# **TUNNEL WORK: CSX DIGS DEEP IN BALTIMORE**





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# From the Editor



# Carl Swanson

carl.swanson@firecrown.com X @TrainsMagazine @ @trains\_magazine



ill Stephens takes us underground this month to examine

CSX's reconstruction of the 8,700-foot-long, 130-year-old, Howard Street Tunnel in Baltimore, Md.

The tunnel will be closed through most of 2025, requiring detours of about 20 freight trains a day. This has had a knock-on effect across much of the CSX system.

When it's done, the railroad will be able to run double-stack trains between the Port of Baltimore and the Midwest via the most direct route, the former Baltimore & Ohio's main line over Sand Patch grade to Pittsburgh and onward to Chicago.

The work is funded in part by federal and state entities, a testimony to the power of public-private partnerships.

# Editor Carl Swanson Design Director Thomas G. Danneman Senior Editor David Lassen Associate Editor Bob Lettenberger Editorial Associate Monica Freitag Assistant Design Director Scott M. Krall Illustrators Roen Kelly, Kellie Jaeger Production Director Kelly Kramer Weekley Operations Specialist Melissa Valuch

roduction Specialist Sue Hollinger-Klahn

**Columnists** 

John P. Hankey, Brian Solomon, Bill Stephens

Dan Cupper, Keith Fender, Steve Glischinski, Chris Guss, Scott A. Hartley, Bob Johnston, David Lustig, Robert W. Scott

Founder A.C. Kalmhach 1910-1981

Librarian Thomas Hoffmann

Director of Trains.com A. David Popp Executive Producer Kent Johnson

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# CUSTOMER SERVICE Phone: (877) 246-4843

Outside U.S. and Canada: 847-313-3921 Customer Service: TrainsMagazine@Omeda.com

### ADVERTISING DEPARTMENT

Martha Stanczak Email: martha.stanczak@firecrown.com Phone: (414) 246-7081

Fmail: carl.swanson@firecrown.com Address: 18650 W. Corporate Dr., Suite 103 Brookfield WI 53045

# **RETAIL ORDERS & INQUIRIES**

Selling Trains Magazine or products in your store: Email: terri.meunier@firecrown.com

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▲ Union Pacific and Canadian National trains cross paths at Nekoosa Junction, Wis., on June 19, 2023. UP CEO Jim Vena is on board with the idea of further Class I mergers; CN's Tracy Robinson is not so sure. Al Baker IT'S BEEN TWO YEARS since CPKC CEO Keith Creel drove the ceremonial final spike at Knoche Yard in Kansas City to celebrate the merger of Canadian Pacific and Kansas City Southern. The symbolic event marked what rail executives, regulators, and analysts expected would be the last merger in-

0210

CEO Keith Creel drives the spike marking completion of the Canadian Pacific-Kansas City Southern merger in Kansas City on April 14, 2023. Could the rail industry see another round of mergers? CPKC

volving two Class I railroads.

But now there are whispers across the railroad industry that some big systems are dusting off their merger playbooks and evaluating their options. Mergers, independent analyst Anthony B. Hatch says, are a hot topic in Class I boardrooms, second only to talk about the impact of tariffs.

Why the change of heart? Until the pandemic hit in 2020, there had been expectations the big U.S. systems would pivot to growth after several years of cost-cutting, shedding lower-margin traffic, and streamlining operations.

"We haven't seen any growth
— any growth in market share,
any growth in volumes, any
growth in market capitalization," Hatch says. Some see a
U.S. transcontinental merger as
a way to jump-start volume and
earnings growth.

Changes in Washington also

play a role. With the Trump administration aiming to roll back federal regulations, and a Republican chairman at the Surface Transportation Board, some believe the conditions may be right for a final round of consolidation. And then there's the fact, Hatch points out, that only one of the current six Class I chief executives has long-term ties to the railroad they lead.

The Class I railroads regularly analyze the merger landscape and produce internal studies that cover potential merger partners and scenarios. What's different now, according to Hatch and multiple other people in the industry, is that at least three railroads' boards are being asked to weigh in. Plus, at least two of the Class I railroads have beefed up their legal and lobbying teams in Washington.

Publicly, the Class I railroads are split about whether mergers make sense or are even possible given the tighter merger rules the STB adopted in 2001. The new rule said mergers must enhance competition, rather than merely preserve it, and would have to be in the public interest. (A deal involving a Class I and KCS was given an exemption.)

Union Pacific CEO Iim Vena told Trains that a transcontinental merger would improve service, divert freight off the highway, and help U.S. exporters and importers better compete in global markets.

Railroads would become more competitive with trucks if it didn't take 24 to 36 hours to hand off freight cars in Chicago. "You change the whole paradigm discussion with trucks on the highway versus what comes to the railroad," Vena said in an April interview.

The ability to provide coastto-coast, single-line service like Canadian National and CPKC can north of the border. and in CPKC's case deep into Mexico — would be a boon.

"I think it's a win for our customers and a win for competition and it's a win for how the country should move ahead," Vena says. "Now, on the regulatory front, it's complicated."

But a Class I merger proposal could gain STB approval when the timing is right, Vena contends. "Now whether we're in the right situation with everything - who knows and we'll see what happens," he says.

To Creel, the 2001 STB rules are an insurmountable barrier.

"The standards that we had to meet to get our deal approved pale in comparison to the standards that are untested in the new merger rules," Creel told a May 21 investor conference. He adds: "There is ... not a hill of regulatory risk to climb. There's mountains of regulatory risk."

And that risk, Creel says, outweighs any benefits that might flow from a transcontinental merger. "So quite frankly, I don't think it's necessary.

I don't think it's needed. I don't think it's realistic," he says.

CN CEO Tracy Robinson, speaking on the railway's May 1 earnings call, said consolidation has been a topic of conversation during her entire career in the industry. "There seems to be a little bit more chatter right now, but at the same time the risks of these types of combinations are significant," she said. "The new rules that came in in 2001 set a pretty high bar."

But, she told a May 20 investor conference, "That doesn't mean that it's not possible and someone won't take a run at it."

CN sought to get its ill-fated KCS acquisition judged under the new rules. But CN didn't get past go, as the STB shot down its request to put KCS in a voting trust, a common maneuver for rail mergers.

Robinson says CN prefers to focus on forming interline agreements with other railroads, such as the Falcon Premium intermodal service linking Canada and Detroit with points in Mexico via Union Pacific and Ferromex. Joint service can provide some benefits of mergers but without the financial and regulatory risks, she says.

BNSF Railway doesn't see a catalyst for a merger. "We view it as unlikely, as we aren't hearing from our customers or the other constituencies that they want to see further consolidation in the industry," spokesman Zak Andersen says.

CSX and Norfolk Southern likely targets in any merger scenario - say they remain focused on running their railroads rather than mergers.

"I see a lot of benefit in a transcon merger. I think there could be a lot of synergies there and cost takeout. But I also view the regulatory framework as pretty challenging right now," NS Chief Financial Officer Jason Zampi told a May 20 investor conference.

CSX Chief Commercial Offi-



CSX auto rack train Q231 passes Norfolk Southern ECO units at the MARTA Lakewood station near East Point, Ga., on July 9, 2017. CSX and NS would likely be targets of another round of mergers. Kyle Yunker

cer Kevin Boone told the same conference mergers are not on management's radar: "We think there's a lot of untapped value that we can control and drive from a share price perspective."

The STB declined comment. But former board chairman Martin J. Oberman, who retired last year, says the STB would take a careful, data-driven approach to a review of any Class I merger application.

"It would be irresponsible for me to say that some hypothetical merger could or could not overcome the new rules," Oberman says. "All you could say is it's a much higher hurdle."

The 2001 rules were designed to put the brakes on mega-mergers following a rapid round of consolidation over the prior two decades. Two mergers UP's acquisition of Southern Pacific and the NS-CSX split of Conrail — produced megameltdowns due to initial trouble integrating the railroads.

Oberman says a question

"I THINK IT'S A WIN FOR THE CUSTOMERS AND A WIN FOR COMPETITION AND IT'S A WIN FOR **HOW THE COUNTRY** SHOULD MOVE AHEAD. - UNION PACIFIC CEO

JIM VENA ON A TRANSCONTINENTAL MERGER

that would shape his thinking during a Class I merger review is how big is too big? Today's railroads are already gigantic, and Oberman wonders whether transcontinental mergers would be in the public interest.

There's no question, industry observers say, that carload and bulk shippers would equate another Class I merger with World War III. Merging railroads would have to contemplate broadened access - such as trackage rights or reciprocal switching — for shippers who are served by just one railroad or would lose access to two.

The STB has broad latitude to impose conditions on any merger, a wild card that could lead to some form of open access beyond what the railroads might imagine. Hatch contends that would wipe out any economic benefits from an end-toend merger of Class I systems.

Vena disagrees: "I'm all about competition and I don't have a real problem with it. If somebody wants to compete against Union Pacific in that environment, I'm good with that."

Oliver Wyman consultant Adriene Bailey, in a RailTrends presentation in November, argued a transcon merger would eliminate redundant headquarters costs, significantly expand the single-line service shippers prefer, and open up so-called watershed markets. This vast swath of the U.S. isn't served well today because origins and destinations within a couple hundred miles of the Mississippi River are short hauls for two railroads - but would be attractive for one. — Bill Stephens



A rendering of a Remora carbon-capture tender, which would convert exhaust gases to liquefied carbon dioxide. Remora

# Startup company aims to capture locomotive exhaust carbon

# Tender-based system would liquefy carbon dioxide for sale to industrial customers

**ADD CARBON CAPTURE** to the list of ways railroads might reduce or eliminate greenhouse gas emissions from their fleets of diesel-electric locomotives.

Michigan-based startup company Remora is developing a tender-based system that can capture carbon dioxide from locomotive exhaust, liquefy the gas, and store it. The liquefied carbon dioxide would be unloaded during locomotive refueling stops and then sold to various industries that use the gas.

Remora expects to begin stationary testing soon at its Wixom, Mich., headquarters, using former CSX C40-9W No. 9043, which it acquired from Wabtec. (C40-9Ws are oddballs, with Dash-9 innards mounted on a Dash-8 frame.)

"Our first step is to build an unpackaged version of the system that's locomotive scale," Remora co-founder and CEO Paul Gross tells Trains. That initial version will be built across two flat cars, so the elements can easily be accessed during development. "And then once we validate that system, we'll crunch it all up

onto a single tender, which we'll ship off to a deployment with a railroad."

Union Pacific will be the first to test the prototype carbon capture car in revenue service next year. Remora's rail partners also include Norfolk Southern, Pacific Harbor Line, and two Genesee & Wyoming short lines.

Remora, which has received \$117 million in funding from venture capital firms, envisions piping exhaust directly from the locomotive stack into the tender. There, the company's system extracts and purifies up to 90% of the carbon dioxide, while also reducing soot, particulates, and nitrogen oxides. The gas is liquefied and then stored in a 20-foot ISO container on board. Power to liquefy the gas will come from an on-board generator; its exhaust also will be scrubbed.

Among the technical and operational hurdles to address: How the exhaust duct connection between the locomotive and tender can stand up to the rigorous forces of slack and lateral and vertical movement as a train rolls down the track and

negotiates curves and turnouts. Remora wants to ensure the ducting is durable and doesn't leak exhaust, yet is simple for crews when they're coupling the car to a locomotive.

"This has been a huge focus for us. It's one of the reasons that we're working with so many experts in the industry," Gross says, noting that the duct design was a focus of recent talks with UP maintenance and operations teams in Omaha, Neb.

One advantage carbon capture has over alternative propulsion systems like hydrogen fuel cells or battery-electrics is that railroads can continue to rely on their proven diesel-electric fleets and existing fueling infrastructure.

Offloading infrastructure would have to be developed for the carbon dioxide, however, and the presence of Remora tenders could complicate refueling. A four-locomotive consist, each with its own carbon capture car, would exceed the length of some refueling pads.

Remora's business model aims to sell the carbon capture tenders to railroads, which will

then get a cut of the revenue generated from selling the carbon dioxide. The company says the carbon capture equipment will pay for itself over its lifetime and produce a positive return for railroads. Remora says there's a market for carbon dioxide gas, used in agriculture, the food and beverage industry, and concrete manufacturing.

Railroads praised the concept and say it could be part of their toolbox for reducing their greenhouse gas emissions.

"Union Pacific is proud to be the first Class I railroad to pilot Remora's groundbreaking locomotive exhaust carbon capture technology to reduce greenhouse gas emissions," spokeswoman Kristen South says. "... This collaboration underscores our ongoing commitment to advancing sustainable solutions."

NS spokesman Chad Previch says, "We view sustainability as ways to improve operations, help customers achieve their goals and provide benefits for the environment and our communities — all potential aspects of this pilot." — *Bill Stephens* 

# Amtrak eliminates 450 management jobs

Move to save \$100 million as company faces challenges

AMTRAK SAID ON MAY 7 that it has eliminated 450 management positions as it looks to cut costs and reach operational profitability by 2028.

The cutback equals just over 10% of Amtrak's management jobs, the railroad said in a memo to employees. "We took the difficult step of informing about 250 people that their positions were eliminated," President Roger Harris told employees. "Further, we closed another 200 open positions that were vacated as we have reduced hiring and managed down the company's rate of growth in recent months."

Amtrak said the reduction in management positions, when combined with other unspecified efforts, would save the company \$100 million annually.

Company funding for the 2026 fiscal year, which begins in October 2025, remained in limbo as of mid-May. It was not addressed in the preliminary federal budget released by the Trump administration at the beginning of the month. Historically, that budget has come

earlier, after which Amtrak responds with a grant and legislative request to Congress to argue for its budget. At deadline, a proposal has not been released by any party.

The company, which posted a \$705 million operating loss in its most recent fiscal year, announced the belt tightening was in the works on March 28.

"Given the current environment, the Executive Leadership Team and the Board have determined that we must act now," Amtrak said then. "We will do this by examining our costs, including the size of our management staff, in a proactive and controlled way. In addition, we will be more selective in starting new projects and will look harder for efficiencies and innovative ways to address the problems and opportunities we face."

