points west such as Cincinnati and Chicago.

One choice: straight up

Many people wonder why a railroad as steep as 5.1 percent was built up Saluda Mountain at all. You will discover the answer if you drive through the rolling hill country around Landrum, S.C., and look at the wall of mountains that rise abruptly to the west. You will notice that the vertical range of the Blue Ridge Mountains is devoid of the usual foothills or cross crenelations. From Melrose to Saluda there is no way to gain elevation by winding around foothills or having the rails wind back and forth as SR predecessor Western North Carolina Railroad managed between Old Fort and Ridgecrest.

This was the problem confronting Capt. Charles W. Pearson, late of the Confederate Army, when he assumed the task of building a railroad from Tryon to Asheville in 1877 for the Spartanburg & Asheville Railroad.

The original survey of the first railroad to crest the Blue Ridge Mountains from the south ran via Columbus, N.C., and along Tryon Mountain, cresting at Howard's Gap (opposite Saluda Gap). Col. Thad S. Coleman was chief engineer in charge of relocating the route of the railroad from Spartanburg to Asheville, with Pearson as assistant engineer.

Coleman and Pearson abandoned the original survey because of the estimated costs of building tunnels and about 13 extra miles of track. However, the chief factor in seeking another route was the unstable condition of the mountain, which was continually slipping. Pearson was appointed resident engineer for the Spartanburg & Asheville when actual construction was started in 1877. He had no choice except to build the railroad straight up Saluda Mountain.

The mountain began to take its toll soon after the first train negotiated the grade on July 4, 1878. In 1880, 14 men were killed on Saluda; in 1886, a runaway work train killed 6 convicts, 2 guards, and a foreman; in 1890, 3 men lost their lives; and in 1893, 3 more were killed and another lost a leg. This last wreck, which occurred at the first steep curve east of Melrose, was a mass of coal, steel, timber, and a carload of cattle, and the curve has since been known as "Slaughter Pen Cut." Loss of life and property on Saluda was the most serious problem that faced the Southern Railway

Forty-two years separate these views west from the U.S. Highway 176 bridge at Saluda. In 1938 (left), 2-8-8-2 4055 storms toward the crest of the hill with a train out of Asheville. In 1980, the mid-train "slave" units of an empty coal train approach the depot while the head-end units round a curve in the distance.

Two photos, Frank Clodfelter

when it was organized on July 1, 1894.

The Southern made a survey to determine if another route avoiding Saluda Mountain was feasible. The survey proved that Pearson was correct: he had no way to build a railroad except straight up.

The runaways of 1903

Discouraged by the loss of life and equipment on Saluda, the Southern was searching for a solution to the problem when three more runaways occurred in 1903.

W. P. "Pitt" Ballew was involved in the first. A veteran of the hill, he became a locomotive engineer in 1899. Ballew may have been small in stature, but what he lacked in size he made up in steel determination to conquer his favorite run out of Asheville. He became a legend in his own time, and to his contemporaries he was downright colorful. He wore a black Dunlap hat with the fine polished look of an aristocrat.

Ballew, who died in 1940, explained his runaway trip: "I'm not superstitious, but it sure pays to keep a wary eye on [the] number 13. We left Asheville with engine No. 440 on July 13, 1903, and we had 13 cars of Interstate coal next to the engine, two merchandise cars, and a car of eggs next to the hack.

"When we started down the mountain," Ballew continued, "I made an application with the automatic brake, and to my surprise I heard only a faint hiss of the brakes instead of a sharp exhaust to indicate that the brakes were being applied to all the cars.

"I [whistled for] brakes to warn the trainmen who were riding the tops of the cars to tie up hand brakes. Fireman Bob Daugherty and brakeman Jim Halliburton swung off the train when I shouted that we had no air and the train was running away."

Loss of life and property on Saluda was the most serious problem that faced the Southern Railway.

Conductor R. C. Ervin caught the caboose east of the station, and when he felt the momentum of the train and noticed the air gauge on the peg, he realized the train was gone. Standing on the front of the hack, he noticed flagman Roscoe Garrison running over the bouncing cars toward the rear of the train. The moment Roscoe's feet touched the caboose floor, Ervin raised the pin and cut the car loose from the train.

The last man off was engineer Ballew. Preoccupied with trying to save his train by reversing the engine, applying sand, and attempting every trick of the trade, Ballew realized too late that all hope was gone. The train was going too fast for a man to swing off running and hold his balance. To stay aboard meant certain death. So Ballew hurriedly climbed down to the last step of the engine and hurled himself down a cinder-covered embankment. Moments later the train turned over below where the first safety track on the mountain was later installed. Engine 440 landed on its side surrounded by a pyramid of coal — a temporary monument to Pitt Ballew's wild ride. The 13 coal cars and the two merchandise cars were a total loss. Only the last car remained on the rails, its load of

Switch tender R. A. Moody (above) cleans the points of Safety Track No. 1 in 1942. In another 1940s view but facing the opposite direction, the switch tender has lined the switch for the main line and stands aside as a train eases down the hill; the safety track's rails are heaped with sand to retard train speed.

