



CN Dash 8-40CM 2446 leads train 435 through Brantford, Ont., on Dec. 31, 2020. See page 72. Greg McDonnell

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**On the cover:**  
**Cadillacs! Columbia Basin Railroad's Connell Turn grinds up the hill out of Connell, Wash., behind five SD9s and a single GP9. See page 44.** Blair Kooistra







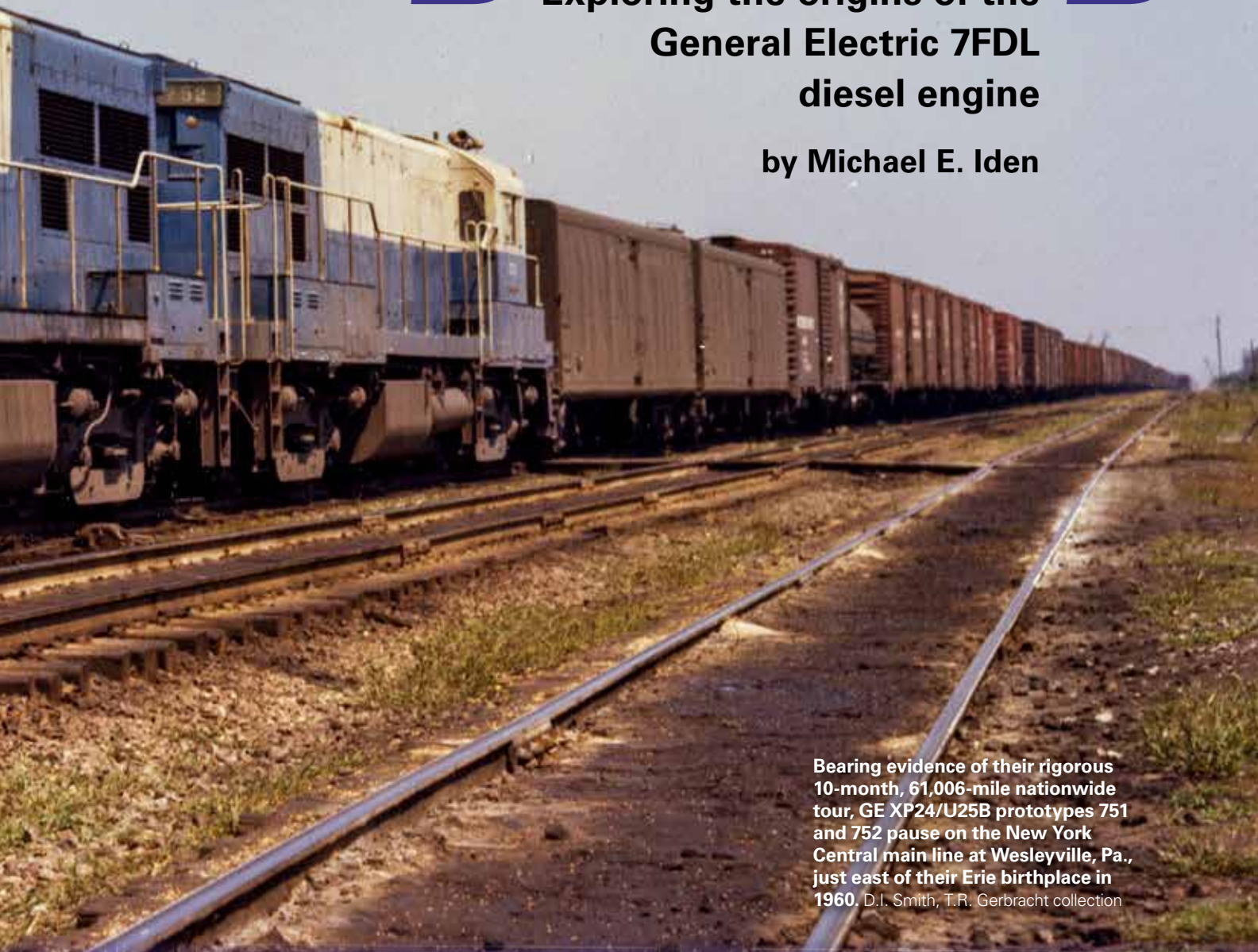


# DIESEL

## dynasty

Exploring the origins of the  
General Electric 7FDL  
diesel engine

by Michael E. Iden



Bearing evidence of their rigorous 10-month, 61,006-mile nationwide tour, GE XP24/U25B prototypes 751 and 752 pause on the New York Central main line at Wesleyville, Pa., just east of their Erie birthplace in 1960. D.I. Smith, T.R. Gerbracht collection