That environment reflects such factors as efforts by the first Trump administration to cut the company's funding; uncertainty over funds allocated but not disbursed; and concerns that operations will not "GIVEN THE CURRENT ENVIRONMENT, THE EXECUTIVE LEADERSHIP TEAM AND THE BOARD HAVE DETERMINED THAT WE MUST ACT NOW."

— AN AMTRAK STATEMENT PRIOR TO ELIMINATION OF 450 MANAGEMENT JOBS

receive the same sort of support in Congress that has prevented previous deep cuts.

Amtrak's staff has grown in recent years, in part as it bulked up areas needed to manage infrastructure projects funded under the Biden administration.

In other Amtrak news:

— A *New York Times* report said the Federal Railroad Administration was in discussion with Elon Musk's Boring Co. about the Frederick Douglass

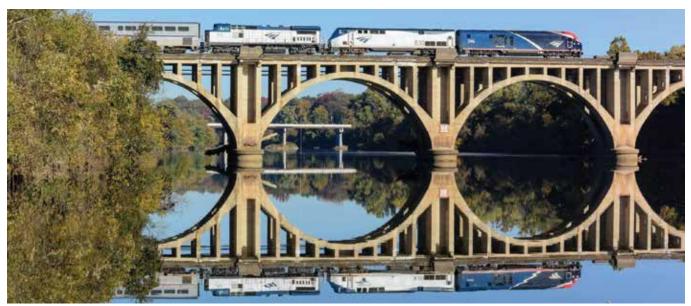
Tunnel project in Baltimore. Boring representatives said the company could build the 2-mile tunnel, currently estimated to cost \$8.5 billion, more cheaply and efficiently.

Boring Co. has proposed and withdrawn from or otherwise dropped a number of projects in recent years, having built only a short segment of what is supposed to be a 104-mile, 68-station project in the Las Vegas, Nev., area.

There was no indication if or how this might affect the construction contract awarded in 2024 to a Kiewet-J.F. Shea joint venture. Amtrak directed questions from *Trains* about the report to the FRA and U.S. Department of Transportation; neither agency responded.

— Minnesota's Metropolitan Council approved a deal to lease surplus Northstar commuter rail equipment to Amtrak and Dallas Area Rapid Transit.

The leases, still to be finalized at press time, would likely see Amtrak use a Northstar trainset in Chicago-Milwaukee *Hiawatha* service, which does not involve business class seating or food service. DART would use its trainset on the Dallas-Fort Worth Trinity Railway Express, to cover for equipment undergoing renovation and add capacity for soccer's World Cup in 2026. — *Trains staff and Bob Johnston* 



An unusual consist of a Siemens ALC42 and GE P42DC and B32-8WH locomotives leads Amtrak's *Auto Train* over the Rappahannock River viaduct in Fredericksburg, Va., on Oct. 22, 2024. The company's belt-tightening has led to elimination of 450 management jobs. Nathan Richters



Union Pacific's "Spirit of the Armed Forces" SD70AH No. 1943 leads a business car train as it exits the west portal of Moffat Tunnel at Winter Park, Colo., on Aug. 21, 2019. James Hickey

# Colorado says Mountain Rail service could begin in 2026

Plans for passenger service, which will eventually reach Craig, outlined under new Moffat Tunnel deal

**THE STATE OF COLORADO** said expanded passenger service from Denver into the Rockies could begin as soon as 2026 following completion of a lease agreement for Union Pacific's continued use of the state-owned Moffat Tunnel.

A new 25-year lease signed on May 5 forgoes lease payments — which were \$12,000 per year under a prior 99-year agreement — in exchange for UP allowing up to three daily passenger trips on the route through the tunnel, in addition to the current *California Zephyr* and seasonal *Winter Park Express* service. The earlier deal was set to expire in January, but the railroad and state had signed a short-term extension while the new agreement was finalized.

Colorado Gov. Jared Polis and Union Pacific President Beth Whited took part in a signing ceremony, which addresses in separate agreements the tunnel lease, the passenger rail agreement, and sale of land at the railroad's former Burnham Yard site in Denver for transit and transit-oriented development use.

"With this work, we are showing the country a new model for pursuing passenger rail through collaboration with the railroad," Polis said in a press release. "I am thrilled with the three new agreements,

and look forward to seeing the positive benefits to our state." The state said the new service would be developed in stages, with passenger service between Denver and Granby beginning in 2026. Future expansion to Craig and Hayden, Colo., will be dependent on capital improvements specified in the agreement, as well as selection of a contract operator.

Whited, in comments reported by Colorado Newsline, said UP " is proud of the hard work and spirit of collaboration that went into this agreement with the State of Colorado. We came together as true partners and the result is an agreement that benefits the citizens of Colorado and the businesses and people who rely upon Union Pacific to deliver the goods and material vital to today's economy."

Said Sally Chafee, Colorado Department of Transportation chief of staff: "More passenger rail trips between the Front Range and mountain communities in Winter Park, Granby, and beyond will offer an option in addition to the drive over Berthoud Pass. The purchase of the Burnham lead line will also improve local mobility surrounding Lincoln Park in Denver, ensuring this historic neighborhood can continue to offer residents safe access to all the surrounding amenities." — David Lassen

# **NEWS BRIEFS**

# NJ Transit, engineers reach deal after three-day strike

NJ TRANSIT locomotive engineers and the agency announced a tentative agreement on May 18, ending a threeday strike that shut down the rail service of the nation's third-largest transit agency. Terms were not announced, but a BROTHERHOOD OF LOCOMOTIVE ENGINEERS AND TRAINMEN official indicated the agreement included a greater salary increase than the one in an agreement voted down by BLET members in April. The walkout by the 450 engineers was the first strike at NJ Transit since a 34-day strike by conductors in 1983.

union PACIFIC President Beth Whited said she would step down on July 1 after 37 years at the railroad. Whited was named president in July 2023, when UP split its president and CEO positions when Jim Vena assumed the latter job. She will remain with the railroad in a strategic advisor role through early 2026.

AMTRAK's Borealis increased ridership on the Chicago-St. Paul, Minn., route by 227% over the first 11 months, compared to when it was served only by the Empire Builder, the company said in marking the first anniversary of the train launched May 21, 2024. In that period, the Borealis carried about 205,800 passengers.

The U.S. SUPREME COURT overturned a lower-court decision blocking construction of the UINTA BASIN RAILWAY, saying an environmental review by the SURFACE TRANSPORTATION BOARD had properly considered only the direct impacts of the planned 88-mile railroad in Utah. An appeals court had ruled that the STB's 3,600 page review was insufficient because it did not consider downstream impacts such as increased drilling or the refining of the oil the railroad would haul.

# **Fixes**

### **JUNE 2025**

Page 23: The longest bridge on Switzerland's meter-gauge Rhätische Bahn was incorrectly identified. The Langwieser Viaduct, at 285 meters/935 feet, holds that distinction.

# Metra, UP financial fight continues

Commuter service now operates three UP lines, but fee fight goes on

**METRA IS NOW RESPONSIBLE** for operating and maintaining trains on the three lines formerly operated by Union Pacific, but that has hardly cooled the years-long disagreement between the two sides about the transfer of service.

After the Chicago-area commuter train operator took over responsibility for the UP West, Northwest, and North lines on May 16, action increased regarding the parties' inability to reach new financial terms.

The latest developments, in order:

- In a May 21 press release, Union Pacific said it had offered new terms for Metra's use of its tracks effective July 1, and urged the commuter operator to accept the fees it called "fair, reasonable, and based on market value." An existing contract was set to expire June 30. "As a private company with a fiscal responsibility to our many stakeholders ... we cannot continue subsidizing Metra's operations," Liisa Stark, vice president for public affairs, said.
- On May 23, UP requested that the Surface Transportation Board dismiss Metra's request for terminal trackage rights on UP. A UP filing argued the federal regulators do not have jurisdiction in the case because Metra is an intrastate, not interstate, operation. Metra has one station in Kenosha, Wis., but UP argued a single station accounting for 0.01% of ridership did not change the "essential character" of Metra as an intrastate operator. Even if it did, UP argued, the STB would only have jurisdiction

over the UP North line serving Kenosha.

Metra's initial filing said it sought trackage rights to ensure it was not barred by UP from operating on its lines. Included with the UP filing was a letter from Union Pacific CEO Jim Vena to his Metra counterpart, Jim Derwinski, saying "we will not be stopping service to the millions of people who use Metra daily." The filing cited that letter as further evidence the Metra action was unnecessary.

Vena's letter also indicated UP would impose its new financial terms on July 1: "While we would rather have an agreement in place with Metra, after nearly six years, it is time to move forward."

• On May 27, Metra filed an amended complaint in an existing federal suit against UP, saying UP was seeking to more than double Metra's operating costs. Metra has been paying about \$21 million annually, according to the filing; the new rates would include a track access fee of \$40.7 million,

unspecified rental payments for properties necessary to Metra operation, and up to \$11 million in incentive payments "for performance metrics that Union Pacific is already obligated to meet."

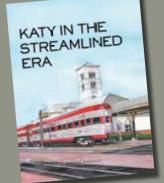
Metra, which called the new fees "commercially unreasonable," also argued that with UP doing far less now that Metra is the operator, the increase would be pure profit for the freight railroad. Metra asked the court for an injunction preventing UP from halting Metra operation, and that the old fees remain in place until the two sides reach an agreement. — David Lassen







THE UNTOLD STORY, BY FRED W. FRAILEY



The rise and fall of a unique Southwest train network. For a railroad without much money, MKT put on quite a show. People rode it just for a good meal. Then the cracks appeared.

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Metra and Union Pacific trains meet at La Fox, Ill. The two sides remain unable to reach agreement on a new contract. David Lassen

# How do railroads get into our blood?

It can be hard to explain why, exactly, we like trains



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

f you're like me, you struggle to answer a simple question that acquaintances ask from time to time: Why do you like trains?

Considering my lifelong love for steel wheels rolling on steel rails — which eventually blossomed into an interest in railroads, where they go, what they carry, how they work, and why — it's odd to not be able come up with a suitable answer.

You know, one that's concise, makes sense, and can be understood by all those poor souls who have not been bitten by the railroad bug. The answer should just roll off the tongue. Yet it seems to be a tall order.

To the unwashed masses, trains are nothing more than noisy sources of frustration that block grade crossings and make them late for work. How, then, can you explain the magnetic attraction of a freight train rolling along the main line at track speed?

Well, you can try.

There's anticipation when a headlight appears in the distance. Crossing gates whir down, red lights flash, and bells clang. Then comes the sensory overload that feeds our addiction.

It starts with the five-chime Nathan air horn blasting the familiar two long, one short, and one long at 110 decibels. It continues with a trio of 4,400-horsepower locomotives making a racket, shaking the ground below your feet, and kicking up a breeze

A lowering set of gates, like this one protecting the BNSF's crossing of a state park road south of Prairie du Chien, Wis., is an annoyance for most motorists. For some of us, though, it means the show is about to begin. Carl Swanson

strong enough to blow your hat off. All the while you can feel the rumble deep inside your chest.

And then comes the freight. The rails sing under towering well cars and auto racks or groan under the 122 tons of coal mounded in each aluminum gon. A car with flat wheels might hammer out a rhythm of its own. All too soon, the commotion is gone. The train leaves the scene as quickly as it arrived, the FRED blinking off into the distance.

To you and me, this is magical. Others — and by others, I mean everyone else — seem perplexed by our love affair with trains. When they see another lookalike freight, we see variety in the details: SD70ACe, ES44AC, SD40-2; 53-foot domestic containers and 40-foot international cans; auto racks and boxcars; foreign power; BNSF orange and CSX blue.

And that's just the equipment. The railroads themselves reflect and are defined by their geography, history, operations, traffic mix, and how they get from Point A to Point B.

Each railroad, each main line, each sleepy branch has its own flavor. Chalk this up to the hundreds of disparate predecessor railroads that make up today's six Class I systems and 600 or so short lines.

Yes, standardization is rapidly replacing what's unique. But if you know where to look you can find things like searchlight signals, jointed rail, Santa Fe's distinctive mission-style depots, end-cab switchers, or New Haven towers with pagoda roofs. Try to explain all this to the uninitiated and you'll get a blank stare.

There are so many ways to enjoy our pastime: Photography, videography, visiting tourist railroads, riding passenger trains, model railroading, or simply standing trackside.

Railroads are fertile ground for the historians among us. Biographers delve into the industry's scoundrels and saviors. Rivetcounters explore equipment from Alco to *Pioneer Zephyr*. Fans document their favorite railroad, main, or branch. And business minds analyze bankruptcies and mergers, the rise of intermodal, the fade of coal.

You can collect everything from timetables and track charts to maps and dining car china. Or, if you've got the space, semaphore blades or steam locomotive bells or speeders. If you really have a fat wallet, why not indulge in your own private passenger car?

Some may say all this borders on the eccentric. For instance, I told my then-college-age daughter that I had just met a guy whose van was decked out in a vinyl wrap of a Florida East Coast ES44C4. Her reply? "I'm glad you like trains but you're not weird about it."

Trains speak to us in ways that others may never understand. And that's OK. For those of us who do get it, no explanation is needed. For those who don't, no explanation will do. I





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# HEAT WAVE

THE CANADIAN PACIFIC MAINLINE (now CPKC) around the north shore of Lake Superior has been well documented in both photos and writings since the arrival of the rails in the late 1800s. Polished granite rock, forests, rivers, and mighty Lake Superior all provide scenic backdrops to the cross-country mainline. To see it in person is the best way to understand the challenges and the conditions CP overcame in lay-

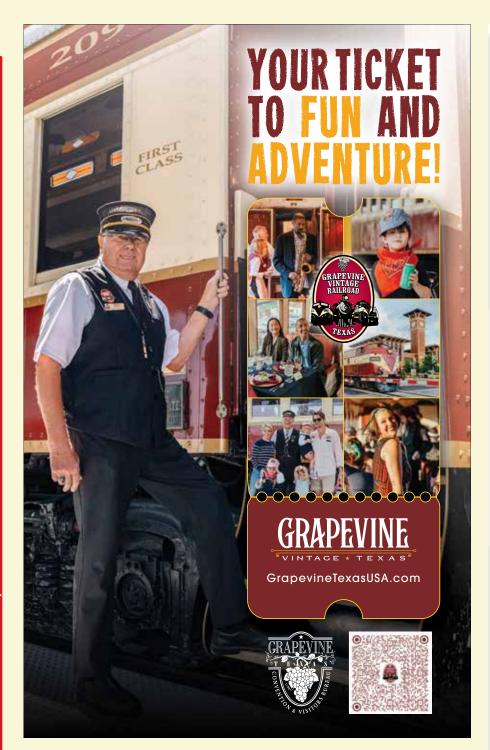
ing tracks through this rugged wilderness. The drive on Highway 17 (the Trans-Canada Highway) between White River and Schreiber, Ontario, provides near constant access to the tracks. I was exploring the line firsthand on a 10-day trek across Superior's north shore, taking it in as CP sent its daily lineup of high-priority intermodal and heavy freight trains that run between Vancouver and Montreal.

