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Trains®

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Welcome to 2019 and our new look

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This is a special year in railroad history, and we've got great stories, photos, and video to enrich your experience

Westbound Union Pacific merchandise drops down grade through Utah's magnificent Echo Canyon, where the first transcontinental railroad opened up the West 150 years ago. TRAINS: Jim Wrinn

Welcome to a new year, a big year for railroad history, and a new look for TRAINS magazine's news columns and departments. Art Director Tom Danneman and his crew of designers, Scott Krall and Drew Halverson, have done a magnificent job refreshing our look. We've aimed to keep the best of what was and bring it up to date.

What's new? Our "Train-Watching" department in the back of the magazine will alternate between a guide to a short line and a hot spot you should know. Also starting with this issue, you'll find a spot to the right of this column that I'll use to call out special products and events from TRAINS that you'll want to know about.

With this issue, we're launching our countdown to May 2019 and the 150th anniversary of the first transcontinental railroad. We'll carry one story per month about this monumental feat in our Journey to Promontory series, which is also the name of a special issue set for release in late January 2019.

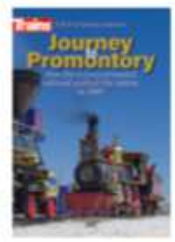
Then, in May, we'll publish a special 100-page anniversary issue of TRAINS that you won't want to miss. If you're not a UP fan, don't fret; we're also reviewing the other big western transcontinental railroads, starting this month with Great Northern. In this series, we'll also look at Southern Pacific, Northern Pacific, Santa Fe, and Milwaukee Road.

Thank you for joining us on this journey in railroad history. The transcontinental railroad was a major event 150 years ago, and we're happy to celebrate it in the pages of *the* magazine of railroading, with events and tours, and special content at TrainsMag.com.

Thank you for coming along!

TWO DVDS FOR 150 YEARS

Our made-for-PBS documentary DVD on the first transcontinental railroad, "Journey to Promontory," is ready. It's 60 minutes of great storytelling history. And you get 15 minutes of bonus footage. Our second DVD, the "Golden Spike Route Today," is the companion DVD to "Journey to Promontory," and takes you on a tour of the Union Pacific main line today from Omaha, Neb., to Sacramento, Calif., with emphasis on Donner Pass, Sherman Hill, and the world's largest yard at North Platte. Both available at KalmbachHobbyStore.com



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>> **Former Rio Grande and Hudson Bay Railway GP30 No. 2508 awaits the call of duty at Western Rail's Airway Heights, Wash., facility.** Tom Danneman

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Ontario Southland Railway snowplow No. 401005 clears a path on the Port Burwell Subdivision at Mount Elgin, Ontario, on Jan. 27, 2014.
Greg McDonnell

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Check out what Trains' staff and contributors say about railroads and train-watching.
Photo by George W. Hamlin

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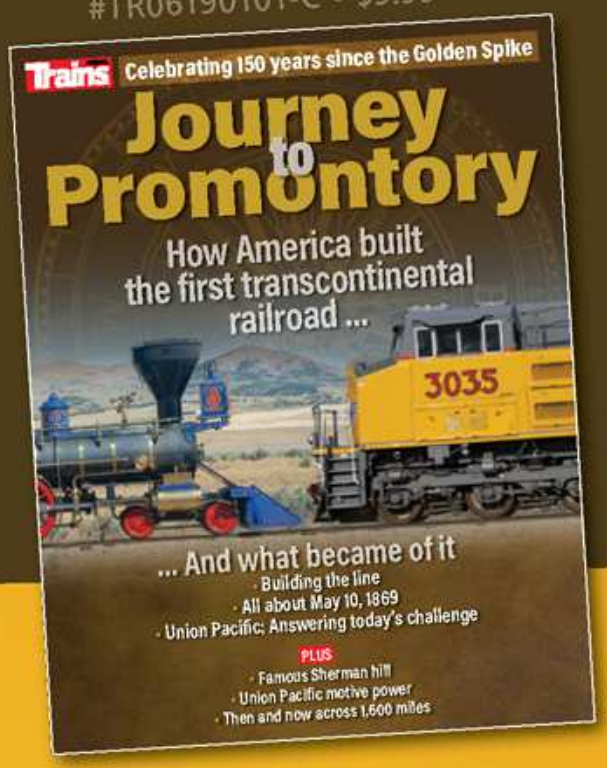

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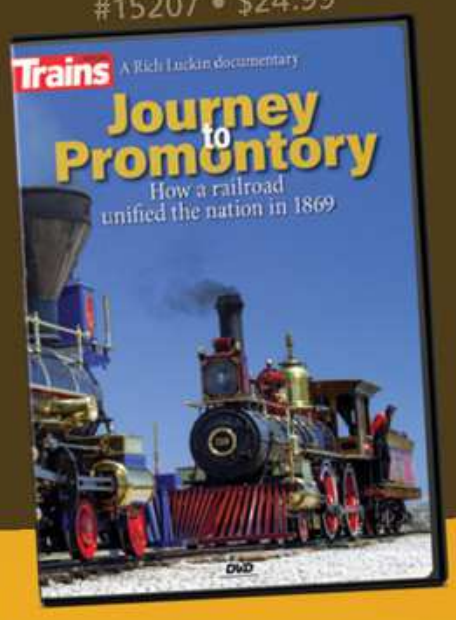

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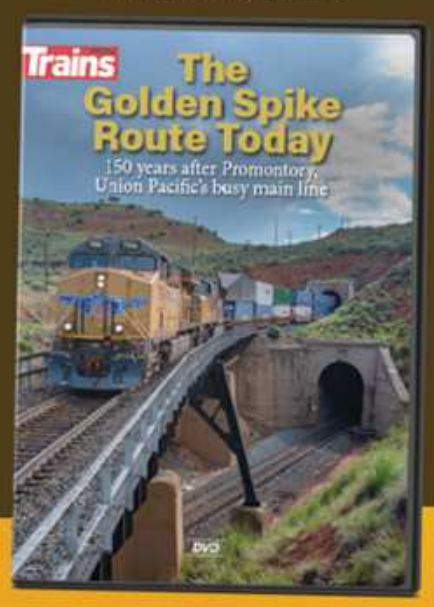

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News

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Intermodal innovations

Railroads, shippers think deeply about how they move boxes for the holidays

YOUR ONLINE PURCHASES are helping put an increasing number of containers and trailers on intermodal trains across North America.

And that's one reason railroads are looking at ways to increase intermodal capacity and efficiency amid strong demand and a widespread truck-driver shortage.

Kansas City Southern last fall doubled capacity at its Dallas-area intermodal terminal, as an example. And BNSF Railway added sections of triple and quadruple track at a trio of crew-change points on its Southern Transcon, allowing priority trains to pass slower freights. Canadian National is adding to its container and chassis fleets to expand domestic service.

But railroads also are enlisting efficiency boosting technological solutions.

BNSF this spring will begin an autonomous crane pilot program at its intermodal terminal in Kansas City, Kan. Canadian Pacific has tamed day-of-the-week swings in volume using a homegrown algorithm that schedules domestic container moves, effectively creating space on peak days. And Amazon, the giant internet retailer, has filed a patent application that envisions using stack trains as rolling fulfillment centers.

Early on, there were questions whether railroads would fit into an Amazon world. Now there's no doubt that intermodal benefits from online sales: E-commerce was the biggest driver of domestic intermodal growth on BNSF in 2018, says Tom Williams, BNSF's group vice president for consumer products. Overall U.S. retail sales were strong in 2018, led by 12-percent growth in e-commerce through September.

In some ways, railroads play a traditional retail role in the e-commerce inventory pipeline for online sellers.

"As larger players, and one really large player in the space, build out their fulfillment centers and distribution centers in key population areas, they're able to use intermodal much the same way brick-and-mortar retailers are for the inbound shipment to those fulfillment centers," Williams told the North East Association of Rail Shippers conference in September.

But e-commerce puts different demands on transportation than traditional retail. E-tailers carry much larger inventories than brick-and-mortar stores, Williams said, so they need more transportation to maintain and balance stock among regional distribution and fulfillment centers. Plus, consumers are more likely to return items if they buy online than in a store.

▲ BNSF Railway crews load trailers onto flatcars at the Denver Intermodal Facility in March 2017. Railroads and shippers are working on ever better intermodal tech. TRAINS: Steve Sweeney

Amazon, the proverbial 800-pound gorilla of e-commerce, provides a platform for smaller merchants to sell their products online. Absent that platform, the smaller retailers are unlikely to use intermodal because they'd be shipping in small lots.

"But when you package that into fulfillment by the largest e-commerce player, they're able to take your product, package it

up into full truckloads, effectively use intermodal, and get that product into fulfillment centers close to population bases," Williams said.

Officials from CP, CSX Transportation, Norfolk Southern, and Union Pacific have all cited e-commerce as a factor in their domestic intermodal growth. And while CSX has been simplifying its intermodal network to focus on point-to-point service between high-volume terminals, e-commerce still figures in its intermodal plans.

"While the emerging e-commerce market has brought new challenges for supply chain managers to overcome, our new operating model presents e-commerce companies with reliable transportation solutions to ensure their shipments arrive on time and as planned," a CSX representative says.

Consumer products — from clothing to electronic gadgets — are typically made in Asia and arrive in North America in international containers. Stack trains take those loads into interior markets across the continent, whether they move in international containers or are shifted to domestic boxes at warehouses near ports before winding up on the rails. Either way, railroads play a role in putting products on warehouse shelves.

"E-COMMERCE IS A BIT OF A DOUBLE-EDGED SWORD FOR INTERMODAL."
— LARRY GROSS, INTERMODAL ANALYST

"E-commerce is a bit of a double-edged sword for intermodal," says Larry Gross, an intermodal analyst. On the plus side, Gross says e-commerce is behind the rising number of 28-foot pup trailers that are riding on flatcars. Intermodal moves of small trailers, favored by parcel shippers such as United Parcel Service as well as less-than-truckload companies, were up 7.5 percent through September. BNSF's trailer-on-flatcar business surged 22 percent in 2018, with 28-foot pups leading the way. Trailers are imperfect for railroads, however, because they can't be stacked, consuming train capacity. E-commerce delivery demands are also shifting toward faster service.

"This mandates staging inventory in multiple locations close to the consumer," Gross says. "So the network becomes more complex and dispersed just as intermodal is pulling back to a corridor-oriented, simpler intermodal structure."

Aside from slower ground-based shipping options consumers can select at checkout, the need for delivery speed has largely limited railroads to inbound moves of e-commerce inventory. But that could change if Amazon has its way.

The e-tailer's 48-page patent application, published in September 2018, calls for getting railroads involved in last-mile package delivery. The concept works like this: Amazon would take an order and send it to the intermodal fulfillment center that's closest to the customer. Doors atop the container would open, and a drone would be launched to deliver the item. The flying vehicle would return to the train after delivery within a 5-mile-or-so radius of the tracks.

Amazon's patent application also considers using the container-based fulfillment centers on trucks and ships. It remains to be seen whether the scheme — a kind of high-tech version of Santa's sleigh — could be technically feasible, commercially successful, and clear various regulatory hurdles. — *Bill Stephens*

Legal troubles for train crews

Case against Amtrak engineer inches closer to trial; NS crew sued by railroad

THREE RAILROADERS are trading the inside of a locomotive cab for the inside of a courtroom in a pair of high-profile court cases that are slowly moving through the justice system.

Brandon Bostian, the engineer at the controls of Amtrak train No. 188 when it derailed in Philadelphia in May 2015, is expected to stand trial on multiple counts of involuntary manslaughter and reckless endangerment sometime in 2019.

Eight people died and more than 200 were injured in the derailment on the Northeast Corridor in Philadelphia's Port Richmond neighborhood. A National Transportation Safety Board investigation found the train was traveling at 102 mph on a curve with a 50-mph speed limit at the time it derailed. An NTSB investigation found that Bostian had been distracted by radio chatter and therefore was unable to slow the train sufficiently.

Bostian was charged with involuntary manslaughter and reckless endangerment, but in 2017 a judge dismissed the case, saying it was an accident, not a criminal act. In early 2018, the prosecutors appealed the decision, and a judge ruled that there was enough evidence to go to trial. Attorneys have been preparing for the case ever since.

In Kentucky, two former Norfolk Southern employees are facing a civil suit after being involved in a March 2018 derailment. NS is suing engineer Kevin Tobergte and conductor Andrew Hall, alleging that they failed to stop at a signal near Georgetown, Ky., on March 18 and caused a head-on collision that injured four people, including themselves. In August, attorneys for the two men filed a motion to dismiss the case, arguing that the lawsuit violated the Federal Employers' Liability Act, a 1908 law that shields railroaders injured on the job. A judge has not yet ruled on the motion.

The railroaders:

Brandon Bostian, Amtrak
Engineer and sole crew member in the cab of eastbound Northeast Regional train 188 when it derailed in May 2015

Kevin Tobergte, Andrew Hall; Norfolk Southern
Engineer and conductor, respectively, in the cab of an NS train that passed a stop signal in Kentucky in March 2018

While criminal charges against a railroad employee involved in a fatal derailment are not unheard of, civil lawsuits against railroaders by their employer are rare, says John Risch, national legislative director for the SMART labor union. Risch says he believes NS' lawsuit sets a dangerous precedent.

"It's outrageous behavior by Norfolk Southern," Risch says. "They're going to have to start paying railroaders $1 million or $2 million annually so they can pay for when their employer sues them."

Dennis R. Pierce, president of the Brotherhood of Locomotive Engineers and Trainmen, wrote in February that the increase of lawsuits and criminal cases against railroaders is concerning to him.

"In the wake of recent dramatic and highly visible railroad accidents in the United States and Canada, there has been a trend to criminalize railroad workers and prosecute them as the sole cause of these tragedies," Pierce wrote.
— *Justin Franz*

THE TRAINS INTERVIEW

Wi-Tronix CEO Larry Jordan

Positive train control options and advanced monitoring are set to mark railroading's future

New locomotive systems, including ones from Wi-Tronix, help detect crew cellphone use in the cab and are already cataloging grade-crossing near misses and trespasser incidents. Wi-Tronix

LARRY JORDAN thinks about Silicon Valley-style tech more than most people in railroading. He has to: His company creates software and hardware railroads can use to detect cellphone use in locomotive cabs and enables companies to view the data coming from onboard sensors — even video cameras — in real time. Jordan spoke with TRAINS recently about the future of railroad tech, and specifically about where legal mandates for positive train control in the U.S. intersect with where technology is headed.

Q In the U.S., PTC specifically means that a system will prevent trains from running stop signals, speeding, violating work-zone limits, and from running through misaligned switches. But there is an alphabet stew of PTC-like technologies and protocols in place around the world. Is PTC more like a menu of options?

A Where it's not legislated, I think it is a menu. I think there are items on that menu that can be implemented economically in a very feasible way. When you say you have to take all four, then you might take none. ... [As legislated by Congress] there's no menu items that address trespasser strikes or crossing safety. If you had a menu and you were to add those two items to the menu, then you might make a different choice than the four menu items that are required from the PTC regulation. And you could do it in such a way that you could save more lives. I think having a menu with a couple more choices gives you flexibility and optimizes the economics.

Q How could locomotive-mounted technology stop trespasser incidents?

A Most locomotives today have video-recording systems that are there to monitor — they are primarily there for crossing incidents. They almost always prove that railroads are in the right and so it avoids litigation. However, those systems aren't leveraged for their capability when there's not an accident. Wi-Tronix has a digital video event recorder that we call Violet. And it is analyzing the imagery information and creating a vision system that's looking at that information all the time. ... We're not going to be able to stop the train before a trespasser is hit. We have the capability to record and catalog near misses and find areas that are risky and use that information to apply capital in a way that's most efficient. You could say, 'There's always trespassers in this area. It's between a school and a shopping mall. And there's always kids going there.' Maybe a targeted use of funding to put a fence up in that area [is appropriate]. Or to have more enforcement in that area. To say 'I'm going to send the railroad police to that area — write a couple tickets to the teenagers, they're going to get the story and not do it anymore.' That's the type of technology that we're working on and it is close to deployment within the next 12 months. We think it can be effective at identifying risky areas so that capital that already exists for this purpose can be applied in a better way and have a better outcome as far as safety goes.

Larry Jordan

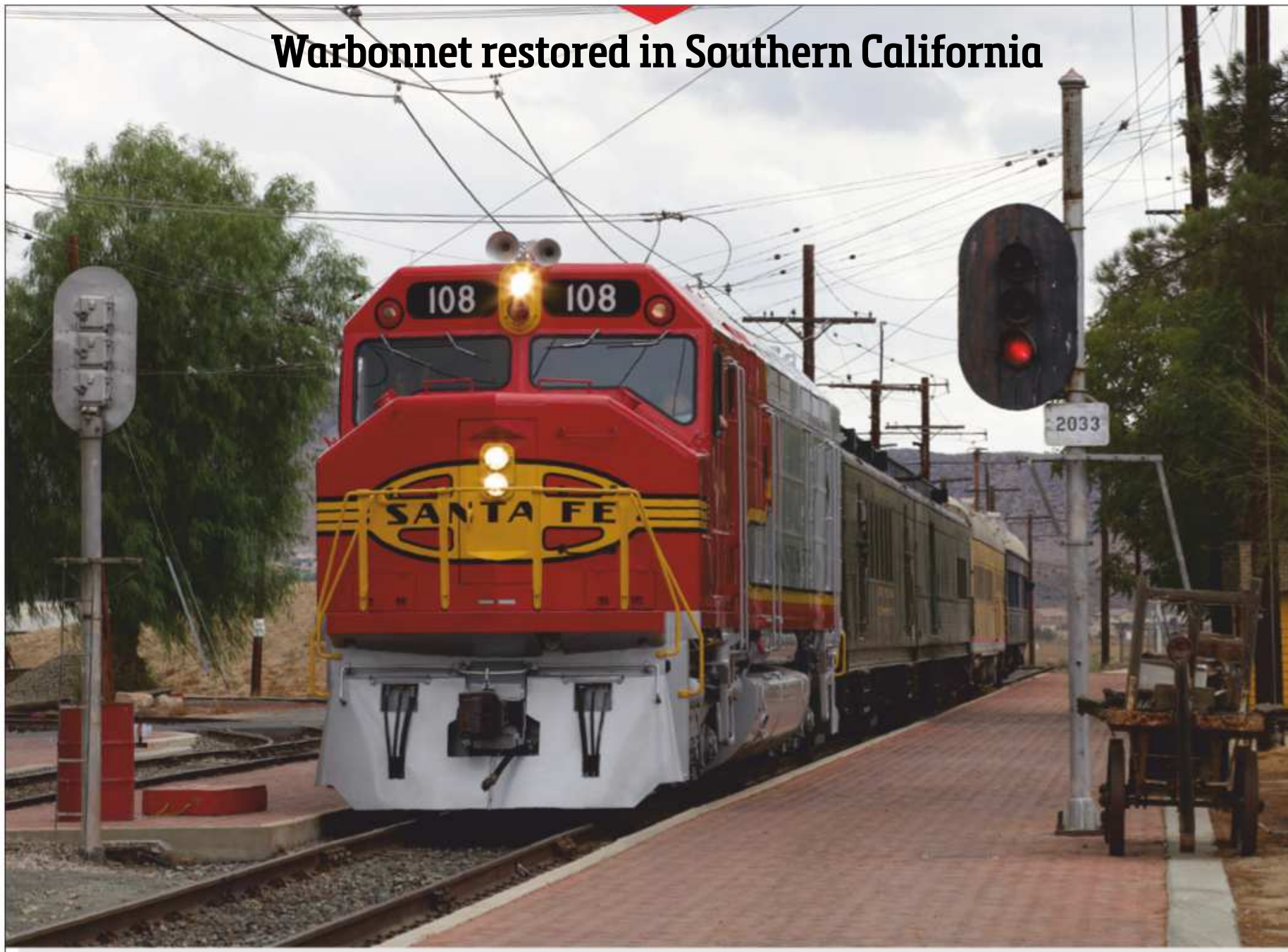
Q Do you need a human to watch a video and identify near misses, or can a computer do that for you?

A We're using [artificial intelligence] and deep learning where our system on board locomotives will detect that there is a person on the side of the track and within a certain distance from the track — or that a car was in the crossing very near the time the locomotive was in the crossing. Those will be autonomously detected and cataloged. It's not practical to have a human go through all that footage. We have to use the technology that is available today. The technology is developing very quickly. A lot of it comes from work that companies like Waymo and Tesla [self-driving and electric car companies, respectively] are doing in autonomous passenger vehicles. And some of it is technology that's coming out of less transportation-oriented functions like Facebook tagging. This is where Wi-Tronix is really keen. We're technologists and we're railroaders. What we do is figure out how to integrate those two spaces to fundamentally improve the rail systems from a reliability, efficiency, and safety perspective.

Q How much information can your cameras pick up from the right-of-way?

A We can see quite a bit. We have forward-facing cameras, not staring down at the track. We can see gauge, ballast condition, we can see if the foliage is trimmed properly, if there's been any incursions on the right-of-way. Are the [crossing] gates down, are the lights flashing? Reading signals. It's a high-definition camera; it can pick up a lot of things. We were reviewing our system with a customer who said, "Wait, wait, rewind." It was a pile of ties on the side of the track. "That's my inventory." If they leave it out too long, it gets stolen. [The system] provides a set of eyes that are always looking and watching and seeing. — *Steve Sweeney*

Warbonnet restored in Southern California



SANTA FE FP45 NO. 108 is back in service following a complete restoration at the Orange Empire Railway Museum in Perris, Calif. The rollout on Oct. 6, 2018, capped a six-year restoration effort led by museum volunteer Jeff Williams. His goal was to restore the 1967 EMD product as closely as possible to its as-delivered appearance, inside and out.

Museum volunteers installed a new headlight between the number boards along with an oscillating headlight, rebuilt the front pilot to original condition, completely rebuilt the cab and control stand to 1967 appearance and had a turbocharger rebuilt to breathe life into the 20-cylinder EMD 654E3 prime mover.

The only thing missing internally is the steam generator, which Santa Fe removed in the early 1970s. Williams used drawings of the original air intake and exhaust vents for the steam generator and a local metal fabricator created new ones. Externally, the fuel tank retains the 1970s Santa Fe modification, eliminating the water tank. — *David R. Busse*

TRAINS' must-see rail events of 2019

Transcontinental anniversary headlines the year

MARK YOUR CALENDARS.

This year is shaping up to be a big one for railroad fans with a slate of events celebrating the 150th anniversary of the first Transcontinental Railroad and more. Here's a rundown of some of the biggest events on deck for 2019.

A once-in-a-lifetime celebration: The 150th anniversary of the completion of the Transcontinental Railroad is, without question, the biggest reason to celebrate in 2019. Railroads and preservation groups already have a slate of events planned in Utah this spring and more are likely to be announced in the coming weeks and months.

On May 10 and 11, a sesquicentennial celebration will be held at the Golden Spike National Historic Site at Promontory Summit, featuring live steam demonstrations, art and history exhibits, and a re-creation of a railroad laborers' traveling tent village. Some estimates place the number of participants at 50,000, double the number for the centennial in 1969. Many other cultural events are taking place in Utah during the year and the best place to learn about them is at www.spike150.org

Perhaps the biggest celebration will be in nearby Ogden, where Union Pacific 4-8-8-4 Big Boy No. 4014, fresh from its historic rebuild, will sit face-to-face with Union Pacific 4-8-4 No. 844 to recreate the iconic 1869 meeting of locomotives.

In conjunction with the transcontinental railroad anniversary, the National Railway Historical Society's annual convention is in Salt Lake City

from May 7 to 12. The Railway & Locomotive Historical Society scheduled its annual convention in Ogden, Utah, as have the Union Pacific Historical Society and Southern Pacific Historical & Technical Society. These railroad-specific organizations are holding a joint convention in the days ahead of the May 10 anniversary celebration. Look for many joint activities among all three history organizations, including an excursion on the Heber Valley Railroad tourist line.

On display through Jan. 6 at the Joslyn Art Museum in Omaha, Neb., is a new travelling exhibition in recognition of the 150th anniversary of the completion of the transcontinental railroad. "The Race to Promontory: The Transcontinental Railroad and the American West" features the photographs and stereographs of noted photographers A.J. Russell and Alfred A. Hart. The images come from the Union Pacific Museum collection.

Highlighting the exhibit at Joslyn will be the three original ceremonial railroad spikes that were presented during the festivities at Promontory Summit on May 10, 1869. Reunited for the first time in 150 years, the Gold Spike, the Silver Spike, and the Arizona Spike were given to railroad officials to celebrate the laying of the last rail and have not been displayed together since that day.

The Russell and Hart photo exhibit will also be on display at the Utah Museum of Fine Arts, Salt Lake City, Utah, Feb. 1–May 26, 2019; and at the Crocker Art Museum, Sacramento, Calif., June 23–Sept. 29, 2019.

The Center for Railroad Photography & Art is holding a spring conference at Brigham Young University Museum of Art in Provo, Utah, on March 29 and 30. The conference is being held in conjunction with the opening of the Center's new exhibit, "After Promontory."

The Center will hold its regular Conversations conference at Lake Forest College north of Chicago from Sept. 13 to 15.

BUT WAIT, THERE'S MORE

While the big anniversary is the headliner of 2019, there's still plenty else to see. To celebrate the 70th anniversary of the Merci Train — 49 boxcars loaded with French goods to thank U.S. citizens for helping that country during World War II — the North Carolina Transportation Museum is hosting a celebration called "49 Days of Gratitude." The event runs from Feb. 9 to March 30.

Later in the year, the Railroad Museum of Pennsylvania will celebrate one of the Northeast's most beloved roads during Reading Railroad Days from June 30 to July 7. — *Justin Franz*

Siemens' autonomous test light rail vehicle appears in Potsdam, Germany, on Sept. 18. The trainset is equipped with cameras, radar, and sensors. Two photos, Keith Fender

World's first autonomous light rail unit debuts

THE WORLD'S FIRST LIGHT RAIL TRAIN equipped with autonomous driving technology was launched Sept. 18 in the German city of Potsdam, near Berlin. Engineering firm Siemens is behind the technology and has partnered with operator Verkehrsbetrieb Potsdam to equip a light rail unit with a combination of digital cameras, radar sensors, a light detection and ranging laser-based measurement system, a GPS system, plus powerful computer systems. This creates a light rail vehicle that can travel on regular routes without a human driver. The system detects and stops for obstructions such as people, cyclists, and vehicles.

