HORSE POWER

In Memory of Beloved Trains Editor Jim Wrinn

NORFOLK SOUTHERN AT 40

4 Editor’s note
At Norfolk Southern, 40 is the new 30

6 Remaking a railroad
NS looks to new operating plan, technology • Bill Stephens

18 Map: Norfolk Southern
Similar approaches helped make merger of N&W, Southern Railway succeed • Matt Van Hattem

20 Real horse power
The diesels that move Norfolk Southern’s trains • Chris Guss

30 NS 40 sacred places
The Norfolk Southern places that inspire • Ron Flanary

40 Premier attraction
Chicago-New Jersey route, formed from four predecessors, is NS’ most important line • Bill Stephens

48 Rat Hole revisited
Ghosts of the past are buried near this busy NS main line • Ron Flanary

58 Where to find NS history today
Legacies of NS’ predecessors are thriving • Jim Wrinn

66 From lightweight to juggernaut
Transformation of NS intermodal business took more than technology • Lawrence J. Gross

76 Gallery
Our favorite images of NS: Delaware, Illinois, Indiana, Maryland, Missouri, Pennsylvania, and Virginia

ON THE COVER: Southbound NS train 218 enters the Charlotte Intermodal Facility, in Charlotte, N.C., on April 26, 2014. Casey Thomason

ABOVE: Original NS heritage unit ES44AC No. 8114 leads westbound train 745 at Marshall, N.C., along the French Broad River, on Sept. 16, 2015. Grady McKinley

TRAINS.COM
Executive Producer A. David Popp
Producer Kent Johnson

CUSTOMER SERVICE
phone: (877) 246-4843
Outside the U.S. and Canada: (903) 636-1125
Customer Service: customerservice@trainsmag.com

ADVERTISING SALES
Account Executive Tom Vorel
(630) 248-2299
tvorel@kalmbach.com

EDITORIAL
phone: (262) 796-6776
e-mail: editor@trainsmag.com

TRADE HOME PAGE
Trains.com

KALMBACH MEDIA
Chief Executive Officer Dan Hickey
Senior Vice President, Finance Christine Metcalf
Senior Vice President, Consumer Marketing Nicole McGuire
Vice President, Content Stephen C. George
Vice President, Operations Brian J. Schmidt
Vice President, Human Resources Sarah A. Horner
Circulation Director Liz Runyon
Director of Digital Strategy Angela Cotre
Director of Design & Production Michael Soliday
Retention Manager Kathy Steele
Single-Copy Specialist Kim Redmond

SELLING TRAINS MAGAZINE OR PRODUCTS IN YOUR STORE:
phone: 800-558-1544
Outside U.S. and Canada: 262-796-8776, ext. 818
email: tss@kalmbach.com

website: Retailers.Kalmbach.com

TRAINS.COM
Executive Producer A. David Popp
Producer Kent Johnson

Horsepower: Norfolk Southern at 40 (ISBN 978-1-62700-931-7) is published by Kalmbach Media Co., 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187. Canada publication mail agreement 40010760.


©2022 Kalmbach Media Co. Any publication, reproduction, or use without express permission in writing of any text, illustration, or photographic content in any manner is prohibited, except for inclusion of brief quotations when credit is given.

Horsepower: Norfolk Southern at 40 (ISBN 978-1-62700-931-7) is published by Kalmbach Media Co., 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187. Canada publication mail agreement 40010760.


©2022 Kalmbach Media Co. Any publication, reproduction, or use without express permission in writing of any text, illustration, or photographic content in any manner is prohibited, except for inclusion of brief quotations when credit is given.
Similar approaches helped make merger of N&W, Southern Railway succeed

From the Railroad Maps special issue, 2013

HISTORIANS HAVE ARGUED one key to the success of Norfolk & Western’s 1982 consolidation with Southern Railway was that the railroads shared a similar culture — determined, forward-looking, and committed to success. This served to douse the fires of early rivalries with a single-minded focus on making the unified system work, and work well.

It helped that each railroad also had a solid franchise — not always the shortest or fastest route, but track that was productive and well-maintained.

In the 1960s, when most railroads were merging to eliminate parallel lines, including the giant Penn Central, N&W by force looked outward, acquiring the Nickel Plate, leasing the Wabash, and tying all three together with a Pennsylvania Railroad line from Columbus, Ohio, to Lake Erie. N&W’s strategic play got it more than just track: It gained access to western gateways and new traffic sources, such as Wabash’s Detroit-area auto business, that would reduce its dependence on coal.

Southern and N&W might not have been prominent on each other’s radar screens before the CSX accretion of 1980 (Southern previously had explored a merger with Missouri Pacific and petitioned unsuccessfully for Monon’s route to Chicago). But each recognized the benefits of combining two strong Eastern railroads that shared common endpoints that served different regions.

Buying 58% of Conrail in 1998 was an equally critical move that strategically positioned Norfolk Southern for handling today’s growth commodity, intermodal traffic, which polished the rails of Conrail’s high-volume traffic lanes between Chicago and the Eastern Seaboard.

