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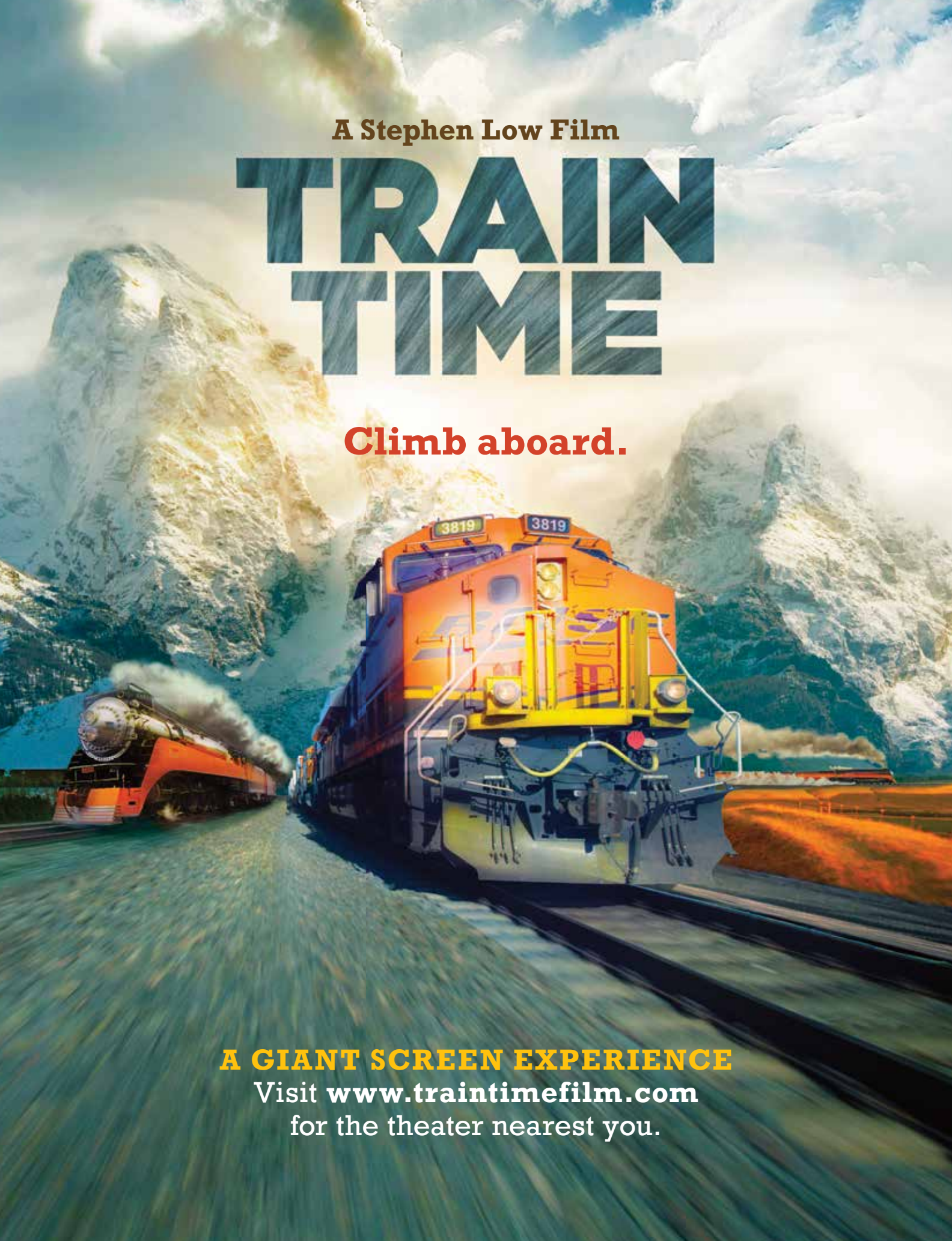
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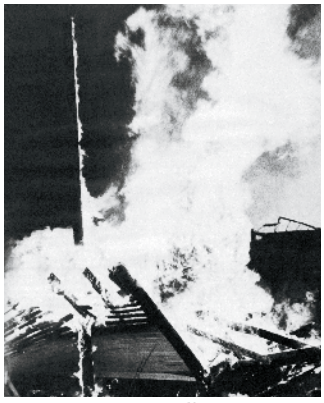

ON THE COVER:
Amtrak No. 715, a northbound *San Joaquin*, leaves Planada, Calif., behind a General Electric Dash 8-32BWH on March 8, 2012.
David Styffe

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From the Editor

Carl Swanson
cswanson@kalmbach.com
@TrainsMagazine
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The article "Walk through fire" on page 14 details the 1978 derailment of 23 railcars in the middle of Waverly, Tenn. Two days after the accident, as workers cleared the wreckage, a propane tank car exploded, killing 16 and severely injuring 43.

The accident had far-reaching consequences, both for railroaders and for first responders dealing with hazardous cargo.

A similar derailment occurred in Weyauwega, Wis., in 1996. Faced with burning propane tank cars, officials evacuated the entire town and kept people away for 16 days until the wreckage could be removed. There were no deaths or serious injuries.

The lessons of Waverly have not been forgotten.

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Amtrak, VIA ask builders to look at new long-distance cars

Requests from both operators could increase interest by manufacturers

▲ **A baggage car from Amtrak's most recent order for long-distance equipment — 130 Viewliner II cars built by CAF USA — is under construction at Elmira, N.Y., in October 2013.** Bob Johnston

AFTER YEARS OF INACTION, Amtrak and VIA Rail Canada announced a little more than a week apart that they had taken the first step in the process to replace their aging long-distance railcar fleets.

Amtrak announced Jan. 19 it had contacted potential carbuilders in December with a Request for Information, "defining and describing the scope of Amtrak's overnight train fleet — including Superliner I and II, Viewliner I and II and Amfleet II railcars — and soliciting input … regarding replacement of this equipment." Just eight days later, VIA issued a similar request, seeking "a supplier to design, manufacture, test, supply, deliver, and commission … coaches, sleepers, diners, multipurpose, and baggage cars," as well as locomotives, "through an open competitive procurement process."

Assuming qualified firms are willing to participate, Amtrak says it expects to release a formal Request for Proposals later this year.

VIA plans a general information session in March, and confidential meetings with individual carbuilders beginning in May. The expedited VIA timeline essentially acknowledges that any potential manufacturer has already responded to Amtrak's request for information.

Having two sets of North American customers seeking orders for equipment that hasn't been built in decades could increase the interest of prospective builders.

PROBLEMS WITH RECENT ORDERS

Except for Siemens' Brightline fleet, recent U.S. intercity passenger car orders have been procurement disasters. Nippon Sharyo had the low bid in 2012 on federally funded Midwest and California bilevel cars; after five years of lax oversight, the states realized the Japanese company lacked the expertise to build them. Siemens was tapped to convert the order to single-level Venture cars, but most remain sidelined due to production and quality-control issues.

CAF USA, a Spanish company that set up shop in the U.S., needed more than a decade to deliver 130 sleepers, diners, and baggage cars to Amtrak. And the carrier's new Acela trainsets being built by Alstom are running at least two years behind the original schedule.

URGENCY FOR VIA

VIA's announcement came as it deals with questions about the structural integrity of the stainless steel cars that are the backbone of its long-distance and remote-service fleet. Trains using those cars, mostly built by Budd in the 1940s and 1950s, currently operate with buffer cars to provide protection in case of colllisions. — *Bob Johnston and David Lassen*

New York's Grand Central Madison opens

Service begins on long-delayed East Side Access route from Long Island

The mezzanine level of Grand Central Madison awaits the station's opening on Jan. 25, 2023. Color coding and the number on the floor place this at 46th Street. Two photos, MTA/Marc A. Hermann

THE NEW LONG ISLAND RAIL ROAD TERMINAL in Midtown Manhattan, deep beneath Grand Central Terminal, has for years been defined by the lengthy delays and massive cost overruns in its construction.

With that station finally open — its Grand Central Madison name reflects GCT's former Madison Yard, the storage facility turned into the station concourse — officials at the Metropolitan Transportation Authority hope it will come to be recognized for its transformative impact.

The station opened Jan. 25, completing the East Side Access project in the works for decades. Tunneling began in the 1970s, and was set aside during New York City's financial crisis; revived in 1998, it was supposed to cost $3 billion and be finished by 2009.

Reports of the final price tag vary, but it will be around $12 billion.

For that, the MTA and LIRR will do more than shorten the commute of some Long Islanders, though that was the original goal and remains part of the outcome.

"It delivers us another route in and out of the central business district in Manhattan," says MTA CEO Janno Lieber, "in the event of emergencies of whatever variety … It creates resiliency."

It also sets the stage for a dramatic remake of LIRR operations. The initial service, a shuttle between the new station and Jamaica in Queens, was a prelude to a schedule revision that will include a 41% increase in weekday trains; see Manhattan trains split 55%-45% between Penn Station and Grand Central Madison; and allow reverse-commute scheduling. That last feature had not been possible because of the capacity constraints that existed on the 9.8-mile Main Line before the Third Track project completed in October 2022.

The new station is a 700,000-square-foot space beneath the most expensive real estate in North America, notes Jamie Torres-Springer, the head of MTA Construction & Development. "While we think the price tag was unquestionably too high because of longstanding management issues," he says, "it's also a worthwhile investment."

The concourse stretches beneath five city blocks, from East 43rd to East 48th streets. It will eventually have 25,000 square feet of retail space, but none will open this year. Reflecting how long the project has been in development, the concourse was originally conceived with an enormous number of ticket windows. The rise of digital ticketing and smartphone apps has made most of those superfluous; they are being repurposed into customer and tourist information, lost and found, and similar uses.

Four sets of escalators, at one-block intervals, will carry passengers to the mezzanine level, which lies between the eight new platform tracks, with two upper and two lower tracks each in west and east caverns. Those escalators, at 182 feet, are the MTA's longest; a ride will take almost 2 minutes.

The opening creates, for the first time, a link between Metro-North Railroad and Long Island Rail Road trains at one location. The MTA will pursue the ridership opportunites this presents by offering a "Combo Ticket" allowing travel on both railroads. The cost will include the regular fare from the point of origin to Grand Central, plus an additional $8 to any destination on the other railroad.

"I think that's a market that is there," says Catherine Rinaldi, president of the Metro-North and interim president of the LIRR. "… I do think it will knit the region together in a sort of economic way that will be enormously advantageous. … [It] certainly wasn't one of the drivers when the project was initially funded, but I think this is a really important feature." — *David Lassen*

Technology has decreased the need for the large number of ticket windows called for in the original station plan, so some are being repurposed for other uses.

CN's operations chief wants to stick with plan

Harris, back in job he held from 2005 to 2007, places emphasis on scheduling

Newly rebuilt AC44C6Ms Nos. 3301 and 3300 lead an eastbound Canadian National manifest freight at Milton, Ontario, on the Halton Subdivision on Oct. 30, 2022. Hayden Peckford

WHEN IT COMES RIGHT DOWN TO IT, railroading is not complicated, Canadian National Chief Operating Officer Ed Harris says.

It's all about sticking to a schedule, following the operating plan no matter what, and running safely.

Harris, who served as CN's operations boss from 2005 to 2007, was named COO Nov. 28 after serving as a consultant since April. One of the first things he noticed was that CN wasn't sticking to its operating plan.

"It was something as simple as running on time. From that we looked at train length. We were running trains way too long, way out of slot, which just created a lot of havoc across the network and really killed our service offering," Harris says. "So we got trains back where they need to be, and lo and behold our velocity jumps up significantly … 10% or so. It made all the difference in the world for getting across the railroad."

As average train speed came up, unplanned recrews and deadheads went down, and service improved. In the fourth quarter, 85% of CN's trains departed on time, up 10% from a year ago. CN did not disclose its arrival on-time performance.

"Tighter schedule adherence … is near and dear to my heart," Harris says. "We stay with the schedule seven days a week and we run the same schedule every day. If the traffic's there, we're going. If the traffic's not there, we're going. Whether it's 120 cars or 40 cars, we're leaving on time. That's really the secret of the business, the way I was brought up."

Average velocity was 207 car-miles per day in 2022's fourth quarter, up 10%.

"Railroading needs to remain simple. I think we got away from that over the past few years," Harris says. "Velocity creates capacity. The faster we are, the more we can handle. And the more we stick to the plan, the more reliable we are."

Harris' operations philosophy dovetails with CEO Tracy Robinson's back-to-basics approach to railroading.

"We are building resiliency based on running a scheduled operating plan with a focus on service, asset utilization, and velocity," Harris says.

The focus this year, he says, will be on arriving on time: "We're going to take scheduled railroading to the next level … with a focus on destination and train performance and individual trip plans."

Harris says CN will reinstitute individual car trip plans, which the railroad began two decades ago. Trip plans allow railroaders to see where a car went off plan, figure out why, and make corrections every day.

Harris, 73, left CN two years before it acquired the Elgin, Joliet & Eastern to create a route through Chicago that ties together its former Wisconsin Central, Illinois Central, and Grand Trunk Western lines.

"We fly through Chicago. I mean, instead of taking 12 hours to get through the city to get to our yards on the south end, we're around it in an hour. That benefit is unbelievable," Harris says. "And the ability to run trains out of Winnipeg through the J to Toronto around the south of Lake Michigan is just fantastic. I wish I could have been here when they bought it because I would have been on the first train going around the horn." — *Bill Stephens*

NEWS BRIEFS

Environmental report, which delayed CP-KCS merger decision, sees minor impact

The **SURFACE TRANSPORTATION BOARD** decision on the **CANADIAN PACIFIC-KANSAS CITY SOUTHERN** merger, which by one measure was due Jan. 19, was delayed by completion of the final environmental impact statement, released on Jan. 27. The board cannot act until at least 30 days after that document is published in the Federal Register. The final environmental report largely reached the same conclusion as the preliminary version released in August 2022, saying most potential impacts "would be negligible, minor, and/or temporary." STB chairman Martin J. Oberman (left); David Lassen

A **UNION PACIFIC** plan to test ground-based conductors, which it calls "expediters," was on hold because the union representing conductors refused to participate, the Associated Press reported. UP said it remains in mediation with two committees of the **SMART-TD** union and negotiations continued. UP had outlined plans for a four-stage pilot program (see "News," March 2023).

It will cost $6.7 billion to extend **CALTRAIN** passenger service, and the planned route of California's high speed trains, some 1.3 miles to a downtown San Francisco transit center, according to an estimate from the **TRANSBAY JOINT POWERS AUTHORITY** — a 34% increase from a prior estimate in 2015.

SIEMENS MOBILITY said it was working with **AMTRAK** to make software and hardware modifications to ALC42 long-distance passenger diesels following "isolated incidents" in which the locomotives lost power following "drastic changes of temperature." An eastbound *Empire Builder* was stranded in rural Minnesota in December when all of its ALC42s failed. Amtrak is taking delivery of 125 of the ALC42s, a long-distance version of the Charger locomotive also used in Amtrak regional service and by several commuter operators. Bob Johnston

Brightline prepares Orlando station, inks deal with Uber

'Flip-flap' boards to offer retro touch at airport station

FLORIDA PASSENGER OPERATOR Brightline had a busy start to 2023, the year it expects to launch revenue service to Orlando, offering a look at Orlando station plans and finalizing a new agreement with ride-sharing company Uber. Some details:

• **Orlando station renderings:** Interior work has been in progress at Brightline's station in Terminal C at Orlando International Airport since February 2022. The 37,500-square-foot space is an integral part of an 80,000-square-foot complex at the south end of the airport with gates for Jet Blue and foreign carriers, concessions, and Parking Deck C, which will have 350 spaces reserved for rail travelers.

As illustrated in renderings, part of the station's upstairs area will feature the Mary Mary Bar, serving "craft cocktails and lite bites," which overlooks arriving and departing trains on the platforms below.

A nod to the past will be what the company characterizes as a "flip-flap message board that can rotate alphanumeric text and/or graphics [to] provide updated train schedules, boarding times, news of the day, and other announcements."

Veteran travelers know these as Solari departure boards, named after their Italian manufacturer. Philadelphia's William H. Gray III 30th Street Station and New York's Penn Station were the last major stations to lose the "flappers" several years ago.

The boards pictured over the bar are narrow versions tucked under a video screen. One of their unsung advantages, as passengers anxiously waiting for tracks to be posted know, is that the sound means new departure information is available.

• **Uber partnership**: Brightline's emphasis on completing the "first mile-last mile" component of travel was underscored by inking its exclusive agreement with Uber to provide pre-booked private and shared rides to and from its five South Florida stations.

A rendering of the bar and lounge at Brightline's Orlando airport station shows the narrow "flip-flap" boards under video screens above the bar. Brightline

Through-ticketing options are linked on Brightline's website and app, augmenting previously available walk-up, fixed-route and electric golf vehicle shuttles, as well as BrightBike rentals. The company also offers dedicated bus shuttles between its stations and Miami International Airport, as well as Miami Beach.

Premium-class passengers are entitled to complimentary rides within a 5-mile radius of stations, while Smart-class patrons can add a ride to and from stations for a fee without distance restrictions. The partnership represents the first time Uber has linked directly to an intercity rail service in the U.S. — *Bob Johnston*

Union Pacific has lost its way

Railroad has sacrificed service for a lower operating ratio

Bill Stephens
bybillstephens@gmail.com
@bybillstephens
Analysis: Trains.com

It's fitting that Union Pacific's logo is a shield. The beleaguered railroad needs one, given the barrage of arrows coming its way. UP has a long list of problems, many of them self-inflicted as a result of its pursuit of a 55% operating ratio. There are so many issues confronting UP that it's hard to know where to begin.

Amtrak could have targeted any host railroad for its first regulatory complaint over the handling of passenger trains. But in December it chose UP, whose woeful treatment of the *Sunset Limited* makes it the worst performing long-distance train.

How bad? Well, Amtrak says that in its worst quarter last year 90% of *Sunset* passengers arrived late, with UP responsible for roughly 75% of the delays between New Orleans and Los Angeles. UP disputes this and blames the *Sunset*'s outdated schedule.

The primary culprit, Amtrak claims, is UP's practice of running freights over siding length. When the *Sunset* gets behind a long train, there's nowhere to overtake it. And so the *Sunset* gets later.