The gentle lake breeze and the passing road traffic noise were the constants, punctuated by an occasional "bang" from the ballast below, as the rails expanded in the

warming sun. Off in the distance, a singlehead trackside signal lit up red, indicating an approaching westbound. Deep in the forest, a locomotive horn sounded for a private crossing. The Heron Bay sub was coming to life.

Steadying my 600mm lens on a highway guardrail, I watched headlights appear over the horizon, and a massive heat plume erupt skyward from the dynamic brake cooling grids as the engineer prepared for the crew change point approximately three miles ahead at Schreiber.

Passing under me, the smell of diesel exhaust and heat from the brake grids enveloped me, a reminder of the awesome energy needed to bring a heavy train to a controlled stop. William Van Horne himself could never have imagined trains measured in thousands of feet, in tens of thousands of tons passing daily, seemingly unchallenged by the north shore, and in his words, the "two hundred miles of engineering impossibilities." - Brandon Muir





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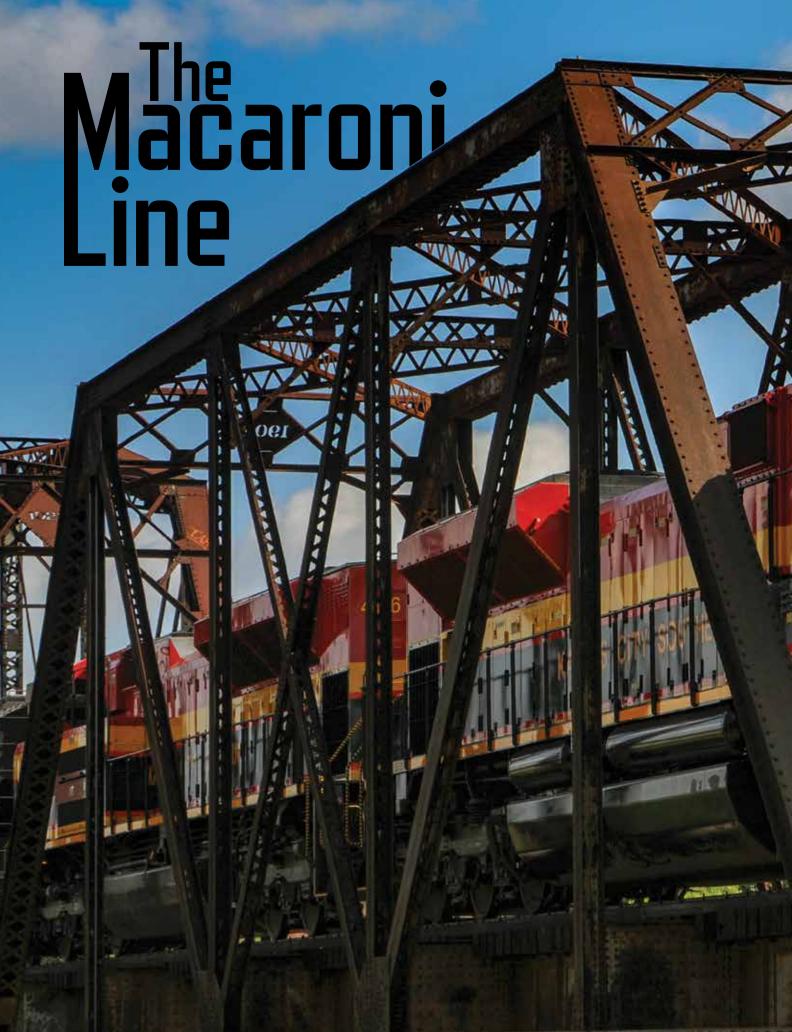
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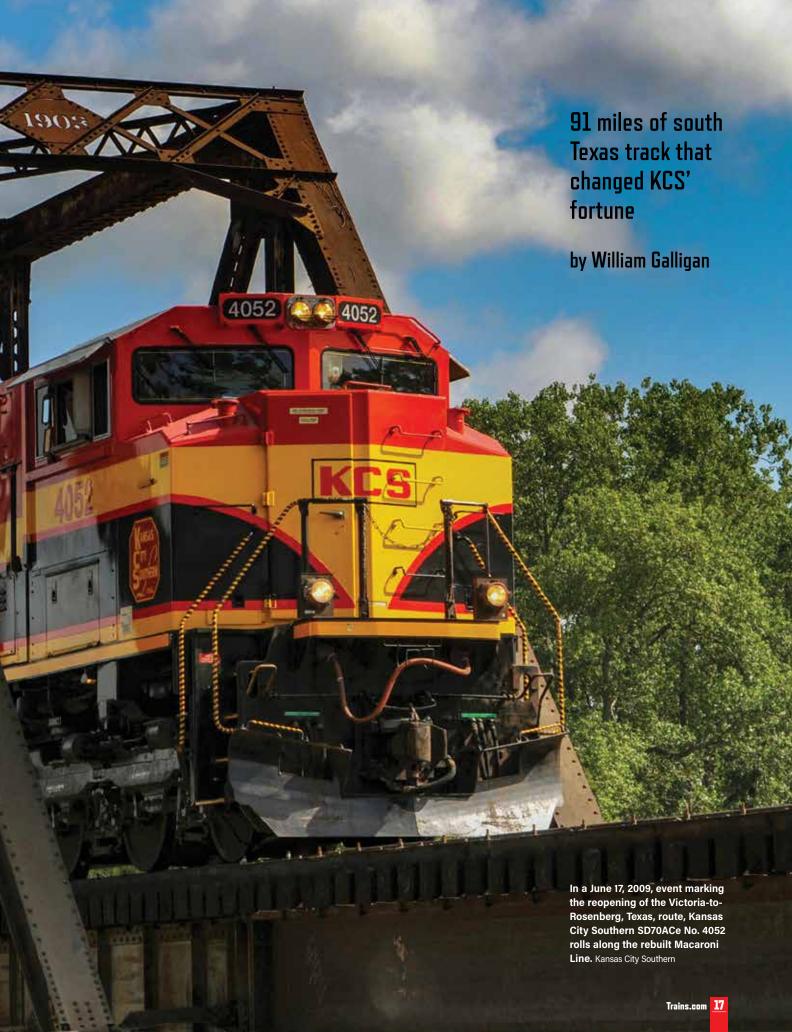
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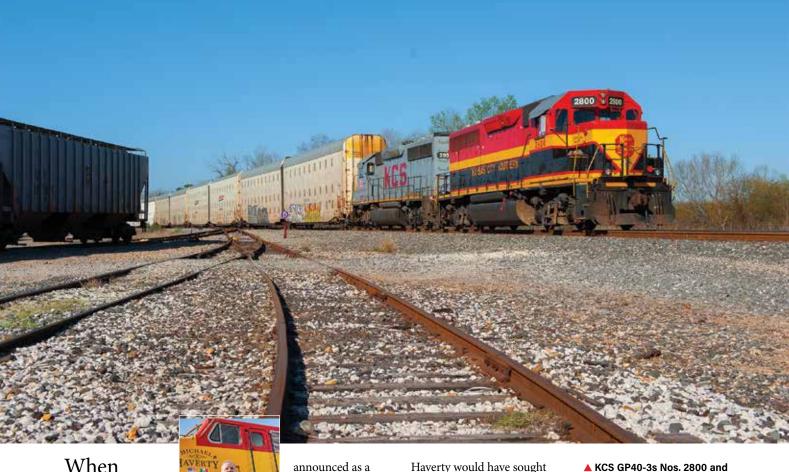


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Michael R. Haverty, the newly minted CEO, stepped into the headquarters of Kansas City Southern Railway on May 1, 1995, he found a mess.

Having embarrassingly failed to sell itself in 1994 to anyone willing to pay a decent price, the railroad had lost its direction, its employees were unsettled, its operations and track were at the low end of Class I standards, and its finances were seemingly moving toward insolvency.

Adding to Haverty's concerns were rumors suggesting that a Union Pacific-Southern Pacific merger would soon be

announced as a competitive response to the Burlington Northern-Santa Fe merger, which was on the verge of gaining

regulatory approval.

It would take more than a decade, a bit of regulatory assistance, and some high-risk spending, but Haverty would eventually oversee a dramatic turnaround. A key, if unlikely, element, would be a 91-mile remnant of an unsuccessful scheme for a rail route connecting New York and Mexico: the Macaroni Line.

That route paved the way for KCS to become a major player in U.S.-Mexico rail traffic [see "The NAFTA Railway survives," October 2018]. And that, in turn, set the stage for the KCS-Canadian Pacific merger, creating single-line service between Canada, the U.S., and Mexico.

# Haverty's growth vision

Two and a half months after Haverty became CEO, the UP-SP merger proposal was announced, and a little more than seven weeks later, the BNSF merger gained final approval.

Haverty would have sought concessions, but knew doing so would have been a lost cause. It was obvious neither merged railroad would want the smallest Class I railroad in the U.S. to survive when the railroad duopoly they were about to create would control 90% of traffic west of the Mississippi River.

Fortunately, what Haverty lacked in company finances to enter the 1990s acquisition chaos, he made up for with fortitude and a comprehensive knowledge of the U.S. rail system. He was widely acknowledged as one of the industry's foremost creative and strategic minds, able to see growth opportunities others did not.

One of the greatest examples of his ability to perceive trends that escaped others was Haverty's early awakening to the fact that economic growth was gradually shifting from its traditional east-west axis to north-south. With that, Haverty had foreseen the possibilities inherent in the vast potential for rail traffic between the central Mexico manufacturing hub and major commercial centers of the U.S. and Canada with the North America Free

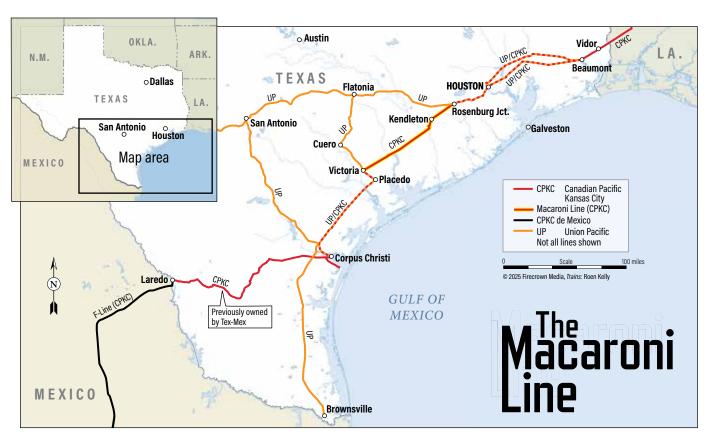
▲ KCS GP40-3s Nos. 2800 and 2951 lead a string of auto racks northbound at Rosenberg. Texas, the northern end of the Macaroni Line, on March 15. 2013. Joe McMillan Inset: KCS CEO Mike Haverty

Trade Agreement going into effect Jan. 1, 1994.

He was convinced that if a U.S. railroad became a player, cross-border traffic would surely rise to prominence in the North American supply chain. Of course, he was also painfully aware that the KCS track system did not come close to reaching the U.S.-Mexico border, and that alone excluded it from being involved in this evolving growth possibility in any significant manner. Although Haverty had only accepted the KCS CEO position with the understanding that the railroad's board of directors would be willing to pursue expansion into Mexico, he had no inkling of how soon his vision would be fulfilled.

# A surprise visit

On his first day as CEO, Haverty was surprised by a visit from consultants representing





Transportación Maritima Mexicana (TMM), one of Mexico's largest maritime shipping companies and owner of the Texas Mexican Railway (Tex-Mex), a 151-mile short line operating between Corpus Christi and Laredo, Texas. The consultants said they believed Ferrocarriles

Nacionales de Mexico, the Mexican national railway, would be privatized soon, and suggested TMM and KCS form a partnership to bid on a concession when privatization was announced. Haverty indicated he was amenable to the idea, but needed time to focus on his

new role at KCS.

Two events changed Haverty's priorities: The UP-SP merger announcement on Aug. 2, 1995, and, later the same year, a statement announcing privatization of NdeM. These propelled pursuit of a Mexican presence to the top of Haverty's

▲ Texas & New Orleans was one of two Southern Pacific subsidiaries using the Macaroni Line after its 1885 sale. Wharton, Texas, is switched by T&NO 2-6-0 No. 432 on Jan. 10, 1953. Charles H. Kiefner photo, George Werner collection



▲ Crew members of Texas & New Orleans train No. 372, a local between Houston and Victoria, Texas, confer while stopped in a siding on Jan. 19, 1952. Charles H. Kiefner photo, George Werner collection

to-do list in an attempt to grow and save KCS.

When the KCS-TMM partnership was announced in late 1995, including KCS' acquisition of 49% of the Tex-Mex, KCS and Haverty became a U.S. rail industry laughingstock. While the BN-Santa Fe and UP-SP mergers were forming a western U.S. rail duopoly, KCS was investing in a short line it didn't come close to connecting with. But Haverty had a plan. Working with shippers opposing the UP-SP merger, he wanted the Surface Transportation Board to require a combination of UP trackage rights and divestitures that would allow KCS to connect with the Tex-Mex.

Haverty played his cards well. While not demanding UP divest trackage to KCS, the STB added a merger condition that UP grant Tex-Mex trackage rights between Beaumont and Corpus Christi, providing a connection between the KCS and Tex-Mex systems.

