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THE magazine of railroading

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Intermodal war in the West

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Vol. 83 • Issue 10

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Features

ON THE COVER:
On June 30, 2017, a BNSF intermodal train running between Portland, Ore., and Alliance, Tex., rolls down Winston Hill west of Townsend, Mont. Tom Danneman

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From the Editor

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Back by popular demand is an overused phrase but it's an appropriate one for our latest special publication, *Chicago: America's Railroad Capital*.

This publication sold out on its release in 2017. Now, six years later, a new edition is available on newsstands and at kalmbachhobbystore.com.

Much can change in six years, especially in the Windy City. Senior Editor David Lassen took on the challenge of updating the publication, including the addition of an entirely new article on Metra and how the commuter rail system is adjusting to a post-pandemic world.

David accurately summed up this revised publication in his introduction, writing, "Chicago remains a place where railroading truly matters."

Subscription rate: single copy: $7.99 (U.S.). Print + digital subscription rate: U.S.: 1 year $58.95. Canadian: Add $12.00 postage. Canadian price includes GST, payable in U.S. funds. All other international: Add $22.00 postage, payable in U.S. funds, drawn on a U.S. bank.

Trains Magazine (issn 0041-0934, usps 529-850) is published monthly by Kalmbach Media Co., 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI, 53187-1612. Periodicals postage paid at Waukesha, Wis., and at additional offices. POSTMASTER: Please send address changes to *Trains*, P.O. Box 8520, Big Sandy, TX 75755. Canada Publication Mail Agreement #40010760.

Locomotive controls have continued to evolve with the passage of time, but one of the most radical changes, at least for Amtrak engineers, came with the delivery of General Electric's Genesis locomotives. Two photos, Doug Riddell

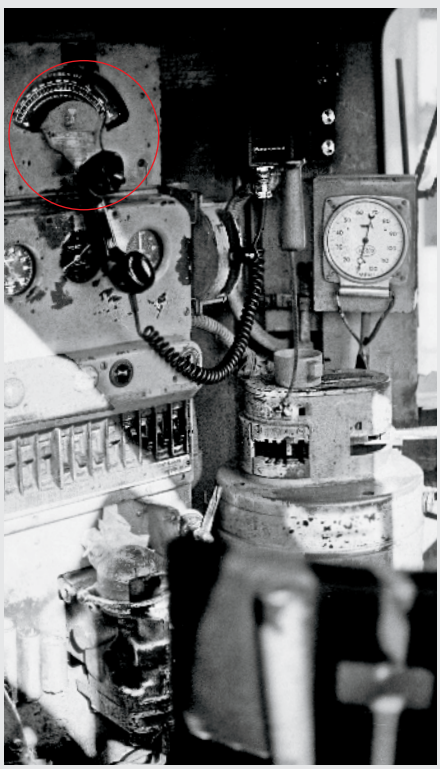
Behind-the-scenes exclusives

FROM NEWS TO COLUMNS TO FEATURES, Trains.com is a well-oiled machine stocked in content. Though it's still fairly new to some of you, this website was designed and is ready to deliver you behind-the-scenes viewpoints on railroading topics from experts. It may not be perfect, but it is evolving daily with the latest and greatest content from individuals that share your passion for trains.

The rail industry has a broad spectrum of people that aren't always in the limelight. These can be editors, writers, artists, and photographers; rail enthusiasts of all stripes; commuters and other passengers; or conductors, engineers, track workers, and others who make their living on the railroad. All these people, involved directly or indirectly with the world of railroading, have stories to tell you ... *Are you listening?*

"From the Cab" and "An Engineer's Life" are entertaining new columns written by professionals who worked with trains every day.

TRAINSLIVE is also a wonderful behind-the-scenes tool that brings you video footage regularly on Trains.com Video. Producer Kevin Gilliam, Associate Editor Bob Lettenberger, Senior Editor David Lassen, Editor Carl Swanson, and so many others, work around the clock to keep you engaged and in the loop. So come check out what's new in our "digital first" neck of the woods. You won't be disappointed. — *Nastassia Putz*



Toward the end of its life, the controls of this former Atlantic Coast Line EMD GP7 evidenced long years of day-in/day-out service. When modern appurtenances such as two-way radios were installed, innovative engineers developed personally fashioned accessories for ease of operation. (See the red circle? Take notice of the bent coat hanger being used to hold the radio's handset in place.) Ingenious!

Plus

Why QR codes?

WHAT'S THIS ICON doing in my magazine? The quick-response barcodes or "QR" codes found throughout this issue will help guide you to additional video content found exclusively on Trains.com. Simply use your smartphone camera to scan the code, tap on the selection, and you'll be directed to the action. — *Kent Johnson*

RAIL PASS

HERE is your official commuter rail pass for Trains.com. Let it take you on an excursion through the mountains and into the forest of content cultivated by our train enthusiasts. Like our readers, our writers raise the bar!

NOTE: Remember to keep an eye out for more of these codes throughout this issue. Just scan it, tap it, and enjoy it.

Vena named as Union Pacific CEO

Former operating officer succeeds Fritz; railroad splits off president, chair positions

▲ **An eastbound UP freight takes a siding in Hondo, Texas, on May 30, 2023. Jim Vena, a longtime Canadian National executive, is UP's new CEO.** Norm Schultze

JIM VENA WAS SET to become Union Pacific's new chief executive Aug. 14, five months after one of the railroad's largest investors publicly demanded UP's board oust CEO Lance Fritz and hire Vena as his replacement.

Soroban Capital Partners was critical of UP's performance under Fritz and noted that the railroad's operations and service quickly improved during Vena's two-year tenure as chief operating officer, only to falter after his departure.

Investors cheered the news, sending UP shares up 10% when the market opened the morning of the announcement.

"Jim brings a strong rail operations background to Union Pacific, with over 40 years of experience," said Mike McCarthy, named UP board chairman the same day. "This includes two successful years as our chief operating officer from 2019 to 2020. After a comprehensive search process, it was clear Jim's track record of operating excellence was unparalleled and he was the right candidate for the job."

Jim Vena

Vena spent four decades at Canadian National, rising from brakeman to chief operating officer. CN posted a record-low operating ratio and its best safety performance while Vena was chief operating officer 2013-16.

Vena accelerated UP's shift to Precision Scheduled Railroading when he joined the railroad in January 2019. UP credited Vena with leading an operations team that reaped more than $1 billion in efficiency savings and delivered the best service in the railroad's history.

"I am excited about returning to Union Pacific and look forward to the journey to be the safest, most reliable, and most efficient railroad in the industry," Vena said in a statement. "Working closely with the entire team, my focus from day one will be to ensure the company delivers industry-leading customer and operating excellence, cultivates and empowers our employees, and cares for the communities in which we operate. These efforts will generate strong shareholder returns."

Fritz told investors and analysts on UP's quarterly earnings call he was proud of the management team the railroad has assembled, as well as the company's efforts in sustainability and creating an inclusive workforce. The railroad made progress on safety and the transition to a PSR operating model created better service, he said.

"In terms of what we needed to do better, we were not consistent and reliable through my 8½ years serving as chairman, president and CEO. That needs to be remedied," Fritz says. "As we look into the future, that's exactly what we need to continue to do. We've got a strategy — serve, grow, win, together — that's built off a foundation of consistent and reliable service. I am confident we are oriented, organized, and capable of doing that."

Fritz praised the selection of Vena, 64.

"We've got a fabulous operating executive joining us as our CEO," Fritz says. "He's got a great track record and he's going to be laser focused on making sure that we're providing the best service product to our customers so that we can translate it into growth."

Fritz was chairman, president, and CEO. UP split those roles, with lead independent director McCarthy becoming chairman and Beth Whited named president. As president, Whited, a 35-year UP veteran who was the railroad's executive vice president of sustainability and strategy, and head of human resources, will oversee strategy and sustainability, law, workforce matters, corporate relations, and government affairs.

McCarthy said the split was "adopting a corporate governance best practice."

Independent analyst Anthony B. Hatch was surprised that UP selected Vena. "I must admit I didn't see this coming," he says.

The market liked the selection, Hatch notes, but rail labor groups did not. SMART-TD's general chairmen and the Transportation Trades Division of the AFL-CIO both were highly critical of Vena's tenure as chief operating officer and are not happy to see him back in Omaha as CEO.

Hatch says UP's selection is out of step with a trend toward CEOs with sales and marketing backgrounds.

"It seems like a choice from the past — the title, not the person," Hatch says. "This is an old-school railroader in a new era for railroads where the growth pivot has to move from talk to walk, and where regulatory interest in the railroads is at high tide." — *Bill Stephens*

FRA seeks data on train length and tonnage from Class I roads

Information would be used to study safety impact

THE FEDERAL RAILROAD ADMINISTRATION PROPOSED in July requiring Class I railroads to provide monthly data that tracks train length and tonnage as well as the number of reportable accidents for trains over and under 7,500 feet.

The FRA said it wants to use the data to better understand the impact of train length on safety and whether trains over a certain length are disproportionately involved in derailments or incidents such as stalls or a loss of communications.

The proposal springs from two FRA safety advisories this year on train length and makeup. The non-binding advisories encourage railroads to take steps to address the complexities of operating long trains. They followed three derailments involving trains with more than 200 cars, a length of 12,250 feet or more, and a weight of more than 17,000 tons.

"Freight train length has increased in recent years, and while research is ongoing related to operational aspects of long trains, including brake system performance, it is known that the in-train forces longer trains experience are generally stronger and more complex than those in shorter train consists," the FRA said in its April 27 advisory.

The data-collection proposal notes that the FRA has entered into an agreement with the National Academies of Sciences, Engineering, and Medicine to examine factors associated with the operation of freight trains longer than 7,500 feet.

But FRA is concerned data from the study will be limited, much like a 2019 Government Accountability Office report that obtained relevant train-length data from just two of the then seven Class I systems.

So the FRA wants the Class I railroads to provide detailed information every month that would include the total number of trains operated, the total number of cars in those trains, as well as the total trailing tonnage in specified train length categories, such as above or below 7,500 feet.

In addition, FRA proposes to collect monthly safety-related data such as the number of emergency events, the number of communication event losses, the number of broken knuckles, the number of air hose separations, the number of PTC enforcements, and the number of locomotive engineer certification revocations.

An eastbound Norfolk Southern coal train passes under the Tunnel Hill bridge just east of Depauw, Ind., on July 19, 2019. Bruce Stahl

"FRA will use the collected data to establish an initial baseline for the length of trains operating within the U.S. rail system as well as to determine if train lengths are changing over time," the agency says, adding it may also use the data "in future analyses to better understand the impact of train length on safety."

Rail labor unions are critical of long trains, which have reduced the number of daily train starts and therefore the number of crews employed by Class I systems. Unions have raised safety concerns about the handling of long trains and the dangers posed from losing communication with end-of-train devices or between the engineer and a conductor who walks a long train in search of defects.

Long trains are operated safely every day, the Association of American Railroads notes. Railroads have said they take proper precautions when operating long trains, including following sophisticated procedures for train makeup. — *Bill Stephens*

Union Pacific coal trains, one led by Chicago & North Western heritage SD70ACe No. 1995, meet on UP's Greeley Subdivision at Platteville, Colo., in November 2016. The Greeley Sub will be part of the railroad's test of ground-based 'enhanced utility' jobs. Chip Sherman

UP will compare conductors, ground-based jobs

Test, similar to pilot scuttled earlier by union, set to begin in Nebraska, Colorado

UNION PACIFIC PLANNED IN AUGUST to begin a pilot program in Nebraska that will compare how quickly conductors and truck-based railroaders can respond to problems that trains encounter en route.

The railroad disclosed the first-of-its-kind Class I railroad test program during a July public hearing on the Kansas Department of Transportation's proposed two-person crew rule.

In December 2022, UP had announced its intent to launch a four-phase pilot program to test a ground-based "expediter" position, but that was scuttled in January when SMART-TD, the union that represents conductors, refused to participate.

Now the union is on board under a new crew consist agreement. The deal creates the expanded utility position — a scheduled, $50-per-hour job — and protects the conductor position through the start of the next round of national contract negotiations that begin in 2025.

"On May 31, General Committee 953, part of SMART-TD, ratified a crew consist agreement that gives Union Pacific the ability to establish a ground-based enhanced utility position," railroad spokeswoman Robynn Tysver says. "This position works on a fixed schedule and is dispatched in a truck to respond to planned and unplanned events along the main line. The idea is to learn how this role can support train movement. While these operations are ongoing, two people will remain in the cab."

Ultimately UP wants to redeploy conductors to ground-based positions in territory that's protected by positive train control, but that would hinge on reaching additional agreements with labor unions.

In a December public hearing on the Federal Railroad Administration's proposed two-person crew rule, UP officials said that ground-based expediters would be able to more safely and more efficiently play the role conductors do today from the locomotive cab. PTC has significantly reduced the conductor's tasks on the main line, they say, and an expediter would be better able to handle troubleshooting and fixing mechanical problems.

> **"WE KNOW THAT WE'RE GOING TO NEED TO LEARN AS WE GO."**
> — JASON PINDER, UNION PACIFIC

The first test phase was planned for the South Morrill Subdivision, UP's coal-hauling route across western Nebraska paralleled by a state highway. The double-track line averages 26 trains per day, according to recent regulatory filings regarding the railroad's Powder River Basin coal volume.

The second phase was slated for September on UP's single-track Greeley Subdivision, which links Denver and Speer Junction, Wyo. The line handles locals, unit trains, and intermodal trains, some of which have work events en route.

UP did not say whether two additional pilot program phases that were originally contemplated in more complex territory — between Pocatello, Idaho, and Portland, Ore., and on the Herington and Topeka subdivisions in Kansas — ultimately will be part of this round of tests.

Jason Pinder, UP's general director of network development, told Kansas transportation officials that the railroad believes truck-based workers will be able to respond more quickly than conductors in two-thirds of instances, which will help improve customer service, reduce the time grade crossings are blocked by a train with mechanical problems, and help keep employees safe.

The expediter will cover trains operating over a set territory. UP will test how large the territory should be and how the railroad can respond to unforeseen events like the expediter's truck breaking down.

"We know that we're going to need to learn as we go," Pinder says.

Like UP, BNSF wants to redeploy conductors. "We are still negotiating potential pilot programs that would test the feasibility of a ground-based conductor position," BNSF spokesman Zak Andersen says.

UP opposes the Kansas two-person crew rule, Pinder says, because it lacks a safety justification, would be preempted by federal regulation, would impede technological innovation, and hurt railroads' ability to compete with trucks. — *Bill Stephens*

With Illinois Gov. JB Pritzker to his right, Metra Executive Director Jim Derwinski speaks at a media event announcing Metra would operate passenger service to Rockford, Ill. Bob Johnston

Chicago's Metra to operate intercity trains to Rockford, Ill.

Illinois to fund improvements, cover operating costs

WITH AN 1880S BRIDGE over the Rock River supporting a Metra train as a backdrop, Illinois Gov. JB Pritzker and other officials announced July 6 that Chicago commuter operator Metra would partner with Union Pacific to provide two daily passenger round trips to Rockford by 2027.

Service will require a $275 million investment from the state's Rebuild Illinois infrastructure fund.

Trains will run on Metra's Milwaukee West line to its end at Big Timber, where a connection to Union Pacific's Belvedere Subdivision will be built. In addition to stops in Elgin and downtown Rockford, stations are planned for Huntley and Belvedere.

The agreement calls for the state to reimburse Metra for all capital and operating costs above ticket revenue the commuter railroad takes in.

"The improvements needed are identified; now that funding is in place, we will partner with [the Illinois Department of Transportation] and Union Pacific," Metra CEO/Executive Director Jim Derwinski tells *Trains*. Definitive agreements await IDOT's bidding process.

Union Pacific Vice President John Turner says the pact includes an additional passing track on the line dating to Chicago & North Western predecessor Galena & Chicago Union in 1848. C&NW had upgraded tracks past the Illinois Railway Museum at Union, Ill., as far as a Belvedere auto plant, but trackage from there to downtown Rockford will need substantial rebuilding.

When improvements are complete, travel time is anticipated to be just less than two hours for the approximately 90-mile trip.

Amtrak's state-supported *Blackhawk* achieved comparable running times on Canadian National's ex-Illinois Central route through Rockford to Dubuque, Iowa, before it was cut in 1981. Spokesman Marc Magliari tells *Trains*, "There was no process where we were asked to submit an operating plan over the combination of Metra and UP-owned property to Rockford."

In an emailed statement, IDOT spokesman Scott Speegle says, "Ultimately, Metra provided a better option in that the estimated cost of infrastructure improvements is likely going to be less [in part because] Metra can run passenger trains to Elgin —literally half the distance to Rockford."

— *Bob Johnston*

Fixes

IN THE AUGUST ISSUE:

— The photo on page 6 of a train led by Kansas City Southern's "Saluting Our Heroes" unit was incorrectly credited. It was taken by Daniel Frederickson.

— The uncredited photo on page 19 of a train led by Milwaukee Road Bicentennial SD40-2 No. 156 is a John F. Bjorklund image from the Center of Railroad Photography & Art collection, taken May 14, 1978.

IN THE JULY ISSUE:

The "box jacking" technique described on page 17 was used in the U.S. prior to the Long Island Rail Road's Third Track project, as part of Boston's 1982-2007 "Big Dig" project, according to a book published in 2000.

NEWS BRIEFS

STB opens investigation into Sunset Limited timekeeping

The **SURFACE TRANSPORTATION BOARD** announced it would open an investigation into *Sunset Limited* timekeeping issues, as requested by **AMTRAK** in December 2022, and outlined the framework for the first-of-its-kind proceeding. The two-part process will determine if a host railroad has failed to provide required operating preference for Amtrak; if so, a second part would determine damages or other actions. The STB's timeline will carry the first part into at least late-March 2024. Amtrak's complaint focused mainly on **UNION PACIFIC**, but all host railroads, no matter how briefly they handle the train, will participate.

Worn rail, track misalignment, and other track conditions led to the *Empire Builder* derailment that killed three people and injured 49 at Joplin, Mont., the **NATIONAL TRANSPORTATION SAFETY BOARD** said in its final report on the Sept. 25, 2021, accident on **BNSF**'s Hi Line. The report said windows that did not stay in place when **AMTRAK** Superliner cars rolled over contributed to the seriousness of injuries. Among NTSB recommendations: a call for all trains to be equipped with autonomous track inspection equipment to detect defects.

The **NTSB** said grade-crossing design was a contributing factor in June 27, 2022, *Southwest Chief* crossing accident and derailment near Mendon, Mo., that killed four. The **MISSOURI DEPARTMENT OF TRANSPORTATION** subsequently announced a plan to close 17 crossings and upgrate 27 others with lights and crossing gates along the state's pasenger rail lines. The crossing near Mendon is among those recommended for closure.