Amtrak trains are the canary in the coal mine, and they're sending a warning about the state of UP's operations. Yes, like the other three big U.S. railroads, UP has experienced crew shortages as it's become harder to hire in a tight job market. But CEO Lance Fritz admits UP was already running too lean when crew shortages cropped up. So when harsh winter weather raked the railroad in early 2022, UP coagulated and never fully recovered.

One symptom of UP's morass is its skyrocketing use of embargoes. Last year UP issued more than 1,000 embargoes in response to congestion, compared with just 27 in 2017 — the year before it adopted a Precision Scheduled Railroading operating model.

A westbound Union Pacific manifest freight rolls through Oak Park, Ill., on March 18, 2018. David Lassen

UP issues the majority of congestion-related embargoes, which alarms regulators. The Surface Transportation Board called UP on the carpet during hearings in December. Congestion, STB Chairman Martin J. Oberman says, is a euphemism for "we don't have enough crews to move our trains and keep our network fluid."

Loop Capital Markets analyst Rick Paterson says UP's reliance on embargoes shows a flaw in the system, whether it's the railroad's level of crews, power, or track capacity. "Something is not right, and it hasn't been for a while," he wrote in a note to clients.

Another way Uncle Pete stood out last year: It was the only railroad slapped with an STB emergency service order. In June, UP was ordered to prioritize delivery of corn to Foster Farms, a California poultry producer whose feed supplies were dwindling. UP came through, but didn't learn its lesson: Foster Farms sought another emergency service order in December.

Still pending at the STB are two cases customers have brought against UP.

Sanimax, a small shipper in the Twin Cities, argues that UP is violating its common carrier obligations by missing switches and unilaterally reducing local service from five days per week to three.

The Omaha Public Power District has filed a rate complaint regarding a reciprocal switch for unit coal trains interchanged with BNSF Railway a few miles from the UP-served power plant.

Safety also is a concern. UP's train accident rate was the highest among the big Class I railroads in 2021 and through the first 10 months of 2022, according to Federal Railroad Administration data. UP's employee injury rates are in line with the other big systems. But four UP employees died in three tragic accidents between August and November last year.

If there's a common thread here, it's UP's 55% operating ratio target, which prompted the railroad to slash costs while sacrificing service and operational resiliency. Starting with an O.R. goal and working backwards distorts the entire business.

Ironically, it costs more to run an under-resourced, sluggish railroad with poor service. Revenue is lost when traffic is diverted to trucks. Customers complain. And regulators demand answers.

Paterson puts it this way: "If UP is unable to stabilize service over the next few years, the end game will be more share losses to BNSF, no deceleration in share losses to trucks, more pushback from price-fatigued captive shippers culminating in greater re-regulation risk … That's not Building America and nobody wants that, including presumably UP management."

It's time for an about-face in Omaha. UP should ditch the O.R. goal and focus on service. Until it does, UP's "Serve, Grow, Win — Together" strategy will be an empty slogan.

Detailing operations

Moving tonnage over Southern Pacific's Siskiyou Line

Brian Solomon
briansolomon.author@gmail.com
@briansolomon.author
Blog: briansolomon.com/trackingthelight/
Podcast: Trains.com

A recent discussion with retired Southern Pacific dispatcher J.D. Schmid was devoted to the nuts and bolts of operations on the western portion (compass south) of SP's Siskiyou Line: specifically those required to move freights timetable west from the yards in southern Oregon to the connection with SP's Cascade Line at Black Butte, Calif. It's a sinuous line with a series of grades in excess of 3% (compensated curvature).

The highest and most difficult was the grade between Ashland, Ore., and Hornbrook, Calif., over Siskiyou Summit. This ascended more than 2,200 feet through exceptionally sharp curves and several tight tunnels to crest in a 3,108-foot-long tunnel (No. 13) at an elevation of 4,135 feet. SP recognized the deficiencies of its Siskiyou Route and in the 1920s supplanted the line with its well-engineered Natron Cutoff via Cascade Summit.

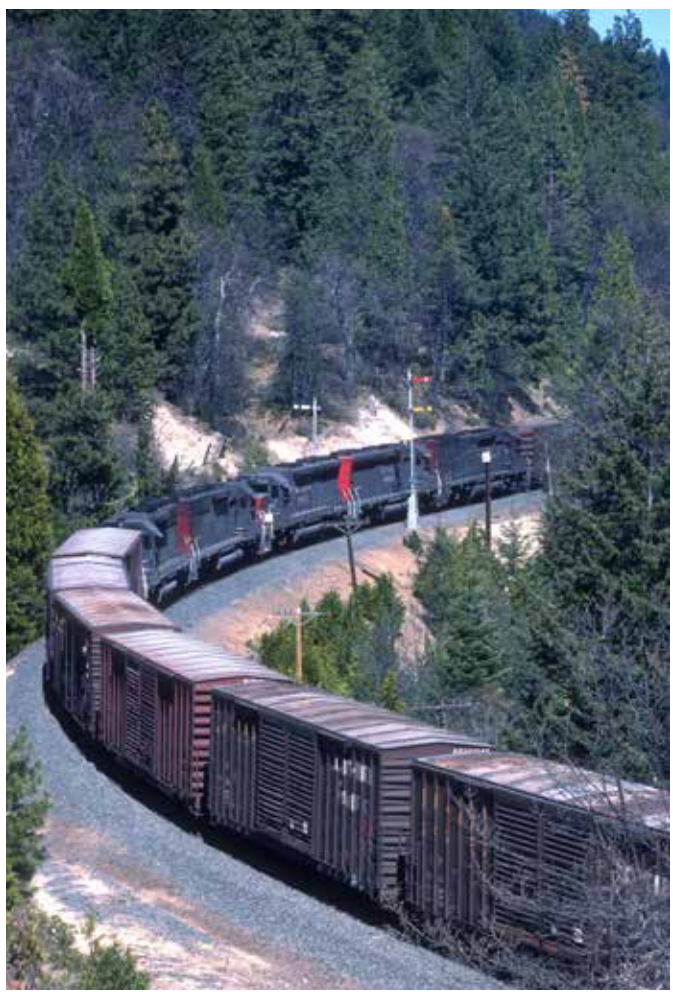
What is often forgotten is that SP continued to operate over the Siskiyou Line until it sold the route in 1992. By the 1970s, despite its primitive engineering, SP was operating some remarkably heavy freights over Siskiyou Summit to accommodate traffic originating along the line.

The Siskiyou Line's grades imposed a safety limit to the trailing tonnage of 2,700 tons. This limitation — often described as "maximum allowable drawbar pull" — meant hauling more than 2,700 tons risked breaking the coupler/drawbar connections. Despite this limitation, by 1975 SP routinely operated trains up to 7,200 tons with midtrain helpers. By this time, the railroad had invested heavily in EMD SD40, SD45, SD40T-2, and SD45T-2 diesels, each of which was rated to haul 900 tons on the steepest grades of the Siskiyou Line and assigned combinations to freights originating at Ashland, Ore., and traveling toward Roseville, Calif. To balance the output and haul the most tonnage possible within the limitations of the drawbar restriction, SP routinely assigned westward trains out of Ashland three big units on the head end, with a five-unit midtrain helper.

Since these freights were longer than the yard tracks, the head end would pick up cuts of cars from two yard tracks and haul them west to Belleview, where it would hold on the main waiting for the helper to gather the remaining cars from a third track and, with caboose at the back, proceed west to couple up to the head portion of the train. With this arrangement, both head end and helper would be within the limits of the drawbar restriction, while the helper would also shove on approximately a third of the tonnage of the head portion of the train.

These moves were accomplished within yard limits (as prescribed by Oregon Division Timetable No. 4, effective on April 27, 1975). By this time, yard limits had been extended from milepost 451.6 (timetable east of Medford) to 425.5 east of Belleview.

By the time I observed operations in the early 1990s, SP had shifted the assembly of westward freights to Medford yard. This eliminated the need to bring the train out to Belleview and enabled crews to assemble the whole consist at Medford. It was quite a show to witness SP's MERVM (Medford-Rosevile manifest) snaking its way over Siskiyou Summit with eight units in full run-8, then listening to the howl of EMD's in full dynamic brake restraining the tonnage descending the west slope.



In April 1990, at milepost 409.8, the midtrain helper of SP's MERVM (Medford-Rosevile manifest) was in dynamic braking to help control the train's descent of the west slope of Siskiyou Summit. Brian Solomon

SUSPENDED BETWEEN NIGHT AND DAY

PHOTOGRAPHER AND AUTHOR Ted Benson has called the love of trains a congenital birth defect. He was being facetious, but that sounds about right to me. Why else would a grown man park on the side of a gravel road and hike for two hours through dense undergrowth straight up the side of a mountain? There are no trails here, but there is a rock that looks down on the tracks and out over the jagged layers of the Oregon Cascades, opening toward the promise of the Willamette Valley. But that rock holds no promise of photographic reward equal to the effort required to reach it. It's 2010, this lumber artery of Southern Pacific lore is down to just 10 trains per day, and I have nothing more than an irrational hope that maybe, just maybe, one of them will pass during a moment of visual splendor. And yet somehow, of the five southbounds due in the next 24 hours, one them would shine its lights around the distant curve in that magic moment when the world is suspended between night and day, the stars still hanging above a horizon kissed by the first pink glimmer of dawn. — *Scott Lothes*

Walk through fire

Friday, Feb. 24, 1978. A building in the New Town section of Waverly burns down following the explosion of tank car UTLX 83013. Waverly Exchange Club

Waverly, Tenn. — The train disaster that changed America

by Yasmine S. Ali, MD

February 24, 1978
Friday, 2:55 p.m.

The whole world had turned upside down.

Police Sgt. Elton "Toad" Smith looked up to see what had struck him on the forehead. What he saw made his blood run cold in spite of the sudden, searing heat. It seemed as if the entire railbed had been hurled into the sky, in one giant whirlwind of rocks the size of golf balls. Debris flew everywhere. Beams from buildings, metal from train cars. Even a hard hat whirled above him, leaving him to wonder about the head that had been wearing it. And surrounding it all were the never-ending billows of smoke, streaked through with blinding flashes of white.

Friday afternoon, Feb. 24, 1978. Smoke could be seen more than 20 miles away after the tank car carrying LPG exploded. City of Waverly

Toad had run no more than three steps from his patrol car in the center of Waverly's New Town section when he became aware that he was waist deep in an all-consuming blue flame that formed a wall for as far as he could see. This shimmering blue wall swept by and through him, engulfing everything in its path, marching all the way out to Commerce Street and passing in front of Slayden Lumber Co.

Oh, God, what a way to die, Toad thought. But then the blue flame simply disappeared, going out as quickly as it came, and Toad hoped that would be the end of it.

He kept running, picking up speed, knowing that he had to get out of there, put some distance between himself and the whirlwind of debris, or at the very least, get behind a building — preferably one that was still standing. As he ran, he became aware of a hideous noise ominously close to him, a sound he would never forget for the rest of his life. It reminded him of the sizzling sound a piece of raw meat makes when dropped into burning-hot oil. "Tshhh," hissed this awful noise near his ear, and he involuntarily turned his head to locate the source.

The sizzling seemed to be coming from inside his own ears now, and as he turned and looked around, glancing behind him while still running parallel to the large front wall of Slayden Lumber, he saw the far end of the wall spontaneously combust.

He had never seen anything like this before ... 23 train cars, all piled on top of one another in a jumbled heap ...

He watched in disbelief as it went up in one big fireball.

He was now almost to the end of that same wall, nearly to the right front corner of the massive Slayden Lumber building, the left end of which was going up in flames behind him, and he just kept thinking to himself, *If I can get behind it, if I can just get behind this building, maybe I could stay out of it. Maybe I might have a chance.*

When he got to the remaining front corner of the building, however, he found that the fireball had beaten him to it. He stood stock-still, watching in horror as that ball of fire rolled out in front of him.

There was nowhere left to go, no place left to run. So, Toad took one last look at the ball of fire, shut his eyes, and with the prayer "Lord, help us all" on his lips, ran right through it.

February 22, 1978
Wednesday, 10:45 p.m.

Frank Craver's phone was ringing.

A phone call at this hour could not be good news. Not for a senior captain of the Volunteer Fire Department in Waverly, Tenn. When he picked up the phone, the voice on the other end was that of Police Chief Guy Barnett, calling from the City Hall dispatcher's office. Chief Barnett informed him that there had been a train wreck at the main crossing.

"I'll be right down," said Frank, not sure what to expect. Climbing out of bed and getting dressed, Frank tried to imagine what a train wreck would look like. He couldn't say that he had ever seen one.

As a jack-of-all-trades at the age of 37, Robert Franklin Craver had seen and done a great many things thus far, but working a train wreck was not among them. His father had died on the eve of Halloween, 1949, when Frank was just 9 years old. When he was 25, he had joined the United States Air Force as a volunteer during the Vietnam War. He was an Airman Third Class from 1964 to 1965. He worked as an Air Policeman, and although he had volunteered for a four-year tour of duty, he received a hardship discharge and went back home to work and help support his mother and younger brother.

It was not unusual for Frank to hold several jobs at once. Most recently, he had served as funeral director and embalmer for

The derailment was caused by this cracked wheel on L&N gondola No. 171228, which was added in Colesburg, Tenn., the night of the derailment. The train crew did not inspect the car, leaving the hand brake set. Brake friction combined with the wheel's high-carbon-content steel led to the crack. City of Waverly

In the derailment, boxcars landed on top of the two white tankers — UTLX 83013 and 81467 — carrying propane, causing structural damage. This view is prior to the explosion. City of Waverly

Waverly's Luff-Bowen Funeral Home, and had been a county ambulance driver for the time that Luff-Bowen held the Humphreys County ambulance contract. When he wasn't busy doing either of those, he worked in the Luff-Bowen stores as a salesclerk.

One job — paid or unpaid — never seemed to be enough to occupy him; he was always wanting to be in the thick of any new adventure, and that was what had led him to become one of the 18 to 20 members of Waverly's Volunteer Fire Department, quickly moving up to fill dual roles of payroll clerk and captain. He enjoyed the camaraderie of the department and the awareness that he was being of service in times of greatest need. And now, with Chief Barnett's call, he had a feeling this was going to be one of those times.

Frank had hoped he would have what he needed with him in his vehicle, but upon reaching the site of the train derailment, he soon began to think that nothing would be enough, at least not anything that he or anyone else in Humphreys County, Tenn., had in their possession. He had never seen anything like this before. The headlights of his car revealed 23 train cars, all piled on top of one another in a jumbled heap, with two derailed tank cars among them. The railcars may as well have been giant rocks that some monstrous hand had held above the ground and let fall all at once, resulting in a mangled mountain of twisted steel and fractured wheels. The two white tankers were connected to one another, and they had come to rest in a "V" formation, one on either side of the tracks.

It was five minutes before 3 o'clock. And that was the last thing he saw and the last thought he had before the world exploded.

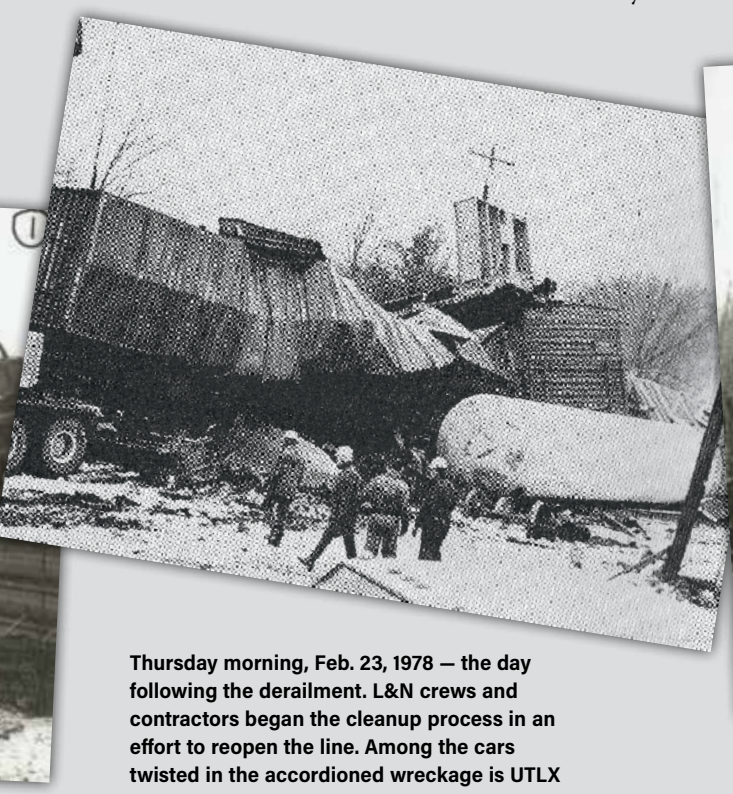
"Whoo-whee, what a mess!" Frank said to himself. The pile of wrecked Louisville & Nashville Railroad cars lay at what was then the main crossing, just steps from Waverly's New Town section. The crossing sat at the end of Richland Avenue, to the east of the town's overpass (known to all residents of Waverly as the Viaduct, which they pronounced as "vaya-dock"). One of Waverly's two fire trucks was already on the scene.

Frank had a flashlight with him, and he got out of his car to have a better look at the wreck. His breath formed a fog on the cold February air as he surveyed the damage. The two tankers looked pretty banged up. He ran the beam of his flashlight in a steady line over the chaotic heap of boxcars. And that was when he noticed the two police officers crawling atop the wreckage. There, on top of it all, were the Frazier boys.

Buddy and Joel

Officer Wallace Bernard "Buddy" Frazier had joined the Waverly police force three years earlier at the age of 22, which, in 1975, had made him the youngest police officer ever hired by the municipality of Waverly. At the time, Waverly's police department had only four patrol cars and eight police officers, two of whom were the Frazier brothers.