A computer screen image shows how the streetcar detects its surroundings.

The system uses a digital map of the network and the software is written so that the vehicle, once "trained," knows a specific route and uses the array of sensors to establish where it is, where it is going, and to manage all necessary stops.

The test vehicle can travel at 32 mph without an operator. The system aims to detect all possible obstructions at 330 feet and can stop the vehicle in less than 264 feet, even at full speed. Trackside signals are used on the Potsdam system in some locations — the vehicles' cameras are used to detect the signal aspect and the system then determines what action, if any, is required.

The system has a range of technologies used in other applications, but is unique in bringing all the technology together with software that processes the data in real time to control the vehicle. Siemens and the streetcar agency plan further tests across the Potsdam network. They expect to expand automation from yards to regular service.
— *Keith Fender*

AAR's chief reflects on railroading and retirement

AT THE END of a House Transportation and Infrastructure Committee hearing last September, Chairman U.S. Rep. Bill Shuster, R-Pa., addressed Association of American Railroads President Edward R. Hamberger.

"You've been a great ally at times, and a formidable opponent at times. Whoever has to fill your shoes has some really, really big shoes to fill," Shuster said. Hamberger was among eight witnesses the subcommittee on railroads called to discuss the state of positive train control.

"This is an important hearing," Shuster said, "but I would not miss a final performance by Ed Hamberger."

"I'm delighted to hear this is my final performance," Hamberger said, laughing. Hamberger retires from the AAR at the end of 2018. He's the longest-serving president since five rail groups merged to form the AAR in 1934. Ian Jeffries, AAR senior vice president for government affairs, will assume the top job on Jan. 1.

Hamberger has faced bureaucrats and politicians in formal hearings some 90 times

Ed Hamberger

in his 20 years as the face and voice of the AAR. The list of subjects ranges from positive train control and locomotive crew size, to long-standing disputes with shippers about rates and access to service.

"It's absolutely a performance," Hamberger tells TRAINS. "You have to be prepared. And there's some nervousness, just like anybody who's going on stage before a play. You have to get the adrenaline flowing.

"I try to be forward-leaning, and enthusiastic, and aggressive in defending the industry where needed, but I always try to do it in a way that's respectful," he says. "I think we can be direct in disagreeing, but our customers are our customers, and we're not in business without them."

The same is true when working with labor groups. "You have to recognize that without a trained, dedicated workforce, this industry goes nowhere. We might disagree about how employees are treated by management, but we can agree on what's important for this industry."

For the past 40 years, AAR has chosen its leaders from the pool of Washington insiders, policy experts, and the politically savvy. Hamberger worked for the Department of Transportation during President Ronald Reagan's administration, and had some railroads as clients in private law practice, but he's not someone who's come up through the ranks of the railroad industry.

"When I interviewed for this job I said I wanted to retire from the AAR, and I meant it," Hamberger says. He had to become an expert in some of the most arcane subjects unique to railroads, such as testifying to the Surface Transportation Board.

"I realized that to do that I'd have to sit down with the attorneys who specialize in the STB. If I was going to be testifying there, I better know what I'm talking about," he says. "You acknowledge that you don't have the 30 years of experience that they do." — *R.G. Edmonson*

READ MORE OF TRAINS' INTERVIEW WITH ED HAMBERGER ON NEWS WIRE:
TRN.TRAINS.COM/NEWS/NEWS-WIRE

A TEXRail Stadler-built DMU will carry passengers to Dallas-Fort Worth International Airport on regular trains starting in January. The line debuts Dec. 31, 2018. Ken Fitzgerald

TEXRail starts regular service on Jan. 5

AS 2019 ARRIVES, Dallas-Fort Worth-area commuters and airport-bound travelers will be able to take advantage of a new commuter-train service. The Trinity Metro's TEXRail train, linking downtown Fort Worth and DFW Airport's Terminal B, will perform its inaugural run on New Year's Eve 2018. The train is then expected to open for revenue service on Jan. 5.

TEXRail will call at nine stations, seven of which include high-capacity park-and-ride lots. After the Denton County Transportation Authority's A-Train and Austin's Capital MetroRail, TEXRail is the third train in Texas to use Stadler's FLIRT diesel multiple units. Each of the TEXRail trains will have a capacity of 488 passengers.

Building the train's 27-mile route required rebuilding the tracks in order to handle both light rail and freight trains. — *Hayley Enoch*

NEWS BRIEF

RJ Corman buys Nashville-area railroads

R.J. CORMAN RAILROAD CO. says it will buy a family of railroads in and around Nashville including the **NASHVILLE & EASTERN**; **NASHVILLE & WESTERN**; and **TRANSIT SOLUTIONS GROUP**, which operates the **MUSIC CITY STAR** commuter railroad. Executives with Kentucky-based Corman said in their Nov. 5 announcement that the takeover should be official in January after regulatory approvals. The shortline railroads operate over a combined 128-mile network around Nashville and central Tennessee.

SAY 'CHEESE' TRAINS' 2018 Switzerland Tour group poses in front of 1881-built St. Gotthard Railway 0-4-0 E 2/2 No. 11 after dinner at the Swiss Museum of Transport in Lucerne, Switzerland, in September. Details of the 2019 tour available at: specialinteresttours.net. TRAINS: Steve Sweeney

WINDED Hurricane Michael's winds toppled a line of freight cars in Panama City, Fla., Oct. 10 and Oct. 11. The storm, with winds in excess of 150 mph, sliced through CSX Transportation and Norfolk Southern lines in Florida, Georgia, and the Carolinas in early October. Sol Tucker

'HOP' ON Milwaukee's 2.1-mile streetcar system, The Hop, debuted Nov. 2, offering free rides for its first year. On Nov. 3, the first full day of operations, a streetcar passes the Milwaukee Public Market on its way to the end of the line at the city's Amtrak station. TRAINS: David Lassen

Hunter's triumph from the grave

Every big railroad is either following his game plan or under pressure to do so. Will that change railroading?

Fred W. Frailey
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Blog: TrainsMag.com

Union Pacific began using Precision Scheduled Railroading principles in October 2018 on its eastern portions, with plans for full implementation in a few years. Two UP manifest trains pass each other on Donner Pass, at Cisco, Calif., on Nov. 11, 2017. Ryan Clark

In the year since Hunter Harrison's death, Precision Scheduled Railroading has progressed from crackpot railroading (in the eyes of some railroaders and shippers) to the gold standard. And it happened so fast we are still trying to wrap our arms around what it means for the future of this industry.

The facts are these: Canadian National, Canadian Pacific, and CSX Transportation have been put through Harrison's Precision Scheduled Railroading wringer, emerging in every case much leaner in terms of productive assets — cars, locomotives, trackage, and employees. That meant tons of savings to hand to investors. Interesting to me is what happened after that. CN, which Harrison ran as president or CEO from 1998 through 2009, went on a growth spurt in that period that continues to this day. Revenue ton-miles at CN — the most basic measure of what a railroad does — rose 48 percent between Harrison's retirement in 2009 and 2017. So it's clear that

Kansas City Southern is contemplating Precision Scheduled Railroading elements that make sense, says CEO Pat Ottensmeyer. A KCS manifest train heads south at Page, Okla., Jan. 10, 2015. David Hoge

No telling if BNSF Railway will take on Harrison's legacy principles. The crew of a manifest train performs a roll-by inspection of an eastbound loaded coal train at Ashland, Neb., April 29, 2018. Samuel Brodersen

downsizing the railroad's assets didn't inhibit CN's growth, because no other railroad even approaches what it accomplished during this period. Revenue ton-miles rose slightly during Harrison's tenure at Canadian Pacific and are now rising faster. His successor there, Keith Creel, says CP is game to grow. That's the same story coming from Jim Foote, who succeeded Harrison late in 2017 at CSX.

Harrison's impact on the other railroads of North America is palpable. The man was scarcely buried before financial analysts forgot the chaos he unleashed in his hurry to implement Precision Scheduled Railroading at CSX and began asking other railroads why they weren't more like CN, CP, and CSX. Union Pacific, the oldest surviving nameplate in American railroading, capitulated and began implementing Precision Scheduled Railroading practices last October on the eastern part of the railroad, with a goal of expanding the transformation to the entire system within several years.

Norfolk Southern, in rewriting its entire operating plan, began with improving terminals. Chief Executive Jim Squires, being purposefully vague, says, "We will implement Precision Scheduled Railroading principles where they lead to a better result for customers and shareholders." Translation: "We're not going down the PSR route yet, but I realize there's a gun to my head." Kansas City Southern CEO Pat Ottensmeyer said in late October that his railroad was looking into "elements of Precision Scheduled Railroading that make sense" and also indicated it may follow UP's lead in this direction. Translation: "Talk to me later."

This leaves only BNSF Railway, which is wholly owned by conglomerate Berkshire Hathaway and supposedly immune from the financial community's obsession with Precision Scheduled Railroading and how-low-can-you-go operating ratios. But things are changing there, too. Chairman Warren Buffett is age 88 and early in 2018 named two new vice chairmen who will likely compete to be his successor. One of the appointees, Greg Abel, oversees Berkshire's non-insurance subsidiaries. Now instead of writing Buffett a quarterly letter, BNSF Executive Chairman Matt Rose answers directly to Abel, and my sources say Abel is fascinated by the profits enabled by Precision Scheduled Railroading. Abel perhaps forgets that Rose took BNSF from No. 2 in carloads, revenues, and net railway operating income versus UP to No. 1 in each category, as of 2017. One is forced to conclude that pressure from Abel contributed to Rose's decision to retire in early 2019. BNSF's chief executive, Carl Ice, may have little choice but to take on Precision Scheduled Railroading, thereby making Hunter Harrison's triumph all but complete.

WE'RE NOT GOING DOWN THE PSR ROUTE YET, BUT I REALIZE THERE'S A GUN TO MY HEAD.
— WHAT NS CEO MIGHT BE SAYING

I'm continually asked two questions. First, can a railroad like UP (or BNSF or KCS) successfully implement Precision Scheduled Railroading and reap its financial rewards without it being done by Harrison or one of his disciples, such as Creel? Second, if you have an entire railroad industry marching to the Precision Scheduled Railroading beat, what does this portend for the future?

The answer to the first question is not easily. To change the railroad, you must change the culture. Harrison did it in every instance by force majeure — if you didn't embrace his plan, goodbye. Who will change the culture at UP? I am at a loss to know. My sources say the impetus for Precision Scheduled Railroading came not from within the railroad, but from the board of directors, which puts Chief Exec Lance Fritz in a thankless position. He must lead the effort, but this isn't his idea, and morale in management ranks is low to begin with. His chief operations officer is new to the job, and nothing in the man's background shouts to me that he is up to this challenge.

Yet there are a lot of smart people at UP, and no company of its stature launches something of this magnitude with a will to fail. I am heartened that UP began by pruning its management ranks — in 2017 it counted 3,678 executives, officials, and staff assistants, versus BNSF's 1,511. (In fairness, BNSF outsources its information technology, whereas UP does not, accounting for some of the difference.) UP revealed in late 2018 it would eliminate 475 nonunion jobs by year's end, plus 200 contract workers.

But let's face it: As done by Harrison, you begin the Precision Scheduled Railroading process by stripping a railroad to its underwear. At CSX, it meant cutting every conceivable cost, denuding the railroad of field supervisors and just about everything else, until it began to be dysfunctional. That's when he knew he had cut enough and could add back assets to make the railroad workable. This method is like becoming pregnant; there is no halfway. UP began Precision Scheduled Railroading with a go-slow approach, not wanting to punish shippers and arouse regulators. Hmm. The way it looks to me now, UP may achieve some good financial results but not the sort that Harrison could or that its directors might expect. It would be a lot easier for UP to simply buy CP and let Keith Creel, a Harrison acolyte who knows Precision Scheduled Railroading inside and out, come in as an outsider and do the dirty work. And if the process will be hard for UP, imagine the barriers to Precision Scheduled Railroading in front of BNSF, KCS, and NS, all under pressure to follow but so far unwilling to do so.

That brings me to the other question, whether a Precision

Scheduled Railroading world would be a better one. It depends on how you define better. I'm an old-fashioned Rob Krebs-type guy. Like Matt Rose, his successor at BNSF, Krebs (CEO 1995-2001) sought to bake a bigger and more profitable pie by striving to be 99-percent dependable in delivering intermodal business, which is BNSF's linchpin. Do that, he said, and customers will come to you. In other words, please the customer, and you will succeed.

By its definition, Precision Scheduled Railroading requires that you get rid of assets until you size the railroad to its current volume; otherwise, you are throwing away money. That implies that a Precision Scheduled Railroading-designed railroad could not grow. Yet CN proved you can add back locomotives, cars, and people in a Precision Scheduled Railroading environment.

That's part of the deal, but I come back to pleasing the customer. To quote a well-connected railroad consultant who I cannot name: "I don't know in my heart that any railroad cares about customer service. They've all improved their operational costs and grown their businesses at the same time that service parameters are bad across the board. If you want to be more than a profitable land-barge system, which combines high efficiency with low on-time results, you've got to grow with the economy, and that is not happening."

I guess I'm saying that good customer service that will entice more business is possible with or without Precision Scheduled Railroading. Thus it is irrelevant. So to repeat what I've said before: If you want to attract satisfied customers, then align the compensation of your people to that end. We will all follow the money. Make right-day delivery of whatever piece of the business is important a part of everyone's bonus and stock grant, and you will see miracles occur here on earth. Who is doing that in a serious manner? Maybe nobody. So Hunter wins, and it doesn't matter.

John Gruber's photography, influence, and legacy

Perspective on our quiet giant

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In 2016, surrounded by an exhibit of his Chicago North Shore & Milwaukee Railroad photos, John Gruber gazes out of an East Union depot window at the Illinois Railway Museum. Brian Solomon

Events have dictated the course of my writing in ways I neither desired nor expected. Twice in as many months I'm compelled to help put a friend's life in perspective. I've been fortunate not only to enjoy friendships with my heroes and the opportunities to work with them, but learn from their work, build on their successes, and facilitate placing their work in the public eye.

It was John Gruber who brought me the news of Jim Shaughnessy's death, and my last communication with John was regarding Jim and his photographic legacy. Both men were pillars of railroad photography. The work of each of these artists was among the most influential of their generations, helping to define the content and direction of this magazine, and many American railroad publications.

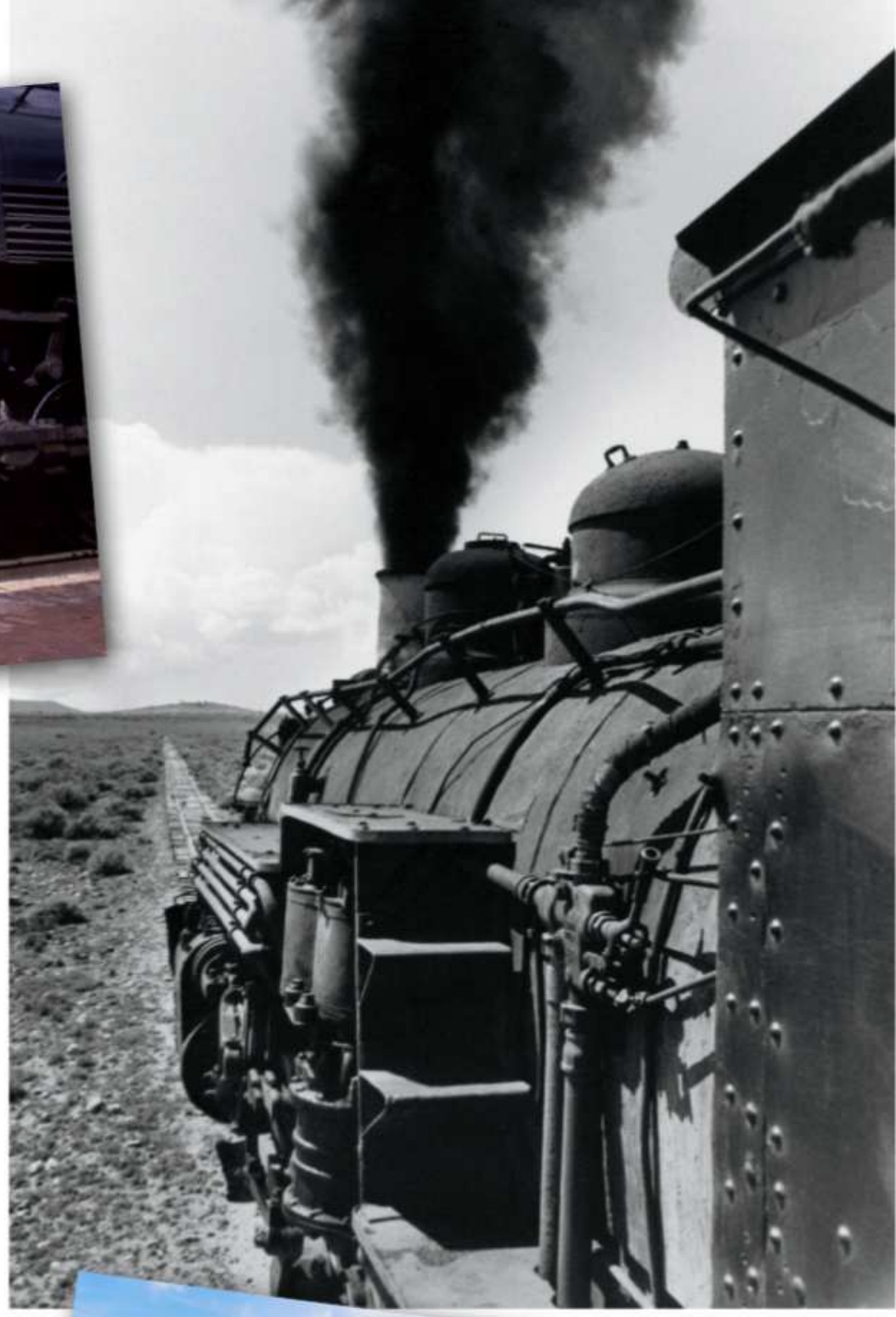
John introduced himself to me at Winterail in Stockton, Calif., 25 years ago: "Hello, I'm John Gruber. My son Dick said I should look you up." I nearly fell over. I'd been admiring John's photography in Trains for my entire life. This crucial moment refocused the course of my personal and publishing history.

In 1995, when Pentrex Publishing was looking to launch the magazine Vintage Rails, I suggested John as editor because he was perfect for the job. Over the years, John and I collaborated on many projects.

Before I was born, John Gruber's photography caught the eye of Trains' long-time Editor David P. Morgan. His clever lens-work stomped on tradition, ignored conventions, and offered Morgan a bold way of portraying the railroad to an audience reeling from the loss of steam and decline of the passenger train. Over the years the men became friends, which aided John in countless ways.

John learned his lessons well, not just from Morgan, but also from other railroad publishing legends, among them Lucius Beebe. He knew when to please, when to wind up his audience, and when to push the boundaries.

John's accomplished published photography was merely his introduction. In the field of railroad history and publishing, John emerged as a visionary polymath, yet his understated personal reserve and judicious use of language — spoken and written — often masked his roll as one of our greatest facilitators. In his



Above: Artist Ted Rose (left), Gruber, and former TRAINS Managing Editor Hal Miller next to Western Maryland Scenic 2-8-0 No. 734 at Cumberland, Md., Sept. 26, 1997. Right: Solomon was struck by this photo of Gruber's used on the cover of TRAINS October 1969. As seen from the fireman's seatbox of Denver & Rio Grande Western 2-8-2 No. 498, the train heads west from Alamosa, Colo., on Aug. 28, 1967. Bottom: In later years, John switched to digital, embracing a Canon DSLR in place of his battle-worn Nikon F. Above and bottom, Brian Solomon; right, John Gruber

prolific publishing career, his generous nature and humanistic approach often placed his own photography on the sidelines as he selflessly promoted the work of others. He had an outstanding ability to connect people, encourage them in their work, and enlist their cooperation.

His reputation preceded him, and he leveraged his stature for greater good, facilitating the advancement of railroad photography, art, history, research, and preservation. His vision and respected network enabled him to reshape railroad literature, railroad image making, and railroad image preservation from the ground up.

Through his photography and writing, he looked beyond the obvious. He often focused on railroaders rather than locomotives and encompassed a greater vision portraying railroads rather than merely trains. In the 1990s, he said to me, "I don't take 'wedgies'"— referring to the standard, uncluttered, front-lit, three-quarter views that too often dominated published railroad images.

John's unassuming personality often startled new acquaintances, yet his fearless, honest quest for access and knowledge enabled him to approach railroaders and officials in all positions. This allowed him to gain an exceptional understanding of how railroads and their people interact. John sought to find the reasons behind events that shaped railroad history, sometimes chasing leads for years in order to find a story.

John delighted in subtly ignoring expectation while gently poking in the ribs anyone who settled for mediocrity, yet like other visionaries he sometimes suffered because of his ability to see beyond the horizon. He was frustrated, if not merely disappointed, when stronger personalities, inspired by his success, but lacking his foresight, compromised his vision.

HE KNEW WHEN TO PLEASE, WHEN TO WIND UP HIS AUDIENCE, AND WHEN TO PUSH THE BOUNDARIES.
— SOLOMON ON GRUBER

He aimed to alter perception by example and preferred subtle influence over strict mandates, but sometimes a brazen shout drowned out his clever whisper.

John's legacy will be the many friendships he made, the countless people he connected and influenced, the projects he facilitated, and ideas he fostered, while subtly setting the bar ever higher for railroad image making and literature.

I owe more to John than I can possibly articulate in this small space. I'll miss his humor, his contributions, and collaborations. But most of all, I'll miss his friendship. Thank you, John E. Gruber, and goodbye!

Union Pacific double diesel era

These distinctive locomotives were a hallmark of the 1960s and 1970s

▲ Union Pacific U50C No. 5000 lays over at the railroad's North Platte, Neb., shop on Jan. 21, 1975. It was one of 40 such units on the railroad in operation from 1969 to 1978. Bruce Barrett

UP double diesels

Quantity and service life

- DD35 (27) 1964-1981
- DDA35 (15) 1965-1981
- DDA40X (47) 1969-1985
- C855A (2) 1964-1970
- C855B (1) 1964-1970
- U50 (23) 1963-1977
- U50C (40) 1969-1978

AS WE APPROACH the 150-year anniversary of the transcontinental railroad in May 2019, lets look back on one of the most interesting eras of Union Pacific motive power: the double diesel.

Following the steam turbine and gas turbine era, UP management determined in the early 1960s that the cost of maintaining a locomotive was fixed, regardless of its size. This, coupled with the need for high-horsepower motive-power consists capable of whisking tonnage trains over grades like Sherman Hill in Wyoming and Wasatch in Utah, prompted the company to pursue large, high-horsepower locomotives to reduce maintenance costs. UP specified a 15,000-hp, three-locomotive consist to each of the three locomotive manufacturers at the time, Electro-Motive Division of General Motors, General Electric, and American Locomotive Co.

GE was first to deliver a production locomotive with its U50 model arriving in fall 1963. The large double-diesel design was a combination of two U25Bs on a single frame and used two FDL16 prime movers, each producing 2,500 hp and riding on a pair of twin two-axle span bolster trucks. The model was successful, with a total of 23 units arriving over the next several years.

EMD's design was second to arrive, albeit using a four-unit consist instead of three. The company had produced a pair of twin-engine DD35 locomotives riding on two four-axle trucks that were essentially two of the company's GP35 locomotives combined on a single frame. The two cabless locomotives were paired with GP35s on each end to achieve 15,000 hp that UP requested. The four-unit consist was considered a demonstrator set when released in late 1963 and toured the country before UP purchased it in May 1964, the same month the first production DD35s began arriving.

The demonstrator consist was a success, leading to the purchase of 25 DD35s and 22 GP35s along with a follow-up order for 15 DDA35s. The DDA35s were a modification to the original DD35 design with a cab added and a rearrangement of equipment to accommodate the cab on the existing frame length.

The Alco version came a month after the arrival of the EMD-production locomotives and consisted of an A-B-A set of C855s, two A-unit C855As and a C855B unit. Its double-diesel design was based off its Century line of locomotives and featured a pair of 251C prime movers for a total output of 5,500 hp per locomotive. While the C855s were the last to arrive, they were the first to be retired after six short years on the roster and one year after Alco quit building locomotives.

As the 1960s drew to a close, two more double-diesel models appeared on UP's roster from GE and EMD. The first to arrive is possibly the most recognizable model of all time on UP's roster, the DDA40X. The model would be a result of UP's desire for an upgraded version of the DD35 line and would use components from EMD's new 40-series locomotives that incorporated the latest changes to EMD's new 645-series prime mover and used an alternator instead of a generator for power creation.

The first DDA40X was delivered in April 1969 and the models were dubbed Centennials due to their arrival in 1969, 100 years after the completion of the transcontinental railroad in 1869. These units became

LOCOMOTIVE BRIEF

General Electric delivers rebuilt ACs to UP

UNION PACIFIC C44ACM No. 7051 is one of the first rebuilt A.C. locomotives to be released by **GENERAL ELECTRIC**. The UP rebuilds focus primarily on control and electrical system upgrades, with the railroad scheduled to upgrade 195 C6044ACs and AC4400CWs in the next three years, with a planned 1,000 units total when the program is complete.

Stephan M. Koenig

the most popular and most reliable of the double-diesel locomotives on UP's roster with many lasting into the mid-1980s before being retired.

The final double-diesel model to arrive would be the U50C in late 1969. This model was, on paper, an improvement to GE's U50 design earlier in the decade. The U50C was more than 4 feet shorter than the U50, due to the use of twin FDL-12 prime movers to produce the same 5,000-hp output of the U50s and the 16-cylinder FDL16. The shorter frame enabled the builder to use C-C trucks under the locomotive instead of the span bolster trucks. The U50C was the second-highest double-diesel produced at 40 units and while envisioned as an improvement to the earlier U50, these were anything but, and would be retired in eight short years.

While the 1960s were the heyday of double-diesel orders on UP, it started two decades earlier with an order from Baldwin Locomotive Works.