Obtaining trackage rights to Corpus Christi to reach Laredo via the Tex-Mex was a game changer. Laredo was not only the top gateway for rail traffic between the U.S. and Mexico,

but KCS access to this critical gateway from the Midwest and Southeast made it and TMM legitimate bidders on a Mexican railway concession. Plus, from a U.S. perspective, KCS could be perceived as a third competitor for handling U.S.-Mexican rail traffic.

# Not the final victory

While a victory for KCS, this was far from satisfactory in Haverty's eyes. The limitations became apparent in late 1996, after KCS and TMM were awarded the crown jewel of Mexico's rail system — the North East Line. The trackage rights agreement did connect KCS to the Tex-Mex, and by extension to its newly formed Mexican railroad — Transportación Ferrovaria Mexicana (TFM). But the agreement did not lend itself to operational efficiency, service reliability, or optimal profitability.

The 157 miles of trackage rights were circuitous, running from Corpus Christi to Placedo via Victoria; onto the Sunset Route to Houston; and finally on the UP to Beaumont. The route was a wide semicircle rather than a straight shot. The Sunset Route, an SP property until the UP merger, was heavily used and often congested, even before adding KCS traffic. Additionally, the trackage-rights route was controlled by UP dispatchers that gave priority to UP trains, resulting in significant KCS transit delays. Finally, the trackage-rights fees KCS paid UP were expensive, higher than the industry average.

Haverty knew that for his railroad to be a legitimate competitor for cross-border traffic, it would need relief from these four constraints. As always, he had a plan. The plan was by no means a grand design that would sweep away all problems. It would benefit KCS and give regulators a partial remedy for the congestion problems UP faced in its rocky efforts to consolidate SP into its operations.

# The Macaroni Line

In early 1880, an Italian count, Giuseppi Telefener, along with several European, New York, and Texas financiers, came up with an ambitious, if hare-brained, plan to link New York to Mexico by rail. Telefener was not devoid of railroad experience, as he had recently overseen completion of a 350-mile line in Argentina, but this was a project of supremely grander magnitude.

In late 1880, the Count and his financiers had the New York, Texas & Mexico Railroad chartered in Paris. Texas was chosen as the ideal place to begin construction, as state government officials and local commercial leaders wanted to expand rail infrastructure in hopes of accelerating development of population and commercial centers from north



To spur rail development, the Texas legislature approved an extremely attractive land grant program that offered rail developers 16 sections of land for every mile of track completed.

With the land grants promised, Telefener paid passage for 1,200 Italian laborers, primarily from Lombardy, to emigrate with their families. They would build the proposed rail line from Richmond, a Houston suburb, to the U.S.-Mexican border at Brownsville. Construction began in 1881. Pasta became a dietary staple for Telefener's laborers, and the railroad was soon christened as the Macaroni Line.

Not long after construction began, the project was hit by problems that would prove fatal. Due to harsh working conditions and illness, half of the Italian laborers quit within the





- ▲ Texas & New Orleans Alco RSD5 No. 169 is photographed at Victoria, Texas, on May 10, 1965, with four-car-long train No. 371, a Victoria-to-Houston local. Joe McMillan
- ◀ Kansas City Southern's business train is southbound at El Campo, Texas, on July 17, 2009 during the dedication of Rosenberg-Victoria Macaroni Line. Norm Schultze



▲ On Jan. 17, 2016, ES44AC No. 4822 makes its way south on the gently undulating right-of-way of the Rosenberg Subdivision, near Hungerford, Texas. The train is on its way to the Mexican border with international traffic. Tom Kline

first six months. Then, in early 1882, the rail line's promoters were blind-sided when Texas repealed all of its land grants. It turns out that the state did not have 8 million acres of land to disperse as part of the grant. Losing the majority of its labor force and the land grant repeal was more than the project could overcome. Construction was permanently halted in July 1882. In 18 months of construction, 91 miles of track had been laid from Rosenberg Junction to Victoria, at a cost of \$2 million.

With an eye to recouping some of his investment, Telefener operated the truncated railroad from 1882 to 1884, when

he sold it to his wealthy brotherin-law, John Mackay. With little interest in rail ownership, Mackay promptly flipped the Macaroni Line to Southern Pacific in 1885, which retained it until SP's acquisition by UP in 1997. However, even before the UP-SP merger, the line was disused and its infrastructure had largely disintegrated.

# **Buving Macaroni**

With his deep knowledge of the U.S. rail system, Mike Haverty was familiar with the Macaroni Line, and was aware it was no longer in use, though not officially abandoned. Continually searching for ways to

improve rail service and reduce costs on the KCS and Tex-Mex systems, he saw an opportunity.

Under normal circumstances, there was no way UP would ever have sold the Macaroni Line to KCS, even though it had no plans to revive it. Why would it? The UP was collecting trackage rights fees from KCS, plus it was controlling the flow of Tex-Mex traffic and giving its own trains priority north of the Mexican border. In fact, UP had applied to the STB to have the line officially abandoned, making it impossible for anyone to purchase the unused corridor.

But for Union Pacific, 1998 was anything but normal. The



complexities of the UP-SP consolidation — with each railroad tied to its own routes, operating and accounting systems, operating philosophies, and corporate cultures — resulted in challenges far greater than anticipated. The result was the largest operational meltdown in U.S. rail history, and harsh public outrage. The STB fell under intense pressure from shippers, government bureaucrats, and elected officials to develop a comprehensive plan to alleviate the bottleneck endangering economic activity over a large portion of the country.

For Haverty, the situation presented an opportunity to

petition the STB, demanding UP sell the Macaroni Line to KCS. In his testimony, Haverty argued that having the corridor would get Tex-Mex traffic off the Sunset Route, one of the nation's busiest and most congested lines. In addition, the line's return to service would increase shipper options and improve service reliability. Obviously, the forced sale of a small rail line would not come close to solving all of UP's service problems, but it would be a piece of the solution.

The STB quickly denied UP's abandonment application, but then the process slowed to a crawl due to a combination of KCS' Macaroni Line application being a relatively small concern in a huge service crisis, normal bureaucratic delays, and UP's vigorous opposition. Finally, in 2001, the STB ruled that UP must sell the Macaroni Line corridor to KCS. Shortly thereafter, KCS acquired the property for \$9.2 million.

While Haverty had what he wanted, it had taken until 2007. Now in full ownership control of the Mexican rail concession and the Tex-Mex. KCS initiated restoration of the Macaroni Line corridor. For a cash-constrained railroad, the price tag

of \$173.5 million was significant. The decision to move forward was based completely on the cost savings of ownership versus fees for trackage rights. In this instance, KCS had rights on more than 100 miles, amounting to annual fees of \$30 million, which would now go away. An uptick in revenues from projected rail traffic increases was not included in the financial calculations, even though there was good reason to be optimistic that the gain would be substantial over time.

# The big Macaroni gamble

Macaroni Line construction was rapid. By mid-2008 significant progress had been made and \$90 million had been spent. But then fallout from the 2008 recession hit the U.S. economy with full force. The revenues of all Class I railroads took major hits, and KCS management was forced to consider whether the rebuild should be suspended. Halting construction meant KCS would get zero return on investment for the \$90 million already spent. Haverty faced a tough decision. Compounding the zero-return potential was a non-investment rating on KCS stock.

Haverty took the risk and

A Rice elevators dominate the scene as KCS SD70ACe No. 4032 leads a five-locomotive consist on a freight approaching Higbee Street in El Campo, Texas, midway between Houston and Victoria, on Nov. 9, 2012. Joe McMillan

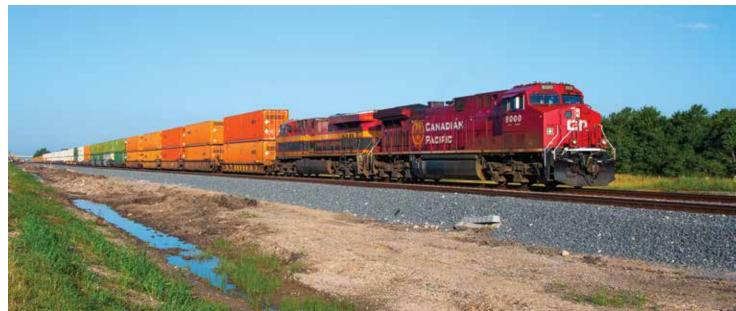
proceeded with Macaroni Line upgrades. Using market sales of newly issued equity securities, KCS financed the remainder of the rebuild. It proved to be a good expenditure, as its return on investment tallied 16.4%, well above KCS' cost of capital at that time. Haverty had gambled, but it had been a reasoned bet and it had paid off. Construction continued and on July 16, 2009, the Macaroni Line was returned to service.

Although KCS had not planned for an eight-year gap between purchasing the 91mile corridor and its restoration, the timing of the completion was perfect.

The recession was coming to an end and the railroad's forecasting became a reality. For 12 years KCS predicted its entry into Mexico was going to produce higher than average carload and revenue growth compared to the rest of the rail industry — and it did.

Revenues for 2010 increased







▲ Four Kansas City Southern units lead a northbound container train across the Rio Grande River and into the United States at Laredo, Texas, on Nov. 15, 2017. Bill Stephens

Canadian Pacific No. 8000 and Kansas City Southern No. 4701 are on a northbound stack train iust north of Kendleton Yard. The train has made a setout and pickup and is getting ready to leave for Houston and points east on June 12, 2023. Joe McMillan



by 23% and a year later 16%. Both numbers far exceeded the industry average — 11% for 2010 and 2.2% for 2011. By the end of 2010, KCS indexed growth in carloads, revenues and operating income had surpassed pre-recession levels, a full year before the rest of the industry recovered.

The financial markets responded. KCS stock price, which had fallen to \$12.62 on April 1, 2009, climbed to \$47.86 by the end of 2010 and \$68.01 at the end of 2011. KCS was on a roll, and the pace only accelerated over the 12 years prior to its 2023 acquisition by Canadian Pacific. The new Macaroni Line corridor played an important role.

# The outsized importance of Macaroni

How did the Macaroni Line rebirth play a part in KCS' operation and financial resurgence emerging from the 2008-2009 recession? How did this short corridor in southern Texas come to represent a vital component in the CPKC system? Perhaps most importantly, how did it become a boon to cross-border rail traffic and an outsized addition to the North American logistics network?

The rebuild freed the KCS. and now CPKC, from much of the UP trackage rights expense, and that alone made the acquisition and reconstruction worth the time, effort, and capital investment. But that does not

tell the entire story.

The rebuilt line immediately brought greater operational efficiency to KCS' south Texas rail service. KCS added three sidings, which tripled capacity and allowed for faster transit of both intermodal and unit trains From 1997, when KCS/Tex-Mex/TFM cross-border service began, to 2009, only two or three trains a day moved across the network. Shortly after the addition of the Macaroni Line corridor, the average grew to the mid-teens, with intermodal and automotive trains representing close to half of the number.

The line also allowed for improved operational efficiency. With its own dedicated corridor, KCS moved intermodal trains through its system faster, improving service and significantly reducing crew costs.

For instance, under UP trackage rights, KCS dispatchers had little idea of how long it would take a train to travel from Vidor to Kendleton, Texas. Normally an 8- to 10hour trip, it often took more than 12 hours, necessitating a crew change. Not only did that add cost, it meant dispatchers had to taxi the second crew, not knowing exactly where the 12hour limit would be reached. With ownership of the corridor. in most cases, no crew change was necessary, as there were no UP trains contributing to KCS delays. Similarly, a train moving from Corpus Christi to Cuero to Houston to Beau-

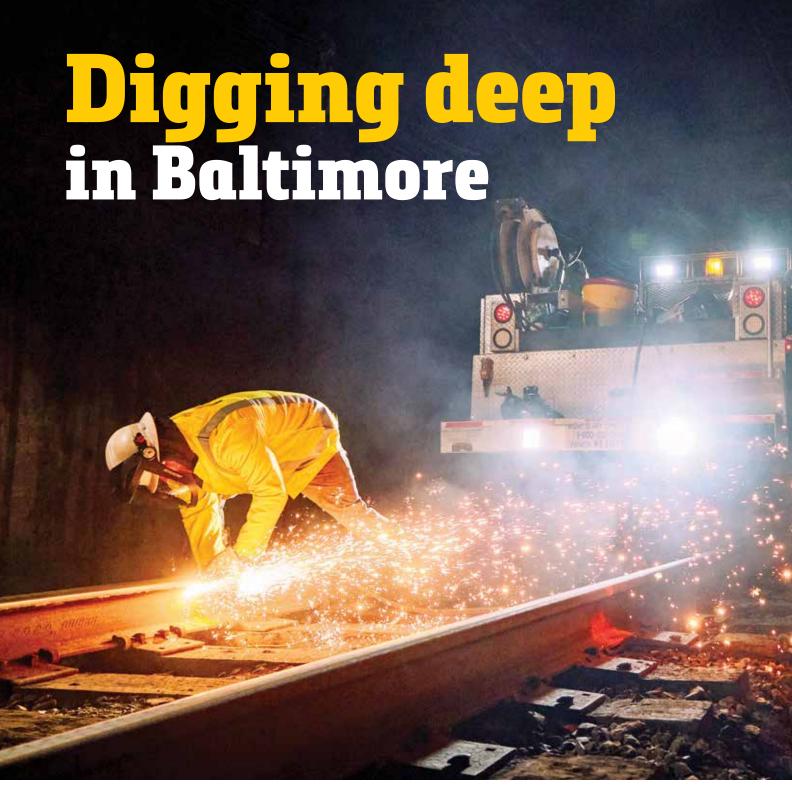
▲ Loading of double-stack containers is demonstrated during a media event marking the July 2009 opening of the Victoria to Rosenberg Macaroni Line. Kansas City Southern

mont, which had taken at least three crews under the trackage rights, was now reduced to two.

The rebuilt line allowed KCS to establish terminals for intermodal and automotive trains. Under the trackage rights, KCS was not allowed to build such dedicated facilities. With corridor ownership, it constructed an intermodal/ automotive facility at Kendleton, yielding more capacity and dramatically improving service.

