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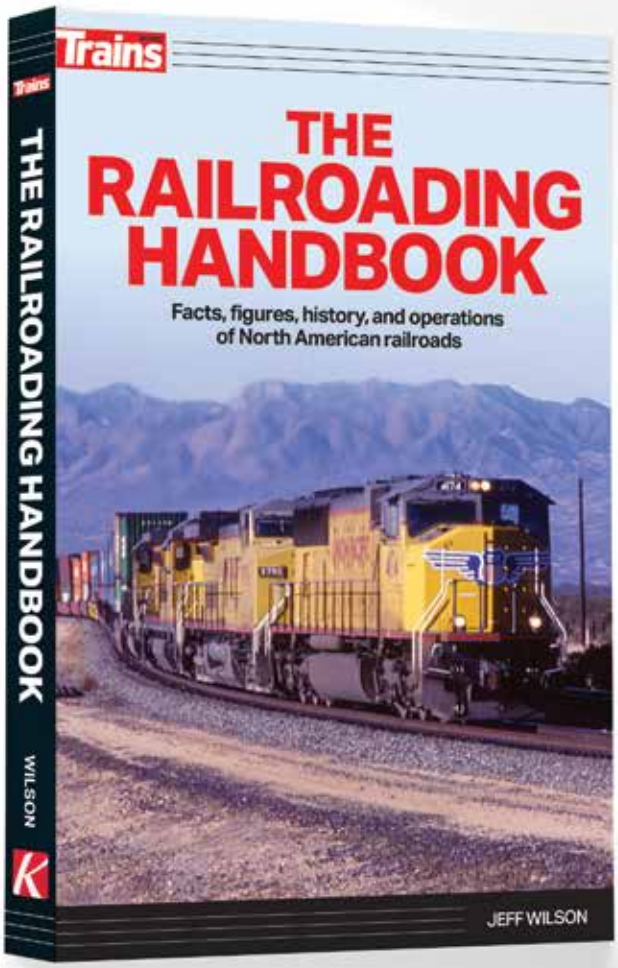

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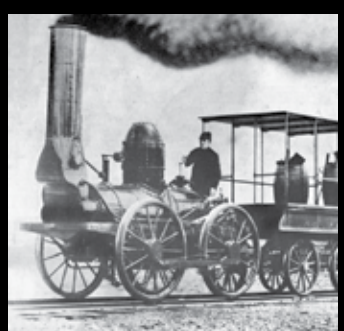


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In this issue

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Features

ON THE COVER:
Pushing an intermodal train through Horseshoe Curve, a two-unit set of Norfolk Southern SD40E helpers greets the morning sun. Eric Williams

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From the Editor

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It's a safe bet one of the biggest railroad preservation news stories in 2023 will be the revitalization of Pennsylvania's East Broad Top Railroad.

Production Editor Nastassia Putz, Video Producer Kevin Gilliam, and I paid a visit to the former coal-hauling narrow gauge in early November following the *Trains* Magazine photo charter with 2-6-6-2 No. 1309 on the Western Maryland Scenic (see page 43).

Knowing of EBT's amazing level of historic preservation, I expected to step into the past and I wasn't disappointed. What I didn't expect was a beehive of activity. The main line is being lengthened and a steam locomotive is nearing its return to service. The East Broad Top is back — and it's better than ever!

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Congressional action set to impose settlement, block rail strike

House acts quickly after Biden calls for legislation to enact tentative agreement

▲ **Heated with coal and diesel fuel, and pounded by a sledge hammer, a hot rail is worked into place by maintenance workers at a curve crossing Straight Creek on Norfolk Southern's Clearfork Branch in Clairfield, Tenn., on March 17, 2015. Maintenance workers are among those who rejected a tentative contract deal.** Brent A. Harrison

THE POSSIBILITY of a national rail strike, which loomed through much of the fall, was fading as this issue of *Trains* reached deadline. The U.S. House of Representatives had passed a resolution imposing a labor agreement between railroads and unions. The Senate was likely to follow suit, although its timeline was uncertain. Senators from both parties were expressing reservations.

President Joe Biden, who called for Congress to act, was certain to sign the legislation when it reached his desk.

Far less certain was the fate of a second resolution to give workers seven days of paid sick leave. That was also passed by the House on Nov. 30, the same day it imposed the terms of a tentative agreement reached by the two sides on Sept. 15.

The sick-day provision was sought by House Democrats unhappy about intervening in the bargaining process. It was willingly accepted by unions, although they continued to call for more attention to working conditions and reforms targeted at rail management they portrayed as "modern day robber barons." It was strongly opposed by railroads and business interests, with Association of American Railroads CEO Ian Jefferies saying it "usurps longstanding bargaining procedures" and the U.S. Chamber of Commerce calling it "an unworkable, one-sided modification."

But in making the sick-leave provision a separate resolution, the House left the Senate room to impose the other terms of the agreement without agreeing to the addition of sick time.

The House voted a day after Biden asked Congress to act, saying a national rail shutdown "would devastate our economy."

Biden said that as "a proud pro-labor president," he was reluctant to override the ratification process, but decided it was necessary because "the economic impact of a shutdown would hurt millions of other working people and families."

The deal to be imposed was largely shaped by the Presidential Emergency Board appointed by Biden during the summer. It included a 24% pay increase over its five-year term ending in 2024; $5,000 in bonuses; and provisions limiting increases in medical costs. The agreement based on the board's recommendations was subsequently ratified by eight unions and voted down by four others.

Unions that rejected the deal said they were concerned about working conditions — which the PEB did not address — while two, SMART-TD and the Brotherhood of Maintenance of Way Employes Division — sought paid sick time.

The SMART-TD union, representing about 28,000 conductors, brakemen, and other workers, was the largest to reject the deal, and did so by the narrowest of margins. Some 50.87% of those casting ballots voted against the deal in results released on Nov. 21. — *David Lassen and Bill Stephens*

Union Pacific, BLET try crew scheduling experiment

Program aims to provide more predictability for engineer work schedules

A Union Pacific train changes crews at Villa Grove, Ill., on Jan. 22, 2020. UP and the BLET have tried a program in Kansas giving engineers more predictable work schedules. Steve Smedley

UNION PACIFIC HAS LAUNCHED a small pilot program in Kansas that aims to bring more predictability to engineer schedules.

The experiment comes as railroads have experienced trouble retaining train crews and hiring new conductors at many locations across their systems — due in part to the unpredictable nature of the jobs.

Ongoing crew shortages at UP, BNSF Railway, CSX Transportation, and Norfolk Southern have created widespread service problems that have drawn the ire of shippers and the attention of regulators.

Eric Gehringer, UP's executive vice president of operations, says about 40% of the railroad's train crews — primarily those working in yard and local service — have scheduled jobs.

The remaining 60% of UP's train and engine jobs are unscheduled. To provide more predictability in road freight service, UP is working with the Brotherhood of Locomotive Engineers and Trainmen on the pilot program that lets engineers know when they'll work every 15 days.

Under the "11 and four" schedule, engineers know which 11 days they'll work and which four days they'll be off during every 15-day period, Gehringer told an investor conference.

"It's something we have to do through the collective bargaining agreement. We can't just instantly put that across the system," Gehringer says. The pilot program was slated to conclude at the end of 2022.

The goal is to see how UP could expand the work-rest scheduling system.

"Union Pacific understands how important it is to address quality-of-life concerns raised by our TE&Y employees. We started a pilot project Nov. 1 to test a work-rest cycle that includes scheduled days off for employees in jobs that have been traditionally unassigned," railroad spokeswoman Robynn Tysver says. "We are working closely with union leaders on this project, which is in its infancy, and hope to gather a better understanding of how to best implement a work-rest balance more broadly throughout our system, while acknowledging there may not be a one-size-fits-all approach."

Representatives of the BLET and the SMART-TD union, which represents conductors, did not respond to *Trains* requests for comment.

Through national collective bargaining, labor leaders sought to improve working conditions after the implementation of Precision Scheduled Railroading and its related layoffs resulted in remaining employees working longer hours, being required to be available to work more often, and having difficulty scheduling time off.

The Presidential Emergency Board, convened last summer after unions and the railroads failed to reach a contract deal, recommended that these issues be negotiated locally.

As of late 2022, UP was nearing its goal of hiring 1,400 train and engine employees this year, Gehringer said, with two-thirds of the new hires in active service and one-third in training. But the railroad remained short of crews across its northern tier and was offering hiring bonuses of $10,000 to $25,000 to new conductors at some locations, including Cheyenne and Green River, Wyo.; Salt Lake City and Helper, Utah; Portland, Ore.; and Seattle.

"We still have those pockets where we are constrained," Gehringer says. Getting back to full strength on train crew staffing levels will improve service and help UP be more resilient when extreme weather or other events hit the railroad, UP executives say.

> "WE ARE WORKING CLOSELY WITH UNION LEADERS ON THIS PROJECT ... AND HOPE TO GATHER A BETTER UNDERSTANDING OF HOW TO BEST IMPLEMENT A WORK-REST BALANCE MORE BROADLY"
> — ROBYNN TYSVER, UNION PACIFIC SPOKESWOMAN

If the economy softens and freight demand drops, UP will use furloughs as a last resort so that it has enough crews to handle a rebound, Gehringer says. "That's not a tool that we employ without thinking very carefully through that, because what we want to be most prepared for is when the demand shifts. We want to be able to capture that without missing a beat," Gehringer said.

UP may be able to offset a freight downturn in 2023 thanks to strong bulk traffic demand and new business wins, including the Schneider National and Knight-Swift intermodal contracts from BNSF as well as new renewable energy and steel traffic, says Jennifer Hamann, the railroad's chief financial officer. — *Bill Stephens*

NEWS BRIEFS

Norfolk Southern to pay $1.6 billion to buy line from Cincinnati

NORFOLK SOUTHERN has reached agreement with the **CITY OF CINCINNATI** to buy the **CINCINNATI SOUTHERN RAILWAY**, the nation's only municipally owned interstate rail line, for $1.6 billion. A subsidiary now owned by NS has leased and operated the 336-mile route from Cincinnati to Chattanooga, Tenn., since 1881. The sale must be approved by Cincinnati voters and the Surface Transportation Board, and will require legislative action by the Ohio General Assembly.

The **COLORADO PACIFIC RAILROAD**, a short line in the southeastern part of the state owned by billionaire Stefan Soloviev, made a late bid for $10.7 million to win a bankruptcy auction for the **SAN LUIS & RIO GRANDE RAILROAD**. Colorado rail holding company **OMNITRAX** had previously been set to purchase the 155-mile railroad — a former **IOWA PACIFIC** property in bankruptcy for three years — for a reported $5.75 million. Colorado Pacific operates a 156-mile route from Towner, Colo., near the Kansas state line, to a junction near Pueblo, and also made an effort to force **UNION PACIFIC** to sell it the mothballed Tennessee Pass line in 2021.

MONTANA RAIL LINK began the regulatory process involved in turning its lines back over to **BNSF RAILWAY,** asking the **SURFACE TRANSPORTATION BOARD** in a Nov. 18 filing for permission to discontinue service over 656.47 miles of track in Montana and Idaho, as part of the early termination of its lease with BNSF. The lease had been slated to run through 2047. The process is expected to take four or five months, with an STB decision expected in the second quarter of 2023. MRL's filing with the STB came after BNSF reached agreements with the nine unions that represent Montana Rail Link employees.

Bill Sheffield, who as governor led the state purchase of the **ALASKA RAILROAD** from the federal government, saving the line from being shut down, died Nov. 4 at age 94. Sheffield was a driving force behind the 1982 purchase of the railroad for $22 million. Sheffield went on to serve as the railroad's president, CEO, and board chairman, and at the time of his death was board chair emeritus.

The station in Pascagoula, Miss., last served by Amtrak prior to Hurricane Katrina in 2005, will again see passenger trains thanks to a November deal on Gulf Coast service. Bob Johnston

Mediation leads to deal in STB's Amtrak Gulf Coast case

Parties offer no details on 11th-hour agreement, indicate it will take months to finalize details

SOME 20 MONTHS AFTER the matter first came to the Surface Transportation Board, Amtrak, CSX Transportation, Norfolk Southern, and the Alabama State Port Authority say they have an agreement to allow the launch of passenger service between New Orleans and Mobile, Ala.

All details, however — including such basics as when that service might begin — remain unavailable.

In a brief statement Nov. 22, the parties said they "collectively reached an agreement to support passenger and freight service in the Gulf Coast Corridor. … Due to the confidential nature of the settlement agreement, the parties are not able to provide further comment on its terms at this time."

The parties asked the STB to hold the matter in abeyance while the deal was completed, saying in a joint filing this would take "several months," but that after several conditions are met, it will "completely resolve this dispute.

"Some of these conditions are not entirely within the Parties' control, however." [Apparently, this refers to the pursuit of federal grants to fund infrastructure improvements.] "Therefore, each Party has reserved its right to reinstate this proceeding in the event certain of those conditions are not met." The parties will provide the board with a progress report by June 30, 2023, if the deal is not completed by then.

The board issued a decision later the same day agreeing to delay further action, canceling the final hearings slated for Nov. 30 and Dec. 1 and its voting conference set for Dec. 7 to determine an outcome.

In a statement, STB Chairman Martin J. Oberman said he wanted to acknowledge "the significant progress that has been made in achieving a settlement under the new leadership of CSX and NS, which I expect brought a fresh constructive approach to resolving the matter." Alan Shaw became Norfolk Southern CEO in March, while Joe Hinrichs took over at CSX in September. The statement also noted the board's preference for parties to solve disputes on their own whenever possible.

Oberman said the agreement would bring "a substantial public benefit" with a positive impact on the region's economy. "I look forward to the parties informing us of the specific infrastructure improvements that will be made to the rail network as a result of the settlement," he said.

Amtrak went to the board with its effort to start two daily round trips on the New Orleans-Mobile route in March 2021, with the goal of beginning service in 2022. That date fell by the wayside as the sides argued in a series of filings, as well as 11 days of hearings, whether the Amtrak trains would cause "unreasonable impairment" of freight operations, which is prohibited by statute. They also had sharply differing views of the infrastructure upgrades that might be needed to address such impairment.

Throughout the process, the board was mindful a decision could be precedent setting for future Amtrak efforts to add service. The settlement avoids establishment of such a precedent. — *David Lassen*

CP's hydrogen locomotive makes first revenue run

Experimental fuel-cell unit, converted SD40-2F, makes freight-hauling debut in Alberta

Hydrogen locomotive No. 1001, designated as an H2 0EL, and SD70ACU No. 7010 bring seven-car train CH2-28 into Calgary's Alyth Yard on Oct. 28, 2022. Josh Soles

CANADIAN PACIFIC'S EXPERIMENTAL hydrogen fuel-cell locomotive made its maiden run in late October 2022 in Calgary, Alberta, taking the first step in determining whether the technology could one day replace diesel-electric locomotives.

"I'll tell you, the excitement around it, the potential of it, is real," CEO Keith Creel told the RailTrends conference in November. "And to see it two weeks ago, running down the main line at mainline speed pulling a load behind it, I mean it made the hairs on my arm stand up, because I would have told you two years ago it's a pipe dream. … Well, it's not a pipe dream. It's a reality. Still a lot of work left to do, but it's super, super exciting."

Home-built unit No. 1001, a converted SD40-2F, is dubbed H2 0EL for "hydrogen zero-emissions locomotive." The Oct. 28 revenue test run was the second mainline foray for the unit this year, which uses hydrogen fuel cells and batteries to power its electric traction motors.

CP is using solar power to produce hydrogen at its Calgary headquarters. It also has a separate hydrogen production facility in Edmonton. CP is partnering with the Alberta provincial government to build a DC-traction version as well as another AC-traction unit.

By the end of 2023, CP expects to have the three locomotives switching customers in Calgary, Edmonton, and Vancouver.

"The next step is scalability," Creel says, through partnering with a customer to build enough road locomotives to prove the technology on the rugged CP main line in the Canadian Rockies west of Calgary.

"It's the perfect test bed. If you can operate there — heavy haul, cold temperatures, the most challenging operational conditions I've ever experienced in my career … it will work anywhere," Creel says.

If the tests are successful, fuel-cell locomotives would likely be deployed in local service until the railway can create a hydrogen fueling network and build tenders to extend the locomotives' range.

Creel emphasized that the hydrogen project is very much an experiment and CP is not betting the farm on its effort to create a green locomotive.