In the mid-1940s, UP was trying to find a diesel big enough to replace some of the railroad's largest steam locomotives. The railroad turned to Baldwin with an order for two DR-12-8-3000 locomotives, better known as the Baldwin Centipede. The massive locomotives each used a pair of eight-cylinder 608SC engines producing 1,500 hp and rode on a 2-D+D-2 wheel arrangement with the four-axle trucks providing the traction for the locomotives. Production delays spanning several years forced UP to cancel its order, with both locomotives instead becoming part of Baldwin's demonstrator fleet when finished. — *Chris Guss*

Amtrak growth flat in 2018

A peek at what lies behind the up-and-down numbers

▲ **Coach passengers crowd the platform for the eastbound *Cardinal* at Charleston, W.Va., on June 14, 2017. The train's ridership suffered when it terminated at Washington, D.C., instead of New York.** Two photos, Bob Johnston

AMTRAK BARELY MISSED a ridership record in 2018 because of hurricane-related cancellations as its fiscal year ended in September. But the company did register a ticket-sales gain of nearly $30 million on revenues of $2.27 billion. Operating and pricing practices TRAINS observed throughout the year reveal why some results turned out the way they did. Here are contributing factors that affected route and train performance:

PENN STATION DISRUPTION: Rerouting Empire Corridor trains to New York's Grand Central Terminal because of track construction had little effect on ridership; in fact, patronage slightly increased between Memorial Day and Labor Day. But the decision to truncate the *Cardinal* at Washington and not offer a dedicated *Lake Shore Limited* New York section was a major blow to those trains. Ridership and revenue dropped an average of more than 30 percent each month the New York-bound trains were cut.

Why the *Cardinal*? It ties up Penn Station tracks before 7 a.m. and after 9 p.m. only three days per week, but management apparently didn't bother to study historical traffic patterns or worry about lost revenue [see "Amtrak's Money Mystery," page 50]. Passengers traveling from most Northeast Corridor cities to Virginia and West Virginia were deprived of a one-seat ride. They were also ticketed to wait 1½ hours westbound and more than 2 hours eastbound in Washington, instead of being allowed more convenient Northeast Corridor connections. Despite months of negative impact, the *Cardinal* didn't begin running to New York again until Nov. 9.

REDUCED CAPACITY: Both trains lost a Viewliner sleeping car during their New York hiatus, which contributed to an almost $2 million loss of sleeper revenue compared with the previous 12 months. The *Lake Shore* also ran with fewer coaches during the summer, but its westbound capacity was already constricted on the busiest travel days by the connecting northbound *Ethan Allen*, whose consist was not expanded to absorb the additional demand. The culprit: Amtrak's "right-size" strategy — assigning only enough cars to accommodate average loads, without looking for exceptions with revenue-growth potential. The 5-year-old concept is exacerbated by current management's fixation on maximizing "load factor." That performance metric may be valid for conveyances like airplanes that fill up and empty in one place; it becomes questionable where city pairs other

AMTRAK 2018 HIGHS AND LOWS
Overall performance by business unit, along with the best and worst performers in each, ranked by percentage change in ridership:

	Passengers (thousands)	Pct. +/-	Revenue (millions)	Pct. +/-
Long distance	4,513	-3.9	$486	-2.6
Crescent	275	+6.2	$30.7	+7.3
Cardinal	97	-14.0	$6.3	-23.9
State-supported	15,079	+0.4	$521	+3.1
New Haven-Springfield, Mass.	286	+16.9	$9.7	+5.4
Chicago-Quincy, Ill.	192	-6.1	$5.0	-5.0
Northeast Corridor	12,124	+0.8	$1,264	+2.2
Northeast Regional	8,687	+1.4	$656	+2.9
Acela Express	3,428	-0.4	$606	+1.6
Total	31,716	-0.1	$2,271	+1.3

than the endpoints can attract business if actively promoted.

This may be the reason the *Empire Builder* did not run in 2018 with an extra Chicago-St. Paul, Minn., short-haul coach. That coach had previously served the 400-mile corridor, which has enough demand to benefit from another round trip, not just an extra car. A Superliner was added to the *Southwest Chief* between Chicago and Kansas City after the "right-sized" train encountered sellouts on the segment in March, but the coach had previously operated through to Los Angeles. Amtrak recently leased five Superliner coaches and one Sightseer lounge to California for use on the busy *Pacific Surfliner* route. That makes 19 Superliners the state is utilizing that aren't available to augment capacity on national-network trains.

PRICING: When available seats or sleeping-car space are reduced, prices go up and demand can be tamped down. Higher fares improve cost recovery and make a transportation company, with seat inventory that evaporates with every departure, appear to operate "like a business." But they could also turn away customers. In 2018, on 28 of the 46 routes Amtrak reports, the "ticket revenue per rider" metric moved in the opposite direction of ridership. When prices went up, passenger counts generally decreased.

Yet the most interesting instance is the New Haven, Conn.-Springfield, Mass., corridor. There, Connecticut insisted Amtrak match its cheaper CTrail fares when the state launched its service in mid-June on the same tracks. The result: Amtrak patronage for July through September on the corridor jumped more than 40 percent. Revenue per rider plunged about 25 percent, but overall gross ticket revenue gained 6 percent.

Exactly how much people are willing to pay to travel depends on competition from other travel modes and other route-specific circumstances. Amtrak's lack of rolling stock dictates many of its pricing policies, but the New Haven-Springfield example illustrates benefits that await when fares drop in conjunction with more frequencies.

OTHER FACTORS: State-supported services with aggressive local marketing and consumer outreach — activity Amtrak has largely abandoned — notched ridership and revenue gains. These include California's Capitol Corridor (both categories up 6 percent), Maine's *Downeaster* (ridership up 5.1 percent and revenue higher by 16.6 percent through August; September track-work cancellations hurt year-end totals), and North Carolina's *Piedmont*s (which benefitted greatly from another round trip launched in June).

However, many long-distance trains were consistently hammered by freight interference and other events. The *Coast Starlight* (ridership down almost 5 percent) was plagued by fires and a tunnel collapse; the *Southwest Chief* (down about 9 percent) rolled through the summer without thousands of Boy Scouts, because forest fires wiped out the Philmont Scout Ranch's season of week-long wilderness treks. Others — especially the *Empire Builder*, *Capitol Limited*, and *Crescent* — were unreliable because of massive freight-congestion delays. The *Crescent* was able to counteract the negatives with a 6-percent gain, in part because coach capacity increased with the elimination of business class, and because Northeast Corridor-only passengers can now ride it southbound.

The table on page 22 certainly makes long-distance trains appear to lag the other categories. But numbers don't always tell the whole story. — *Bob Johnston*

Ridership on Amtrak's Hartford Line corridor service in Connecticut jumped when ticket prices were cut. Here, P42 No. 109 pushes a northbound train at Hartford on July 12, 2018. Scott A. Hartley

Missed opportunity

Can Amtrak sell what rail travel offers?

TOOLING UP THE HUDSON on the *Lake Shore Limited* on a sunny September afternoon, one could only imagine the inviting atmosphere a properly outfitted Viewliner II diner *Boston* might offer: a rolling restaurant with tablecloths, a varied and inviting menu, and a friendly serving staff to enhance the onboard experience.

It's not possible to say if Amtrak's introduction of "contemporary" dining on the *Lake Shore* and *Capitol Limited,* or sidelining the *Coast Starlight*'s Pacific Parlour Cars, played a role in those trains' 2018 ridership declines. Or if repeat business is discouraged by full-service dining car menus unchanged since September 2017.

In August, Amtrak issued a request for information seeking outside vendors to provide "transformational service models and industry best practices for Managed Food and Beverage Service." Responses were due Oct. 16, so we may soon find out if this initiative will yield a creative approach to onboard hospitality, efficiencies, and innovation that continues to elude current management.

As the *Lake Shore* passed the trackside prison at Ossining, N.Y., ("Sing Sing") that afternoon, it was easy to imagine how company leadership, lacking institutional passenger-rail knowledge, has itself become imprisoned by only what it is familiar with. Is that what outside vendors will offer too? Many Amtrak employees — past and present — have attempted to capitalize on the train's unique alternative to seat-belt modes, but will anyone dare step up if the risk of doing so jeopardizes their job?

At the very least, perhaps this search will yield some recognition the company needs to do more to grow its business by giving potential customers a reason to get on board and abandon existing travel options they grudgingly accept. — *Bob Johnston*

The *Lake Shore Limited*'s Viewliner diner is almost empty on Sept. 16, 2018, after *Lake Shore* service to New York was restored.

50 years after the NEW HAVEN

The Connecticut Department of Transportation introduces new image, retires NH "McGinnis" scheme

Story and photos by Scott A. Hartley

Above, FL9 No. 2012, wearing the McGinnis paint scheme, leads train No. 66 at Springfield, Mass., on the last day of New Haven operations, 50 years ago, on Dec. 31, 1968. Left, one of 10 Connecticut Department of Transportation FL9s repainted in honor of NH's McGinnis scheme, takes Metro-North train No. 1904 through Union City, Conn., Aug. 8, 1998.

Dec. 31, 2018, marked the 50th anniversary of the last day of the New York, New Haven & Hartford Railroad. Coincidentally, the Connecticut Department of Transportation retired the former railroad's famous "McGinnis" logo and colors that the agency had used on its own rail commuter equipment for more than three decades.

The New Haven, as the railroad was known, was the result of multiple mergers and takeovers of smaller railroads that culminated in 1872. For nearly a century, the company dominated transportation in southern New England. But with huge passenger deficits and the loss of much of its freight business, the 1,500-mile railroad entered bankruptcy in 1961. Seven years later, the Interstate Commerce Commission ordered the newly merged Penn Central to include the New Haven in its system effective on the first day of 1969.

The New Haven brought a colorful collection of locomotives and cars to its new owner. Perhaps the longest lasting change made during the turbulent 21-month tenure of railroad president Patrick B. McGinnis was the company's new corporate image. McGinnis hired New York industrial design firm Knoll Associates to modernize the railroad's appearance — from offices and stations to stationery and trains — and the firm assigned Swiss-born graphic designer Herbert Matter to the task.

NYNY&H had used versions of its well-known script herald since 1891, but Matter quickly chose to develop the railroad's new image around the more common "New Haven" name. He proposed dozens of designs, all with an "NH" as its center, before McGinnis finally selected the "N-over-H" that survives to this day. The logo was introduced on the cover of the New Haven's 1954 annual report, and soon began to appear on locomotives and rolling stock — along with bold red, white, and black colors. When the New Haven vanished into Penn Central 50 years ago, it was logical that the "McGinnis scheme" would vanish as well. Remarkably, that did not happen, and locomotives and cars built well after the demise of the railroad continue to carry the New Haven scheme in revenue service today.

The first hint that the New Haven had not been forgotten came in 1973, when new electric multiple-unit cars purchased by the states of Connecticut and New York for New Haven, Conn.-New York City commuter service received red-orange bands on their flanks, perhaps to distinguish them from similar blue-striped cars that ran on the Penn Central's Hudson and Harlem lines. But for rail enthusiasts, the unbelievable occurred a decade later when the Connecticut Department of Transportation sent four former New Haven FL9 locomotives for rebuilding. A small group of local rail enthusiasts, led by the late Joe Trifono, had presented the agency with a proposal that included painting diagrams, color information, and stencils, suggesting that the McGinnis scheme be applied to one of the four locomotives that Chrome Locomotive in Illinois were to rebuild. The transportation department must have been impressed: Instead of just one FL9,

Connecticut Department of Transportation GE P32AC-DM No. 229 leads Metro-North Hudson Line train No. 833 at Cold Spring, N.Y., on July 18, 2018. No. 229 is one of four Connecticut P32AC-DMs and will continue to wear the McGinnis paint scheme in Metro-North pool service.

Connecticut Department of Transportation GP40-2H No. 6696 is seen with a Hartford Line train at Hartford, Conn., on June 12, 2018. This locomotive will join five other GP40-2Hs getting new paint and the rebranding logo agency officials nicknamed "the Orb."

the state ordered all four to be painted that way. Connecticut's Public Transportation Chief Richard W. Andreski says that in 1983 commuter railroad employees were veterans of the "legacy railroads," and there was a great deal of support by railroaders to honor the former New Haven Railroad. At the time, the dual-mode FL9s (capable of running as electric locomotives in New York City's tunnels) were part of the state's contribution to a Metro-North equipment pool for services Metro-North operates in Connecticut. Because the diesel fleet cycles between Connecticut and New York routes, "New Haven" engines also have operated regularly on Metro-North's Hudson and Harlem lines.

Connecticut and New York's Metropolitan Transportation Authority would continue to paint orange stripes on EMU equipment assigned to the New Haven Line. Connecticut applied similar schemes to its locomotive-hauled coaches. Although the New Haven Railroad used the elaborate full McGinnis paint scheme only on cab units, Connecticut officials made it work on road-switchers and GE Genesis units as well. Model railroaders in the mid-1960s had scoffed when manufacturer Athearn produced a McGinnis-schemed New Haven model of the then-new EMD SDP40 passenger road-switcher — knowing that the bankrupt railroad could not afford to purchase the prototype. But more than two decades later, Connecticut EMD hood units on Shore Line East trains would look quite natural wearing that paint scheme. The full McGinnis image eventually would be worn by a total of 25 Connecticut diesel units: 10 rebuilt FL9s, two F7s, one GP7W, two GP38s, six GP40-2Hs, and four P32AC-DMs. Except for the GP40s and P32s, all have been retired.

Following that incredible run of 25, Connecticut strayed from the McGinnis scheme in 2008, when six new Brookville Equipment BL20GH locomotives assigned to Metro-North's branch-line pool arrived from the builder wearing an ersatz New Haven image. Painted in a black-and-orange scheme, the small road-switchers carried Matter's N-over-H logo, but were lettered "New Haven" in a new font.

Connecticut's commuter rail services have been a somewhat confusing mix: Amtrak has operated the state's Shore Line East trains between New London and New

IT WAS TIME FOR A COMMON IDENTITY OF THE STATE'S RAIL

Connecticut Department of Transportation Brookville Equipment BL20GH No. 130 leads a Metro-North train northward on the Waterbury Branch at Beacon Falls, Conn., on Feb. 28, 2015. This locomotive also will receive new paint to reflect the agency's new branding.

Featuring CTDOT's new paint scheme and branding, CTrail GP40-2H No. 6694 is seen at Hartford, Conn., June 11, 2018. Illinois-based National Railway Equipment performed overhaul services to this and other former McGinnis-liveried GP40-2Hs.

Haven, using state equipment, since 1990. New York's Metro-North Railroad runs commuter trains between New Haven and New York's Grand Central Terminal, as well as on three branches in Connecticut, all under contract with the state. Each operation has maintained its own distinct identity. By 2017, Connecticut was preparing for the startup of a third service, designated the Hartford Line, running on Amtrak's New Haven-Springfield, Mass., route. Branded "CTrail," the new service began in June 2018, and is operated by a consortium of TransitAmerica Services Inc. and Alternate Concepts Inc.

Connecticut's Andreski says that it was time for a common identity for all of the state's public transportation modes. A new logo — referred to as "the Orb" by agency officials — already was being applied to state-run buses. Connecticut officials decided to adopt the Orb for rail. "Rebranding our rail services is part of an overall strategy to better integrate Connecticut's public transportation system," Andreski says.

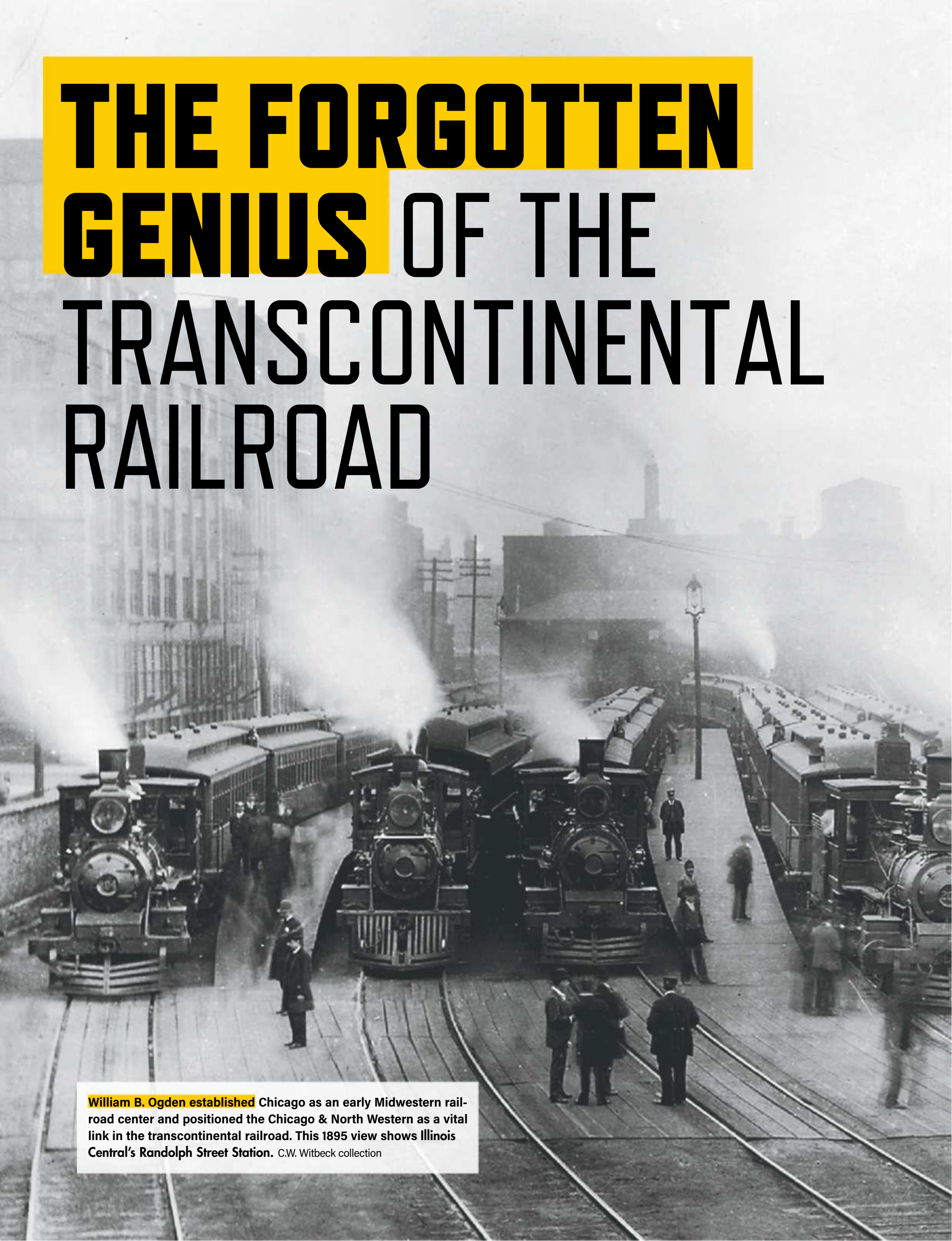
The new Hartford Line service would draw locomotives from the Shore Line East fleet of McGinnis-liveried GP40-2Hs and tattered silver-and-blue P40s. All were due for major overhauls, and the six GP40-2Hs, which had been rebuilt from Clinchfield and Chesapeake & Ohio EMD hood units by AMF Technotransport in Montreal in 1996, were sent to National Railway Equipment in Illinois. The 12 ex-Amtrak P40s (four of which had been purchased from interim owner NJ Transit, and had never run in Connecticut) are to be rebuilt by Amtrak at Beech Grove, Ind.

The rebuilding programs included fresh paint for all of these Connecticut-owned locomotives, and the Department of Transportation is using the opportunity to present a common brand on its fleet, Andreski says. A working group within the agency elected to use the "CTrail" name and use the Orb as part of the new paint scheme. The former New Haven Railroad image would be retired by the state, although the group chose to retain the red, black, and white colors. The first rebuilt GP40-2Hs returned to Connecticut wearing a mostly black scheme, with red-and-white highlights. Black was chosen partly to facilitate maintenance and cleaning, Andreski says. He adds that "the logo really pops" on the black carbodies. The 12 P40s, as well as the six Brookville Equipment BL20GHs assigned to Metro-North branch services are expected to receive similar schemes. Andreski says that the agency is working with Metro-North to determine how CTrail locomotives working on Metro-North will be lettered.

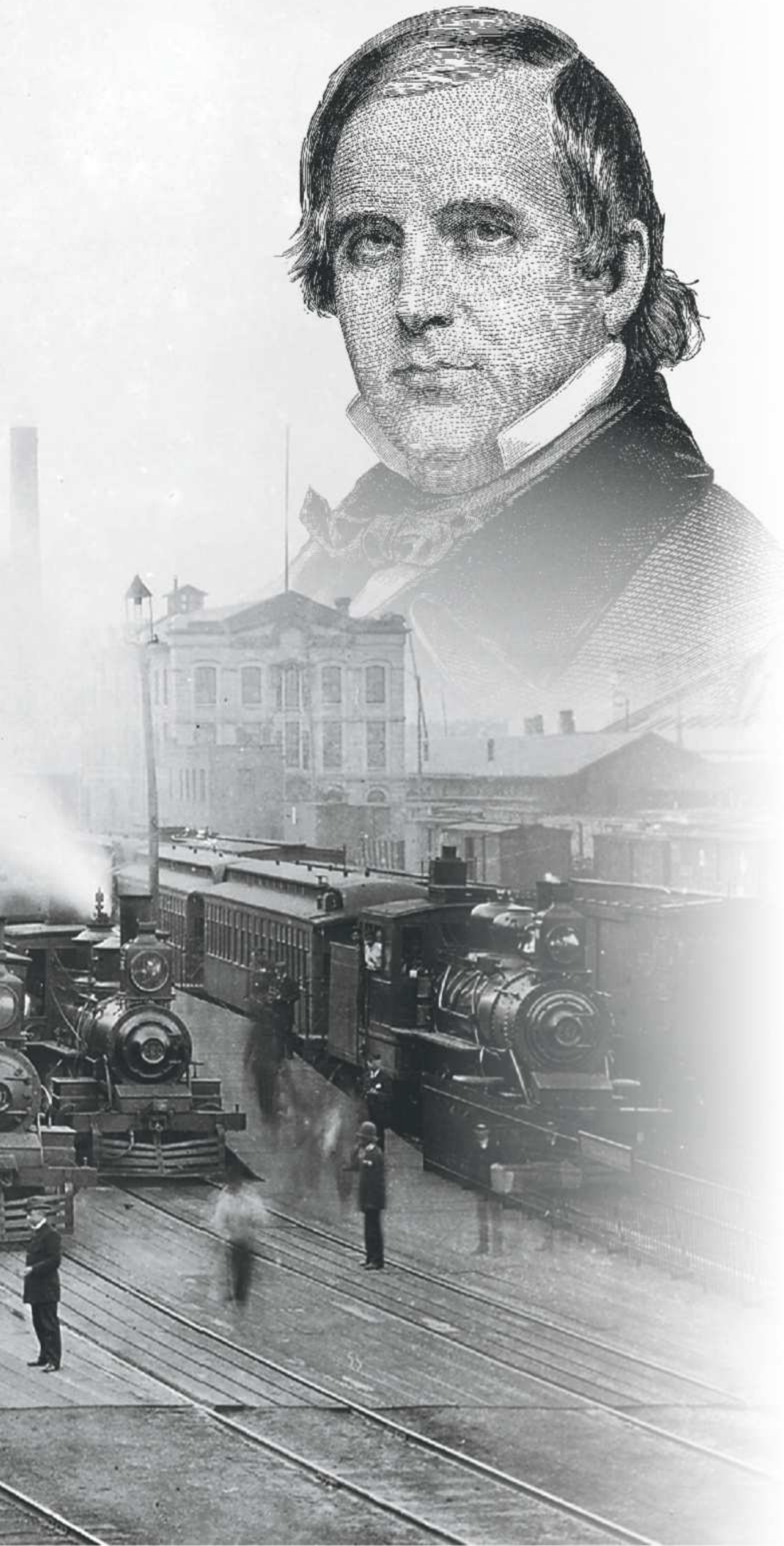
New Haven Railroad enthusiasts have enjoyed seeing locomotives painted for the fallen flag company for a half-century after its demise. And the wonderment is not over yet. Connecticut's four GE P32AC-DM units, all in Metro-North pool service, have received midlife overhauls in recent years and continue to wear the full McGinnis scheme. There are no immediate plans to repaint those units, Andreski says. T

SERVICES AS WELL AS OTHER PUBLIC TRANSPORTATION MODES.