That Wednesday, Buddy and his younger brother, Joel, had been working the afternoon shift together as partners, assigned to the same car that night — the only one the city had available. On patrol together, they were traveling east on U.S. Highway 70 and had just passed the Waverly Clinic building at the junction with Meridale



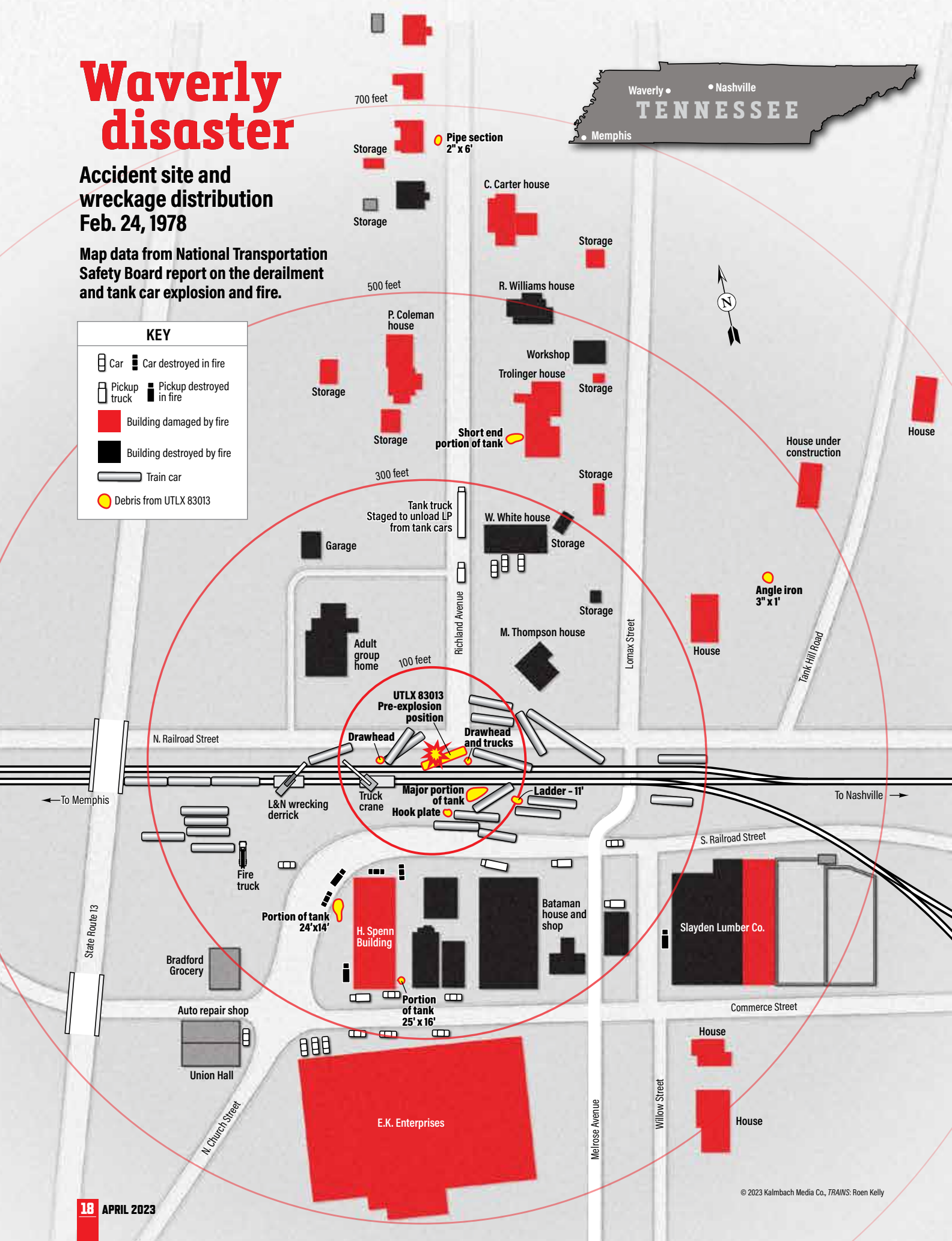
Thursday morning, Feb. 23, 1978 — the day following the derailment. L&N crews and contractors began the cleanup process in an effort to reopen the line. Among the cars twisted in the accordioned wreckage is UTLX 83013, the tank that will explode the next day. It is one of two cars in the derailment that were carrying LPG. The second car — UTLX 81467 — did not explode. Waverly Exchange Club

Cleanup continues on Thursday afternoon, Feb. 23, 1978. Tank car UTLX 83013, containing 27,871 gallons of LPG, is at left. When the boxcar was lifted off the tank car, a wheelset was tangled in the wreckage and inadvertently dropped on UTLX 83013, which further damaged the tank structure. City of Waverly

Waverly disaster

Accident site and wreckage distribution Feb. 24, 1978

Map data from National Transportation Safety Board report on the derailment and tank car explosion and fire.



Street when, a few minutes before 10:30 p.m., they noticed the westbound L&N coming into town, horn blowing. Before they reached the city limits just a few miles farther east, they received a call from dispatch to report immediately for a train derailment that had occurred at the crossing near the downtown area.

The two young officers turned around and sped back to the Richland Avenue crossing, not knowing until they arrived what exactly had occurred, not knowing whether or not a vehicle with passengers might be involved in the accident at the crossing. Upon reaching the derailment site and seeing the mountain of wreckage, they still did not know what had caused the train to derail and feared that a civilian automobile might be buried beneath the ruin.

They got out of their patrol vehicle and began to examine the pile of train cars, climbing over and around them, unaware of the danger that lay beneath.

The train's conductor finally found Buddy, hailing him from the wreckage. He said that no motor vehicles and no passengers or other personnel were involved or injured, but he had lost all communication with L&N due to the wreck. Buddy told the conductor to get in the patrol car and he would get him to a phone. Buddy lived in a house nearby, only about half a mile from the crossing, so he took the conductor to his house where he could use Buddy's home phone to call his superiors at L&N Railroad and inform them of the derailment.

February 24, 1978
Friday, 2:52 p.m.

Carolyn "Sam" Tucker, RN, was driving south over the State Route 13 Viaduct on her way back to Waverly's small community hospital, Nautilus Memorial. She and Dr. Subhi D. Ali, the only surgeon for miles around, had an outpatient case scheduled for 4 p.m. that afternoon at the hospital, and Sam intended to be there before change of shift at 3 p.m.

As she drove down the viaduct, she looked over at the train wreck, and at the white propane tanks still lying on their sides. It was an interesting sight, and there was so much of a mob down there, so many spectators milling about and taking it in. She wondered why it was always so hard to take your eyes away from a train wreck.

Frank, Susan, and the Chief

On the way back to their car, Frank Craver and his daughter Susan stopped by Police Chief Guy Barnett's vehicle in front of the Starlite Inn, about 100 feet from the tracks. Chief Barnett was in the driver's seat, scooted down in it like he always did, and he had that cap on his head, the one he liked to wear. "Have you had any sleep since the derailment?" Frank asked him.

"No, not much. I was just thinking about going to the house and laying down for a while."

Frank stood there for a few moments, conversing with the Chief and letting him know he would be out of town for the weekend. He stood with his back toward the tracks and the tank cars. His right hand was on his 6-year-old daughter's right shoulder as she stood in front of him; his left hand was resting on the ledge just inside the open window of the Chief's vehicle. Glancing down at the Timex watch on his left wrist, the wrist that rested beside Chief Barnett's left shoulder, he noted

Saturday morning, Feb. 25, 1978. Ruins of Waverly's New Town section after the fires from the explosion were finally extinguished. Water cannons remain pointed at the second tanker full of propane, labeled a "ticking time bomb" by local authorities. A new white tanker sits on the tracks in preparation for the offloading process. Waverly Exchange Club

Friday afternoon, Feb. 24, 1978. First responder "Cooter" Bowen runs past Police Chief Guy Barnett's car, which was hit by a fragment of tank car UTLX 83013. Firefighter Frank Craver's shoes are on the ground between Bowen and the Chief's car; his tattered clothes are in the foreground behind the car.
Frank Craver, City of Waverly

the time. It was five minutes before 3 o'clock. And that was the last thing he saw and the last thought he had before the world exploded.

(The material above contains excerpts from Walk through Fire: The Train Disaster that Changed America*, by Yasmine S. Ali, MD, ©2023, published by Kensington Books and now available wherever books are sold.)*

On the cold night of Feb. 22, 1978, a 96-car L&N freight train derailed in the center of Waverly, Tenn. Among the 23 wrecked cars were two white, 30,000-gallon tank cars loaded with liquid propane. Two days later, at 2:55 p.m. on the afternoon of Friday, Feb. 24, 1978, one of the propane tank cars exploded during the clean-up efforts. The explosion took 16 lives and all of Waverly's New Town section with it. More than 200 people were injured.

Those are the statistics.

But the Waverly Train Disaster was so much more than that. It was, in the end, an amazing victory of community over chaos, a show of spectacular bravery by first responders, and a triumph of a rural hospital against all odds.

Fallout from the Waverly Train Disaster also revolutionized the railroad industry from top to bottom, led to new rail safety standards on every level, prompted the passage of the Staggers Rail Act, formalized hazardous materials handling and emergency response training, and catalyzed the formation of the Federal Emergency Management Agency. It was a milestone event in U.S. history, a call to action far and wide.

And, as Buddy Frazier himself put it nearly 40 years after the disaster, when he became mayor of Waverly: "There's no telling how many lives have been saved over the years because of the lessons that were learned here."

The National Transportation Safety Board investigation into the derailment and subsequent explosion revealed the cause of the derailment to be a broken high-carbon wheel on the train's 17th car, a gondola loaded with wooden crossties that had been added to the train during a stop in Colesburg, Tenn., 37.6 miles west of Nashville and prior to the train's arrival at Richland Crossing in Waverly.

At that crossing, the fractured wheel hit a switch in the tracks, pulling its own car over on its side and derailing the 22 cars behind it.

The whole world had turned upside down. … It seemed as if the entire railbed had been hurled into the sky, in one giant whirlwind of rocks the size of golf balls.

As the final NTSB report of February 1979 stated, "Train No. 584 departed Colesburg without its brakes being properly tested; a brake test is required by Federal regulations." However, L&N did not require a brake test for train cars added at an intermediate terminal, nor did they require a brake-pipe leakage test. Because of this, the NTSB concluded that L&N's own air brake instructions "did not comply with the requirements of the Federal Railroad Administration's regulation."

This was a critical flaw, and the root cause of the disaster, because leaving the handbrake on the rear wheel of the gondola car caused it to overheat and crack, before it reached Waverly. According to the NTSB, the wheel cracked completely through its rim, plate, and hub. This loosened the wheel from its axle and moved it inward.

There was also the issue of the wheel's composition. As noted by the NTSB: "The rear pair of wheels on the gondola car had been manufactured by the Southern Wheel Company with a higher carbon content than previously cast steel wheels, in order to improve the wearing quality of the steel. However, when this high-carbon wheel was exposed to above-normal heat, such as that produced by dragging or sticking brakes,

the wheel tends to crack, break, and derail."

The NTSB further concluded that "the fractured wheel had been of lower carbon content, it probably would not have cracked." Immediately following the Waverly Train Disaster, in March 1978, the Federal Railroad Administration used its emergency powers to issue an order to remove high-carbon cast steel wheels from service — specifically, 70-ton 1% carbon cast steel wheels, known as 70T U-1 wheels. A year after the disaster, manufacturing standards for railroad wheels also changed.

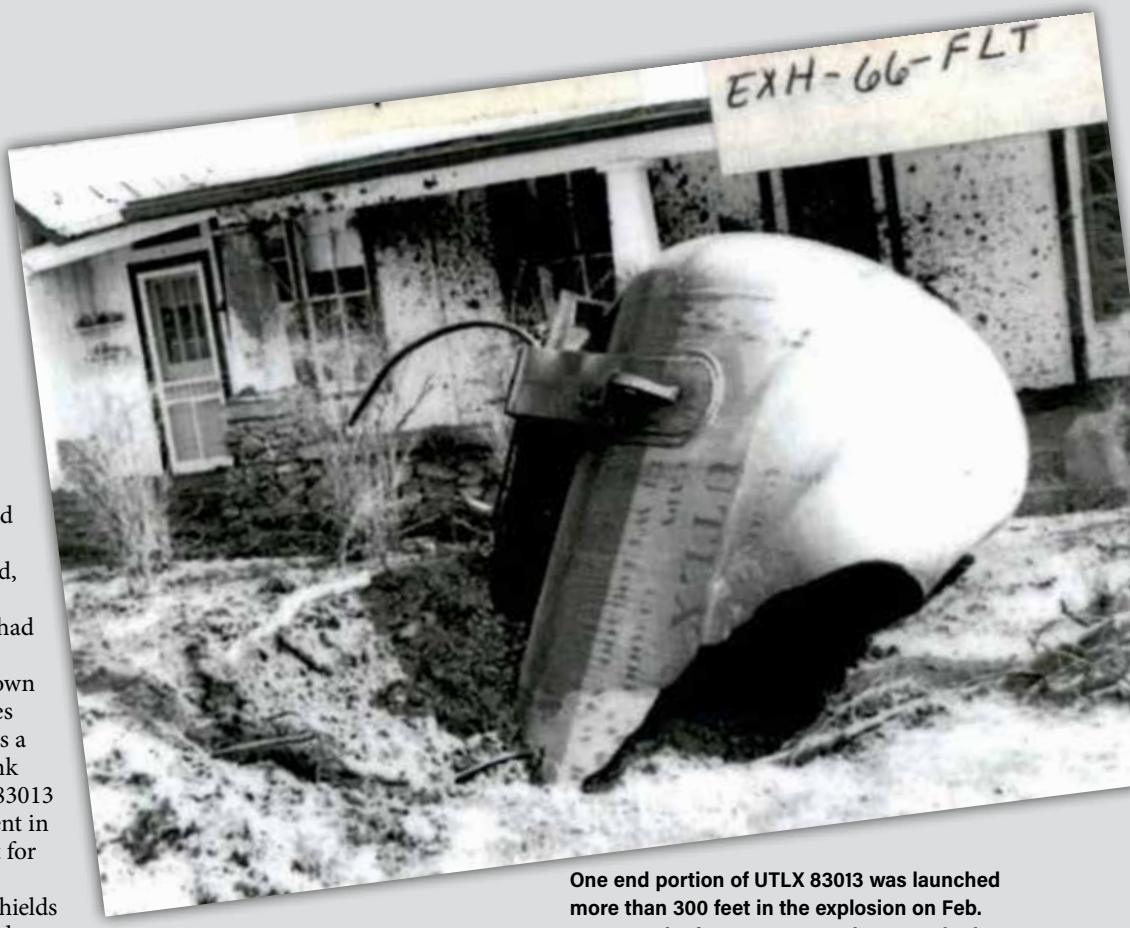
As for the tank car that exploded, UTLX 83013, it was also found to have numerous structural flaws. It had been loaded with 27,871 gallons of liquefied petroleum gas — also known as propane — adjusted at 60 degrees Fahrenheit. The product weight was a total of 130,994 pounds. Union Tank Car Co. had manufactured UTLX 83013 in 1961; at the time of the derailment in 1978, Amoco Oil Co. was leasing it for LPG service.

The tank car did not have head shields or shelf couplers. It was not insulated, nor was it outfitted with a jacket. During the derailment, UTLX 83013 suffered structural damage in the form of what the NTSB called a "gouge-like scrape" and major indentation on its lower right side, which extended from the tank's leading head to its center. A damaged girth weld resulted in fractures that propagated "for about 5 feet in each direction along the gouge. The fractures then changed directions and resulted in circumferential fractures."

Without expertly trained teams on site at the time of the derailment, the entirety of the tank's structural damage was not appreciated by those in Waverly who responded to the wreck and initiated the cleanup, including crews from L&N and from Steel City, which operated one of the two cranes involved in transferring and clearing the derailed cars. The tank car ruptured before its safety valve operated, meaning that its steel walls failed at a pressure below 300 pounds per square inch gauge — well below the bursting pressure of 1,000 psig.

A spot of praise

There was one bright spot in the NTSB's analysis, however. In fact, the final report had only one mention of unconditional praise. This was reserved for the personnel of Waverly's small community hospital, Nautilus Memorial, and to the town of Waverly for their joint disaster plan, which "provided excellent care for the public following the accident." Firsthand accounts and statistics corroborate the NTSB's recognition that had it not been for the highly resourceful hospital team and the immediate triage of the injured, many more lives would have been lost to the tank car explosion.



One end portion of UTLX 83013 was launched more than 300 feet in the explosion on Feb. 24, 1978. The fragment created a crater in the front yard of one Waverly resident's home along Richland Avenue. City of Waverly

Within an hour of the explosion, 40 patients were triaged and stabilized in the Nautilus emergency department. Of the hospital's 105 employees, 98 responded to the activation of the disaster plan. In just 90 minutes following the explosion, 49 ambulances from 30 surrounding counties were streaming into Waverly in response to the town's mayday calls. Medevac helicopters from the nearby U.S. Army base at Fort Campbell were a major part of the initial effort to transfer the most critically injured patients to higher-level care.

The coming together of first responders and hospital staff ... in Nautilus Memorial's two-room emergency department was a testament to the strength of a tight-knit community ...