Alberta is aiming to transition to a hydrogen-based economy as part of a push toward cleaner energy supplies. CP would haul hydrogen from Alberta to customers across its system, as well as to its own fueling facilities.

Creel spoke at the RailTrends conference sponsored by trade publication Progressive Railroading and independent analyst Anthony B. Hatch. — *Bill Stephens*

NEWS PHOTOS

SANTA RETURNS After being sidelined for two years by the COVID-19 pandemic, the CSX Santa Train returned on Nov. 19, celebrating its 80th anniversary by distributing 16,000 toys and backpacks in Kentucky, Virginia, and Tennessee. CSX's three F40s, with their Baltimore & Ohio heritage scheme, powered the train. Above, Santa greets the crowd at Marrowbone, Ky. Left, Ely Carter-Williamson; above, Ron Flanary

The shortsighted view of long trains

Why 'no-fitters' make no sense

Bill Stephens
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Analysis: Trains.com

Railroads are attracted to extremely long trains like moths to a flame. And sometimes they get burned from this unhealthy obsession.

A case in point: In October, CSX Transportation ran two overlength merchandise trains at each other on its single-track main line between Savannah and Augusta, Ga. The plan was to do a double saw-by — a maneuver as complicated and time-consuming as you can imagine — to get the no-fitters past each other. But that plan went out the window when the 12,000-footer tripped a hot box detector. While the conductor hit the ground to find the problem, the crew of the 11,000-footer was instructed to leave half of its train in a siding, then proceed to the next siding to await the 12,000-footer. Once it passed, the 11,000-footer had to retrace its steps and put its train back together before heading back in the right direction.

The idea behind long trains is as simple as it is old. Move your tonnage on fewer but longer trains and you save crew, locomotive, and fuel costs.

The savings can be illusory, though, if you take the concept to the extreme. In the CSX example, both manifest trains had to be recrewed. So did two locals caught up in the mess. Amtrak's *Silver Star* was delayed 45 minutes. And, most importantly, the customers' freight was delayed almost 5 hours.

Is this any way to run a railroad?

Canadian Pacific CEO Keith Creel would say no. During hearings on the CP-Kansas City Southern merger, Creel lamented the fact that Union Pacific's long trains frequently block the main tracks around Englewood Yard in Houston, impeding KCS trains that run through the terminal via trackage rights on UP. Englewood's receiving and departure tracks are a steam-era 7,000 feet, which is not uncommon. But since 2018, UP's average train length has grown 30% to an industry-leading 9,483 feet, requiring longer trains to double or even triple their way in or out of Englewood.

Union Pacific SD70AH, the *Spirit of the Union Pacific* unit, leads a long Denver-to-Grand Junction manifest through Lacy, Colo., on Oct. 3, 2020. UP averages the longest trains in the nation. Matt Krause

Surface Transportation Board Chairman Martin J. Oberman asked the obvious: Should UP be running shorter trains or building longer tracks?

Creel said he understands UP's desire to run longer trains. "But you can't let your ambitions get ahead of your physical plant," he said. "You have to match yard capacity with mainline capacity, size of trains."

When CP wanted to run 10,000-footers in and out of the Twin Cities, it first extended the receiving and departure tracks at its St. Paul, Minn., yard to 10,000 feet so trains wouldn't tie up the main. UP could do the same at Englewood's west end, where Creel says there's room after the railroad shifted its intermodal operations to nearby Settegast Yard. UP plans to lengthen Englewood's receiving and departure tracks are on hold due to concerns over soil contamination on the site. To UP's credit, it has completed 80 siding projects to support the operation of 15,000-foot trains. Yet there are still places where it's more than 60 miles between long sidings.

Railroads continue to push the limits of common sense with megatrains. On subdivisions where long sidings are few and far between, the no-fitter trains extend meet delays. Even double-track mains aren't immune. Monster trains can bog down the double iron by taking longer to enter and exit permanent and temporary speed restrictions. Megatrains also encounter more frequent mechanical problems: The law of averages says that the more cars in a train, the more likely there's a bad apple in the bunch.

Given all this collateral damage, why would some Class I railroads continue their love affair with trains that don't fit their physical plants? It's because they care more about the operating ratio and investors than they do about providing reliable service.

The service-design veterans I spoke with agreed: It's bad railroading to run no-fitter trains in both directions in single-track territory. It's also not a good idea to run lumbering behemoths that turn a fast double-track corridor into molasses. The toll on service simply isn't worth it. And the supposed operational savings are all too often offset by the unpredictability of recrewing trains en route.

Last year, as part of its back-to-the-basics operations makeover, Canadian National stopped running trains over siding length. CEO Tracy Robinson says it's among the interrelated reasons why CN's on-time performance is up sharply, the railway is running faster than it has in six years, and unplanned recrews fell by 38% last fall. Doesn't that sound like a winning formula? T

Irish lessons in train travel

Clean, frequent, and comfortable trains equal great ridership

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Kris and I were married in September. The day before the wedding, Conway Scenic Railroad provided our family and friends with former New Haven Railroad Budd RDC1 *Millie*. I ran the car as an extra to Conway and return. We stopped for photos along the way. After the wedding, Kris and I traveled to Boston by Concord Coach and flew Delta Airlines direct to Dublin. During our stay in Ireland, we traveled around the country by train. While this was not a new experience for me, it provided an opportunity to reflect on rail travel from the perspective of a paying passenger. It provoked serious thought as to what worked well and how we can make traveling by train more appealing to the general public.

Irish Rail ticks the boxes for today's traveler, and its model should be studied by American passenger providers. It is a modern, functional railway that offers convenient, comfortable, and affordable passenger transportation using fleets of self-propelled diesel railcars, diesel push-pull passenger trains, plus overhead electric suburban service marketed as the "DART" (Dublin Area Rapid Transit). As a passenger, I was impressed by the InterCity services. Tickets were easily purchased on line and enabled us to select our seats during the purchase process.

Most Irish Rail services operate on a regular interval timetable which aids in planning. The interior of trains are functional and clean with large windows that line up with seats that, for most part, were arranged in pairs facing tables and provided handy USB ports. Most of the trains we traveled operated within 5 minutes of the advertised. WiFi is available for free on all trains. The Irish Rail mobile-app allows riders to call up real-time arrival and departure boards for most stations, follow their train's progress on an interactive map that shows if a train is running behind, and offers PDFs of train schedules largely organized by routes. Each train features lit destination boards at the front and sides. There is noteworthy consistency in the information provided by the various type of media.

Although Irish Rail had suffered a precipitous drop in intercity ridership during the COVID pandemic, the network appears to have recovered: we found many trains well-patronized. In terms of comfort, the finest service was the cross-border Enterprise that connects Dublin and Belfast operating jointly with NI Railways and was celebrating its 75th year of service during our rides. These trains have distinctive décor, offer comfortable seating, and in First Class a snack service is provided by an attendant who takes orders shortly after the train departs main stations and delivers food and drinks to passengers for a reasonable charge.

Main stations are well-staffed and feature ticket windows as well as kiosks where you can procure information and buy tickets or collect prepurchased tickets. Stations at Dublin, Cork, and Belfast featured cafes and convenience stores where you can get light meals, drinks, and snacks, as well as newspapers, books, and magazines. In Dublin and Cork, the ticket kiosks also allow you to buy and top-up 'Leap' cards. These are plastic cards that store a balance and are used to pay for travel on public transit, including local rail services, and save the hassle of having to procure coins or local currency. They also allow you to transfer between modes of transit and different service providers. I paid for all my ticket purchases with my Visa card (American Express is not accepted). In Belfast, the Enterprise ticket allows passengers limited travel on buses and NI Railways' local trains to within the city center.

Our rail trips provided valuable lessons for improving rail service in the U.S. Successful intercity rail service is more than just connecting the dots on a map. Providing reliable advance planning information in conjunction with straightforward ticketing, supplemented by good information throughout the travel process, encourages rail travel. The availability of food and other commercial services at stations for reasonable cost makes traveling more pleasant. These conditions, combined with clean, safe, and comfortable trains operating on competitive schedules in medium-distance corridors (150-300 miles) contribute to making intercity rail an affordable and practical travel option for a great many people. The proof is in the ridership.

Ironically, we found that the most difficult part of our whole trip were challenges in getting to and from airports in both Boston and Dublin, neither of which have effective rail connections. But that's a lesson for another day.

Irish Rail transformed Victorian-era routes and infrastructure into a well-traveled modern national passenger network. Diesel railcars pause at Kent Station in Cork on Oct. 5, 2022. Brian Solomon

OWNEY the Railway Mail Service DOG

Mascot racked up 143,000 miles aboard Post Office mail cars

By Carl Swanson

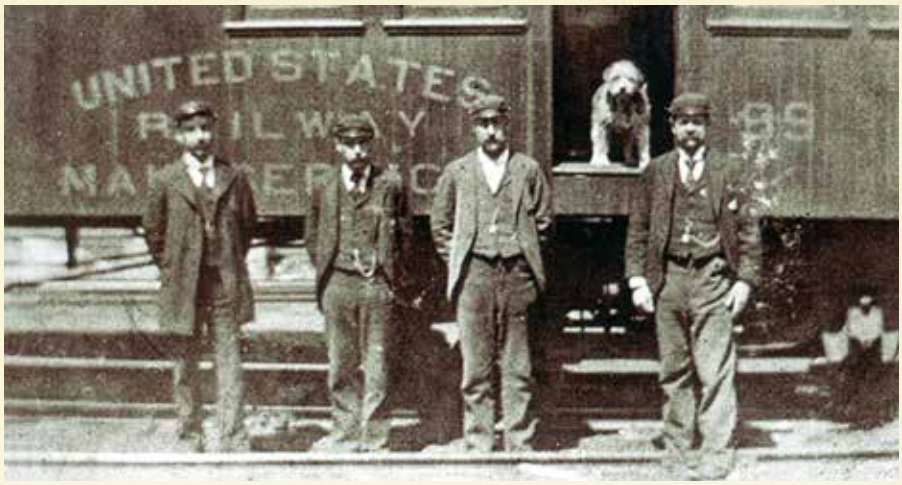
Owney the Post Office dog, the official mascot of the Railway Mail Service, was one of the most famous — and widely traveled — animals of all time. Images courtesy of the National Postal Museum, Smithsonian Institution

IN 1895, a globe-trotting mixed-breed mutt named Owney paid a brief call on Milwaukee. As was his custom, the dog arrived aboard a mail car on one train and departed a few hours later by another. His home was anywhere U.S. mail traveled by railroad — and in the 1890s that was *everywhere*.

"A wanderer upon the face of the globe, if ever there was one, appeared in the office of Chief Clerk Frank P. Smith of the Railway Mail Service this morning," reported the *Milwaukee Journal* in its May 11, 1895 issue. "Post Office Owney is a dog, but he is no ordinary dog. He is the property of 7,000 railway clerks."

Seven years earlier, in 1888, Owney was a scruffy stray puppy when he appeared at the Albany, N.Y., Post Office. Adopted by the clerks, the Post Office became his home thanks to a kind-hearted supervisor willing to overlook regulations. Heeding the call of the open road, Owney soon started riding mail wagons and then Railway Mail Service train cars.

These specially designed cars were coupled to passenger trains. As the train moved along, postal clerks in the car would sort the mail for destinations along the line. At places where the train didn't stop for passengers, a clever contraption allowed bags of mail to be taken aboard from trackside hooks "on the fly." At the same time, clerks would heave sacks of mail destined for that town off the moving train.



Owney stands in the doorway of a Railway Mail Service car, surrounded by postal clerks.

The nationwide network of cars became Owney's home for the remainder of his life. He would hop off one postal car at a station and climb into another and curl up on a pile of empty mailbags knowing wherever he went the mail clerks would take care of him.

The National Postal Museum notes, "Railway mail clerks considered the dog a good luck charm. At a time when train wrecks were all too common, no train Owney rode was ever in a wreck. The railway mail clerks adopted Owney as their unofficial mascot, marking his travels by placing medals and tags on his collar."

Wearing his custom-made harness with some of the brass tags collected on his travels, Owney is a popular exhibit at the National Postal Museum in Washington, D.C.

The tags, usually metal luggage claims stamped with a city name, attracted the attention of the *Milwaukee Journal* reporter. "A huge collar, from which dangled a half-hundred or more tags from almost every conceivable corner of the country … is fixed firmly around his neck. These tags collect so rapidly that it becomes necessary to remove them at times and clerks along the line take them off and send them to 'Owney, Albany, N.Y.,' where they are carefully stored away in a room provided for this purpose in the Albany Post Office."

Concerned the tags were becoming a burden for the dog, Postmaster General John Wanamaker had a custom harness made for Owney and named him the official mascot of the Railway Mail Service.

In 1895, Owney made an around-the-world trip. Starting from Tacoma, Wash., in August, he traveled with mail bags throughout Asia, North Africa, the Middle East, and across Europe, before returning to New York City on Dec. 23 and, finally, to his Post Office friends in Albany.

Although famous, Owney was not much to look at. The *Milwaukee Journal* reporter wrote, "He is a scotch terrier, somewhat larger than the ordinary specimen of that kind of dog. He has had many a knock in his time and he looks it. One eye has ceased to serve its original purpose."

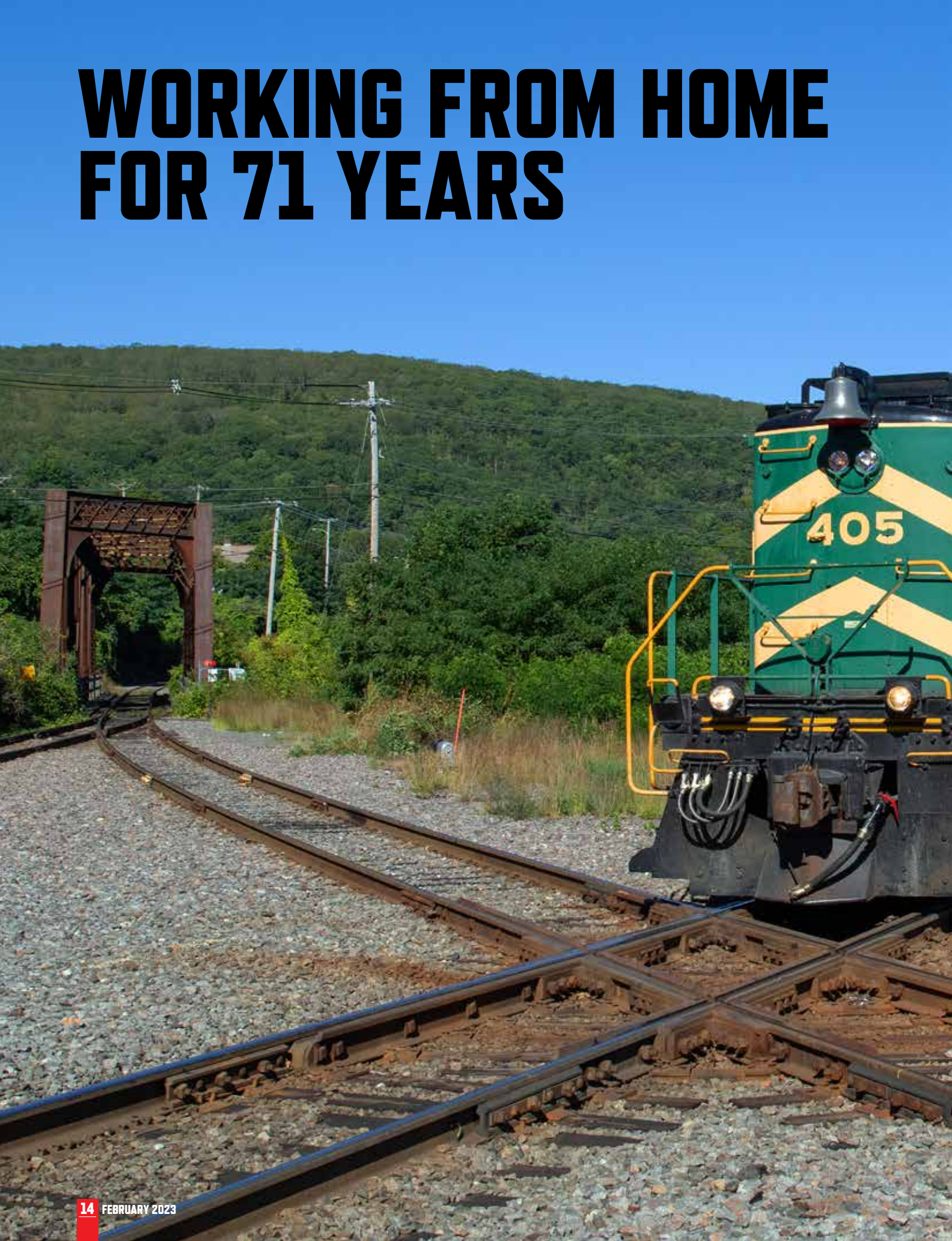
Owney's death was a sad one. In June 1897, he hopped off a train in Toledo, Ohio. A mail clerk chained Owney to a post while waiting for a newspaper reporter to arrive. Not used to this sort of treatment, ailing, and possibly becoming ill-tempered in his older years, Owney bit the clerk's hand. The local postmaster ordered Owney put down. A Toledo police officer led the dog into an alley and shot him.