THE FORGOTTEN GENIUS OF THE TRANSCONTINENTAL RAILROAD



William B. Ogden established Chicago as an early Midwestern railroad center and positioned the Chicago & North Western as a vital link in the transcontinental railroad. This 1895 view shows Illinois Central's Randolph Street Station. C.W. Witbeck collection



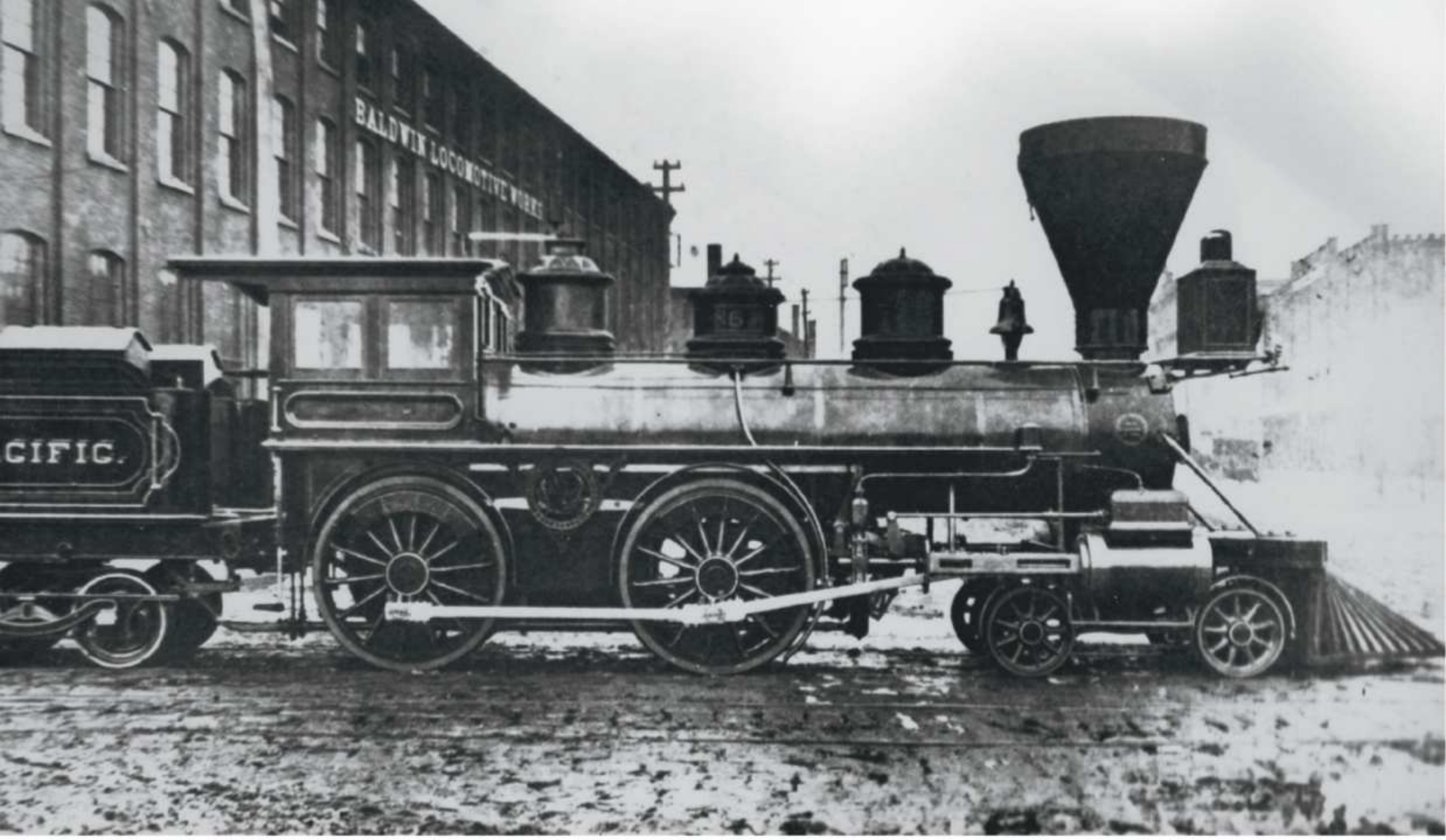
William B. Ogden, Union Pacific's first president, made a true transcontinental railroad possible

by Jack Harpster

In public parlance, the Union Pacific and Central Pacific railroads are commonly referred to as "the first transcontinental railroad." However, that is not an accurate description. In fact, those two historic railroads only completed the first transcontinental railroad. Those roads, created by the Pacific Railway Act of 1862, and completed 150 years ago, represent only 57 percent of the distance from coast to coast. The other 43 percent was covered by the Chicago & North Western and the Pennsylvania Railroad. This story is about that often neglected 43 percent, and of the railroad genius who stood head and shoulders above all others in the creation of the eastern and Midwestern portions of our nation's first coast-to-coast rail network.

Creating a railroad advocate

William Butler Ogden was born on June 15, 1805, in Walton, N.Y., the son of Abigail and Abraham Ogden. Abraham was a shrewd, hardworking man; and by the early 1820s he had built a successful lumbering, sawmilling, and cloth fulling and carding businesses in upstate New York. His son William worked in all three businesses growing up and quickly grasped the fundamentals of successfully operating such enterprises. However, William had other career plans, and when he was only 15 years old, he left Walton for New York City to begin studying for a legal career.



Symbol of mid-19th century steam power and early railroad expansion, the 4-4-0 American type dominated the railroad scene in the 1850s and 1860s. This new locomotive at Baldwin's plant in Philadelphia is ready to do business for a growing Union Pacific. TRAINS collection

But fate had other plans for the teenager. Only a year after William left home, his father had a massive stroke and called his son home to run the family businesses. Despite his youth, by the time Abraham passed away in 1825, then 20-year-old William was a seasoned business professional; and over the next 10 years he would carry the family businesses to even greater success and profitability than his father had. However, in 1835 everything would change once again for young William.

During his years running the family businesses, William had met the girl of his dreams. Her name was Sarah North, and she lived nearby. After waiting a suitable amount of time, the young couple had announced their marriage for June 1829, but shortly before the wedding, Sarah passed away unexpectedly from pneumonia. William went into a severe grieving period that would virtually immobilize him for the next three years. Ultimately, Ogden would not marry until he was 70 years old, and then mostly out of convenience.

In 1832, William's brother-in-law, his older sister's husband Charles Butler, a successful Albany, N.Y., attorney and real estate investor, invited Ogden to attend a meeting with him.

Ogden accepted the offer, and at the meeting he was somewhat surprised when he was introduced to U.S. Vice President and fellow New Yorker Martin Van Buren. Ogden soon learned the true purpose of the meeting: the Vice President wanted him to run for the Delaware County seat in the upcoming New York State Assembly election.

Ogden had earned a reputation as an eloquent and convincing speaker; and Van Buren had an important job for him.

Following the election, which Van Buren promised would be a shoo-in, Ogden would address a joint session of the New York legislature and try to convince lawmakers to approve financial aid for the foundering New York & Erie Railroad, lest it fail. It was something the legislature had refused to do in past sessions, and Van Buren believed an orator of Ogden's skill was needed for one last attempt.

Ogden agreed to run; he won the election easily; and he did indeed convince fellow legislators with a passionate speech to approve $3 million in funding for the New York & Erie Railroad. The speech would also mark Ogden as one of America's earliest visionaries of the value of embracing this new technology.

"I see continuous railways from New York to Lake Erie ... and south through Ohio, Indiana, and Illinois to the waters of the Mississippi, and connecting with railroads running to Cincinnati and Louisville in Kentucky, and Nashville in Tennessee, and on to New Orleans. They will present the most splendid system of internal communication ever devised by man," Ogden had accurately promised in his speech before the legislature.

This was Ogden's first brush with the most important technological advance in the first half of the 19th century; but it would be far from his last.

Ogden and Chicago

Ogden's brother-in-law Charles Butler and Butler's wealthy New York City friend, Arthur Bronson, had become partners in a New York firm named American Land Co. Typical of such companies in the first half of the 19th century when liberal credit policies were rampant, American Land Co. purchased vast parcels of vacant land in the Northwest, called the Midwest today, and in southern Cotton Belt states. These parcels would then be subdivided into housing, farming, and/or business lots and resold to other speculators or to new arrivals as the population expanded westward. In mid-1833 Butler, Bronson, and some of their investors, including

Ogden became the first president of the Union Pacific in 1862 and served for a little more than a year before stepping down to return his attention to the Chicago-Council Bluffs main line. This UP 4-4-0 No. 77 was some of the railroad's earliest power. TRAINS collection

William Ogden, purchased a 182-acre parcel of unoccupied land abutting Lake Michigan on the north side of the Chicago River in a muddy little village of the same name.

In late 1836, Ogden was dispatched to the village to begin subdividing the land for resale. An article from the Dec. 9, 1836, edition of the Chicago Democrat newspaper recorded that there were 3,279 residents living in Chicago at that time.

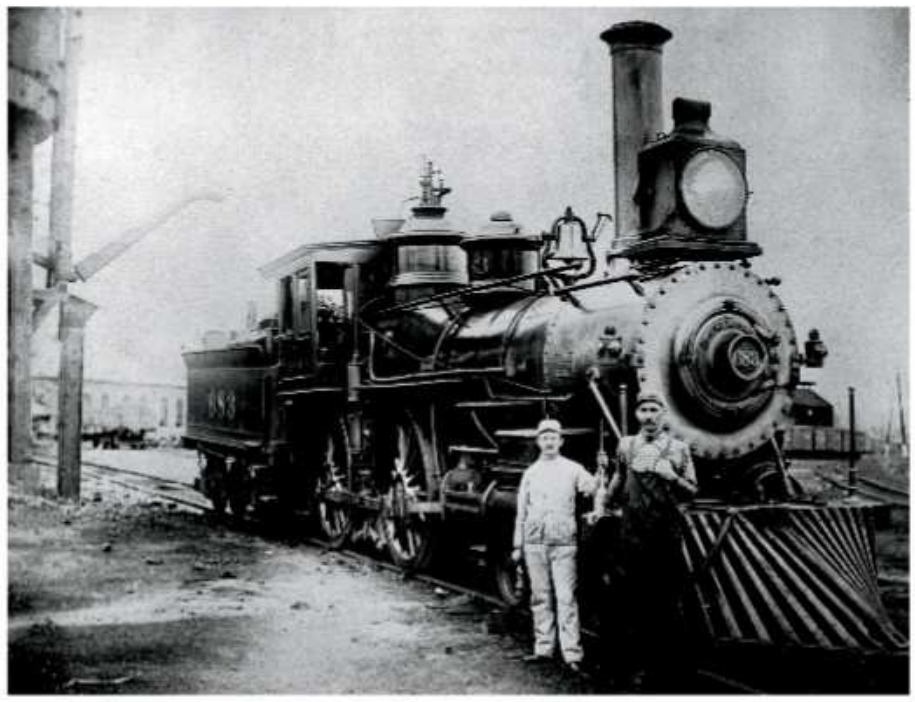
The article continued that there were three taverns, five churches, and seven schools in the village. If nothing more could be said for the condition of Chicago at that time, at least its churches and schools outnumbered its taverns four-to-one. Only three years earlier, it had been three-to-nothing in favor of the taverns.

Ogden established the Ogden Land & Trust Agency to manage and oversee the properties. He opened a small office on Kinzie Street near State, and hired a local fellow to assist him. After staking out the individual lots, the men began to post "For Sale" signs on the properties, and within a couple of days, Ogden discovered the properties were already selling for more than three times what they had initially paid. Over the next few years, once he had decided to remain in Chicago, Ogden continued to sell off their original land at huge profits, and he began actively soliciting capital from other eastern investors, and making real estate purchasing decisions in their behalf.

His brother-in-law's American Land Co. would remain his largest client in years to come, but he would ultimately service nearly 100 other eastern clients in the purchase and sale of Northwest and Southern land, growing extremely wealthy in the process.

In 1837, Illinois granted Chicago a city charter, and Ogden was elected the city's first mayor. But soon thereafter, the national financial Panic of 1837 occurred. It was a major economic recession that would last until the mid-1840s and leave Chicago, like the rest of the U.S., in financial doldrums.

When the financial crisis and its lingering effects finally ended in 1843, William B. Ogden was one of the few moneymen who emerged poorer but still quite wealthy, and he began executing his next move. It was to be a power play that would position Chicago for greatness.

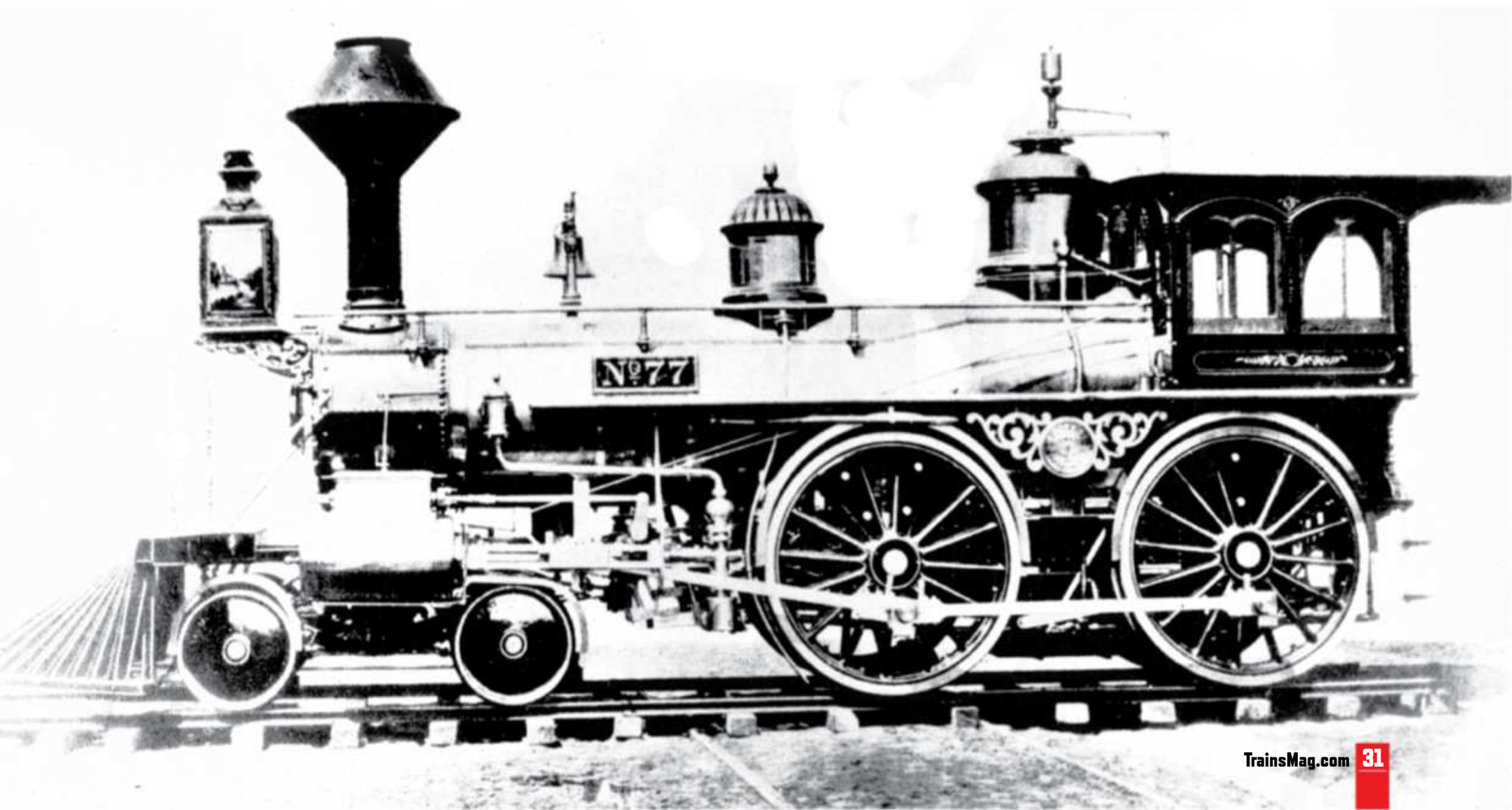


Chicago & North Western, typified by this early 4-4-0, started out small but grew into the largest railroad in the land with its merger with the much larger Galena & Chicago Union. TRAINS collection

Move aside St. Louis

St. Louis, sitting astride the mighty Mississippi River, had what Chicago wanted: the dominant position in Midwest trade. The first mention of a railroad for Chicago appeared in the Chicago Democrat on Dec. 3, 1834, but the idea had not taken root in the city due to the financial panic. However, Ogden now sensed that the timing was right. At the urging of he and other Chicago North Side businessmen, who wished to trump South Side businesses that far surpassed them in revenue, the Illinois Legislature rechartered the lapsed Galena & Chicago Union Railroad charter on Jan. 16, 1836. Through Ogden's hard work, crystal-clear vision, and a few backdoor dealings, he and a small group ended up as the majority owners of the stock in the new railroad, with Ogden serving as the railroad president.

The next few years were not easy for Ogden and his partners, as there were numerous



William B. Ogden was involved in a dizzying array of railroad development and construction efforts. Among them, Ogden would be a major stockholder in the nation's second transcontinental railroad, the scandal-laden Northern Pacific Railway, in the late 1860s. Burlington Northern

barriers to building and operating a successful railroad so early. But primarily through Ogden's personal efforts — for instance, he sold shares in the enterprise by going door-to-door in the farming-rich communities in the Midwest — the group persevered, and by the early 1850s, with their enterprise finally operating in the black, the Galena & Chicago Union Railroad was celebrated as the first railroad west of Lake Michigan.

The Chicago Daily Journal, on Nov. 21, 1850, proclaimed the accomplishment, writing, "The 'Iron Horse' is now fairly harnessed in the Prairie land." Ogden would soon resign his position as president, and return to his numerous responsibilities in Chicago. However, railroads were in his blood by now, and soon thereafter he attended the National Pacific Railway Convention in Philadelphia that would again thrust him front and center in the expansion of the nation's rudimentary rail network.

The convention's main agenda that year, as it had often been in past years, was to promote a transcontinental railway bill in Congress, and to propose routes to the West. Ogden was so well known nationally for his vision for railroads to expand across the country that delegates elected him as presiding officer. Later that same year, Ogden and other champions of the cause were overjoyed when President Millard Fillmore signed the first railroad land grant bill, granting 2.5 million acres of right-of-way to two railroads to lay track from Chicago on the Great Lakes to Mobile on the Gulf of Mexico. The land grants program proved to be the kick-start to developing a railroad network that would eventually connect the West and Great Plains to the rest of the country, although its realization was still years in the future.

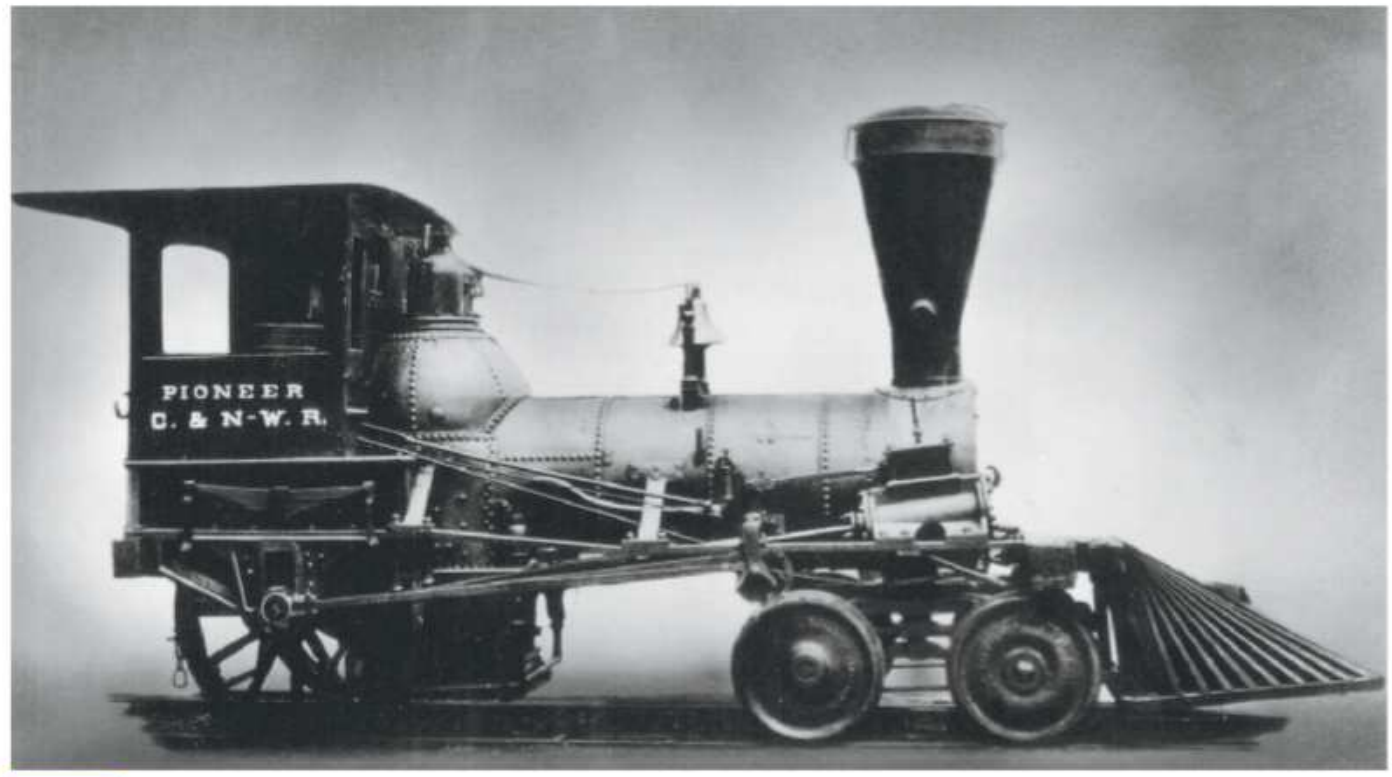
In the meantime, Ogden's interest in railroads intensified. Throughout the 1850s and '60s, he would be president, an investor and board member, or a bondholder of a dizzying array of small or fledgling railroad enterprises. In 1853, he was named president and a director of the Chicago & Fort Wayne Railroad, but when that line became insolvent in the Panic of 1857, Ogden was named its receiver. He and his friend, wealthy New York attorney and politician Samuel J. Tilden, drew up a plan for the railroad's reorganization. They renamed the line the Pittsburgh, Fort Wayne & Chicago Railroad and began work to merge it with the struggling Pennsylvania Railroad. On Feb. 10, 1860, attorney Tilden wrote to N.H. Swayne, attorney to the Pennsylvania Railroad, advising him of the steps underway to legalize the merger, and adding, "Mr. Ogden is today in Pittsburg with authority to have a settlement effected if it can be," which it soon was under Ogden's direction. The newly consolidated Pennsylvania Railroad thus became the first to forge a direct connection between New York City and Chicago, and this would eventually become the first of four legs in the transcontinental railroad.

West to Omaha

In 1855, on the occasion of his 50th birthday, Ogden invited a number of friends, business acquaintances, and fellow railroad enthusiasts to join him for dinner. It was not a celebratory event as the guests had expected. Instead, Ogden laid out his vision for a grand new railroad, a vision he had nurtured since the day he had founded the Galena & Chicago Union nearly a quarter-century earlier. His guests listened intently as Ogden described a totally integrated rail network running throughout the entire Midwest to the edge of the Great Plains. His proposed system would serve the middle of the nation — the heartland — and connect Chicago to Omaha just as Chicago was currently connected to the eastern rail network. Chicago, he explained, would eventually be the nexus of a national rail system that covered the entire country from coast to coast. He explained that his Midwest rail link would be called the Chicago & North Western Railway.

The names of the existing railroads that Ogden would cobble together over the next few years was mind-boggling: the Beloit & Madison; Illinois & Wisconsin; Chicago, St. Paul & Fond du Lac; Milwaukee & Mississippi; Ontonagon & State Line; Marquette & State Line; Wisconsin & Superior; and the list went on. While Ogden continued building his railroad into the early 1860s, the War Between the States began tearing at the fabric of the nation. Despite that, in 1862 Congress finally passed, and President Abraham Lincoln signed, the Pacific Railway Act that would create the Union Pacific and Central Pacific railroads.

Ogden had long felt, and had so advised leading Congressmen and President Lincoln, who he knew personally, that a route through the central part of the country — the route ultimately selected — was the most appropriate for a coast-to-coast rail network. Southern states had been lobbying for a southern route, but when they seceded from the Union, their pleas became moot. A northern route, espoused by the northern states and territories, never had a serious chance, as everything west of Wisconsin was virtually unpopulated. Ogden would, however, eventually be a major stockholder in the nation's second transcontinental railroad, the scandal-laden Northern Pacific Railway, in the late 1860s.



Pioneer **was the first locomotive to operate in Chicago. Built in 1837 by Baldwin, William B. Ogden purchased it from the Utica & Schenectady in New York for his Galena & Chicago Union, which he later merged into his Chicago & North Western Railway. It began service in 1848.** Union Pacific Museum

The 1862 Pacific Railway Act authorized the creation of a board of commissioners of 163 men from 20 states and territories to work out the organization of the Union Pacific Railroad & Telegraph Co. Ogden was one of those commissioners. A meeting was called for September 1862 at Chicago's Bryan Hall. When chairman Samuel Curtis convened the meeting of the "Board of Special Commissioners for Construction of a Railroad and Telegraph Line from the Missouri River to the Pacific Ocean" with a roll call, more than 75 members were in attendance, a good turnout considering that a war was raging throughout the country. The commissioners determined when and where the company's $1,000 bonds would be offered for public sale. When $2 million worth of those bonds had been sold, with a 10-percent down payment required, the officers would supervise an election for a 13-man board of directors, which would be augmented by two directors appointed by the president of the United States. Thereafter, the commission would be disbanded, its work finished.

William Ogden, the natural choice, was selected by fellow directors to be the Union Pacific's first president, and it was hoped that his name and reputation would enhance the UP's chances of getting off to a strong start during the initial subscription drive. It was not a job Ogden had sought, nor one he was particularly inclined to accept. He had his hands full with his many responsibilities in Chicago, and even more so with the building of his Chicago & North Western Railway that he planned to drive westward to the Missouri River for a connection with the UP in Omaha. In spite of those things, he accepted the job.

UP president briefly

Ogden, like most of the "Old Settlers," as Chicago's earliest arrivals were called, not only had his hand in building most of the city's physical, cultural, and societal infrastructure, but he also had his money in it. These Old Settlers had profited significantly from Chicago, but they also gave back. Ogden had his hand, and his money, in building the city's first steamship line so mail could enter and leave the city; and he financed the Chicago Lyceum for Social and Intellectual Pursuits, and the Chicago Historical Society.

He also helped found and fund the University of Chicago; the Illinois and Michigan Canal, which transported trade goods through the area; and the Rush Memorial Hospital, to name but a few of the many institutions he was instrumental in bringing to Chicago. If this, and his railroad endeavor, were not enough, the man had also founded and built The Peshtigo Co. in Wisconsin in 1864, and it would become the largest lumber and milling operation in the nation.

While this was going on at home, Ogden's top priority was still the Chicago & North Western, which he realized would be a vital cog in the completion of the transcontinental railroad. In 1863, he resigned as president of the UP to spend more time on his own plans, an auspicious move as it would turn out, as

the UP's nasty Crédit Mobilier scandal would eventually poison the reputations of those still involved with the railroad.

Ogden's purchase of Wisconsin's and Illinois' Kenosha, Rockford & Rock Island Railroad moved his C&NW along, but the seminal event in completing the C&NW and making it one of the four legs of the transcontinental railroad would occur in mid-1864 when Ogden and his attorney Samuel Tilden announced a blockbuster deal, a *coup de grâce* that would shake the railroad world.

The Galena & Chicago Union Railroad that Ogden had founded in 1836, nurtured, then backed away from, although continuing to hold a sizable stake in, had grown into a huge regional success covering 545 route-miles. Ogden and Tilden now announced plans for the smaller C&NW, with only 315 route-miles, to purchase the larger Galena, resulting in a C&NW that would be an 860-mile monolith, the largest railroad in the nation.

The purchase did not proceed smoothly, but it was accomplished. The minnow had swallowed the whale! On June 4, 1864, the Chicago Daily Tribune lauded the consolidation: " ... these two influential companies have consolidated, and will henceforth form one company, acting in diverse directions, yet with one aim, subject to one controlling power [William B. Ogden] and achieving results which singly they could not have accomplished."