TRANSPORT CANADA selected three consortia for the Request for Proposals stage of the High-Frequency Rail project, a passenger-only line on the Toronto-to-Montreal-Quebec City corridor, while pushing back the expected opening of the route until the mid-2030s. One group, Cadence, consists of four Canadian-based firms; partners in the others include Germany's **DEUTSCHE BAHN** and a division of Spain's **RENFE**.

CPKC-CSX deal realizes Mike Haverty's vision

Former CEO tried to tie KCS and CSX together more than 20 years ago

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

The agreement Canadian Pacific Kansas City and CSX Transportation reached in June to create a new interline route linking the Southeast with Texas and Mexico via Meridian, Miss., is not a new idea: More than two decades ago Kansas City Southern CEO Mike Haverty sought to tie his cross-border railroad to CSX by having the companies purchase short line Meridian & Bigbee.

Today it's still a good idea — and it's easy to see why. Genesee & Wyoming's Meridian & Bigbee plugs a 148-mile gap between CPKC at Meridian and CSX just outside of its Montgomery, Ala., hub. The route is a big advantage over the current CPKC-CSX interchange via the slow and notoriously unpredictable New Orleans gateway. And direct interchange is superior to the existing CSX-M&B haulage agreement.

The deal will provide CSX with far better access to Mexico, while the new gateway gives CPKC another avenue for volume growth, something it needs in order to pay for the $31 billion CP-KCS merger.

The three-way agreement involving CPKC, CSX, and G&W has a lot of moving pieces. CPKC will acquire the trackage M&B owns between Meridian and Myrtlewood, Ala. CSX will operate the trackage it currently leases to M&B between Myrtlewood and Burkeville, Ala., 20 miles west of Montgomery. The interchange technically will be at Myrtlewood. M&B, meanwhile, will continue to provide local service between Myrtlewood and Meridian without interchange restrictions.

The big picture, CPKC CEO Keith Creel says, is the potential of connecting the high-growth areas of the Southeast with fast-growing Texas and Mexico. By 2026 four new auto plants will join those CSX already serves in the Southeast and Midsouth. Creel says direct interchange will enable the railroads to participate in automotive supply chains linking parts suppliers and assembly plants in the U.S. and in Mexico. Expect CPKC and CSX intermodal customer Schneider to haul auto parts over the route.

CPKC and CSX will beef up the Meridian & Bigbee's track to permit 40 mph operation. It's possible that in a decade traffic growth will warrant 60-mph speeds and centralized traffic control, Creel says. That suggests CPKC and CSX would exchange at least three trains each way per day, which operations experts say is the volume trigger for investing in CTC.

The CPKC-CSX deal comes with competitive wrinkles.

First, Norfolk Southern is not happy. The Meridian-Shreveport, La., route is part of the NS-KCS Meridian Speedway joint venture that dates to 2006. NS gained a 30% interest in the KCS line in exchange for investing $300 million in capital improvements. NS has the exclusive right to interchange intermodal traffic moving between the Southeast and Dallas, as well as transcontinental intermodal traffic linking the Southeast and West Coast via Shreveport or Dallas/Fort Worth. But new CSX-CPKC service between the Southeast and Houston, Laredo, and Mexico will provide competition for NS-CPKC interline moves.

Second, CSX currently hands its Mexico-bound traffic to Union Pacific at New Orleans. UP then delivers it to CPKC de Mexico at Laredo. Count on CSX cutting out the UP middleman and handing this traffic to CPKC at Myrtlewood.

Finally, during the CP-KCS merger hearings, the other Class I railroads raised concerns that CPKC would crimp existing interchanges as part of an effort to unfairly divert traffic to the combined CP-KCS network. Ironically, here's CPKC creating a new gateway with CSX.

"This is a BIG deal," Haverty says. "This is exactly what I proposed to [CSX CEO] John Snow well over 20 years ago. I told him we could both buy this line and it would give CSX access to the Meridian line, the shortest, fastest and safest rail route between the Southeast and Southwest U.S."

The railroads held meetings but nothing came of them.

"Why didn't such a logical concept become reality back then? Because the two dominant railroads in the East were afraid to do anything with KCS that would clearly upset the two dominant railroads in the West," Haverty says.

Today's CPKC-CSX deal is good for both railroads — and the entire industry — because it will produce volume growth, says Haverty, who is pleased to see things finally come full circle.

"Keith Creel is a phenomenal railroad leader," Haverty says. "Keith has accomplished many things in a short period of time that I couldn't get done during my 20-year career at KCS. He is the most innovative and operating-oriented CEO in the U.S. rail industry, in my opinion."

SPIDERS AND STARLIGHT

CALIFORNIA'S TEHACHAPI LOOP can produce incredible railroad images in daytime. But if you are willing to brave a summer night on Tehachapi, the photographs can be out of this world.

The pass comes alive at night, with tarantulas seemingly crawling out of every hole, rats and mice scavenging the rocks below for food, silver-dollar sized beetles scuttling along the trails and through the grasses, and the biggest black widow spiders the world has to offer.

The rising moon and starry sky light up one of the most iconic landmarks in California railroad history. Originally listed as one of the seven wonders of the railroad world, the Tehachapi Loop, engineered by William Hood in the late 1800s, is located nearly halfway between Bakersfield and Mojave, Calif., along Union Pacific's Mojave Subdivision, which serves as both BNSF Railway's and UP's main artery for freight traffic between northern and southern California. It sees anywhere from 40 to 50 trains daily. Still the best route over the mountain, Hood's engineering genius is proven anew with every train that crosses Tehachapi Pass.

In 2017, a warm July night of nonstop rail traffic includes this loaded BNSF grain train, referred to as the "earthworm" by rail enthusiasts. This one is powered by a General Electric C44-9W and an ES44DC, along with three other units mid-train and two additional locomotives on the rear. It's uncommon to see just two lead locomotives on these extremely heavy grain trains. The train calmly slithers its way into the scene and down the south leg of the famed loop on its way to the San Joaquin Valley in central California. The headlights and train blur, tracing the right of way from Tunnel 10 all the way to Woodford in this multiple-minute time exposure.

For those with a healthy respect for venomous arachnids, a visit to the Tehachapi Mountains in the middle of the night can be an unsettling experience but the risk is balanced by the reward.
— Scott Allen Sparks

THE STRASBURG

Passengers still come first, but the company is flexing its freight muscles

Story and photos by Dan Cupper

One of America's premier steam tourist lines, the Strasburg Rail Road Co. in southeastern Pennsylvania, is going after freight business like never before.

Strasburg freight? Yes.

As the nation's oldest short line — chartered in 1832 — and one of its earliest tourist railroads (1959), the Strasburg has been known as a premier seasonal passenger carrier for nearly 65 years. It has also expanded into providing contract mechanical, car shop and boiler services. Yet, it has increasingly returned to its roots as a hauler of agricultural and other commodities. Many of those loads are identical to the ones it carried when it opened for business in 1851 — 172 years earlier.

Starting in 1926, the SRC relied on Plymouth No. 1 to move freight. It was the railroad's only new locomotive buy in the 20th century and it's still on the roster. Kurt Bell collection

EARLY FREIGHT YEARS

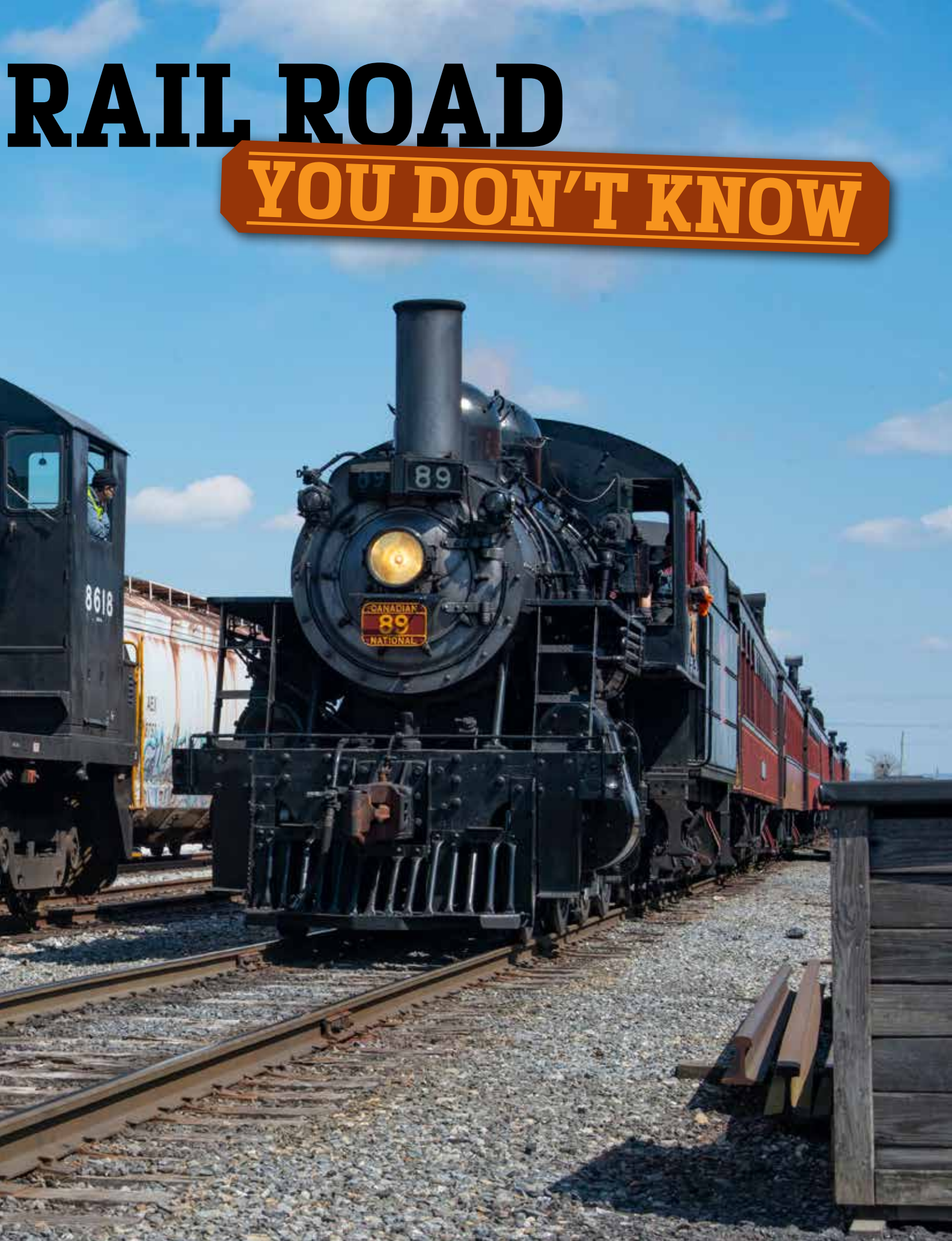
The 4-mile-long line has a typical small-railroad story. Local boosters feared being left behind in the 1830s when a larger regional carrier bypassed the village of Strasburg, so they built a connecting line. Located at Paradise, Pa., the interchange is known as Leaman Place Junction.

Although the Strasburg still operates under its original charter and name, the larger railroad, to which it connects, has changed ownership and identities many times. First it was the state-owned Philadelphia & Columbia, then the Pennsylvania, then Penn Central, then Amtrak, with freight service provided via trackage rights, first with Conrail and now

A freight-passenger meet on the Strasburg Rail Road? With SRC's growing freight business, meets like this on March 29, 2023 are more common.

RAIL ROAD

YOU DON'T KNOW



In 1961, leased Pennsylvania Railroad GE 44-ton switcher No. 9331 spots a coal load on the Graybill trestle in Strasburg, Pa. The trestle is now dismantled. The Strasburg Rail Road later bought the unit and relettered it to No. 33. Kurt Bell collection

Norfolk Southern. The line was electrified between Philadelphia and Harrisburg in 1938, one of the last pieces of the Pennsy's electrification program.

After opening in 1851, the Strasburg relied on mostly hand-me-down steam locomotives and then bought a new 1926 Plymouth Locomotive Works 20-ton, gas-mechanical, four-wheel switcher.

"Since day one, the railroad has always depended on freight," says Kurt Bell, a historian, Pennsylvania state railroad archivist, and former Strasburg train-service employee. "There's always been some kind of mill at the terminus of the railroad at Strasburg," he says, including a feed mill, a planing mill, and a machine shop.

Trolleys ended the short line's passenger trade in the Great Depression, but it continued hauling freight. It carried grain, coal, and lumber, along with ore, canned goods, and seasonal tobacco shipments. Milk shipments in Supplee refrigerator cars started in 1908, expanded in 1919, and ended during World War II when milk dealers began to buy their own motor trucks.

According to Bell, the railroad also enjoyed "a robust LCL freight business for decades — 'less than carload lots,' akin to today's Amazon or UPS delivery services, which the Strasburg engineer picked up from the Pennsylvania Railroad Leaman Place freight agent by walking across the Pennsy main to the PRR office, and brought back small packages, parcels and even live chickens in crates, [then] returned to Strasburg with the deliveries in the cab of the Plymouth." Customers then picked up deliveries at the end-of-the-line Homsher Mill, the family firm that had owned the railroad since 1918.

As happened everywhere, trucking and improved highways began eating away at the traffic base, and nationwide, hundreds of short lines were abandoned completely.

The Strasburg Rail Road almost became one of those statistics, too, as it nearly "succumbed to competition and old age in 1956," as the local *New Era* newspaper put it. After track washouts brought service to a halt, its owner and sole shipper — the feed mill owned by the Homsher family — embargoed shipments, substituted trucks, and prepared to sell it. Among those interested were scrappers, historical groups, and one party that wanted to pack the whole thing up and move it to somewhere in the Caribbean. The state highway department paved over the rails at a key grade crossing.

The railroad, Bell says, "applied with the Pennsylvania Public Utility Commission in 1957 to no longer haul freight, but it was never formally abandoned at the federal level."

Matt Hoover, left, conductor, and Steve Weaver, vice president — operations and roadway, were on duty for the opening day of SRC's yard at Paradise, Pa., on Feb. 10, 2023.

In 1958, a group of 23 local business leaders and railfans bought the railroad for $18,000. They started to rebuild the worn-out, weed-grown track in an attempt to reclaim what little potential traffic was left — feed, coal, and lumber.

For motive power, they started with the 1926 Plymouth, No. 1, which had been the road's only new-locomotive purchase in the 20th century. As before, the company moved cars to and from the Pennsy connection at Leaman Place Junction.

Within months, the group acquired an ex-Reading Co. wooden coach and started running modest tourist trains, followed a year later by steam power in the form of ex-Canadian National 0-6-0 No. 7312. This locomotive, built by Baldwin in 1908, was soon renumbered to Strasburg No. 31. When the revival of steam locomotives for seasonal passenger runs took off nationally in the 1960s, Strasburg was at the forefront. Being located in an existing tourist area (the Amish-oriented "Pennsylvania Dutch" culture of the state's Lancaster County) and within a few hours drive of New York, Philadelphia, Baltimore and Washington, the line prospered.

Seasonal passenger service was the growth industry, quickly outpacing freight. Eventually the line was regularly carrying 400,000 passengers a year, many of them arriving on chartered tour buses.

PEOPLE AND PLASTIC PELLETS

But while the people business flourished, freight did not.

The late Ellis Bachman, a former vice president of administration, told Bell that the Strasburg's LCL traffic ended in 1962 when the Pennsy gave up that business. "He remembered the last [such shipment] was a crate of fresh oranges delivered in the cab of the then-leased PRR 44-tonner No. 9331," Bell said.

Service dwindled almost to a single commodity and a single customer. The start-up of a relationship with that customer was handled by Edward A. Lewis, who came to the company in 1974 as vice president of administration. His 45-year career included managing Strasburg and several other short lines in the East and South. He authored Kalmbach's *American Shortline Railway Guide.*

The traffic consisted of inbound covered hoppers carrying plastic pellets for Exide automobile battery cases, manufactured by General Battery Corp. in nearby Lampeter, Pa. Volume amounted to 50-100 cars a year, according to Bell, mostly handled by Strasburg's ex-PRR 44-ton GE diesel switcher No. 33, which Strasburg bought from the Pennsy (as noted, formerly PRR

No. 9331) after previously leasing it.

In 2002, Bell interviewed Lewis, who told him: "In the 1970s freight averaged $25-$30 a car versus a plastics car, which earned $50 a car — a big difference in revenue. Exide was shipping plastics out of Philadelphia to Lampeter by truck and found it cheaper to ship by rail. Instead of sending the business to the Penn Central, they said, "we'll give the business instead to SRC.'"

Lewis, he said, tried to get the company into the boxcar business in 1978, during the period when shortline boxcars roamed the country collecting incentive per-diem payments for their owners. He investigated leasing 25 cars from the National Railway Utilization Corp., an idea the Strasburg board approved in 1978. But Conrail would not agree to part of the terms, killing the deal.

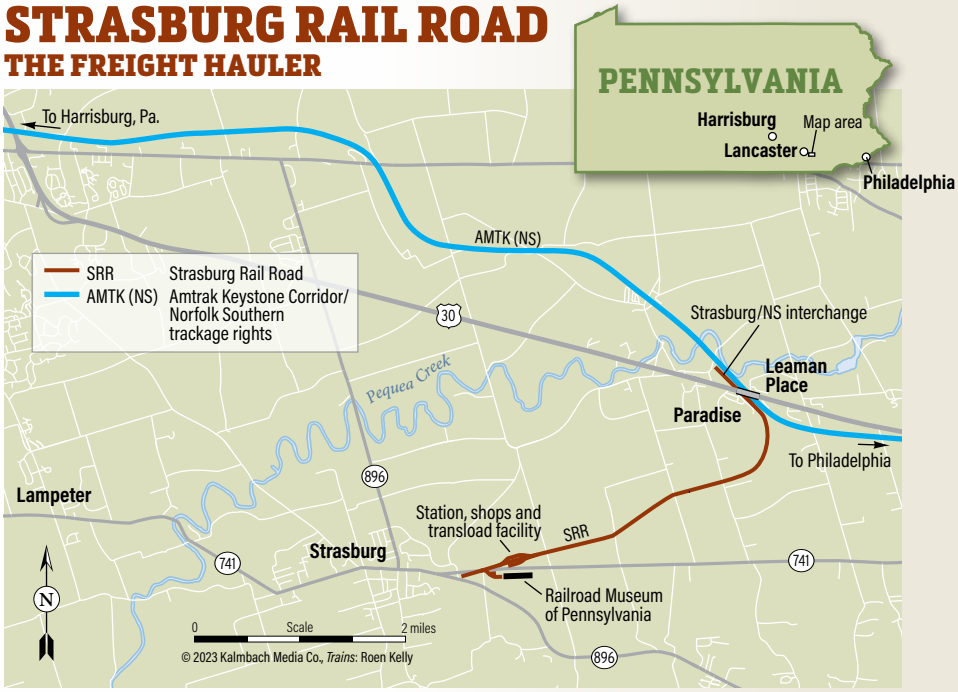
In 1976 the last car was delivered to the mill at Strasburg, Bell said, severing a historic line of business that extended more than a century.