Finally, the Macaroni Line gave Tex-Mex direct access to Houston's Port Terminal Railroad Association [see "The Heart of Houston," November 2024]. This provided an alternate route to the Mexican border and allowing expansion of service on an uncongested south Texas rail line.

After humble beginnings 130 years ago, the Macaroni Line played a role in KCS becoming one of the most exciting transportation stocks in the eyes of Wall Street, and more importantly, a positive element in the U.S. rail network. The line has taken on a greater significance under CPKC, a crucial link for the sole railroad offering single-line service to North America's three largest nations. I



CSX's Howard Street Tunnel clearance work will create new double-stack routes

by Bill Stephens

ust hours after a trio of six-axle CSX GE locomotives rolled empty Consol coal train E730 through the Howard Street Tunnel at 3:35 a.m. on Feb. 1, a small army of contractors, railroad workers, and heavy equipment arrived to begin removing the single track that runs through the 1.7-mile tunnel beneath downtown Baltimore.



If all goes according to plan, the 100-car coal train will be the last through the tunnel for six to eight months. Meanwhile, work on the long-awaited \$566 million clearance project continues around the clock, seven days a week. It's a big job - as is detouring the 20 or so trains per day that typically used the tunnel that the Baltimore & Ohio opened in 1895.

The tunnel will remain

closed to allow construction crews to lower the floor by 2 feet. Once work is complete, CSX will be able to provide double-stack intermodal service in the Interstate 95 Corridor for the first time. The railroad also will be able to run doublestack trains between the Port of Baltimore and the Midwest via the most direct route, the former B&O main line through Cumberland, Md., over the

Sand Patch grade, and on through Pittsburgh to Chicago.

CSX CEO Joe Hinrichs says the clearance project will remove the single biggest competitive disadvantage facing the railroad's intermodal network. "So this is a big deal," he says.

It's also a big deal that the Howard Street Tunnel project is even underway in the first place.

At one time CSX, like the B&O before it, thought the

Crew members begin work to remove rails from inside the Howard Street Tunnel on Feb. 1. 2025, the first day of a six- to eight-month project to increase clearances for stack trains. CSX

tunnel's tight clearances would forever be an insurmountable barrier. That line of thinking changed a decade ago, though, when cost estimates came down enough to justify clearance work and CSX was able to line up millions of dollars in government funding.

But then the railroad pulled out of the project — only to jump back in five months later under a new public-private partnership agreement.

# Taking the long way

Unfold a CSX system map, spread it out on your desk, and you'll quickly see the railroad's most important main lines form a triangle. There's the Chicago-New Jersey corridor on the north, Chicago-Florida on the west, and New Jersey-Florida on the east. The Howard Street Tunnel occupies a strategic spot on the New Jersey-Florida leg of the triangle. But it also is part of CSX's key route linking Baltimore, Philadelphia, and other Mid-Atlantic points with the Midwest. In all, about 10% of CSX's road freights run through the tunnel on any given day.

CSX originally planned on using 12-hour work windows in the tunnel so that traffic could keep moving on its regular routes. But that would require the removal of track daily to allow construction work to take place, followed by installation of temporary panel track to allow trains to roll through the tunnel at night. It's a process that would have to be repeated every day for three years - with no guarantee that work windows would end on schedule or that heavy freight traffic wouldn't interfere with construction by constraining work blocks.

Mike Corv, a former Canadian National executive who came out of retirement to become CSX's chief operating officer in September 2023, was not a fan of this potentially disruptive approach. "This



Track is removed outside the Howard Street Tunnel as work begins on the project to address the bottleneck created by the 8,700-foot tunnel beneath the streets of Baltimore on Feb. 1, 2025. CSX

project was initially planned to take three years and create extensive daily track outages over one of our key corridors," Cory says. "I'm extremely proud of the team for being able to turn this around from a three-year project to one that will take six to eight months

for the tunnel to be operational. We benefit from this improvement forever and far faster than originally planned."

The full closure requires CSX to detour traffic that moves on 16 scheduled tunnel trains per day — five pairs of merchandise trains, two

intermodal train pairs, and two locals — plus unscheduled unit trains of coal, grain, and other bulk commodities.

CSX is using a couple of detour routes involving rival Norfolk Southern.

One relies on existing trackage rights over NS between

Youngstown and Ashtabula, Ohio, a line that links the former B&O main line with the former New York Central Water Level Route. This allows two merchandise train pairs to bypass Howard Street by running around the horn via Cumberland, Buffalo, and Selkirk, CSX began rerouting these trains in the fall of 2024 while trackwork and clearance projects were underway north of the tunnel within Baltimore.

Second, when the tunnel was closed Feb. 1, CSX began using temporary trackage rights over NS between Hagerstown, Md., and Philadelphia. Four trains per day are using this detour. Consol coal trains can use either alternate route.

While the tunnel is shut down, CSX has truncated its North Bergen, N.J.-Jacksonville, Fla., intermodal train pair, I032/ I033, which carry UPS traffic. For now the hotshots originate or terminate at Curtis Bay Yard in Baltimore, which is south of the tunnel. Containers and trailers are trucked to and from destinations north of Curtis Bay.

The overall Howard Street Tunnel project consists of verti-



▲ CSX intermodal train Q031 emerges from the south end of Howard Street Tunnel on Nov. 26, 2019. Compare this view with an earlier image of the south portal on page 32. Michael S. Murray

cal clearance improvements at 22 locations between Philadelphia and Baltimore. CSX began construction in Pennsylvania in 2022 and has been working its way south ever since.

When work was completed at locations north of Baltimore in October 2024, CSX was able to begin double-stack service between the Midwest and the Seagirt Marine Terminal Intermodal Container Transfer Facility at the Port of Baltimore. Trains I157 and I158 run via Buffalo, Selkirk, and Philadelphia, a temporary route that's 350 miles longer than the B&O main. "The out-of-route miles are tremendous," Hinrichs says.

This traffic will switch to the **B&O** once the Howard Street project is complete.

Executives say the railroad has preserved service for every customer that uses trains that previously were routed through the Howard Street Tunnel, even if it means trucking some freight to its final destinations.

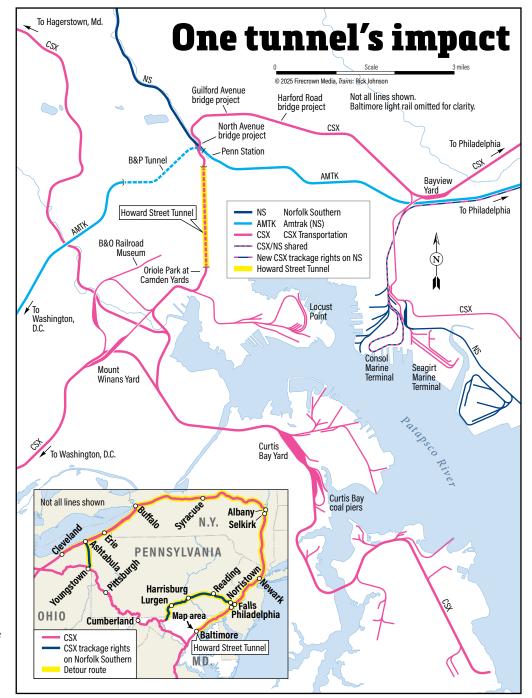
It's an expensive proposition to have to absorb 10 million out-of-route car-miles per month for the duration of the tunnel closure. The Howard Street detours, when combined with a handful of daily detours related to the Blue Ridge Subdivision being out of service due to hurricane damage, cost \$10 million per month.

The detours contributed to congestion on CSX that worsened after the tunnel was shut down. By late May performance metrics had rebounded after CSX pulled 50 locomotives out of storage and took other steps to unclog yards.

# Stack 'em up

CSX officials are looking forward to the cost savings and growth opportunities that will flow from completion of the overall project in early 2026.

"This unlocks efficient double-stack service on both our I-95 corridor between New England and Florida, as well as on the B&O route from Chicago to the Mid-Atlantic," says Maryclare Kenney, CSX's vice president of intermodal and automotive. "This will create cost efficiency on our



current business and it'll double our capacity."

In the I-95 Corridor, more efficient double-stack service will make intermodal more competitive with trucks, officials say. The ability to interchange double-stack loads with Western railroads in Chicago will give a boost to Baltimore domestic and port traffic, too. When containers were singlestacked, a rubber-tire interchange was required in Chicago for containers bound for Baltimore, Kenney explains.

Overall, CSX expects the Howard Street Tunnel project to allow the railroad to convert 75,000 to 125,000 truckloads per year to intermodal. That translates into between \$53 million and \$89 million in new revenue, based on the average \$708 CSX received per container in 2024. "It's a pretty significant opportunity over the next couple of years," Hinrichs says.

The project also will give CSX a leg up on Norfolk Southern. To reach Baltimore, NS relies on trackage rights

over Amtrak's Northeast Corridor and must singlestack its intermodal trains due to the corridor's catenary clearance restrictions.

Maryland officials, meanwhile, say the Howard Street Tunnel project will make the Port of Baltimore more competitive with others on the East Coast and help create 7,300 jobs in the process.

Intermodal analyst Larry Gross says how much new volume CSX can win depends entirely on pricing.



△Intermodal train 1032 passes through Elk Mills, Md., on Feb. 19, 2022. Trains 1032/1033 normally run between Jacksonville and North Bergen, N.J., but are beginning or ending at Curtis Bay Yard in Baltimore during the tunnel project. Michael S. Murray

"Double-stacking does not unlock any volume. What unlocks volume is lower prices," he says. "So the question is whether once they have double-stack capability, are they going to lower prices? It's going to improve their economics. The optional step is how do they share that benefit with the market? If they tell the market that we're doublestack now and the price is the same, no one is going to do anything different."

CSX's I-95 Corridor is one slice of the Northeast-Southeast intermodal lane, which ranks No. 10 by volume overall in the lanes tracked by the Intermodal Association of North America. The Northeast-Southeast lane

currently accounts for just under 5% of overall intermodal volume and has room to grow. "There's a lot of truck traffic out there," Gross says.

Gross says he's encouraged by the Howard Street Tunnel project and the intermodal possibilities it opens up. "There are very few home runs out there," Gross says. "There are a lot of singles and doubles."

# 'It will never be fixed'

The Howard Street project has been a long time coming. CSX brass had discussed it for two decades, but the estimated \$1 billion to \$3 billion price tag for a new or substantially rebuilt tunnel always was a show stopper. "We've been talking about

Howard Street my entire career - 20 years," Chief Financial Officer Sean Pelkey says. "And forever it was 'Howard Street is the bottleneck in the network. It will never be fixed."

But the CSX Engineering Department learned from the Virginia Avenue Tunnel project in Washington, D.C., completed in 2016 [see "National Gateway realized," February 2017]. A study that year, conducted by CSX and the Maryland Department of Transportation, determined that the Howard Street Tunnel was structurally sound and did not need replacement or major reconstruction as part of a clearance project. The study also found that engineering advances would allow for the tunnel to be improved at a much lower cost.

CSX said that the project, if funded, would remove trucks from highways and create more than \$640 million in benefits to 25 eastern states. The railroad then worked with elected officials in Maryland, Pennsylvania, and Baltimore to cobble together a package of federal, state, and local funding to clear the tunnel and other restrictions between Baltimore and Philadelphia.

Then along came E. Hunter Harrison, who became CSX's chief executive in March 2017. Harrison did a top-to-bottom review of CSX and its operations, and by the fall of 2017



had begun focusing on the intermodal network. There were audible gasps in the room in CSX headquarters in Jacksonville, Fla., when Harrison announced the railroad would pull out of the Howard Street project.

Harrison was philosophically opposed to receiving government money and believed that



The CSX "Spirit of our Armed Forces" locomotive, ES44AH No. 1776, leads single-stacked Baltimore-Jacksonville train 1035 through Long Bridge Park in Arlington, Va., on Dec. 6, 2023. Trevis Trent



CSX manifest freight M371, detoured because of the Howard Street project, passes the station in Pottstown, Pa., on Feb. 5, 2025. The railroad's Monon heritage unit is second in the consist. Tunnel detours are accounting for 10 million out-of-route miles monthly. Dave Carney

the East Coast had too many ports vying for big ships and their container traffic. "When you start taking their money, they want to try to tell you how to run your company — and they ought be able to," Harrison told an investor conference.

"Nobody wants to be told their port's not the superport. But somebody's got to wake up to that," Harrison said. "And sometimes it's got to be us by saying we can't invest in that with shareholder money because it's not a good investment."

Harrison's decision stunned officials in Maryland. The Port of Baltimore can handle today's largest container ships. But officials feared the port would be left behind East Coast competitors without access to double-stack rail service. After Harrison's death in December 2017, CEO Jim Foote held multiple meetings with Maryland's congressional delegation, the governor, state transportation officials, and the port. What emerged in March 2018 was a new agreement to move

forward with what at the time was a \$466 million project.

Since then the price tag has risen by \$100 million. Funding for the \$566 million project includes \$247.5 million from the state of Maryland, \$170.75 million from CSX, \$125 million from the Federal Railroad Administration, and \$22.75 million from the Pennsylvania Department of Transportation.

# The big dig down below

Up to 200 people are working on the Howard Street Tunnel itself, as well as the two remaining bridge clearance projects just north of the tunnel, says Brandon Knapp, the railroad's Baltimore-based senior director of design and construction.

CSX is increasing clearance to 21 feet by excavating the tunnel floor and installing new precast concrete inverts that will be tied into the tunnel's existing footing. "The top of rail in most locations is going down between two and three feet, so we'll be excavating down about 5 feet in

most locations to be able to build back up," Knapp says.

One of the challenges of working in a tunnel, Knapp says, is that there are only two ways in and out. Crews deliver new construction materials via the north portal, while excavated material is removed



▲ CEO Jim Foote brought CSX back to the project after Hunter Harrison pulled out. David Lassen

via the south portal. CSX shuttles the material to its Mount Winans Yard in airdump gondola cars. Bayview Yard serves as a secondary dump site for what's expected to be the removal of 27,000

cubic yards of ballast, brick, and soil from the tunnel floor.

Another challenge: managing the water that constantly seeps into the tunnel. "This is a free-draining tunnel. There is quite a bit of water that comes in here," Knapp says.