His death sparked nationwide anger. The *Chicago Tribune* termed Owney's death "an execution." Mail clerks around the country donated funds to have the dog's remains preserved. He was placed on public display in the Post Office Department's headquarters in Washington, D.C. In 1911, Owney became the property of the Smithsonian Institution.

A century later, in 2011, Owney appeared on a U.S. postage stamp. Today he occupies a central place in the atrium of the National Postal Museum, wearing his famous harness and surrounded by a few of the roughly 1,000 tags he accumulated in his 143,000 miles of mail car travel.

In 2011, Owney appeared on a U.S. postage stamp.

WORKING FROM HOME FOR 71 YEARS



Today's diesel locomotives commonly operate in revenue service for more than 40 years, and it can be difficult to follow how many railroads a particular locomotive might serve during its lifetime. That's not the case with Green Mountain Railroad RS1 No. 405. This Alco, built at Schenectady, N.Y., for the Rutland Railroad in 1951, has spent the past 71 years toiling in Vermont, New Hampshire, and New York. Rutland shut down in 1961, but the Alco didn't leave the property. In 1965, the late F. Nelson Blount bought the still-young 1,000-hp locomotive to handle freight over 52 miles of leased, state-owned former Rutland trackage between Bellows Falls and Rutland. Additional used Alcos came and went on the Green Mountain until No. 405 was the last. Meanwhile, the principals of the Vermont Railway purchased a controlling interest in Green Mountain in 1997, and since then, the commonly owned railroads have been marketed as the Vermont Rail System. By the new millennium, No. 405 was semi-retired, mainly handling short passenger excursions during warmer months. Retired VRS operations and mechanical employee Scott J. Whitney, who ran and maintained the No. 405 throughout his 37-year career, believes the veteran Alco may be the most published diesel locomotive in the world. In addition to thousands of riders' pictures tucked away in family scrapbooks and on computer hard drives, photographs of the green engine have appeared in books, magazines, newspapers, calendars, and tourist brochures for six decades. Whitney might just be right. In late summer 2022, Vermont Rail System was power-short and needed to put No. 405 to work switching freight at Bellows Falls. It's seen here picking up interchange cars from the New England Central Railroad and is about to cross Vermont Rail System's onetime Rutland tracks. As might be expected, fans descended on the area to record the action, and undoubtedly some of their photographs will give No. 405 more exposure to the world. Although Vermont Rail System has adopted a common bright red paint scheme for its five railroads, the company has no plans to cover over the Rutland-inspired green and yellow on its only Alco. Well into its eighth decade of revenue service, the Schenectady product shows no signs of slowing down. — *Scott A. Hartley*

Call it a staff meeting or a gathering of the board of directors, either way this is the three generations behind the Central Indiana & Western. At left is Ron Brown, grandfather. Mark Brown, Ron's son, is on the right. That's Wiley Brown, Mark's son in the middle. Terrie Purdy, Wendy Brown

THREE GENERATIONS of railroading

It's Aug. 19, 2022. CI&W No. 3534, an ex-Norfolk Southern SD40-2, powers through the switching routine at the Brockway Glass plant. Bruce Stahl

How the Central Indiana & Western Railroad thrives under the Brown family

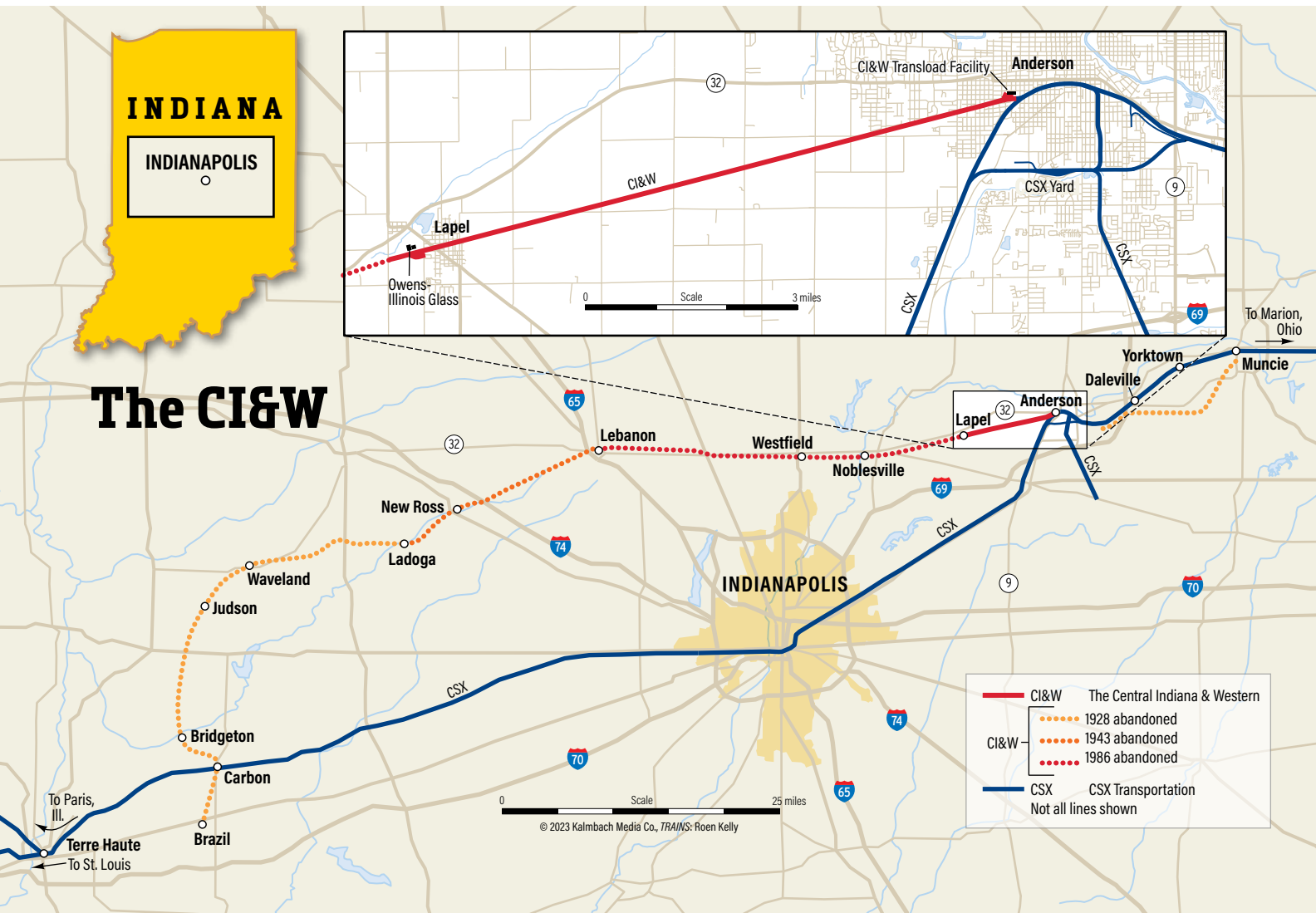
by Michael C. Connor

RAILROAD HISTORY IS FILLED WITH STORIES of ambitious dreams exemplified by destination names that were reached only in the exaggerated aspirations of the founders. This history is also filled by routes that started in a small locality, wandered over the map through other similar sized communities and arrived at an end point no larger than where it started from, without ever going through a major metropolitan area. In either case, such lines did not survive long or are not in existence today. The Central Indiana & Western Railroad is an exception to both obstacles. The railroad also tells the saga of three generations of railroaders. Not only has the family and the line endured, but they are innovative when it comes to customer service and dedicated to maintaining current business while expanding earnings with additional railroad-related revenue.

Back in 1875, the first CI&W predecessor, the Anderson, Lebanon & St. Louis Railroad, was chartered. This line, as with many of its successors, had grand ambitions designated by its name, but fell far

With a string of covered hoppers pulled from the Brockway Glass plant, CI&W No. 3534 rolls past the former Big Four station in Anderson, Ind. Bruce Stahl

The CI&W



short of expectations. The next iteration was known as the Cleveland, Indiana & St. Louis Railway. It must be noted that track never extended beyond the Indiana state line under any of the various owners. Constantly troubled financially, the line was reorganized again in 1885 as the Midland Railway Co. As this group took control, the rails ran from Anderson to Noblesville, Ind., but eventually continued the bypass concept around Indianapolis by reaching Waveland, Ind. Although the original destination lay across the state line in Paris, Ill., coal discoveries near Brazil, Ind., changed the goal and a series of acquisitions, extensions and trackage rights finished the task. Later in 1899, the Anderson to Muncie, Ind., connection was made as well, completing what would be the full length of the road. It must be noted that even today, none of the towns listed nor any of the areas the line passed through had a population even close to 100,000.

Almost immediately after the line was in operation, contraction set in. Rivals Pennsylvania Railroad and New York Central jointly acquired and ran the newly formed Central Indiana Railroad, but evidently, they were not sure what to do with it. A post-purchase analysis recommended abandonment (and this was in the early 1900s when rail transportation still ruled). To their credit, investments were made in the operation. In 1928, the first of many truncations occurred with the Muncie to Anderson line pulled up and everything west of Lagoda shut down, as well. Other shrinkages reduced the Anderson line to Lebanon by 1943. By 1986, the only remaining section under Conrail was the part from Lapel to Anderson.

At this point, Conrail was going to close the remnant, but offered to sell it to anyone interested. Into the breach stepped the first two generations of the Brown family plus a partner. Grandfather Ronald Brown and father Mark Brown, along with Jim Lawyer, acquired the line, which was, quite frankly, in bad shape due to lack of maintenance. However, the Browns had access to resources most new railroad buyers didn't have. Ronald owned and operated a business called ANNEX Railroad Builders, which built and repaired railroad track. Consequently, a supply of rails, ties, and ballast was available for the new venture. The materials were quickly used to rehabilitate the line, and operations commenced again. Conditions and demands on their time were such that it was necessary to sell ANNEX to Railworks in 1998.

The Browns bought out their partner in 1998, and Mark acquired sole ownership in 2001. Grandson Wiley joined the firm in 2011 and is now in the process of buying the line from his dad. The Central Indiana

A DAY ALONG THE CI&W

THE CENTRAL INDIANA & WESTERN work day gets rolling at the Owens-Illinois Brockway Glass plant in Lapel, Ind. Today, Jan. 6, 2012, ex-Chicago & North Western GP7 No. 4295 is on the point for the run to Anderson, Ind. The first task is switching the glass plant *(top)*. With outbound cars gathered, the train heads out for a straight, flat run to Anderson, Ind., and the interchange with CSX Transportation at their local yard *(middle)*. This is pure, hardworking, grassroots railroading in America's heartland. **Seven photos, Garth McMains**

BROCKWAY GLASS, LAPEL

ROAD 852, EAST OF LAPEL

APPROACHING ANDERSON

Like most towns of any significant size, there has been expansion in the recent decades. As CI&W No. 4295 approaches Anderson, the farm fields give way to the paved streets and new suburban homes. When No. 4295 rumbled through in 2012 it was already 60 years old and provided a stark contrast of the old railroad versus the new suburbia.

It may look like a hand-me-down locomotive to most folks, but ex-Norfolk Southern SD40-2 No. 3534 is easily the pride of the CI&W fleet. For this practical, tough, gritty little short line, it's more about improved services, innovation and exceeding expectations than flashy paint schemes. Bruce Stahl

& Western has benefited from having one consistent, reliable customer as the basis of its business over the years. The Owens-Illinois glass operation in Lapel is one of the fundamental companies in town and requires sufficient loads to service its needs.

Covered hoppers are the primary means of transporting the inbound freight, which is silica sand, recycled glass, soda ash, and the mineral nepheline. The CI&W runs on either a two-day schedule of Monday and Thursday or Tuesday and Friday, or once a week depending on customer requirements and CSX deliveries to the interchange in Anderson. On an annual basis, about 1,300 carloads are handled. There are two major grain elevators in Lapel as well. Outbound loads were generated by the elevators until shippers began diverting loads to trucks for the ethanol facilities. Those same ethanol plants have been a source of income for the railroad in another way.

Although the glass business was a reliable source of revenue, the Brown family realized the railroad needed to grow in order to stay in operation. Expansion to the west was not feasible as the track was gone. More tracks in Anderson were not an option either. There are no additional communities between the two cities. The only expansion path was to offer additional services. In 2020 an effort was made to increase business by erecting one of the few transloading sites on a Class III railroad in the U.S. Wiley stated they're capable of transferring any type of load imaginable short of intermodal containers. The facility has a loading pit for moving loose material and a 50,000-square-foot warehouse with four bays to handle boxcar loads. Customers who have their own fluid transfer equipment mounted on trucks can pump directly from the trucks into the railcars.

Development of the transload facility had a futuristic twist. Recycled Polymer Solutions began using a part of the site first. RPS was planning to grow and eventually need rail services. The Browns struck up a solid relationship with RPS and its parent, BBS Charities of Indiana. The relationship grew to a point where CI&W leased the unused portion of the RPS site for the transload facility. When making track improvements for the new facility, CI&W laid enough rail so that RPS would be able to receive rail shipments when they're ready.

Those grain elevators CI&W was servicing, along with others, are now making use of the ethanol processors to deliver product. In the manufacturing process waste liquids are created and delivered to the transload site, then loaded into tank cars for shipment.

A typical day on the CI&W starts at the Owens-Illinois facility in Lapel around 7 a.m. Usually an hour is consumed in rearranging the customer's cars already there for the rest of the week's production needs and getting the empties situated for the interchange with CSX at Anderson. Indiana is blessed with county roads spaced about a mile apart. There are lots of opportunities to see the railroad in action at the numerous grade crossings. After collecting the empties from Owens-Illinois, the crew makes the run to Anderson, passing through mostly rural, flat territory. As the train approaches Anderson, a stop is made at the transload facility to pick up any cars headed to CSX. Clearance is obtained from the dispatcher in Jacksonville, Fla., to move onto the CSX main line and then into the yard. Empties from the glass factory and any consignments from the transloading area are left for CSX and any loads to the glass factory along with inbounds to the CI&W facility in Anderson are picked up.

Fans of EMD units are in for a treat as the railroads four locomotives are all La Grange products. Until recently, the CI&W was exclusively GP territory as well, with a SD40-2 from Norfolk Southern being the latest acquisition. The original engine for the line, CI&W No. 88, was New York Cen-

tral No. 8853, built as an SW7 in 1950. It is still owned by Indiana Boxcar Corp. and leased to a grain operator in Scircleville, Ind., using the same number. The CI&W No. 4295, a GP7, is the former Chicago & North Western No. 1578 that was built in 1952. The other two locomotives are the CI&W No. 8307, a GP10 from the Paducah & Louisville that started life in 1951 as GP7 No. 585 painted in Frisco colors, and an ex-GP38 that wore NS colors.

The SD40-2 is now the railroad's main power. The unit was recently overhauled and now "runs really smoothly" according to Wiley Brown.

Again, obtaining clearance from the CSX dispatcher, the return trip clears the yard and sets off for home in Lapel. If necessary, a stop is made to drop off transload cars. Arriving in Lapel, the customer cars go past the grain elevators and two pieces of varnish stored on the siding. One is an ex-Amtrak baggage car purchased as a future line-side office. The other is a passenger car owned by a private collector. The day ends with delivery and sorting of the customer cars. Care must be exercised for two reasons. One is that the factory shift change can occur at the same time and workers from there must cross the tracks to access the parking lot. The other reason is a bit interesting. Although the line has very little grade along the main path, there is a 1.5% downhill slope toward the end of the line. One of the engines has graphite brakes and the weight of the cars has been known to nudge that engine even when brakes are set.