The article continued, crediting " ... the fertile brain of William B. Ogden, the king of western railroads. With some men this concentration of power would be dangerous, but we think there is little fear that Mr. Ogden will use the power he has acquired in any other way than to benefit the community."

When Ogden had resigned from the presidency of the nascent UP, he believed he could be more helpful by connecting the UP's eastern terminus in Omaha with leading Midwestern and eastern cities. When the C&NW's first passenger train made the 488-mile trip from Chicago to Council Bluffs, Iowa, directly across the Missouri River from Omaha, in February 1867, he had proven his point.

The first and second legs of our nation's first transcontinental railroad were now a done deal, and William B. Ogden was the man behind both successes.

Without a doubt, the construction of the Central Pacific

Impossible without **William B. Ogden's imagination and drive to complete the Chicago-Council Bluffs, Iowa, section of the transcontinental railroad, a UP stack and automotive train moves eastbound near Westside, Iowa, in December 2014.** TRAINS: Jim Wrinn

and UP roads had been physically more difficult than the building of the Midwestern and eastern legs of the first Transcontinental Railroad, but the latter two had definitely not been easy.

Ogden's legacy

William B. Ogden died on Aug. 3, 1877. The Great Chicago Fire in October 1871, which destroyed much of what he had built, and the concurrent fire in Peshtigo, Wis., that destroyed his lumbering enterprise and killed between 1,500 and 2,500 people, took an incalculable toll on the then 66-year-old man. Ogden was never the same again, though he would live on for six more years.

The New York Times heaped praise on the man in his obituary, writing: "In the development of the railroad system of the country, Mr. Ogden has been one of the foremost and most potent of coadjutors. The Times has before now had occasion to criticise [sic] methods of railroad construction with which he was identified ... but the most censorious criticism cannot deprive him of the credit of being one of the most enterprising and far-seeing of the railroad magnates who have opened up the virgin lands of the continent to the settler."

Mid-20th century author, writer, and historian Stewart Holbrook wrote often about late 19th-century railroad tycoons like Daniel Drew, James Fisk, Jay Gould, Cornelius Vanderbilt, J. Pierpont Morgan, and John D. Rockefeller. He referred to them as buccaneers, rascals, and plunderers. He wrote more favorably of the earlier generation of builders — the true pioneers of the industry, he called them — men like William B. Ogden, John Alfred Poor, and J. Edgar Thomson.

He reserved his highest praise for Ogden, writing: " ... The pioneer roads ... were projected and built by all sorts of men, some of them able, some dismally unfit, but among them none ... of whom one could say: 'Here was a true prophet and great genius of railroads.' It remained for Chicago to present the first great railroad man. He was William Butler Ogden ... and now, in 1947, [he] is all but forgotten."

Sadly, today in 2019 as we celebrate the sesquicentennial of the completion of the nation's first transcontinental railroad, that is still true. I

This article was adapted by JACK HARPSTER *from his 2009 book, "The Railroad Tycoon Who Built Chicago: A Biography of William B. Ogden," published by Southern Illinois University Press, Carbondale, Ill. In 2019, in conjunction with the 150th anniversary of the completion of the nation's first transcontinental railroad, Southern Illinois University Press will reissue the book in softcover. Find it at www.siupress.com/railroadtycoon*

Making Great

James J. Hill's northernmost U.S. transcontinental railroad was something special

by Steve Glischinski

Editor's note: As the United States celebrates the 150th anniversary of the first transcontinental railroad, Trains *is taking a look at America's other transcons. This is the first article in that series.*

IS THERE A SINGLE RAILROAD more closely associated with its founder than James J. Hill and his Great Northern Railway? Certainly the Harrimans are linked to Union Pacific, but by the time E.H. Harriman entered Union Pacific's sphere in 1897, it already linked the Midwest and the Pacific Coast. Harriman made his mark by rebuilding and modernizing UP, but he didn't build it from scratch.

What made Great Northern great? James J. Hill's ambition developed a small Minnesota carrier into a transcontinental railroad between Minnesota and the Pacific Coast, a move made not with government assistance, but with his (and investors') capital. Even more extraordinary: When Great Northern extended its line in the

Northern great

Two Great Northern paint schemes are on display as GN Extra 312-A passes Extra 311-C, waiting in the siding at Floodwood, Minn., on Aug. 16, 1969. Doug Wingfield

1890s to become the nation's northernmost transcontinental railroad, Hill sought a route not based on economy of construction, but on the productivity of the territory his railroad would serve. He built with an eye to the future and the long-term viability and economy of operations. The only government lands the company received were attached to 600 miles in Minnesota constructed by predecessors.

The opening of the Pacific Northwest and the spread of agriculture are arguably GN's greatest legacy. Great Northern was a pioneer on many fronts: like Union Pacific, it tried to entice settlers to its sparsely populated territory, but GN went further. Hill advocated crop diversification to improve yields on lands near GN lines, and imported purebred cattle to distribute among farmers. Great Northern bought land from the federal government and resold it to farmers at cheap prices. GN operated agencies in Germany and Scandinavia that promoted its lands, and brought families to the United States at low cost. Hill invested to found schools and churches for communities along GN's routes. He was out to build an empire with his own hands and not wait for development to run its course.

Hill constantly sought ways to better his railroad's operations. Throughout the life of the Great Northern, Hill and his successors worked to improve GN's physical plant to cut costs and improve operating efficiency. In annual reports, the company pointed with pride to the latest improvements:

Improving and serving agriculture was a point of emphasis for GN. At the time of this photo in 1956, this GN-owned grain elevator in Superior, Wis., was the world's largest. William D. Middleton

replacing the original main line in western Montana over Haskell Pass with a flatter route via Whitefish and Eureka (1904); the Surrey Cutoff across North Dakota, reducing the transcontinental line by 52 miles (1912); the 7.79-mile Cascade Tunnel and the Chumstick Line Change, reducing the Cascade Mountains crossing by 9 miles, lowering the line's elevation by 502 feet and eliminating 6 miles of snow sheds (1928-29); and the extension of centralized traffic control in the 1950s and 1960s. These were major undertakings, but hundreds of minor improvements bore Hill's touch.

In 1951, Great Northern operated 8,316 miles of railroad. Its main line covered approximately 1,800 miles from the Twin Cities to Seattle. In between, it served only one city in excess of 100,000: Spokane, Wash. The states with larger populations that it did serve — Minnesota, Washington, and Oregon — were concentrated at the eastern and western extremes. Therefore the railroad had to depend on long-haul shipments, which were more profitable, and became a model for handling this type of traffic, just as Hill had envisioned.

GN never went bankrupt. It remained profitable until March 2, 1970, when it merged with Chicago, Burlington & Quincy; Northern Pacific; Pacific Coast Railroad; and Spokane, Portland & Seattle to form Burlington Northern.

The founder

James J. Hill was born in Rockwood, Ontario, in 1838. He reached St. Paul, Minn., in 1856 at age 18, and landed a job with a steamboat company as an agent. He gradually learned the transportation business, working with wholesale grocers, fuel (coal) suppliers, and railroads and steamboat companies to handle freight transfers. Eventually, he struck out on his own. In 1867, Hill entered the coal business, and by 1874 had expanded it five times over. In 1872, he and his partners started the Red River Transportation Co., which offered steamboat transportation on its namesake river, along Minnesota's western border, to Winnipeg.

While Hill was diligently building his businesses, railroading came to Minnesota. Work had begun in St. Paul in 1861 on the St. Paul & Pacific, the first predecessor of Great Northern. Its genesis was the Minnesota & Pacific Railroad, chartered by the Minnesota territorial legislature to build from Stillwater to St. Paul to Breckenridge, on the border with Dakota Territory, with a branch from St. Paul to St. Cloud and St. Vincent on the Canadian border. The Minnesota & Pacific received a grant of 2.46 million acres of land.

Construction began in autumn 1856, but the line went bankrupt in 1860. Reorganized as the St. Paul & Pacific Railroad, in 1862 it completed 10 miles of track between St. Paul and St. Anthony (later part of Minneapolis). The rail, cars, and locomotives had to be shipped upriver by Mississippi River barge. The first run was made on June 28, 1862, pulled by 4-4-0 No. 1, the *William Crooks*, named for the line's chief engineer and preserved today in Duluth, Minn. The invitation-only affair included Minnesota's governor and lieutenant governor, St. Paul's mayor, directors of the St. Paul & Pacific, and about 100 citizens. It left St. Paul "at about half past two o'clock and returned at six o'clock," according to newspapers of the day, in time for an evening banquet and general celebration of the historic event.

The StP&P "branch" reached the St. Cloud area by 1867, but construction on the main line was slow, primarily due to the company's limited funds and the need to cross the Mississippi River between St. Anthony and Minneapolis. In 1864, mainline construction was assigned to a separate corporation organized under St. Paul & Pacific's charter, the First Division of the St. Paul & Pacific, but it did not begin work until 1867. The line started west that year on what would eventually become the Great Northern main line. It reached Breckenridge in 1871. The Northern Pacific briefly owned the line, but the Panic of 1873 forced NP into bankruptcy. NP sold its holdings in the StP&P, which then was pushed into receivership by Dutch inves-

GN territory was sparsely populated, with one city over 100,000 between its endpoints. Here, 2-8-2 No. 3117 is westbound at Richmond, Minn., in 1955. James Kreuzberger; Steve Glischinski collection

tors that held most of the Pacific's stock.

For three years, the receivers did little, and the railroad suffered under the financial burdens of the Panic of 1873, but Hill was studying it closely. Its land grants were valuable, and he foresaw that operating changes could make the railroad highly profitable. Hill assembled a group of partners known as the Associates: John S. Kennedy, a New York banker who had represented the Dutch bondholders; Norman Kittson, a friend of Hill's and wealthy fur trader; Donald Smith, a Montreal banker and executive with Hudson's Bay Co. who would go on to co-found Canadian Pacific Railway; and George Stephen, Smith's cousin who helped raise the funds to build CP. By Hill's estimate, a $5.5 million investment would bring them a railroad and holdings worth $19 million, so the group purchased the line in 1878. The following year they formed the St. Paul, Minneapolis & Manitoba, which took over the assets of the St. Paul & Pacific and the First Division. James J. Hill was in the railroad business, and was named president of the railroad in 1882.

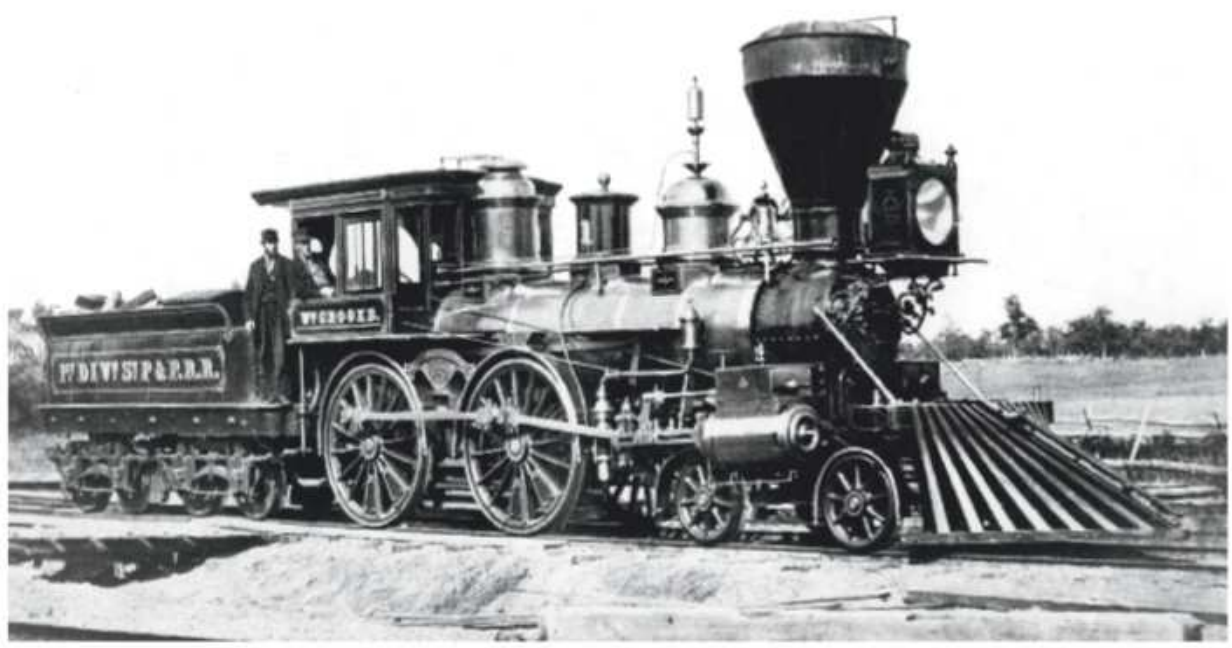
Building an empire

The Manitoba engaged in a blizzard of acquisitions that provided connections from the Twin Cities to the Red River Valley and its wheat-growing areas. By 1881, it operated 695 miles of road. During this expansion, the railroad worked to attract settlers to buy the millions of acres provided by the land grant in Minnesota, and in lands the railroad purchased in Dakota Territory. Settlement was important to provide dependable freight traffic and laborers who would build more rail lines.

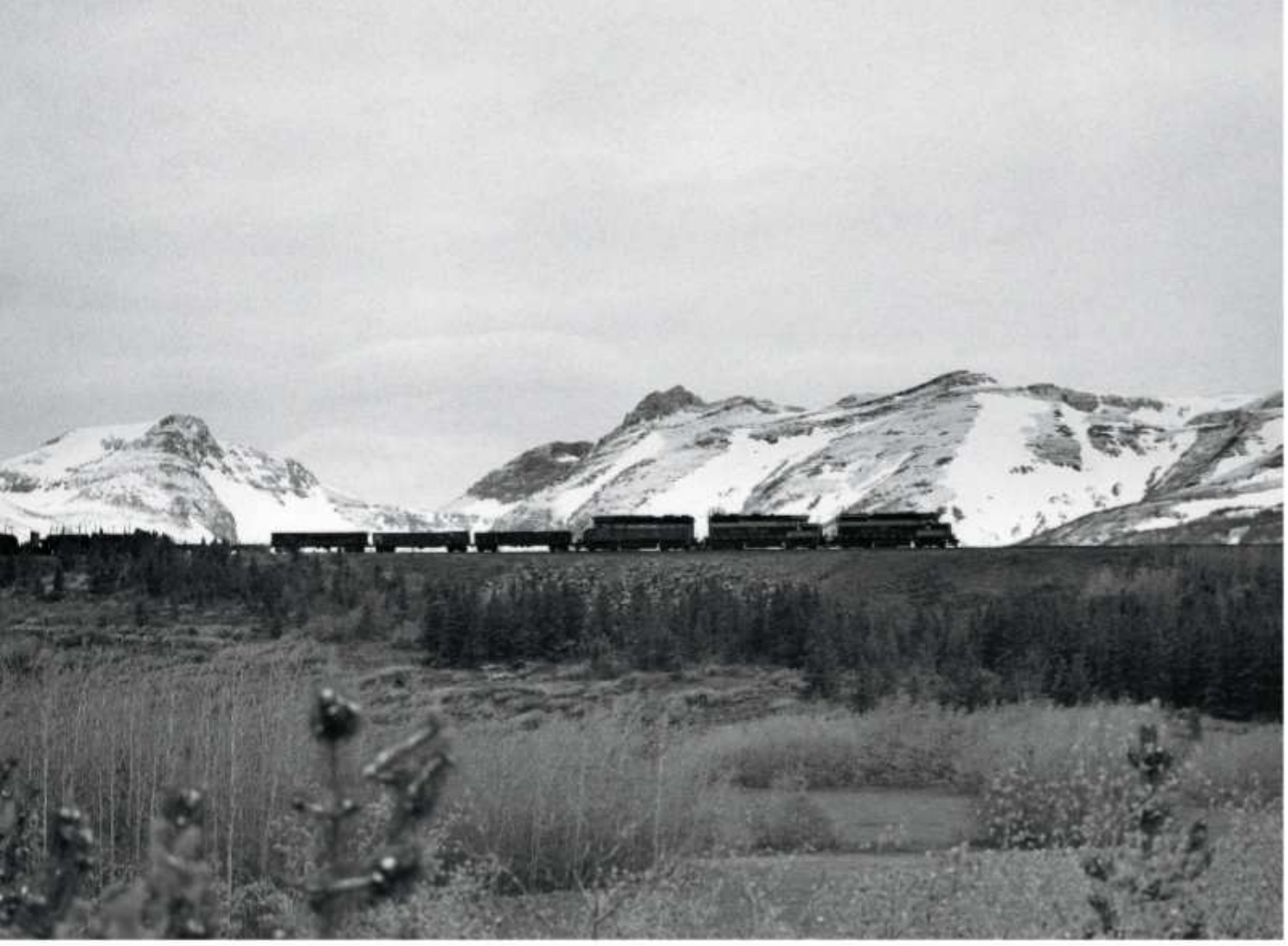
In 1881, the Hill group purchased the 1856 charter of the Minneapolis & St. Cloud Railroad, and the following year used it to begin construction of a line toward the ports of Duluth and Superior. Rails reached west to Devils Lake, N.D., by 1885, and attained Montana in 1887, with GN splitting the area controlled by Northern Pacific to the south and Canadian Pacific to the north. Colonization progressed, branch lines were built to feed the main line, and traffic grew.

Despite Hill's view that the Northern Pacific had been poorly constructed and errantly routed, he looked admiringly at NP, which obtained transcontinental status in 1883. By the end of the 1880s, he faced the decision whether his railroad should build to the Pacific Coast as well. Why go west? Author Albro Martin, in his landmark book "James J. Hill and the Opening of the Pacific Northwest," writes, "By then regional railroads like his were finally facing the decision whether to become transcontinentals in their own right or to be absorbed by men of larger vision and daring." A more fundamental reason, Martin explains, was as the nation became more industrialized and thus more regionally

James J. Hill, who built the Great Northern and shaped its success, in 1915. TRAINS collection



The *William Crooks*, shown at Elk River, Minn., in 1864, made the first run on GN predecessor St. Paul & Pacific. Today, the locomotive is at the Lake Superior Railroad Museum. Great Northern



GN found the lowest-altitude U.S. passage through the Rockies via Marias Pass. A trio of Geeps leads a train over the pass on May 20, 1969. Robert L. Hogan

specialized, through traffic grew much faster than local business. The need to increase traffic, especially more profitable through traffic, could no longer be ignored. Hill committed his railroad to head to the Pacific in early 1889.

On Sept. 16, 1889, the Minneapolis & St. Cloud's name was changed to Great Northern Railway Co. On Feb. 1, 1890, Hill transferred ownership of the Manitoba, Montana Central Railway, and other rail properties he owned to GN, and the modern-day Great Northern was born.

Construction of GN's Pacific Coast extension began in 1890 just west of Havre, Mont. Standing in the way were two mountain ranges, the Rockies and the Cascades. A low-level passage through the Rockies was found by GN locating engineer John F. Stevens and a Flathead Indian guide named Coonsah in December 1889. Marias Pass would become the lowest rail crossing of the Rockies south of the Canadian border.

Stevens moved west to locate the line over the Cascades, and found a passage that would come to carry his name. Stevens Pass was at the head of Nason Creek, a tributary of the Wenatchee River. But the route was fraught with problems: to get over the mountains required eight switchbacks, with grades up to 4 percent. Tremendous operating problems caused by heavy snowfall were partially solved with snow sheds and opening of the first Cascade Tunnel, a 2.6-mile bore completed in 1900 and electrified in 1909.

The final spike to complete the transcontinental project was driven near Scenic, Wash., on Jan. 6, 1893. More expansion followed: in the 1890s, Hill purchased control of large parcels of land on Minnesota's Mesabi Iron Range, allowing GN to begin large-scale shipment of iron ore. Hill gained a nickname: "Empire Builder."

The "Hill Lines"

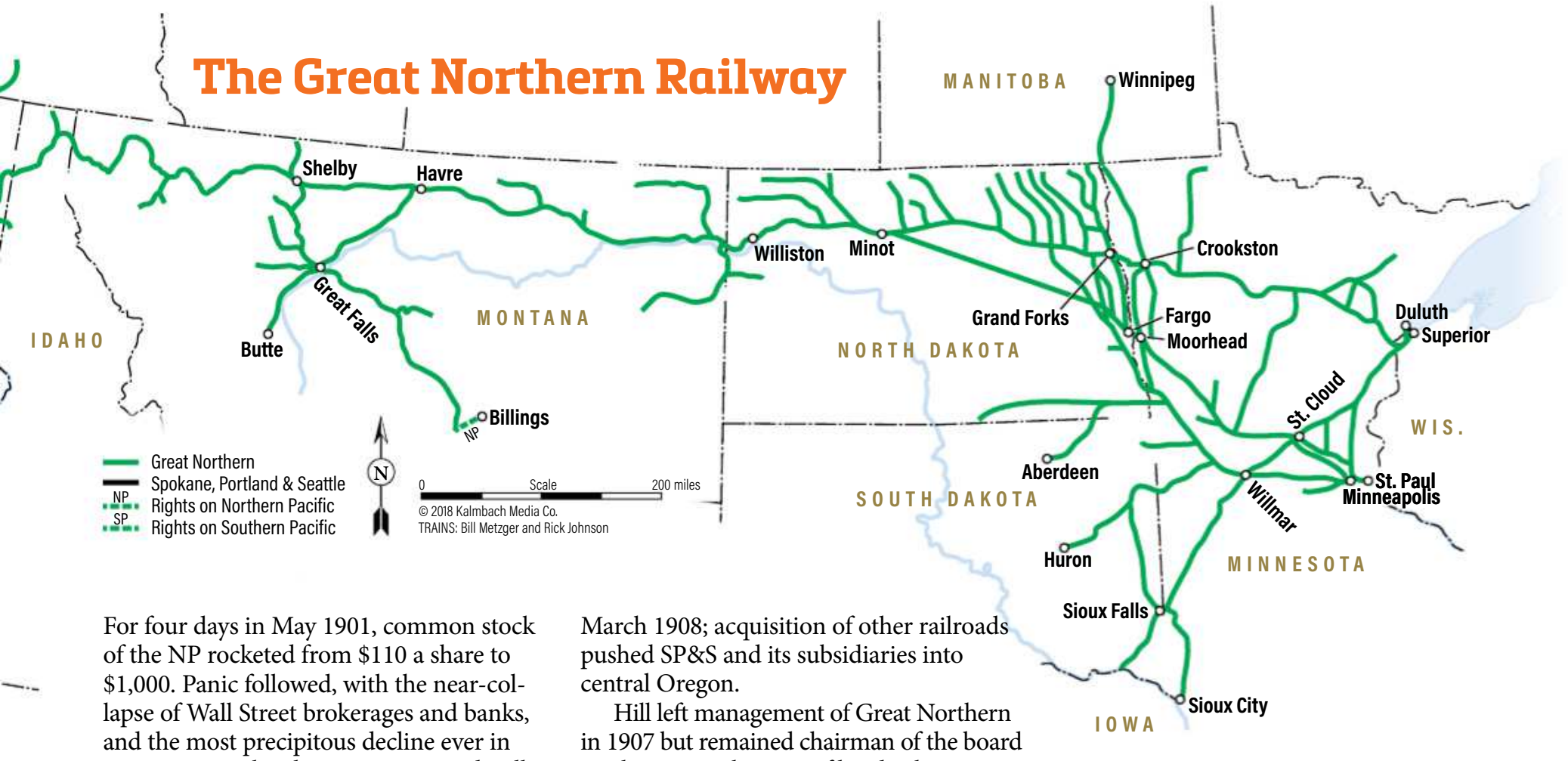
Hill's actions at the turn of the 20th century presaged the megamergers of the 1980s and 1990s. In summer 1893, Northern Pacific collapsed into receivership. Hill and his associates saw that NP, now freed from paying interest on its bonds, might be able to slash rates and cut into GN's profits. NP's German bondholders were worried about the value of their bonds, and Hill's friend George Stephen suggested a solution: "unification" of the NP and GN under James J. Hill. But the railroad would be reorganized without him under management backed by a Hill ally, financier J.P. Morgan. Late in 1900, Morgan ended his voting trust of the NP, and Hill and the Associates, and German bondholders who owned a large minority of common stock, exercised working control of NP.

Seeking a route from the Twin Cities to Chicago and its railroad interchanges, Hill set his sights on acquiring the Chicago, Burlington & Quincy. Union Pacific, controlled by Harriman, hoped to obtain the CB&Q as well. Harriman began buying stock in Northern Pacific with the intention of using it to gain control of CB&Q. Hill learned of his activities and contacted Morgan, whose company quickly began buying more NP stock.

The result was the "Northern Pacific Corner," the first U.S. stock market "crash."

Great Northern's first great transcontinental train was the *Oriental Limited*. A westbound *Oriental Limited* passes through Fargo, N.D., in an undated photo. Robert A. Hadley

The Great Northern Railway



For four days in May 1901, common stock of the NP rocketed from $110 a share to $1,000. Panic followed, with the near-collapse of Wall Street brokerages and banks, and the most precipitous decline ever in American stock value. Harriman and Hill worked to settle the issue to avoid panic, and NP and CB&Q stayed in Hill's orbit. Hill, Morgan, and Harriman then formed the Northern Securities to control the stock of the three railroads.

The public feared Northern Securities would create a railroad monopoly. President Theodore Roosevelt saw it as a violation of the federal Sherman Anti-Trust Act. In 1902, the government sued Northern Securities. In 1904, the case reached the Supreme Court, which ordered the consortium be broken up; each railroad was then managed independently. The victory earned Roosevelt the title "trust buster." Yet the close relationship between GN and NP remained, and the two railroads jointly owned the Burlington.

Great Northern moved forward. In 1905, the Portland & Seattle Railroad (Spokane was later added to the name) was chartered to connect GN and NP's lines from Spokane and Pasco, Wash., to Portland, Ore. Jointly owned by the two railroads, SP&S's main line was completed in March 1908; acquisition of other railroads pushed SP&S and its subsidiaries into central Oregon.

Hill left management of Great Northern in 1907 but remained chairman of the board until 1912. By the time of his death in May 1916, James J. Hill was worth more than $53 million (more than $1.2 billion today).

GN after Hill

Great Northern experienced superior leadership following Hill's tenure (see page 43). His second son, Louis W. Hill (1872-1948), is remembered for his enthusiastic promotion of Montana's Glacier National Park. After graduation from Yale, he became a successful businessman in his own right. He was named GN president in 1907 and board chairman in 1912.