Left, Frank Clodfelter; above, Allan D. Krieg

eggs in somewhat scrambled condition. The train crew who had jumped to safety found Ballew near death at the foot of the mountain — a scarred and broken little man who had fought to the last moment to save a train entrusted to his care.

Railroad officials discovered that an angle cock between the cars had been turned. It was thought that someone might have turned the angle cock after the brakes had been worked at Saluda, or that a bouncing drawhead might have partly turned it — enough to maintain the pressure on the engine gauge, but not enough to retard the train when the automatic brake was applied.

"I'm not superstitious, but it sure pays to keep a wary eye on [the] number 13."

While Pitt Ballew was in the hospital recovering, two more runaways occurred on Saluda. Exactly a month after Pitt's runaway, Third No. 62 left Asheville on August 13, 1903, with 23-year-old Jack Averill Jr. at the throttle, fireman Charlie Hair on the scoop, and W. B. Sherrill as brakeman. This train had 13 Interstate and Seaboard coal cars. Engineer Averill lost control before he reached Sand Cut, about halfway down the mountain. The engine crew stayed aboard in an attempt to bring the train under control. Approaching Melrose at the foot of the hill, the runaway reached an estimated speed of 60 mph — a freewheeling ride into eternity!

Death claims two heroes in 'Slaughter Pen Cut' was the headline the following day in the *Asheville Citizen*. The subhead read: "Saluda Mountain Witnesses Another Disastrous Wreck on the Southern Railway." The paper reported that the engine and 11 cars were demolished. The engineer and fireman were killed, their bodies buried under the wreckage. Brakeman Sherrill had lost both legs and was expected to die. Engineer Averill's father, mother, wife, and two little children were spending the summer at Saluda and so were just 3 miles from where he met his untimely death. The article further stated that as the runaway passed Melrose the operator, J. W. Heatherly, saw the fireman throw up his hand and smile — and then Heatherly fainted.

The third runaway on Saluda in 1903 occurred just one week later. Engineer J. F. Dougherty, heading up the hill with a "shirttail of cars" (not enough tonnage for a helper), slipped and stalled east of Sand Cut. The train began to run away backwards before the crew had time to tie up the hand brakes. None of the men jumped from the train, as they were confident that the speed was not high enough to derail at Slaughter Pen Cut; also, they were hoping their train could be brought under control.

As the train passed Melrose the operator there notified the Asheville dispatcher that the train was running away backward. The alarmed dispatcher was aware that another westbound extra was due at Tryon, 5.7 miles east of Melrose, and that if that train had passed Tryon, there was no way of warning its crew. The dispatcher hammered out a message to the Tryon operator: "Throw a red train order board on the westbound extra and get him into the siding as quickly as possible. There's a runaway coming down the mountain, and he's already by Melrose!"

The westbound extra was already blowing for the crossing immediately east of the Tryon station when the operator dropped a red board in his face. Running toward the locomotive, the op shouted his emergency message to the crew. Quickly reversing his locomotive, the engineer held his breath when he heard a constant whistling on the 1.5-percent grade west of the station. Seconds after the westbound extra cleared the main line, the runaway shot past. Engineer Dougherty's train sailed across the 400-foot Vaughan's Creek trestle and, after hitting the 1.5-percent grade up Bird Mountain, seesawed back and forth before finally settling to a stop. None of the crew was hurt.

The quick action of the Asheville dispatcher, the Tryon operator, and the crew of the westbound extra had saved lives and another costly wreck. Railroading at its best!

The *Rutherfordton* [N.C.] *Tribune* for August 20, 1903, published the following item: "Freight on the Asheville and Spartanburg road may be wholly abandoned and all freight brought over the Knoxville and Augusta division, now being built. Twenty-seven men have been killed crossing Saluda Mountain, and every death has been caused by the

Two heavy Mikados, author Clodfelter's favorite Southern freight power, labor past Safety Track No. 1 with a train of reefers filled with peaches in the mid-1940s; smoke from a 2-10-2 pusher rises above the trees at left. This spur, considered superfluous in the diesel age, would be removed in the early 1950s.
Frank Clodfelter

wrecking of a freight train, there not having been a single passenger disaster on record."

Life-saving safety tracks

The runaways of 1903 led to two changes in operation over this unique mountain — in their degree of importance: safety tracks and brakes on coal cars.