Howard Street, a major city thoroughfare, and the Baltimore light rail system run 50 to 70 feet above the tunnel. "We certainly don't expect to have any impact on the neighborhood above," Knapp says.

But, just in case, an array of sensors is keeping an eye out for any ground movement up on the surface. "We've worked with the city and worked with the MTA to be able to install those monitoring points to make sure that we're getting good information," Knapp says. "If we're seeing any sort of movement, we'll take action."

One of the adjacent bridge clearance projects is anything but run of the mill.

The four-arch North Avenue stone bridge spans CSX, Amtrak, and Baltimore light rail



A steady stream of water seeping into the free-draining tunnel is just one of the logistical challenges of the Howard Street project, along with the limited access and the major thoroughfare, light rail line, and neighborhoods directly above. CSX

▶ A train of international containers from the port of Baltimore passes through Coulters, Pa., 22 track miles east of Pittsburgh, on July 18, 2017. The tunnel project will eliminate the clearance limitations that restricted such trains to single-stacked containers. Robert J. Wise

tracks, as well as Jones Falls. Overlapping infrastructure in the compact area complicates matters, with the CSX main line sitting atop Amtrak's 1872 Baltimore & Potomac Tunnel.

"It's a very interesting structure. It's the location where the Amtrak B&P Tunnel comes underneath us," Knapp says. "We actually sit essentially on a bridge over the top of their tunnel, and then we have North Avenue over the top of us."

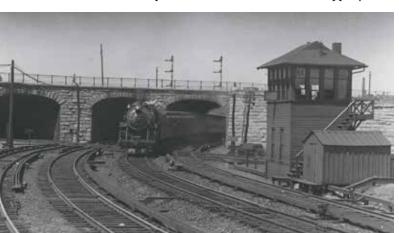
That, of course, meant that the only way to gain clearance was to go up. CSX is replacing one of the stone arches with a steel girder span. The North Avenue project and the nearby Harford Avenue bridge modification project aren't expected to be completed until early 2026, a few months after the tunnel work is scheduled to wrap up. "We're doing our best right now to help accelerate that schedule," Knapp says.



The Howard Street Tunnel was the centerpiece of B&O's Baltimore Belt Line, built between 1890 and 1895 to link the railroad's lines on opposite sides of the city. The Belt Line — the first electrified railroad in the U.S. — gave the B&O a through route and allowed the railroad to connect its yard in Mount Clare, on the west side of Baltimore, to Bavview Junction on the east side. In addition to the

Howard Street Tunnel, the Belt Line features eight stone or concrete arch overpasses and tunnels that required clearance improvements.

When built, Howard Street was a 7,341-foot-long, doubletrack tunnel that consisted of three sections: A 300-foot cutand-cover section at the south end; a 5,900-foot section bored through rock and loose soil; and a 1,150-foot cut-and-cover section. Northbound trains -



▲ Increasing clearance at the North Avenue viaduct, shown circa 1943, is a challenge because the B&P Tunnel is immediately below, and the area now includes light rail and more roadways. Trains collection



B&O's Baltimore Belt Line through the Howard Street Tunnel was the first electrified rail line in the U.S. The 3.75 miles of electrification was removed in 1952. Trains collection



eastbound by timetable face a 0.8% ascending grade through the tunnel.

The B&O inaugurated passenger service through the tunnel on May 1, 1895. Freight service followed on Aug. 4, 1895, ending car ferry operation across the Patapsco River between Locust Point and Canton.

The advent of double-stack equipment in the 1980s was not the first time Belt Line clearances posed an obstacle.

"The builders of the Belt Line never dreamed that the day would come when railroads would have freight cars too large for, or would carry loads that would not clear, the ample arches they had provided in the tunnels along the line," L.W. Sagle wrote in the April 1943 issue of Trains. "And so it was for 42 years that the clearances were ample, but in 1937 the need for additional clearance above the cars became acute. The type of construction of the Howard Street tunnel is such that it is economically impossible to lower the tracks. So the B&O engineers solved the vexing problem by constructing a gauntlet track



The train shed at Mount Royal station is viewed from just inside the north portal of the Howard Street Tunnel, circa 1968. Clearance issues with the tunnel have long been a service barrier for CSX. Historic American Engineering Record/Library of Congress

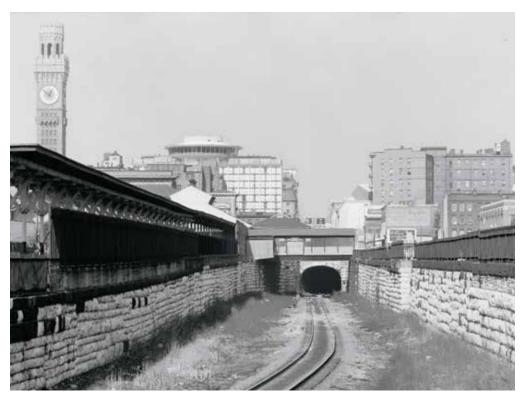
through the Howard Street tunnel and one of the Mount Royal Avenue tunnels."

The gauntlet (in which the mainline tracks overlap) allowed trains to take advantage of the higher clearances at the center of the tunnel's masonry arch. The 3.75 miles of electrification was removed in 1952.

Two 20th-century projects extended the tunnel to its current 8,700-foot length. In 1982, CSX extended it south by 1,393 feet as part of construction of the elevated Interstate 395. In the early 1990s, the southern end was extended another 50 feet to allow the new light rail line to cross over the CSX main.

With the expansion of a GM minivan assembly plant in southeast Baltimore, CSX lowered the floor in the tunnel in 1984 so that it could handle auto racks that require 19 feet, 6 inches of clearance.

The tunnel made headlines after a July 18, 2001, derailment and five-day fire shut down



Baltimore's Camden Yards ballpark is now just to the left of the Howard Street Tunnel's south portal. Since this image was taken, the tunnel has been lengthened twice at this end, to accommodate an interstate highway and Baltimore's light rail line. Historic American Engineering Record/Library of Congress

nearby neighborhoods and forced the cancellation of three Baltimore Orioles home games at Camden Yards, the ballpark adjacent to the south portal.

Eleven of train L412's 60 cars derailed about 1,850 feet from the north portal. Among them: a tank car of tripropylene that punctured and ignited. The blaze spread to adjacent cars carrying paper and lumber and turned the tunnel into one big brick oven as temperatures reached 1,500 degrees. A few hours after the derailment, a 40inch water main above the tunnel failed, sending 14 million gallons of water into the tunnel and cutting power to the area.

The tunnel still bears scars from the event. "You still see a lot of soot and so forth, and there's still some areas where there was some damage to the inverts," Knapp says.

But Knapp is impressed with the design, craftsmanship, and durability of the tunnel. "The tunnel is still in actually very good condition," he says.

### A B&O boost

The Howard Street project and a Cumberland Yard makeover are leading to a revival of sorts for the B&O main line's east end, which currently handles 16 to 20 or so trains per day, plus Amtrak's Floridian.

Cumberland's hump was shut down in 2017 as part of CSX's shift to Harrison's Precision Scheduled Railroading operating model. Some of Cumberland's switching work then was pushed to the hump yard in Selkirk. Cumberland's capacity was further reduced when some of the yard's tracks were subsequently removed or stub-ended.

Fast forward to December 2024, when CSX wrapped up work at Cumberland that enabled the yard to handle more merchandise traffic moving between the Mid-Atlantic and Midwest that had been routed the long way around via Selkirk.

Shifting the freight to its natural routing via Cumberland eliminates 29 million out-of-route miles per year, reduces car handlings by 59,000 annually, cuts transit time, and produces \$15 million in direct operational cost savings, Cory says.

The yard reconfiguration

included demolishing the hump and hump tower. Three new switching leads and an additional 4,600-foot classification track were added. The switching leads, equipped with automated hydraulic switches, access 30 classification tracks.

The upgrades tripled the number of cars Cumberland switches per day, to around 900, says Casey Albright, senior vice president of network operations and service design.

CSX has shifted a daily merchandise train pair's worth of traffic back to Cumberland. This, in turn, freed up capacity at Selkirk to handle growth in paper, forest products, and waste traffic from former Pan Am Railways territory in New England.

Cumberland also regained switching work that had been parceled out among smaller-

An eastbound container train nears the summit of Sand Patch Grade at Sand Patch, Pa., on July 10, 2019. Completion of the **Howard Street project could lead** to an additional stack train via Sand Patch to serve Baltimore. Travis Mackey

yards along the B&O, including Connellsville, Pa., and Brunswick, Md. Bringing the work back to Cumberland saves an average of 16 hours transit time per car, Cory says, while reducing the number of local jobs operating at the outlying yards.

The return of a pair of merchandise trains to the former B&O means CSX has more options to efficiently take locomotives to and from the shop at Cumberland. Previously CSX often used intermodal trains to deliver locomotives to the shop. which is not ideal.

Cumberland also has temporarily taken on a vital role: Handling more switching work in support of Howard Street Tunnel detours. "Cumberland getting up and operating has really enabled us to move some of that traffic away from the Howard



Street Tunnel," Albright says.

The completion of the Baltimore clearance project will send more intermodal traffic the B&O's way. Stack traffic currently routed via Buffalo and Selkirk will instead run between Baltimore and the Midwest via the B&O. Most of the current traffic is domestic containers rather than port business.

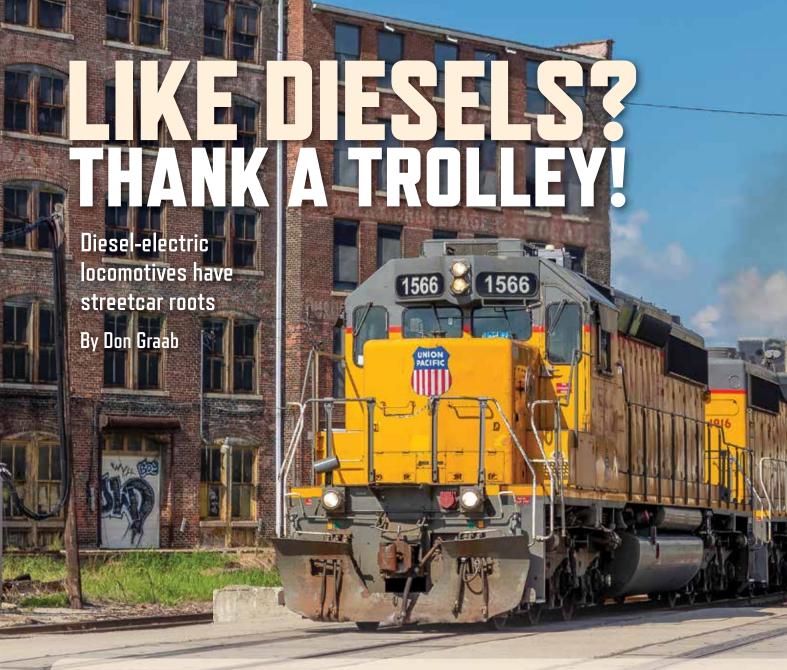
Will the Baltimore stack traffic mean another intermodal train will join the five currently scheduled to growl their way over the Sand Patch grade?

"Our hope is that it'll justify its own train," Albright says. "That's what we're looking forward to. And that'll be in our sales and marketing wheelhouse to sell that business. But if it's not immediately its own train, the goal is for it to grow into its own train pretty quickly." I



A Reconfiguration of the Cumberland, Md., yard — which had its hump shut down in 2017 — included removing the hump and adding new switching leads and an additional classification track. The changes have allowed CSX to bring back trains that had been assigned to smaller facilities. CSX





IT'S STRANGE BUT TRUE: Dieselelectric locomotives have streetcar roots. With diesel locomotives rapidly replacing steam locomotives in the years after World War II, it's easy to imagine diesels as a natural evolution of the steam locomotive. The fact is, there was almost no transfer of technology. The melodious steam whistle was replaced by a blaring air horn. In place of a rope-pulled clapper with a brass bell, there was a pneumatic ringer for a steel bell. The 6ET (Engine & Tender) brake system morphed into the 6BL (Branch Line) brake system, still lacking a self-lapping automatic brake valve and the vital brake pipe pressure maintaining feature.

The real technology transfer started years earlier — for the origins of the diesel-electric locomotive are rooted in streetcars, not steam engines. Early diesel-electric locomotives reflected the legacy of streetcar development in several ways, some of which are present on locomotives to this day.

Let's begin with DC series wound motors. Engineers and scientists working on streetcar development saw the clear advantages of DC motors for propulsion — specifically, the characteristics of high torque at low rotational speeds. Power at low speed matched beautifully with the need to start a heavy train and offered a big advantage over steam.

While the armatures may have gotten bigger (and the insulating material certainly has improved), this DC motor design remained almost the exclusive traction motor for a century, until variable-speed AC motors became practical.

As they pondered the correct voltage and current for streetcar propulsion, electrical engineers landed on the progression of a series circuit, followed by a series-parallel circuit, and then a full parallel cabling arrangement for the traction motors to manage the appropriate levels of current for starting and voltage for higher speeds. This all-important series-parallel power circuit was present in new locomotives

until the 1980s, when continued increases in traction alternator output (and alternator transition) made this motor arrangement obsolete.

Early streetcar designers struggled with transmitting power from the DC series motor to the wheels. Early designs used awkward arrangements of belts, gears, and axlemounted armatures. All proved unsatisfactory. There was no reasonable way to keep the motor aligned with the wheelset while traversing the track. In the streetcar solution suggested by inventor Frank Sprague, the traction motor hangs off the axle. Sprague called this "wheelbarrow suspension," and it eliminated the alignment issue.



It remains in use today.

The selection of carbon materials for the electrical brushes necessary for commutation of DC motors was a stroke of genius that solved the primary DC motor reliability issue early in the 20th century. All locomotives used this technology until the introduction of AC traction motors in the 1990s. In fact, a whole industry manufacturing carbon brushes for industrial America was spawned to support DC motors. Even today, more than half of all North American locomotives use carbon brushes.

During the streetcar era, speed control was achieved with six to eight notches on a hand-operated rheostat. Similarly, the eight-notch throttle control of internal combustion engines is a characteristic of almost every diesel-electric locomotive built in North America. (The half-throttle positions on 1960s General Electric locomotives were a rare exception.)