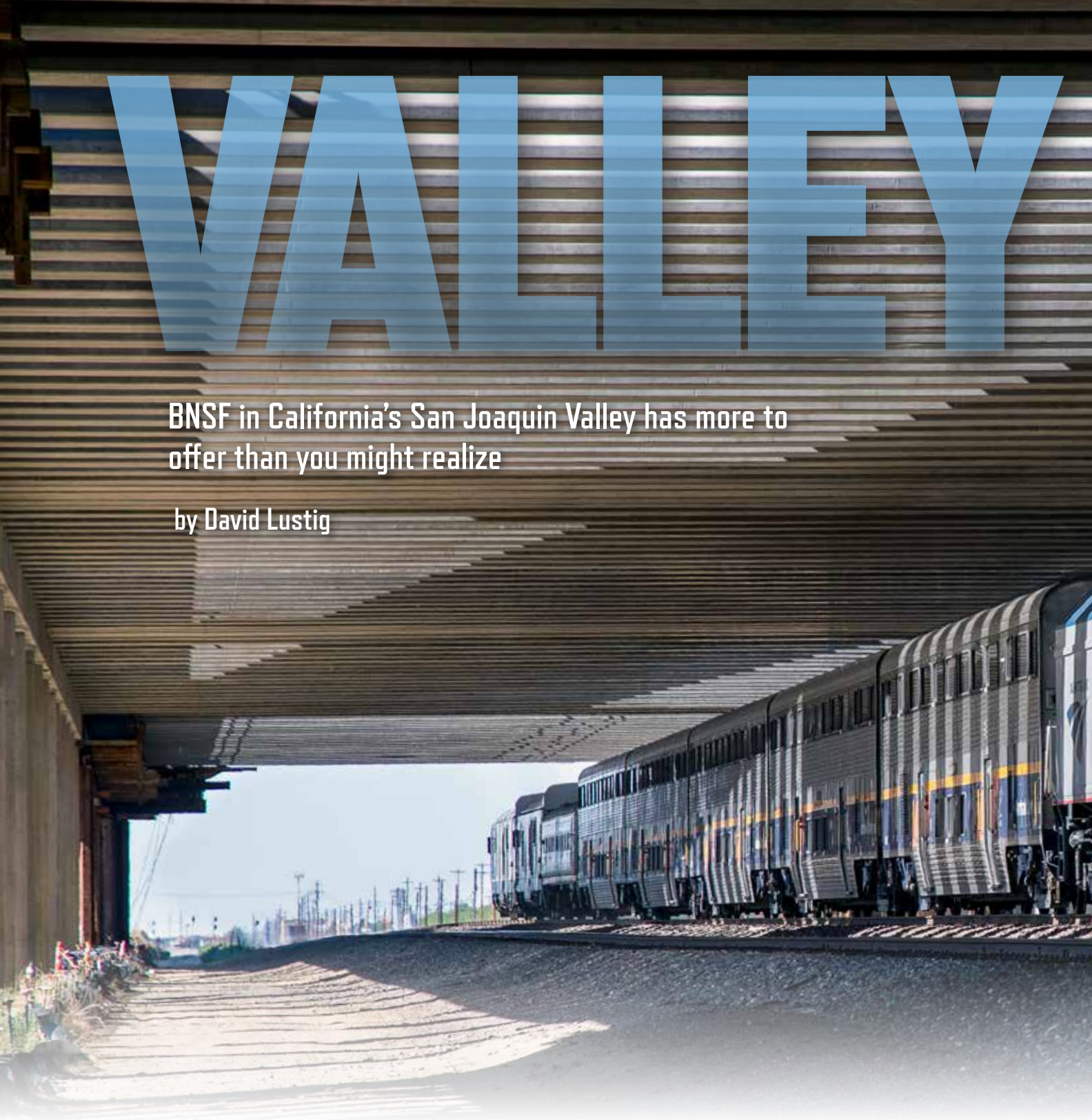
The coming together of first responders and hospital staff — including my own parents, a trauma surgeon and an internist — in Nautilus Memorial's two-room emergency department was a testament to the strength of a tight-knit community in the face of utter devastation, a portrait of courage at the edge of the abyss. Rather than allowing the sheer volume of casualties to overwhelm them and their small hospital, physicians, nurses, and first responders worked together to minimize loss of life, and amazingly, not a single living patient who entered their hospital that day died while in their care. They were, and remain, true small-town heroes, a tribute to all that is possible when a community unites to overcome tragedy. 1

Yasmine S. Ali, MD, is a cardiologist and bestselling author of Walk through Fire: The Train Disaster that Changed America. *Waverly is her hometown. This is her first* Trains *story.*

VALLEY

BNSF in California's San Joaquin Valley has more to offer than you might realize

by David Lustig



Noted author and photographer Don Sims once said, "If you want to see railroad equipment, visit a train yard. But if you really want to see and appreciate railroading, head out to a busy main line."

There are many places in North America to accomplish that. If you have a hankering to visit California, it might be time for a road trip to the San Joaquin Valley. Whether you like to chase or pull up a folding chair and watch the parade pass, there's almost always something to see.

For those who have visited before, you're right, it isn't what it used to be. Nothing is. The mainline railroads that once were — Southern Pacific and Santa Fe — are gone. So are many of the low-yield branch lines that once spider-webbed the region. Today Union Pacific, BNSF, and Genesee & Wyoming's regional San Joaquin Valley Railroad are the main players, the last taking over many of the revenue-producing secondaries and branch lines. Amtrak, in the form of its *San Joaquins* service, is here, too.

Our focus is on BNSF's main line connecting Barstow in the south and Richmond in the San Francisco Bay area. Of particular interest are the portions of the Bakersfield and Stockton subdivisions between those

FEVER

two San Joaquin Valley communities.

On a map of California, find Sacramento. Then look east to the Sierra Nevada, west to the Coast Range and finally south to Bakersfield, near the Tehachapi Mountains. That, give or take a few square miles, is the San Joaquin Valley. It's massive.

Within the valley's borders are the cities of Stockton, Modesto, Tulare, Turlock, Merced, Fresno, Visalia, Hanford, and Bakersfield, not to mention dozens of smaller towns and hamlets. Originally populated by Native Americans, Europeans began settling here four years before the Declaration of Independence in 1776.

An agricultural megacenter, residents can experience hot, dry summers and rain during the winter. There's also intrusive tule fog at other times. Like so much of the West, it had been experiencing a decade-

Passing through a man-made "tunnel" — an overpass for the California high speed rail right-of-way — former F40 control unit No. 90278 brings up the rear of northbound *San Joaquins* train No. 719 near Wasco, Calif., on Aug. 6, 2022. Elrond Lawrence

***San Joaquins* train No. 717 passes under the plume of smoke from a dairy's manure compost fire at Angiola, Calif., on March 15, 2020 — the weekend the state began issuing shelter-in-place orders because of the COVID-19 pandemic.**

The helpers of a Tehachapi-bound BNSF train pass one of the finer business establishments of downtown Bakersfield on Dec. 13, 2017. Three photos, Elrond Lawrence

long drought prior to the arrival of an "atmospheric river" that brought drenching rains this past winter. Even when there are water restrictions, almost everything that can be is grown or ranched is here somewhere, punctuated by active oil wells.

Military installations once dotted the area, creating a look on maps akin to paint spattered on a wall. The weather is particularly favorable to those learning to fly. Today almost all of those installations are gone except Naval Air Station Lemoore, near Hanford. Never heard of it? It's the home of the Top Gun school — you know, the one in the Tom Cruise movie. Hollywood storytelling to the contrary, it hasn't been in the San Diego area for a while.

For us, railroading is the big draw, and if you can deal with the weather, the occasional bug swarms, and the wafting odor of nearby dairy herds, this is the place to be.

NORTH FROM BAKERSFIELD

Every trip, even a virtual one, has to begin somewhere, so let's begin in Bakersfield and head north.

The Valley's southern anchor has been booming lately, and if you haven't been here for a while, you may be surprised. Fifty years ago, the population was around 70,000. Today it's beyond 350,000 and growing.

Once home to good-sized SP and Santa Fe yards, today most movements are run-throughs. There's still considerable local business to be switched, but today it's more of a crew-change spot. Look carefully and you'll find the remains of facilities for both Class I roads, including turntables and roundhouses.

Bakersfield is the southern terminus of Amtrak's *San Joaquins* operations, overseen by the San Joaquin Valley Joint Powers Authority and predominantly following the BNSF route. Service is frequent. At this writing, Bakersfield is served by six round trips a day, five to and from Oakland, and one to and from Sacramento. It is also the hub for Amtrak Thruway Bus service serving destinations including Santa Barbara, Los Angeles, and Las Vegas.

The passenger station, at 601 Truxtun Avenue, dates to 2000. One of these days there will be a California High Speed Rail station here, as well.

CHASING TRAINS

Before you head north, arm yourself with a good road map and, if you have one, a railroad map. Unlike Union Pacific, which pretty much parallels State Route 99, following the BNSF takes a little more effort and diligence. Be forewarned: law enforcement along these roads will be a

In August 2022, a train of southbound grain empties emerges from one of the massive bridges under construction for the high-speed rail project. This one is near Wasco. Laura Lawrence

A towering but abandoned grain elevator provides the backdrop as Charger No. 2105 leads *San Joaquins* train No. 703 on Aug. 6, 2022, as it heads north following its stop in Corcoran.

combination of California Highway Patrol and local police. Sometimes keeping up with a train is difficult due to highway speed restrictions and if your luck has deserted you, you might get pulled over for speeding, even at just a few miles over the limit. I speak from experience, so a word to the wise.

The good thing about the route is that there are plenty of small towns along the way. If you haven't stocked up on essentials or are low on gas, a convenience store is never that distant.

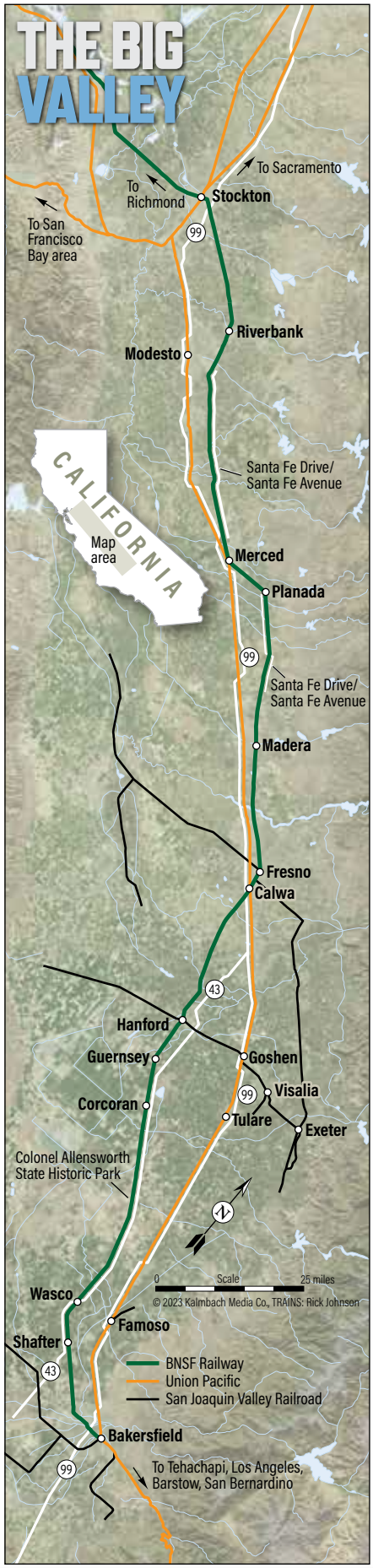
The BNSF leaves Bakersfield due west before turning to the northwest towards Shafter along State Route 43. There are many sideshows along the BNSF, locations mostly forgotten by those barreling up and down nearby State Route 99. Many are worth poking around during your travels.

For example, Shafter was once the home of a World War II Army Air Corps base and later a home for prisoners of war. Today, the little city owns and operates the Paramount Logistics Park, a newly built industrial park with more than 10,000 feet of track. Amtrak stops here briefly.

For returning fans, the valley has another surprise. If you haven't been there in a while, be prepared for a shocking change in the landscape.

Punctuating the area are man-made concrete monuments that would make an ancient Egyptian pharaoh envious. What you're seeing is the emergence of California High Speed Rail, the multi-billion-dollar, hoped-for answer to traffic congestion in the Golden State.

It's construction on a grand scale that leaps over and under the landscape and the railroads. Years in the making, and still years from operation, these structures are the Mother Lode if you want a different backdrop for your photographs. You'll



A BNSF corn train is unloaded at Pitman Family Farms near Hanford on Aug. 7, 2022. Pitman has its own pair of SD40T-2s, but when trains are heavier, BNSF leaves its own power in charge, with financial incentives and penalties to ensure the cargo's prompt unloading. Laura Lawrence

spot them in the distance long before you are close enough to shoot them, but keep your eyes peeled when moving north towards Wasco.

The headquarters of the Tejon Indian Tribe of California, Wasco is a charming throwback to a quieter era. Again, there are numerous opportunities to incorporate local flavor into your railroad photos, including a nice little Amtrak station.

Look carefully at the many industries as you start your trip. A number of them have their own motive power, ranging from small switchers to secondhand EMD tunnel motors.

LOOK FOR CONCRETE

The ultimate goal of the high-speed rail system is to connect Anaheim and Los Angeles with San Francisco, mostly through a route in the San Joaquin Valley. When completed, trains will span the 380 miles between the population centers in 2 hours, 40 minutes. Future extensions are intended for San Diego and Sacramento.

The operation will ultimately operate on a dedicated, grade-separated line. The San Joaquin Valley portion will crisscross existing rail lines.

Approved by voters in 2008 with an expected cost of $9 billion, the price tag has ballooned past $70 billion. Currently, just under 120 miles of valley right-of-way is under construction.

AFRICAN AMERICAN HISTORY

Farther north, a sign will guide you to Colonel Allensworth State Historic Park. Once a thriving farming community founded in 1908, it was the only California town started, financed, and governed by African Americans. It was dedicated to improving that group's economic and social status. But circumstances beyond the community's control, including a significant drop in the local water table, left it a ghost town.

Colonel Allensworth State Historic Park, founded in 1974, sometimes sees Amtrak service for special events. Craig Walker

Today, the "Allensworth Historic District" is listed on the National Register of Historic Places. And yes, you can frame a scene with both the park and passing trains in the background. Amtrak occasionally makes special stops at the park, as in 2022 for a park rededication and for Juneteenth events.

Then there is the city of Corcoran, about a baker's dozen miles south of Hanford. Here the railroad skirts the town, but you're still capable of capturing dramatic rural photos of California farm life. Besides an Amtrak station, the small town has other claims to fame — or notoriety. Charles Manson, the head of the "family" that committed murders in Southern California in the late 1960s, was housed at the prison here until his death.

On a lighter note, do you remember the movie *North by Northwest* and the famous crop-dusting scene with Cary Grant? If not, look it up. In the movie, the action was downstate somewhere in the Midwest. In reality, it was Corcoran.

CONTINUING NORTH

Continuing on State Route 43, next up is Hanford, one of the larger cities on the

southern end of the line with more than 50,000 souls. Yes, there is an Amtrak station here, and as a bonus, a diamond with a former Southern Pacific branch now operated by the San Joaquin Valley Railroad. If you've got the time, a train banging over a crossing is always good photography.

While you're hunting for trains, be on the lookout for artifacts of railroad past, including grounded freight cars now in farmer's fields, and bridges as well as grade crossings with Santa Fe markings.

North of Hanford, BNSF and Route 43 go their separate ways. Look northwest and find Conejo on your street map, and you'll find the railroad. It'll be a series of non-parallel farm roads, but it might be worth it to get a few shots.

Just south of Fresno, the undisputed population champion of the San Joaquin Valley with more than 500,000 people, is Calwa. For the traveling public that means nothing, but to you it is where BNSF and UP cross. It's not the easiest to get to and like many industrial areas, it's not a garden spot. Photos here are optional.

FRESNO

Fresno was and still is a critical point in the San Joaquin Valley. It is a vibrant, multi-cultural city that continually gains in importance. If you want to take a breather and find a wonderful place to rest and enjoy a vast variety of restaurants, look no further.

Fresno's rail importance has been reduced as the industry has changed, with its emphasis on longer trains, a change in the traffic railroads pursue, and the shedding of branch lines by the Class I roads. But if city railroading is your cup of tea, you can't do much better than here. Mixed in with its agricultural heritage is a philharmonic orchestra and numerous multicultural events.

The area's best passenger station, as far as I'm concerned, is here. A former Santa Fe affair downtown, it's served by the *San Joaquins* and is witness to the myriad BNSF freights working their way through. The San Joaquin Valley Railroad operates most of the branch lines in the area.

North of Fresno, it takes a checkerboard of back-and-forth side roads to zig-zag along the right-of-way. You can rejoin the chase just north of Madera by following Santa Fe Drive, which eventually becomes Santa Fe Avenue. That will take you through Merced, which has another attractive Amtrak station, and on to the Modesto/Riverbank area; from there, you can follow the line to Stockton and Mormon Yard.

From Stockton, BNSF moves west out of the San Joaquin Valley and through Franklin Canyon towards Richmond in the San Francisco Bay Area. That segment of the railroad is a chase for another day.

C44-9W No. 4082 leads an eight-unit consist powering a BNSF manifest freight past the Fresno Amtrak station in July 2016. David Lustig

Led by SC44 Charger No. 2106, four-car *San Joaquins* No. 715 stops in Merced, Calif., on its way to Oakland on June 14, 2019. Craig Walker

THOUGHTS FROM THE REGULARS

What makes the San Joaquin Valley such a nifty place to enjoy our hobby? Listen to fans who trek there on a semi-regular basis.

First off, author and photographer Elrond Lawrence and wife Laura. She not only chases with him but has become an extremely competent drone pilot.

"We're amazed that most railfans ignore the San Joaquin Valley, but it's nice to have this long stretch of busy railroad almost totally to ourselves," Elrond says. "The construction of California's high speed rail line is a jarring change to the landscape, but it makes for fascinating picture opportunities that can't be found anywhere else. Setting aside politics and the massive costs, it's history in the making, and I'm glad we can cover it, no matter what happens.

"We discovered the BNSF's San Joaquin Valley main line in March of 2020, literally during the weekend that California issued a statewide shelter-in-place order due to the COVID-19 pandemic."

Laura and Elrond Lawrence, in a drone "selfie" by Tunnel 5 on Tehachapi Pass near Bealville. Laura Lawrence

They add that the valley was a big surprise for them: there was a constant flow of trains, both BNSF and Amtrak, through wide-open spaces and forgotten historic towns filled with relics from Santa Fe days. It quickly became one of their favorite places to railfan, especially after Laura got her drone. They enjoy working as a team.

Laura says while a drone is wonderful for mountains, forests, and beaches, it's also perfect for a very flat, huge valley with hidden patterns of agriculture fields and almond trees. In the springtime, they say,

BNSF No. 4803 West races past almond trees in full blossom south of Modesto on March 10, 2013. The ground's coating of blossoms can create a look similar to a dusting of snow.
Two photos, Elrond Lawrence

With Ted Benson driving, David Styffe documents a BNSF locomotive in well-preserved Santa Fe warbonnet paint during a 2010 trip along Santa Fe Drive/Avenue.

when the trees are covered with blossoms, the area takes on a kind of "snowscape" appearance that they've never seen anywhere else.

"I'll hike around the groves to find a good angle while Laura flies her drone above," Elrond says.

Another big surprise, he notes, is how many older locomotives and railroad "critters" lurk beside the BNSF up and down the valley.

"Who would have dreamed that we'd shoot former SP tunnel motors unloading unit trains at farms, or catch a rebuilt GP9 in full Santa Fe colors and lettering?" he says. The BNSF trains are fun too, since they have a nice mix of grain, intermodal, and mixed freight, and older power tends to appear consistently; Amtrak's *San Joaquins* are sharp-looking trains with some variety, and the station stops have a small-town feel. Being a single-track main line, there are a dozen opportunities a day to catch a meet between freight and passenger trains.