In 1910, Great Northern backed federal legislation to create Glacier National Park. To generate tourist traffic for its trains, GN began advertising the splendors of the park. Under Louis Hill's tenure, GN subsidiary Glacier Park Co. built and operated hotels and chalets throughout the park. They were modeled on Swiss architecture, part of Louis Hill's vision to portray Glacier as "America's Switzerland." Until the advent of better roads and automobiles, thousands of Americans enjoyed the park courtesy of Great Northern. It was Louis Hill who coined such GN slogans as "See America First" and "Glacier National Park Route."

Great Northern reached California in 1931. It built 91 miles of new line from Klamath Falls, Ore., (reached via SP&S' Oregon Trunk Railway) to Bieber, Calif., while Western Pacific built 112 miles from Keddie to Bieber. The route became known as the "Inside Gateway" — WP connected with Santa Fe in Stockton, Calif., and together the three railroads competed with Southern Pacific for traffic between California and the Pacific Northwest.

Great Northern fielded several fine passenger trains despite Hill's admonition that passenger trains were "like the male teat — neither useful or ornamental." From 1905 to 1929, GN's premier transcontinental train was the Chicago-Seattle *Oriental*

GN dieselized with FT locomotives, which debuted the classic orange and green paint scheme. Here, a matched set of FTs departs Willmar, Minn., in the early 1960s. Perry Becker

GN O-8 No. 3396 leads the first section of train 402 at Harlem, Mont., in August 1948. The O-8s, rebuilt from older engines, were the heaviest Mikado types ever. Frank McKinlay; N.F. Priebe collection

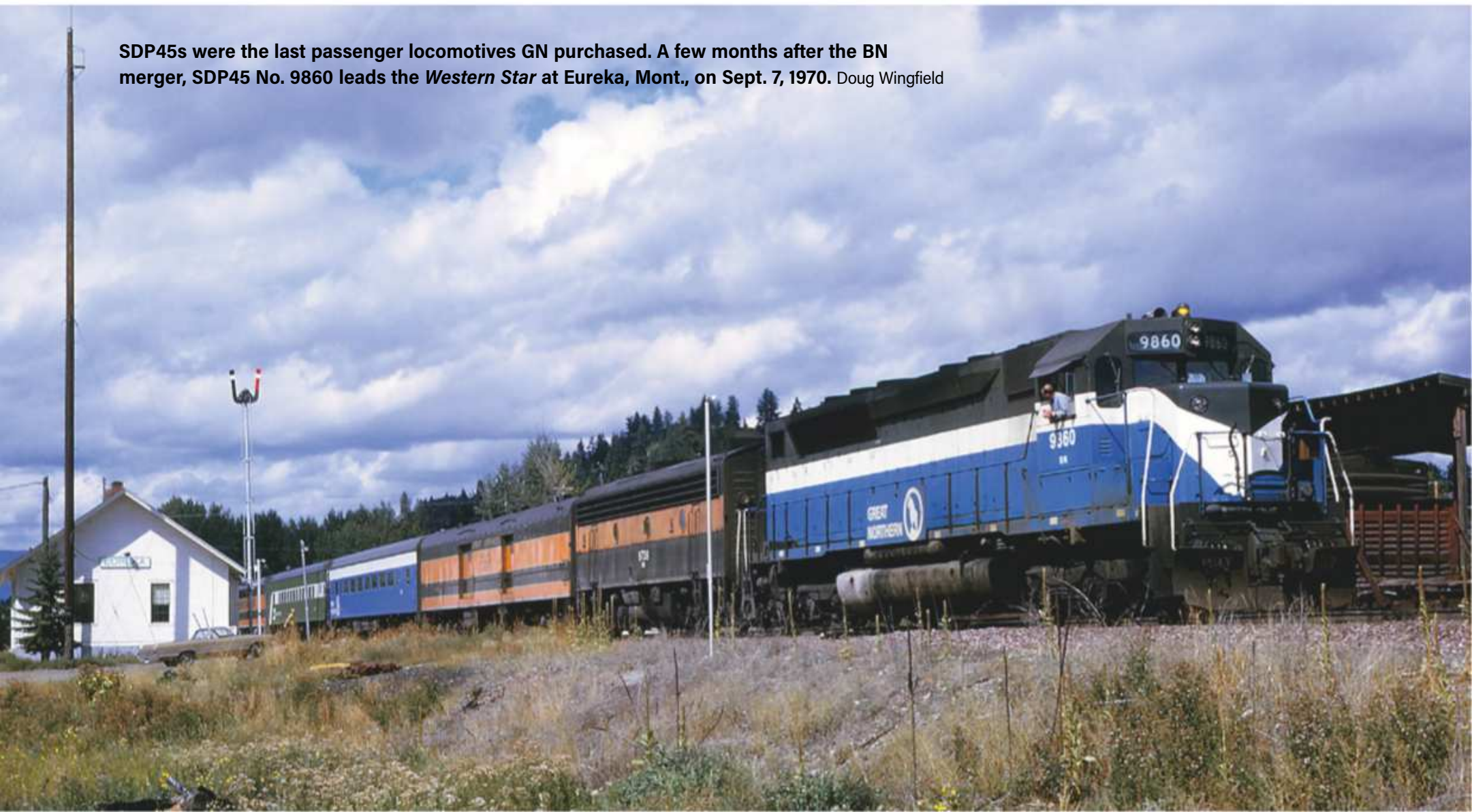
Limited. Meant to evoke the Far East — passengers could connect to GN steamships in Seattle — it introduced the Rocky Mountain goat as GN's symbol in 1921, when the goat emblem was carried on its observation car for the first time. (The goat didn't receive the name "Rocky" until 1955 when he appeared in GN television advertising.) The *Oriental Limited* was dropped in 1931 as the Great Depression raged. By then the *Limited* was playing second fiddle to the *Empire Builder*. Inaugurated in 1929 and named for Hill, it operated from Chicago to St. Paul via CB&Q, thence GN to Seattle, and Spokane to Portland via SP&S. In 1947, GN streamlined the train and used its former heavyweight equipment for a secondary train on the route, which carried the *Oriental Limited* name. The streamlined *Builder* marked the first passenger-train application of GN's Omaha Orange and Pullman Green with gold stripe paint, created in 1941 for freight FTs.

In 1951, the *Empire Builder* was streamlined a second time, and its old cars plus new equipment stocked a new secondary streamliner, the *Western Star*, with the *Oriental Limited* name retired. GN took its short-haul passenger business seriously, and operated frequent service between the Twin Cities and Twin Ports, and from Portland to Seattle and Vancouver, B.C.

GN's last new steam locomotive purchases were 20 4-8-4s from Baldwin Locomotive Works in 1929-30. GN created the heaviest Mikado-type ever when it rebuilt older Mikes into Class O-8 Mikados. The first three O-8s were created in 1932 when GN rebuilt three older 2-8-2s with new boilers from Baldwin, and 22 rebuilt Mikes joined the O-8 class in 1944-46. Oil burners with roller bearings on all axles, they had more tractive effort than Nickel Plate Road's S-3 Class Berkshires, but their reign was brief, as GN dieselized in 1957.

GN in the diesel era included a heavy dose of GP7s, GP9s, and F units. In 1966 it purchased the first production 3,600-hp SD45 from EMD, which it dubbed "Hustle Muscle." The locomotive survives today. Second-generation passenger power also came in 1966 with six 3,000-hp SDP40s, followed in 1967 by eight SDP45s, the latter received in "Big Sky Blue" colors adopted that year.

GN used electric locomotives to conquer mountain grades in the Cascades. In 1909, the company electrified its line through the original Cascade Tunnel with four GE-built boxcabs that pulled trains through the tunnel with their steam



SDP45s were the last passenger locomotives GN purchased. A few months after the BN merger, SDP45 No. 9860 leads the *Western Star* at Eureka, Mont., on Sept. 7, 1970. Doug Wingfield

locomotives still attached.

When the new Cascade Tunnel opened in 1929, electrification was expanded to 73 miles, using 18 boxcabs supplied by Alco-GE and Baldwin-Westinghouse. In 1947, two 5,000-hp streamlined electrics arrived from GE. They only saw service for nine years as GN fitted Cascade Tunnel with ventilation fans for diesel operation in 1956 and the electrification was abandoned.

Great Northern today

Great Northern's footprint remains, nearly 50 years after the BN merger. Towns and cities have made depots into museums. Hill's 36,000-square foot mansion, built in St. Paul in 1891, is a National Historic Landmark. Amtrak's *Empire Builder* is a direct link to Great Northern's heritage, and BNSF's colors harken back to those of GN.

Its history is studied and promoted by the widely respected Great Northern Railway Historical Society that carries the Great Northern torch to new generations. Former employees, although reduced in number by year, remain devoted to the company.

One such employee, Gary Nelson, hired out on GN in 1967 in Willmar, Minn., and retired from BNSF in 2009. He has a direct connection to Hill, and his story helps explain why GN employees were so loyal.

"My grandfather on my mother's side was Francis Bergland. He began his career in Great Northern's bridge and building department in 1892," Nelson said. In 1914, he was injured in an accident that resulted in the amputation of his leg. After the accident, he lived in a house on the north end of the yard in Willmar (which still stands). "James J. Hill had that house built for my grandfather due to the loss of his leg. Not only that but he gave him 3 acres of land. Great Northern retained him as an employee (he had a 50-year career on the railroad) and gave him a job as a cook on B&B outfit cars, and he also arranged that in the future my grandfather's sons would get jobs with Great Northern. In 1926, my dad married my mom, and his brother married my mom's sister. Both my dad and his brother became employees of Great Northern, like their father-in-law. My two sisters also became PBX operators for GN when it had its own telephone system. This all came about because my grandfather lost his leg and Jim Hill put out a directive to take care of him."

The majority of GN's transcontinental line across the northern tier is today BNSF's "Hi Line." Trains still streak across the plains, rumble over Marias Pass, and take the long plunge through Cascade Tunnel — just as Great Northern's founder intended. It's an oft-used Hill quote, but it seems appropriate: "I've made my mark on the surface of the earth and they can't wipe it out." Indeed.

Great Northern's great leaders

GREAT NORTHERN WAS BLESSED with extraordinary leadership in the decades after James J. and Louis W. Hill. Among them were a father and son, and a man who rose through the ranks.

GN president Ralph Budd speaks at the last-spike ceremony for the Inside Gateway in Bieber, Calif., in 1931. Great Northern

Ralph Budd (1879-1962) served as GN president from to 1919 to 1931, and was the youngest man to assume the presidency of a major railroad at age 40. In the 1920s he began another attempt to merge the Hill Lines after the infamous Northern Securities case of 1904. Ultimately, the Interstate Commerce Commission approved the merger, but without the Burlington Route and its important Chicago connection — a condition GN and NP could not accept.

Budd was cut from the James J. Hill cloth, observing in 1928 that the main paths to successful railroad operation "lie through reduction of costs, which could be produced only by a company ... able to reduce its grades, improve its roadbed and best equip and maintain its line," and in expanding the volume of business.

Budd acted on those words. In 1925, GN's board approved his Cascade improvement plans that included the 7.79-mile Cascade Tunnel, a 43-mile line relocation that eliminated curves and grades, and extended and improved the electrified line through the new tunnel. This cost $25.6 million — approximately $368 million today. Ralph Budd went on to greater fame at the Chicago, Burlington & Quincy as the man who brought the U.S. its first stainless steel streamliner, the *Zephyr.* He was also at the helm when Burlington built the first dome car in 1945.

Frank J. Gavin (1880-1962) came to the presidency in September 1939. Like Hill, a Canadian by birth, he started as a clerk for GN in 1897 and worked his way through the ranks. He was an operating man, and approved expenditures for more freight cars and roadway improvements. He mobilized the railroad to war following the attack on Pearl Harbor on Dec. 7, 1941. Gavin embraced diesel power — by the end of 1941, GN had 49 diesels, including nine FTs, the first locomotives to wear the famous paint scheme of Omaha Orange and Pullman Green separated by imitation gold stripes. At the end of 1945, only 17 percent of train miles on GN moved behind diesels; by 1951 it was 63 percent.

In 1943, Gavin and his management team decided a new streamlined *Empire Builder* should enter service after the war; the new train debuted on Feb. 23, 1947, and generated $5 million in revenue in its first year. In 1949 he approved purchase of 66 passenger cars for another new *Empire Builder*, with other new cars joining the 1947 equipment to create the *Western Star*, which allowed GN to offer double daily streamliner service on its transcontinental route. The new trains debuted in 1951, the year Gavin retired. In 1956, Gavin Yard in Minot, N.D., was named for him.

John M. Budd (1907-1979), Ralph Budd's son, served as president from 1951 until the Burlington Northern merger in 1970. Passenger-train fans remember Budd for maintaining GN's passenger service at a high level. In a speech in the 1950s, he spoke for many when he said: "The world judges the railways by their passenger services. If this is the window through which we are viewed, we must wash it and shine it, or else cover it with a dark shade." To his credit, he continued his "clean window" passenger policy right up to the BN merger.

Budd's greatest accomplishment was what neither James J. Hill nor his father could achieve: merger of the Hill Lines. It was John Budd who, along with Northern Pacific's Robert Macfarlane, initiated discussions in 1955 that began the torturous process of merger, which would take 15 years to complete. Always referred to by employees as "Mr. Budd," he earned the respect of not only his officers, but also labor. Third-generation GN employee Gary Nelson said: "John Budd directed that his officers treat everyone with respect. That included the union's general chairman and the local chairman. He knew the only way they were going to be successful was to have a harmonious working relationship. That was true right up to, and in some cases after, the BN merger." — *Steve Glischinski*

Recycle, rebuild, repeat

A small Washington locomotive dealer is more than just a parts supplier

Story and photos by Tom Danneman

Former Canadian National locomotives, including a GP9RM and a GMD-1, frame a former CSX B40-8 at Western Rail's Airway Heights, Wash., facility.

A former CSX GP40 pokes out of the awning at Western Rail's Airway Heights facility. Workers perform maintenance here as weather permits.

North Little Rock, Roanoke, Topeka, and Waycross are synonymous with Class I railroads' major locomotive maintenance shops. These comprehensive facilities and extensive staffs can accomplish just about any work their owners need. But what about the more than 550 smaller railroads in North America? From single components such as a control stand or engine block to full locomotive rebuilds and units for short-term lease, Western Rail Inc. has them covered.

Back in 1989, President Todd Havens started the business in downtown Spokane, Wash., as a family-owned locomotive brokerage firm. In its early days, the company owned just four or five locomotives that were scattered throughout the country.

As the company flourished, and the number of locomotives grew, so too did the need to find a location to maintain and store them.

"We were just getting too big. We had locomotives stored all over the country," Havens says. "I sold RailAmerica their first eight locomotives, back in 1993."

In 2000, Havens and Vice President Pat Rowe found a former wood-chip mill for sale in Airway Heights, Wash. While this location did not have a shop building, the 26-acre plot did include two tracks that were once used for wood-chip loading. It also had a connection to the outside railroad, which Western Rail ran for several years before Eastern Washington Gateway Railroad took over. Western Rail also acquired warehouses in Illinois and Arkansas to better serve its Midwestern and Eastern customers.

Meanwhile, in 1999, a handshake deal was struck with Pend Oreille Valley Railroad, a short line operating between Metaline Falls, Wash., and Sandpoint, Idaho. The deal allowed Western Rail to contract out services for rebuilding and repairing locomotives at Pend Oreille Valley's shop in Usk, Wash.

"Why we decided to go that route, and not build our own shop at Airway Heights, is simply the lack of overhead," Havens says. "We just pay them a rate and keep them busy." Western Rail also helped Pend Oreille Valley build two state-of-the-art additions to the shop, including a $2 million paint booth. Five of Pend Oreille Valley's seven mechanics work full time under a special agreement for Western Rail.

Western Rail's primary business is parts. "From grain elevators to Class Is, someone is always looking for parts," Havens says. He figures the company has $5-to-6 million in parts, 90 percent of which are EMD. That does not include the complete locomotives stored there and in Usk. In addition, Western Rail is continually looking to acquire locomotives to strip for parts, resell, rebuild, or lease.

Rowe figures he talks to 1,300 people from the U.S. and Canadian railroad industries every two months, looking for opportunities to buy parts and locomotives. Those contacts are anyone from a railroad's chief mechanical officer to an independent mechanic. Typically, the parts supply and locomotives come from an industrial or short line that is shutting down and liquidating. For example, in 1989, Western Rail acquired an SD7 and an SD24 from Kennecott Utah Copper when they were removed from service. Kennecott SD7 No. 903 and SD24 No. 904, the last SD24 built, were used to haul copper ore in Salt Lake County, Utah. Both locomotives were qualified for service by Western Rail, and resold to the now-defunct Minnesota Valley Railroad. Railroads are also looking to trade in older locomotives for those that

Mechanics work on Western Rail's first "in-house" rebuilt EMD 16-645 engine in Airway Heights. The finished engine was dynamometer tested and delivered to a dredge boat operator for installation.

Western Rail and Pend Oreille Valley's facility in Usk, Wash., includes this state-of-the-art paint booth. Leased Rogue Valley Terminal SW1500 No. 1500 rests inside.

are more powerful and fuel efficient. On average, Western Rail sells 10-to-15 locomotives a year to customers ranging from a small grain elevator to larger corporations such as Cargill or ADM.

Larger railroads have also come calling. Beginning in 2007, BNSF contracted with Pend Oreille Valley and Western Rail to install fuel-saving SmartStart systems into 40 locomotives, which automatically shuts down or starts the locomotive, saving fuel and cutting emissions. That work was done in Usk, and half of the units were also repainted there. In addition, regional railroad Montana Rail Link came to Western Rail for repainting work.

Typically, work starts at the Airway Heights facility. There, the locomotive is evaluated and slated for sale, lease, or rebuild. If a locomotive is deemed unsuitable for rebuilding, it will be stripped of usable parts. "The best place to store a part is inside a locomotive," Havens stresses. "We never scrap them until they are out of useful parts."

Even though many of the locomotives in Airway Heights and Usk could be considered museum pieces, most could be put into revenue service quickly.

"Ninety percent could go out in service tomorrow," Havens says.

With the occasional help from Havens and Rowe, who are certified mechanics themselves, the two mechanics in Airway Heights can handle work such as changing a generator or air compressor and even a full engine swap or rebuild. Since the Airway Heights facility has no indoor shop, the weather dictates how much work is done there. Because of that, most of the heavy work is done at Pend Oreille Valley's shop in Usk. When an engine swap or generator is done in Airway Heights, the locomotive will get shipped to Pend Oreille Valley for final alignment, testing, and sometimes paint.

Rebuilding locomotives has also become big business for Western Rail. Depending on time frame, customer's requirements,

A former Oregon, Pacific & Eastern SW8 sits in storage on Pend Oreille Valley in Usk, Wash. The classic switcher can be ready for service at a moment's notice.

Western Rail: keepers of the classics

EVEN THOUGH IT IS KNOWN for rebuilding second-generation locomotives, Western Rail holds several units that could be considered museum pieces. Its oldest locomotive, a rebuilt EMC SW (now considered a SW9), was built in 1938. But one switcher stands out among them.

Former Oregon, Pacific & Eastern SW8 No. 602 was built by EMD in 1952 for Bamberger Railroad in Utah. Bamberger was a railroad that started out in 1891 as the Great Salt Lake & Hot Springs Railway, later the Salt Lake & Ogden Railway. The railroad was officially named Bamberger Electric Railroad after its owner and Utah Governor Simon Bamberger in 1917. "Electric" was dropped from the name in 1939 after a bankruptcy. The railroad continued to serve its freight customers until 1952. After the railroad's demise, No. 602 was sold to Yreka Western where it worked until 1978, when it was sold to Oregon, Pacific & Eastern. In 2010, Western Rail and the short line made a deal to acquire the 602 in trade for a GMD-1. Amazingly, No. 602 was in mostly original condition, including plain bearing trucks and original cab controls.

Today, No. 602 is stored for Western Rail on the Pend Oreille Valley Railroad in nearby Usk, Wash. The locomotive remains intact, and is serviceable, but its future has yet to be determined. — *Tom Danneman*

Left: The classic EMD SW8 still retains its original plain bearing trucks. Above right: The cab interior also sports original equipment including control stand, headlight and class light controls, as well as a wooden floor. Unfortunately, vandals have broken some glass. Below right: No. 602's twin-beam headlight housing awaits its next illumination.

Savage Services No. 7100, a former CN SW1200RSm, is completely rebuilt inside the Pend Oreille Valley's Usk, Wash., facility. The switcher was completed and repainted in March 2018.

Western Rail Mechanic Brett Schultz checks the crankshaft on Savage Services SW1200RSm No. 7100 inside the shared facility.

and the type of locomotive needed, it is determined what parts a locomotive will need, when it will be delivered to the customer, and whether the work will be done in Airway Heights or Usk.

"What we are is a Progress Rail or National Rail Equipment on a small scale," Havens says. "They get contracts to rebuild 15 locomotives; we get contracts to rebuild two. We want the smaller 'mom-and-pop' railroads' business. Western Rail has performed and will continue to do work for the Class Is, but it is not our core business."

For Western Rail, rebuilding a locomotive could mean an engine swap, a turbo to roots-blown conversion, or a complete rebuild including Dash-3 electronics and a fresh paint job. "What we're known for is converting GP35s to GP38-3s, from a turbo to roots-blown engine with the newest electronics," Havens says. Western Rail is also known for completing the fabrication and installation of short hoods and new cab windows on original high-hood SD9 locomotives. Recently Western Rail in Airway Heights completed its first "in-house" overhaul of an EMD 16-645 engine. The work was completed and successfully dynamometer tested in August 2018, and was delivered to a dredge boat operator. Haven says this new phase of engine rebuilds will keep busy the mechanics in Airway Heights during their "spare down time," fulfilling a need in the industry for rebuilt engine blocks.

Western Rail is also developing a Tier 3 emissions-qualified locomotive. In summer 2018, Western Rail entered a partnership with Cummins, which will supply the genset (diesel engine and electric generator) for the rebuilds. Western Rail will be using GP35 No. 2000 for the core locomotive, and will incorporate a TMV Control system (a modern locomotive control system that incorporates features such as wheel slip, cooling fan, engine, air compressor, and generator controls) to interface between the Cummins genset and the locomotive itself. "We plan to reuse as much of the original EMD parts and design as possible, making it an easier transition for the mechanical personnel to work on them," says Rowe. Western Rail hopes to have the locomotive ready for testing in summer 2019. It will serve as a test bed for future Tier 4 locomotives.

"Our goal is to make an easy single-engine repower package for SW- through SD-type locomotives," Rowe says.

Western Rail has a parts supply that would be the envy of many railroads, a fleet of locomotives ready at a moment's notice, and is capable of bringing its old first- and second-generation motive power into fuel-efficient, state-of-the-art locomotives that meet modern emission standards. While it may not have a marquee name, 30,000-square-foot shop, or hundreds of employees, Western Rail is a go-to shop and supplier for railroads big and small. I

390

650

602

311

3043

Western Rail locomotive roster

Current as of October 2018. Some locomotives may not be shown or may have left the property

Number	Builder	Model	Original railroad	Built	Notes
50	EMD	SD40T-2	Denver & Rio Grande Western	3/80	
51	EMD	SD40T-2	Southern Pacific	1/79	
102	EMD	SW9	Chicago, Rock Island & Pacific	3/38	1
102	EMD	SW14	Illinois Central	6/51	
159	EMD	SD9	Duluth, Missabe & Iron Range	4/59	
311	GE	65-tonner	U.S. Army	3/43	2
315	EMD	F40PHR	Amtrak	8/79	
376	EMD	F40PHR	Amtrak	6/81	
390	EMD	F45	Burlington Northern	4/71	3
602	EMD	SW8	Bamberger Railroad	6/52	
602	EMD	SD9E	Southern Pacific	1/55	
650	EMD	SD-M	Duluth, Missabe & Iron Range	3/58	
651	EMD	SD-M	Duluth, Missabe & Iron Range	3/57	
803	EMD	SW8	Texas & New Orleans	3/53	
849	EMD	GP30	Union Pacific	9/62	4
999	EMD	SW9	Bellefonte Central	7/53	
1001	EMD	SW1	New York Central	6/49	
1009	EMD	GP35	Pennsylvania Railroad	5/64	
1203	EMD	GMD-1	Canadian National	4/60	
1360	EMD	MP15DC	Missouri Pacific	1/82	
1384	EMD	MP15DC	Missouri Pacific	11/82	
1407	EMD	GMD-1	Canadian National	12/59	
1415	EMD	GMD-1	Canadian National	8/58	
2000	EMD	GP35	Louisville & Nashville	5/64	
2001	EMD	GP35	Gulf, Mobile & Ohio	4/64	
2001	EMD	GP38AC	Illinois Central	2/70	5
2002	EMD	GP38AC	Illinois Central	2/70	5
2250	EMD	GP35	St. Louis Southwestern (Cotton Belt)	12/64	
2500	EMD	GP35	Southern Railway	2/65	
2508	EMD	GP30	Denver & Rio Grande Western	4/62	
3006	EMD	GP30	Reading	4/62	
3043	EMD	GP20u	Atchison, Topeka & Santa Fe	10/61	
3043	EMD	SW1000	New Orleans Public Belt	7/71	
3108	EMD	GP40	Chesapeake & Ohio	7/71	
3510	EMD	GP35	Norfolk & Western	11/63	
3514	EMD	GP35	Pennsylvania Railroad	5/64	
4201	GE	B23-7	Conrail	4/78	
4202	GE	B23-7	Conrail	4/78	
4404	EMD	SD9E	Southern Pacific	4/55	
4508	EMD	GP35	Southern Railway	2/65	
5057	GE	U25B	Milwaukee Road	8/65	6
5954	GE	B40-8	CSX Transportation	4/88	
6526	EMD	GP35	Southern Pacific	12/63	
6756	EMD	GP40	Seaboard Coast Line	5/70	
7216	EMD	GP9RM	Canadian National	12/57	
8305	EMD	GP10	Illinois Central	1/56	
8319	EMD	GP9R	Southern Pacific	2/55	
9161	GE	C40-8	Union Pacific	2/88	
9968	EMD	GP40	New York Central	12/65	

Notes: Some may be rebuilt and carry different model designations. **1** Rebuilt from EMC SW in 1959. **2** Built for Sioux Ordnance Depot, Panhandle, Neb. **3** Stored for private owner. **4** Previously owned by Feather River Rail Society, Portola, Calif. **5** Rebuilt by Western Rail to GP38-3 standards. **6** Stored awaiting cosmetic restoration for the South Cle Elum Rail Yard National Historic District.