He noted that Strasburg ran a steam-powered Friday morning mixed train seasonally in 1987-1989 and again in the 2010s. "Riders rode a caboose while empty pellet cars were dropped off at Leaman Place," he said.

Freight service, which included an occasional carload of lumber, fluctuated in the 1980s and 1990s. Lumber traffic ended in the early 2000s and, Bell said, "there was a year or two where they didn't haul freight, and were afraid they were going to lose their common-carrier status."

STRASBURG RAIL ROAD

THE FREIGHT HAULER



In fact, the Strasburg became so passenger-focused that it dropped its membership in the American Short Line and Regional Railroad Association — only temporarily.

A TURNAROUND

At about that time, longtime employee Linn Moedinger — son of the 1958 investor William M. Moedinger Jr. — began to advocate for more freight business. The father had served as president from 1969 to 1988, and an early newspaper photo shows him posed with the Plymouth switcher and the line's (then) only freight car, a wooden boxcar. His son eventually became both president and chief mechanical officer.

"Linn started getting freight-minded people on the board," said Bell. "He seemed like he was passionate about pursuing freight."

Line improvements were made to handle contemporary freight cars including the 2011 construction of a concrete bridge over the Pumpkinville Turnpike, which is really just a dirt farm path. The design and styling of the new bridge was inspired by a Lackawanna Railroad design.

Using SW8 No. 8618, the SRC crew shoves cars onto the NS interchange track on Feb. 10, 2023. At right is Amtrak's Philadelphia-Harrisburg, Pa., Keystone Corridor main line.

A Strasburg crew switches cars for delivery at Paradise, Pa., in February 2023. The engine, SW8 No. 8616, is on the Eby's track, named for the fertilizer mill that once occupied the site.

Linn Moedinger, who retired in 2018 and still sits on the board, recalls the loss of the plastic-pellet traffic. "That was good business," he said, "but they switched to using recycled pellets [delivered] by truck."

Pondering the potential for added business with improved facilities, he said, he began thinking, "Gee whiz, maybe we could actually do something here."

"We decided to push into freight in a bigger way," he said, "and get some RTAP [state Rail Transportation Assistance Program grant] money to do some infrastructure [improvements] to benefit freight but also benefit the passenger business."

By 2008, traffic was down to about 10 cars a year, and the board ordered a strategic review of re-entering the freight business, according to Steve Weaver, vice president of operations and roadway. He was handed the duty of scoping the project as well as planning needed right-of-way improvements. At the same time, the company started to apply for public funding.

Ultimately, the grant money was combined with the road's local matching funds to both build a new yard at the interchange and upgrade the main line to carry the increased weight of loaded freight cars. As Weaver explained to a reporter, "Our infrastructure takes a beating from freight. If we were just hauling tourists, we wouldn't have needed" work to improve rail, culverts, and switches, and grade crossings. He noted that the road's wooden coaches weigh 35 to 50 tons, but the contemporary standard for a loaded freight car is 286,000 pounds, or 143 tons.

Among the more visible improvements was the 2011 construction of a concrete bridge over Pumpkinville Turnpike — really, just a dirt farm path — whose styling was inspired by a Lackawanna Railroad design.

Freight traffic was increasing but was all being transloaded at the Strasburg end of the line, where the passenger business is located, along with the road's enginehouse and contract/repair shop, creating congestion.

MORE FREIGHT POWER

In 2008, the road bought an ex-New York Central/Penn Central/Conrail EMD SW8 from another Pennsylvania carrier, the Lewisburg & Buffalo Creek. Built in 1953, the 800-hp unit was renumbered to one of its NYC numbers, 8618, and painted in an NYC-like scheme with "Strasburg" lettering. It replaced the 44-tonner, which in 2011 moved to Maryland's Walkersville Southern Railroad. Anticipating growth, in 2019 the railroad bought former Santa Fe

1,200-hp switcher No. 1235, an EMD SW9 unit that Santa Fe had rebuilt into an upgraded model it called an SSB1200.

The company's board also laid the groundwork for acquiring property for a major expansion just west of the junction with Amtrak's double-track electrified Keystone Corridor at Paradise. Using trackage rights, Norfolk Southern local freight No. H26 from Dillerville Yard at Lancaster, 11 miles west, picks up and delivers cars for the short line.

To expand this facility, Weaver drew up plans for a seven-acre, six-track yard with a public-delivery team track, two storage tracks, and a private siding for a dedicated customer with a loading dock, Capital Forest Products. It also included a run-around track separating freight operations from steam tourist movements on the line's nearby long-standing passenger run-around track.

BUYING LAND

This all remained plans on paper until a key real estate parcel became available in 2019. The railroad bought it for $425,000 and began negotiating with Amtrak to lease more track and right-of-way adjacent to the Keystone line. Phase 1 of the project involved rehabilitating the Amtrak-NS interchange track, laying new track, building a loading dock, and improving drainage.

Some of the interchange track had previously been the PRR's mainline Track 1, laid with heavy-duty 152-pound rail, which was still in good shape. Crews set it aside, improved the roadbed and ties, and re-installed the heavy rail. During excavation, crews uncovered stone sleepers from the original Philadelphia & Columbia trackage dating to 1834.

In 2022, Strasburg opened Phase 1 of the work by delivering three boxcars to Capital Forest Products, which the railroad describes as "one of the East Coast's largest distributors of cedar shakes and shingles, roofing and siding."

In February 2023, the railroad completed Phase 2, fully opening the yard. The work encompassed about a mile of new and upgraded track. The total cost was $3.3 million. The new yard allows a crew to sort and prepare freight cars for delivery without interfering with steam passenger movements.

Jim Hager, Strasburg general manager, has emphasized developing freight business.

BUSINESS IS UP

While the planning and building were going on, Strasburg slowly built back carloadings, which have shot up from 10 per year to 500, a volume that Weaver says, "is considered a minor miracle in the railroad world."

Taken as a whole, the improvements are designed to:

- Increase capacity, permitting freight traffic to triple;
- Relieve pressure on the existing three-track, 60,000-square-foot freight yard and pad east of the Strasburg passenger station; and
- Minimize conflicts between passenger and freight movements.

In peak tourism season, two steam trains run simultaneously on the single-track line, with occasional spikes caused on special occasions, such as photo charters and "A Day Out with Thomas" children's events.

Weaver said Amtrak's engineering office was extremely helpful in accommodating the expansion.

AN OVERVIEW

"Developing the freight business is an essential revenue piece to keep the railroad whole," said Jim Hager, general manager since September 2022. "The pandemic did a number on many businesses, especially tourism, but produced some valuable lessons. Through freight operations, we were able to keep some revenue coming in."

The line still carries more than 300,000 passengers a year, but freight now accounts for nearly 10% of its revenue.

"Since I arrived, we [with Weaver and Freight Logistics Manager Mike Cronk] put an emphasis onto growing the freight business," he said. "We lost one customer to a new facility on a Class I, but grew five, bringing the customer base to 16, 15 of which are transload partners.

"We have customers receiving and shipping product anywhere from a single [car] to many carloads per annum. Our car count averages around 500, and we project about a 50% increase this year."

The importance of this, Hager said, is "a strong freight base not only generates revenue, but opens an avenue to additional funding sources available to freight

No actual revenue tonnage here. Amtrak's eastbound *Pennsylvanian,* train No. 42, passes a Strasburg Rail Road mixed photo freight at Leaman Place Junction, Paradise, Pa., on May 16, 2019. ACS64 electric locomotive No. 606 is assisting the *Pennsylvanian's* GE P42 diesel.

Customers like the railroad's pole barn at its Strasburg transload facility when it comes to keeping their shipments dry. A train is spotted at the barn for unloading on Jan. 11, 2019.

railroads for various roadway projects … The mix will allow us to generate revenue and keep the entire operation and right-of-way in excellent condition."

A LOGISTICS MANAGER'S ROLE

With 12 years on the Strasburg, Mike Cronk has worked both train- and engine-service and shop jobs. This is his third year managing freight traffic. His duties are those once handled by a general freight agent, but he does much more. He keeps track of NS's deliveries, usually by email but also by monitoring the Virtual Railfan streaming camera at the junction.

As the "first point of contact with new and existing customers," he notifies them when their cars arrive, and pitches in with a forklift when necessary to unload. He has one helper, Kyle Lopez, and hopes business grows to where Strasburg could hire another.

"In 2021 when I took over managing the freight operation, I was tasked with boosting productivity and eliminating any inefficiencies," said Cronk. Although he's handled inquiries from prospective customers, he's not really a salesman, saying, "I'm not out knocking on doors." The freight operating ratio, he says, has dropped from a money-losing 105% to a profitable 60%.

Mike Cronk is Strasburg's freight logistics manager, a job with a wide range of responsibilities.

Commodities include inbound retail and specialty lumber, fertilizer, and grain and related products — alfalfa, corn, hominy, oats, peas, rye, soybeans, and wheat. "The fertilizer is [both] liquid (tank cars) and granular (hoppers)," he said.

Outbound traffic includes lumber, meal for pet food, and tank cars of chicken fat used in making pet food.

OPERATIONS

Freight trains are fitted around the passenger timetable. Since they run on demand based on the flow of shipments, there's no fixed freight schedule, but they average five days a week. Usually the power is No. 8618, but steam engines pinch-hit on occasion or by special arrangement. Superintendent of Locomotives and Rolling Stock Dave Lotfi, who's qualified on both, quips that this is the only place he knows where "when a diesel breaks down, the backup is steam."

Dave Lotfi, engineer, has just dropped cars for interchange at Paradise, Pa., March 29, 2023.

CUSTOMERS SPEAK

Two Strasburg freight customers are happy with their service.

Strasburg 2-6-0 No. 89 completes its switching at Leaman Place Junction after bringing a rare public mixed train from Strasburg with cars ready for interchange on Feb. 16, 2019.

Chris Burkhart, a dispatcher with the family-owned Little Britain Ag Supply, said his company has switched from getting its cars of ammonium sulfate fertilizer delivered to an NS-served siding in Lancaster.

"At Lancaster, we could get four [truck] loads in a day, but Strasburg, being handy and closer, we can get six loads a day," he said. Shipments, typically 100 tons per car, arrive in covered hoppers, from which they're transloaded by conveyor, 25 tons at a time, into trucks for movement to the company's yard near Quarryville, 15 miles from Strasburg.

"This year was the first we've used [Strasburg]," said Burkhart, who noted that

Cronk sends a text the day before pick-up and sets up a conveyor to handle the transload. "It's worked out well."

"We were a little hesitant" at first, he said. "Pulling a truck in there, dealing with tourists walking around — but it hasn't been a problem." A separate entrance helps keep trucks and crowds apart, and Strasburg employees are vigilant about "watching out for people being where they shouldn't be."

If additional business develops, Burkhart hopes to use the Strasburg more: "They exceeded our expectations."

Will Mullin, president of lumber wholesaler EDK LLC, said he was surprised to learn that the railroad handled freight.

"I live in Strasburg, and I always thought of [it] as a tourist railroad with antique trains," he said. "I have a friend who works part-time as a locomotive engineer. I reached out to him to see if the railroad would have any space [for storage], and he connected me with Mike Cronk. I did not know that Strasburg [had that] capability."

EDK handles two kinds of wood products — dimensional lumber such as pressure-treated yellow-pine 2x4s and 4x4s, and plywood from Louisiana.

"The trick for me is to be able to handle [both] boxcars and center-beams — boxcars for plywood, center-beams for dimensional lumber. Lots of facilities are set up for boxcars, but I need to be able to have access to both sides [for unloading]."

The Strasburg yard also has a pole barn to protect plywood from rain. EDK also uses another transload facility on another railroad, but it lacks the facility to keep plywood dry.

With doubling fuel costs making trucking expensive, shipping by rail can save 25% in freight charges, Mullin says. Trucking's advantage is speed — a shipment can arrive in two days by truck, but rail, with transloads and interchanges, might take a month. "On the other hand," he said, "25% is a lot of money — it's thousands of dollars."

Rail doesn't always work, he said, particularly if it's a short haul. Mullin adds, "If too many short lines touch it, it doesn't make sense."

But for those shipments of 700 to 800 miles, Mullin is "grateful" to have the Strasburg Rail Road option.

"It's a hidden gem," he says.

Countdown to 1,000 ISSUES

No. 3802 stands for dedication as *Trains*' "all-American diesel" in 1982. J. David Ingles, Brian M. Schmidt collection

34TH ANNUAL MOTIVE POWER SURVEY

A census of American locomotives

Can 29,518 units be exemplified by one? Yes

by J. David Ingles

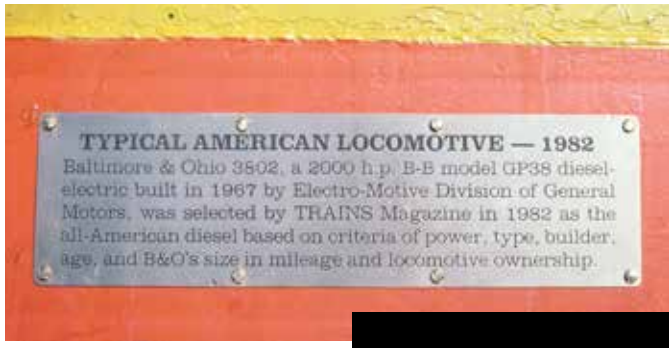
IT WAS HISTORY IN THE MAKING! This reprint — and author — deserve recognition for an offbeat yet consequently popular attempt to identify the "all-American diesel." It was a rather obvious choice. From issues 500 through 599 (June 1982 to Sept. 1990) — chosen by staff and contributors — is "A census of American locomotives" from the November 1982 issue. According to former *Trains* Editor Kevin P. Keefe, JDI was "meticulous," especially in this article. "Dave crunched thousands of numbers — roster lists, horsepower, prime movers, traction motors, service mileage, you name it — to arrive at the mythical 'average' diesel, Baltimore & Ohio GP38 No. 3802," says Keefe. "Chessie System soon canonized the Geep by putting a plaque on it." — *Trains* staff

WHAT WEIGHS OVER 125 TONS, is 57 feet long, 15 feet high, 10 feet wide, consumes 372 gallons of diesel fuel a day, and is painted yellow … or gray … or black … or green? Your average American locomotive.

Is there such an animal, a specific unit which accurately represents the typical locomotive of 1982? Yes. Early last summer, in fact, we thought we might have seen candidates in what was one of the more varied diesel consists to be witnessed on a main line in these economically depressed times … on Burlington Northern's three-track Chicago-Aurora speedway, when maid-of-all-work freight No. 350 came through. On the point: seven units — specifically, SD9 6031, SDP45 6598, SD40-2 8146, GP40 3031, SD9s 6040 and 6029, and SW1200 240.

All, of course, were EMDs … that is, products of General Motors' Electro-Motive Division, which has built roughly three-fourths of the diesels in this country. All were hood units (vs. the carbody style of the first-generation "cabs" or "covered wagons" the Es and Fs and PAs and FAs and such of yesteryear). Three were of road-freight size (usually defined as 2,250 hp or above), three of intermediate, or road-switcher, size (1,500-2,250 hp), and one of yard-switcher configuration (1,500 hp and below, with cab at the end and a hood lower than the cab roof). Both four-motor (B-B) and six-motor (C-C) wheel arrangements, which together account for more than 99% of the American locomotive population, were represented. Could this atypical consist, of interest for its variety, fail to have the typical unit therein? It could.

Well, just how do we determine that representative unit? "Representative" is defined in our *Webster's Dictionary* as "a typical example of a group." Do we strive mathematically for the average ("a single [entity] that summarizes the general significance of a set of unequals"), or just select the typical ("combining or exhibiting the essential characteristics of a group")? Can't we just pick a unit say, that SD40-2 in BN 350's consist? Yes, but that would be unscientific.



This plate affixed to the B&O No. 3802 frame, deems it the *Typical American Locomotive* (1982). J. David Ingles, Thomas Hoffmann collection

JOIN US, then, in a systematic search. And please understand that, as with publishing the national census of U.S. citizens taken every 10 years, tallying the American diesel population must rely on figures gathered a year or two beforehand.

We utilized two primary sources: the Association of American Railroads' latest statistics, *Analysis of Class I Railroads, Year 1980*; and *Diesel Locomotive Rosters: United States, Canada, Mexico,* by Charles W. McDonald (Kalmbach, 1982), in which the 91 rosters are dated late 1980 or early 1981. Thus our cutoff date, necessarily imprecise, is mid-1981. One advantage of taking the diesel census these days, however, is that in these recessionary times, locomotives are not being added to or subtracted from rosters in the great quantities common when the economy is good (fewer than 1,000 units built in 1981, vs. 1,938 units in 1979, a mere 509 units in 1976, and a post-1970 high of 1,577 in 1972). True, many diesels are in storage (nationally, 3,765, or 13.6%, on Jan. 1, 1982, says AAR, with 645 [39%] on Union Pacific and 1,200 [29%] on Conrail, to name two big examples). But they are still on the books, and most will return to service when business picks up. So, they're counted.

***Trains* then-Managing Editor J. Dave Ingles is comfortably seated in the cab of B&O GP38 No. 3802.** J. David Ingles, Brian M. Schmidt collection

The average unit should, naturally, be on the average railroad. Since the "Big 12" systems — that is, every one with over 5,000 miles and 1,000 locomotives — field 90% of America's diesel fleet, the typical unit is bound to wear one of the emblems in the color panel on pages 24-25. But for the statistics, we must include all 35 Class I railroads (those grossing $50 million or more per year); and exclude Rock Island, which ceased operation March 23, 1980, and Frisco, which was merged into Burlington Northern Nov. 21, 1980.

There are many bases on which to average railroads, but the one that seems to come to most minds first is route-mileage, which totals 178,629 (down from 206,265 a decade before). Class Is represent 94% of all U.S. railroad mileage.

The Class I road with the actual length nearest to the average of 5,104 is Baltimore & Ohio, at 5,208. But operationally B&O is part of a larger entity, Chessie System. Considering this actuality of locomotive operation, the 35 Class Is thus condense to 29 systems: B&O, C&O, and Western Maryland in Chessie System; Colorado & Southern (since absorbed) and Fort Worth & Denver in BN; Grand Trunk Western and Detroit, Toledo & Ironton combined; and Cotton Belt inside Southern Pacific. Norfolk & Western and Southern did not amalgamate under Norfolk Southern until 1982 (and their units still operate as two fleets), so they remain separate for our purposes, and we also kept the Family Lines roads separate.