There is a small, but dedicated crew that operates the line. Jake Garvey and Wiley Brown are the only full-time employees. Jay Harmon is a part-time engineer with 30 years of experience at the former Indiana Transportation Museum. Andrew Johnson helps with maintenance on a part-time basis.

Roughly 10 miles long, the Central Indiana & Western is not a big operation, nor does it pass through any dramatic scenery. The ownership is focused on servicing the existing customer base and fostering new business through its recent and continuing improvements. Three generations of the Brown family have worked to keep a small portion of a rail line, which has existed for almost 150 years, serving smaller Indiana communities. This tradition of running a railroad in an area with no large, urban complex is an honorable one and one to be appreciated.

MIKE CONNOR is a long-time contributor to Classic Toy Trains, *a sister publication. He is retired and living in Greensburg, Ind., with his wife Maryellen. His other interests include Indy car racing — having attended around 60 Indianapolis 500s — and soccer at all levels. This is his first* Trains *byline.*

3700 WEST 25TH ST., ANDERSON

WEST 25TH STREET, ANDERSON

1200 WEST 18TH ST., ANDERSON

APPROACHING THE CSX YARD

After rattling a few windows on track-side homes and cutting diagonally across a number of streets on the west side of Anderson — *(top two photos)* — the CI&W passes what is now its transload facility along West 18th Street *(third photo)*. For the final leg of the trip, CI&W runs on CSX tracks that curve south through town to the CSX yard *(bottom photo)*.

WHEN LITTLE TRAINS MADE BIG

Huge volumes of southwest Virginia coal forced Southern Railway to innovate

Story and photos by Ron Flanary

The weather on Jan. 2, 1966 was miserable, but it was the day when all the calculations, technological hardware, and basic railroading experience would be tested on Southern Railway's Appalachia District. So far, so good: Extra No. 3003 East was rolling along without problems as it approached the top of the first long grade after departing the cramped yard at Andover, Va.

The enormous coal train groaned by with three new SD35s and a single SD24 on the point running near full throttle. A procession of loaded coal hoppers followed — with reporting marks for the Southern, Interstate, Norfolk & Western, and Chesapeake & Ohio — all brimming with various blends of Appalachian bituminous headed for consignees all over the Southeast.

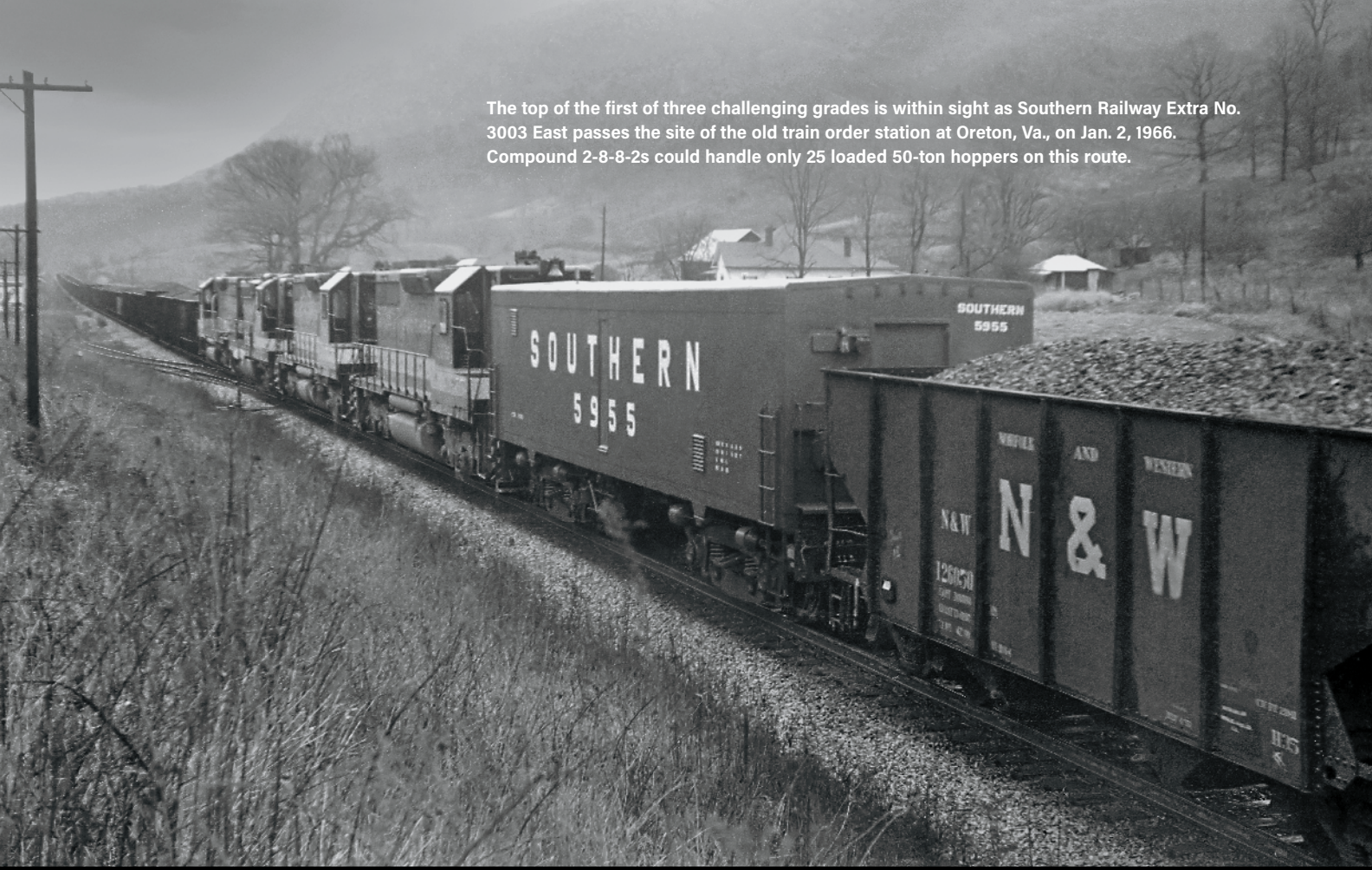
The difference between this train and others soon appeared: radio-controlled mid-train units (another trio of SD35s and an SD24) plus radio receiver car No. 5955: basically a box built on the frame and trucks of retired Fairbanks-Morse H16-44 No. 2149. The "radio car" received FM transmissions from the lead locomotive and relayed them through conventional m.u. connections to the four mid-train units. The radio equipment itself took up little space in the car. A huge block of concrete inside provided ballast.

As the caboose finally came into sight, and the train tipped over the summit using dynamic braking, a sum of 117 loads totaling approximately 11,500 tons had passed. That's certainly not an impressive number given the size of 21st century trains, but at the time and on this rail route, it was epic.

MORE POWER, BETTER HANDLING

Many years before "DPU" became part of the American railroading lexicon, forward-thinking transportation and mechanical department managers with Southern Railway were tinkering with the concept of distributing motive power mid-way in a train to not only move more tonnage but

THAT'S CERTAINLY NOT AN IMPRESSIVE NUMBER GIVEN THE SIZE OF



The top of the first of three challenging grades is within sight as Southern Railway Extra No. 3003 East passes the site of the old train order station at Oreton, Va., on Jan. 2, 1966. Compound 2-8-8-2s could handle only 25 loaded 50-ton hoppers on this route.

TRAINS

also improve overall train handling. Initial deployments of this technology were on Southern's Washington-Atlanta main line. A mid-train receiver car was preferred, rather than dedicated units with the necessary equipment, to allow flexibility. Any motive power with MU capability could be used in mid-train service. The lead unit, obviously, required the radio equipment to transmit signals to the receiver car.

Southern's coal-rich Appalachia District (which included the coal-hauling Interstate Railroad, merged into the big road in 1961) generated huge tonnage at the time, and the future held significant promise as major utility companies in the Carolinas were building new coal-fired generating plants to meet the growing demand for electricity. The unit train wasn't a new concept, though, and in fact Southern had been operating one in Alabama since 1960, cycling between a mine and a utility.

In the hills and hollows of central Appalachia, however, the railroad routes were obliged to conform to the constraints of ancient geography. On the 87 miles of main line between Andover and Appalachia to Bulls Gap, Tenn., where the Leadvale Cutoff formed a junction with Southern's Knoxville-Asheville main and the Bristol-Knoxville line, the gradient was particularly demanding over the first 33 miles. At the apex of the steam era, Southern employed both compound and simple 2-8-8-2s to move coal over this line. The best the articulated locomotives could do was a measly 1,800 tons — just 25 loaded 50-ton hoppers. The first diesels (a four-unit set of F3s with lower gearing and extra ballast) raised that to 4,000 tons, or 55 loads.

The age-old pattern of moving coal eastward (by railroad timetable direction) required a relay team of trains. The three major hills in the first 33 miles all featured several miles of 1.8% to 2% gradient, with the last one exacerbated by a twisting stretch near the top called the "Goose Neck." The last mile of the ascent was normally littered with broken knuckles and draw heads in sufficient quantity to warrant an occasional work train with a crane and magnet to pick up the scrap.

As loaded hoppers accumulated at Appalachia, a "turn" would drag whatever tonnage it could manage to a holding yard just past the top of the last major grade at Daniel Boone, Va. After turning the locomotive on the wye, taking on coal and water, the crew returned with whatever empty hoppers might be there — or "cab lite" if there was none to be moved. This was followed by a second "turn" doing the same process. The third train in the cycle was known as a "C" train (for "Consolidation"). When it reached Daniel Boone, the cars from the first two turns were added and

Previously employed by Southern Railway, the author captured the Belmont unit train being made up at Appalachia, Va., on July 7, 1969. Head brakeman Billy Lawson talks the engineer back to couple the mid-train units and "radio car" to the rear of the train.

the through train departed for the last 54 miles to Bulls Gap. The mostly down-river line had two short grades of .5%, but given the demands of the first 33 miles, these were small potatoes to engine crewmen, who regularly whipped their mounts to make a swing over the top aided by momentum. In 1960 a newer and larger tonnage building yard was constructed at Yuma, Va., 44 miles from Appalachia. The three-train cycle continued as before.

Extra No. 3003 East was merely one important test for a whole new approach to shipping coal from southwestern Virginia. Until that time, it was a loose-car system from multiple mines to multiple destinations. Mine runs on both the Interstate and Southern's St. Charles Branch served nearly 30 different tipples in a two-county area of the state. All these "commercial" loads had to be dropped one at a time over track scales at Andover and weighed before a waybill would be typed by yard clerks. As Yuma Turns and "C" trains headed east from Appalachia, the conductor's "wheel" report for 50 or 60 cars would include that

The Interstate Railroad's fourth mine run has arrived at the Roda, Va., load-out on April 12, 1985, with a string of empty hoppers. A swap will ensue between a like number of loaded "yellow ball" 50-and 70-ton hoppers in captive service between mines and transloader.

many waybills and almost that many consignees. That pattern was changing, however, as the traditional customers for southwestern Virginia coal began to seek other sources of energy or, in many cases, just closed. The Carolinas used to be dotted with textile mills and other small manufacturing firms, for example, but increasingly these coal customers were in decline, particularly as production moved offshore.

On the other hand, the development of coal-fired power plants brought new opportunities for both the coal industry and the railroads. Increasingly, large blocks of

loaded hoppers were routed to these power plants. This situation called for high-volume shipments from multiple mines to a single consignee, aka the unit train.

On Sept. 15, 1965, the old Southern yard at Appalachia was unceremoniously shuttered, with all operations moved to the Interstate yard at Andover. For a time, it was a chaotic operation with too many locomotives, too many cars, and too many train crews vying for limited space in the narrow valley along Callahan Creek just north of Appalachia.

Work began almost immediately to recast the operational model of moving coal tonnage by rail. Most of the facilities at the old Southern yard were razed (except for the old car shop) and earth movers and other heavy construction equipment rolled in to prepare a knoll that stood between the old load and empty yards for a transloading facility. Construction of the first of three huge 70-foot diameter, 180-foot-tall concrete coal silos was underway in early 1966 as the big facility began to take shape. A rotary car dumper was installed along with a network of conveyor belts to link all the pieces. And, of course, a flood-loader was installed to load unit trains. This project was implemented by the largest coal producer in the region, Westmoreland.

Many of the local mines were Westmoreland operations, but just as many were contractor operations working on leases, and mining coal for Westmoreland customers. Rather than have Southern or Interstate crews handle the unloading of hoppers or loading the unit trains, three (and a fourth soon thereafter) Alco S2s from Southern's CNO&TP subsidiary were delivered, in fresh Southern "tuxedo" paint, but lettered "General Coal" — the coal marketing arm for Westmoreland.

While the many mine runs of the Southern and Interstate continued to work the tipples by placing empties and pulling loads for "commercial" customers (the railroad's term for single-car shipments to smaller consignees), most would handle shuttles of old 50-and 70-ton steel hoppers with solid bearings between the mines and the new transloader. Initially, the pool of older hoppers included 400 cars, all stenciled with a solid yellow ball denoting "Local Service Only." Not surprisingly, these cars were soon nicknamed "Yellow Balls." The inbound loads were tagged by mine, dumped, blended, and reloaded into unit trains from the storage silos.

On Sept. 19, 1966 — a year after the old Southern yard was closed for conversion to the transloader site — the first unit coal train departed the new facility bound for North Carolina. Over the next three decades, the transloader dispatched 93-car trains to Duke's Plant Allen at Belmont, N.C., and 60-car trains to Plant Marshall at Catawba, N.C. The trains usually alternated each day, reducing the turnaround time between mine and power plant from seven and half days to two. Each train had a single waybill, with the cars listed and total tonnage calculated on car capacity rather than actual weight.

Looking back from the head SD45, the Belmont train on July 29, 1969 cruises at 45 mph on the last few miles before the crew change point at Bulls Gap, Tenn. The next day this same 93-car unit train will be gingerly easing down famed Saluda Mountain.

THE END TO AN ERA

This delivery system of taking "small trains" and turning them into "big trains" lasted nearly three decades. Along the way the Southern had to tweak the operation. A 1968 derailment at Glenita, Va., ["Calamity at Glenita," Spring 2016, *Classic Trains*], was caused when a loaded Silverside gondola ahead of the mid-train units reached its resonant frequency (aka "rock and roll") on the still-jointed rail. The 39-foot rail joints were nearly identical to the distance between truck centers. The swiveling front truck spread the high side rail on a 10-degree curve, causing derailment.

As a result, the entire 750-car fleet of Silversides had center plate extension pads installed plus snubbers for the spring nests in their trucks to minimize the "rock and roll" phenomenon. More welded rail and speed limit adjustments followed.

For many years, Southern's R-1 track geometry car was attached to the rear of either the Catawba or Belmont train to test the entire route to ensure all was in order. The Belmont trains were obliged to snake down the nearly 5% grade of Saluda Mountain, while the Catawba trains descended the same escarpment on the Blue Ridge Loops between Ridgecrest and Old Fort, N.C.

As coal shipments from central Appalachian mines to southeastern utilities grew from the 1970s to 1990s, three additional coal silos were constructed at the transloader. Additional unit trains for other utilities were later loaded at the transloader, particularly for Georgia Power. Coal mined from lower quality seams had to be "washed," so a preparation plant was added to the transloader. Coal from the mines was "run-of-mine," requiring a process to remove rock, middlings, minerals, and other contamination (e.g., small machine parts used in the actual mining). A supplemental deep mine, named Bullitt, opened in 1969, feeding additional coal directly into the transloader.

Of course, none of this would last forever. In August 1995 Westmoreland chose to close all its Virginia operations. The transloader and Bullitt Mine were immediately shuttered and would never operate again. Other former Westmoreland facilities were leased by smaller companies and continued to produce for a few more years.

It was the end of an era of when "little trains made big trains." While the two power plants are still in operation, the remaining coal units use bituminous from other sources, and are routed there via former N&W lines. The Appalachia transloader was demolished a few years ago, leaving the 30-acre site vacant. The route via Asheville has been downgraded by NS, and the famed Saluda grade was mothballed in late 2001. The unit trains from Appalachia to the Carolinas are remembered for their early innovations in moving large volumes of coal.