Pitt Ballew, crippled and maimed in the first of the 1903 runaways, had ample time to reflect on the grade while recuperating. He inadvertently caused a sensation and alarm while he was a patient. "I shouted from my bed, *'I've got it! I've got it!'* The nurses rushed in to see if I was out of my head or expiring of my injuries. The nurses calmed down when I assured them I was all right mentally and physically. Then I requested they send for Southern's Superintendent G. R. Loyall as quickly as possible.

"I explained to Mr. Loyall that the Southern build two safety tracks on Saluda: the first about a mile from the top of the sharp curve above Sand Cut, where the mountain rises abruptly to the right of the descending tracks. The second at Melrose at the foot of Saluda Mountain."

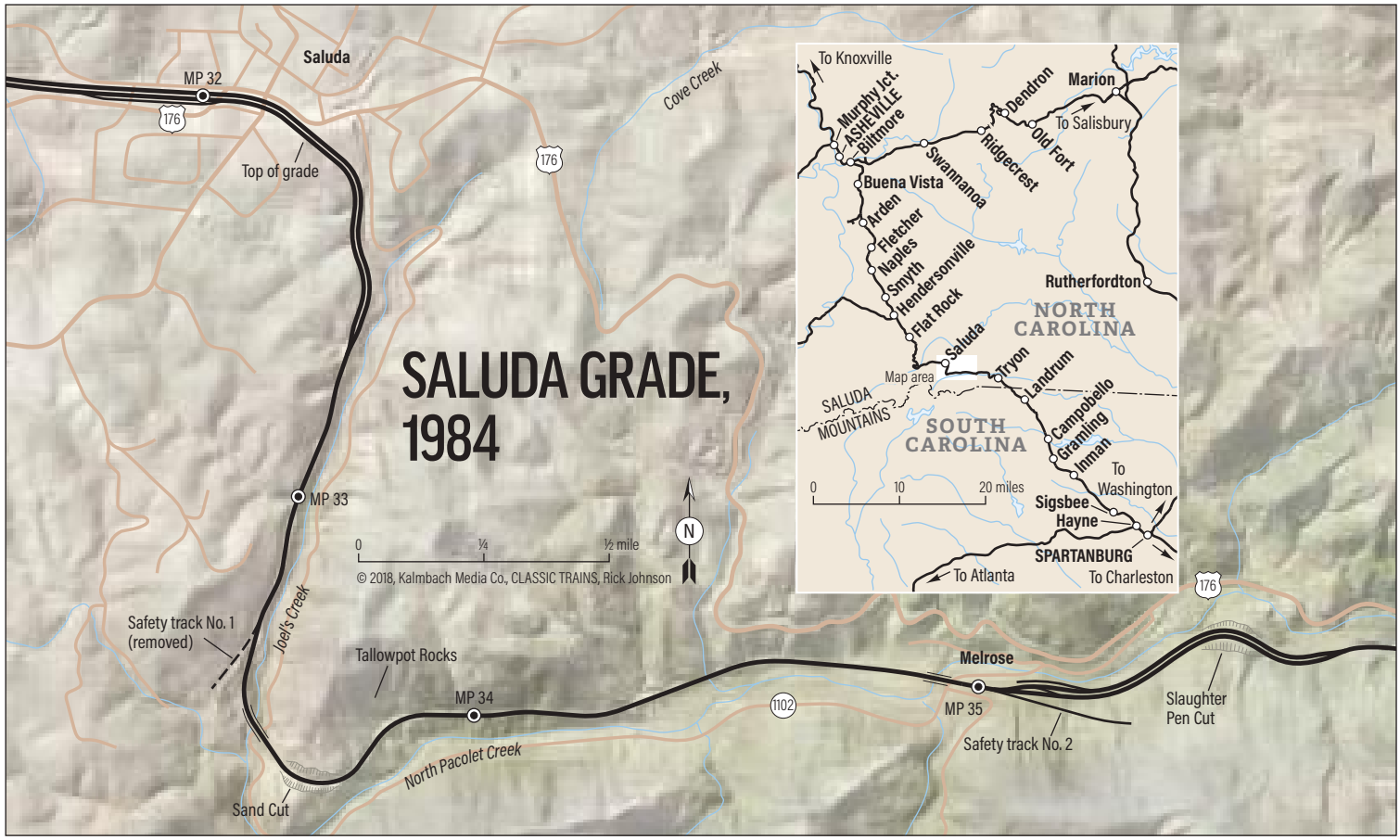
The railroad, impressed with Ballew's suggestion, immediately surveyed and built the two safety tracks, which were put into service within months.

According to the late E. B. Hall, former mayor of the town of Saluda and veteran operator there, Safety Track No. 1 was 1,080 feet long and was located 8,001 feet east of the depot. The grade ranged from 4.3 to 9.9 percent. At the end-of-track were anchored timbers chained to the rails and a mound of dirt 60 feet long, 14 feet wide, and 6 feet high. The track was heavily sanded.