But isn't Family Lines a system? Corporately, yes; operationally, partially. Excluding the Family Lines is a good example of how, when working with figures, the statistician must be arbitrary. Chessie System and Family Lines are under the corporate umbrella of CSX, to be sure, but any train-watcher knows that Chessie mixes its components' locomotives to a greater degree than does FL. You must go to the Clinchfield to see the majority of its units, and you will find far fewer Louisville & Nashville units in North or South Carolina, or Seaboard Coast Line diesels in Kentucky or Indiana, than you will B&O units in Virginia, WM in Ohio, or C&O in Pennsylvania.

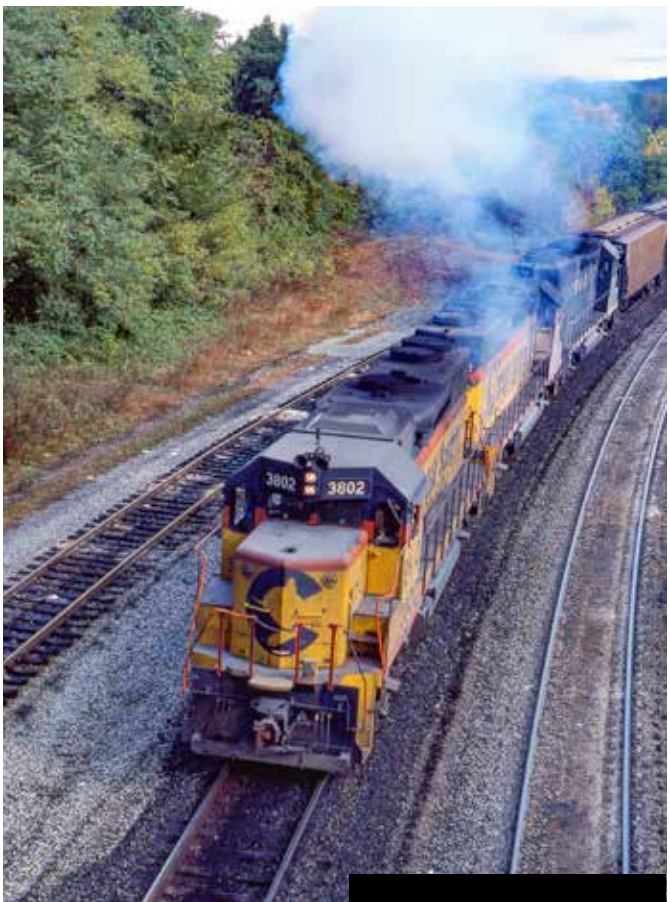
If we avoid B&O because it's in a system, then, the next road nearest the average is L&N, at 5,954 miles. If we also sidestep L&N since it's part of FL (or by considering FL a system, which yields 27 Class Is with an average length of 6,616 miles), the next candidate is N&W, at 7,448.

These candidates for the average railroad are all based on the mean figure (total in this case mileage divided by number of entities). Using the median, or middle, entity, we may choose Cotton Belt, 17th road down the list of AAR's official 35, or Milwaukee Road, 15th of 29 systems and 14th of 27. But in reality, Cotton Belt's locomotives are inseparable from parent Southern Pacific's, and one

THE "BIG 12" SYSTEMS HAVE MORE THAN 9 OF EVERY 10 LOCOMOTIVES

15.0%	12.4%	9.4%	9.2%
CONRAIL	BURLINGTON NORTHERN	SP	SCL/L&N GEORGIA • CLINCHFIELD WEST POINT ROUTE
EMD 3390	2888	2230	1860
GE 651	554	372	652
OTHER 115	—	15	102

	EMD	GE	OTHER
SCL	914	353	28
L&N	783	299	74
CRR	97	—	—
GA/WPR	66	—	—



Chessie GP38 and GP40s lift grain cars out of Cumberland, Md., in fall 1978. This is an example of an average unit on an average railroad.

might plausibly argue that the mileage figure of 3,901 for the Milwaukee Road, reflecting its truncation to a Midwestern regional on March 1, 1980, isn't a true reflection of figures for that year.

What happens if we average the roads on the size of their locomotive fleets instead of mileage? A similar familiarity of choices. For the "AAR 35," B&O's roster of 975 locomotives is closest to the average of 800; for the 29 systems, again B&O, only 10 above the average 965; for 27 systems counting Family Lines as one, Chicago & North Western's 1,040 is almost right on the mean of 1,037.

MORE IMPORTANT, perhaps, and certainly more precise than the average railroad is the type of average unit. Is it an SD40, or a GP38, or a GP7? It's not a switcher, for AAR's statistics tell us that the average horsepower of all American diesels is 2,300. An analysis and updating of U.S. rosters in McDonald's book reveals that two-thirds of American units are B-Bs, so our average unit is not an SD. It will be a GP type, however, since 85% of the American diesel population is EMD. At 2,300 hp, the average unit would be a GP39, Electro-Motive's only B-B model of that horsepower. But there are only a little over 200 GP39s and GP39-2s, a quantity small enough (about half of 1% of the total population) to be statistically insignificant. So, it's time to be arbitrary again.

To compensate for the locomotive population we have deliberately ignored (i.e., all units on short lines or industrial pikes), let's go down in size instead of up. There are legions more switchers uncounted than big engines found on the handful of mining roads and unit-coal-train operators that use road diesels. Eureka! We hit the 2,000-hp level, home of the GP38 family, EMD's current "everyman's locomotive" (found on 41 of 72 rosters in our tabulation, second only to the GP7's 49).

But how old a GP38? They've been built since January 1966, when DT&I 200 was turned out, which as it happens is close to the right age. AAR could not specifically state what the average age of U.S. locomotives is, but it did provide 1980 figures on age by five- or six-year groupings that showed 23% built 1975-1980, 19% 1970-1974, 18% 1965-1969, 10% 1960-1964, and 30% before 1960.

Thirty percent before 1960? You mean that for every older unit there are barely more than two of the so-called second generation of dieseldom — that is, all those GP35s and SD40s and kin, plus all of General Electric's road units?

This figure of almost one-third of the population being 20-plus years of age and older not only suprised us, it bothered us in not being broken down. So, we did a quick compilation of the 30 year olds, that is, pre-1950 locomotives, for clarification. This leapt over the decade of dieselization when virtually all the EMD "7" and "9" series units (save for a couple dozen of the earliest SW7 switchers) were built.

Of the pre-1950 units still in service, 88% are EMD SW1 and NW2 switchers, virtually all of them post-World War II. Arbitrarily selecting 1947 as the mean year for pre-1950 units still in existence, we estimated 7,400 units built in the 1950s and a bit over 1,000 from 1949 and before — i.e., 26.5% of the entire population dates from 1950-1959 and 3.5% (those old SW1s, NW2s, and the like) from before 1950. (Conrail still has the oldest active Class I diesels, 1939 SW1s 8400 and 8401.)

Thus, the average age of all American locomotives is 15.2 years, or built in 1965. Although the GP38 debuted in 1966, only 31 were built that year, before the model really caught on. Four times that figure were sold in 1967. Baltimore & Ohio, which shows up several times above as a candidate for the average road, and partner Chesapeake & Ohio each received 50 GP38s in 1967 (series B&O 3800-3849 and C&O 3850-3899), so it seems eminently fair to designate a Chessie 3800 — specifically, one of B&O's — as the typical American locomotive.

7.5%	7.3%	6.2%	5.4%	5.2%	5.0%	4.0%	4.0%
Santa Fe	Chessie	Union Pacific	mo-pac	Southern Railway	NW	Illinois Central	Chicago & North Western
1660	1918	1415	1353	1308	1228	1080	1044
414	122	311	158	145	92	14	—
7	—	1	—	—	64	—	49

	EMD	GE
B&O	985	—
C&O	823	122
WM	110	—

= 90.6% Of all American locomotives

As it happens, the service the 3800s see is also typical enough. As large systems go, Chessie is liberal on assignments, so even without straying off-line, the 3800s operate in all 13 states and one Canadian province that Chessie System serves. They haul everything from coal to auto parts to TOFC trailers, on hotshots and drags and locals, switch in yards and mosey along on work trains.

The 3800s are typical of GP38s in having low noses (short hoods) and in being equipped with dynamic brakes. The only major atypical feature of them reflects the heavy-duty nature of coal-oriented Chessie — the 3800s are heavyweights, weighing 138½ tons, and they sport the maximum-size fuel tanks, 3,600 gallons. Of the 3800s, we have randomly selected B&O No. 3802 (EMD serial No. 33320) as our representative all-American unit.

OF HOW MANY locomotives is B&O No. 3802 the average? In these days of so many units stored, often in long lines in yards, it isn't hard to conjure a vision of a queue of diesels. Imagine a single long line of them from Los Angeles to Needles, Calif., on Santa Fe, or Chicago to Carbondale, Ill., on the Illinois Central Gulf, or Washington, D.C., to New Haven, Conn., on Amtrak's Northeast Corridor. Those routes each are a bit over 300 miles, the distance America's fleet of more than 29,500 locomotives would stretch if coupled together.

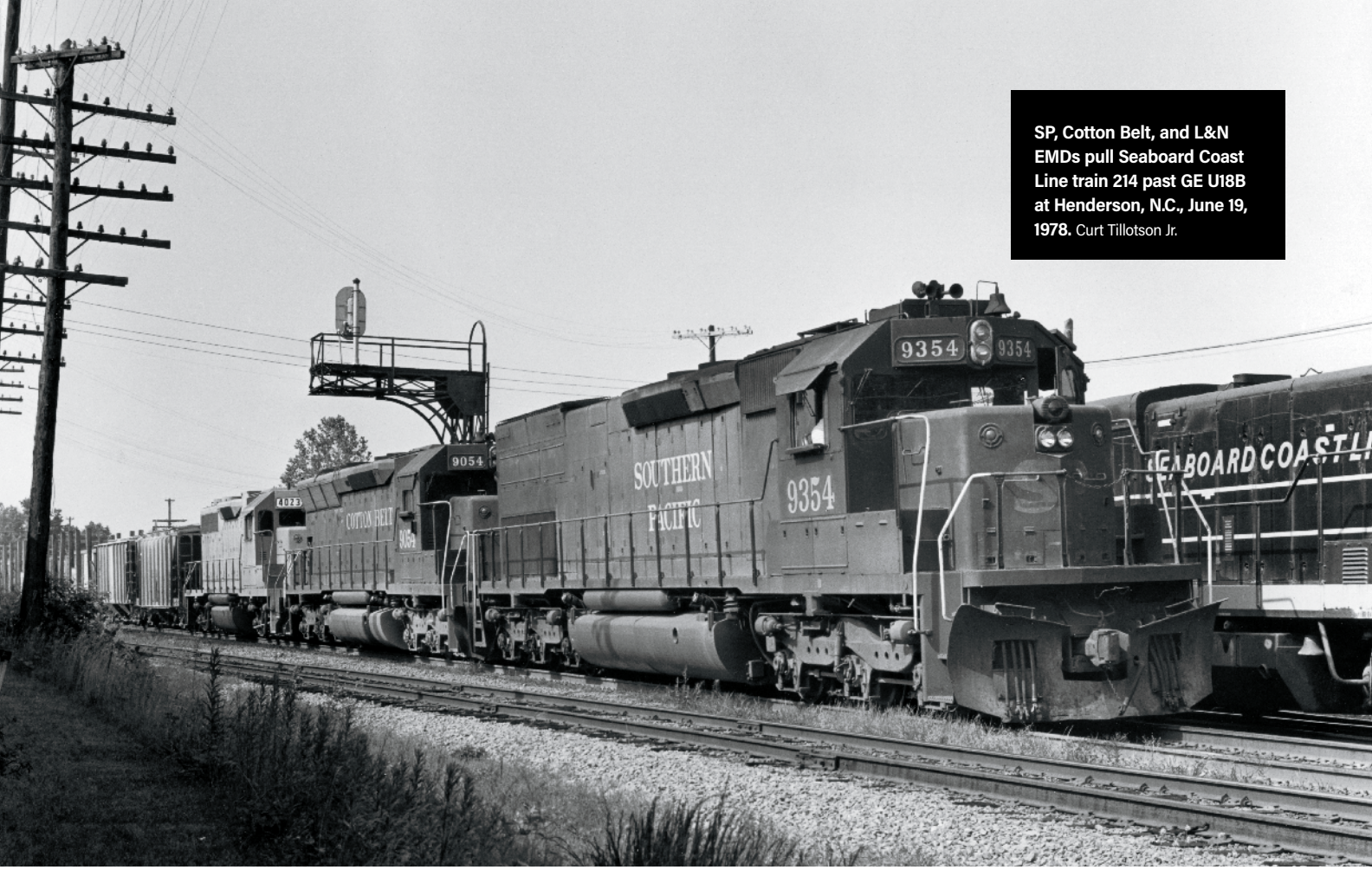
As with any population figure, that "more than 29,500" is necessarily imprecise. The 1980 AAR figures show the 35 Class I roads operating 28,003 diesel locomotives (up from 27,086 in 1970). Allowing for retirements of large or significant groups in 1980 and 1981 (e.g., most Conrail Alcos; all C&NW Baldwins; all L&N six-motor Alcos; BN's U25 and U28Cs), a perusal of the same roads' rosters in McDonald's *Diesel Locomotive Rosters* yields a total of 27,752, or 99.1% of the AAR figure. (Newer AAR totals, not broken down by road, show 28,222 on Jan. 1, 1981, and 27,670 a year later.) In these figures (but not universally), AAR excludes Amtrak as a Class I, presumably because it carries no freight and runs largely on others' tracks by contract. And Amtrak, with 401 units, has the 14th largest roster in the U.S.

So we must include Amtrak, which induces a count of the locomotives on other non-Class I railroads which are an integral part of the American trunk-line rail network. Selecting from the rosters in McDonald's book, we added 29 roads with almost 1,000 total units. Included: system component railroads (e.g., Georgia Railroad; Duluth, Winnipeg & Pacific); roads since merged (e.g., Detroit & Toledo Shore Line; Illinois Terminal); former Class I line-haul carriers, bumped down in 1978 when the minimum-gross revenue level was increased from $10 million to $50 million (e.g., Maine Central; Richmond, Fredericksburg & Potomac; Toledo, Peoria & Western); former Class I terminal companies, a category which was abolished (e.g., Indiana Harbor Belt and Union Railroad, each with more than 100 units); and larger Class II roads ($10 million minimum revenue) with road-type locomotives and/or significant mileage (e.g., Green Bay & Western; Texas-Mexican) or whose operations are in effect branch lines of Class I connections (e.g., Chicago & Illinois Midland; Utah).

No freight railroad with less than 10 locomotives was included, nor was any private locomotive operator, even the ones which utilize big road units (e.g., Detroit Edison, Kaiser Steel). Alaska, Canada, and Mexico, naturally, also were excluded.

And if we count Amtrak's units, we must count all passenger locomotives. They're more important than freight haulers on the Long Island, after all, which is a bona fide Class I road. Some roads still own passenger diesels, even for occasional official-use only (e.g., Southern), and other lines whose commuter services are underwritten by government authorities still list the passenger units on their rosters (e.g., BN).

So, add the units of seven commuter authorities operating on Class I main lines (in Boston, Chicago, Detroit, New Jersey, New York, Pittsburgh, and Washington) whose locomotives would — if not for government participation and the consequent bright individual transit-oriented liveries — be wearing the blue of Conrail or Grand Trunk or Boston & Maine, or the yellow of Chessie or North Western. Amtrak's

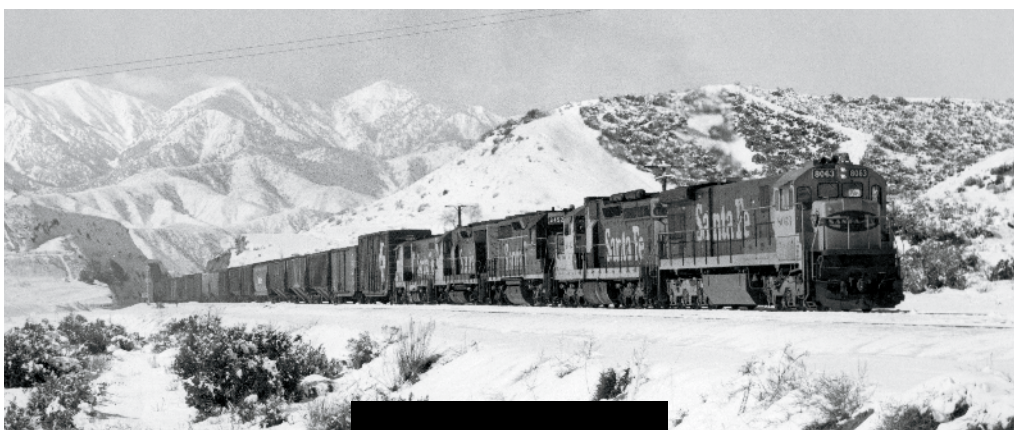


SP, Cotton Belt, and L&N EMDs pull Seaboard Coast Line train 214 past GE U18B at Henderson, N.C., June 19, 1978. Curt Tillotson Jr.

yard switchers are counted, of course, so we must include the units of Washington Terminal, which has become a unique passenger switching operation.

All this tacks on another 200-plus units, for a grand total of 29,518, a mere 5% increase over AAR's. These are on 35 Class I lines, 38 other freight lines, Amtrak, WT, and the commuter authorities. Hence, our population estimate of "over 29,500." This figure of 29,518 is our base for all statistics not quoted as AAR. As a historical note, this is half the number of locomotives in use in this country 50 years ago.

Worthy of mention here is that all but 86 of these locomotives are diesels. Conrail's electrics, the last such non-industrial freight-haulers in service in the U.S., were retired in 1981, leaving only the passenger electrics of Amtrak (73 — 47 AEM7s and 26 E60Cs) and NJ Transit (13 GG1s) on active rosters. (A decade ago, in 1970, 268 electrics were counted.) The last Class I-owned revenue-service steam locomotives, Denver & Rio Grande Western's 3-foot-gauge 2-8-2s, were conveyed to the new operator of the Durango-Silverton, Colo., route, the shortline common carrier Durango & Silverton Narrow Gauge Railroad. How about Class I excursion steamers? UP lists its 4-8-4, (the only steamer counted by AAR), but Southern's 2-8-0s Nos. 630 and 722 are on the books of a nonoperating subsidiary, and the other big steamers are owned by museums or individuals.



Santa Fe C30-7 8063 leads EMDs at Cajon Pass on Feb. 7, 1979. GEs are prominent on the main line. Bob Gottier

AAR 1980 statistics show 273 in an "all other units" (after diesel-electric and electric) category. Aside from steam, these include two species of railroad animals that are not quite locomotives: slugs, the nonpowered tractive-effort boosters utilized in yard work and slow drag service; and power cars, the former locomotives whose traction motors are disconnected and which serve as cab control sites and auxiliary power supply on passenger trains (e.g., LIRR). Since some railroads (Conrail, for one) do not list slugs on their locomotive rosters, we have excluded them all. Ditto the power cars.