Historically, Norfolk Southern’s component franchises remained essentially independent operations: Coal moving on former N&W lines had nothing to do with the land-bridge containers rolling across the former Pennsylvania main line. However, that historic traffic separation dissolved with the Heartland Corridor and Crescent Corridor projects, clearing previously restricted main lines for double-stacked container traffic.

— Matt Van Hattem
Trackage rights, 2013

AGR   Alabama & Gulf Coast
AMTK  Amtrak
BNSF  BNSF Railway
CF&E  Chicago, Fort Wayne & Eastern
CN   Canadian National
CNYK  Central New York
CP   Canadian Pacific
CSX  CSX Transportation
CUDH  Columbus & Ohio River
IAIS  Iowa Interstate
KCS  Kansas City Southern
METX  Metra
NBER  Nittany & Bald Eagle
NJT   NJ Transit
OHCR  Ohio Central
OSRR  Ohio Southern
PAS   Pan Am Southern
WTN  West Tennessee

© 2013, Kalmbach Publishing Co., TRAINS. Robert Wagner
Norfolk Southern’s history is rich and diverse. Here are 40 of our favorite places that make the heart race just a little faster. They’re the living legacies of the main predecessor railroads that make up today’s NS.

1. HORSESHOE CURVE

Without question, Horseshoe Curve is one of the most iconic U.S. railroad sites. The curve was the most prominent feature of the Pennsylvania Railroad main line when it opened for business on Feb. 15, 1854. The line was a practical engineering solution for a railroad between Philadelphia and Pittsburgh, over the Allegheny Mountains. Westbound trains climb a maximum grade of 1.85% from Altoona to Gallitzin, Pa., before descending to Johnstown on a maximum 1.1%. Horseshoe Curve would eventually have four main tracks, which characterized most of the PRR between Philadelphia and Pittsburgh. With the dramatic decrease in passenger traffic, plus longer and less frequent freight trains, Conrail removed one of the mains between Altoona and Gallitzin in 1981. Horseshoe Curve was designated a National Historic Landmark in 1966. PRR GP9 No. 7048 is on permanent display.

2. ALTOONA WORKS/JUNIATA SHOP

The Juniata Shops complex in Altoona, Pa., was constructed in stages by the Pennsylvania Railroad between 1850 and 1925, with subsequent modifications over the years. Between 1866 and 1946, a total of 6,783 steam, diesel-electric, and electric locomotives were built at the shops. The PRR was a leader in research and development, and a stationary testing plant constructed in 1905 was used to evaluate motive power until it was discontinued and the facilities razed in 1968. Peak employment at the shops came in the 1920s, when there were more than 16,000 workers.

3. ELKHORN TUNNEL AND FLAT TOP MOUNTAIN

As the N&W built westward into the Pocahontas coal-field region of southern West Virginia, a 3,014-foot tunnel was punched through Flat Top Mountain in 1888. The selected elevation was the same as the Pocahontas coal seam No. 3, a valuable vein of coal 10-feet thick. The eastbound approach to the tunnel included 4 miles of 2% grade, plus the grade inside the tunnel itself was 1.4%. Even with a...
steam-powered ventilation system, the movement of eastbound coal using steam power was quite inefficient. The solution was electrification initially between Eckman and Bluefield, W.Va. N&W had such confidence in its modern steam locomotive designs that a new double-tracked 7,107-foot Elkhorn Tunnel was placed into service in 1950. The crest of the grade was 40 feet below the old bore, and along with revisions to the approach on both sides of the new tunnel, reduced the eastbound traffic to 1.4%. Ron Flanary

**4. ROANOKE, VA.**

No location is more associated with the Norfolk & Western than Roanoke, Va. Between 1884 and 1953, the Roanoke Shops (also called the East End Shops) built 447 steam locomotives for the railroad. The best known of these are Class J 4-8-4 No. 611, built in 1950; Class A 2-6-6-4 No. 1218, built in 1943; and Class Y6a 2-8-8-2 No. 2156, built in 1942. In 1953, the shop built its final locomotive, Class S1a 0-8-0 No. 244, the last steam locomotive manufactured in the United States for domestic use. The N&W also owned the Hotel Roanoke, which was adjacent to the station (today it’s owned and operated by Virginia Tech). The 1905 passenger station was slated for full remodeling in 1941. Architect Allmon Fordyce of Raymond Lowey and Associates of New York did the plans and specifications. With steel and other building materials still in short supply following World War II, construction didn’t start until 1948, and it opened for service the following year. The station has since been restored and remodeled as the home of the...
Southern Railway’s steam story is best told at Tennessee Valley Railroad Museum, where 2-8-0 No. 630 and legendary 2-8-2 No. 4501 reside. They pull trains on museum trackage and occasionally on a shortline partner.
WHERE TO FIND HISTORY TODAY

Legacies of Norfolk Southern's predecessors are thriving
Story and photos by Jim Wrinn