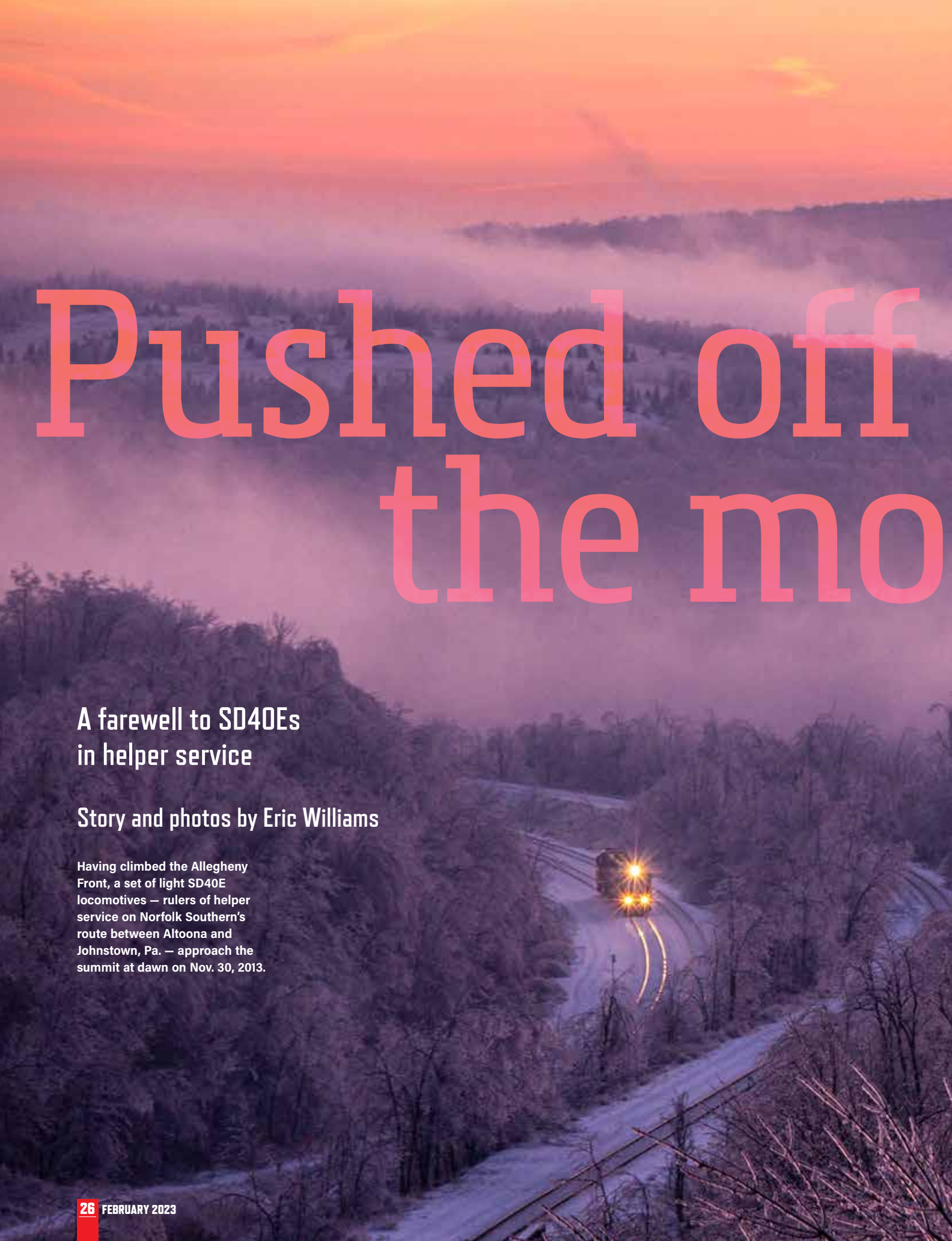
Before PSR and widespread use of distributed power, Alphonse Karr's quote rang true: "The more things change the more they stay the same." 1

Pushed off the mo

A farewell to SD40Es in helper service

Story and photos by Eric Williams

Having climbed the Allegheny Front, a set of light SD40E locomotives — rulers of helper service on Norfolk Southern's route between Altoona and Johnstown, Pa. — approach the summit at dawn on Nov. 30, 2013.

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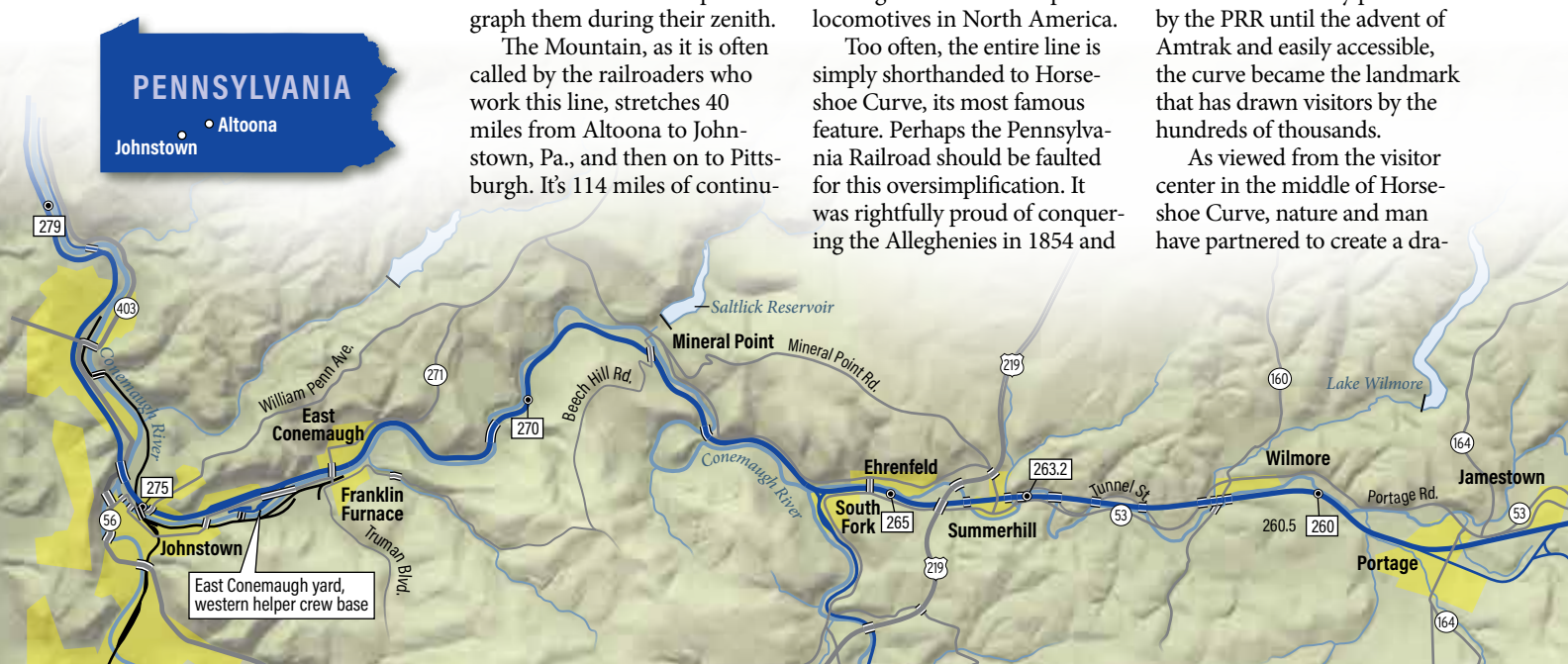
▲ **Helpers move in and out of their base at Altoona's Rose Yard in a steady rain on Feb. 12, 2017. On the helper track, a fresh crew prepares to leave, while in the distance another helper set approaches. On the adjacent yard track, another helper crew is cutting off after bringing a coal train down the mountain.**

They ruled The Mountain for a dozen years. Tailor-made, powerful, and reliable, the SD40E was a helper engine par excellence. Custom built by Norfolk Southern, these locomotives performed superbly on the former Pennsylvania Railroad main line over the Allegheny Mountains. But like previous generations of helper locomotives, they were silently deposed by a new king of the mountain. The reign of the SD40E helper has ended, but I was able to witness and photograph them during their zenith.

The Mountain, as it is often called by the railroaders who work this line, stretches 40 miles from Altoona to Johnstown, Pa., and then on to Pittsburgh. It's 114 miles of continuous grade that climbs up and over the summit of the Eastern Continental Divide and then across the rugged Allegheny Plateau. Most trains require assistance over The Mountain: a rear-end pusher, a head-end helper, or both, to aid in train control. Multiple routes converge at both endpoints of this passage, funneling traffic onto a three-track main line crossing the summit. It is among the busiest lines in the Norfolk Southern system, necessitating the largest bastion of helper locomotives in North America.

Too often, the entire line is simply shorthanded to Horseshoe Curve, its most famous feature. Perhaps the Pennsylvania Railroad should be faulted for this oversimplification. It was rightfully proud of conquering the Alleghenies in 1854 and eagerly promoted the line to potential customers. When its marketing department sought an element that would resonate with the public, what feature captured the achievement's engineering and scenic wonder more eloquently than Horseshoe Curve? Heavily promoted by the PRR until the advent of Amtrak and easily accessible, the curve became the landmark that has drawn visitors by the hundreds of thousands.

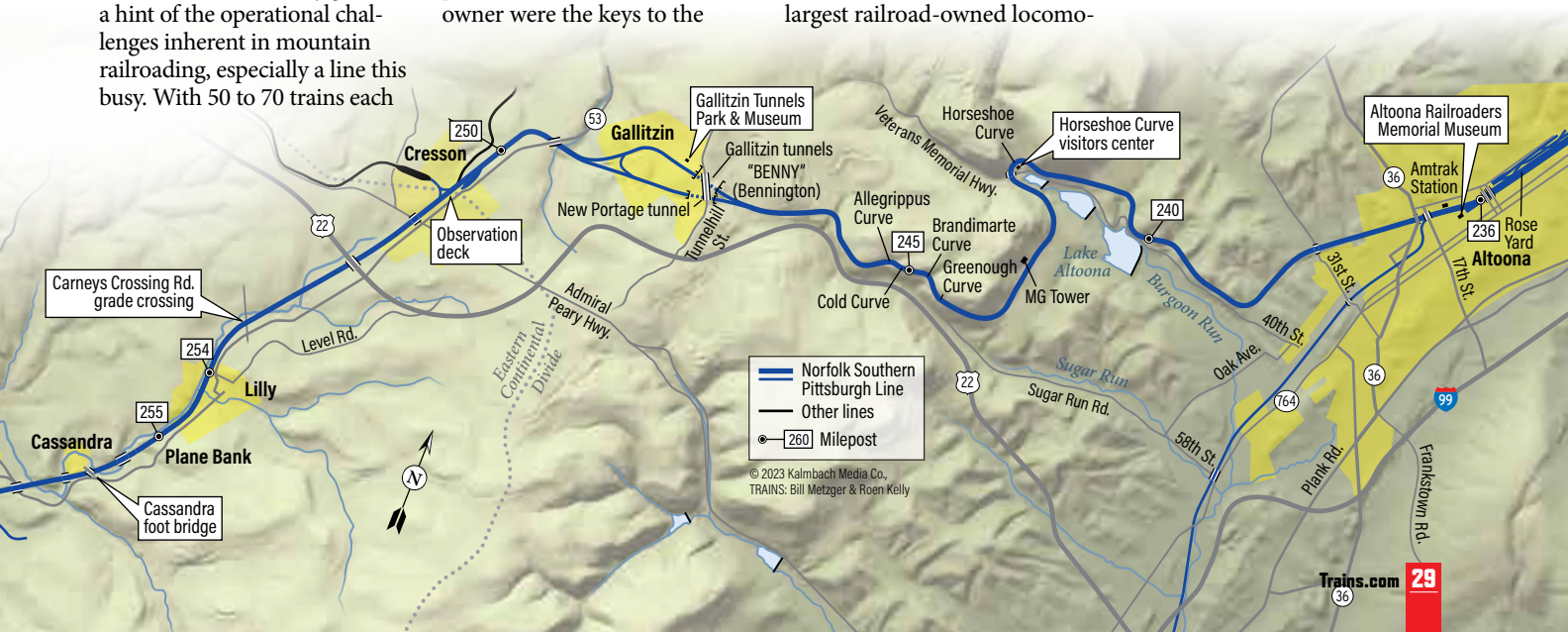
As viewed from the visitor center in the middle of Horseshoe Curve, nature and man have partnered to create a dra-



matic amphitheater of mountain railroading. Surrounded on three sides by individual mountains, the railroad cuts into all three, and uses their fill to build a right-of-way that steadily climbs the grade. This sensorial experience is made whole by the sounds of trains fighting gravity. But our senses can only give us a hint of the operational challenges inherent in mountain railroading, especially a line this busy. With 50 to 70 trains each day, varying from light and fast intermodals to heavy coal drags, keeping the line fluid is the key to smooth operations. That is the role of the helpers.

Norfolk Southern gained ownership of the line as part of the Conrail purchase negotiated with CSX in 1999. An unexpected dividend for the new owner were the keys to the Juniata Locomotive Shop, the capable and versatile repair facility founded by the Pennsylvania Railroad in Altoona. The shop was established soon after PRR arrived in Altoona in the 1850s, and by the 1920s it employed 16,000 workers across its 218-acre expanse. It quickly established itself as one of the largest railroad-owned locomo-

▲ **Pushing an intermodal train through Horseshoe Curve, a two-unit set of helpers greets the morning sun on April 9, 2017. The SD40Es married SD40-2 prime movers to SD50 frames.**



▲ **At the Horseshoe Curve visitors center, two Amish teenage boys watch a set of SD40Es push a train up the mountain on July 13, 2019. The Mountain is far more than the famous curve, landmark though it is.**

tive construction and repair shops in the world.

While its reputation was establishing through building and repairing in-house-designed steam locomotives, it transitioned in the 1950s to become a premier diesel locomotive repair shop and rebuilder. When Norfolk Southern took ownership, Wick Moorman, its CEO at the time, told investors, "When we acquired Juniata, we weren't quite sure what we were getting. It has turned out to be one of the crown jewels of the Conrail acquisition. Juniata is doing groundbreaking work that we think gives us a competitive advantage."

That advantage is economic and in expertise. Not only is it cost effective to rebuild worn, but still capable, locomotives to like-new condition, but this skilled labor force can also use its years of field knowledge to design and engineer for specific operational conditions and needs. Today, computer engineering is just as vital as mechanical ability, as digital processors can bring out the last ounce of a locomotive's horsepower and tractive effort. With Juniata standing literally across the tracks from the Rose Yard crew base, trainmen and design engineers can readily exchange information, and then test their concepts in the real-world lab just outside the shop doors.

For The Mountain, they custom designed and built a locomotive from the ground up. The SD40Es are built on the frames of retired SD50s, with the proven and reliable prime mover from retired SD40-2s, new microprocessor controls, cab signals to lead a train, and Helperlink technology to allow units to cut off on the fly after they complete their shove. Norfolk Southern designates these reimagined and rebuilt locomotives with an E, signifying "enhanced."

While I can fully appreciate the technical specifications that make this locomotive model unique, ultimately, it's the styling that strikes a chord with me. From the utilitarian Spartan Cab design established with the introduction of the GP35, the EMD styling department rolled out road locomotives that followed this basic template for the next 35 years. These locomotives are what I saw trackside during my formative years, and they continue to paint my boyhood memories with nostalgia. While there are plenty of other locomotives that I like, none engages my emotions like these do. The signature element of these locomotives is the angular cab, common throughout the EMD 35-to-70-series. The last Spartan Cab locomotive rolled out of EMD nearly 30 years ago, so seeing the SD40E rebuilt with this signature element sealed my affection.

Visiting The Mountain had been on my bucket list for years, but there were always other, and closer, places to explore. What finally drew me there was that fleet of rebuilt EMD helper units — with those standard, utilitarian cabs. In 2013, when I made an initial visit, change was sweeping the railroad industry, and I started to wonder how it might affect mountain operations. Between Precision Scheduled Railroading, the federal positive train control mandate, increased Distributed Power Unit usage,

▲ A four-pack of helpers add their regenerative braking power to the rear of a heavy coal train heading down the mountain and through Horseshoe Curve on Jan. 26, 2019. The SD40E's role as the line's primary helper developed in the wake of a rebuilding program between 2008 and 2013.