At 2,300 hp average, the aggregate horsepower of United State diesels is 67,871,000, plus 547,400 for the electrics, for a total of 68,418,000 hp.

WHAT DO these 29,500 diesels imply in terms of components? Virtually the same number of prime movers, for one item. With the retirement of almost

all Union Pacific's double-engine EMDs, and all its twin-engine GEs, only the 100 E units left elsewhere in passenger (almost all commuter) service have two engines. And since Fairbanks-Morse is out of the picture, we have the same number of crankshafts.

Cylinders, and thus pistons? Roughly 446,000, or 15 cylinders per unit which figures, since more than 18,000 of the 25,000 EMD locomotives extant, or 72%, and 2,750 of the almost 3,700 GEs, 75%, contain a 16-cylinder engine (item: there are 1750 20-cylinder EMD "45" series locomotives). There are only about 4850 total cylinders in the 400-plus Alco engines left, which averages just about an even 12 cylinders per unit. This also figures, since all the Alcos in the 1,500- to 2,000-hp range (over half of the Alcos remaining) have 12-cylinder "244" or "251" model prime movers.

There are about 136,350 traction motors, or 4.6 per locomotive, reflecting the fact that almost 20,000 units, or two-thirds of the population, are B-Bs. The others: 9,368 C-Cs (31.7%); the 100 AlA-AlA E units; 43 B-AIA FL9s running for Amtrak and MTA out of Grand Central Terminal, New York; 45 D-D DDA40X double-engine EMDs still carried on UP's books; and two 25-ton B-truck GE shop goats Long Island lists on its roster.

Wheels total 277,358: 112,416 on the C-C units, 3,760 on the D-Ds, 1,200 on the AlA-AlAs, 430 on the FL9s, and the rest, 159,552, on the B-Bs.

And what do these 29,500 locomotives do? Mostly sit, unfortunately. EMD duty-cycle statistics for "medium duty" (the norm) show almost half a diesel's life when running is spent with the throttle in idle. Specifically; low idle, 31%; normal idle, 15%; running notches 1-7, 4%; notch 8, 17%; dynamic braking, 9% (units lacking dynamics convert that figure to normal idle).

When active, locomotives spend 86% of their time on the road, says AAR. Speaking in averages, they are part of three-unit lashups pulling 68-car trains weighing 4,300 tons. These average 18 mph and travel 60 miles each day. Each locomotive produces over 49 million revenue ton-miles annually.

When not on the road, the remaining 14% of the locomotives' active time is spent in yard switching (11%) and in switching trains (3%). Some examples: Conrail units, as you'd expect, are below average, putting in only 81.8% of their miles in road service, 17.8% in yard switching, and .4% in switching trains. UP's, on the other hand, record 94.4% of their miles in road work, 4.8% in yard work, .8% in switching trains. Other examples: Western Pacific, 94.8% road, 4.7% yard, .5% switching trains; L&N, 83% road, 12% yard, 5% trains; Pittsburgh & Lake Erie, 52.8% road, 45.8% yard, 1.4% trains; Long Island, 44% road, 34% yard, 22% trains; Elgin, Joliet & Eastern, 24% road, 75% yard, 1% switching.

You cannot always correlate yard *work* with yard-switcher-*type* locomotives, of course, since many roads utilize "road units" for yard work and/or have demoted their older road engines to yard service. Conrail, for instance, has almost 800 units of yard-switcher configuration, or 19% of its roster.

A GP30 in Denver in July 1982 is an example of UP using road units in yard work. J. David Ingles

But the majority of its low-horsepower road-switchers (e.g., GP7s, 9s, 15s; U23Bs, U23Cs), including its almost 100 "DeWitt Geeps" — Alco RS3s re-engined with 12-cylinder EMD engines — are utilized only in yard and local service. According to the AAR, Conrail officially "assigns" about 1,750 units, or more than twice the number of "switcher type units," to yard work. Thus, more than 40% of its locomotive fleet is busy putting trains together for the other 60%.

For contrast, consider UP, which assigns about 200 units, or only about 12% of its roster, to yard switching. UP is a good example of a line utilizing road units in yard work. Specific figures for June 1982 show that only 71 of 179 units actually in switching service were SW types (the 179, vs. 218 for 1980, reflects the recession). The others: 48 SD40s, 24 GP30s, 24 GP9s, nine SD24s, one GP38, and two Western Pacific road units, a GP35 and a GP40.

Little Long Island illustrates that you can't always take the AAR yard switching assignment figures at face value. Of LI's 69 units, 31 (45%) are yard-switcher types, but all are "assigned" to yard service in the AAR statistics, even though some of them haul passenger trains. Then again, on the Long Island, what's a road freight train?

The Class I roads heaviest on yard work are the two steel-plant lines. EJ&E, whose engines switch much of U.S. Steel's Gary, Ind., complex, has 74% of its units assigned to yard service; 64% of the "J's" roster is yard switchers. P&LE has 65% in both categories.

Boston & Maine is a non-steel road heavy on terminal operations, and it's also unusual in that it runs a significant amount of switcher-type diesels on the road. Of its 150 locomotives, 64 (43%) are yard switchers, but it reports only 53 (37%) assigned to switching.

Burlington Northern and Louisville & Nashville, to pick two, are more typical. BN assigns about 600 of its 3,400 units, or 18%, to yard service, while switcher types make up 14% of its fleet. L&N has 140 switchers among its 1,156 units, 12%, with a corresponding percentage assigned to switching work.

BN and C&NW SD40-2s work at Mullen, Neb., in September 1981. SD40-2s outnumber switchers. Two photos, J. David Ingles

In doing all this work, American diesels consumed 4.1 billion gallons of diesel fuel in 1980 (up 10% from a decade before) at an average cost of 82 cents per gallon … 41.7% costlier than only a year before, when the average price was 57.5 cents a gallon.

WITHOUT DETAILING every roster, how does the 29,518 total break down in terms of builder, wheel arrangement, and type? First, two large percentages: Electro-Motive Division products account for 85% of all the units, and [as shown on pages 24-25] the 12 largest system rosters have 90.6% of the U.S. locomotive population beyond industrial and short lines.

The products of minority builders Alco, Baldwin, and Fairbanks-Morse are virtually gone from mainline railroads. The latter two have indeed vanished; except for about three dozen switchers on Conrail, SCL, and Katy long ago re-engined with Electro-Motive prime movers, no Baldwins are left on Class Is. And these hybrids have thinned in number since our figures were compiled. You have to go to the likes of Oregon & Northwestern, Columbus & Greenville, Escanaba & Lake Superior, and U.S. Steel plants to see pure Baldwins. The only active power units left on Class I lines whose ancestry traces to Fairbanks-Morse are N&W slugs.

Alco will be the next to go. Our census counted only a whisker over 400, and their population likewise has thinned since 1981. The only Alco fleets numbering above two dozen were on L&N (70), N&W (64), Delaware & Hudson (61), C&NW (47), and Amtrak (25). Alcos with EMD engines, counted separate from pure Alco, were on Santa Fe, Conrail, Katy, L&N, and SCL.

A minute number, 14 units, with other engines (i.e., Sulzer, Caterpillar, Cummins), plus the Amtrak and NJT electrics, rounded out the population.

Forgetting the 44-tonners of yore, General Electric in reality has produced only road diesels for Class I carriers, and only since 1962. So, although their population appears large, the GEs are usually prominent on mainline freights and so seem more numerous than their actual population of just under 3,700. In fact, almost 3,500 of these, or 95%, are on the 10 largest systems. Conrail and Family Lines run about a dead heat for having the most GEs [see the color panel on pages 24-25], but on a percentage basis FL has more of them, 26% to 16%. BN is third in quantity, Santa Fe fourth. BN has the largest fleet of a single GE model, 227 C30-7s, followed by SP's 205 U33Cs.

A dozen Class Is (excluding FW&D, whose diesels are nigh to invisible in BN's fleet) are all-EMD. These range from B&O with 985 to Florida East Coast with 66. The largest "independent" (since B&O is part of Chessie System) with all EMDs is Milwaukee with 467 units (all its extant GEs and FMs are off the roster), followed by Rio Grande with 282. Other all-EMD rosters: Kansas City Southern, 261; B&M, 150; DT&I, 73 … and the three large U.S. Steel roads — EJ&E with 100; Bessemer and Missabe with 74 each. Chessie's Western Maryland, with 110, and FL's Clinchfield, with 97, round out the La Grange field. (Soo Line sports 233 EMDs, but its 10 out-of-service GE U30Cs spoil its all-EMD status.)

ANY ACTIVE diesel-watcher could cite those all-EMD roads, and likely tell you exactly where to find most of those 400 Alcos left … because locomotives, like almost any other facet of this fascinating field of railroads, are subject to White's Law. This theorem — "Scholarship is inversely proportional to importance" — is credited to George W. Hilton, who cited it in a book review (a critical one, as it happens) of *Gold Rush Narrow Gauge*, on the White Pass & Yukon by Cy Martin (Trans-Anglo Books, 1969), on page 55 of March 1971 *Trains*. Hilton said it "was enunciated out of a feeling that narrow gauges received too much research relative to their importance in railroad history …" White is John H. White Jr., curator of transportation for the Smithsonian Institution in Washington, and he says the "enunciation" was exactly that — a conversation, "probably about the Maine 2-footers." He alluded to the theme in the "*Trains* Turntable" [page 58, August 1971] "Two Worlds of Railroad History," calling for more compromise from amateur and professional historian/authors in their work approaches. "The amateur typically studies the least important railroads. He is devoted to the unusual and the incidental. Short lines, geared locomotives, and abandoned logging roads are his obsessions."

Translated to diesel-watching today, you have the focus on the insignificant and the obsolete — the E units and the last Alcos, Baldwins, and F units. Of course, it's all relative; even Jack White would agree that some pursuit of history, albeit in an "amateur" manner, is better than none.

But does this diesel-watching which focuses on the last F3s, E8s, and RS1s reflect that the Big 12 systems account for 88% of American Class I route-miles and nine of every 10 locomotives? It doesn't seem so. The Big 12 also sport 17 of every 20 EMDs, exactly mirroring the EMD percentage in the entire population.

To put some of the Big 12 in perspective among themselves, play with the numbers on the color panel. Examples: Leader Conrail has almost as many EMDs as No. 2 Burlington Northern has locomotives, and Conrail is within 200 units of having more diesels than the new Norfolk Southern (N&W plus Southern) and

Missouri Pacific put together. CR's roster of switcher-type units alone (more than 750) would rank 13th!

Counting all units of switcher configuration from the oldest SWls to the newest MP15s, there are only a little over 4,100 of them, or just under 14% of the population. A mere 100 or so are non-EMD, with N&W's 36 Alco T6s being the largest group. Conversely, train-watchers who are tired of watching SD40s on the main line might take some solace in learning that there are more in that family (4,269, counting the Dash-2s, SDP40s, etc.) than there are switcher types. The largest SD40 fleets (which are also the top groups of any single type unit) are BN's almost 900, and UP's 800-plus. In ranking, these fleets of SD40s individually would be right behind the entire rosters of Nos. 11 and 12 ICG and C&NW (just over 1,000 each).

Reliance on six-motor units tends to be a Western phenomenon. BN (1,868), SP (1,395), and UP (1,183) have the biggest quantities of C-Cs, and UP, at 68% of its roster, has the biggest dependence. Santa Fe (41%, with 856) and N&W (38%, 531) are next. Of the Big 12, Chessie and ICG have the fewest C-Cs.

Of specific model groups, which is second to the SD40? Our all-American GP38 clan, which at 2,691 in our tally has just overtaken the GP9 population (excluding heavily rebuilt versions such as ICG's GP10s). Conrail alone has 618 GP38s, followed by Southern with 428 and MoPac with 331. B&O 3802 is among a minority, Chessie's rosters having only 130 GP38s: but Chessie is tops in GP40s with 536, almost 30% of the total built.

If you want to buy a GP38, the current GP38-2 version will run you $719,600, says EMD, almost three times the statistical average locomotive cost of $240,690 in 1970 (which itself was almost double the $140, 944 of 1950). Today's GP38-2 is almost four times the actual price of $199,158.75 [less about $34,000 trade-in credit on each of 100 F7s turned in] that Chessie paid for No. 3802 and its sisters.

Mergers affect rosters. If Union Pacific is successful in merging MoPac and Western Pacific, their combined total will be about 3,400, just under BN (which gained 441 units in merging Frisco). WP accounted for 118 units in our census. Since our effective tabulation date, the Norfolk Southern partners gained 56 units, all EMDs, in two acquisitions: 41 Illinois Terminal units to N&W and 16 Kentucky & Indiana Terminal SW1500s to SR.

Road units of Grand Trunk Western, DT&I, and Detroit & Toledo Shore Line (16 EMDs) now operate together. The fleet is virtually all-EMD, with only 10 Alco switchers and a handful of rebuilt Alcos with Cat diesels in GTW's 180 total units. Central Vermont (19 EMDs, 12 Alcos) and Duluth, Winnipeg & Pacific (eight SD40s, five Alco RS11s) are GT corporate partners but geographically separate. If GT adds Milwaukee Road to its stable, the approximate GT system total of 800 units will retain Milwaukee's rank of 13th but be closer to ICG and C&NW.

Back to Chessie System and B&O No. 3802. As this story was being set in type in late July

A freight with three Conrail GP38 overtakes a Burlington Northern coal train at Pekin, Ill. Conrail's EMDs nearly equal BN's total units.

1982, our all-American locomotive was busy being its typical Baltimore & Ohio self. According to Chessie's power desk in Baltimore, No. 3802 had this service record:

- **JULY 1-2:** Hyndman, Pa., work train, on Newburg grade, return to Cumberland, Md.
- **JULY 2 (p.m.)-3 (a.m.):** Cumberland-Brunswick, Md., extra freight.
- **JULY 3-4:** Brunswick-Baltimore, grain train.
- **JULY 4-5:** Baltimore-Brunswick, hopper train.
- **JULY 6:** Brunswick-Cumberland, extra freight; shopped for 24 hours at Cumberland (home shop for all B&O units) with flat spots on wheels.
- **JULY 7:** Western Maryland "digger," turnaround to mines near Cumberland.
- **JULY 8-9:** Cumberland-Baltimore on consolidated Baltimorean/88.
- **JULY 9:** Baltimore-Cumberland on extra freight.
- **JULY 10:** Cumberland-Grafton, W.Va., on Benwood 99.
- **JULY 10-11:** Grafton-Cumberland on coal train.
- **JULY 11:** Cumberland-Keyser, W.Va., extra freight.
- **JULY 12-17:** Keyser, assigned to work-train service.
- **JULY 18:** Keyser-Grafton, extra freight; Grafton-Cowen, W.Va., coal train.
- **JULY 19-25:** Burnsville Junction, W. Va., helper.
- **JULY 26:** Cowen-Grafton coal train.
- **JULY 27-31:** Grafton, work train in yard/yard-switching.

All of which is not bad utilization. In May 1982, the last month for which Chessie had complete mileage figures, No. 3802 logged 4,276 miles. It's almost a million-miler, with a career total of 928,992 through May, an average of 5,308½ miles per month for its 14 years, seven months. Keep an eye out for No. 3802. It's so typical it's easy to miss. T

INTERMODAL WAR IN THE WEST

Competition between UP and BNSF heats up while their intermodal customers target trucks

by Bill Stephens

IT'S NOT EASY FOR RAILROADS' DOMESTIC INTERMODAL CUSTOMERS to jump ship, which is why their partnerships tend to endure for decades. Yet change has come to the West. In the past two years, Union Pacific has landed a trio of longtime BNSF Railway customers. Knight-Swift and APL Logistics bolted from BNSF in 2022. And this year Schneider National shifted its orange containers to UP.

You see the change in a pair of hot Union Pacific Z-symbol stack trains that link Los Angeles and Chicago via a combination of UP's Sunset and Golden State routes and, east of Kansas City, trackage rights on BNSF's Southern Transcon. On a cloudy March 2023 afternoon, they roll through Fort Madison, Iowa, a couple of hours apart. With six locomotives up front, eastbound ZCIG4 carries 252 containers and trailers, 70 of them belonging to Swift or Schneider. Behind westbound ZG4CI's four units are 231 boxes and trailers, 84 of which bear Swift or Schneider logos.

Tally it up: Two years ago 32%, or 154, of those containers would have been stacked on BNSF trains and sending their revenue to Fort Worth. Instead, they're riding a resurgent UP intermodal network. Over the past decade, UP's intermodal traffic sank 6% — and it was the only railroad to see a decline. For years UP brass told Wall Street analysts that the railroad wouldn't lower its profit margins to compete against what they viewed as BNSF's irrational pricing. But now intermodal is the very foundation of Omaha's volume growth plans.

Splitting a sea of J.B. Hunt containers, BNSF train Z-ALTWSP6 (Alliance, Texas-Willow Springs, Ill.) passes through Fort Madison, Iowa, on May 29, 2021 — before Schneider traffic moved to Union Pacific. David Kroeger

A Union Pacific trackage-rights Z train, including Schneider and Swift containers formerly handled by BNSF, passes through Fort Madison, Iowa, on BNSF on April 17, 2023. Three photos, David Lassen

TOP ASSET-BASED TRUCKLOAD INTERMODAL CUSTOMERS

Company	Containers in Fleet	Western Partner
J.B. Hunt	113,000	BNSF
Hub Group	50,000	UP
Schneider	28,035	UP
Knight-Swift	12,490	UP
STG Logistics (former XPO)	11,000	UP
APL Logistics	980	UP

ANNUAL INTERMODAL VOLUME

	2020	2021	2022
BNSF Railway	5,085,507	5,525,132	5,054,135
Union Pacific	3,149,000	3,211,000	3,116,000

Nearing the end of its trip, an eastbound UP intermodal train curves into West Chicago, Ill., on June 17, 2023. Schneider, the largest of the new UP customers, says its move was prompted by the preferential agreement between J.B. Hunt and BNSF.

Neither railroad would disclose how many annual loads changed hands. But it's likely Knight-Swift, APL, and Schneider delivered nearly 450,000 new container loads to UP. This much is certain: As U.S. intermodal volume slumped 10% for the first six months of 2023, UP's intermodal volume was down 5%, while BNSF's tumbled 18%.

No one could be happier about the turn of events over the past two years than J.B. Hunt, BNSF's lone remaining truckload intermodal partner. And if you think BNSF is crying in its soup, think again. BNSF and J.B. Hunt have tightened their relationship and are acting like one company as they jointly look for ways to increase capacity, improve service, and convert freight off the highway. "There will not be a glaring hole in BNSF's volume for very long," says independent analyst Anthony B. Hatch.