5954

102

3006

1415

315

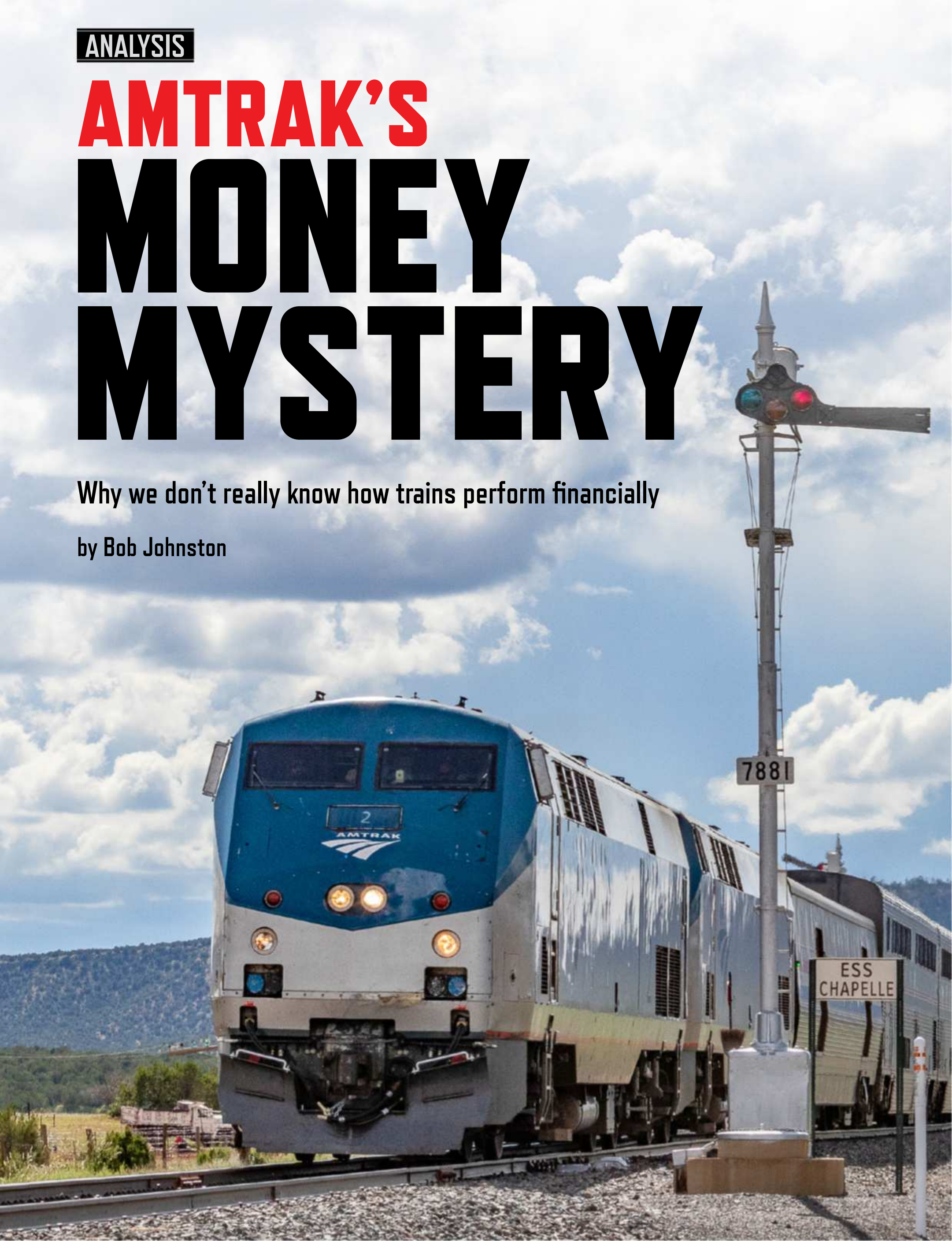
SEE A WESTERN RAIL ROSTER GALLERY AND FULL LOCOMOTIVE HISTORIES AT TRAINSMAG.COM

ANALYSIS

AMTRAK'S MONEY MYSTERY

Why we don't really know how trains perform financially

by Bob Johnston



When the *Southwest Chief* rumbles across New Mexico's Raton Pass, with sleeping-car passengers paying as much as $1,058 to ride in a roomette, what is the train's revenue-versus-cost effect on Amtrak's bottom line?

According to the "route level results" of the fiscal 2017 performance report, the Chicago-Los Angeles train generated $49.9 million in revenue but racked up $104 million of so-called "operating" expenses.

So the train "lost" more than $54 million? Really?

The expense burden has become Amtrak's justification for systemwide cost cutting. The company estimates those expenses at more than $1 billion for all long-distance trains, and $793.6 million for Northeast Corridor *Acela Express* and *Regional* trains running over multitrack, electrified infrastructure maintained to 125-to-160-mph standards.

The quest to stem the sources of red ink has been blessed by Amtrak's board of directors and orchestrated by CEO Richard Anderson and Executive Vice President and Chief Commercial Officer Stephen Gardner. It has led to sharply reduced food service on the *Lake Shore Limited*, *Capitol Limited*, and *Silver Star*; curtailed excursions and carriage of private cars; eliminated revenue-growth initiatives, other than ticketing penalty fees and periodic internet-based fare sales; and threatened the *Chief*'s future. Company officials told Kansas, Colorado, and New Mexico stakeholders in August that maintaining the *Chief* route will require $254.7 million over the next 10 years — on top of those annual losses.

Throughout Amtrak, short- and long-term management bonus incentives are tied to slashing expenses. This fails to take into account potential revenue lost from such cuts, and reduces passenger options. And cost cutting through 2017 management buyouts eliminated field personnel and resulted in a loss of institutional knowledge — perhaps the biggest such loss in the company's 47-year history — that has permanently diminished U.S. passenger-rail expertise.

As Trains was preparing this report, the Rail Passengers Association issued a white paper titled, "Amtrak's Route Accounting: Fatally Flawed, Misleading, and Wrong." On the following pages we highlight some of its findings — such as a snow-removal charge for a station in Florida. We also present examples we uncovered that attempt to shine a light on a bookkeeping system that distorts a nationwide transportation mission, a mission thousands of current and former employees fought to maintain. But be warned: exactly how Amtrak attributes expenses continues to be shrouded in mystery.

Starvation Peak forms the backdrop for the eastbound *Southwest Chief* at East Chapelle, N.M., on Aug. 25, 2018. By Amtrak accounting, the train loses $54 million. David Styffe

Former CEO Wick Moorman says long-distance trains (like the *Sunset Limited*, at Houston's Buffalo Bayou) lose about $500 million once overhead is allocated. Mark Griffiths

AMTRAK PERFORMANCE TRACKING

Following a Chicago luncheon on May 25, 2017, former Amtrak President and CEO Wick Moorman told TRAINS that long-distance trains "break even on direct costs." But when Amtrak allocates overhead using a formula developed by the Volpe National Transportation Systems Center, he said, "based on rational types of things like passenger-miles and train starts, [they] end up with about a $500 million loss." State-supported trains, he added, lose about $90 million on a fully allocated cost basis.

Moorman was referring to the "Amtrak Performance Tracking" methodology. It was developed at the request of Congress in 2005 to definitively categorize the company's expenses, according to how and where they are incurred. The Volpe Center, an arm of the U.S. Department of Transportation, was chosen to construct clear assignments of revenues and costs to replace Amtrak's previous system. That system failed to provide "reliable cost accounting information essential to making prudent business decisions," according to a 2013 U.S. DOT Inspector General's report.

The *Downeaster,* shown here at Freeport, Maine, saw its equipment charges double when Amtrak updated how it assigned costs to state-supported trains. Its operating agency questioned some charges, such as items pertaining to unrelated activities in Chicago. Two photos, Bob Johnston

ASSIGN OR ALLOCATE?

Amtrak flirted with bankruptcy earlier in the 2000s. In part, this was because in striving to achieve a "glide path to self-sufficiency," as then-President George Warrington promised, its reporting systems lost track of expenses and the money coming in to pay them. In theory, choosing an independent entity like Volpe to devise an accounting system would help management keep the company solvent. It would also make a concerted effort to assign costs to the revenue-producing entities that incurred them. What happened, however, is that Volpe enlisted Amtrak's help. The multivolume blueprint of the system's methodology uses the term "professional judgment" to describe how rules were jointly developed by Volpe and Amtrak financial analysts to distribute company overhead expense. (TRAINS obtained a copy, in part through a Freedom of Information Act request.)

In that 2013 document, the Department of Transportation Inspector General determined that Amtrak Performance Tracking directly assigns 90 percent of its revenue to a given route, but "Amtrak assigns only 20 percent of its costs and allocates the rest." A 2016 report by the Government Accountability Office states, "Indirectly allocating a high percentage of costs, rather than directly assigning costs, increases the risk that revenues and expenses for a cost center or line of business will be misstated."

States had already begun to protest some decisions. Section 209 of 2008's Passenger Rail Investment and Improvement Act required operating authorities of short-distance trains to pick up a greater

percentage of operating costs — as determined by Amtrak. [See "Passenger Train Game Changer," October 2013.] That's when David Kutrosky, managing director of California's Capitol Corridor Joint Powers Authority, discovered Amtrak was using a formula to allocate the cost of diesel fuel for his trains' locomotives rather than measuring it directly. In Maine, Northern New England Passenger Rail Authority Executive Director Patricia Quinn saw equipment charges double, and questioned line items for unrelated Chicago activities.

"We're not getting credit for efficiencies," she told TRAINS in a September 2014 interview, adding, "We've committed to paying the costs of operating our services. The question remains how much of that overhead are we going to take responsibility for when we have no input." She had just spent two days in Washington, D.C., "with mediation trying to figure out how we are going to get to the point where the states are assuming an appropriate amount of cost."

BEHIND THE CURTAIN

Rather than collecting specific data that would clearly show what costs would disappear if, say, the *Southwest Chief* were eliminated — "avoidable costs," in the parlance of Congress' 2005 directive — allocation protocols permit Amtrak to use measurements it already has or believes it can estimate. The resulting process has 60,000 allocation rules, with 1,600 "responsibility centers" grouped into nine similar "cost families" (for example, transportation operations), which are divided into 36 "subfamilies" (onboard service), and finally 44 "subcategories" (linen).

"Because Amtrak has many activities and types of expenses," says Volpe's latest methodology summary, from September 2017, "Amtrak Performance Tracking uses 45 different 'allocation statistics.'" These include:

- Passenger-miles
- Boarding or deboarding for individual stations and by trip length
- Number of first-class passengers
- Frequency of train trips
- Estimated diesel power and electric traction "usage factors"
- Talk time at reservation centers
- Labor hours
- Ticket revenue

Identifying these metrics provides a roadmap of how otherwise amalgamated costs, including over $1 billion in general and administrative expenses, are to be assigned to each train or operation.

Volpe describes another rough estimation, "asset usage allocation," as a "synthetic" substitute for interest and depreciation. It is calculated by type of asset, such as a Viewliner or locomotive, and the amount shows up as an expense charged against the route to which it is assigned. The expense is irrespective of costs incurred for overhauls and maintenance of fully depreciated rolling stock. The Volpe report claims this "provides a more representative measure of the resource cost of all capital equipment and property, regardless of how financed, currently used by Amtrak to produce various services and outputs." Alas, it's not a "real" expense, but an accounting device.

A rail gang works on the Northeast Corridor at Madison, Conn., in 2009. The corridor's track maintenance is treated as a capital expense, not charged against *Acela* and *Northeast Regional* trains. It's an operating expense for state-supported and long-distance trains. Robert A. LaMay

AMTRAK PERFORMANCE TRACKING COST TYPES FOR THE SOUTHWEST CHIEF

Direct (avoidable)	Apportioned	Synthetic	Fully allocated
Would go away if the train were discontinued	Would shift to other route served	Determined by "use" metric (depreciation substitute)	Calculated by "total activity" such as revenue other costs
Example:	**Example:**	**Example:**	**Example:**
• Crew base in Albuquerque, N.M. • Ticket agent in Flagstaff, Ariz.	• Kansas City, Mo., ticket agent • Redcap in Los Angeles	• Superliner replacement • Locomotive replacement	• CEO's bonus • Corporate engineering staff salaries

MISCALCULATION AND MYSTERY

Not covered by Amtrak Performance Tracking are Northeast Corridor track maintenance costs. Amtrak treats these as a capital expenditure rather than showing them as part of operating expenses. The Rail Passengers Association white paper uncovered the fact that in fiscal 2017, state-supported routes were charged $5.1 million and long-distance trains $5.6 million for track maintenance. Yet, because of this accounting treatment, *Acela Express* and *Northeast Regionals* chalk up less than $90,000 in such expenses. This, of course, aids the claim that those trains are profitable "above the rail."

Other questionable allocations or indefensible errors noted in the Passenger Association report include:

- Miami station expense included a portion for snow removal.
- A total of $3 million in electric-traction maintenance costs were assigned to non-Northeast Corridor routes.
- Charges ranged from $400,000 to $900,000 for moving different long-

Longview, Texas, agents Pat Calton (left) and Doug Nies retrieve baggage from the *Texas Eagle* in 2012. At stations served by multiple trains, costs of baggage handling and redcaps are charged only against long-distance trains, even though those employees serve passengers on all trains.

DAVID GUNN: THE CASE FOR AVOIDABLE COSTS

WHEN IT COMES TO AMTRAK'S APPROACH to accounting, David Gunn doesn't mince words.

"The debate about allocating cost in railroading is a foolish argument!" the former Amtrak president and CEO says at his retirement home in Nova Scotia. "Amtrak isn't profitable. You have to get into subsidizing passenger trains the way you do roads and airlines."

Gunn contends any attempt to grow or contract any element of Amtrak's route structure must trace the costs and revenue generated by that service. "Can you imagine what happens to revenue if trains are cut? Instead of allocation, I would start with labor costs; they are the bulk of a train's budget and you should be able to trace (the effects) back to corporate, where there would be little saving, and what jobs are going to go. That begins to tell you what you are going to save on the cost side, and of course you are going to lose revenue."

Former Amtrak CEO David Gunn

Hired in 2002 when Amtrak teetered on the brink of bankruptcy, Gunn knew from his previous rail experience that establishing a functional organization chart — and filling it with knowledgeable railroaders — is key to running a safe and efficient company. A principal concern now is the loss of talent in the management buyout program that occurred under his successors.

"Amtrak has been a principal brain pool of running passenger trains: people who know high speed, signal systems, and maintaining the track. That's being destroyed — and there's not going to be any Amtrak left." — *Bob Johnston*

distance trains from New York's Penn Station to Sunnyside Yard in Queens.

• Yard and equipment charges for overnight servicing at Chicago ranged from $300,000 for the *Texas Eagle* to $1.8 million for the *California Zephyr.*

• All redcap labor and baggage handling costs are allocated to long-distance trains, according to trip length, even though wheelchair service and baggage handling are provided to all trains, especially at New York and Chicago.

• Connection revenue is not tracked, so if one train is discontinued, the company can't determine the resulting negative monetary impact on other services.

The Miami error was caught by the station manager there and revealed in the Government Accountability Office's 2016 report, and state operating authorities continue to comb invoices for questionable allocations. But exactly what expenses comprise that hefty long-distance tab remain a mystery. In 2017, Amtrak sharply curtailed the amount of information publicly disclosed in its "Monthly Performance Report" (from 66 pages in August to 7 pages in September).

TRAINS asked Amtrak to itemize the costs allocated to the *Southwest Chief* — over and above running the train, paying the crew, and paying BNSF on-time performance incentives — that cause it to "lose" almost $55 million. In response, the company offered no numbers, only this statement:

"National assets are the nation's core rail assets shared among Amtrak services, including systems for reservations, security, training, training centers, and other assets associated with Amtrak's national transportation system. Corporate services are defined to include company-wide functions such as legal, finance, government affairs, human resources, information technology, among others. These resources play a vital role in ensuring that Amtrak can develop and consistently provide competitive products and services, as well as delivering investments that will sustain, improve, and grow our business."

The eastbound *Southwest Chief* (center) overtakes a BNSF freight and meets the westbound *Chief* at Hinsdale, Ill., in March 2018. Amtrak declined to provide numbers on overhead charged against the *Chief*. TRAINS: David Lassen

So whatever amount the company decides to spend, the *Chief* and other routes are "charged" a portion based on performance tracking formulas, not whether the resources were deployed to actually benefit the services.

INCENTIVIZING CUTS

Controlling costs is important to every organization, and Amtrak has periodically reshuffled personnel and organization charts to make the company more efficient since its inception in 1971. But several years ago, the company began paying bonuses to managers who meet financial goals, largely based on trimming expenses.

"The new performance management process and Short-Term Incentive Plan reward employees based on their performance as it relates to our strategic plan," former Executive Vice President and Chief Human Capital Officer Barry Melnkovic told the in-house Amtrak Ink publication in 2015. He also said, "If we aren't driving alignment to our strategy, improving efficiency, reducing waste, fostering innovation, and tapping into our employees' discretionary effort, then there is no need for the [Human Capital] function."

An employee who requests anonymity tells TRAINS, "If you meet the goals that the board gives you, in management you get a bonus based on the percentage your department makes in achieving the goal." The result, the person says, is that managers are working for their bonuses, "with marching orders to cut, cut, cut."

Such bonuses may reach to the top of management. Former Amtrak CEO Moorman and current CEO Anderson both publicly stated, and Amtrak documents confirm, that they came out of retirement to work without a salary. In April, TRAINS filed a Freedom of Information Act request asking for details of their total compensation, including bonuses. Amtrak documents received in mid-October revealed only that both men were eligible to receive up to $500,000 in annual bonuses, based on goals specified in written memoranda they agreed to with the Amtrak board of directors. TRAINS asked to see the bonus criteria as part of its request, but Amtrak had not responded by press time. Details from any subsequent Amtrak response will be reported on TRAINS "News Wire."

CORRUPTING THE MISSION

The emphasis on belt tightening is a response to the Amtrak Performance Tracking methodology, which in turn governs how much states pay to tap Amtrak resources to run trains. But recent developments have prompted an intervention by lawmakers from Kansas, Colorado, and New Mexico, who drafted funding

***Acela Express* trains use more power and cause more electrical-system wear but are charged only marginally higher overhead than other corridor trains.** Three photos, Bob Johnston

legislation requiring Amtrak to keep the *Southwest Chief* running. They became involved because "America's Railroad" was created to sustain and grow surface-transportation mobility options nationwide.

Amtrak's accounting system and management priorities mitigate against that. If the *Chief* is discontinued, the non-direct corporate overhead assigned to it will be redistributed to other services, increasing the costs for state-operated trains and forcing more expense on long-distance ledgers.

The performance-tracking system also plays into the continuing challenges previous Amtrak managements, boards, and Department of Transportation overseers have failed to address. The biggest is a long-overdue acquisition of new cars and locomotives. Performance Tracking's inherent biases make the investment case hard to prove, with revenue and customer-usefulness benefits buried beneath massive overhead charges that would flow elsewhere as services are discontinued.

Misplaced priorities also affect growth of Amtrak's existing business. Take Miami, where last May Brightline launched service from a new downtown complex. A centrally located station to be shared with commuter service Tri-Rail at Miami International Airport has languished without Amtrak trains since it opened in 2015. The *Silver Star* and *Silver Meteor* still call at a facility miles from the center city, bereft of convenient rental-car or public-transportation connections. It is, however, near Amtrak's Hialeah maintenance facility. Moving to the new station would clearly produce a leap in customer convenience and revenue, but would introduce higher crew costs for a backup move from the existing yard. And, with more boardings, the station's corporate-allocated share of system costs would rise. Under current directives, which provide no incentive for revenue gains (because the company's regional marketing positions have been eliminated), what Amtrak manager would advocate for the venue change?

The bottom line: management's no-growth priorities are a reality, but Amtrak Performance Tracking is the culprit facilitating them. T

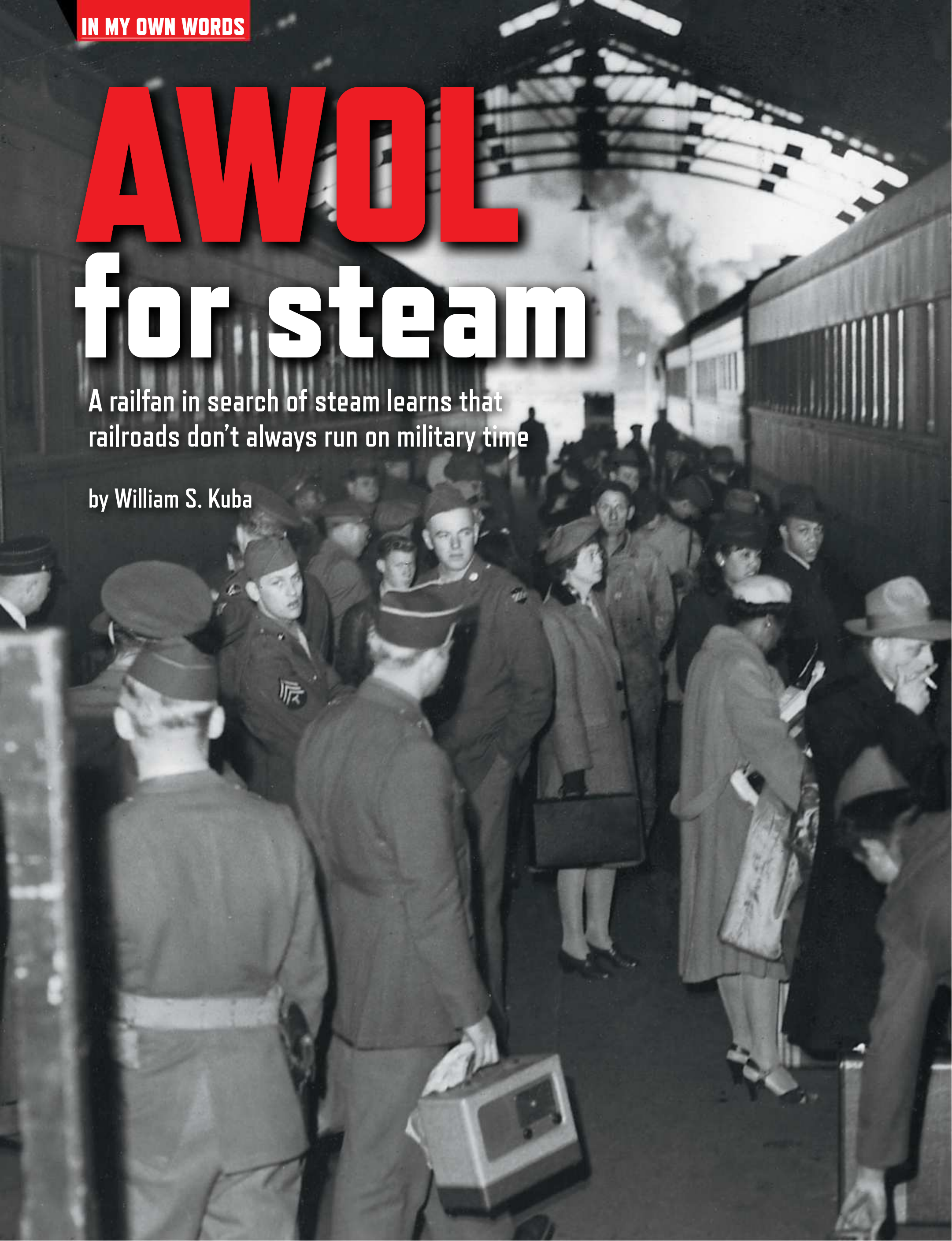
The track in the foreground at the Miami International Airport station is for Amtrak trains. It has never been used, in part because Amtrak accounting works against moving trains from their current, remote Miami terminal.

IN MY OWN WORDS

AWOL for steam

A railfan in search of steam learns that railroads don't always run on military time

by William S. Kuba



Pennsylvania 2-10-4 No. 6456 is similar to the locomotive that pulled No. 90 into Indianapolis. It was an uncommon locomotive for a passenger train, even when steam ruled the rails. TRAINS collection

Military personnel in uniform crowd the platform at Richmond, Ind., giving the same sense of urgency as the author's trip at Indianapolis. Pennsylvania Railroad

AFTER THE KOREAN WAR, the U.S. Army developed a plan to strengthen its Army Reserve units. The plan had enlistees go through six months of basic and advanced training, then return to civilian life with assignment to a reserve unit. That intersection between military and civilian life can lead to great anxiety.

Fresh out of high school, I enlisted in January 1956. After basic training I was assigned to Supply Clerk School, at Fort Knox, Ky., starting April 22, 1956.

By 1956, railfans wanting to photograph steam locomotives were having more and more difficulty. We had to travel farther and the pickings were slimmer. In this case, the Army provided the "travel" by placing me on Illinois Central's Kentucky Division. While the rest of the IC was proceeding to dieselization, the Kentucky Division was nearly all steam. Photographing at Fort Knox and Louisville regularly, and with weekend passes to Central City, Princeton, and Paducah, Ky., it wasn't long before I had caught up with most of the 100-plus assigned steamers.

With the July 4 weekend approaching, I felt a need to expand my territory. With a two-day pass in hand I was headed for a different "Central" — the New York Central at Indianapolis. After photographing various NYC 4-8-2s at its downtown facility and some Pennsylvania Railroad steam at its large east-side yard, it was time to head back to camp.

Transportation back to Louisville was to be Pennsylvania train No. 90, scheduled to leave Indianapolis at 12:40 p.m. arriving in Louisville at 2:50 p.m. with plenty of time to make bus connections back to Fort Knox. No. 90 was the every-third-day *South Wind*, a joint Pennsylvania-Louisville & Nashville train.

All my life I've had an aversion to being late, so I was at the Indianapolis Union Station well before train time. I found that No. 90 was to arrive from Chicago 1 hour late. No problem, it just gave me time for a more leisurely lunch.

As the afternoon advanced the 2:40 became 3:40. Diving into my timetables I was faced with only one, awful conclusion.

I was AWOL! — "Absent With Out Leave."

In civilian life, consequences for being late can vary widely, and in fact some people actually find being late to be fashionable. But the military takes a much different view, and it is drummed into recruits constantly what could happen if you were just "a little" late. And my "little" would amount to hours!