Safety Track No. 2 was cut out of the side of the mountain for 1,464 feet at the foot of the grade, opposite the operator's shanty at Melrose. This track was located several thousand feet west of Slaughter Pen Cut and had grades that varied from 5.5 to 10.3 percent. This track was also heavily sanded.

After the tracks were completed in November 1903, switchtenders were stationed at Safety Track No. 1, and the switch was kept lined for the spur. Engineers on descending trains were required to blow one long, one short, and one long at the whistle board 800 feet from the safety track if their train was under control. After the switchtender threw the switch to the main line, the engineer would give two short blasts to confirm that his train was still under control. Safety Track No. 2 was controlled by the Melrose operator with the same whistle procedure.

Installation of the emergency tracks saved many lives and countless thousands of dollars' worth of equipment over the years. There is



no record of the number of "mild" runaways that have occurred since the tracks were installed; certainly these could otherwise have been major derailments.

A passenger train descending Saluda in October 1904, less than a year after the safety tracks were installed, somehow ran away after passing the first safety track under control. The speed of the train was so great that it ran right to the end of Safety Track No. 2. Fortunately, there were no injuries, but the engine was damaged when it hit the rock cliff at the end of the track. If the safety spur had not been built, Slaughter Pen Cut would likely have claimed more victims.

The hogger and brakeman saved their lives by jumping as the train started up the spur.

Safety Track No. 1 saved another passenger train during the devastating flood of July 1916 when the Asheville Division was almost washed away. Engineer Tom Tarpley, on First No. 10 bound for Jacksonville, whistled for switchtender R. W. Ward to give him the main. Ward refused to throw the switch. Tarpley was in an explosive mood until Ward explained: "The track walker has discovered that the fill between here and Sand Cut has been washed away and the bridge over the Pacolet River at Melrose has been destroyed. Park your train in the safety track!"

The railroad made arrangements for transportation, food, and lodging for the 300 passengers who had landed in Saluda. The train remained in the safety track for 13 days.

While I was chief photographer for the *Asheville Citizen-Times*, I photographed the wreck of 2-8-8-2 No. 4052 on September 25, 1940, when it ran away up Safety Track No. 1. The huge engine swept aside the chained timbers like match sticks and plunged over the end of the dirt mound with the first two cars of the train. Engineer "Turk" Pope and the head brakeman saved their lives by jumping as the train started up the spur. Although Pope shouted to his fireman to jump, the unfortunate man remained aboard and was crushed when he was pinned against the boiler by coal that poured into the cab from the upturned tender. Pope dug with his bare hands in a futile effort to save his fireman. His bleeding hands uncovered enough coal to find that the man was dead.

The second change on Saluda after the 1903 runaways concerned brakes. The railroad discovered that in Saluda wrecks, Interstate Railroad coal cars outnumbered other types of cars in runaways. The Interstate Company, located at Bulls Gap, Tenn., owned its own cars and shipped a tremendous amount of coal via Saluda for export through Charleston. In the interests of economy, its cars were equipped with steel wheels, which heated more quickly than wrought iron and considerably lessened braking efficiency. Furthermore, to reduce the danger of flattening wheels, the company requested that brake piston travel on its cars be cut to 6 inches and brake levers shortened to 2½ inches. All of these factors reduced braking power by 50 to 60 percent. The cars met Interstate Commerce Commission specifications for average grades, but Saluda is no average grade. The Asheville Division superintendent issued instructions that Interstate coal cars comprise no more than 50 percent of any train descending Saluda.

Workhorse 2-10-2s

In service between 1917 and 1953, Southern Railway's 2-10-2 locomotives were one of the longest lived and most successful classes of steam power on the continent. Although not as beautifully proportioned or as fast as my favorite SR freight engine, the Ms-4 Mikado, the 2-10-2s were held in deep respect by management, shop forces, and engine crews.

Southern received 55 2-10-2s from Baldwin during 1917–18, Nos. 5000–5054, class Ss — bulky, low-speed power with 57-inch drivers, 28x32-inch cylinders, Southern valve gear, Duplex stokers, 190 PSI steam pressure, up to 378,000 pounds engine weight, and 71,000 pounds tractive effort (raised to 74,000 pounds when steam pressure was increased to 200 PSI). An additional 25 class Ss engines ar-

In a sequence of photos from the early 1950s (counterclockwise from top), Southern FP7 6141 and an unidentified F3A crest the grade and bring the westbound *Carolina Special* through the town of Saluda. Bringing up the rear is a deadheading dinette-coach, likley coming from the shops at Spartanburg, S.C.