◀ Two sets SD40E helper locomotives pass MG Tower on the former Pennsylvania Railroad's storied East Slope on Dec. 30, 2016. Reflecting railroading's constant change, the helpers have given way to newer models, the PRR-era signals have been replaced by PTC-equipped signal towers, and the future of the long-closed tower is uncertain.

▲ Fall colors are on display as a pair of SD40Es push a westbound intermodal train through Greenough Curve on Oct. 25, 2016. While most intermodal trains have sufficient power to traverse the mountain, helpers ensure the run will happen in an operationally safe and efficient matter.

▶ A set of light helpers charge up the hill as they swing through Cold Curve on April 24, 2016. This crew came on duty at Rose Yard and is bound for Conemaugh, on the western end of the helper district. They will wait there for an eastbound that needs help into Altoona.

and constant upgrades in locomotive technology, would manned helper operations over the Alleghenies change or even be eliminated before I had a chance to witness it?

When I finally got there, I found the experience exceeded expectations. The mountain landscape was grand, there was constant activity, and the SD40Es seemed to be running the show. Documenting these helpers in the landscape was to become my railfanning passion and priority for a few years.

By autumn 2019, the changes that I'd feared a few years earlier had caught up to The Mountain. During that period, I observed preparations by the railroad to replace the remaining steam-era Pennsy signal bridges with their 1920s-era position-light signals with aluminum PTC-equipped towers and "Darth Vader"-style Safetran signals. Not only was the physical plant changing, but PTC necessitated locomotive equipment upgrades, leading to uncertainty if the SD40Es would be able to lead trains. An era was closing, leading me to increase the frequency of my trips until February 2020.

By then, not only had all the remaining PRR-era signals been replaced, but change had come to the helper locomotive pool, as well. Many trains now

▲ **From the hillside over Brandimarte Curve, a four-pack of light helpers heads downhill to Altoona on May 7, 2017. These double sets are usually called to help loaded coal and oil trains over the mountain.**

▶ **Passing under a former Pennsylvania Railroad signal bridge on Dec. 16, 2017, two helper units assist an intermodal train upgrade, while an eastbound stack train descends. This intermediate signal between Allegrippus and Cold Curve has since been removed.**

▼ **In an atypical case of assigning four helpers to something other than a coal or oil train, a long, heavy auto rack train has two sets of SD40Es tied to its rear with their dynamic brakes engaged on Dec. 16, 2016. The 1.86% grade is visible from atop the rock cut at the Allegrippus Curve.**

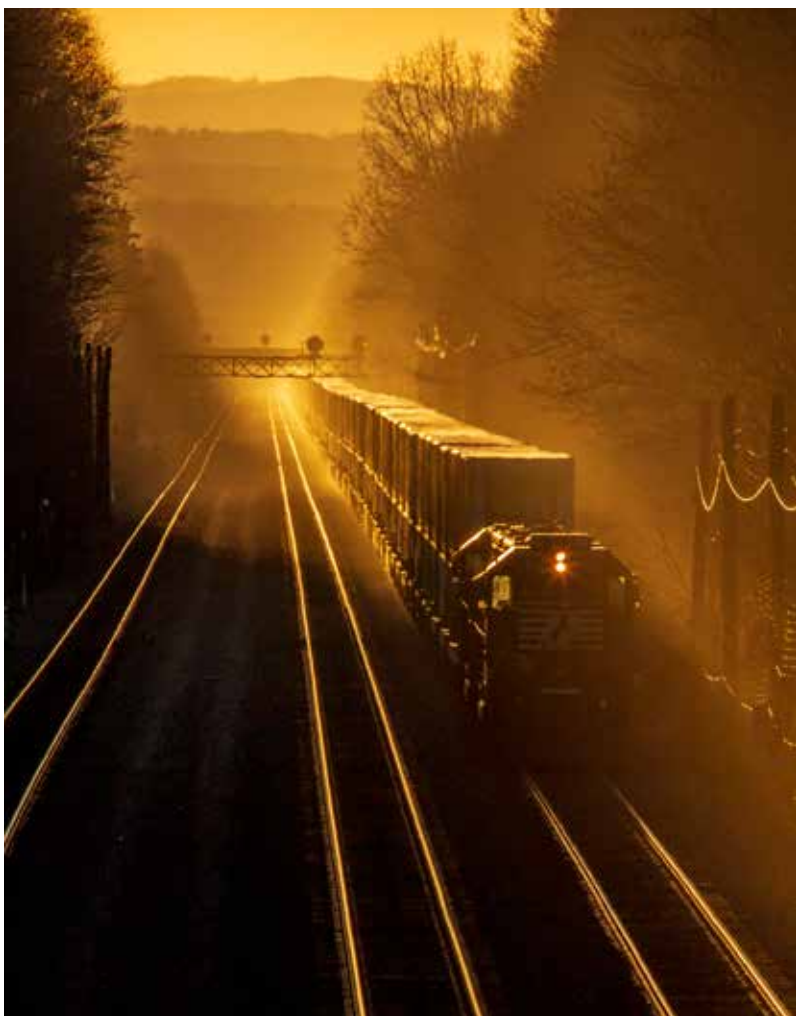
◀ **Just yards from the crest of the Alleghenies on the west side of the New Portage Tunnel at Gallitzin, this helper set is transitioning from pushing up the mountain to a braking role as it helps an eastbound intermodal over the summit on Jan. 26, 2019.**

▼ **Pushing through Cassandra, Pa., two helpers assist an intermodal train down the West Slope on Dec. 26, 2018.**

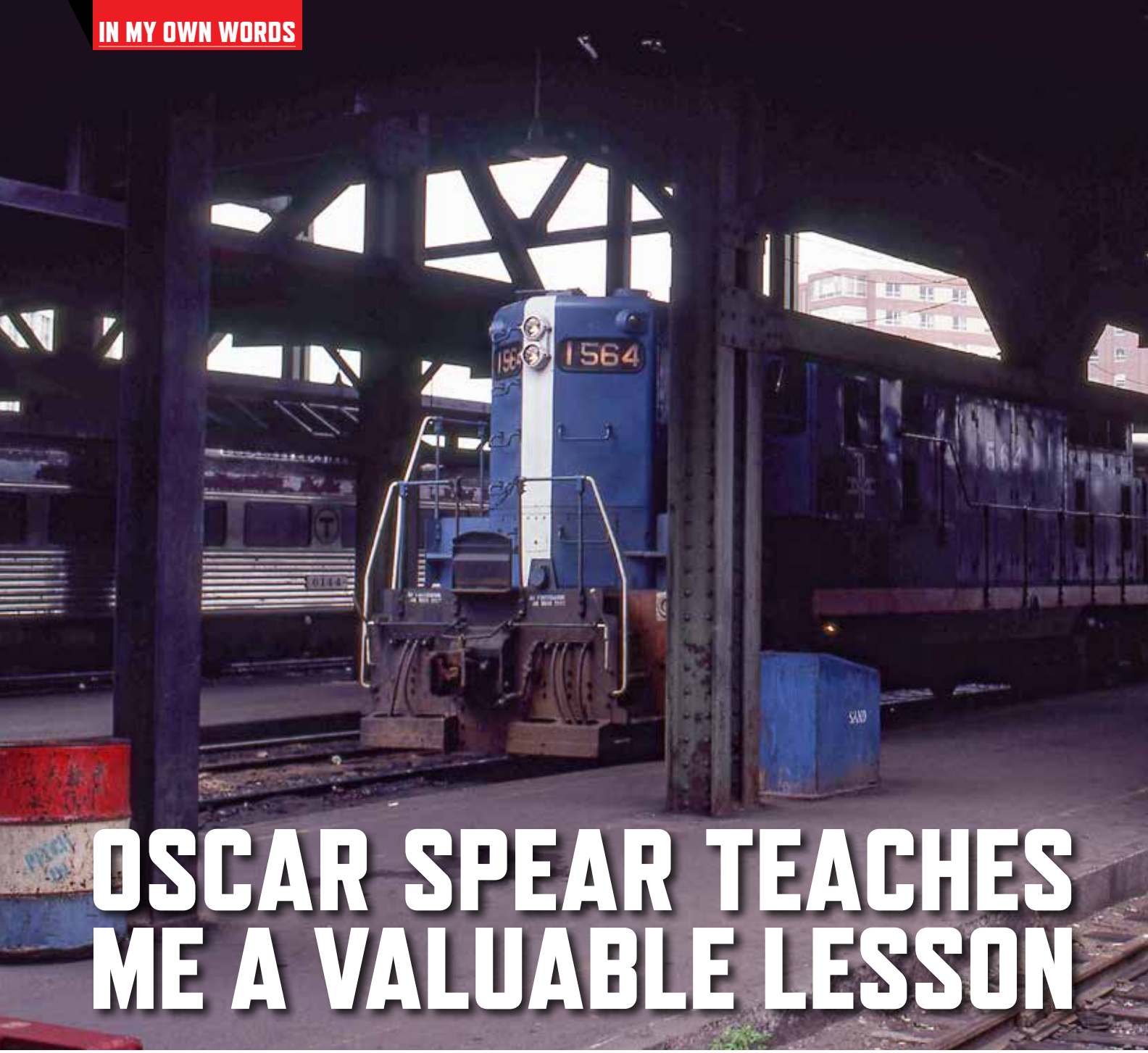
had Juniata's newest rebuilt locomotives, the SD70ACU model, in helper service. Within a few months, these locomotives became the new kings of the mountain, and the SD40Es were dethroned, displaced to other, lower-priority assignments around the system.

In reality, the transition took months, but emotionally it felt like a blink of an eye. I had no proper closure, which I suppose is inevitable with any change for which we are not ready. Just weeks after that last February trip, the COVID-19 pandemic would flare up and push much of the country into a lengthy business closure and personal self-quarantine. I haven't been back since, partially due to lifestyle changes brought on by the pandemic, and partially because of a loss of enthusiasm. Not only are the SD40Es gone from The Mountain, but their passing most likely marks the end of the standard-cab helper unit era there. The last new Spartan Cab unit rolled out of EMD in 1994, and with Norfolk Southern owning thousands of newer models, it's highly doubtful that we'll see anything other than a modern wide-cab unit roaming the mountain again in this specialized service.

While this change happened relatively recently, compared to some 167 years of railroad operations on The Mountain, enough time has passed to look back. In hindsight, time was on my side — I achieved my objectives of documenting a locomotive class within a landscape that resonated with me deeply. It's easy to romanticize what has been lost, but change is constant. The era of the SD40Es drove my railfanning passion for more than a few years, but with its passing, other discoveries have presented themselves.



It's time to move on. The SD40E helper is dead. Long live the SD40E. 1



OSCAR SPEAR TEACHES ME A VALUABLE LESSON

Watch the signals, even if you are sitting on them

by Douglas F. Kydd

Sitting high in the cab of an FP10, like the one shown here in Boston's South Station, you cannot see the dwarf starter signal directly below. Not climbing down to take a look became an error of epic proportion for our young engineer. Brian Schmidt collection

DURING SPRING 1979, I was working for the Boston & Maine Railroad as a fireman on commuter trains out of Boston's South Station. My daily assignment consisted of three trips, all on different main lines and branches.

My third trip of the day was from Boston to Attleboro, Mass., a total of 32 miles out and back. My mentor engineer was Oscar A. Spear, an elderly and sometimes unintentionally comical character, who treasured the generation gap between him and those under 35. He pretended to resent the age differences and knew how to use it to elevate himself to an air of superiority. Oscar lived in Wakefield, Mass., adjacent to my hometown of Reading, Mass. This was his second time working for the B&M.

THE B&M: ROUND ONE

The son of a Pullman conductor, who died when Oscar's age was in the single digits, he originally hired out on the B&M as a Portland Division passenger trainman in the late 1930s or early 1940s. During his short tenure on the B&M, he spent nearly all his time in baggage cars and saw nothing but newspapers and suitcases. He wasn't happy in this position. Eventually, he was able to bid a flagman's position, at which time he purchased, at his own expense, a new uniform. Shortly afterwards, he was flagging the rear of an

eastbound passenger train near Wells Beach, Maine. The train departed without him, and he was left standing alone in the pouring rain. His new uniform was ruined. Disgusted, Oscar left the B&M and found employment in the New Haven Railroad's dining car department, presumably working behind the scenes aboard their legendary grille cars.

It would be nearly 40 years before Oscar saw another paycheck from the B&M.

SHORT TRACKS & DWARF SIGNALS

The station tracks at Boston's South Station were relatively short. And sometimes, train consists were adjusted to snugly fit the length of these short tracks. This presented a potential hazard, familiar to Oscar, but not familiar to me. I never operated an engine for Oscar, instead occupying the fireman's seat, as he verbally toted the superiority of "his" generation as opposed to the unwashed baby boomers. There was a method to Oscar's teaching methods, however.

If the length of the passenger train was precisely at the utmost limit of the South Station track, the engineer's cab would be directly above the first dwarf interlocking signal, entering territory of Boston's Tower One. The problem was that if the dwarf signal was directly underneath the engineer's right hand (and fanny), it was invisible to him. With eyes focused on the next signal, on a signal bridge several hundred feet ahead, the engineer could easily overlook this very essential starter signal.

Oscar let me ride the fireman's seat of his engine for several weeks, like an unessential drain on the economy of society's economic machine. As was planned weeks in advance, he waited until that nasty trap was set up. On a July 1979 day, we were set to leave for Attleboro with EMD FP10 No. 1153 in the lead. He told me this was the day I would take the train from Boston to Attleboro. Elated, I took a position in the engineer's seat.

The conductor's signal received, I promptly released the independent brake valve (without checking the starting signal, directly beneath my fanny) and switched the engine bell on.

The ever alert Oscar promptly slapped the independent brake valve into the "applied" position and tooted, "Get out of the seat! Get out of the seat! Get out of the seat! Get out of the seat! Get out of the seat! Get out of the seat! Did you check the starter signal?"

I hadn't. I promptly dismounted the locomotive, checked the signal, and noted that it was red, at "stop" indication!

Oscar barked: "If you hadda gone by that red signal, it woulda been my job!"

Oscar ran the engine from there to Attleboro and return. It was a very dry-mouthed trip for me, but I learned a valuable lesson. After that craftily taught lesson about the starter signals at South Station, I was never asked to sit in the engineer seat of Oscar's locomotive again. However, he continued to "teach" me long after I had stopped firing for him and even after he retired in 1983.

OLD, BOLD, LUCKY ENGINEERS

In retirement, I visited him at his residence a couple of times and he continued to sternly lecture me, sometimes about things not related to railroading. One such lecture involved the unpredictability of rail–wheel adhesion, particularly in deep-freeze, winter conditions where crystallized snow powder is blown onto the tracks by fast moving trains passing on adjacent tracks. His lesson that a light brake application begun three miles from the intended stopping point is much better than a heavy brake application made at the last minute, closer to the intended stopping point. His advice, at the time, seemed a little over cautious.

With the humility that accompanies experience, I came around to doing things his way. There are "old" engineers. There are "bold" engineers. There are relatively few "old bold" engineers.

Those that are "old" and "bold" are just plain lucky. 1

NEVADA NORTHERN THROWS A PARTY

The steam-powered landmark railway celebrates 35 years

Story and photos by Carl Swanson

NEVADA NORTHERN RAILWAY CELEBRATED 35 years of operating passenger trains behind historic steam locomotives by bringing back its Iron Horse Symposium, an event last held before the outbreak of the COVID pandemic.

The weekend-long symposium in late September included steam- and diesel-powered train rides, special presentations on the railway's history, and behind-the-scenes tours of the East Ely, Nev., shop facilities. The event concluded with working demonstrations of historic equipment, including two steam locomotives, 2-8-0s Nos. 81 and 93, along with Alco RS2 and Alco RS3 diesels, and the railway's restored Baldwin VO1000 diesel switcher, which returned to operation in 2022 after sitting idle for 39 years.

Mark Bassett

Nevada Northern's steam-powered wrecking crane — the oldest operating crane on any U.S. railroad — demonstrated its lifting power for symposium attendees. In addition, historic rolling stock normally stored indoors was pulled out for display.

While the event marked 35 years of museum operations, Nevada Northern's roots go back more than a century. The

Nevada Northern 2-8-0 Consolidation No. 93 rolls an ore-car consist past the railway's landmark coal tower and water tank during a recent symposium marking 35 years of preserving Nevada's copper mine railroad era.