UP'S TRIPLE THREAT

To jumpstart its domestic intermodal growth, UP could not have found a better customer than Schneider, the third largest asset-based truckload intermodal provider behind J.B. Hunt and Hub Group. That's because the company, which brings about 330,000 annual loads to UP, aims to double its overall intermodal volume by 2030.

Schneider said its move to UP was motivated by the unique BNSF-J.B. Hunt revenue-sharing relationship that dates all the way back to the business-car handshake

between then-Santa Fe President Michael Haverty and J.B. Hunt in 1989.

"One of our competitors has a preferential contractual arrangement with BNSF, which limits the market share and relative profitability of the services we provide through the BNSF," Schneider said in its 2022 annual report. In other words, they were concerned about getting squeezed out. "You can only have one guy that gets first dibs on loading and unloading," Hatch says.

Intermodal analyst Larry Gross was surprised by Schneider's move to UP. "These transitions are fraught with risk," he says. "You don't make them lightly."

Schneider executives say UP opens up growth opportunities, particularly for transcontinental traffic. CSX Transportation is Schneider's rail partner in the East, and UP and CSX offer more steel-wheel interchange in Chicago than BNSF and CSX.

"Steel-wheel should be lower cost than two lifts and crosstown move or a long dray move from Chicago to destinations in the East," Gross says. Direct interchange in Chicago also should translate into more reliable service — a must if intermodal is to convert freight from highway to rail.

Schneider began shifting some of its business to UP in 2022 on lanes served by both railroads. When Schneider said the final transition to UP went smoothly in January, the company touted the advantages of its new rail partner.

"We believe the move in the West means we can offer our customers a distinct differentiator in the market," says Jim Filter, Schneider group president of transportation and logistics. "The combination of more coast-to-coast connections and being the first fully asset-based carrier with company drivers, company-owned containers, and company-owned chassis to operate on the railroad will result in more consistent service and less time in transit. We see huge benefits with Union Pacific to successfully deliver a positive service experience for our customers and drivers."

IT'S LIKELY KNIGHT-SWIFT, APL, AND SCHNEIDER DELIVERED NEARLY 450,000 NEW CONTAINER LOADS TO UP

Knight-Swift brings about 100,000 new loads to UP. Swift executives have said its major traffic flows are a better match for UP's network, particularly in the key markets of San Antonio and El Paso, Texas; Salt Lake City; Denver; and Portland, Ore. Another decisive factor: The I-5 corridor that links California with the Pacific Northwest is one of the busiest lanes for Knight-Swift's trucking divisions. UP offers I-5 intermodal service. BNSF does not. So aligning with UP provides Knight-Swift with the opportunity to convert more loads to rail.

An arriving intermodal train delivers cuts of container well cars to the tracks at UP's Global 4 terminal in Joliet, Ill., on June 17, 2023, as a switch crew works on an adjacent track. UP is testing electric wide-span cranes at the facility as part of upgrades leading to greater efficiency.

UP declined *Trains*' request to interview executives about its intermodal wins. But they've said plenty publicly. Former UP CEO Lance Fritz says the new domestic customers brought the railroad immediate growth and will bring more volume over the long term, just like UP's two other domestic truckload customers, Hub Group and STG Logistics.

"There's a nice little bump up in domestic volume to begin with. Knight-Swift is smaller than Schneider. But what's really important is that they're both growth engines in their own right. Knight-Swift is absolutely dedicated to growing their intermodal business … we love having them as a new customer and partner. Schneider's the same way. They're absolutely dedicated to their intermodal business, they want to see it grow, they've been growing it," Fritz told an investor conference last year.

Kenny Rocker, UP's executive vice president of marketing and sales, says he's bullish on domestic intermodal. "We're really excited about where we're going with our premium business," he told an investor conference in February.

Despite welcoming three new customers that have their own equipment, Rocker says UP remains committed to the EMP and UMAX container pools that intermodal marketing companies rely upon. The railroad is equipping the containers with GPS sensors and has added 5,600 new chassis to support the EMP and UMAX fleets.

SMART CRANES

To prepare for the volume Schneider, Knight-Swift, and APL Logistics would bring, UP increased capacity at its major intermodal terminals. Over the past two years UP has added cranes to boost lift capacity, increased overall ramp capacity by 20%, and made technology investments like the UPGo app that speeds truckers through terminal gates.

To streamline terminal operations, UP last year began testing five new electric widespan cranes at its Global 4 terminal in Joliet, Ill. The cranes can operate semi-autonomously and are integrated with an artificial intelligence system. When a driver uses the UPGo app, the crane tells the trucker where to go to pick up the load while locating and lifting the right container.

"We are always looking for new and innovative ways to improve services. These electric cranes will help us meet our goals of building a more sustainable future … while giving our customers faster and more efficient service," Jeff Chapman, UP's general director of capacity and technology, network planning and operations, said in a statement.

UP also has opened what it calls "pop up" intermodal terminals in West Colton, Calif., and the Twin Cities. UP tests the market, then expands the terminals as volume builds.

The West Colton terminal, in the heart of the Inland Empire import distribution area, opened in 2021 with a capacity for 45,000 annual lifts. It has since been expanded to 120,000 lifts per year.

UP says additional expansion projects could one day allow the Inland Empire Intermodal Terminal to handle 1.5 million loads per year — which would rank it tops

J.B. Hunt and Schneider trucks cross the UP tracks on Laraway Road outside UP's Global 4 facility, and just a few miles from BNSF's Logistics Park Chicago. J.B. Hunt is adding more containers than are owned by the three companies that left BNSF for Union Pacific. David Lassen

An eastbound BNSF Railway domestic intermodal train with J.B. Hunt, Swift, and Schneider containers aboard climbs Cajon Pass in September 2019. Bill Stephens

on UP and among the country's busiest. Any dramatic expansion, however, would eat carload switching capacity at the West Colton hump yard, much as UP's Proviso Yard in Chicago gave up space for the expansion of the Global 2 intermodal terminal.

The Inland Empire terminal location is key for UP. Containerized imports are trucked from the ports of Los Angeles and Long Beach to Inland Empire warehouses for transloading into domestic containers before riding the rails to inland destinations. Roughly half of the ports' volume bound for inland markets — such as Chicago, Dallas-Fort Worth, and Memphis, Tenn. — is transloaded.

The West Colton terminal is within 10 miles of most of the 625 million square feet of warehouse space in the Inland Empire. Previously, UP's nearest terminal in the Los Angeles Basin was 37 miles away at City of Industry. By reducing the dray distance, the Inland Empire Terminal reduces customers' costs and allows UP to compete more effectively with BNSF's busy San Bernardino intermodal terminal just a few miles away.

Twin Cities Intermodal Terminal opened in January 2021 as a domestic facility capable of 20,000 lifts per year. Its current capacity is 100,000 lifts. It handles domestic traffic between Minneapolis and LA and international traffic between the Twin Cities and LA and Oakland. UP plans to add service that will link the Twin Cities to the Pacific Northwest, Texas, and Mexico.

A new Kansas City, Mo., intermodal terminal is in the works, as well.

"I'm encouraged to see Union Pacific is interested in growing the business," Gross says. "Putting new dots on the map is a critical thing to help intermodal penetrate more markets."

BNSF AND HUNT GET COZY

There's no question that BNSF and J.B. Hunt are committed to intermodal growth. Last year — three months after Schneider said it would leave BNSF for UP — they announced a joint plan to expand capacity and more tightly coordinate their operations.

J.B. Hunt is increasing its industry-largest container fleet by 40% over the next two to four years, bringing it to 150,000 53-foot containers. It's also adding chassis. Last year J.B. Hunt underscored its capacity expansion plans by reaching a service agreement with Swire Shipping for two vessels that can expedite delivery of new Hunt containers made in China. The ships are named *Johnelle* and *Johnnie Bryan* after the Hunt couple that founded the company.

For its part, BNSF continues to expand intermodal terminals across the system and has provided property around terminals in Southern California, Chicago, and other key markets to increase terminal efficiency. BNSF also will add to its well car fleet, including 1,200 delivered last year.

Over the years BNSF and J.B. Hunt have grown together and, out of necessity, have had a close relationship. But they couldn't get cozier because BNSF also counted Hunt competitors Schneider, Knight-Swift, and APL Logistics among its customers. If BNSF did something special for J.B. Hunt, it would have to do it for the other customers, too.

Now it's a different story. "We often got frustrated with each other because J.B. Hunt wanted to do something a certain way and they needed us to do it the way that they were structured," Darren Field, J.B. Hunt's intermodal president, tells *Trains*. "And that did create healthy tension that was good for all of us. But as those competitors are gone, the dialogue is very different. Everything that we had ever wanted to talk about is on the table today."

Tom Williams, BNSF's group vice president of consumer products, agrees. "I would say it's an evolution because it's always been very close," he says of the relationship. With multiple truckload intermodal customers, there was always competition for capacity and integrating their data streams with the railroad's systems. Those conflicts are gone now that J.B. Hunt is BNSF's only truckload partner. "It's removed a barrier that existed to go to the next level," Williams says.

Now BNSF and J.B. Hunt technology teams are jointly developing systems to provide more transparency, more visibility, and that are easier for customers to use. "We will have different technology. We will have end-to-end technology. And it's going

J.B. Hunt boxes dominate on westbound train Q-CHISBD8-08 (Chicago-San Bernardino), crossing the Colorado River into California from Topock, Ariz., Oct. 10, 2019. Grady McKinley

to be a game-changer," BNSF CEO Katie Farmer says.

The 41,000 containers Hunt is adding slightly exceeds the number of Schneider, Knight-Swift, and APL Logistics boxes that left for UP. "The easiest thing for J.B. Hunt to do is go buy containers to backfill Schneider's capacity," Field says. "The hard work is integrating our technology tools. How do we deliver a product to the customer that is not available anywhere else and frankly can't be available anywhere else because of those channel conflicts?"

Hunt isn't necessarily after Schneider's business. "Highway conversion is our top priority," Field says.

The big prize? Seven million to 11 million truckloads per year that could be in J.B. Hunt containers. Hunt, which handled two million intermodal loads last year, can see all that highway volume through its online bid warehouse. "We have seen literally millions of shipments over time every year that can and should be intermodal," Field says.

Much of that freight could be rolling on BNSF. "We think there's about six to seven million loads that move today that should be moving on the Southern Transcon," Farmer says. "That's not all the loads that move — that's moves that we believe have characteristics that lend themselves to rail. That's what I'm excited about."

That's enough business to more than double BNSF's intermodal volume, which in 2022 was just over five million containers and trailers. "We want to pull in as much of that freight as we possibly can," Williams says.

The problem is intermodal service isn't reliable enough to lure more away from trucks. "We have to prove an ultra-successful consistent rail service to those customers … There's many, many customers that will say, 'I don't have to have it as fast as a truck gets it to me. I just have to know it's going to be here,'" Field says. "And by saying that, it highlights that they don't trust intermodal. And at the level of quality they're looking for, I'm not sure we've earned that trust, particularly over the last four or five years."

THE 41,000 CONTAINERS J.B. HUNT IS ADDING SLIGHTLY EXCEEDS THE NUMBER THAT LEFT BNSF FOR UNION PACIFIC

So BNSF and Hunt are attacking an age-old intermodal problem: Reliability takes a hit when volume is heavy, either by the day of the week, during peak season, or in years when demand is high. "We handle a lot of freight that has some tolerance for variability, a lot of inbound to distribution centers," Williams says. "But then there's a lot of customer freight that moves in long haul lanes that doesn't necessarily have really tight transit requirements, but because of the higher cost of failure can't handle what has been historic variability."

GETTING MORE OUT OF TERMINALS

Improving service consistency starts in terminals, which get congested late in the week as volume builds. Traditionally, BNSF creates the load sheet — which determines what containers will take a certain train — and J.B. Hunt schedules its service around it. Now they're doing it together after BNSF CEO Farmer suggested that J.B. Hunt station some of its people in the tower at the Corwith terminal in Chicago. With J.B. Hunt sharing data on which loads are the most service-sensitive, BNSF can make sure the hot boxes make the train and are among the first grounded at destination. "We can protect that most-service-sensitive, highest-cost-of-failure cargo and make sure that it's not subject to the variability that the volume surges bring," Williams says.

BNSF and J.B. Hunt also are sharing data to protect a terminal's most important real estate: The production tracks where cranes lift containers on and off well cars. The idea is to prioritize space close to the tracks for boxes that either have to be loaded on the next train or head for the out-

A crane lifts an international container off a stack train at BNSF Railway's terminal in Alliance, Texas, in March 2023. BNSF aims to keep production tracks clear of congestion as a way to boost capacity. Two photos, Bill Stephens

Pilot Stephen Bossert watches as a quadcopter launches from its dock at BNSF's Alliance, Texas, intermodal terminal to survey container locations and empty parking spaces — part of an effort to get drivers in and out of the facility more quickly.

gate. Containers that need a place to wait can be parked farther away within the terminal or at satellite lots. "The worst place it can queue is next to one of our production tracks," says Jon Gabriel, BNSF's vice president of service design and performance.

Although BNSF and J.B. Hunt both own or lease their own parking lots near major terminals, they're now managing them together. "We can't always control how much inventory is on our property, but we can control where we put it," Gabriel says.

Making spaces alongside production tracks "fast-turn zones" creates better cycle times for hostlers and draymen and prevents congestion under widespan cranes. "Smoothing out that operation has an exponential effect," Gabriel explains.

At the Alliance terminal a few miles north of the railroad's headquarters in Fort Worth, BNSF is testing a pair of home-grown artificial intelligence systems that use algorithms to improve terminal operations.

The first plots the most efficient way for hostler rigs to get containers and trailers from their parking spots to the cranes. The goal is to reduce the number of hostler miles, which eases congestion and speeds loading. So far the system has, on average, shaved 20 miles off each hostler's driving distance per train.

The second is a load planning optimizer that takes just seconds to determine where containers and trailers should be dropped next to production tracks, what cars they'll ride, and whether they should be on the top or bottom when double stacked.

BNSF AND J.B. HUNT OWN OR LEASE THEIR OWN PARKING LOTS NEAR TERMINALS, BUT NOW MANAGE THEM TOGETHER

The two systems have reduced the average train loading time by 30 minutes, which means BNSF can get more out of its production tracks each day. When deployed across the railroad, BNSF believes they will create capacity for 500,000 additional lifts per year, without adding cranes or production tracks. "It's quite significant," Gabriel says, particularly in landlocked terminals that have no room for expansion.

In another capacity and productivity trick, BNSF has converted the widespan cranes at Logistics Park Chicago to operate by wireless remote control. Instead of having to drive out to the crane and climb four flights of stairs to the cab, the operators now work from an office at the terminal. "On average we save about an hour per shift per crane by having remote operators walk into a conference room and clock in," Gabriel says. "If you multiply that by six cranes that we have at LPC, you have the equivalent of another entire crane's worth of productivity and capacity that we can deploy for our customers."

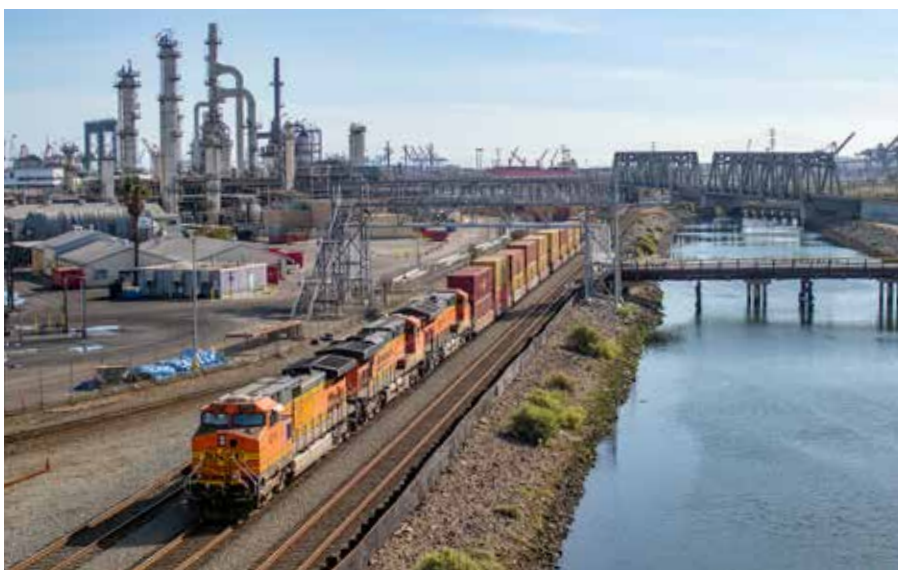
BNSF's three terminals that can handle a million lifts per year — Hobart in Los Angeles, LPC, and Alliance — are sprawling facilities with multiple parking lots. Keeping track of where several thousand containers are parked so hostlers and drivers can easily and quickly find them is no small task as trucks come and go. The same goes for empty parking spaces. Assistant Terminal Superintendent Jerry Glasow says the last thing he wants is truckers wandering all over Alliance's 500 acres of parking looking for a spot or a container.

BNSF has a tech solution for this, too. At Alliance it's testing a system that pulls real-time data from GPS trackers on containers, cameras mounted on hostler rigs, and aerial drones. "We've created a data collection engine that can take all of those and combine them so that we know with high certainty where your box is," Gabriel says.

On a sunny March afternoon, BNSF Unmanned Aerial Systems Pilot Stephen Bossert stands in a drone hive at the Alliance terminal preparing for another test flight. A quadcopter emerges from its charging station, briefly hovers while getting its bearings, and then zips off over a row of parked containers. From his laptop Bossert gets a drone's eye view as it targets each container's ID, notes its parking space, and finds empty spots. A few minutes later the drone returns so it can report its findings and recharge its batteries. Eventually all this will be done automatically.

The information is fed

An eastbound Cadiz local (foreground) awaits departure from BNSF's Barstow Yard in July 2015. The planned Barstow International Gateway will transform intermodal traffic from Southern California's ports. Elrond Lawrence



A BNSF container train backs into a terminal at the Port of Los Angeles. BNSF's planned $1.5 billion Barstow facility aims to address delays at the ports of LA and Long Beach. David Lassen

into BNSF's RailPass app so draymen save time getting in and out of the terminal. It's a big deal for intermodal customers. "If I find 5 minutes of time for my driver inside the rail terminal, and multiply that over the magnitude of loads we ship, it's real money," Field says.

BIG PLANS

If all goes as planned, BNSF will open its massive $1.5 billion Barstow International Gateway in California in a few years. Called BIG for short, the 4,500-acre facility to be built on railroad land in the junction city of Barstow, Calif., will include an intermodal terminal, support yard, and transloading warehouses. "We get really excited about the potential this brings," Williams says.

BIG will transform the way rail-bound containers are handled at the ports of LA and Long Beach. Containers currently dwell for days on the docks before being loaded on well cars, with containers bound for smaller markets sitting the longest.