I had no idea if anyone could help me, and just as things appeared at their worst, a little light came on. Literally.

It was at a booth directly across the concourse from where I was sitting. The sign read "Traveler's Aid." I told myself, "There's no one in this building that needs aid more than I do." The wonderful woman there couldn't get me back any faster, but she did advise me to get a statement from the conductor, which would satisfy the military. I gathered that I wasn't the first AWOL soldier on her watch.

Some time before 5 p.m., the train was called, and I was first in line to board. This would not get me to Louisville any faster, but it did get me on the station platform in time to witness an amazing sight. Train No. 90 arrived behind a steam locomotive.

In 1956, the only Pennsylvania steam passenger engines left were K4 4-6-2s in New Jersey. Yet, here was 2-10-4 No. 6414 on a passenger train. One month to the day later, I caught up with the 6414 in the rain and fog of the Columbus, Ohio, engine terminal.

The railroad replaced No. 6414 at Indianapolis with a couple of Geeps, and the trip to Louisville was otherwise unremarkable. I did get my statement from the conductor to present to my commanding officer, and I was full of questions as to the delay, but it was obvious the conductor was not having one of his better days.

Train No. 90 only got me to Louisville. I had to run from the railroad station to the bus depot and plead with the bus driver to wait while I got my ticket for the last bus that evening.

Consequences? There were none! The note from the conductor apparently took care of my problem. My commanding officer seemed quite amused by the incident, much to my relief.

Everyone in my platoon was aware of my hobby, and they thought it couldn't have happened to a more deserving soldier, and I took plenty of ribbing through the next month. T

WILLIAM S. KUBA *died Nov. 23, 2012. This is his first* TRAINS *byline.*

Skookum lives!

Rare 2-4-4-2 steams again after 63 years; next: TRAINS event, then California

▲ **Logging luminaries: *Skookum*, McCloud No. 25, and Polson No. 2 pose for photos at Garibaldi, Ore., in October.** Martin E. Hansen

The proud restoration crew poses under the banner given to the project to salute the Baldwin-built logging locomotive made in 1909.

FIFTEEN YEARS is a long time in many circles. Fifteen years to restore a locomotive left for dead in a creek in remote Washington state some 40 years earlier, however, doesn't seem bad.

Such is the happy ending — finally — for the famous 1909 2-4-4-2 *Skookum*, whose lifetime of rejection, acceptance, rejection, and redemption makes it unique among preserved North American steam power.

In September, crews at the Oregon Coast Scenic Railroad steamed the legendary Pacific Northwest logger for the first time in 63 years. Martin E. Hansen profiled the locomotive in TRAINS' October 2018 issue.

The engine posed for images — and featured an authentic banner draped across its boiler that had hung on new locomotives shipped from Baldwin in the early 20th century — during a Pete Lerro photo charter in October, but running gear issues prevented the engine from participating. Crews traced the problem to the right-side low-pressure valve chest.

Wearing a dark green boiler jacket, *Skookum* shows off at Oregon Coast Scenic in Garibaldi, Ore., in October. Two photos, Mason Cooper

Otherwise, the locomotive, resplendent in a new green boiler jacket, steamed well, and its appliances functioned normally. The engine participated in a three-engine lineup with operating Polson Logging 2-8-2 No. 2 and McCloud 2-6-2 No. 25.

The 2-4-4-2 had begun life with rejection by a Tennessee logging railroad, its resale in the Pacific Northwest, and a long career there. After a 1955 derailment that left it wrecked in a creek, enthusiasts acquired, dismantled, moved, and attempted restorations over the years, but until the engine found its way into preservationist Chris Baldo's hands, its future was never certain.

Now it is.

After a TRAINS-sponsored photo charter next March, the engine will be relocated to California. The saga of the logging lokie named *Skookum* will continue, the tale of rejection and redemption now part of its storied history that today seems to be more about a second shot at life. — *Jim Wrinn*

Hot spot: Klamath Falls, Ore.

Southern Oregon city is a hub for Union Pacific, BNSF operations

▲ North of Klamath Falls, two locomotives lead a southbound Union Pacific freight along Upper Klamath Lake, just north of Algoma siding on July 14, 2016.
Two photos, Robert R. Harmen

UP's north local is almost home as it arrives at Wocus, Ore., on Aug. 31, 2016.

LOCATION: Once a major hub of logging railroads in southern Oregon, Klamath Falls remains a central point for two railroads, serving as a division point and crew-change location. Today, Klamath Falls is served by the west's two major railroads, BNSF Railway (formerly Great Northern/Burlington Northern) and Union Pacific (formerly Southern Pacific), over which Amtrak operates the *Coast Starlight*, trains 11 and 14. If one includes a split of the north line at Chemult, 74 miles away, five routes radiate from Klamath Falls. The city is located near the southern border of Oregon on U.S. Route 97. Highways depart Klamath Falls in most directions, including routes to Medford, Ore.; Lakeview, Ore.; and Alturas, Calif.

TRAIN-WATCHING: Klamath Falls lies on what Union Pacific calls its I-5 corridor, which handles all freight traffic between the Pacific Northwest and California. A wide variety of traffic includes from double-stacked containers to unit trains of grain and crude oil. Crews change at the UP depot, just a hundred yards or so south of the Amtrak depot, although some will go by van to trains in the yard. Southbound trains may set out extra power at the south end of the yard, and northbound trains often reposition their rear distributed power. Those engines are usually combined with the head-end power, along with any excess units needing movement back to Eugene, Ore. The Klamath Falls yard has three tracks for holding long trains while switching is performed. Local trains operating out of the yard go north as far as Crescent Lake siding, and run on Tuesdays, Thursdays, and sometimes Sundays to Perez siding on the former Modoc line. Perez, 50 miles southeast, is the interchange with the Goose Lake Railway, which takes five days to make the round trip from Lakeview to Perez.

BNSF trains run on the joint trackage from Chemult to Bieber Line Junction, at the southern end of Klamath Falls. BNSF movements call the UP dispatcher to get clearance into or out of its own yard, located just beyond where the lines separate. Trains may dwell here waiting for a crew. Most traffic is general freight, with some unit grain and crude-oil trains. Use of distributed power is common. BNSF has a local that runs south to Westwood, Calif., on Monday and Thursday, coming back the next day, plus a short turn to Bieber on Wednesday. Power is often a pair of SD60s.

Another aspect of BNSF operations is the White line, which crosses Lake Ewauna to reach two sawmills and an LPG dealer. The crew leaves the yard in late afternoon, crossing the UP line and an antique drawbridge to a small yard. The LPG dealer is usually switched after the train crosses the lake, using a shoving platform for the back-up trip north to the dealer. After switching in the small yard, it heads to the

Weyerhauser sawmill at the far end of the line. The nearer Columbia Forest Products mill is switched on the return trip, usually after dark.

Coast Starlight No. 14 comes north in the morning; southbound No. 11 usually passes through after dark. Scheduled departure north is 8:17 a.m.; the southbound is 10 p.m. Often, UP and BNSF trains wait to follow the *Starlight* out of town.

RADIO FREQUENCIES: Union Pacific, 160.785; BNSF, 161.100.

FOR YOUR FAMILY: The area features museums, antique shops, and Upper Klamath Lake activities. There are several resorts to the west. Crater Lake National Park is 50 miles north and Mount Shasta is 80 miles south. The Lava Beds National Monument, famous from the 1872-73 Modoc Indian War, is about 40 miles southeast. The Train Mountain Railroad Museum in Chiloquin, Ore., is 27 miles north. See www.trainmountain.org. Hiking and biking on the 109-mile OC&E Trail, built on the former Oregon, California & Eastern right-of-way, begins just east of the Union Pacific yard.

— *Robert R. Harmen*

MORE ON MRVP

A slow-speed chase of the Toledo Hauler

Portland & Western's Toledo Hauler is about to crest the grade at Summit, Ore., on March 16, 2016. Tom Danneman

WESTERN OREGON is home to rugged coastal mountain terrain and rain-soaked forests. It's also where railfan videographer Charlie Conway and TRAINS art director Tom Danneman recently headed to capture the action along the Portland & Western Railroad. From the unique perspectives captured for MRVP's **Charlie's Trackside Postcards** (MRVideoPlus.com/CTPTH), you can ride along as the two "chase" the slow-rolling Toledo Hauler as it twists and turns through the tall timber. But even if a snail's-pace pursuit isn't your thing, there's plenty of other Oregon and regional railroad action to follow when you subscribe and then click on MRVideoPlus.com/DTA. – *Kent Johnson*

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Q What keeps today's freight railroads from using modern, high-tech steam locomotives? — *Richard W. Kruger, Independence, Mo., via Facebook*

▲ **Norfolk & Western 4-8-4 No. 611 is seen on a photo freight in Spencer, N.C., in May 2015. Although it is a "modern" steam locomotive, 611, and others like it, cannot compare to diesel-electric locomotives in overall efficiency.** Harvey W. George

A "Modern" steam locomotives — the Norfolk & Western 4-8-4 Class J No. 611, Santa Fe 4-8-4 No. 2926, and Chesapeake & Ohio 4-8-4 Greenbrier No. 614 as extant examples — are truly amazing in the genius of their mechanical design. They are powerful and reliable. However, if you've ever been around the maintenance activities on them — monthly boiler washes, annual inspections, or even the daily lubrication, fire-cleaning, and servicing — you would quickly realize how labor-intensive these locomotives are, much more so than today's diesel-electric locomotives. They also require more logistics and labor in fueling and watering, and they are far less efficient in converting fuel into drawbar horsepower. Finally, the drawbar is where one of the biggest distinctions comes into play. A modern high-adhesion A.C.-traction diesel locomotive can simply out-pull any steam locomotive (including a 4-8-8-4 Big Boy). And diesel-electrics have dynamic brakes, which have become fundamental in modern train handling. That's important because much of today's traffic mix is high-tonnage if not high-speed. The latter is what steam locomotives are better suited for, and they worked well in the day when time freights — as opposed to tonnage freights — predominated. — *Walter Rosenberger, Norfolk Southern Operations Manager Research & Tests*

Q How and why do railroads place locomotives as distributed power units? — *Paul Ziegler, Hideout, Utah*

A There are three primary

BNSF Railway SD70ACe No. 9394 powers the rear of a Canadian Pacific unit coal train through Wisconsin in February 2010. The locomotive is working as a distributed power unit. Thomas E. Hoffmann

The controller wheel on a 1950s-era Swedish electric locomotive. Chris Guss

factors railroads consider when placing locomotives into a train consist as distributed power: 1) Distance to ensure reliable radio communication; 2) the need to limiting in-train (coupler) forces; and 3) the ability of yards to build and terminate distributed power trains. Radio communications between locomotives is reliable up to about 8,500 feet. Certain locations have land-based distributed power repeater radios installed where communications have been a challenge. Midtrain DPUs are typically placed behind 50 to 75 percent of a train's total tonnage. This can vary depending on the train consist and whether the DPU is a single or multiple-unit set. Generally, railroads want the DPU pulling at least as much tonnage as it is shoving. Finally, the length of yard tracks where the distributed power train is assembled or parked can be a factor. — *Walter Rosenberger, Norfolk Southern*

Q What is the purpose of the large wheel in the center console of certain European diesel and electric locomotives? — *Howard Moody, Winnsboro, S.C.*

A The wheel is actually a throttle/brake combination traditionally called a controller, notch changer, or tap changer and was commonly found across Europe until the 1970s. Turn the controller clockwise, and it increases the power to the traction motors. Turning it counterclockwise provides braking resistance. Indicators typically found at the base of these wheels shows what setting the controller is at. Each setting increases or decreases voltage applied to a locomotive's traction motors. — *Chris Guss*

Q When and where did railfan photography begin? — *Bill Hough, Los Altos, Calif.*

A My own search for the first railfan photographer began when I read of Fred Jukes who, in 1893 at age 16, used his father's early Kodak roll-film camera to photograph the Carson & Colorado at Mound House, Nev. The availability of a working camera using roll film — first marketed by the Eastman Co. — rather than wet or dry plates, made photography available to the public. During the next 20 years, documentary photography by amateurs exploded. There were many who aimed their Kodaks at the railroad scene, and while we know of pioneers from the early days, I would argue that there was no one single person or location from which all else followed. — *Mel Patrick, railroad historian*

Q What programs are available that could show spacing between yard tracks? — *Robert E. Cronan, South Portland, Maine*

A The first, best, and one of the few free tools for checking out the layout of railroad tracks and yards is Google Maps — if you use the internet. Google stores satellite images of nearly the entire Earth on its servers and offers the images to the public. It's also relatively easy to use if you are comfortable navigating computers with a keyboard. Search the internet for Google Maps or go to maps.google.com. Then, either click a plus (+) sign to zoom in on a portion of the world you want to look at, or type a specific location into the text search bar on the left side of the screen. Google will only give a hint of an area's topography with the overhead image. If you also want precise contour lines, the U.S. Geological Survey has a new online mapping feature that is free: viewer.nationalmap.gov/advanced-viewer/ — *Steve Sweeney*

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JANUARY 19, 2019: 56th Atlanta Model Train & Railroadiana Show. Infinite Energy Center, 6400 Sugarloaf Parkway, Duluth GA 30097. 9:00am-4:00pm. Early admission available Friday PM (18th) Over 300 tables of model trains and railroad artifacts for sale. Free parking. Miller, 3106 N. Rochester St., Arlington, VA 22213, 703-536-2954. Email: rrshows@aol.com or www.gserr.com.

JANUARY 26, 2019: The 28th Annual Great Tri-State Rail Sale. La Crosse Center, 2nd & Pearl Streets, La Crosse, WI. 9:00am-3:00pm. $5.00, under 12 free. Model, Toy & Antique Trains & Memorabilia, Sale & Swap Meet. 608-781-9383.

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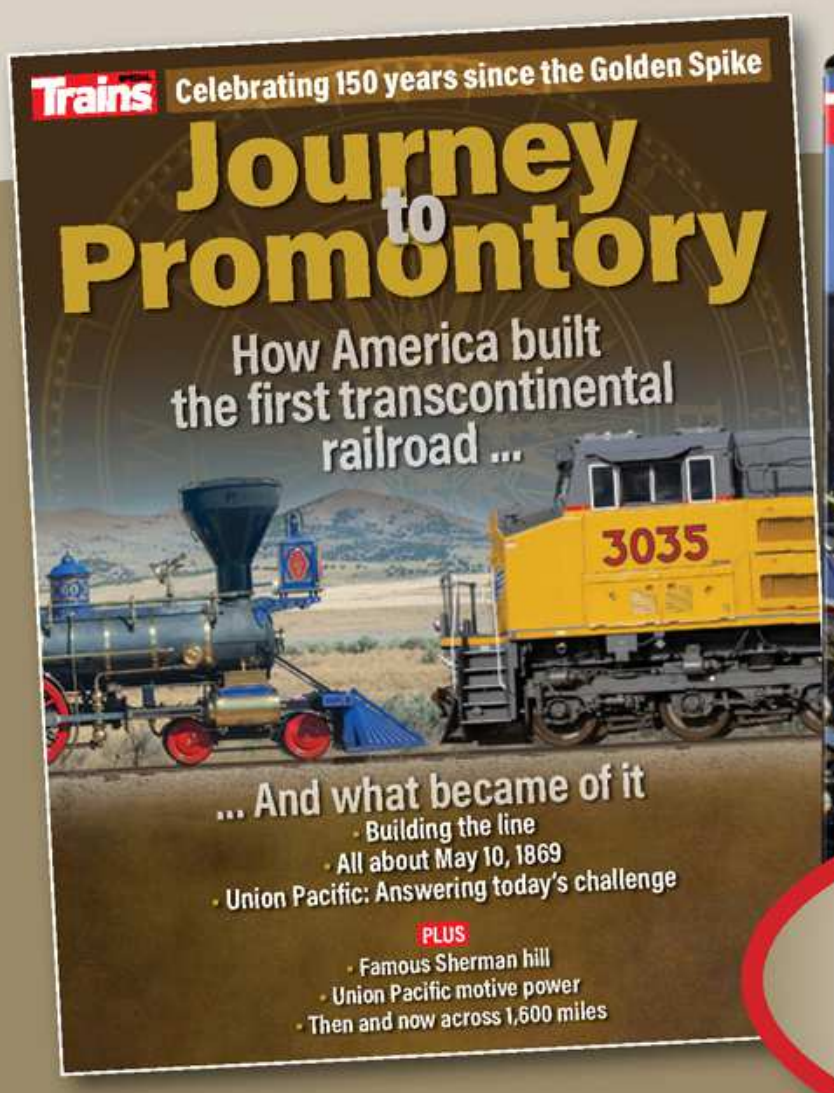

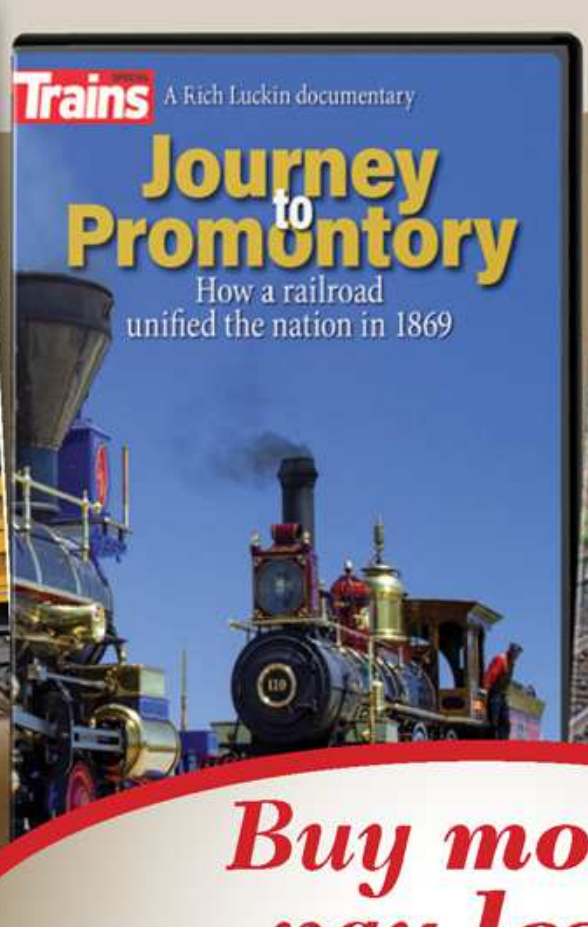

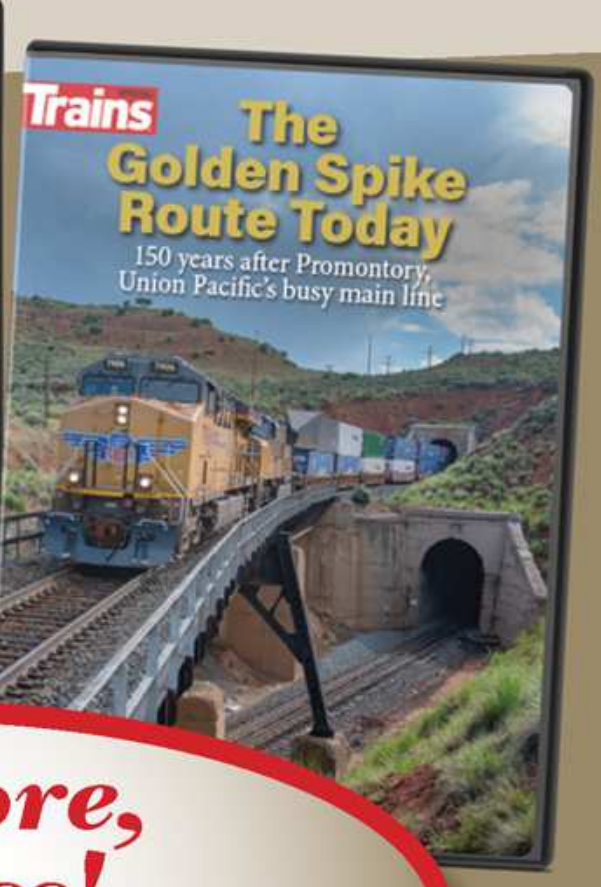

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P33414

1977: cool running

Late afternoon on Feb. 8, 1977, Canadian National Railway Work Extra 9475 Snowplow kicks up a storm east of Guelph, Ontario, as two GP40-2Ls hurtle plow No. 55397 through heavy drifting at high speed.

Three photos, Greg McDonnell

1976: enrobed in ice

Twelve days into 1976 and two days on the road, a Canadian National crew pulls into Palmerston, Ont., plowing from Owen Sound to Kincardine with a pair of ice-encrusted GP9s sandwiched between Jordan plow No. 55614 and CN wood caboose No. 78636.

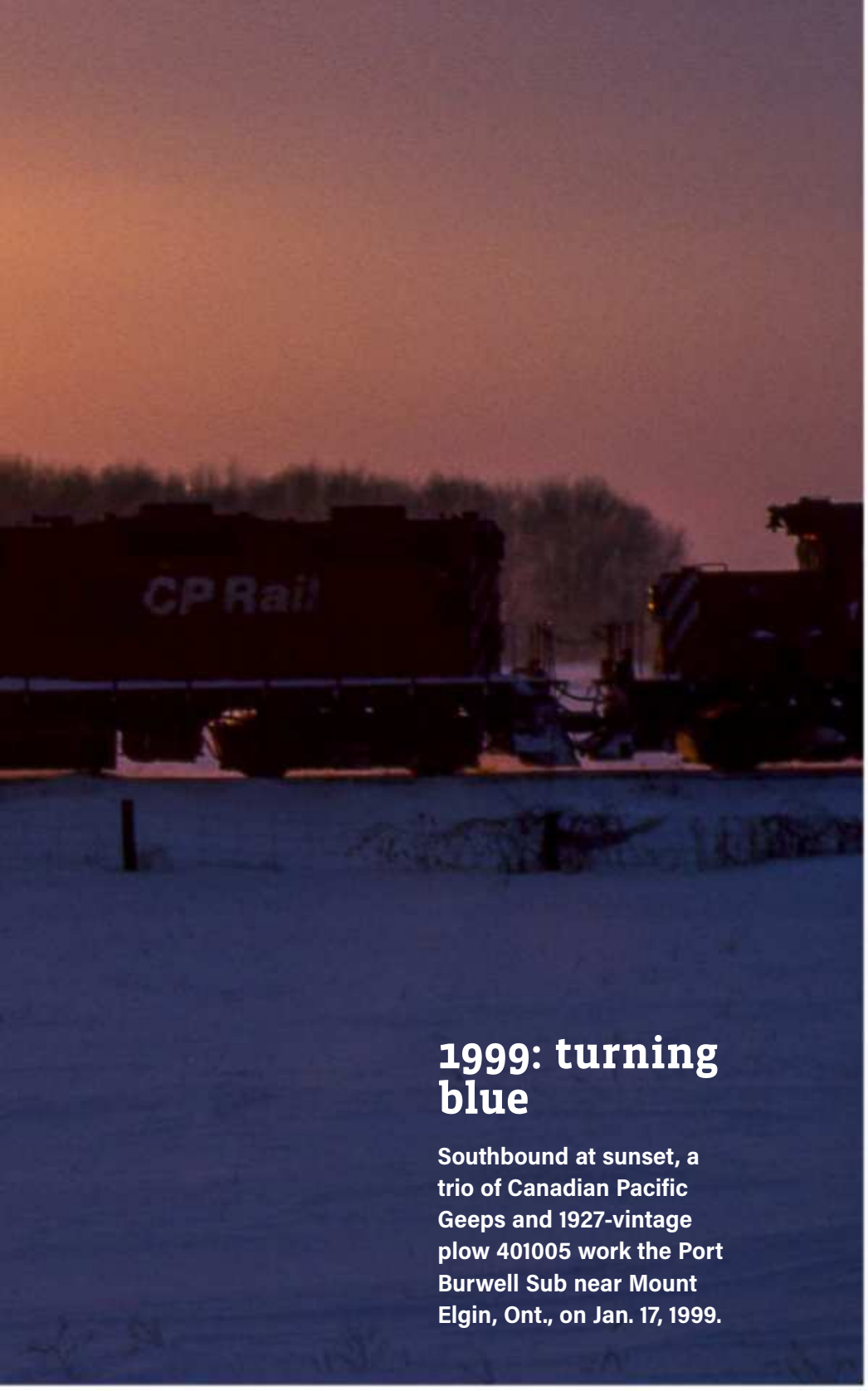
1978: stalled

The crew aboard Canadian National No. 55614 surveys the situation as Work Extra 9178 snowplow's F7, GP9, and RS18 struggle to extricate the train from a drift at mile 13 on the Forest Sub near Granton, Ont., on Feb. 1, 1978.

1988: frozen on the farm

Plowing from Stratford to Hanover, Ont., on Feb. 9, 1988, Canadian National plow No. 55370 (built by Eastern Car in 1929) and F7As 9166 and 9167 pass ancient farm implements in a frozen field on the outskirts of Milverton.

Three photos, Greg McDonnell



1999: turning blue

Southbound at sunset, a trio of Canadian Pacific Geeps and 1927-vintage plow 401005 work the Port Burwell Sub near Mount Elgin, Ont., on Jan. 17, 1999.

2004: sun and snow

Silhouetted in a splash of sun, in the midst of a lake-effect snow squall, Goderich-Exeter Railway plow No. 55408 and FP9s Nos. 1400 and 1401 amble eastward on the Goderich Sub near Mitchell, Ont., on Jan. 13, 2004.

2015: full speed ahead

Heading home after a full day of plowing Ontario Southland Railway lines from Salford to Tillsonburg and St. Thomas, Ont., Jack Hyde and Brad Jolliffe enjoy the ride as former CP plow 401005 flanges through light snow east of Woodstock on Feb. 13, 2015. Greg McDonnell

2015: running repairs

Ontario Southland crew replaces flanger blades damaged in an encounter with frost-heaved crossing planks on a farm lane east of Belmont, Ont., on Feb. 13, 2015. With spares carried for the purpose installed, they'll be back underway in short order.

Three photos, Greg McDonnell

2015: special like snowflakes

Secreted behind the shrouded business-end of Ontario Southland Railway's former Canadian Pacific plow No. 401005: a snow-packed archbar truck.

2015: better than riding shotgun in mom's car

Best seats in the house. Helper's-eye view as Ontario Southland 401005 makes a second pass through a long, deep drift south of Mount Elgin, Ont., on Feb. 13, 2015.