Alco RS2 No. 105 and RS3 No. 109 put on a smoky show for symposium attendees. The locomotives are pulling a third Kennecott Alco, RSD4 No. 201, which is currently in the process of being restored. Kennecott Corp. purchased all three of the locomotives new, the No. 105 in 1949, No. 109 in 1950, and No. 201 in 1951.

Nevada Northern Steam Wrecking Crane "A" lifts a locomotive plow. It is the oldest working crane on any U.S. railroad and was recipient of a *Trains* Magazine preservation award in 2000.

railroad was built to support copper mining activities in the area. When Kennecott Copper decided to end local operations in the 1980s, civic leaders persuaded the company to donate its buildings, right of way, and rolling stock to the community and its non-profit museum foundation.

"It really is one heck of an underdog story," says Mark Bassett, NN's president. "Who could imagine a community that just had the major employer shut down shop would get a railroad donated to them and actually operate it for 35 years?"

The Nevada Northern, a National Historic Landmark, is considered by many the best preserved standard gauge steam-era American railroad facility. Trains operate on the original line powered by century-old steam engines original to the area.

The late William Withuhn, former transportation curator of the Smithsonian National Museum of American History, called the Nevada Northern, "a living American treasure" noting its original depot, office, engine house, machine shop, freight shed, and coal and water towers, plus its three original steam locomotives, ex-Kennecott diesels, five rare wooden passenger cars, and 60 early freight cars.

The railroad is also widely known for a more whimsical reason. Dirt the Cat, abandoned as a kitten and adopted by shop workers, is the railroad's official mascot and enjoys an international following thanks to a series of widely shared social media posts. Dirt is named for his fur coat permanently stained by a lifetime amid the soot and grease of the 114-year-old steam engine-servicing facility, and he makes a point of greeting visitors to the shop building.

Dirt the Cat

The Nevada Northern's Iron Horse Symposium is a gathering to discuss and learn railroad history, and take part in tours and demonstrations. The next symposium is scheduled for Sept. 28 through Oct. 1, 2023.

Strasburg's No. 475 back in service

Repair work on former Norfolk & Western 4-8-0 is completed in only five days

▲ **The damage to Strasburg Rail Road's No. 475 looked worse than it was after its collision with a trackhoe on Nov. 2. The smokebox door bears evidence of repairs executed in only five days by the railroad's mechanical department. The braze marks on the door were not ground down, leaving a visible reminder of the incident.** Dan Cupper

ON NOV. 2, STRASBURG RAIL ROAD'S 4-8-0 No. 475 collided with a piece of track maintenance equipment. On Nov. 7, the locomotive was back in service after an overtime repair effort by the railroad's mechanical department.

The locomotive suffered damage to its smokebox front and door, headlight, and other parts in the collision with a "trackhoe," or tracked excavator, after running through a misaligned switch onto a spur where the maintenance machine was parked [see "Strasburg Rail Road steam engine hits excavator … ," "Preservation," January 2023]. No one was injured. The accident was captured by a Virtual Railfan streaming camera; video from that camera was widely shared online.

The Federal Railroad Administration has investigated the incident. The railroad cooperated with the FRA to isolate and clarify conditions that contributed to the incident. Among the contributing factors were a track switch left open by a maintenance crew, and engine-crew inattention to the position of the switch points.

"Mistakes are inevitable, and [the point is that] we learn from that," says Brendan Zeigler, vice president and chief mechanical officer of the railroad. "We stand behind our employees and the contributions they make."

> "MISTAKES ARE INEVITABLE, AND [THE POINT IS THAT] WE LEARN FROM THAT. WE STAND BEHIND OUR EMPLOYEES AND THE CONTRIBUTIONS THEY MAKE."
> — BRENDAN ZEIGLER, VICE PRESIDENT, CMO

In a *Trains* News Wire interview on Nov. 8, Zeigler indicated the damage was largely confined to No. 475's cast-iron smokebox front and door, with minor damage inside the smokebox to the cinder screen netting and supporting parts.

The major visible repair work was threefold, as the excavator's boom punched a hole in the smokebox front and door, both of which shattered into pieces, and damaged the headlight beyond repair.

The Strasburg Rail Road Mechanical Services team replaced the smokebox front with three-quarter-inch-thick steel plate, using the damaged item as a template. The smokebox door — the hinged round center of the smokebox front — likewise broke into shards, and Zeigler said, "We elected to braze-weld that. We put a reinforcing steel ring inside to hold it together."

The result is a door with visible spiderweb-like scars where the sections were rejoined. Zeigler addressed the question of why those braze marks weren't ground down to restore a smooth appearance: "I elected not to have them do that," he said, "to leave it as a 'witness mark' to remind our crews of the need for vigilance."

Finally, although the headlight bracket was undamaged, the headlight itself was too far gone, so the railroad installed a replacement that it had on hand.

Strasburg General Manager Jim Hager added that the "dedicated and talented" mechanical staff got the engine running again within a 96-hour window. "They went above and beyond [and] turned the locomotive around quickly so that the shop crew could get back to contract work that needs to get done," he said.

Strasburg's shop, which is one of the best-equipped steam facilities in the nation, routinely maintains not only its own fleet of steam and diesel locomotives and cars but also fabricates and repairs railroad equipment for museums, other tourist roads, and amusement parks. Current clients include East Broad Top and Black River & Western.

As the only operating 4-8-0 in the U.S., No. 475 was built by Baldwin in June 1906 and operated on Norfolk & Western until 1962. It has been at Strasburg since 1991. — *Dan Cupper*

New Jersey commuter locomotive to operate again

U34CH was at the roots of today's Jersey-style commuter trains

U34CH No. 3372 powers a trip in push mode with Pullman-Standard "Comet I" coaches. This locomotive-coach combination was a commuter train design pioneer. Tom Kelcec, Steve Helper collection

ERIE LACKAWANNA GE U34CH NO. 3372 is part of a pioneering group of locomotives. Now it is the last of its kind and will be restored to operation by the United Railroad Historical Society of New Jersey and FMW Solutions.

The U34CH represents a passenger train landmark. During the late 1960s and early 1970s, as passenger trains declined, the challenges of old equipment reached Erie Lackawanna commuter trains. The railroad was dealing with fleet of coaches and MU's dating to the late teens and 1920s.

While the EL was the largest commuter line in New Jersey, it was short on cash to modernize its fleet. By the 1970s, the state of New Jersey had committed $90 million to updating the commuter service on several foundering railroads. Rather than refurbishing old equipment, the state opted for newly designed coaches and locomotives.

The result was an order of Pullman-Standard "Comet I" coaches, and 32 GE U34CH locomotives. This was the first time in the evolution of modern passenger equipment that locomotives and cars were ordered together to work in tandem. The new coaches would be powered by electricity delivered from a new type of generator in the U34CH. The drive shaft from the locomotive's 16-cylinder motor would go through its main generator, which powered its six traction motors, and continue into a generator used exclusively for powering the train. This meant, to power the cars, the engine always ran at 960 rpm, or full power, making a locomotive that was not only powerful and efficient, but distinctive, with a consistent roar both stopped and at speed.

NJ Transit inherited the U34CH fleet in 1983 and ran it until 1994. All units, except No. 3372, were scrapped or exported to South America; those are presumed to be scrapped too. NJ Transit donated No. 3372 to URHS after the URHS-sponsored farewell excursion. After its retirement, No. 3372 was leased to New York & Greenwood Lake Railway in Passaic, N.J. During this time, vandals damaged the traction motors and high-voltage wiring. In 2014, URHS raised funds to move the unit to Boonton, N.J. There, volunteers stabilized the unit and stored it awaiting restoration.

Now URHS, working with FMW Solutions, has begun the restoration with a $10,000 matching donation from Tri-State Railway Historical Society.

"There are so few preserved locomotives that are uniquely Jersey, and this is one of them," says Kevin Phalon, URHS president. "There are thousands of people who still remember riding behind, working on, and running these locomotives. No. 3372 holds a lot of meaning for a whole lot of people, so it was imperative that we start this project off right — with funding and professional experience."

During the summer of 2022, URHS contracted FMW Solutions, a railroad consulting and restoration firm, to perform an evaluation of the locomotive. That inspection indicated the prime mover shows signs of wear, but is otherwise in good condition. Overall, the locomotive's main components show nothing that would rule out operation. There is extensive damage to portions of the wiring due to vandalism and weather, all of which can be repaired.

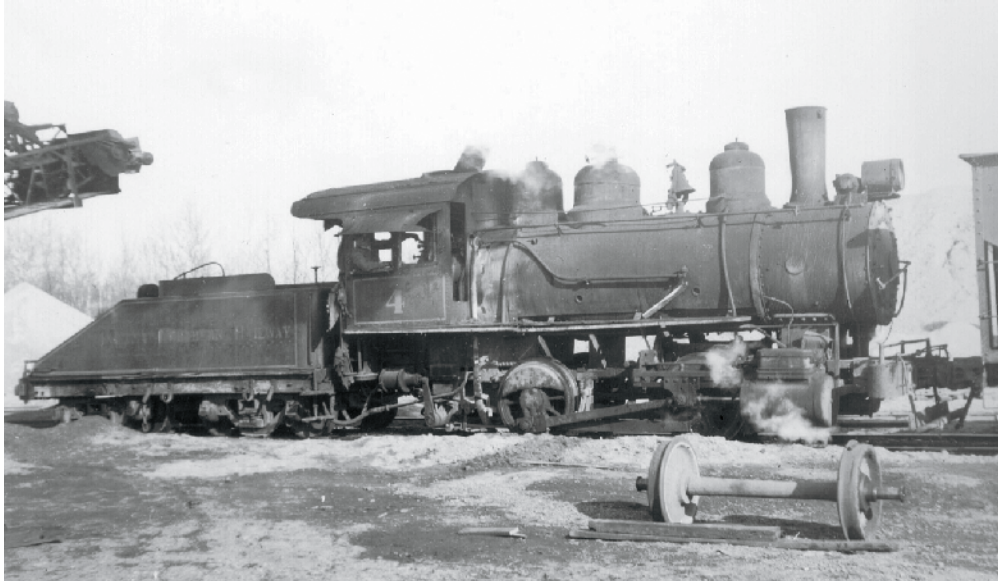
"URHS has a great vision for preserving New Jersey's railroad industry and our diesel-electric experts are looking forward to being a part of it," says Shane Meador, FMW Solutions vice president-mechanical. "Our inspection of 3372 was promising, and it shows that locomotives from this era can make good candidates for restoration."

If you would like to help with the restoration or view the locomotive's mechanical assessment, please visit the URHS website: URHS.org — *Trains staff*

GE built 33 U34CH units from 1970 to 1973. The New Jersey Department of Transportation took 32 for operation by the Erie Lackawanna. The last one went to the New York MTA. Peter Klapper

AIRS group has big plans for a little steam engine

Operational restoration of 1913 Baldwin underway



Into the early 1960s, No. 4 was the switch engine for a gravel pit outside St. Louis. The locomotive is seen at work in 1955 shoving a string of hopper cars. Bob Barcus collection

Named *Oliver* by the Indiana Northern Railroad, No. 4 is seen in virtually as-built condition in this colorized photograph. AIRS plans to return the locomotive to this state. AIRS collection

WHILE BIG OPERATING STEAM LOCOMOTIVES ARE EXCITING and grab considerable attention, there is room for small steam locomotives in today's restoration world. What these diminutive steamers lack in girth, they more than make up for with the roll they played in American railroading.

The American Industrial Railroad Society is working to shed light on the small locomotive story. The group, based in Davenport, Iowa, has acquired Indiana Northern Railroad No. 4, an 0-4-0, tender-type locomotive built by the Baldwin Locomotive Works in January 1913. The locomotive was purchased by AIRS in 2020 and relocated to a restoration site in Davenport, where volunteers are working to return the dismantled engine to operational status in its as-built appearance.

AIRS was established in 2020 with a mission to preserve, restore, and interpret equipment, artifacts, and documents related to U.S. industrial railroading. Partnered with the Davenport Industrial Railroad and the Youngstown Steel Heritage Foundation, the group plans to travel to various museums and railroads across the country with No. 4 once it's operational.

The locomotive operated for the Indiana Northern in South Bend, Ind., until 1948, and served numerous customers on the 2-mile-long railroad, including the Oliver Chilled Plow Works, and the Studebaker Automobile Co. The engine was then purchased by a gravel pit outside St. Louis, Mo., where it switched carloads of gravel until the late 1950s or early 1960s. The disused engine languished in the abandoned pit for years until it was recovered and later dismantled in an unsuccessful restoration attempt. AIRS purchased the locomotive from the estate of the previous owner.

"No. 4 is representative of the thousands of switching locomotives that helped turn the gears of industry in the U.S. for decades." says Sam Aufmuth, AIRS president. "It's a perfect fit within the mission of AIRS, and by restoring the engine to operation, we aim to bring to light the vital and often overlooked role that the industrial railroads and railroaders played as the last-mile connections to the country's economy."

One of the most daunting tasks thus far has been cataloging parts and determining what is missing. The previous restoration attempt left the locomotive in pieces with parts from other railroad equipment mixed in. When the locomotive arrived in Davenport, the team realized a complete inventory was needed. Time has been devoted to sorting, organizing, and cataloging No. 4's parts. It's estimated that about 80% to 85% of the locomotive has been recovered. Most of what is missing are the engine's appliances, such as headlights, dynamo, air compressor, and brake stand. Additionally, the wooden tender frame rotted away before AIRS acquired No. 4. Most of these items are replaceable, so their absence has not disqualified the engine from operational restoration.

At present, work is focused on inspecting the boiler and reconstructing the cab.

If you would like to help with No. 4's restoration, please visit the AIRS website: www.industrialrails.org.

The AIRS crew with No. 4's boiler. Work has begun to assess the vessel. The AIRS group is comprised of volunteers younger than you might expect for steam-engine work. AIRS

IN NOVEMBER, TRAINS PHOTO EXCURSIONS visited the Western Maryland Scenic Railroad for a trip with 2-6-6-2 No. 1309, and the Wisconsin & Southern Railroad to see Soo Line No. 1003. On the WMSR, No. 1309 ran for both daylight and night photo sessions, as seen at left emerging at Brush Tunnel west of Cumberland, Md. The excursion with No. 1003 featured nearly a dozen photo locations through south-central Wisconsin. One site, above, saw No. 1003 and its period freight train passing under the former Chicago & North Western Railway bridge west of Randolph, Wis. The bridge now carries the Union Pacific. Want to join the fun? Watch the pages of *Trains* for future photo excursions. Two photos, Carl Swanson; No. 1309 lighting: Michael Summers, Casey Thomason

Hot spot: Muncie, Ind.

Unique diamond arrangement offers interesting viewing of CSX, Norfolk Southern

▲ **On May 27, 2019, a CSX auto rack train, with GE C40-8W No. 7862 leading, approaches the Norfolk Southern diamond near Walnut Street. The train is heading for Avon Yard outside of Indianapolis. The NS New Castle District parallels the CSX Indianapolis Line Subdivision to the north.** Two photos, Arthur Bradley

IT'S NOT THE BIGGEST TOWN IN THE STATE, but it plays host to some good railroad action. The ex-Conrail, now CSX, Bee Line along with the main lines of Norfolk Southern's New Castle and Frankfort districts meet in Muncie, Ind. The CSX and NS New Castle mains cross just east of Walnut Street. The Frankfort District line splits from the New Castle District northeast of the diamond. A connection west of Walnut Street creates a wye for NS, allowing trains on the Frankfort District to continue south onto the New Castle District. NS handles local switching at East Yard, located about a mile east of the diamond. Rounding out the Muncie rail scene is Progress Rail's 740,000-square-foot locomotive manufacturing facility.

LOCATION: Muncie, located 50 miles northeast of Indianapolis, is a central location for all lines. If you are coming from Indianapolis, take Interstate 69 north about 40 miles to the State Route 32 exit. Proceed east another 11 miles to Muncie. Continue to Walnut Street, turn right, and proceed south to the track. The diamonds are on the east side of Walnut Street.