Three photos, Linn H. Westcott

rived from Alco's Richmond Works in 1918, numbered 6350–6374 for SR's Cincinnati, New Orleans & Texas Pacific line but were soon reassigned (and renumbered 5055–5079) because they could not satisfactorily run in the close clearances of the CNO&TP. (USRA-design Ss-1 2-10-2s Nos. 5200–5249 were barred from the Asheville Division because of their longer rigid wheelbase.)

Shop forces at Asheville made several modifications to the Ss-class engines assigned to Saluda. They made water glasses longer than normal so crews could better observe the water level in the boiler while descending or ascending the mountain; a second air pump was installed because of the excessive use of air brakes on Saluda; some engines used as helpers or on the head end of passenger trains were equipped with cab signals and steam-heat connections; and water pipes were installed over the driving wheels so a constant flow of water would cool the tires while descending the mountain.

Santa Fe types and 2-8-8-2s were not permitted on through freights between Asheville and Hayne until the 1930s when bridges and trestles were strengthened. The articulateds were transferred in 1943 to the Birmingham Division to haul coal. The 2-10-2s made their greatest showing from then until the diesels arrived in 1949, and some served as Saluda helpers until 1952.

Steam bath on a helper

An unforgettable memory from my decades on the hill is an episode that occurred

Sand Cut scenes: Troops wave from their Pullman (top) as a 2-8-2 hauls the *Skyland Special* up the hill during World War II; Safety Track No. 1 cuts across the mountain above the engine. Three decades later, fantrip Mikado 4501 heads up with a four-car Spartanburg–Asheville excursion on July 8, 1972.

Two photos, Frank Clodfelter

while I was firing a Santa Fe type on the second-trick Saluda helper. My hoghead was "Coldwater" Roberts, and one of our evening assignments was helping train 27, the *Carolina Special*, from Melrose to Saluda.

One winter afternoon after the helper conductor coupled the air hoses of our 2-10-2 to the rear Pullman on No. 27, Coldwater blew two short blasts of the whistle to notify the engineer on the head end that he had cut out the automatic brake on the helper, shoved up the slack, completed the brake test, and was ready to leave.

Simultaneously the hoggers opened their throttles, and black 2-10-2 5011 and green-and-gold 4-8-2 6492 blasted alternate exhausts off the ridges in rhythmic explosions. The air was filled with the smell of coal smoke and valve oil, the sound of grinding flanges biting curved rails, and the earthy odor of fallen leaves on the forest floor.

The two engines gently handled the train as it crossed the bridge over the Pacolet River, where the grade changes from 1.3 to 4.4 percent; however, within a few hundred feet, as the grade jumped to 5.1 percent on the steepest part of the hill, the engines were beating their hearts out. The occupants of the seven-car train were witness to one of the most arresting examples of cooperation in human endeavor — the crews of two steam locomotives working in unison to move a train over Saluda Mountain.

There was no conversation. There was concentration aboard the two locomotives. Each man was absorbed in the details and responsibility of his job in moving the train safely and on schedule over the hill.

The relaxed passengers along the green aisles of the Pullman, day-coach riders chatting leisurely among themselves, and patrons of the dining car enjoying polished silverware on white tablecloths with cut flowers — all were unaware of the intense concentration of the engine crews. The engineers were alert to the danger of driving-wheel slippage that could result in a stall on the mountain — ready on an instant's notice to shut off the throttle, opening again quickly to regain footing. A stall would mean time lost on the schedule, difficulty in restarting on the grade without burning the rails, and the chance of damaging valve gear or flattening driving wheels if they went into a spin. Foremost in the minds of the enginemen was the safety of passengers and fellow crew members as they kept their eyes trained on the roadbed to observe track conditions, signals, road crossings, diamond boards, or flagmen. As required by the rules, the engineers looked back or ahead on curves to inspect their train for hotboxes, dragging equipment, or sticking brakes. They were constantly checking boiler water level in the sight glasses — too little water in an engine cresting Saluda could result in a boiler explosion.

Running a steam locomotive is an art, but

On the 10-degree curve just above Sand Cut, 2-10-2 No. 5029 shoves on the rear of the *Carolina Special* in April 1947. The angled sign to the right of the engine indicates that the switch for Safety Track No. 1 is 800 feet ahead. Specially modified for the hill, class Ss engines were Saluda fixtures until the end of steam.
William P. Price

so is proper firing. Passengers looking out from the *Carolina Special* that day, as well as the crew on the helper engine, would note that the fireman on the 4-8-2 was demonstrating his professionalism with the skill that comes from years of experience. A trail of gray smoke from his engine indicated proper combustion, and the white vapor from the pops, just under the release mark, was proof of a full head of steam. He was firing by the stack and the steam gauge — glancing out occasionally at the stack to be sure the smoke was not too heavy and then back at the steam gauge so the safety valves would not pop at 200 PSI. Shutting back on the stoker or pulling on the injector to put cold water in the boiler would prevent the release of the pops and consequently the loss of steam. This fireman, by knowing the road, figured ahead to quit firing a few moments before the engineer shut off the throttle to drift down a hill, opening the blower to keep smoke out of the cab, working the injector to keep a safe supply of water but not enough to "drown" the boiler so the engineer would be working dry rather than saturated steam.