Freight that's being transloaded into domestic containers, meanwhile, must get picked up by trucks, driven 80 miles to Inland Empire transload facilities, and then hauled to BNSF's San Bernardino or Hobart intermodal terminals. No one is saying BIG will replace the Inland Empire's maxed-out transloading capacity.

But once BIG is operational, marine containers will be loaded directly from ship to rail at the ports. Existing BNSF trains will haul them through the Alameda Corridor and up the BNSF main to Barstow. Once there, the containers will take one of two paths. They'll either be sorted by destination and loaded on eastbound trains or their cargo will be transloaded on site, then catch an eastbound.

This will speed the customer's freight. "We feel like it will save days to the overall transit of that container just in its first couple hundred miles in the U.S.," Gabriel says.

J.B. Hunt will handle BIG's transload traffic. "The Barstow Gateway is another sign that BNSF is locked in and committed to their intermodal franchise and expansion of their services as we move forward together," Field says.

Transloading doesn't just help retailers get their goods where they're needed. It's

The last great barrier to complete double-tracking of BNSF's Chicago-Los Angeles route is this bridge over the Missouri River at Sibley, Mo., shown in 2012. Construction of a second bridge has begun. Zach Pumphery

also more efficient: The same amount of cargo that would move in up to 450 40-foot international containers can be handled in just 300 Hunt 53-foot domestic boxes. And that reduces the number of lifts, chassis, terminal parking spaces, and railcars required, which in turn frees up capacity in the intermodal network. "International intact will always exist, but we think there can be some real value driven for the railroad, for us, and for the customers in a much more significant transload operation that can be right there at Barstow at really the lowest cost available," Field says.

MAINLINE CAPACITY

Out on the high iron, UP and BNSF have been adding capacity to support their intermodal operations.

Union Pacific has extended 39 passing sidings over the past two years, giving long trains more places to meet. Among them: Linking two sidings between Longview and Marshall, Texas, to create 10.4 miles of new double track on the Little Rock Subdivision. UP built 7.5 miles of new main track to connect the Marshall and Keokuk sidings, which were upgraded to higher speeds.

"This busy piece of our railroad sees up to 40 trains per day, is a crew change location, has a local serving yard, and is near service unit boundaries," David Pratt, UP's senior manager of resource planning, said in a statement. "Combining all of these elements with some of Union Pacific's fastest growing intermodal business lanes, this 8-mile double track project supports improved operations and customer experience."

Eastbound containers head downgrade along the Middle Fork of the Flathead River near Pinnacle, Mont., with the mountains of Glacier National Park as a backdrop on Feb. 27, 2022. BNSF is working to improve intermodal routes beyond its Southern Transcon. Kenneth Edmier

BNSF, meanwhile, continues to polish its crown jewel, the Southern Transcon linking Los Angeles and Chicago. The world's busiest intermodal artery, it accounts for 7% of the railroad's route-miles but carries 40% of BNSF's traffic-miles. "It's built for speed and for growth," Gabriel says. "We clearly feel there's over-the-road conversion growth opportunities for us to get with that great network we built out and continue to add to."

This year BNSF will break open the last

An eastbound intermodal train snakes around track work near Red Desert, Wyo., on UP's Rawlins Subdivision on Sept. 1, 2022. The shift in intermodal customers has created three distinct networks. David Lassen

major single-track bottleneck on the Southern Transcon by opening 25 miles of second main on the Emporia Subdivision in Kansas, making the route 99.8% double iron. Construction of a second bridge over the Missouri River at Sibley, Mo., has begun to eliminate another single-track section.

BNSF looks at expansion projects with one eye on capacity and another on service. Gabriel says BNSF capacity projects are designed not only to allow a given stretch of main line to carry more trains per day, but also to bring on volume while maintaining the railroad's service commitments. "It's a different way of looking at things," he says.

A case in point: Southern Transcon stretches of third and fourth main that BNSF has added on heavy grades and at crew change points west of Amarillo, Texas, since 2018. At crew change points, the extra main allows intermodal trains to leapfrog manifest and bulk trains. On grades, the third main separates the hotshots from the rest of the pack. Gabriel calls them "dedicated passing lanes for the fast trains."

This year BNSF will complete a 29.23-mile third-main project between Needles and Goffs, Calif., allowing the separation of slower westbounds from intermodal traffic on the 1.4%, 2,010-foot climb out of Needles. A project to add 25 miles of third main on the 1.42% Supai Summit grade near Flagstaff, Ariz., is in the works, and BNSF envisions a third main on the 1.44% Ash Hill grade, the last obstacle for westbounds before Barstow. "That additional capacity really does help us reduce the variability of our service," Gabriel says.

BNSF isn't ignoring its other intermodal routes. Opening of a second span over Lake Pend Oreille in Sandpoint, Idaho, last year eliminated a bottleneck on the Northern Transcon. Also coming to the Pacific Northwest: An additional passing siding and section of double track between Spokane and Pasco, Wash.

BNSF'S SOUTHERN TRANSCON ACCOUNTS FOR 7% OF ITS ROUTE-MILES BUT CARRIES 40% OF ITS TRAFFIC-MILES

THE DUST SETTLES

The intermodal customer shift in the West has given the three big domestic intermodal players unique networks, Gross notes, with Hunt using BNSF and Norfolk Southern, Schneider relying on UP and CSX, and Hub rolling on UP and NS.

They'll compete based on those differences, he says. "I don't think it has much impact on overall growth — although it certainly has an impact on UP and BNSF," Gross says.

The interesting thing to watch will be how the newfound total alignment of BNSF and J.B. Hunt affects growth and service as well as competition with the other intermodal players. UP's domestic truckload intermodal partners have a traditional buyer-seller relationship with the railroad, Gross notes. The BNSF-Hunt relationship is different. J.B. Hunt controls the rate, Gross says, while BNSF gets a piece of the door to door revenue. How will these different models affect the intermodal customers' ability to convert freight off the highway?

UP and BNSF have been going head to head in intermodal for a long time, Hatch notes. BNSF has taken the market-share lead — it carries 40% more intermodal volume than UP — partly due to heavy capital spending that began in the railroad's early years under CEO Rob Krebs and continues to this day, Hatch says. UP was happy to play second fiddle, he says, as the railroad maintained a focus on profit margins.

"It's interesting that, years later, UP went back in the other direction and got this business. My interpretation is that this has win-win-win potential," Hatch says. UP gets to fire up its intermodal growth engine. Its trio of former BNSF customers are free to compete against J.B. Hunt. And now Hunt has more room to grow and a tighter relationship with BNSF.

LOOK BOTH WAYS,

Filling in for a supervisor gave one MOW worker a brush with death ... and a GG1

by Peter J. Dolan

I WAS A VERY YOUNG assistant supervisor of track headquartered at Paoli, Pa., working for Penn Central in the mid-1970s. I had been promoted out of the heavy maintenance gangs on the former New York Central side to the well-respected and somewhat better maintained Pennsylvania Railroad main line west from Philadelphia. I left behind the Jersey Division's freight-only River Line for fast passenger trains led by GG1 electrics and 70 mph intermodal hotshots streaking between local commuters, mixed freight, and heavy ore trains with helpers grinding west up the hill out of Philadelphia. This railroad had tall rail, long switches, and deep ballast. I was fortunate to work with the very capable men of the old Pennsylvania. Many were WWII veterans who, if shown respect, were glad to bolster my knowledge and experience. It was a new environment and a dangerous one. I was taught to keep clear of pneumatically controlled slamming switch points and to never step where I didn't look.

The Pennsylvania's Atglen and Susquehanna Branch ran from the west end of my territory at Parkesburg to Harrisburg, Pa. The supervisor was on vacation, so responsibility for a Sperry Rail Service inspection rested solely in my hands.

We entered the No. 3 main line at Thorndale and tested west to Parkesburg, some 9 miles without a single defect. It looked to be an excellent day on good PRR-design 152-pound rail. All that was left was 1.1 miles of branch trackage before we could

THEN LOOK AGAIN

The author recalls how a fast-moving Penn Central GG1 nearly ended his life — and how looking both ways before stepping onto an active track sometimes isn't enough. *Trains* collection

transfer the inspection car to the next territory. Piece of cake — or so I thought.

Wham! We started identifying big defects including cracked and broken rails with fractures 20-feet long — along with head and web separations, bolt hole cracks, and split heads. This branch line rail was *old*. It was heavily worn 131-pound bolted rail. We found 13 defects in 1.1 miles.

The division engineer arrived shortly after the problems were identified and took control. We diagrammed a plan and promptly summoned additional trucks with rail and equipment. It was a laborious task as this track was only accessible by rail with a Burro Crane and hi-rail trucks. In places where the defects were close together, we would remove the bad rail, slide the remaining rails together, then fill the gaping hole. That reduced the need to cut and drill every rail to a specific length. That was important as the old reciprocating rail saw took four men to position on the rail and each cut required an average of 15 minutes. Grinding and welding the replacement rail to existing rail profiles provided relentless work for the welder.

The repairs lasted well past midnight. After the last bolt was tight and last spike driven, we requested permission from the tower operator at Park to enter the main and clear the equipment in the MW yard at Downingtown, about 12 miles to the east. He lined us onto No. 3 track in the interlocking. The track inspector's hi-rail vehicle reversed. The Burro crane followed pushing the rail cart with a load of scrap rail on which I rode. As required, all our lights were on bright to light our way and warn other equipment of our presence.

Arriving at the tower, my training prompted me to peer over the hi-rail vehicle to check for a westbound, the normal direction of traffic on track 4, before stepping down and crossing to the tower. I saw nothing over the roof of the hi-rail truck as I looked past its bright lights. I then cautiously leaned out to look around the Burro Crane to assure myself nothing was running against the current of traffic.

Seeing nothing, I swung down and landed on the tie ends of track 4.

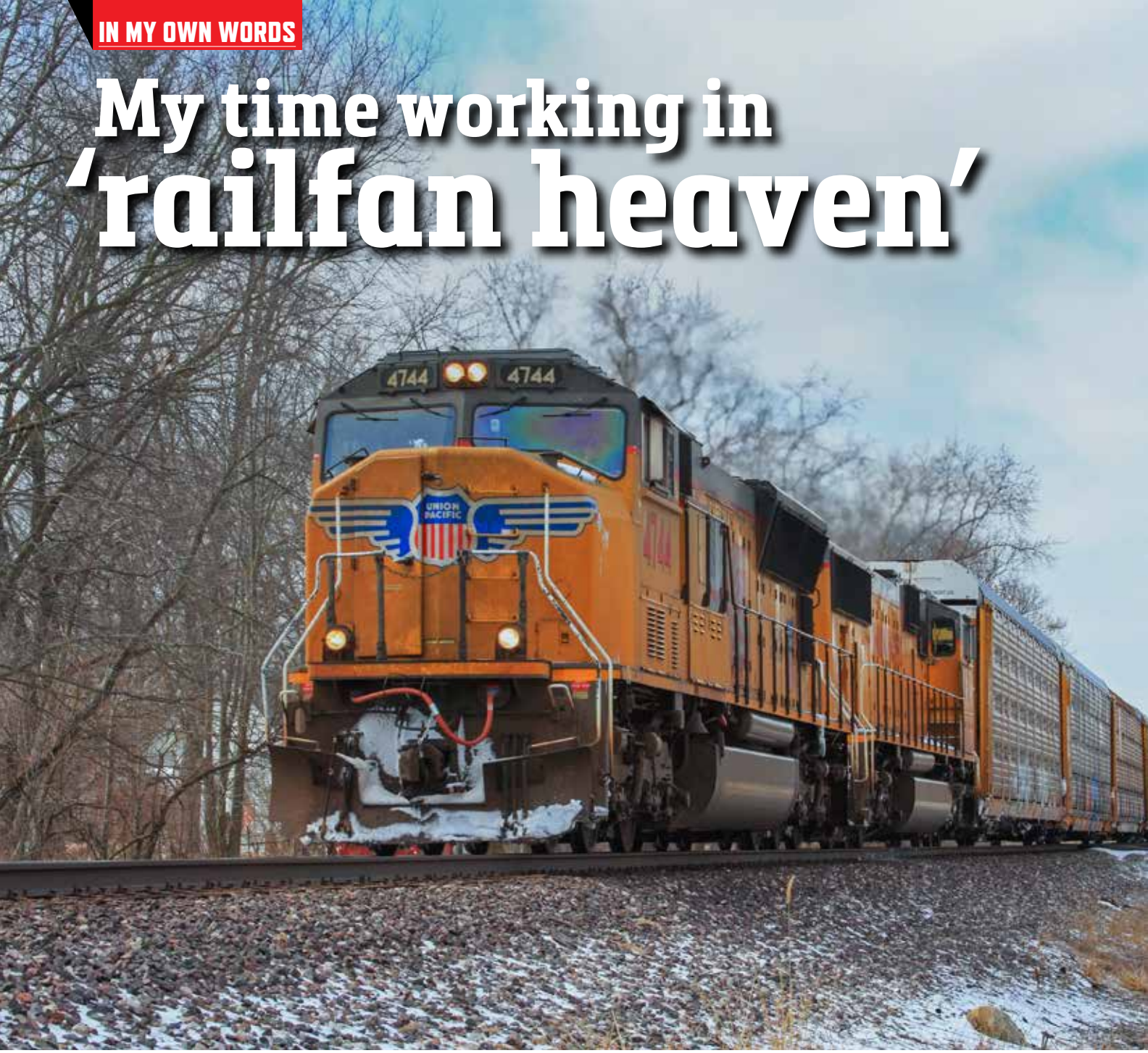
I think I knew something was wrong before my feet hit the ground. Looking up I saw a dimmed headlight in a fast-moving wall of black steel looming over my head. I spun around, my hand found a piece of scrap rail on the cart, and I pulled myself up as hard as I could. I was still in the air as a roaring engine whine and blast of tornadic air enveloped me. The dirt on the cart was flying and rock ballast was rolling off. I held on tight, and tried to seal my eyes from the swirling sand and dust. It was a long train and it drilled fear into me second after second. It seemed as if it would never pass. Eventually the thunderous vibration stopped. The wind subsided and all that remained was the burble of the crane and the idling engine of the hi-rail.

There was shouting from the direction of the tower. What appeared to be a disaster to bystanders turned into the closest of close calls and great relief. In the bright lights the crane operator peered at me through his glass window. He was visibly shaken. That made two of us. He climbed down from his cab and told me he had seen me look both one way and then the other. I had done just that, I assured him.

It is a tradition for opposing locomotive crews to dim their extremely bright, narrowly focused lights as they approach each other. I had looked directly into the bright lights of the hi-rail truck and failed to see the headlight dimmed by the GG1's considerate engineer.

Each day of my 41 years with the railroad I had the opportunity to learn. That day I learned a very serious lesson. Look east. Look west. Then look again. 1

My time working in 'railfan heaven'



A gift of timetables leads to time as a train schedule planner

by Rob Siik

TRAIN SCHEDULES HAVE INTRIGUED ME since my father returned from a 1966 business trip with a present of current public timetables from 13 railroads. To the 11-year-old me, the timetables were like windows to a new world. Before then, the only passenger train I knew about was the Chicago & North Western *400* that served Michigan's Upper Peninsula.

That new world was further expanded a few years later when I discovered a 1967 edition of *The Official Guide of the Railways* at the Northern Michigan University library. *The Guide* included every intercity passenger train schedule for the U.S., Canada, and Mexico. Although the 1967 version was only a fading reminder of the much larger issues of the past, to me it was a Rosetta Stone.

Fast forward to 1991: I now own a collection of old *Guides*. My career with Norfolk Southern is in its second decade when I transfer from Engineering to Transportation Planning in Atlanta. Among my new duties is developing schedules for proposed trains, a task a fellow fan described as "railfan heaven."

To make my new job even better, it let me ride freights, on my own time, to learn about the railroad and train operations. I found most crew members willing to give me plenty of free advice.

The first thing to know is that the schedules I worked on conferred no operating

Headed by Union Pacific SD70M No. 4744, Norfolk Southern train No. 120, an empty auto rack train running between Kansas City and Detroit via UP, accelerates out of the siding at Riverside, Ind., on Feb. 23, 2013. No. 120's schedule was worked on by Rob Siik while in the NS Transportation Planning department. Justin Sandlin

authority — almost every train on NS ran as an extra under the control of the dispatcher. Most freight schedules are principally marketing tools and crew and locomotive assignment planning aids. On a day-to-day basis, combining or annulling scheduled trains, or running late or early, is common in the freight world. However, intermodal traffic, especially, was booming, and when Marketing proposed new trains, they came to Transportation Planning for a schedule.

You might think that a major railroad in the 1990s would have had a computer program to gin up new schedules with a few keystrokes. We did have a dispatch program that would, sort of, simulate the operation of a segment of the railroad and allow us to add proposed trains to the mix. However, it took considerable computer input to "build" the segments and enter the schedules for the existing trains. Then the program took overnight to run — assuming it didn't crash.

Overall, my opinion was the program might be worth the effort for planning large capital investments like new passing tracks, but for schedule planning it required a great deal of work to generate results that were no better than other simpler techniques which, with the exception of a few computer aids, probably would have been recognizable to an 1891 train scheduler.

The first step in the life of a proposed train was normally a request from Marketing for a train to serve a specific origin and destination with a specific departure or arrival time for a given volume.

The second step was to develop the basic running time, before adding time for meets, and other contingencies along the route. For this I used NS' Train Performance Calculator. For a given territory I'd feed in the projected train type, locomotive horsepower, and tonnage and the Performance Calculator provided an expected unopposed running time — "unopposed" being the key word. As much as Marketing would want everything else to clear the mainline for their proposed train, on a predominantly single-track railroad that was not realistic. I would then usually add 10% to the TPC's running time as a cushion for yard congestion.