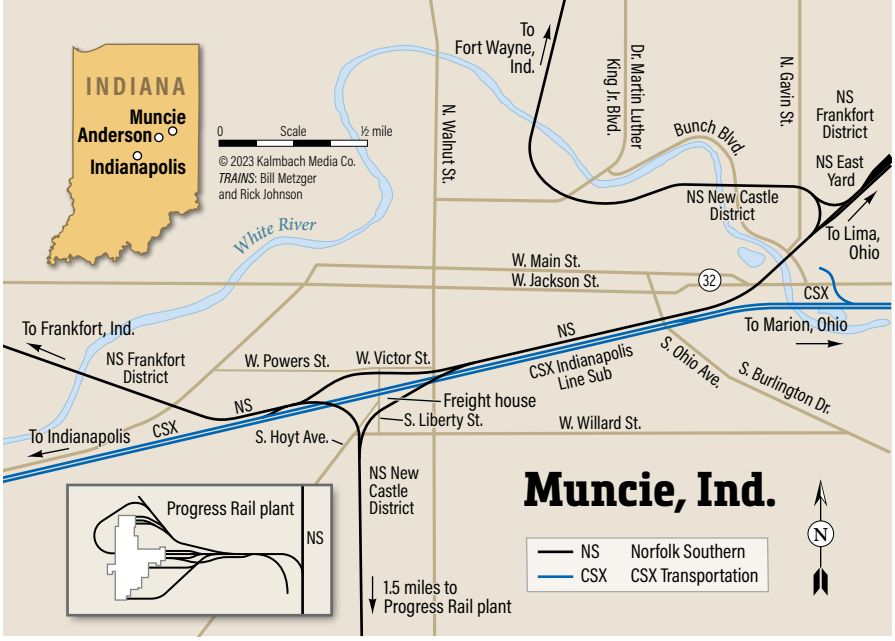
Norfolk Southern traffic includes manifest, intermodal, and Triple Crown RoadRailer service. Locals also mix in with the mainline action on both lines. Run-through power is not uncommon, making it possible to view locomotives from BNSF, UP, KCS, and CN.

If you followed State Route 32 into Muncie, you most likely saw signs for Anderson, Ind., as you exited I-69. Anderson is about 18 miles west of Muncie. It is home to the Central Indiana & Western short line, running from Anderson to Lapel, Ind. If you are seeking some grassroots, Midwestern railroad photos, make the trip back to Anderson. The CI&W is profiled in this issue (see page 16).

RADIO FREQUENCIES: CSX: 160.800; NS: 160.440

TRAIN-WATCHING: The CSX double track sees approximately 25 trains per day, with a mix of manifest, intermodal, and seasonal unit grain shipments. CSX activity tends to favor more trains in the morning and late afternoon. Norfolk Southern adds 15 to 20 trains a

Union Pacific No. 7203, a GE AC4400CW, hauls a auto rack-intermodal train through fresh snow on March 14, 2020. Union Pacific locomotives and other foreign power are common in Muncie. Bryson Sleppy



As the sun sets on Dec. 22, 2021, a Norfolk Southern GE C40-9W leads a northbound intermodal train across the eastern diamond, crossing CSX, on its way to Fort Wayne, Ind.

day on the New Castle District and another four to six trains on the Frankfort District.

BEST VIEWING: The eastern diamond is easily viewed from a parking lot on the north side of the tracks. The former Big Four (Cleveland, Cincinnati, Chicago & St. Louis Railway) freight house is still standing west of the diamonds and can be an interesting industrial photographic backdrop. The building is now an automotive-repair facility, and parking there is not recommended.

The CSX line parallels State Route 32 west of Muncie, which opens up additional opportunities for photography outside of town. The NS line to Fort Wayne crosses the White River at three locations in Muncie. The bridges for each of these crossings are easily accessed. It is recommended to do your train-watching in Muncie during daylight hours.

FOR THE FAMILY: Muncie is home to Ball State University. Its campus provides an opportunity to explore a scenic Midwestern college. Be sure to visit Minnetrista Museum and Gardens, which is set on 40 acres along the White River. At Minnetrista you can visit the studio of public-television painter Bob Ross, and Oakhurst, the home of George Ball. Ball was one of five brothers that launched a manufacturing company, which among other products, became famous for their canning jars. When planning your trip visit minnetrista.net — Trains *staff*

Q Was EMD's BL2 model used for freight, passenger, or both?

— Dan Sladovich, Washington Township, N.J.

▲ The intention of EMD's BL2 model was to address branchline power needs. The features built into the locomotive — improved rear-facing visibility, platforms and running boards at each end for switching, and improved forward vision — were designed for freight work. Passenger trains traveled branch lines too, and railroads, like the Chesapeake & Ohio, did use the BL2s for such work. Here a C&O train heading for Muskegon, Mich., in September 1949 is powered by a BL2. Richard Pedler

A The BL2 was to be the solution to branch line power challenges. The name even said so. "BL" stands for "Branch Line." By the late 1930s to early 1940s, railroads found that the EMD F3 was not ideal for branchline switching work. There were no end platforms for brakemen and no easy rear view for the engineer. Maintenance inside the F carbody was complicated by the body structure.

Although Alco, Baldwin, and Fairbanks-Morse offered road-switcher diesel locomotives as early as 1941, EMD was reluctant to offer one. EMD's eventual answer was the BL2 — a cross between an F unit and the future GP7s and GP9s. The model did not appear in the EMD catalog until 1948. Both freight and passenger versions were offered. Only 60 units were built, with the Chesapeake & Ohio taking the largest number at 14. The Boston & Maine, C&O, and the Rock Island ordered the passenger model with a steam generator. — *Bob Lettenberger*

Q When did the various lengths (40 feet, 50 feet, 60 feet, etc.) of boxcars come into use on Class I railroads? — *Rick Parker, Granville, Ohio*

A We can trace the first boxcar to 1833 on the Mohawk & Hudson Railroad in New York. M&H shippers needed extra protection from the weather for goods being shipped in what amounted to a high-sided, wooden gondola. The railroad covered a few 25-foot gondolas, and the boxcar was born, albeit in a rudimentary form.

By the end of the 1830s, the Baltimore & Ohio Railroad fielded a car looking like the boxcar we know. It was 30 feet long, fully enclosed with side doors, with a 10-ton capacity.

The boxcar grew again in 1896. Improvements had continued. Steel construction began replacing wood, car length ranged from 36 to 40 feet, and capacity ranged between 40 and 50 tons.

Entering the 20th century, the 40-foot boxcar was positioned to become the standard and dominate U.S. rail freight conveyance.

Boxcar development was not over. The early 1930s saw the introduction of the 50-foot boxcar with capacity ticking up into the over 70-ton range. The 40-foot car, however, remained popular into the 1950s.

Following World War II, the boxcar experienced another growth spurt — this time, vertically. The hi-cube boxcar was introduced in the mid-1960s as a vehicle that could haul more lightweight freight in a space that was taller as opposed to longer or wider. Translated: cus-

Texas & Pacific No. 40632, a 40-foot Pullman-Standard PS1 boxcar, is representative of the standard U.S. boxcar. This size remained popular into the 1950s, when larger sizes took over. Three photos, Tom Kline

The 40-foot boxcar grew to 50-feet long in the early 1930s. Car doors became larger affording more convenient loading and unloading. The added length increased capacity to 70 tons. L.E. Raby, Tom Kline collection

In the 1960s the boxcar grew in two dimensions — length and height. The length grew to 60 feet, while the interior height expanded from a standard 10 feet, 11 inches to a new hi-cube height of 13 feet.

Measuring 86 feet long, Penn Central No. 293936 represents the larger boxcars introduced in the early 1960s. With nearly 10,000 cubic feet of space, these rolling barns are ideal for auto parts.

tomers, like appliance manufacturers, had factories with rail-loading doors spaced for 40-foot cars. The choice was a major factory remodeling to respace the loading doors or increase shipping capacity with a taller boxcar. When factory remodeling did take place, it gave rise to the 60-foot, hi-cube boxcar, yielding even greater capacity.

A final size iteration we'll mention here came about in the early 1960s. One driving factor in boxcar expansion was the desire to move greater tonnage. Another significant consideration was providing room for what was being shipped. Automobiles and auto parts have been shipped by rail since before World War II. Over the decades, cars and their parts have grown significantly. To accommodate larger parts and more of them, 86-and-89-foot-long boxcars were introduced.

We still see boxcars of varying sizes on U.S. railroads today. The standardization of container shipping has curtailed the size growth of boxcars and knocked them from their once-dominant position. For some goods, though, the boxcar is still the preferred way to travel. — *Bob Lettenberger*

Q While visiting Horseshoe Curve near Altoona, Pa., I noticed a high-pitched steel "squealing" from what I suspect was a brake application. The train was ascending the mountain. Was this the brakes or did something else cause the noise? — *Tom Ciavarella, Pennsylvania Furnace, Pa.*

A Heading up the mountain around Horseshoe Curve it's doubtful that the squealing was generated by a brake application. A more likely possibility is

On a curve, whether ascending, descending, or level, steel wheels on steel rails can emit a squealing sound. One will often hear such sounds from trains on Norfolk Southern's Horseshoe Curve. Nolan Majcher

the flanges of the wheels on the outside of the curve being forced against the steel rail. As a train moves up or down a hill on a curve, there will be side-to-side movement depending on in-train forces, how the car is loaded, and the condition of the track. Consider also, when you make a turn with a road vehicle, the front wheels aren't mounted on a solid axle and turn in the direction indicated by the steering wheel. On a freight car the wheels remain in a fixed position in relation to the axle carrying them. The entire truck turns, not the individual wheels. Combined with side-to-side movement, this unaligned contact will cause the steel-on-steel squealing.
— *Trains staff*

Q Virtually all road diesels run in multiple-unit lash-ups with all locomotives identically configured with cabs. What are the trade-offs between commonality of design and production versus possible savings from creating "B unit" configurations that omit the cab subsystems? — *Henry Anderson, Cornelius, N.C.*

A The trade-off is convenience. Yes, production costs are reduced when considering a "B" or cabless locomotive. Eliminated are: the in-cab control stand, crew seating and comfort facilities, mandated FRA window glazing, heating and air conditioning, and the cab structure, itself. Also eliminated is the cost of maintaining the various appliances and cleaning the cab. While reducing such costs add up to a savings, there is an overriding factor — to be useful, the locomotive must be controlled. This requires a cab with control facilities.

When all sides of the cabless debate are considered, the convenience of having a cab with controls versus not having one looms large. Contemporary locomotive consists can be divided in just about any manner. If B units are involved, a cab needs to accompany them.

There is a design consideration at play as well. EMD is credited with developing the B unit. When introduced in 1939, the FT generated 1,350 hp. By mating the cab unit with a cabless B unit, EMD sold a locomotive rated at 2,700 hp. The cabbed A unit and B unit were semi-permanently coupled with a drawbar, similar to what connects a steam locomotive to its tender. EMD also promoted the idea that two FT locomotives — an A-B-B-A configuration — would generate 5,400 hp. Unlike today, the EMD concept was that A and B units would be constantly mated to generate desired horsepower output. As diesel locomotive technology advanced and horsepower per unit increased, the need to semi-permanently couple units went away.

The 1930s through the 1950s were the heyday of B units. Alco, Baldwin, EMD, and Fairbanks-Morse all offered locomotive models with both A-and-B-unit variations.

There are examples of B units in the 1960s and beyond, but the ranks are thin. A number of railroads, especially the Burlington Northern and the Santa Fe, built B units from wrecked cab locomotives. Alco and EMD, to satisfy the Union Pacific's desire for a 15,000 hp, three-unit freight locomotive, developed high-horsepower B units in the early 1960s. EMD produced the DD35 in 1963. The idea was to sandwich two 5,000-hp B units between two standard GP35s. The DD35 was two GP35s on one frame. In 1964, Alco offered the A-B-A combination of a C855 and C855B, a three-unit, 16,500-hp monster. Only one set was built.

The final request for regularly manufactured B units came from the Santa Fe in 1991. The order was for the EMD GP60B.
— *Bob Lettenberger*

Santa Fe EMD F7A No. 43C heads an A-B-B-B-A consist on the *San Francisco Chief* at Dalies, N.M., in February 1967. EMD developed the B unit giving railroads the ability to add more power as needed. Tom Otoski

First, EMD built the cabless DD35, second in this consist. Union Pacific asked for an cabbed version, as well. Here DD35A No. 84 leads its train up Wyoming's Sherman Hill on May 12, 1968. Steve Patterson

Santa Fe No. 5517, a SD45-2B, helps lift a train over California's Tehachapi Pass. The home-built unit is one of eight that Santa Fe constructed from other SD45-2s. It's March 1992. Steve Schmollinger

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FEBRUARY 4-5, 2023: Monticello 2023 Train Show. Saturday 10am-5pm and Sunday 9am-1pm. Berndes Center, 766 N. Maple St., Monticello, IA 52310. Tables $30. Admission: $5, children under 12 free w/paid adult. Monticello RR Club, PO Box 169, Monticello IA 52310 or email Ron Ackermann: rack611@gmail.com

FEBRUARY 24-25, 2023: Asheville Train Show. Western North Carolina Agricultural Center. Friday noon-7:00pm and Saturday 9:00am-5:00pm. Admission $6.00, under 10 free. All scales, all gauges, collectibles, artifacts, operating layouts, hundreds of vendor tables. More: www.Asheville-Trainshow.com

MARCH 4-5, 2023: 27th Annual Train Show. New Bern Riverfront Convention Center, 203 S. Front St., New Bern, NC 28560. Saturday 9:00am-5:00pm; Sunday 10:00am-4:00pm. Admission $8.00, under 12 free w/adult. Operating layouts, over 90 vendor tables, food concession. George Creathorne, 201-213-6907

APRIL 1-2, 2023: Rocky Mountain Train Show. National Western Complex, 4655 Humboldt St., Denver, 80216. Saturday, 9:00am-5:00pm, Sunday 9:00am-4:00pm. 3 acres of model trains, all scales, 30 layouts, 700 sales tables, clinics and more. Admission $13.00, under 12/scouts in uniform FREE. Free Parking. 303-364-0274

All listed events were confirmed as active at the time of press. Please contact event sponsor for current status of the event.

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ADVERTISERS

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Heading for home

The warm autumn afternoon of Oct. 8, 2020, finds a Kansas City Southern grain shuttle at Firth, Neb., on BNSF's Saint Joseph Subdivision. KCS No. 4623, a GE AC4400CW, is heading the train back to the railroad's namesake city.

Energy

BNSF's Aurora Local, with GP38AC No. 2128 on the point, jumps out from the shadow of a parked coal load on the rolling plains near Tamora, Neb., on Nov. 13, 2018. This is a power buffet with coal, oil, and wind represented.

See Z train

A pair of BNSF ET44C4s, Nos. 3728 and 3864, parallel Interstate 76 in eastern Colorado as they race along with the daily Z-CHIDEN. It's July 17, 2021.

The blade runner

With foreign power up front in the form of Canadian National GE ET44AC No. 3227, train U-CNIONL, the final load of wind turbine blades bound for O'Neill, Neb., crosses the Missouri River into the Cornhusker State on BNSF's Creston Subdivision on May 10, 2022.

An Easter treat

Two Grinstein green and cream BNSF SD70MACs, Nos. 9653 and 9702, rumble into Pleasant Dale, Neb., with coal load C-NAMMON bound for Louisiana on an unseasonably warm Easter Sunday 2021. The colors, Burlington Northern leftovers, are named for Gerald Grinstein, BN president.


9653
BNSF

Long time running

A pair of ex-Penn Central SD40s power the Nebraska Central Railroad's Hordville (Neb.) turn over the Platte River south of Central City, Neb., on a sunny May 19, 2020. It's been decades since these units left the erecting bay in La Grange.

A golden day

BNSF's Beatrice (Neb.) local has just picked up fertilizer loads at the Koch plant in Hoag, Neb., and is ready to head north to Crete, Neb. This was March 2, 2020 — the 50th anniversary of the Burlington Northern. GP40M No. 3020 can trace its roots to BN predecessor Chicago, Burlington & Quincy.

August VanCleave is a 24-year-old rail enthusiast and graphic design major in his senior year at the University of Nebraska-Lincoln. His grandfather, Kevin Piper, is also an enthusiast and has kindled August's passion for railroad art and photography. Piper retired after a 35-year career as a locomotive engineer for five railroads. In April 2022, August presented his work and philosophy at the Center for Railroad Photography & Art's Conversations as one of two docent attendees. If this is not enough railroad hobby, he also models BNSF's southeast Nebraska operations in HO scale.

A Platte River ramble

With a single Boeing P-8 Poseidon fuselage up front, BNSF's H-KCKLAU snakes along the banks of the Platte River near Louisville, Neb., on June 14, 2020. That's GE C44-9W No. 4175 in the lead.

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