And lastly, all the important aspects of multiple-unit control still used for diesel-electric locomotives were introduced for streetcar use by Frank Sprague in his Oct. 16, 1900, patent on this subject.

For good reason, many associate the success of dieselelectric locomotives with multiple control. The impact of M.U. control on freight train length is undeniable. Operating several locomotives under the control of a single operator has yielded terrific productivity gains since the steam era. It's worth remembering Frank Sprague had multiple unit control patented and running on Chicago's Southside Elevated Railroad by 1897. While the initial M.U. cable had only five connectors, the precedent for operations involving multiple rail vehicles with DC traction motors was in place.

And so, streetcars laid the foundation for diesel-electric locomotives. While the complexity of diesel locomotives long ago eclipsed streetcars, today's light rail vehicles are head-to-head competitors for the application of modern technology. I

MAIN: Until the introduction of AC traction motors in the 1990s. diesel-electric locomotives, like Union Pacific SD40N No. 1566 rolling through Kansas City's West Bottoms neighborhood, used carbon-brush DC motors originally developed for streetcars - one of many examples of the streetcar roots of dieselelectric locomotives. Carl Swanson

INSET: Early designers overcame many challenges in applying electrical propulsion to streetcars. Their innovative motor and control solutions shaped the development of early diesel-electric locomotives as well, and some are present in locomotives to this day.

Carl Swanson collection



# in a big way





he United States Bicentennial in 1976 paid tribute to the creation of the nation and the 200th anniversary of the adoption of the Declaration of Independence. It was a glorious time to celebrate. Bicentennial fever was seemingly everywhere, and nowhere more so than on America's railroads.

Class I railroads, regionals, short lines, industrials — it made no difference. Almost everyone wanted to show off their patriotism by giving locomotives and various pieces of rolling stock the patriotic red, white, and blue. Unique designs sprouted up everywhere. Railroads and railroaders were proud, and they eagerly wanted to display the colors.

This General Electric locomotive, built in 1963, emerged from a mid-1970s rebuilding with a new number, 6800, a new model designation, U25BE, and a red, white, and blue paint job. The third Espee bicentennial unit, it was named Spirit of Sacramento by Sacramento shop crews.

#### Jumping on the bandwagon

Locomotive builder Electro-Motive Division was in the midst of an order of 3,600-hp SD45T-2 road switchers for the railroad's St. Louis Southwestern subsidiary - more commonly referred to as the Cotton Belt. Although legally a separate company, it was operated as just another division and was an integral part of the SP system. Could a unit of the current order be painted in red, white, and blue?

Enter Southern California's Chester Mack. The railroad looked to this veteran



industrial designer — the original 1947 American Freedom Train was his work. He had the credentials, could he do it again?

Absolutely! Just look at No. 9389 on pages 38-39. I photographed it at Taylor Yard in Los Angeles on March 16, 1975, on one of its first days on the railroad: red, white, and blue with a gold underframe and trucks. Outstanding!

It arrived in perfect condition. I had a photography pass from the railroad to be on the property, and promptly took advantage of it when the 9389 arrived.

When I found it, the unit was surrounded on the ready tracks by standard red and gray SP locomotives. It took considerable cajoling to convince the hostlers, who claimed they were done for the evening, to move the other units clear of the 9389. I was working for a railroad magazine back



Southern Pacific EMD GP40P2 No. 3197 was the second SP unit repainted in red, white, and blue. It usually operated in commuter service between San Francisco and San Jose. The author photographed the 3197 in Taylor Yard in Los Angeles in 1976.

then, but offering copies of the current issue failed to sway them. The publisher also produced a number of non-railroad titles, and I carried them around for just such occasions. Happily for me, these were more appealing to the hostlers.

Five No. 2 flashbulbs did the trick, including one fired off on the other side of the unit to make it stand out better from its background. It was a great start in chronicling the railroad's red, white, and blues.

#### A second unit

Southern Pacific's headquarters was in San Francisco, and the word was upper management wanted a bicentennial unit in local captive service for them to admire whenever the occasion arose.

The railroad purchased three EMD GP40P-2s in 1974 to augment the locomotive fleet assigned to commuter service between San Francisco and San Jose. Numbered 3197 to 3199, the trio, delivered in standard red and gray, were initially assigned Roseville, Calif., to Eugene, Ore., freight service, reportedly to avoid certain

California taxes. After a few months, all three were sent to San Francisco and settled into their intended assignments. One of them would make a perfect candidate for bicentennial colors.

The first of the three, No. 3197, rolled into a stall at the railroad's Bayshore Yard in 1975, to emerge a few weeks later with another Chester Mack design, slightly different from No. 9389. It became the star of the commuter fleet.

#### And a third

Rumor had it the last of the trio would be a General Electric unit. But which one?

In 1975, the railroad was involved in rebuilding and upgrading many of its higher-mileage road locomotives. Among the various EMD Geeps and SD units, the railroad decided to include its fleet of fouraxle General Electric U25Bs. As the Los Angeles-based units came due for major shopping they were sent dead-in-train to SP's locomotive shop in Sacramento, Calif.

Arriving from the factory in 1963 in the 7500 series and later renumbered in the



All three Southern Pacific bicentennial locomotives were photographed at Los Angeles' Taylor Yard in 1975.

6700s during a fleet-wide reorganization, the first of the GEs to be sent north was No. 6708, serial number 34700. With more than 1.25 million miles under its frame, it had been stored following an accident and became the first GE in the railroad's extensive overhaul and rebuilding program.

Renumbered 6800 and receiving the new designation of U25BE, to reflect the improvements it would receive, fate intervened when it was picked to be the third bicentennial unit.

Again, the paint scheme was slightly altered from the original design for No. 9389. The U.S. Treasury Department was planning a 1976 Savings Bond Purchase Campaign and had introduced a new logo. The Liberty Bell decals on the other two units were replaced with the Savings Bond logos. Sacramento shop crews promptly dubbed the locomotive the "Spirit of Sacramento."

Returned south to its Los Angeles maintenance base, the unit was officially christened on Nov. 12, 1975, at the railroad's Glendale, Calif., passenger station. Hosted by Southern Pacific public relations man Tom Buckley, the featured speaker was U.S. Treasurer Francine I. Neff. Music was provided by a United States Marine Corps band.

Not to forget the tail end, SP decorated bay window caboose No. 1776 in red, white, and blue, as well.



Southern Pacific's enthusiasm for the nation's bicentennial included this colorfully painted caboose, renumbered 1776. It was later donated to a museum in Texas.

#### What happened to them?

As bicentennial fever began to fade, the trio became just part of the roster.

Repainted into standard SP red and gray, the No. 9389 was sent through an upgrading program at the Sacramento Shops in 1988 and emerged as No. 6833. It lasted until 1991, when it was involved in a wreck at Cody, Kan., and subsequently scrapped.

U25BE No. 3100 was one of only two GE units to go through the rebuilding program before SP decided it was too expensive in terms of manpower, compared to rebuilding an equivalent EMD. It was donated to the Orange Empire Railway Museum in Perris, Calif. — now the Southern California Railway Museum - in 1998. The museum refurbished and repainted the unit.

The No. 3197 lost its bicentennial paint in the early 1980s and continued in commuter service until Caltrain took over a few years later. Renumbered into the 7600s, all three units had their steam generators removed and larger fuel tanks installed for the remainder of their careers in freight service. Picked up by Union Pacific after the 1995 acquisition of SP, the 7600 was returned to its owner at the end of its lease, remanufactured, and picked up by Indiana Harbor Belt as its No. 4010.

The caboose? After returning to its traditional brown with orange ends, it finished its days in rear-end service before ultimately being donated to the Railroad Depot Hudspeth County Museum in Sierra Blanca, Texas. I

### **Trains**

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🗓 SCAN ME



As operations continue, work begins to replace 400-foot bridge destroyed by blaze

▲ It could cost the Mt. Rainier Scenic Railroad up to \$10 million to replace this 400-foot-long, 70-foot-high bridge, destroyed in a fire ignited on April 30, 2025.

Mt. Rainier Scenic Railroad

#### MAY WAS A DEVASTATING

**MONTH** for the Mount Rainier Scenic Railroad.

And yet, the heritage line based in Elbe, Wash., about 45 miles south of Tacoma, has not only continued to operate, but sees reasons to remain positive.

On the evening of April 30, the railroad's largest wooden bridge — a 400-foot-long, 70-foot-high structure between Mineral and Morton, Wash. caught fire. Because of the remote location, it took an hour for first responders to arrive; the bridge burned for days and was a total loss. The fire was ruled to have been human-caused.

The loss is a huge setback for the railroad's continuing growth, which includes plans to develop shortline freight service to lumber mills beyond the bridge. As of mid-May, estimates for a replacement range from \$2 million to \$10 million.

"That sounds like a huge range," says Bethan Maher, executive director and CEO for the railroad and the parent Western Forest Industries Museum, during a May 19 phone interview. "But it's more information than we had two weeks ago."

The final cost will be shaped in part by what kind of bridge the replacement will be: A modern concrete-and-steel structure? Another wood trestle?

Because the fire hit the day the railroad signed paperwork to purchase the line from the City of Tacoma's Tacoma Rail, there is no insurance to address. the cost. "Insurance for railroads and lines and structures is sort of a complicated paradigm as it

is," Maher says. "But we hadn't changed any of our insurance yet because we didn't know when this thing was going to be signed and delivered.

"The timing of this has been stellarly bad."

#### **EXPANDING OPERATIONS**

Trains, it should be emphasized, are still running. And despite the fire - the Mt. Rainier Scenic continues to expand operations after a three-year shutdown when former operator American Heritage Railways pulled out in 2020. The Western Forest Industries Museum acquired the railroad in 2020, resuming operations in 2023.

"We doubled our operational trackage over the last year, so we have a new route we're running on," Maher says. "We have a steam engine in the shop that's going to make its debut sometime this fall. ... We've got our newly restored parlor car."

The locomotive under restoration, a 1924 Porter 2-8-2, should be done in time to replace Polson No. 70, the current everyday locomotive nearing its Federal Railroad Administration 1,472-inspection.

The RailCycles — railbikes designed and built by the railroad — also continue to operate. "RailCycle has been a moving operation for us," Maher said. "We move it ahead of wherever the next place is we're going to restore rail service. ... So RailCycle is running on a new route, between Mineral and what's called Divide, and that's gorgeous. You've got some old-growth timber, and then some really, really expansive views of, you know, the foothills of Mt. Rainier, Storm King, the mountain itself."

More information is available at the railroad website: mtrainierrailroad.com.

#### THE TASK AHEAD

Even against that backdrop, dealing with the bridge will be a massive challenge.

"The first thing we need to

do is get in and clean up the site. We've got a stream there, and burnt creosote timbers and suspended rails. ... We've got to take down the rest of the structure because it's an environmental hazard, and now, unfortunately, it's also going to be a public nuisance hazard." Access is a challenge, as indicated by the response time to the fire. The nearest paved road is about a half-mile away, and that's a winding road with "probably like 17% grades," she says.

Funding will clearly be a hurdle. "We're planning on going after CRISI funds" — the Federal Railroad Administration's Consolidated Rail Infrastructure and Safety Improvement grants — "to begin servicing the mills at the end of the line again," Maher says. "But the reality is tourist railroads fall in a gray area ... Most transportation funding doesn't touch what we do because we're not freight and we're not intercity passenger." She has been talking to elected officials in hopes of garnering some assistance.

A GoFundMe page was closing in on \$200,000 in donations as of May 27. That will help, but it's just a starting point.



Executive Director Bethan Maher checks in on restoration of 2-8-2 No. 5. a 1924 Porter locomotive due for completion this fall. Radford Creative

While much remains uncertain, help and advice has come from a wide range of sources.

A notable contribution has come from Ken Kirschling, who was familiar with the railroad and the trestle — as a bridge inspector for RailStar Engineering LLC. He has been donating his time to help assess how the project can move forward.

"He's the nicest man you can ever meet," Maher says. "... He's helping us estimate the rebuild costs and look at the different options. Obviously, that's a huge amount of work. ...

"He's probably been in communication almost every day."

Beyond that, Maher has heard from a cross section of the rail industry: short lines, tourist railroads, even people at BNSF Railway.

"It's been incredible that folks from BNSF have reached out to offer help, you know?" Maher says. "... The railroad community support for our little railroad in the woods has been incredible, you know, from model railroad clubs all the way up to the Class Is." — David Lassen

### T1 Trust chooses site for locomotive assembly

#### New facility to be built in partnership with Dennison museum

**DENNISON. OHIO. HAS BEEN cho**sen as the site for final assembly of new-build Pennsylvania Railroad T1 locomotive No. 5550.

The T1 Steam Locomotive Trust in May announced plans, in partnership with the Dennison Railroad Depot Museum, to build a new locomotive and passenger car restoration shop in the Ohio city where the PRR built steam locomotives in the late 1800s. The organizations have secured a \$1.7 million economic grant from the U.S. Department of Agriculture to build a 200-by-60-foot, twotrack structure that will also be used to maintain the museum's excursion passenger cars.

The funds will also allow completion of the locomotive's

firebox and boiler exterior. Mating the frame and boiler is expected in 2026, when the Trust brings together the locomotive's components at the new facility.

Final welding of the locomotive frame — 64 feet long and weighing 71,000 pounds — was completed in late April by the Dover Tank & Plate Co. in Dover, Ohio, after two years of engineering and six months of construction. Davey Lawless, project manager for Dover Tank & Plate, said in a T1 Trust video that the frame was fabricated from steel plate ranging in thickness from three-quarters of a inch to 8 inches. Two of the company's fabricators spent about 3,500 hours on the job.



A two-track shop to be built in Dennison, Ohio, will be site for assembly of the T1 Trust's new-build 4-4-4 steam locomotive. T1 Trust

Work is underway on the locomotive's cylinders. The "Cylinder Club" campaign for that step, which has so far raised more than \$120,000, is part of a new "Forge Ahead" capital campaign that has

raised about \$700,000 of a \$1.5 million target to maintain project momentum.