"BNSF's Valley Line is only a couple of hours from our house in the Central Coast, and since the local Coast Line is incredibly quiet, the big valley has become our local train-watching hot spot. It has many of the qualities that I love about the Mojave Desert — open space, big skies, small towns, lots of trains, warm weather — but the scenery is much greener!

LIKE BEING IN NEBRASKA

Then there's Southern California writer and photographer David Styffe's viewpoint.

"Growing up and spending my entire life near Los Angeles, I've been fortunate to watch and photograph trains in all of Southern California's famous locations such as Cajon, Beaumont, and Tehachapi," he says. "But just two hours away, the San Joaquin Valley has provided some of my favorite rail-watching experiences. I enjoy exchanging the urban density of my home turf for the open farmlands dissected by the BNSF tracks and open two-lane highway. There is plenty of freight traffic with the bonus of frequent Amtrak service. Meets in CTC territory between freight and passenger trains occur frequently and it's not unusual to have a very full day with many resulting photographs."

Still not convinced?

Craig Walker, another Southern California photographer, and a frequent visitor to the valley has his own thoughts. His photos have frequently graced the pages of *Trains*.

Northbound *San Joaquins* No. 715 leaves Planada, Calif. — south of Merced — behind a GE Dash 8-32BWH on March 8, 2012. David Styffe

At sunset on Feb. 20, 2018, BNSF high-priority UPS intermodal train Z-WSPSTO overtakes local L-CAL03 at West Allensworth Siding on the Bakersfield Subdivision. The Z train is some 187 miles from its destination in Stockton. Craig Walker

"There are reasons I often think of myself as the 'World's Laziest Railfan,'" he says, "and one example has to do with my earliest forays into California's San Joaquin Valley.

"My first visit was in the observation car of Southern Pacific's *San Joaquin Daylight* a week before the implementation of Amtrak and the discontinuance of that train in 1970. The line paralleled a major highway, leading me to follow it on future trips to Northern California."

Following the implementation in early 1974 of Amtrak's *San Joaquins* service from Bakersfield to Oakland, Walker rode it to the Bay Area a few times, and with the Santa Fe line not being freeway adjacent, made the erroneous assumption that driving along the Santa Fe was too slow and difficult to navigate.

"It wasn't until 1990 that, heading to Winterail [the rail photography show, then held in Stockton] with several others, I was persuaded to follow ATSF. And it was that year I realized the folly of my earlier adherence to following the SP exclusively in years prior. Rail traffic on the Santa Fe was greater than I suspected and, scenically, the trip was more enjoyable as well.

Craig Walker

"The agricultural San Joaquin Valley reminded me of how Southern California's Orange County, where I grew up, appeared before the scourge of urban sprawl arrived and wiping out the county's many orange groves and strawberry fields.

"In the San Joaquin Valley, a place which supplies more food to the United States than most other states do, the groves were full of almond trees and the fields were planted with a wide variety of other vegetables, but it all seemed familiar. The towns along the Santa Fe, being generally smaller than those along the SP, seemed more interesting, and the main line was more scenic, with curves and bridges that were appealing for photography."

A FEW SUGGESTIONS

As you might have gathered, the San Joaquin Valley is full of towns, so supplies, food, and lodging are easy to come by.

The slowest day is usually Mondays, as Union Pacific has a work window in the Tehachapi Mountains south of Bakersfield Since BNSF uses that line via trackage rights, fewer trains are on the move.

At certain times of the year there can be lots of bugs here, so repellent is something you should consider. And even when it is a super warm, sometimes very hot day, it can really chill down at night, so bring a warm jacket if you are going to venture out in the evening.

Now this may sound silly, but traveling many of the back roads through the valley will put you extremely close to crops growing in the fields. Some of these crops are quite valuable. Even if you think no one is looking, stay out of the fields. Farmers and security guards are always on the lookout for trespassers. (Oh, and if you're subject to hay fever, bring your allergy medicine when things are in bloom.)

But in general, the allure of the valley may best be summed up by a non-fan friend of mine who accompanied me to the area a few months ago.

"Good grief," he said. "There are trains everywhere!"

Here comes SANTA

The 2022 Santa Train, led by CSX No. 1, crosses Copper Creek Viaduct at Speers Ferry, Va. The impressive 1,091-foot ballast-deck structure rises over 170 feet above the average level of the creek at the center.
Ryan Markham

CLAUS

A CSX Appalachian tradition of gift-giving returns to the rails

Story and photos by Ron Flanary

Looking more like a modern-day reincarnation of the Baltimore & Ohio's famed all-Pullman New York-Washington-Chicago *Capitol Limited* than a conveyance for Santa Claus, one of the more venerated traditions of Appalachian railroading made a glorious return Saturday, Nov. 19, 2022. This would have been the train's 80th year running if not for the disruption of the COVID-19 pandemic over the previous two years. However, with the return of this annual tradition comes an opportunity to review its fascinating history.

A reason for the season

Today's city of Kingsport, Tenn., was settled during the Revolutionary War and chartered in 1822 as a municipality. The Civil War left the community in bad shape, and the charter was lost as a result. Completion of the Carolina, Clinchfield & Ohio Railroad as a through route in 1915 transformed Kingsport into a robust industrialized city. A new charter was issued in 1917 and the core of the city was built and designed by landscape architect John Nolen.

Huge tracts of land along the South Fork Holston River were reserved for industry, particularly the area now occupied by Eastman Chemical Co., while the balance of the area was designed for housing, commerce, educational facilities, and other support services. In fact, Kingsport was the first privately financed, professionally planned, and economically diversified community in the United States.

It wasn't a "company town," but a carefully choreographed network of interlocking, independent businesses that drew their strength from the railroad's ability to bring in raw materials and deliver finished products. While these operations attracted a cadre of highly educated and technically trained leaders from all over, it was the non-union indigenous labor force from the surrounding region, including Southwest Virginia, that did the hard work. Kingsport thrived during the Great Depression.

This ad was published a week before the first train ran on Friday, Nov. 26, 1943. Santa's "special railroad car" was CC&O office car No. 1.

The Clinchfield Railroad served an extensive network of coal mines in Southwest Virginia with connections from other mines in eastern Kentucky on the Chesapeake & Ohio. There were many ancillary industries in Kingsport for textile manufacture, paper production, printing, concrete, and other products — all relying on the railroad to provide coal, other natural resources, and haul finished products to market.

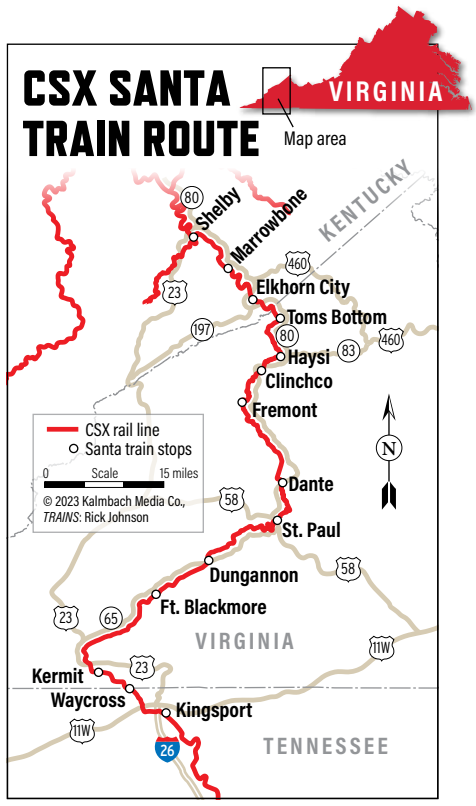
While the Clinchfield made a bundle on freight traffic, passenger service was more local in nature. The impressive station with the tall clock tower at the west end of Broad Street, the main drag of Kingsport's downtown area, expressed an optimism for passenger traffic that was never realized. Nonetheless, World War II constraints of gasoline rationing, tires, and narrow two-lane mountain roads made a day trip from Southwest Virginia to Kingsport by train an appealing proposition. Between the arrival of No. 38 from Elkhorn City, Ky., around 10 a.m., and the departure of northbound No. 37 around 3 p.m., the merchants of Kingsport were eager to direct patrons to use their five hours on Broad Street to see a movie, have a delicious lunch, or make purchases at one of the many stores within walking distance to the station.

All of this was particularly critical in 1943 with the nation's war effort ramping up. Much of that coal brought south in Clinchfield hoppers fed the Holston Ordinance Works, a facility completed that year to manufacture munitions for the war effort. The plant produced RDX — an explosive powerful enough to penetrate the hulls of German U-boats. Even more coal powered the sprawling industrial facility that today is Eastman Chemical. Meanwhile, Appalachian coal is still used in quantity at the plant today and arrives by rail.

The Santa Train was thus born from a sense of regional unity and national patriotism — and good old fashioned business promotion. To this day, it's Kingsport's way of saying "thank you" to the generations of

The 2022 edition of the Santa Train is 3.5 miles from the end of its 110-mile journey from Shelby, Ky., to Kingsport. At Rotherwood, the train — uniformly clad in a version of B&O blue and gray — crosses the North Fork Holston River. Ryan Markham

At milepost 68 (from Elkhorn City), the Santa Train rolls around a curve on the approach to the siding at Starnes, Va., on a rather chilly Nov. 26, 1977. Most of the tractive effort was provided by ex-NC&StL/L&N F7Bs Nos. 250 and 869 rather than CRR Ten-Wheeler No. 1.



Southwestern Virginians and their families who toiled to support the city's industries and regional tri-state economy.

Without them, Kingsport in its current incarnation would have never happened. City leaders, with the benefit of history, are fully aware of that fact.

"Santa Claus Special" begins

The tradition of Santa Claus throwing candy and small gifts along the route of the former Clinchfield Railroad began in 1943 when members of a predecessor group of today's Kingsport Chamber of Commerce decided to do something, in retrospect, rather remarkable. The leadership of the Kingsport Merchants Association appealed to officials of the Clinchfield Railroad to operate a "Santa Claus Special" on Friday, Nov. 26, 1943 — the day after Thanksgiving.

For the first 10 years, the *Santa Claus Special* brought Santa to town aboard CC&O office car No. 1. To further boost ridership, the railroad advertised reduced roundtrip fares over the holiday season. In 1952, car No. 1 was replaced by No. 100 — a custom-built vehicle fashioned by shop forces in Erwin, Tenn., from former Atlantic Coast Line diner *Orlando*. No. 100's new steel sides were built of the same steel plate the Clinchfield used to repair hopper cars.

In the beginning, the passenger train made an incredible 40 stops on the route, with Santa greeting throngs of children and adults at every wide spot along the railroad. Santa was pulled along the 95-mile route from Elkhorn City to Kingsport by one of the Clinchfield's five Pacific-type engines. Goodies grew to include books, small stuffed toys, and other Christmas gifts, and were thrown to those gathered along the entire route as the train moved between stops.

With the end of regular passenger service in 1954, the Kingsport Chamber and the major industrial rail customers in the city persuaded the railroad to continue the annual Santa Train tradition. However, the schedule was revamped to depart Elkhorn City shortly after midday, arriving in Kingsport by 5:30 p.m., for the Christmas parade. The number of stops were reduced along the way. The annual run used CRR office car No. 100, FP7 No. 200 to provide steam heat, and four or five "hot" southbound freight loads that might have needed expediting to Kingsport, all pulled by a single F7. It had become an unscheduled mixed train.

But, in 1968, Tom Moore, new Clinchfield general manager, boldly ordered the restoration to service of an old Ten-Wheeler (ex-Black Mountain Railroad No. 1) that was rusting away behind the shop in Erwin. For the next ten years the "One Spot" (with a diesel assist from either No. 200, or one or two F7Bs with steam generators) would pull the train.

The Santa Train evolves

From 1979 forward, diesels have handled the train each year — with the notable exception of the 50th running on Nov. 21, 1992, when Union Pacific and CSX cooperated in bringing UP's Challenger No. 3985 east to pull the train. The Clinchfield had owned six nearly identical versions of the big 4-6-6-4, so for the occasion, the engine was re-lettered as "Clinchfield 676" (one number higher than the last one). The improbable visit of the big engine from Cheyenne is still fondly recalled in Clinchfield Country.

The train has varied in length and consist over the years, and the motive power has included three types of steam (4-6-2, 4-6-0, and 4-6-6-4), EMD F-units, FP40PHs, and several models of four-and-six-motor hoods, as well as various types of modern GE wide-nose and conventional cab freight units.

The dawn of CSX Corporation in 1980 brought a few noticeable changes to the

On Nov. 23, 1985, veteran Clinchfield F-units Nos. 118 and 116 (ex-CRR Nos. 200 and 800 respectively), bring the four cars bearing a copious quantity of gifts and other goodies — and, of course, Santa — into St. Paul, Va., for a stop just before noon.

A Clinchfield primer

THE EARLIEST NOISES of building a railroad to connect Ohio with the Atlantic Ocean were made as far back as 1827, the same year the nation's first common carrier, the Baltimore & Ohio, was chartered. Proposals are one thing but turning dirt and laying track is another matter. A charter was issued to the Louisville, Cincinnati & Charleston in 1836, but it went belly up after completion of only 18 miles of track. Next came the Blue Ridge Railroad, but it, too, gave up the ghost after partial completion of a tunnel in the northwest corner of South Carolina after 1853.

Three decades later, after the tensions of the Civil War eased, the Charleston, Cincinnati & Chicago — "Triple C"— launched the most ambitious effort of all in 1886. By 1890 much of the line was completed with limited operations, and a lot more was graded, and ready for track. Alas, the Triple C was buried by the Panic of 1893. After a period of resurrection, the pieces emerged again under a new regium as the Ohio River & Charleston.

A local businessman named George L. Carter, in 1902, stepped in to launch what was initially named the South & Western Railway — an ambiguous title designed to conceal his intentions. Carter developed vast coalfields in Southwestern Virginia and scrapped most of the Triple C grade in favor of construction standards unheard of at the time. Grades of no more than 1.5% and curves less than 10% (except in a few notable instances) were mandated. The railroad would need 55 tunnels totaling 10 track miles underground, plus several impressive steel viaducts.

Most of the tunnels were concentrated on the climb from the Piedmont region to the top of the Blue Ridge mountains at Altapass, N.C., and in the stretch of trackage north of Kingsport through the heart of the dendritic topography of the Cumberland Plateau. By 1908 he renamed the railroad the Carolina, Clinchfield & Ohio, and by 1915, the obligatory "last spike" was driven at Trammel, Va., with an aging and frail Carter in attendance. The CC&O would later be leased jointly to the Atlantic Coast Line and Louisville & Nashville in 1924, an agreement made retroactive to 1923. The two big roads created the Clinchfield Railroad as the lessee and operating company.

The Clinchfield became the catalyst that created the city of Kingsport. Along the way the railroad also became a major player in the movement of seasonable perishables from Florida to the Midwest and mixed freight linking its major southern connections, the Atlantic Coast Line in Spartanburg, S.C., the Seaboard Air Line in Bostic, N.C.,

A southbound Erwin to Spartanburg passenger special stopped briefly on Sept. 15, 1974 on the Blue Ridge Loops. In the 10 miles from the top at Altapass to this point 13 tunnels were required. Two photos, Ron Flanary

and the Chesapeake & Ohio at Elkhorn City, Ky., at the north end. Other key connections included the coal-hauling Interstate Railroad at Miller Yard, Va., (and, by virtue of trackage rights to that point, its co-parent, the Louisville & Nashville), the Norfolk & Western at St. Paul, and some interchanges with Southern Railway and a few shortline operations. The small coal mining community of Dante, Va., became the epicenter for the railroad's service to the mines on its northern end, with mine runs placing empty hoppers and gathering loads for weighing, billing, and dispatching in coal trains, both north and south. In short, the Clinchfield became a money-making machine for the ACL and L&N.

The CC&O initially moved its trains with Consolidations and Mikados. Typical of drag freight era power, several Mallet compound 2-6-6-2s would take over the heaviest tonnage trains but were soon eclipsed by several USRA-model 2-8-8-2 Mallets. There were stretches of the railroad — particularly on the south end — where trains could really roll if motive power was up to the task. With heavy manifests routinely requiring triple-headed 2-8-2s to make schedule, the Clinchfield embraced modern steam in late 1942 with the

EMD hood units await calls to work at Dante, Va., on Oct. 13, 1980. Originally known as Turkey Foot, the town was renamed Dante in 1906. Shortly after, it became a busy center of coalfield railroading.

first of an eventual fleet of 18 high-speed 4-6-6-4 Challenger-types (including six second-hand former Rio Grande engines acquired in 1947).

Co-owner L&N would not commit to total dieselization until 1950, but the ACL made the plunge earlier — largely on the money from its control of the L&N and the Clinchfield. In 1948, the Clinchfield took delivery of its first diesel — F-unit No. 800. By April 16, 1954, steam was gone, dispatched by a modest fleet of more F-units for road freights, GP7s for mine runs and locals, and several SW7s to work yard jobs at Erwin and industrial switching jobs at Kingsport and other on-line traffic hotspots. Later motive power purchases ranged from GP38s, SD40s, and SD45-2s, to several remanufactured units. During the last two decades of the Clinchfield's existence, leased and borrowed motive power was common to address a near constant shortage of units to move its trains. ACL and L&N also supported major investments in the Clinchfield's physical plant with heavier rail, centralized traffic control, siding extensions, and other betterments to keep the railroad up to the highest standards.

With creation of CSX Corporation in 1980, the various members of the "family" of ACL (later SCL) railroads were combined as Seaboard System in 1983 to match up with the Chessie System companies. Eventually everything was placed under CSX Transportation in 1986, an arrangement that lasts to this day. One of the first tangible changes under CSX was linkage of a former L&N branch with a C&O line at Deane, Ky., creating a through route for L&N coal from its Eastern Kentucky Subdivision to Southeast U.S. power plants via the former Clinchfield. From that day forward until the use of thermal coal from central Appalachia began to decline significantly by 2010, the former Clinchfield route was one of the more tonnage-heavy segments on the entire CSX system [see "Men Against Mountains," Oct. 2001]. With southbound coal traffic down to a trickle — and production in its own territory from a single mine at McClure, Va., — the former Clinchfield was downgraded in 2017 with remaining through traffic diverted to other routes.

That decision was later reversed, so today's route sees several locals, at least two through mixed freights each way, ethanol, grain, and the remaining coal traffic. The historic headquarters of the Clinchfield at Erwin, Tenn., was closed with the downgrading of a few years ago, so through crews now change at Kingsport.