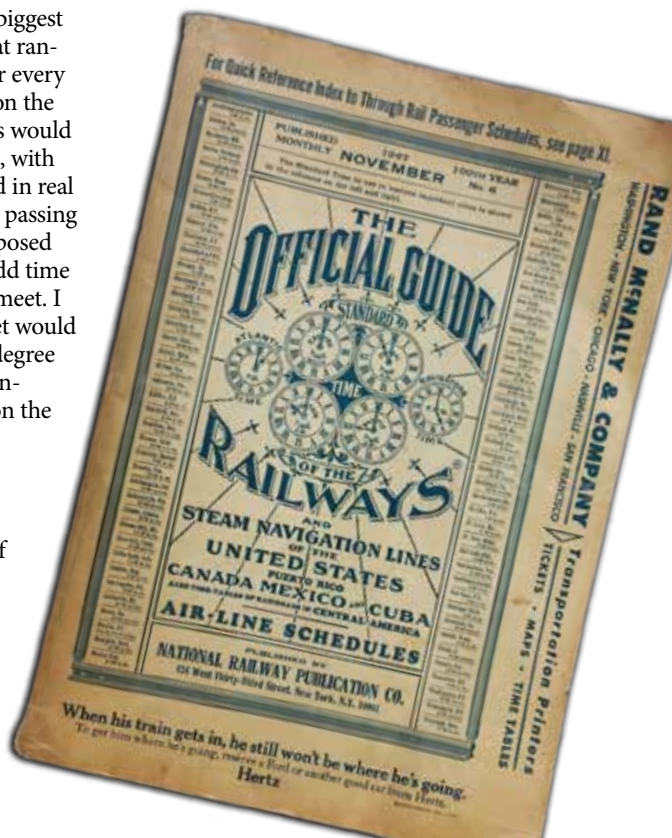
The next step was to add additional time to account for expected meets on single track, crossings of other railroads, crew changes, and en route traffic pickups and setouts. Since meets were often the biggest source of delays, and were somewhat random, I prepared stringline charts for every mainline district showing distance on the x-axis and time on the y-axis. Trains would then be represented by sloping lines, with the locations where the lines crossed in real life taking place — hopefully — at a passing track. I would superimpose my proposed schedule onto the chart, and then add time to my schedule for every projected meet. I did not try to guess where each meet would take place; such a projection was a degree too exact given real-life variability. Instead, I would add time calculated on the number of passing tracks exceeding 7,000 feet long (trains were shorter then) on the district, their average spacing, and the track speed limit. I would also consider the "hotness" of the train being met relative to my proposed train. For example, I always gave Triple Crown [intermodal] and auto parts trains priority over my proposed schedule. Conversely, I would normally disregard locals and bulk trains on the assumption that they would normally take most of the delay when meeting my train.

After my boss and Marketing were both satisfied with my proposed schedule, and it appeared the train might really happen, the schedule would be sent to the affected General Manager and Division Superintendents for final approval. I found they generally accepted my scheduling process even if their chief dispatchers often wanted tweaks. Then the matter would be in the hands of Marketing.

How good were my efforts? Among the schedules I recall working on that were ultimately instituted were trains No. 225 and No. 226, Memphis-Atlanta connections with the Southern Pacific's *Blue Streak Merchandise,* Kansas City-Columbus, Ohio, intermodal trains No. 207 and No. 208, and train No. 120, moving empty auto racks from the Union Pacific at Kansas City to Detroit. I don't recall any major schedule issues, but ultimately so much depended upon crew and locomotive availabilities, timely connections, and efficient train meets that making a clear judgement was difficult.

As for me, after several years in "railfan heaven," I transferred to Intermodal Operations and worked on developing new and expanded intermodal facilities. I

Today, Rob Siik *is retired after a 39-year career (1977-2016) working for both Norfolk & Western and Norfolk Southern. On the railroads, he spent time in the engineering, transportation and intermodal departments. Rob now resides in Norfolk, Va., with his wife Julia.*



‘Shay it Forward’ fundraiser at Illinois Railway Museum honors Wrinn

Preservation event is first in a series planned to honor the late *Trains* editor

▲ **Cate Kratville-Wrinn, widow of *Trains* Editor Jim Wrinn, places his cremains into the firebox of J. Neils Lumber Co. No. 5 — an operable three-truck Shay — during the first “Shay It Forward” event. This event was hosted by the Illinois Railway Museum on June 24.** Two photos, Steve Smedley

Silver Creek & Stephenson Railroad Heisler No. 2 starred in the *Trains* photo charter on June 25, near Freeport, Ill.

THE FIRST “SHAY IT FORWARD” preservation fundraising event was held at The Illinois Railway Museum (Union, Ill.) on June 24. The celebration honored the memory and legacy of late *Trains* Editor Jim Wrinn, who died March 30, 2022, after a battle with pancreatic cancer.

Fundraising activities included throttle time with the museum’s three-truck Shay locomotive, J. Neils Lumber Co. No. 5, lunch and dinner meals aboard the museum’s articulated *Nebraska Zephyr* train set, and night photo sessions.

Wrinn’s widow Cate Kratville-Wrinn, daughter of William Kratville, noted railroad historian and preservationist, has set up the Shay It Forward program to support museums and preservation groups. The program is especially focused on the geared steam locomotives Jim so dearly loved.

“Multiple times, Jim would say, ‘if we won the lottery, what engines are we going to get running first?’” said Kratville-Wrinn. “So, Shay It Forward is a program to support nonprofit steam programs with Shay locomotives, whether they are running, stuffed and mounted, or are locomotives that are in need of preservation.”

The Shay It Forward weekend began June 23, with a celebration of life event for Wrinn in the Milwaukee suburb of Franklin, Wis. It concluded June 25, with a *Trains* photo charter running on the Silver Creek & Stephenson Railroad in Freeport, Ill., featuring Heisler No. 2.

Some of Wrinn’s ashes were spread through the firebox of the Shay at IRM. This is the third time a portion of his ashes have been placed in an operating steam locomotive.

“Western Maryland Scenic Railroad [No.] 1309 on Nov. 6, 2022, at Helmstetter’s Curve, Md., was the first locomotive in which we dropped Jim’s ashes in the firebox,” said Kratville-Wrinn. That locomotive bears a plaque honoring Wrinn for his role in supporting the 2-6-6-2’s restoration. The second time was at the Cumbres & Toltec Scenic Railroad, with Class K-27 2-8-2 No. 463 on June 3, on the trip that featured the inaugural run of parlor car *Jim Wrinn*.

“Jim was in the front of the train and bringing up the rear, which I just love,” said Kratville-Wrinn.

Illinois Railway Museum steam engineer Ken Ristow also ran Wrinn’s ashes through the firebox of No. 5.

“IRM and I personally chose Kenny because [he and Jim] had known each other for years and they had worked together on steam charters,” said Kratville-Wrinn.

The Shay It Forward program will be held at other railroad museums and tourist lines across the country in the future. —*Steve Smedley*

During its earlier excursion career, Canadian Pacific No. 2816 pauses at Banff, Alberta, on Oct. 1, 2010. No 2816 will lead CPKC's Final Spike Steam Tour during 2024. Mike Danneman

Final Spike Steam Tour planned for railroad's first anniversary

CPKC steam excursion to travel in Canada, US, Mexico

ON APRIL 14, 2024, CPKC's first anniversary, the railroad will launch a celebratory tour train through Canada, the U.S., and Mexico, led by Canadian Pacific 4-6-4 No. 2816. A detailed schedule has yet to be released, however, plans call for display stops in Moose Jaw, Saskatchewan; Minot, N.D.; St. Paul, Minn.; Bensenville, Ill.; Davenport, Iowa; Kansas City, Mo.; Shreveport, La.; Laredo, Texas; and Mexico City.

In preparation for the tour, No. 2816 has been in the Ogden Shops, located in Calgary, Alberta, for restoration. For more than 110 years, the former Canadian Pacific Railway shops have been a site for steam locomotive work. The Ogden Shops, built in 1912-13, are named for then-CP President I.G. Ogden.

Dubbed the *Empress,* No. 2816 was delivered by Montreal Locomotive Works in December 1930. No. 2816 is one of 10 CP H1b-class 4-6-4 Hudson-type locomotives. Fitted with 75-inch driving wheels, the engine was first tasked with hauling heavy passenger trains between Winnipeg, Manitoba, and Fort William, Ontario. When retired on May 26, 1960, the locomotive had tallied more than 2 million miles of revenue service.

The *Empress* took an early 1960s detour to the collection of Steamtown, U.S.A. F. Nelson Blount, Steamtown owner, was seeking a 4-6-4 and wanted one from the New York Central. By this time these had been scrapped, so he settled for No. 2816, acquiring it in January 1964. Blount had the locomotive delivered to Bellows Falls, Vt., before it was moved to Scranton, Pa., in 1984. No. 2816 remained in Scranton as part of the Steamtown National Historic Site until the CP acquired it in 1998. From 1964 through 1998, the engine was mainly left exposed to the elements and began to show signs of deterioration. CP returned the locomotive to service in 2001 after an extensive overhaul that included converting it to burn oil. It's been in storage since 2012.

CPKC indicates the final schedule, along with tour event plans, will be released early in 2024. Current information about the railroad, No. 2816, and plans for the Final Spike Steam Tour is available on CPKC's website: cpkcr.com. —*Bill Stephens and Bob Lettenberger*

Merrill (Wis.) Historical Society donates railroad library assets to National Railroad Museum

Pandemic and staffing issues forced the library's closure

IT WAS A GOOD IDEA, no a great idea, at first. Then the COVID-19 pandemic hit.

In 2016, the Merrill (Wis.) Historical Society, with the assistance of local rail historians, began gathering books and ephemera, for a railroad library within its local history collection. The library was unique in north central Wisconsin — Merrill being 200 miles northwest of Milwaukee. Housed in the Society's History & Culture Center, the library was a resource for researching railroad topics, model railroaders, and casual readers. Brett Barker, associate history professor at the University of Wisconsin — Marathon County, stepped in to help curate the collection.

Among the holdings were hundreds of books, railroad magazines, like *Trains,* copies of the *Official Guide,* equipment registers, along with dozens of maps, track diagrams, and technical drawings. The historical society exhibited railroad objects from its collection in the library. Even the bubbler — Wisconsin speak for water fountain — from the Milwaukee Road's Merrill depot was added to the library.

The Sherburne S. Merrill Railroad Reference Library opened on National Train Day, May 14, 2016.

When the pandemic hit, volunteers to fill the historical society's basic needs became hard to find. Enlisting volunteers with specialized knowledge to staff the railroad library became a greater challenge. The historical society did not want the railroad resources left unused, hence, the decision was made to close the library and find a suitable home for the collection.

In early 2023, Tom Burg, of the Merrill Historical Society, contacted the National Railroad Museum (Green Bay, Wis.). The museum agreed to accept the Merrill railroad collection, integrate it with its own, and make it available for research.

"The entire collection has been physically transferred to our museum," says Daniel Liedtke, NRRM curator. "We are in the process of adding it to our catalog and will then be able to have the items available for research use."

Liedtke indicated that the Merrill holdings filled many gaps in the NRRM library. He feels the combined collection will be a comprehensive research tool.

It will take several months to catalog and integrate the collections. The National Railroad Museum collection is available for research by contacting Liedtke at: dliedtke@nationalrrmuseum.org. More information on the National Railroad Museum and the Merrill Historical Society, can be found at: nationalrrmuseum.org or merrillhistory.org — *Bob Lettenberger*

Pack your wanderlust

The thrill of traveling by train involves never knowing what adventures lie ahead

▲ **In the winter of 1971, a United Aircraft TurboTrain approaches its station stop at the Route 128 Station west of Boston on Penn Central's former New Haven Railroad Shore Line route.** Richard J. Solomon

I'VE MADE THOUSANDS of train rides, but I've never lost the exhilaration that one gives me. Every time I board a train, I relive my youthful wanderlust of finding my seat, gliding along on steel rails, and watching the unfolding rolling panorama pass by my window.

The thrill of a train ride is the combination of experiencing motion without the stress of having to worry about the details, enjoying an ever-changing view without having to focus on it, and the ability to read, doze, chat with a friend, or the freedom to wander around the train and get a snack.

For me, the equipment experience is part of the joy. Simply feeling how different railroad cars roll is part of it, but also the various layouts and seating arrangements, plus the styles of décor and types of seating, contributes to my impression of the journey.

Among my early long-distance train rides was a trip with my father in the early 1970s aboard the United Aircraft TurboTrain. We caught the train at the Route 128 station outside of Boston and traveled to New York City along the former New Haven Railroad Shore Line route. Riding in the dome behind the engineer running the train, what I remember most was the unusual sensation as the train sailed through curves. Years later, when researching the TurboTrain for a book, I read about its advanced pendular suspension designed to minimize the effects of centrifugal forces on the body when traveling at high speed. I loved the TurboTrain. When I started first grade in 1972, I proudly brought my lunch to school in a CN TurboTrain lunchbox.

In 1999, I boarded an Italian-designed ETR470 Pendolino train at Horb am Neckar, Germany, for a twisting ride through the Black Forest toward Basel, Switzerland. This Cisalpino service connected Stuttgart to Milan via the Gotthard Pass. My initial contact with the train was simply to experience its tilting system, which I found more refined than the old TurboTrain but didn't give me quite the same sensation.

About a year later, traveling with a Swiss Pass, I boarded a crowded Cisalpino at Bellinzona, Switzerland to take the ride to Milan. Although I had reserved my seat, when I arrived at the appropriate place hoping for a window view, I found a young woman in my place. She offered to move, but instead I politely declined and took the aisle-seat instead.

The seating was arranged in quads — pairs of seats facing

A passenger enjoys a ride on the United Aircraft TurboTrain in October 1968. This state-of-the-art tilting double-end, gas-turbine-powered passenger train featured low-profile domes on the forward and rear cars. This allowed passengers an elevated view while sitting behind the locomotive engineer who ran the train from the dome's cab. Richard J. Solomon

one another. In the seats facing us was an animated, loquacious elderly German woman traveling with her granddaughter. They chatted with glee at the passing scenery; I took notes on the train ride. After about 45 minutes, the grandma and child disembarked at our next station stop. The young woman next to me took a sigh of relief. "Thank God … she has pointed out every mountain, every castle, and tree since we left Zürich!" This broke the ice, and she and I chatted the rest of the way to Milan, where she was studying fashion at the European Institute of Design.

You never know who you'll meet on a train. I've met a great variety of people with stories to tell.

Rolling east on Amtrak train No. 48, the *Lake Shore Limited*, I struck up a conversation with an Amish carpenter on his way to build a barn at a farm in the woods in the Adirondacks. On another trip on train No. 48, some 20 years ago, I had a fortuitous meeting with a signal systems engineer working for General Railway Signal Company. At the time, I was in the finishing stages of my book *Railroad Signaling*, and as we rolled east he helped me write detailed photo captions and answered a variety of technical questions.

Many train riders I've chatted with on trains were passing acquaintances, while a few have become life-long friends. In 1982, as a teenager traveling on a Mystic Valley Railroad Society excursion to the Hoosac Tunnel, I met a fellow young enthusiast named Dan Howard. We became good friends and later took a variety of railfan trips together. We stayed in touch over the years. Not only has Dan contributed to my books and magazine articles, but he and his wife Mary attended my wedding last year.

All things being equal, I prefer spontaneous rail journeys, where a rail pass, flexible ticket, or inexpensive one-way tickets permits the rider to get on and off trains at will. While easy in Europe, these types of journeys are more difficult in the USA. Pennsylvania's SEPTA offers a flexible ticket called the Independence Pass (iseptaphilly.com/blog/independencepass), which is a great way to experience its rail and transit network. — *Brian Solomon*

In February 2000, a northward Cisalpino class ETR470 tilting Pendolino glides northward at Bellinzona, Switzerland. Cisalpino, a joint venture between Italian and Swiss railway companies, bought new ETR610 pendular trains for trans-Alpine services between the two countries in 2004. The joint venture was effectively dissolved a few years later with services being provided by Trenitalia and SBB using ETR610s. Brian Solomon

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OCTOBER 15, 2023: 32nd Annual Chicago Railroadiana and Model Train Show. Sunday, 10:00am-3:00pm. Kane County Fairgrounds, 525 South Randall Rd., St. Charles, IL. Admission: $6.00 w/tax. Tables starting at $65.00. Information: 847-358-1185, RussFierce@aol.com or www.RRShows.com

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

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ADVERTISERS

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In the November issue

B&O's Masterpiece

Baltimore & Ohio's **MAGNOLIA CUTOFF** has been an engineering masterpiece since the 1900s. The success of the Canadian Pacific Kansas City merger may hinge on unknotting its **SHREVEPORT YARD** choke point. Each October, former California Key System bridge units, operated by the **WESTERN RAILROAD MUSEUM** resume mass-transit duties. The countdown to the 1,000th issue continues with **BEST OF TRAINS**.

On sale October 10, 2023


NJ TRANSIT

Hooked a train

On May 18, 2022, New Jersey Transit train No. 877, led by GP40PH-2B No. 4217, is a couple of miles from the end of its run at Hackettstown, N.J., as it skirts along the Musconetcong River at Saxton Falls. Always a popular spot for trout fisherman, it once housed guard lock Five West on the Morris Canal. Donning chest waders was required to get this shot.

Rare glass

It's 10:55 a.m. on Oct. 29, 2022. NJT train No. 6636 skirts Estling Lake in Denville Township, N.J., behind ALP46A No. 4656. Just as the train stretched out along the shore, the water turned to glass creating a marvelous reflection. Such an occurrence usually happens only during a day's first or last light. The photo was taken from private property with permission.

Memories

Because Nos. 4119 and 4120 are the last two F40PH-2CATs still running on the NJT roster, they have become popular photo targets. Here No. 4119 with train No. X60 rolls past a reminder of New Jersey's involvement in the Revolutionary War at Morris Plains on April 15, 2022.

With pride

EMD F3 No. 663 makes its way through the Delaware Water Gap on Delaware-Lackawanna track in eastern Pennsylvania. More than three and half decades ago, Bahrs and his late friend Mike Miterko successfully advocated for the Tri-State Railway and Anthracite Railroad Historical societies to purchase two of the last Bangor & Aroostook F3s. These oldest operating F3s now power trains for the Steamtown National Historic Site in beautiful Lackawanna livery.

Seeing red

The ornate stone station at Madison, N.J., is accented with the brilliant red leaves of winged euonymus or burning bush. It's Oct. 30, 2022, and ALP46A No. 4652 guides NJT train No. 6640 through this well-manicured fall scene.

Down by the park

Pushing into the station at Morris Plains, N.J., on April 20, 2022, is GP40PH-2B No. 4214 with train No. 872. The park gazebo and local 9/11 memorial stand next to NJT's Morristown Line.

Takin' a look

NJ Transit's unique catenary inspection vehicle travels east near Mount Tabor, N.J., on Oct. 27, 2022. In service since 2013, this $2 million rolling workshop is equipped to inspect and repair catenary and signals from ground level to 45 feet above the track.

Bob Bahrs, who has been photographing trains for more than 50 years, likes shooting in spring and fall best. He has recorded locations and railroads across North America — British Columbia, Utah Railway, Ontario Northland, Bangor & Aroostook, Western Maryland, and, his favorite, Erie Lackawanna. Bahrs retired in 2010 after 32 years in train service for Conrail and Norfolk Southern. The photos here were all shot this past spring and fall on former Lackawanna trackage. Both his father and grandfather hired out on his beloved Lackawanna, which disappeared 63 years ago.

Natural beauty

Mother Nature is working to enhance our view of NJT train No. 6644 as it rolls along Tabor Lake in Parsippany, N.J., on Oct. 29, 2022. Between the fall-colored leaves on the trees and in the water, the reflection of ALP46 No. 4624 is highlighted in front of a high blue sky.

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