For more information or to donate, visit the Trust website: prrt1steamlocomotivetrust.org. Lucas Iverson



#### An unexpected nighttime meet in the Canadian backwoods

#### by Richard "Dick" Bennett

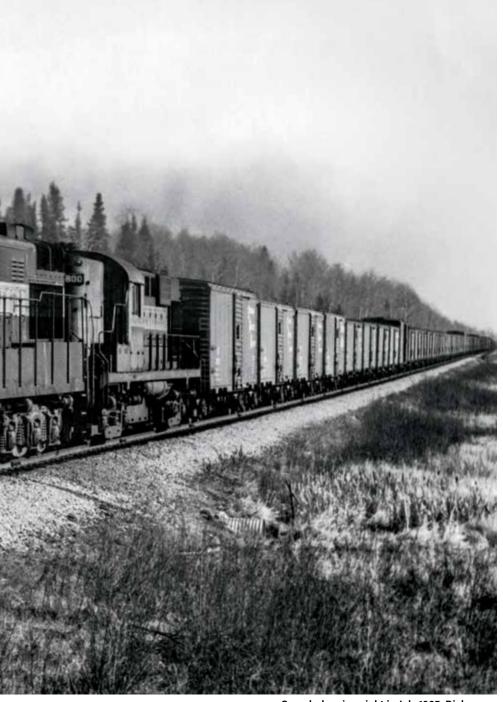
I WAS 19 IN SUMMER 1965, and had hired on as a seasonal signal crew laborer for the Canadian Pacific Railway. The CP was installing Centralized Traffic Control along its transcontinental main line between Sudbury, my hometown, and Chapleau, Ontario, some 140 miles northwest. Since I loved trains, what better way to save some college money than to work on the rails?

On my first day, I boarded train No. 3,

the *Dominion*, in Sudbury for points west. On board I met up with 11 other gang workers, three of whom were student helpers my age. Our task was to work 10-hour shifts for 10 days straight, digging ditches, laying electric wires, erecting new signal foundations, posts, and light fixtures at sidings, then return home for four days' rest. "I am up to this," I said to myself, with some hesitation, as we pulled out of the

station, not knowing what to expect.

A few hours later I found myself lying on a top bunk in one of six rundown, burgundy-colored 1920s passenger/baggage cars, coupled together on a lonely siding somewhere north of Biscotasing — an isolated outpost for hunters, canoeists, and backcountry campers, which was reachable only by rail. There I was, hunkering down with my new associates, somewhere in the



dark and silent Canadian boreal forest filled with mosquitos, bears, and moose all under a beautiful bright summer moon supervising our every move.

Our daily routine was to be up at 6 a.m. for a hearty breakfast in an old baggage car. Then trench digging with picks, shovels, and drill bits for the next five hours, a break for lunch, five more laborious hours. then supper. After dinner, and once the long summer sun had finally set, exhausted as we were, we read, listened to our transistor radios, played checkers and chess, and occasionally joined our 50-year-old French-Canadian crew boss, Art Duchamps, in a muttered kind of sing-along before bed. A few guys sneaked in some lively spirits for such occasions but none of us were supposed to know.

On a dark, rainy night in July 1965, Dick Bennett, a summer hire working on a Canadian Pacific signal crew, heard two train horns. One from a freight train, much like this, was supposed to coming through. The second posed a serious problem for Bennett's signal gang. James A. Brown

One night in July, on another siding somewhere between Sultan and Ramsey, I went for a late-night stroll between the three parallel tracks — the main, the siding, and the subset siding where our train lay. It was about 9 p.m. on a gloomy, rainy night. "I wouldn't be gone long," I thought as I sauntered along, only occasionally looking up from under my rain-soaked cap to see what lay ahead.

Shortly, I heard the horn of a distant freight approaching from the west. I didn't give it a second thought since it was just another freight coming our way, like they did all day and almost every night about this same time. But immediately afterwards, almost as an echo, I heard another horn, this time much louder, closer, and coming from the east. "That's strange," I said to myself. "Two trains coming at us from opposite directions? Can't be."

I hopped back onto the lead car of our work train just in time to hear Duchamps yell, "Take these keys and run down to the east end and make sure that switch is turned onto our siding."

He had just learned from the dispatcher what I had already heard — that something unexpected was coming our way.

The "unexpected" was the "milk train" that stopped at every hamlet along the way. It was supposed to be sidelined for the night some 30 miles east — but not tonight! To make matters worse, since we were not expecting any siding traffic that night, we had left our motor cars and a string of motor car trailers filled with tools sitting on the siding. We did this almost every night so we could leave for work quickly in the morning.

If that freight is coming, it will switch off the main, heading right to where all our equipment was. That would not make a pretty sight, no matter which of the three tracks they were on!

Duchamps continued hollering and swearing in true French-Canadian style. In a minute or two, our entire crew had spilled from the cars, half-dressed, and in a panic. Just as my buddies and I arrived to pull the switch, I saw a boxcar with a burning red flare latched to its rear coupler rollicking its way out of the dark, rainy night in our direction. It was that cursed milk train, pedaling a string of nine or 10 boxcars as fast as it could to get off the main. The only place it could go was our siding.

Looking back towards our cars, I saw a sight I will never forget — a dozen or more men bare handed, frantically lifting our rail speeders filled with thousands of pounds of tools, and throwing them into the ditch just in time to clear our unexpected company. I will also never forget the choice words Duchamps had for the engineer and conductor of our new arrival when they finally came to a safe stop beside us — the full moon blushed red the rest of the night!

Just a few minutes later, that big freight from the west, refusing to slow down for any reason, went barreling by, crew scowling at all of us as if they owned the railroad.

Scottish-Canadian poet Robert W. Service wrote, "The northern lights have seen queer sights," but the strangest, most dangerous sight, I ever saw was somewhere northwest of Biscotasing on a wet summer night in 1965. **I** 



From Grand Central to Milano Centrale, great structures enhance a great trip

▲ Manhattan's Grand Central Terminal is an architectural masterpiece. Among the features of this great station is the rarely pictured "whispering gallery," located on the lower level. It is best experienced in person.

Three photos, Brian Solomon

AMONG THE DELIGHTS OF RAIL-**ROAD TRAVEL** is departing and arriving at great stations. I have more than a few favorite stations, so I'll limit today's essay to active stations served by regularly scheduled trains. This excludes favorites that are gone but not forgotten, such as Philadelphia's magnificent Broad Street Station; station buildings that survive but have been repurposed, such as those transformed into restaurants or museums; as well as active stations serving heritage railroads, such as the North Conway, N.H., station operated by Conway Scenic Railroad. Each of these categories may be explored at another time.

A great station combines architectural splendor with functionality, and adds to the travel experience rather than detracts from it. My favorites are amazing spaces, work well, leave lasting good impressions, and offer distinct experiences for those who love railroads.

#### **MAGNIFICENCE IN MANHATTAN**

First on my list is New York City's Grand Central Terminal. Without a doubt, this is America's most famous station, but that's not why Grand Central makes the top of my list. This was the first station that I came to know through tours my father gave me before I was 6 years old. I've felt a personal connection to this icon of railroading ever since.

When you visit, take the opportunity to arrive by Metro North commuter train (which runs dozens of times daily from a variety of suburban stations in New York and Connecticut), then disembark, proceed to the station's capacious grand concourse with its famous octagonal information booth, and experience the majesty of this magnificent place. Gaze up to take in the celestial ceiling. Visit the station's famed Ovster Bar for fresh seafood. Seek out the whispering gallery in the lower-level concourse, where

the effect of a parabolic ceiling allows a whispered conversation between friends at opposite ends of the arched ceiling despite the cacophony of noise that characterizes the station.

#### **LANDMARK IN PHILLY**

Philadelphia's 30th Street Station (renamed in honor of the late U.S. Congressman William H. Gray III in 2014) is an awe-inspiring place. It was completed in 1933 and restored to its former glory between 1988 and 1991. Like Grand Central, trains reach the station on two levels. Passengers may choose between Amtrak, NJ Transit's Atlantic City Rail Line. and numerous SEPTA commuter rail lines.

Amtrak serves the lower level, with its frequent Northeast Corridor trains, including the fast Acela trains, plus a variety of daily long-distance services including the Crescent, Palmetto, Silver Meteor, and triweekly Cardinal - now the

only through train between Philadelphia and Chicago.

The station was built for the Pennsylvania Railroad and constructed on a colossal scale that combines classical Greco-Roman magnificence with 1930s art deco styling. The station retains much of its Pennsylvania Railroad heritage, including PRR keystones cast into railings, the 1895 allegorical relief titled Spirit of Transportation salvaged from Broad Street Station, and Walter Hancock's massive bronze of angel raising a fallen soldier as a tribute to more than 1,300 of the railroad's employees who perished during World War II.

#### WAY OUT WEST

The West Coast has the great Los Angeles Union Passenger Terminal (now named Los Angeles Union Station). This Art Deco gem is an interpretation of Spanish Mission style design by the LA architectural team of John and Donald Parkinson, Completed in 1939, it served Santa Fe, Southern Pacific, and Union Pacific. Today, it is home to Amtrak, Metrolink, and Los Angeles Metro Rail rapid transit.

My first visit to Los Angeles brought me to LAUPT by way of Amtrak's Coast Starlight 45 years ago. Arriving in the fading light of an August evening, the station seemed magical. Since then, I've arrived and departed via this icon of Western railroading many times and it always feels like an occasion.

In many places, small town stations — where they remain — exist only as a reminder of passenger trains long past. Among the exceptions are stations at Bellows Falls and White River Junction, Vt. Both are neat places to watch and photograph trains, and have survived as places to board Amtrak's Vermonter (running between Washington D.C. and St. Albans, Vt.), while also occasionally serving Vermont Rail System excursion trains.

#### INTERNATIONAL FAVORITES

Beyond our shores are many great stations. For years, I rented a Dublin apartment that was



Philadelphia's William H. Gray III 30th Street Station is among the finest large American railroad terminals. This awe-inspiring space has been adding to the travel experience since 1933.



Milano Centrale was constructed on a colossal scale. The largest of its five trainsheds rises 110 feet above the tracks and spans 236 feet. At right, a Trenitalia ETR1000 high-speed train has just arrived.

walking distance from Irish Rail's Heuston Station among the oldest large stations in continuous service. I've made countless journeys around Ireland from Heuston. I miss the sounds of the train announcements, the idling EMD diesels, and the atonal squawks of locomotive horns announcing departures from the platforms.

When on the European

continent, consider a visit to Belgium's Antwerp Central, a virtual palace of railroad stations, combining classic and modern architecture with trains arriving and departing on three levels.

In Germany, the Köln Hauptbahnhof (Cologne Main Station) is overshadowed by the city's towering cathedral.

Italy's Milano Centrale (Milan Central) stands out for its sheer enormity; its disproportionate size makes the ordinary mortal seem insignificant.

You can arrive and Milano Centrale by antique tram, then glide out from this 20th century masterpiece aboard a modern high-speed train, and you will have encapsulated the thrill of European rail travel in one journey.

What are your favorite stations? — Brian Solomon





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

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Nevada State RR Museum, Carson City

## In the September issue



#### Rimrock and coal

BNSF's Laurel Subdivision in Montana is a LITTLE-KNOWN BUT SCENIC line that may be the harbinger of a coal rebound few saw coming. AMTRAK'S **BOREALIS** marks a successful first year on the Chicago-Twin Cities corridor. Recalling the end of steam on West Virginia's logging and coal-mining **BUFFALO CREEK & GAULEY.** 

On sale August 12, 2025







## Jump Off Rock

It's a popular swimming and paddling spot on the Nantahala River passed by the Great Smoky Mountains Railroad during Nantahala Gorge excursions. On Oct. 25, 2019, No. 1702, a 1942 **Baldwin Locomotive Works** 2-8-0, leads the tourist train through this scenic North Carolina region. Travis Mackey

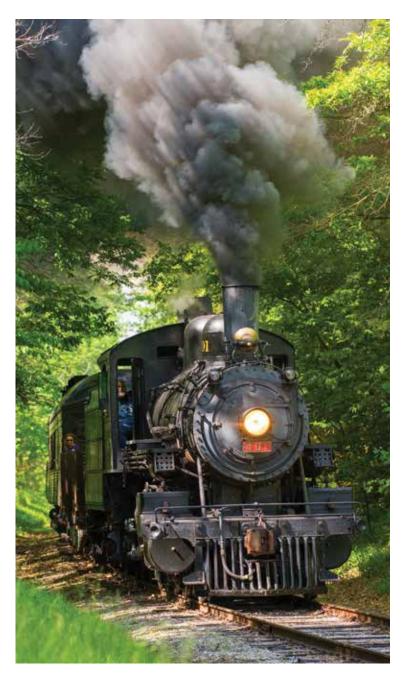
### The Queen of steam

Built by the Norfolk & Western in 1950, 4-8-4 No. 611 was among the last three J-class locomotives constructed, No. 611 has made numerous excursion trips since its revenue service retirement in October 1959, including this trip on May 2, 1992, where it is seen eastbound near Abingdon, Va. Ron Flanary









## Midwest Southern excursion

Former Southern Railway No. 401, an H-4 class 2-8-0 built in December 1907 by **Baldwin Locomotive Works,** powers an excursion train on the Monticello (III.) Railway Museum's ex-Illinois Central trackage on May 19, 2019. The locomotive has been in the museum's collection since 1971. Steve Smedley



#### **Iron horses** at Los Pinos

The Eureka, a Baldwin class 8/18 4-4-0, and Glenbrook, a 2-6-0 also from Baldwin, pull away the water tank at Los Pinos, Colo., on the **Cumbres & Toltec Scenic** Railroad. The locomotives were visiting C&TSR on Aug. 27, 2021, during the railroad's Victorian Iron Horse Roundup. David McLeod

#### **Uncharted** rails

On its 2024 Westward **Bound tour, Union Pacific** Big Boy No. 4014 crosses the Clio Trestle on former Western Pacific rails in Northern California. It's July 11, 2024, and the Big Boy is heading to Roseville, Calif., as part of a trip that included a run over Donner Pass. Joel Kirk





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- Visit the National Railway Museum in York
  - Yorkshire Moors Ry.
  - Ffestiniog & Welsh Highland railways

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#### with Carl Swanson

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