CBS News' Charles Kuralt and his "On the Road" series brought the Santa Train story to a national audience. Kuralt's crew films the train at Speers Ferry, Va., on Nov. 20, 1982.

Jerry Davis (left), then CSX Rail's COO, used his Union Pacific roots and influence to bring UP Challenger No. 3985 east to pull the 50th running of the train in 1992. On the platform of a UP business car with Davis as the train passes Dante, Va., is Eastman Chemical's David DeVault. It was DeVault who made the initial suggestion to go "big" for the 50th running by arranging for a "Clinchfield" 4-6-6-4 to pull the train.

The 1990 train is slowing for a stop at Dungannon, Va., on Nov. 17, 1990. Throwing off candy and gifts from the moving train would cease a few years later in the interest of safety.

Santa is joined by several "elves" on the rear of CSX's "West Virginia" as the Santa Train passes folks gathered along the route at Steinman, Va.

Santa Train —the closure of the agency at Elkhorn City and extension of the crew district 15 miles north (or railroad "west") to Shelby, Ky., on former C&O trackage. Since then, the Santa Train has originated at Shelby. Children along this stretch were comparatively sparse the first few years, but it didn't take long for the crowds to rival those along the traditional Clinchfield segment.

When the late Charles Kuralt rode the train in 1982, his CBS News "On the Road" segment (and front-page article in the *New York Times*) kicked off a small flood of donations of cash, toys, clothes, and other all new items to be tossed off. When Clinchfield successor Seaboard System morphed into a share of CSX Transportation in 1986, the train's identity changed as well. Two of four ex-Clinchfield F-units were annually assigned to the train until 1990, when more conventional motive power took over.

Over the 40 years of CSX, many personalities in upper and mid-level management arrived on the job to find the Santa Train, and its strong tradition, as part of their responsibility. For the most part, these managers supported the continuation of an operation that clearly costs CSX quite a bit of money but has an intangible benefit of showing the company in a very positive light. Then-COO Jerry Davis can be credited with arranging the run of UP's Challenger in 1992. Davis had a lot of urging from the Kingsport corporate interests, particularly from Tennessee Eastman successor Eastman Chemical, and the late David DeVault, who handled rail logistics for this major CSX customer.

Today, the Santa Train fund at the Kingsport Chamber pays for nearly all the gifts, candy, and other items tossed off the rear by Santa and his helpers. Over the last two decades, several celebrities (mostly country recording stars), politicians, and dignitaries have ridden the train each year. The Chamber also provides a college scholarship annually to a deserving high school senior along the train's route.

The 2022 revival

The reincarnated train was pulled by three gleaming CSX F40PHs and a matched train of a dozen cars — all wearing a version of the B&O's familiar blue and gray passenger scheme. The brakes were released at Shelby, Ky., precisely on time for departure at 6 a.m. There were a dozen stops along the 110-mile route for Santa and his helpers to dispense an estimated 15 tons of candy, toys, back packs, and other gifts to the large crowds gathered at each stop.

After a long day, the Santa Train rolled to a stop in Kingsport on time at 3 p.m. It was a textbook perfect run from end to end. Two of CSX's F40PHs (Nos. 1 and 2) that pulled the train have been stretched to house dedicated HEP generators, while the third (CSX No. 3) still maintains its original length. Its tractive effort is helpful, but it no longer has an HEP function.

Initially, CSX agreed to use former Clinchfield Railroad office car No. 100 on the rear, as it had been in 2019. The Watauga Valley Railroad Historical Society and Museum in Jonesborough, Tenn., owns the car, but after CSX mechanical cleared No. 100 for use on the train, CSX opted for

Santa Train power — the unlikely stars

TOM MOORE WAS A FLAMBOYANT MAN who enjoyed being in the limelight. His railroad career — starting in 1943 at Southern Railway's engineering department — took him up the ladder through several management positions until he left in 1963 to work for the Atlantic Coast Line. In 1968 Moore was deployed to Erwin, Tenn., by his ACL and Louisville & Nashville bosses to take over as the railroad's general manager. On an initial stroll through the company's car and locomotive shops, he spied a small derelict Ten-Wheeler (4-6-0) literally rotting into oblivion on a back track. Its road number — No. 1 — and Clinchfield lettering on the tender was a bit misleading. The engine had been built in the shops of the Logansport, Ind., shops of the Pittsburgh, Cincinnati & St. Louis in 1882. After several changes in ownership, it became Carolina, Clinchfield & Ohio No. 5 and was leased to the timber-hauling Black Mountain Railroad in 1913 — renumbered BM No. 1. Retired in 1955, it came home to Erwin the last time and was patched up, painted, and presented to the town of Erwin for display.

Alas, nothing came of the offer and the engine was left to the elements until Moore arrived. He asked the railroad's chief mechanical officer, Percy Likens, if the engine might be restored. Likens acknowledged it was possible, but a tall order. Moore's response would launch a memorable decade for the Clinchfield: "Do it."

In early September 1968, work began to resurrect the engine in time for the 1968 Santa Train — scheduled for Nov. 30. A talented group of 40 Clinchfield employees labored and improvised to raise No. 1 from the grave. The diminutive Ten-Wheeler made a break-in run from Erwin to Kingsport and back on Nov. 13 pulling two just-acquired former L&N heavyweight coaches and Moore's office car, No. 100. The engine's 165-pound pressure was downgraded to 125 psi after an examination of the boiler revealed it should have probably been condemned and replaced — a deal-breaker had that been required. It was only because of the respect state boiler inspectors had for Mr. Likens that they allowed welded patches and other fixes to be used along with the lower working pressure that the project was done. As a result, of course, No. 1 was not capable of generating much tractive effort.

CSX road foreman of engines, Kenny Dethridge, looks down from the deck of "Clinchfield 676" (UP No. 3985) as the 50th running of the Santa Train rounds a curve just north of Delano, Va. Railfan photographers joined the crowd on the two-lane highways following the rail route on Nov. 21, 1992.

For the 75th Santa Train, CSX arranged for (and repainted at its Huntington, W. Va. shops) Clinchfield F7 No. 800, the railroad's first diesel electric, to lead the train. The cab unit crosses Lick Creek at Hamlin, Va., on Nov. 18, 2017.

For the first Santa Train run in 1968 FP7 No. 200 was operated behind No. 1 with a control box fashioned for the steamer's engineer, Ed Hatcher, to operate the EMD from his seat in the 4-6-0. Moore soon augmented his prized Ten-Wheeler with two former NC&StL/L&N F7B units with steam generators and boiler water storage, plus an eventual fleet of 13 passenger cars of L&N, NC&StL, Georgia Railroad, and SAL heritage to fill out his excursion fleet. One of the cars was a former Wabash open platform parlor-observation that replaced the cramped spaces on office car No. 100 on the rear of the Santa Train. For a decade, the Clinchfield operated an ambitious passenger excursion program. But Moore and two company officers were indicted and convicted in Federal court for self-dealing and fraud in 1979. No. 1 is today on exhibit at the B&O Railroad Museum in Baltimore, looking exactly as it did when it pulled Santa Claus on the Clinchfield.

Over the years since the first run of Santa behind a Clinchfield 4-6-2 on passenger train No. 38, an eclectic roster of motive power has handled the run. The last regular service steam run was in 1951 as FP7 No. 200 was in charge the following November. It remained that way until 4-6-0 No. 1 and her diesel helpers took over. Starting in 1979, F-units did the pulling much of the time, interspersed with EMD hood units some years. New GE "comfort cab" units were in vogue briefly before safety concerns with forward visibility brought several EMD SD40-2s and some conventional cab GE units.

Beginning in 1942, the Clinchfield began acquiring an eventual fleet of 18 4-6-6-4s in three groups. Just before receiving the last four E-2 class Challengers based on a Delaware & Hudson design in December 1947, the Clinchfield picked up six used Challengers built to UP chief mechanical engineer Otto Jabelmann's design for the Rio Grande in 1943 to help move World War II tonnage. The engines were declared surplus after the war and subsequently purchased from the Defense Plant Corporation by the Clinchfield in July 1947. The E-3s were identical to UP No. 3985.

CSX hired UP's Jerry Davis as president of its rail division in 1989, and in a casual suggestion during a meeting with Eastman Chemical rail logistics officials, Eastman's David DeVault (one of the organizers of an impromptu photo session with the engine in Cheyenne in 1988) suggested to Davis that it would be a grand thing if CSX could arrange with UP to bring UP No. 3985 to Kingsport in 1992, and temporarily

something else. A former C&O instruction car named *West Virginia*, previously used on the rear of the Santa Train, was chosen.

On short notice, the car was shopped for basic mechanical attention, repainted into the B&O-inspired scheme, and renamed *Jervis Langdon, Jr.* Following a theme instituted more recently, cars in the CSX office car fleet were named for CSX and predecessor company chief executives. Langdon — who died in 2004 at the age of 99 — was B&O's president from 1961 to 1964. Former B&O dome *Moonlight Dome* was also renamed for just-retired CSX CEO James M. Foote. These changes came at the request of CSX's new CEO, Joe Hinrichs, who desired a uniform look for the Santa Train. Given the sparkling appearance of the freshly washed train, it would be hard to argue with his logic.

The decision to run the Santa Train after a two-year hiatus was a pleasant 180-degree

renumber and reletter it as one of the identical Clinchfield engines. In short, it was done. In the two weeks before the 50th running of the Santa Train in November 1992, UP's steam team ferried the big engine and support equipment to Memphis, where former L&N and NC&StL trackage was then followed to Nashville, north to Louisville, Cincinnati, and east over the former C&O to Huntington. There, temporary lettering was applied creating "Clinchfield 676," one number higher than the last of the E-3 engines.

The operation was a huge public relations success for CSX and the Santa Train drew photographers from everywhere. NBC News sent Joe Garagiola and a film crew to tell the Santa Train story for a national audience. The Challenger wasn't without its own challenges, however. On the southward ferry run to Kingsport, the big engine went into a 14-degree right hand curve passing a standing empty hopper train on the left. The fireman's side front running board articulated far to the left, as designed, and began clipping several vertical ribs on empty hoppers near the front of the train. While nearly causing coronaries in both Jacksonville and Omaha, the damage was superficial.

Early next morning welders completed repairs in Kingsport. That was followed by the ordeal of trying to turn the big engine on the wye at Kingsport. The 20-foot rigid wheelbase of the 4-6-6-4's pedestal tender was just too much for the tight curve of the wye, forcing CSX to improvise. The engine had to be towed to Shelby later that night in order to be ready to pull the train south the next morning.

UP 3985 was officially retired by UP in 2020 and donated to Railroad Heritage of Midwest America in Silvis, Ill., where it is now safely ensconced in the former Rock Island back shop. Initial work to restore the big engine to operation began in January.

Clinchfield F-units put in many appearances on the Santa Train, but none quite as memorable as that by No. 800 on the 75th running of the famed train in 2017. The privately owned unit — the first diesel-electric purchased by the railroad — was given an accurate repaint by the CSX paint shop in Huntington, and along with a former SCL SD45 also given a Clinchfield makeover, assisted two CSX F40PHs (for head end power) on the big train.

The lead unit for the Santa Train on Nov. 22, 2014 was SD40-3 No. 4047, shown in this panned shot at Speers Ferry, Va. The remanufactured unit was originally built in 1979 for the L&N as No. 8034. Speers Ferry was a stop for many years, but wasn't ideal for patrons to safely reach.

2022 marked the return of the CSX Santa Train after missing two years due to the COVID-19 Pandemic. The head elf himself, Santa Claus, distributes toys in Dante, Va. Michael Summers

whiplash surprise call from Hinrichs. On his first day on the job, CSX issued a press release confirming the Santa Train would be reinstated. After months of speculating on whether the annual event would return after it last ran on Nov. 23, 2019, CSX earlier announced there would be no train on Aug. 23. The reasons given related to supply chain and (according to Bryan Tucker, vice president of corporate communications), "staffing challenges across our network." Hinrichs, of course, changed all that into a positive outcome.

Hinrichs and Jamie Boychuk, executive vice president of operations, explained the actions taken to reinstate the train. Hinrichs requested a plan on how to operate the train within CSX's staffing constraints. Boychuck explained that in previous years, several train and engine crew members had worked as a team, moving in advance of the train for crowd control and safety measures. This team erected a temporary safety barrier with tape and plastic fencing to keep crowds away from the track at each stop. However, this meant that those employees wouldn't be available to run other trains.

"Instead, we asked employees of our engineering department to take on this task, and they performed admirably. We were able to maintain complete fluidity on the railroad since we had available train crews to handle revenue freight traffic," said Boychuk.

Indeed, the Santa Train met two northbound empty ethanol trains and an empty unit coal train. Traffic on this once-busy route is only a third of the level from 20 years ago, when the southward movement of thermal coal to multiple powerplants in the Southeast started a precipitous drop. After crew member retirements and transfers to more active CSX routes, the seniority roster had evaporated over time as train starts fell.

Hinrichs was quite upbeat about the Santa Train and announced that CSX will run it next year, and certainly into the future. From the look of beaming faces of children and adults along the route, he must be the most popular guy in the Appalachian region right now — except for Santa Claus, of course. 1

Training for contingencies

VIA's Toronto simulator offers the chance to learn in a controlled environment

▲ **Jonathan Cooke, VIA senior manager, operating practices and transportation training, handles the controls of VIA Rail Canada's engineer-training simulator for its new Siemens Venture trainsets at VIA's Toronto Maintenance Centre.** Two photos, Bob Johnston

"PABLO, MAKE IT SNOW!"

The locomotive seat gently vibrates while a cacophony of cab noise includes barely intelligible radio chatter. A clear signal comes into view. The view, from Montreal-bound VIA Rail Canada train No. 60, is of a beautiful spring morning along the St. Lawrence River just past GO Transit's Rouge Hill station east of Guildwood, Ontario. The digital speedometer flips past 70 mph.

Suddenly, the landscape turns cloudy-white as a blizzard blows in off the river. That's because Jonathan Cooke, VIA Rail Canada's senior manager, operating practices and transportation training, told console operator Pablo Larrain to change the weather inputs on VIA's engineer training locomotive simulator.

The blustery conditions make it harder to see what's ahead — a car stalled at a crossing, or perhaps a moose bounding across Canadian National's two-track main. It also means that the upcoming stop at Oshawa will require different deceleration and braking tactics than what the trainee — me — executed unsuccessfully at Guildwood, where I failed to get the last cars of the Siemens trainset on the platform.

REALISTIC ENVIRONMENT

The ability to throw unexpected distractions at would-be engineers is just one feature of the training complex at VIA Rail Canada's Toronto Maintenance Centre.

"We try to recreate the whole trip an engineer will take — from printed documentation provided in the briefing room to the locomotive cab," says Cooke, on a *Trains* tour of the facility in September 2022. The

Technician Pablo Larrain at the console where variables are introduced to the locomotive simulator during trainees' operations. Behind the video screens is the hybrid simulator currently configured as an F40.

original cab replica, activated in 2021, is a hybrid whose setup can be configured for VIA's workhorse F40PH-2D's brake handle placement and analog gauges, P42DC computer screens, or the dashboard of now-arriving SCV42 Chargers.

A second simulator duplicates an F40 cab, while the third incorporates motion and the complete control array specific to Charger locomotives and Siemens cab cars. The P42s will be retired as the Siemens units are introduced through 2025 to become the backbone of the Canadian carrier's Quebec City-Windsor, Ont., corridor fleet [see "VIA: New trains, new challenges," March 2023]. The company also has installed F40 and Charger simulators at its Montreal Maintenance Facility.

All VIA trains operate with two locomotive engineers. The service manager riding with passengers has no operating responsibilities other than verifying when doors may be opened or closed and communicating that to other onboard employees, who all have radios. How the two people in the cab respond and interact under the pressure of an unexpected event is picked up by two cameras and five microphones.

"If there is a conflict in the cab," observes Cooke, "they may be unsure of themselves and speaking under their breath — what should I do here? We can pick that up and coach them afterwards."

Meanwhile, others in the training class are able to critique their compatriots' responses from a wall-sized theatre screen. It reveals not only the same track and landscape those in the cab are seeing, but data displays showing master controller and brake handle positions, speed, and status of all other controls. Observers and instructors also hear piped-in radio chatter that may be unrelated to the passenger train and inconsequential — or contain an urgent warning from a Rail Traffic Control dispatcher.

The first crew goes through a job briefing, just as it would when taking a train out of Toronto Union Station, then spends 15 to 20 minutes in the simulator while the rest of the class watches. Cooke says, "We all learn from our mistakes when we are multi-tasking; you need to prioritize, and this controlled environment helps train for that. Everybody benefits from those types of lessons, and students will give their fellow trainees feedback."

AT THE CONTROLS

The Charger simulator's console, flooring, and side panels came directly from Siemens' Sacramento, Calif., factory, so the operators' visibility and blind spots are similar. Other cab controls are also replicated. Thus, if the headlight or head-end power is programmed to fail during an exercise, the engineers have operating-rule obligations and can access the circuit breakers in attempting to remedy the situation.

Video appears not only through the windshield, but also to the rear utilizing the side mirrors. Passengers can be seen boarding VIA train No. 60 at Toronto. Suddenly smoke is visible; an alarm sounds — there's a fire in the locomotive! Detailed bidirectional visuals have been created to accurately represent over 700 miles of track on the Quebec-Windsor corridor. This is "where we have the highest concentration of trains and employees who benefit from this type of training, and where there is a history of issues and challenges on a complex network," explains Cooke, who qualified as an engineer in 2009 with Canadian National and came to VIA in 2011.

He says the company has software capable of building low-fidelity portrayals of basic track layouts and signaling to extend route familiarization throughout VIA's network without all the elements depicted on the route to Montreal. But the detail built into this system is valuable, because what we are seeing replicates glare on signals caused by the location of the sun. In the current simulation, it is 7:08 a.m. on June 21, 2022.

The mirror view comes in handy pulling out of Toronto because speeds are limited as long as the train is snaking through the station's puzzle switches. Another helpful aid for trainees learning the route is a track profile screen on the right side of the engineer's console showing elevation, curvature, and crossover locations. With speed limits rising to 90

With the cab set for a night view, the simulator shows Toronto Union Station. The left screen monitors locomotive systems; the middle tracks speed, propulsion, and brakes; and the right is a simulator-only representation of grades being portrayed. Three photos, Bob Johnston

mph on an upgrade, Cooke suggests pulling back the master controller all the way for full power. On the other hand, an upcoming station stop at Guildwood following a downgrade requires a more prudent train-handling approach.