After adjusting the stoker on the 2-10-2

"A REAL HERO"

I have many, many impressions of Saluda Mountain, both during the time I was a train dispatcher in Asheville and also when I returned later as division superintendent. . . . It is undoubtedly the most dangerous and critical stretch of mainline railroad anywhere in the country, and the unusual events that have occurred on the mountain would fill a rather large book. Fortunately, modern equipment such as pressure-maintaining features of locomotives as well as more sophisticated brake equipment have reduced the danger to some extent, but as you know it is still a piece of railroad that must be watched every minute. I am sure there are many records of runaways on the mountain in years gone by — quite a few in my time, in fact.

Probably you recall one when an ammunition train almost reached the top of Saluda Mountain and ran away backwards. As I recall there was only one individual who remained with the train and that was the engineer of the helper. . . . He stayed with the train and did what little he could to retard the speed of the train and in any event undoubtedly kept it from going over the end of the runway track. In my book that's a real hero. — *H. H. Hall, president and chief operating officer, Norfolk Southern Railway, in a December 1982 letter to author Frank Clodfelter*

Derricks from Asheville and Hayne — plus a large contingent of men — work the wreckage of a coal train that piled up at Melrose on September 20, 1964. This first Saluda runaway since the steam era shocked the Carolina Division.
Frank Clodfelter

helper I was firing, knocking off the injector before I had too much water in the sight glass, it was time to steal a moment for observation. The scene out of the open window was straight out of Currier and Ives. The massive 2-10-2, workhorse of the Asheville Division, was talking to the mountain in a labored voice. The rear marker lights on the Pullman directly in front of us were beginning to glow in the fading light. At the head end, the driving wheels of the 4-8-2 road engine were highlighted by the rays of the setting sun.

And speaking of observation, how can I ever erase the sight of that passenger engine with an authentic engineer at the throttle? J. B. Barnhardt was the epitome of a Southern Railway runner. Proudly clad in freshly laundered overalls, red bandana pinned to his shirt, safety goggles bridging his nose, gray cap squarely set on his head, a 23-jewel Hamilton watch secured to a gold Simmons chain, and light gloves for a delicate touch of the throttle — he was a picture of confidence, pride, and responsibility.

Suddenly there was the stinging pain of hot boiler water enveloping my body. The cab was so clouded with steam that visibility was impossible — a pipe had broken somewhere! Engineer Roberts, suffering the same fate that had befallen me, loosed a blast of profanity. He blew one short blast of the whistle and shut off the throttle; within seconds the train stalled. Engineer Barnhardt on the lead engine had quickly reduced throttle, keeping the slack stretched while he applied the automatic brake to avoid the possibility of a runaway backwards.

I climbed out the cab window to escape the spray of hot water and was preparing to jump to the ground and run around the rear of the engine and drag Coldwater out of the right-hand side of the cab when another stream of profanity assured me that my engineer was not being scalded to death. The helper conductor came scrambling down the coal pile from his doghouse on the tender to ascertain the trouble; alarmed passengers filled the rear vestibule of the Pullman to witness the spectacle of the stalled engine with hot steam erupting from the cab. After a few moments the steam subsided, and I was able to locate the cause of the trouble. I discovered that the copper pipe leading to the water sight glass on my side had broken and was spraying hot water and steam into the cab.

I suggested to Coldwater that I shut off the boilerhead valve leading to the sight glass on my side and that he could use the glass on his side until we reached Saluda.

"Hell, no!" he barked. "You're not cutting off a damn thing from this engine! I reported that leaking line the last time this engine went to the roundhouse and they didn't do anything about it. Now let the master mechanic chalk up another engine failure to his record!"

Coldwater shouted to the conductor: "Cut this engine off — we're backing down into the

An eastward view at Melrose shows the extensive facilities at the base of Saluda Grade in April 1948. Around the left-hand bend beyond the water tower is Slaughter Pen Cut, where a carload of livestock perished in an 1893 runaway. The switch target for Safety Track No. 2 is mounted high for better visibilty.
William P. Price

spur track at Melrose and the fireman will kill the fire!"

When the operator at Melrose learned of the engine failure and stalled train, he notified the chief dispatcher in Asheville and advised that an eastbound freight for Hayne had not departed from the siding in Melrose. The orders came quickly: "Instruct the crew on the eastbound to cut off their engine and back up to No. 27 and help the train to Saluda." The eastbound's crew did as instructed, but their

"Hell, no!" barked Coldwater. "You're not cutting off a damn thing from this engine!