"This is where we'll use the grade to help control the train's speed," he advises, but the display is only a tool that helps trainees learn each route's specific characteristics. "We really try to have students looking at the track; paperwork is a distraction," he adds. The video-screen space on a locomotive and cab car is reserved for possible future installation of positive train control, as configured on U.S. Chargers.

VIA's latest simulator has evolved from training tools dating from 2016; before that, Cooke says training consisted of a locomotive control stand in front of a 50-inch TV. Now there is the dispatcher signaling over radio chatter, "CN detector … milepost …," a limited clear signal array indicating a 45-mph crossover ahead, and the hind end of a bear hustling into the brush.

Larrain, at the simulator's control console, again introduced snow into the mix. Then it was time to execute an emergency stop on the main line, so VIA's newly hired Public Affairs Coordinator, Cerise Thoor, has an opportunity to bring the morning train from Toronto into Oshawa.

As we experienced crunching sounds and seat vibration of the simulator cab grinding to a halt next to one of Canada's ubiquitous Tim Horton's donut shops along the tracks, it was impossible not to think how valuable route-specific simulator training would have been to the engineer operating Amtrak *Cascades* train No. 501 over the Point Defiance Bypass south of Tacoma, Wash., on Dec. 18, 2017. With this technology now available, there is no longer any excuse for not using it.
— *Bob Johnston*

A close-up of the right screen in the image above, which helps qualifying engineers learn route characteristics. This is keyed to the video displayed through the simulator's windshields.

An exterior view of the Charger simulator, as seen from a hallway at the Toronto Maintenance Centre.

Swiss introduce gauge-changing train on Montreux Interlaken route

Equipment operates on line with meter and standard gauge tracks

A CONCEPT SOUGHT for years by the Swiss rail industry and passengers became reality in December 2022, as through trains debuted between Montreux on Lake Geneva and Interlaken in the heart of the Alps.

No new rail lines were needed, but some impressive modern technology was required.

The route includes a 39-mile meter-gauge line out of Montreux operated by Montreux Berner Oberland Bahn, or MOB, and a 33-mile standard-gauge route out of Interlaken run by Switzerland's second-largest mainline rail company, BLS (formerly the Bern–Lötschberg–Simplon Railway, now known by its initials).

To make the through running possible, trains use 23 new Golden Pass Express, or GPX, push-pull cars built by Swiss firm Stadler operating on variable-gauge trucks.

A gauge-changing system built at the station at Zweisimmen, where the two track gauges meet, adjusts the specially designed trucks made by Alstom in Switzerland.

The new trains cost about $95 million, funded in part by Switzerland's national rail infrastructure fund and in part by the train companies. Not all the new cars were in operation when the service debuted; the last few were set for completion in 2023.

A COMPLEX SYSTEM

The operation is complex. Automatic gauge changes have been done elsewhere, but the difference here is the largest ever undertaken, going from 1000 millimeters to 1435 mm, a difference of 435 mm or 17.126 inches. In Spain, there are trains that switch from 1435 to 1668 mm, a difference of 233 mm or 9.17 inches, while some trains in Japan adjust from 1435 mm to 1067 mm, a different of 368 mm or 14.49 inches.

The locomotives involved cannot change gauge, so must pass through when it is set for their width. In practice, the gauge change is always accomplished when the cars are being pushed or pulled by the MOB meter-gauge locomotive.

Trains arriving on the standard gauge stop short of the gauge changer, where the BLS locomotive is removed along with a special car used to connect it to the push-pull GPX

▲ A Golden Pass Express (GPX) gauge-changing train in Zweisimmen, Switzerland, on Dec. 14, 2022. The wheelsets change from meter gauge to standard gauge in Zweisimmen. Keith Fender

The gauge-changing equipment at Zweisimmen. The GPX train, with a bright green BLS standard-gauge locomotive at the rear, has already undergone its conversion. Trains are always moved through the equipment by MOB's meter-gauge locomotive. Two photos, Keith Fender

The trains built by Switzerland's Stadler feature three classes of service and large picture windows. This view is from First Class, which offers two-plus-one seating.

cars. The MOB meter-gauge locomotive couples up at the back, pushes the whole train through the gauge changer, and continues on to Montreux. The opposite applies for trains going to Interlaken. They arrive through the gauge changer hauled by the MOB locomotive; the technology allows that locomotive to pass through before changing all the other axles from meter to standard gauge. Once the MOB locomotive is removed, the cars — now standard gauge again — get the BLS locomotive and its special car attached at the rear, which then push the train to Interlaken.

While the gauge change is obvious, and announced onboard — with a video of the wheelsets being changed played in the cars as it happens —this is not the only change involved. The BLS standard gauge system uses Switzerland's standard 15 kV AC overhead power, but the MOB meter gauge uses the less routine 900 volts DC. This means voltage in the overhead wires has to be physically changed each time to allow the necessary locomotive movements at Zweisimmen.

The final technical complication to be overcome was the fact station platforms are about 8 inches higher on the standard-gauge line than on the meter-gauge portion of the route. The gauge-changing process also physically lifts or drops the cars to the correct height. Retractable electric steps help bridge the gap to the platform for passengers. Low-floor cars suitable for use by those in wheelchairs, etc., are being built and will be the last cars to be introduced.

ONE LESS TRAIN CHANGE

The line where the new trains run has been part of the Golden Pass route for many years. This route takes passengers from Luzern via the meter-gauge, rack- (or cog-wheel-) equipped, route over the Brünig Pass to Interlaken, where they transfer to trains via Zweisimmen to Montreux. The spectacular mountain and lake scenery has been attracting visitors for well over a century, while the rail trip has required two changes of trains since 1916.

Once the frequency of the Golden Pass Express trains ramps up to four each way daily, which is scheduled for June, it will be possible to make the trip with just one change, at Interlaken. Running the entire route using gauge-changing equipment has been considered, but would require new or modified cars for cog-wheel operation over the Brünig Pass section.

TRAINS OFFER THREE-CLASS SERVICE

The new trains are clearly aimed at Switzerland's massive international tourist market. A "cow bell" chime, as found round the necks of most Swiss cows but seemingly nowhere else in the world, is used to precede all onboard announcements. (As usual for Switzerland, these announcements are in multiple languages, including English.) But this is no tourist-only train, although a lot of tourists use it. It's part of the local transport system, with residents using it for trips from one town to another.

There are three classes of onboard accommodations. Second Class is modern two-plus-two seating, albeit like all the train with big picture windows. First Class has two-plus-one seating, while at either end of the train there is Prestige seating, which can be rotated, with plush leather seats and a view forward or back during the portion of the trip when no locomotive is immediately adjacent. (This will never be the case for the entire journey, irrespective of which end of the train is chosen.)

The Prestige seats are really just for tourists and need prebooking with a special fare (currently 35 Swiss Francs, so around $37) charged on top of the First Class ticket price. In First and Second Class, reservations are not compulsory and rail passes like Eurail or the Swiss Pass are accepted, although anyone planning to make the trip as a highlight of a vacation should probably book their seats in advance.

There are several onboard catering options to choose from with locally sourced food available to pre-order. There is also the option of buying drinks and snacks onboard.

The train has its own website in several languages. You can find the English-language version at www.gpx.swiss/en/

— *Keith Fender*

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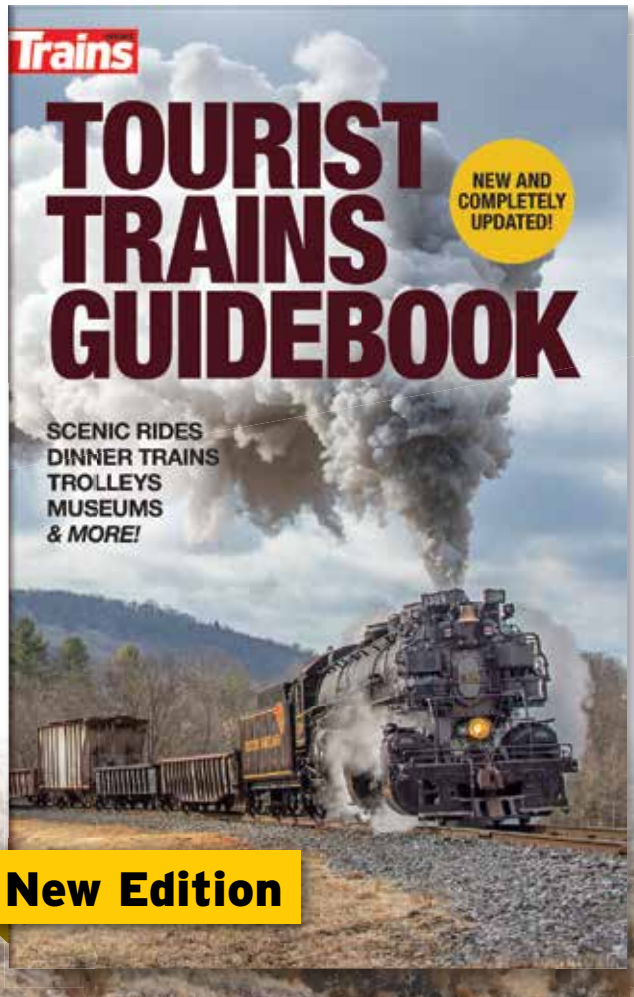

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The return of Maine Central No. 470

Although much work remains, 99-year-old locomotive is moving toward operation

▲ **New England Steam Corp. volunteers prepare to remove the throttle valve of Maine Central 4-6-2 No. 470 inside the organization's shop at Hancock, Maine, on Dec. 31, 2022. The locomotive last ran in 1954, and had been displayed outdoors for 62 years.** Two photos, Hanna Brooks

STEAM LOCOMOTIVES on Maine's restored narrow gauge railroads deservedly receive a good deal of attention, but another important steam restoration also continues to move forward in the Pine Tree State. Maine Central 4-6-2 No. 470, the last steam locomotive to operate on the railroad in 1954, spent 62 years displayed outdoors in the Maine Central Railroad shop town of Waterville, Maine, until its 2015 sale to not-for-profit New England Steam Corp.

Now housed inside NESCo's shop at tourist road Downeast Scenic Railroad in Hancock, Maine, a small group of volunteers work steadily on the now 99-year-old Alco, eager for it to operate again on home rails.

In late 2022, a new tender water cistern and coal bunker, fabricated two years prior, were mounted on the car's original frame. Flues and tubes are being removed in preparation for a boiler survey. Many small parts have been needle-scaled and painted. The four-wheel lead truck has been disassembled and evaluated. New cab sides and a front piece are awaiting riveting and installation.

Maine Central No. 470 was the last of five Class C-3 Pacifics built for the railroad in 1924 by Alco at its Schenectady, N.Y., plant. With 73-inch drivers, Baker valve gear, and a trailing-truck booster, the engine held down mainline passenger assignments until the arrival of EMD E7s starting in 1946.

By 1954, No. 470 was working passenger trains on MEC's scenic Rockland Branch east of Brunswick, Maine. As Maine Central was rounding out its purchases of EMD and Alco road-switchers in the early 1950s, the railroad gave steam its last hurrah on June 13, 1954, when No. 470 hauled 700 passengers on an all-day Portland-Bangor round-trip farewell excursion. Shortly after, Maine Central's last operating steam engine was put on display near Waterville's train station.

In 1962, the locomotive was donated to the City of Waterville. No. 470 was moved two more times, and except for some cosmetic restoration, it sat in the elements for another 46 years. By 2013, city leaders decided to dispose of the deteriorated and vandalized Alco.

Most initial bids were from out of state, meaning the historic locomotive might depart the region. The city wanted it to stay in Maine, if possible, according to H. Leverett Fernald, president and CEO of the

New England Steam Corp. The organization had been formed as a 501(c)(3) nonprofit corporation for the purpose of acquiring and restoring No. 470. Fernald recounts that after meetings, city officials agreed to sell the locomotive to NESCo for $25,000, provided the organization had the means to move it. He says the group did raise the funds and the title passed in November 2015.

Over the following months, the locomotive and tender were disassembled, and moved by truck over the 85 highway miles from Waterville to Hancock. The engine's boiler and frame were two separate loads, while the tender frame, cistern, and trucks were another two.

From the beginning, NESCo planned to move No. 470 to the not-for-profit Downeast Scenic Railroad, which has run excursion trains over an isolated 5 miles of Maine Central's onetime 130-mile Brewer-Calais branch since 2010. Several of NESCo's principals, including Fernald, also are Downeast volunteers.

He says the cooperation between the two organizations will give No. 470 a place to run when its rebuilding is complete. Even after more than 3,000 hours of volunteer work, much remains to be done. All work is paid for by fundraising, NESCo memberships, and grants from private foundations. Fernald says that completion of the boiler survey by an outside contractor will give the group a better idea of the boiler rehab's actual cost.

On Nov. 13, 2022, the newly fabricated cistern and coal bunker is lowered onto the original tender frame of the last steam locomotive to operate on the Maine Central. Nonprofit New England Steam Corp. plans to run No. 470 on the Downeast Scenic Railroad.

He quickly lists other pending tasks: The lead truck will need machine work and new springs. The trailing truck, main frame, cylinders, and drivers all require evaluation and repair. Much of the heavy repair also will be performed by contractors. Asked about a target date for completion of the project, Fernald says, "If we had a million dollars given to us right now, we could probably have it done in five years. A realistic date is probably 10 years."

To learn more about the No. 470 project and how you can help, visit www.newenglandsteam.org or see NewEngland-Steam on Facebook. — *Scott A. Hartley*

PRESERVATION BRIEFS

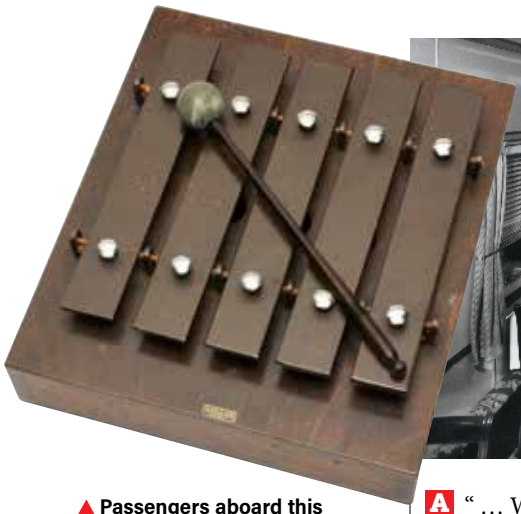
Rebuilding has begun on former UP Challenger

The process of returning ex-**UNION PACIFIC CHALLENGER NO. 3985** to operation has begun in the Silvis, Ill., shops of **RAILROADING HERITAGE OF MIDWEST AMERICA.** Crews began work by removing, assessing, and labeling parts. The cab was also disconnected and lifted off the engine. No. 3985 last ran for the UP in 2010 and has been stored in Cheyenne, Wyo., until its donation to RRHMA in 2022 along with several other locomotives and railcars. The railroad decided to focus its efforts on restoring Big Boy No. 4014 and operating it along with 4-8-4 Northern No. 844. RRHMA is also restoring No. 4014's tender. When completed UP and RRHMA will swap tenders, returning No. 3985's original tender to that engine. RRHMA

METRO-NORTH RAILROAD and **CITY EXPERIENCES** announced that tours of New York's Grand Central Terminal have returned after a two-year hiatus due to the COVID-19 pandemic. Walks, a global tour provider, will now conduct the daily tour, which begins at 3 p.m. The 90-minute program visits the Main Concourse, Grand Central Market, Transit Museum, Vanderbilt Hall, Grand Central Clock, and Whispering Gallery. Grand Central Terminal, opened in 1913, has hosted trains the likes of New York Central's *20th Century Limited* and stands as an architectural icon in America. Metro-North Railroad

Q What musical instrument was used to announce dinner on passenger trains?

— Jonathan Skinner, Davis, Calif.



▲ **Passengers aboard this Baltimore & Ohio Railroad dining car would have been called to their meal with gentle notes G-E-C played on a dining-car chime like this five-note version produced by J.C. Deagan Inc. of Chicago.** B&O Railroad

A " … We are gently roused from our reveries by the three musical notes of the dinner chimes and the soft voice of the dining car waiter giving the call for dinner," wrote Lawrence W. Sagle of the Baltimore & Ohio Railroad public relations department in describing railroad dining [see "Meals en route," January 1941].

The waiter most likely made the call to the dining car with the help of a Deagan chime. John Calhoun Deagan was a musician and manufacturer born in Hector, N.Y., in 1853. He studied music at the University of London and became fascinated with the science of sound. Deagan employed his talents to produce magnificent musical instruments including xylophones, organ chimes, marimbas, and tubular cathedral bells, to list a few. In 1913 he opened J.C. Deagan Musical Bells Inc. in Chicago. In three years, the name was shortened to J.C. Deagan Inc.

Among Deagan's offerings was a series of dinner calls or chimes. Models were offered with three, four, and five notes that could be hand-held or wall mounted. The sounds generated by these chimes were beautiful. Railroads began to use them as a well-mannered means of calling passengers to

You can hear the wheels squealing on this string of hopper cars being led off the Metropolitan Sub at Point of Rocks, Md., by CSX No. 4841, an EMD SD70ACe. On this sharper curve, the wheels slip laterally on the rail, contributing to the loud squealing. Alex Mayes

the dining car. A waiter passing through the train would normally play three notes and announce that the dining car was now open for the midday or evening meal. The announcement was recognized by passengers, yet was not overly loud or intrusive to those quietly enjoying the ride.

The notes played have a story behind them as well. The Deagan chimes began appearing aboard dining cars in the late 1930s. In the previous decade, Radio Corporation of America (RCA), then owned by the General Electric Co., along with Westinghouse, AT&T and the United Fruit Co., formed the first radio network — the National Broadcasting Co. By 1927, NBC developed a seven-note chime to identify the network and announce its programming. This was trimmed to three notes no later than 1930. The notes: G, E, and C, for General Electric Co., which was RCA's largest stockholder until 1932, when it was forced to divest its interest.

GE involvement or not, the three-note chime had been ingrained in American minds as an unobtrusive attention-getter. Most railroads adopted the notes as their call for mealtime, announced with the aid of a Deagan chime. — *Bob Lettenberger*

Q Wheel flanges contribute to the squealing sound made by railcars on sharp curves. Can a wheel slide on the rail, adding to the noise? — *Justin Lambrecht, Green Bay, Wis.*

A Yes, when a metal wheel slides laterally on a metal rail, a squeal can be the result. As noted previously, the wheels of a railcar are fixed to the axle and do not rotate independently, like those on a road vehicle [see "Ask Trains," February 2023].

When a railcar is rounding a curve, the wheel on the outside rail travels farther than the wheel on the inside rail. The

Sporting Amtrak's phase VI paint scheme, new ALC42s Nos. 302 and 300, along with an older GE Genesis unit, lead the *Empire Builder* through Caledonia, Wis., in April 2022. Nos. 300 and 302 are two of only eight ALC42s to be painted in the phase VI scheme. Al Baker

Amtrak No. 309 is the first Siemens Charger ALC42 to wear the phase VII paint scheme. This is the seventh major locomotive color design in Amtrak's 50-year history. The various portions of the scheme were developed to match the shape of the locomotive. Amtrak/Mike Armstrong

wheels have a tapered profile. With lateral movement, the wheels will slip from side to side across the profile. This metal-on-metal slide will cause a loud squealing noise. Sharper curves have the potential to produce increased wheel movement, leading to more noise. Lateral wheel movement can occur on both level curves and those on a grade. A wet rail or one that has been oiled will reduce the squealing. — *Trains staff*

Q If the new Amtrak paint scheme, shown on page 7, June 2022, is phase VII, what is phase VI? Where will Amtrak use the new ALC42 locomotives? – *Bob Cronan*

A With the delivery of the Siemens ALC42 locomotives, Amtrak unveiled what it is calling its seventh standard exterior scheme — phase VII. No. 309 is one of 75 units in the current order, which will be delivered through 2025, and the first to wear the new phase VII colors. Rounding out the first 10 ALC42s, eight are painted in the phase VI scheme (Nos. 300, 302-308), and one, No. 301, wears the "Day One" heritage scheme.

Describing the phase VII paint scheme, Amtrak says, "The Amtrak red color on the front provides a bright splash of color, while darker colors were placed in strategic areas to accentuate the sleek form. The white portions of the design, stripes, logos, and unit numbers are reflective for added visibility and safety. The design's use of non-metallic colors is a departure from predominantly silver locomotives, making repair work more efficient."

Amtrak plans to use the ALC42s on its long-distance trains, replacing the aging GE P40 and P42 units. The earliest P40s joined Amtrak's fleet in 1993. The first P42s arrived in 1996. No. 309 has run on the *California Zephyr* and *Capitol Limited*. Other ALC42s have been seen on the *Empire Builder* and *City of New Orleans*. — *Bob Lettenberger*

In the May issue

Beer and trains

The development of the nationwide rail network had a profound impact on the rise of the **BREWING INDUSTRY**. Take a ride aboard Metro-North's next-generation **TRACK INSPECTION CAR**. Dinner trains, Santa trains, and everything in between spelled success for Ohio's **HOCKING VALLEY SCENIC RY**. The *400* was Chicago & North Western's **SPEED CHAMPION**. Plus News, Photo Gallery, Preservation, Ask Trains, and more!

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www.leadvillerailroad.com **1-866-386-3936**

FLORIDA — **MILTON**

WEST FLORIDA RAILROAD MUSEUM

5003 Henry Street

The Museum occupies the L&N Milton combination freight and passenger depot that was built in 1907-09 on the site of the original 1882 P&A depot. Unique to this museum is the relocated bridge tender's home, and the Globe Coffeehouse, one of the only Louisville and Nashville diners remaining. The Museum is open Wednesday to Saturday from 10:00 a.m. to 3:00 p.m. and other times by appointment for group tours.

www.wfrm.org **(850) 623-3645**

INDIANA — **Connersville**

WHITEWATER VALLEY RAILROAD

5th and Grand

Travel through time on Indiana's most scenic railroad. 33-mile round trip to Metamora, May through Oct. Special events Feb through Dec. Vintage diesels: 1951 Lima-Ham. (2) 750 HP & 1000 HP, 1954 EMD/Milw. Rd. SD10, 1948 Alco S1, 1942 GE 65 Ton. Gift Shop.

www.whitewatervalleyrr.org **765-825-2054**

KANSAS — **Abilene**

ABILENE & SMOKY VALLEY RAILROAD

200 SE Fifth Street

May-October. Enjoy our 11-mile round trip through the Smoky Hill River Valley. Diesel and Steam Trains, Dinner Trains, and Private Charters available. Find us on Facebook, our website or call us. Close to I-70.

www.asvrr.org **785-263-0177 or 263-0118**

PENNSYLVANIA — **Marysville**

BRIDGEVIEW BED & BREAKFAST

810 S. Main St.

At The Bridgeview B&B
The action comes to you!
Freight Trains are rolling
in and out of Enola Yard
right past our front porch. From the spacious decks and sitting room, you can watch the Susquehanna River, Blue Mountains and trains crossing World Famous Rockville Bridge, all in one spectacular panoramic view! Relax, in a comfortable, "home away from home" atmosphere at The Bridgeview, where we feature 10 clean, cozy rooms, all with private baths, A/C, WiFi, plus a freshly prepared breakfast to start your day! Visit Harrisburg, Hershey, Gettysburg, Adamstown and PA Dutch Country. See our website for more information, and give us a call. Come experience The Bridgeview Bed & Breakfast, where you never know, **what**, you might see next!!

www.bridgeviewbnb.com **717-957-2438**

PENNSYLVANIA — **Strasburg**

RAILROAD MUSEUM OF PENNSYLVANIA

300 Gap Road

Real Trains. Experience our fascinating, world-class collection of 100 historic locomotives and railroad cars in the climate-controlled Rolling Stock Hall. Real History. Climb aboard a caboose, take the throttle in an authentic locomotive cab, inspect a 62-ton engine from underneath and stroll back in time through the 1915-era Main Street. Real Excitement. Try out hands-on activities in Stewart Junction railway education center and interactive exhibits throughout the Museum. Visit during a family-friendly special event. Features a working restoration shop, vast research library and archives, tours and virtual tours, orientation video in Steinman Station passenger depot and the Whistle Stop Shop museum store. Open year-round, free on-site parking.

www.rrmuseumpa.org **717-687-8628**

TEXAS — **Rosenberg**

ROSENBERG RAILROAD MUSEUM

1921 Avenue F, Rosenberg, TX 77471

The Rosenberg Railroad Museum is dedicated to preservtion and education of railroading history and its impact on Fort Bend County. Exhibits Include 1970's Caboose, 1903 Tower 17, 1879 passenger car, Garden Railroad, model train layouts, and more! Open Wed-Fri. 10-3pm, Sat. 10-4pm, & Sunday 1-4 pm.

www.RosenbergRRMuseum.org **(281)633-2846**

WISCONSIN — **Green Bay**

NATIONAL RAILROAD MUSEUM

2285 South Broadway

Explore dozens of historic trains and engaging exhibits at the National Railroad Museum, which is open year-round. Among our popular attractions are: the General Motors Aerotrain, Union Pacific "Big Boy" #4017, Pennsylvania Railroad GG-1 electric locomotive #4890, the Dwight D. Eisenhower A4 locomotive, and the world's largest collection of drumheads. Train rides are offered daily May-September (weekends in October).

www.nationalrrmuseum.org **920-437-7623**

WISCONSIN — **Trego**

WISCONSIN GREAT NORTHERN RAILROAD

N6639 Dilly Lake Road, Trego, Wisconsin

America's Only Moving

BED & BREAKFAST DINNER TRAIN

The train departs Tuesday through Saturday evening at 5:30 May through December. The train features a queen bed, toilet, sink and shower in each sleeper deluxe suite. Enjoy cocktails in the lounge and then move to the diner for a scrumptious 4-course chef prepared meal from our onboard kitchen. When the train returns to the station view the starlit sky while trading railroad tales with other passengers around our gas fire on the patio. Wake up to a hot breakfast in the diner. See the world famous *Mark Twain Zephyr* at Trego Depot!

www.spoonertrainride.com **715-635-3200**

CLASSIFIEDS

Word Rate: per issue: 1 insertion — $1.57 per word, 6 insertions — $1.47 per word, 12 insertions — $1.37 per word. $35.00 MINIMUM per ad. Payment must accompany ad. To receive the discount you must order and prepay for all ads at one time. Count all initials, single numbers, groups of numbers, names, address number, street number or name, city, state, zip, phone numbers each as one word. Example: Paul P. Potter, 2102 Pacific St., Waukesha, WI 53202 would count as 9 words.
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CLOSING DATES: June 2023 closes Mar. 22, July closes Apr. 26, Aug closes May 23, Sep closes June 19. Oct closes July 26, Nov closes Aug. 22, Dec close Sept. 27.
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Fax: (262) 796-0126 E-mail: classads@kalmbach.com

RAIL SHOWS AND EVENTS

MARCH 25-26, 2023: Train Show, Lewis Recreation Center, 3110 Forrest Lawn Dr, Greensboro, NC 27455. Saturday 9:00am-5:00pm & Sunday 10:00am-4:00pm. Admission $10 (includes both days), $1 off with flyer, children under 12 free with adult. Visit us: www.carolinamodelrr.org. Contact Kenn at kcassell@twc.com or call 336-501-0233

MARCH 25-26, 2023: Lincoln Square Train Show, 100 W. High St., Urbana, IL 61801. Saturday 10am-5pm, Sunday 11am-4pm. Hosted by Illinois Terminal Division, NMRA. FREE public admission. Railroadania and historical societies. Free parking and wheelchair accessible. Vendor table info at http://itd.illinoisterminaldivision.org/show/show.htm

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

JUNE 11, 2023: 47th Annual Kane County Railroadiana and Model Train Show. Kane County Fairgrounds, 525 South Randall Rd., St. Charles, IL. Sunday, 10:00am-3:00pm. Admission: $6.00 w/tax. Tables starting at $65.00. Information: 847-358-1185, RussFierce@aol.com or www.RRShows.com

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

LODGING

"QUINN"TESSENTIAL RAILFAN ACCOMMODATION on Airbnb.com. Private Guest house, close walking distance to tracks and Tehachapi Loop. Located next to tunnel 10. Railroad Memorabilia on property. A Railfan Hidden Gem! Questions? qrailfan@use.startmail.com

INN ON THE RIVER: Book your stay for a relaxing getaway overlooking the beautiful Mississippi! Guests are minutes from quaint restaurants, stores and many outdoor opportunities. Each room has a private balcony for stunning views of the Mississippi River and the Burlington Northern-Santa fe Rail Line. Reservations: 608-534-7784 www.innontheriverwi.com or email: innontheriverwi@gmail.com

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SOUTHERN PACIFIC DIESEL LOCOMOTIVE BUILDER'S PLATES FOR SALE. Lifetime collection. Over 290 plates from 20 different manufacturers and rebuilders. Inventory sent upon request. Best offer. bslomazzi@att.net

TOP DOLLAR PAID for steam/diesel or electric builder plates. mr_slides@hotmail.com Telephone: 216-321-8446

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RAILROAD ART

THE ESTATE OF WELL-KNOWN RAILROAD ARTIST, ANDREW HARMANTAS, is selling all remaining paintings from his collection. Paintings are of various railroads, steam, diesel, and various sizes. Majority are framed. Inquiries, visit www.andrewharmantasart.com

MISCELLANEOUS

RAILROAD PATCHES: Engineer caps with insignia. 1,000 designs. Catalog $5.00. Patch King, Box 145, York Harbor, ME 03911.

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PRR LW PULLMAN CAR Cast-iron door nameplates, 1938-1950. J.H. STEVENSON, Rocky River, OH 440-333-1092 jhstevenson8445@gmail.com

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ADVERTISERS

The Advertiser Index is provided as a service to TRAINS magazine readers. The magazine is not responsible for omissions or for typographical errors in names or page numbers.

Miles of mountains

A multitude of San Gabriel Mountain peaks dwarf the head end of a southbound Union Pacific stack train as it approaches Sullivan's Curve of California's Cajon Pass on Nov. 12, 2022. The location is named for photographer Herb Sullivan, who chronicled Santa Fe and Union Pacific here in the 1930s and 1940s. Southern Pacific built its own line alongside the Santa Fe in 1967, and today Union Pacific and BNSF run side-by-side on the much-photographed curve.

A mountain meeting

A BNSF eastbound freight on the railroad's Cajon Subdivision, led by GE ES44C4 Nos. 6553 and 6685, overtakes the rear distributed power — EMD SD70M No. 4155 and SD70ACe No. 8637 — of a northbound Union Pacific manifest train stopped on the railroad's Mojave Subdivision in Cajon Pass on Nov. 12, 2022.

Sunseeker

Southbound Amtrak *Pacific Surfliner* train No. 580 outruns the rain that the steely Pacific Ocean sky portends at San Clemente, Calif., on Feb. 21, 2022. In places along the San Luis Obispo, Calif., to San Diego route, the tracks run less than 100 feet from the ocean.

A Tribute

It's a rare rainy day in Cajon Pass on Nov. 7, 2022, as the lead locomotives of this eastbound BNSF Railway stack train grind by on an ascent. The GE locomotive trio — ES44C4 No. 8164, ES44DC No. 7826, and C44-9W No. 4343 — brings a combined 13,200 hp to the climb. This composition is similar to some of the famous Santa Fe Railway images that Herb Sullivan captured at the curve that bears his name. Close your eyes and you can almost see the red, yellow, and silver of a Santa Fe warbonnet against the rock formations.

Head in the clouds

The head end appears to touch the clouds as this Norfolk Southern manifest train clanks and bangs high over Nicholson, Pa., on the Tunkhannock Creek Viaduct on Sept. 30, 2021. The bridge measures 2,375 feet long and towers 240 feet above the creek.

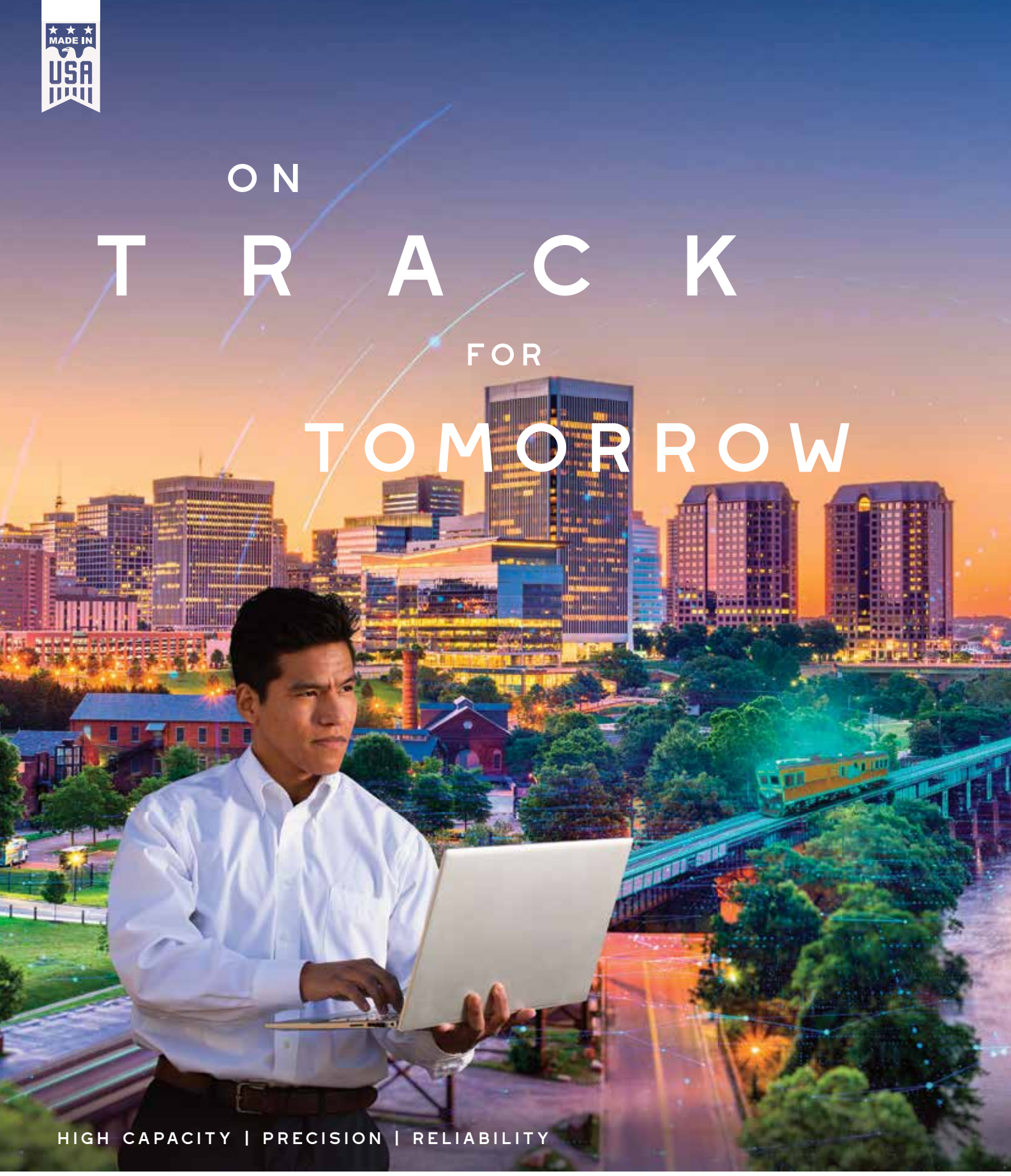
Up and over

Kansas City Southern No. 4798, a GE ES44AC, helps heave a covered-hopper unit train up Rich Mountain at Page, Okla., on April 7, 2022. The train began its ascent shortly after departing Heavener, Okla. It will wind along Big Creek, following the stream into Arkansas.

Andrew Meinzer grew up in Galion, Ohio, where trains of its busy then-Conrail tracks provided an around-the-clock soundtrack to daily life throughout the small town. He enjoys photographing scenes and landscapes that include the bonus of a train traveling through them. So far, his favorite place to photograph trains is Cajon Pass. It has beautiful rock formations and is near his current home in the Los Angeles area. Plus, with all of the train traffic there, if he misses a good shot, it's only a short wait for the next train and a "do-over"!

The gods above

A westbound Union Pacific covered-hopper unit train — led by No. 5313, a GE ES44AC — ducks under the Bridge of the Gods as it exits Cascade Locks, Ore., on Aug. 28, 2022. The bridge, which is 1,858 feet long, stands 135 feet above the Columbia River.



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