2-10-2 was not equipped with reverse sanders, and after a fire-flying slipping of the driving wheels on unsanded rails, the train moved forward a few feet and stalled.

The Melrose operator reported this second failure to the dispatcher, who told the operator at Saluda: "Instruct the westbound freight in the siding at Saluda to cut off their engine, back down below Sand Cut, and doublehead No. 27 to Saluda."

The *Carolina Special* suffered a 2-hour delay in one of the most dramatic and amusing incidents in the long history of railroading on Saluda Mountain.

Diesels come to Saluda

The age of diesel-electric locomotives on Saluda began May 25, 1949, when Southern began operating EMD F7s in freight service. Four units totaling 6,000 h.p. took 1,500 tons up Saluda without help; with a 2-10-2 helper they were rated at 2,000 tons. Average speed Melrose to Saluda was 10½ mph compared with 6 or 7 mph with two 2-10-2s, which together were good for only 1,000 tons. Two Mikados occasionally doubleheaded with 700 tons or, with a Santa Fe helper, 1,200 tons. With a Mallet helper the tonnage for two Mikes was 1,250.

The Southern's February 1950 *Ties* magazine explained: "Here was no mere extension of diesel usage — this was tackling one of the hardest tests in railroading. With the roar of diesel engines working at full capacity as trains wound their way around curves going up grade, and with the whine of traction motors with their electrical fields reversed to convert them into generators operating as dynamic brakes on the downgrade, these locomotives proved that the toughest job on the Southern — one of the toughest on any railroad — was well within their capacity. And, railroading on Saluda Mountain was safer."

Safer, yes — but not without risk . . .

"This train is gone!" Road Foreman of Engines K. D. Lewter made this dramatic and spine-tingling announcement over the radio in the darkness of the early morning of September 20, 1964, after the brakes of unit coal train 154 had been placed in emergency and its six F7s gained uncontrollable speeds. Railroaders from the Asheville dispatcher to the operator at Hayne Tower were electrified by the announcement that a diesel-powered train was running away down Saluda Mountain. Crews as far away as Spartanburg cut their conversations, and carpecks in their Asheville shanty froze in shock.

Brakeman Tom Jenkins was the first to leave the train. He had climbed up on the rear unit after turning up retainers and was pour-

Marching out of Melrose: With its customary rear-end helper (top), the *Carolina Special* ascends the hill in the early 1940s. Santa Fe type No. 5027, assisted by 5047, gets into the grade with a freight in 1948.

Top, E. H. Bennett Jr.; above, David W. Salter

ing a cup of coffee. When he heard on the radio that the train was running away, he swung off and watched it hurtle by.

Leonard Biddix, who was the fireman on this first diesel runaway down Saluda, explained what happened: "We balanced the train over Saluda Mountain and applied the automatic brake for an inspection of brakes by the trainmen. After the inspection, we released the air so the retainers could be turned up on the cars. After the head-end brakeman returned to the rear unit and we heard from the conductor on the caboose, we started down the mountain. We used the dynamic brakes when the train started rolling and charged the train line with three applications of the automatic brake. However, normal applications with the automatic brake failed to check the speed of the train. We drew the air down to 75, 71, and then to 55 pounds, but this did not check the speed of the train. We realized that we were running away and placed the brakes in emergency position.

"When we left the top, flagman Sherlin was calling off the air pressure shown on the caboose — he never let up calling air until the brakes were shot and he heard Mr. Lewter's announcement that the train was gone.

"When the train reached a speed of 22 mph as we approached Sand Cut, Road Foreman Lewter dropped off on the left side. Engineer Charlie Green jumped off the right side. After we got through Sand Cut, I swung off and jumped past some rails laying along the track. I was able to stand up but ran off into a briar patch and got scratched up. When the train got by I found Charlie Green with a fractured ankle — his foot had landed in a pothole. I asked Charlie where Mr. Jenkins and Mr. Lewter were. About that time we saw Mr. Lewter running down from Sand Cut. . . . We still had not found Tommy Jenkins. I walked back up the mountain and found Tommy walking down the other side of Sand Cut. We waited to hear what would happen when the train hit the safety track at Melrose. There was a tremendous sound such as you might hear during a violent thunderstorm or about like a bomb going off.

"Tom, Jenkins, and I got Charlie Green supported between us and he hopped down the mountain on one foot. At Melrose, we found flagman Sherlin and conductor Benfield looking over the wreckage, which was a sight to behold. They had ridden the caboose down the hill and said the cab made a real easy stop and they were not injured in any way. I could hear the wrecked engines running, but I could not get to them because cars were piled on both sides of the safety track. A bystander said he knew of a path around the wreck. I shut down the motors of each unit. All were running except the lead unit, which had hit a rock cliff. Some engines were on their sides, but so far as being hurt they were not that bad off. The lead engine that hit the rock cliff was the only one that had any appreciable damage."

Of the 6,300-ton train's 69 cars, the first 23 were turned over or derailed. Damage to the locomotives totaled $69,500.

The second diesel runaway down Saluda occurred on November 14, 1971, with three SD locomotives. The crew jumped and there were no deaths or injuries. The locomotives derailed just as they started up the Melrose safety track.

A member of the crew later stated: "It was a sight to behold. Within a space of 7 car-lengths, 44 cars were piled upon themselves with the 6 rear cars and the caboose remaining on the rail."

Saluda in the 1980s

To give a picture of current operations, a typical train on the Asheville–Hayne run, was selected at random from the trainsheets in the office of Carolina Division Superintendent L. E. Wetsel Jr. The date of the run was April 5,

On September 15, 1984, three SD units pull out of the siding at Melrose and proceed up the hill with one-third of their train; after reassembling the three portions at Saluda, they'll continue on to Asheville. Norfolk Southern ended operations on the grade in 2001; the track remains in place, but it's been severed.

Two photos, Jim Wrinn

1984. Eastbound freight 178 out of Asheville had engineer Ray Wallace at the throttle and conductor Paul Ross on the caboose. The power was three EMD SD40 and SD40-2 locomotives (Nos. 3283, 3176, and 3212) totaling 9,000 h.p. pulling 5,337 tons in a 94-car train of 35 loads and 59 empties.

Wallace and Ross on Hayne–Asheville train 187 had the same units on 44 loads and 22 empties weighing 5,187 tons. Per standard practice, 187 would climb Saluda Mountain in three cuts. Leaving Hayne, conductor Ross figured the tonnage of each cut from the waybills, knowing that each SD40/SD40-2 is rated at 540 tons up the hill. Ross advised the head-end brakeman which car to cut behind when the train arrived at Melrose. Engineer Wallace stopped the train at the base of the mountain with the slack stretched before the first cut was made. When the brakeman reached the designated car, he uttered one word on his walkie-talkie: "Slack." Wallace provided just enough slack for the brakeman to lift the pin. Then the brakeman rode the rear of the cut to Saluda, where it was parked and the power returned to Melrose to pick up each remaining cut in turn.

During the 29-day period in April 1984 that included the above example, 65 freights ran Asheville to Hayne, 72 from Hayne to Asheville. Eastbound tonnage was 354,322; westbound, 273,200. Average trains daily (both ways): five. Trains ran at irregular hours.

The last *Carolina Special*

Saluda's final scheduled passenger train, the *Carolina Special*, made its final runs on the mountain on December 5, 1968. The train, which once ran out of Chicago (on NYC's Big Four to Cincinnati, thence over Southern) to Asheville, where it divided into sections for Charleston, S.C., and Goldsboro, N.C., was a typical American passenger train of the steam and early diesel era. During its prime years it consisted of mail and baggage cars, coaches, a diner, and Pullmans — even an observation car proudly marked Carolina Special. It was not a fast train, but when one considers the rugged and diverse country through which it ran, it must be ranked as one of the most utilitarian and colorful that ever served the South.

The EMD F3s that I had on the final runs of the *Carolina Specials*, train 28 Asheville to Hayne and 27 back, were 4144 and 4138, respectively. By then the train had dropped to sub-zero respectability — the usual baggage car and coach powered by a single diesel unit, plus an additional coach, which was not needed. To add to the gloom, the F units were draped in the funereal black-and-white scheme that had replaced green-and-white on passenger diesels.

This epitaph was written by W. D. Workman, who rode the engine with me from Hayne to Asheville, and published on December 12, 1968, in *The State*, the Columbia, S.C., newspaper that he edited: "Many adjectives were applied to Southern Railway's *Carolina*

Special over the years. 'Crack' was not one of them. More often it was dubbed, either out of frustration or affection, 'The Carolina Creeper.' But for over half a century, the *Carolina Special* was a vital passenger link between South Carolina and the Midwest. For years now, it has been dying in pieces as revenues tumbled. Last week the *Carolina Special* left Columbia for the last time. Aboard was Editor W. D. Workman Jr. of *The State*, in the company of a handful of railroad buffs and one legitimate passenger."

The *Carolina Special* operated for more than half a century. Beginning in the year of my birth, 1911, it operated until December 5, 1968, when I ran its final trip up Saluda.

FRANK CLODFELTER hired out with the Southern Railway at his native Asheville, N.C., in 1931. After a stint as chief photographer of a local newspaper, in the early 1940s he returned to railroading, first as a fireman, then engineer. He began contributing photos to TRAINS *in the early 1940s and completed this article just before his death in 1984.*

Frank Clodfelter runs F3 4138 up Saluda Grade on the final run of the *Carolina Special*, December 5, 1968.
W. D. Workman