**CN 2406 and UP Dash 8-40CW 9362, part of the first U.S. order built with wide-nose "Canadian cabs," share the floor at GE Erie, Pa., on Dec. 27, 1989.**

alternator sitting on an otherwise bare 71-foot, 8-inch platform. Next up, CN 2406 stands in a similar state. Class engine CN 2400 is near the back of the line. Of the 13 Dash 8s languishing on the scrap track, 11 are cowl-carbodied Dash 8-40CMs. Thirteen more are stored nearby. It's the beginning of the end for one of the most distinctive locomotive models of modern times.

### Brutish and boxy

The 4,000-hp, comfort-cab/full-carbody Dash 8-40CM was on the cutting edge of locomotive technology and design when I first encountered CN 2400 and sisters under construction on the Building 10 erecting floor at GE in Erie, Pa., on a snowy morning in December 1989. The class engine was resplendent in CN vermillion and black-and-white stripes. Its siblings, in various stages of completion and gray primer

paint, crowded the erecting hall.

Resembling nothing that had ever taken shape on the shop floor at Erie, the Dash 8-40CM was mechanically and electronically similar to a conventional Dash 8-40C. Beyond that, there was nothing conventional about the brutish, boxy, full-cowl freighters. From the MLW-Dofasco ZWT-3 high-adhesion trucks to the CN-design comfort/safety cab, desktop controls, and cowl-carbody complete with its rearward-vision-enhancing "Draper tape," the Dash 8-40CM was a custom machine, designed and built to exacting CN specifications.

A CN innovation, the comfort cab — or alternately the safety cab — was designed by the railway to provide increased collision protection with integrated collision posts, heavier steel, a full-width nose, an overlapped, outward-opening nose door, an inner nose door, and smaller cab windows, all

engineered to withstand a million pounds of force and prevent debris, burning fuel, and other foreign materials from entering the cab. Crew amenities included electric heat, window defrosters, high-backed seats with armrests and footrests, as well as a refrigerator and hotplate. The cab made its debut on a 30-unit order for MLW M420s that began arriving on the property in May 1973. The GMD version was first applied to CN 5560, delivered in June 1973 as the final locomotive in a 61-unit GP38-2 order.

A standard requirement on every new CN locomotive since spring 1973, the comfort cab ultimately gained acceptance in the industry and changed the face of North American railroading. By coincidence, the earliest evidence of that industrywide acceptance was on the Erie production line at the same time as the CN cowl. Sharing the floor with the 2400s were Union Pacific Dash 8-40CWs 9356-9405, the first U.S.-built locomotives to have the wide-nose Canadian cab, which GE dubbed the "North American cab."

The cowl carbody was a natural progression from the CN initiatives that brought the comfort/safety cab. The full-width carbody kept snow and ice from interfering with critical components, warmed intake air, and eliminated the operating hazard and maintenance inconvenience of walkways packed with snow and ice. Extra-wide hood doors and the absence of walkways and handrails improved access for maintenance.

The Canadian National order was a major score for GE. CN hadn't taken delivery of a new Erie-built diesel since the arrival of 44-tonner No. 5 in fall 1956, and its only other GE diesels were a half-dozen little centercabs and eighteen 70-tonners purchased in 1950 to help dieselize operations on Prince Edward Island. The only other GE products on CN were six World War I-vintage boxcab electrics built for Canadian Northern passenger trains operating through the Mount Royal Tunnel in Montreal, and a trio of 86-ton centercab



**7FDL-16 prime mover and CMG 194 main alternator destined for Dash 8 installation, Building 10, Erie, Pa.**



**"Made in Erie, Pa., U.S.A." builder's plate adorns CN Dash 8-40CM 2401, a major score for GE.**



**CN took a second helping of Dash 8-40CMs in late 1992: Nos. 2430-2454 wore the CN North America scheme.**





**Trudging through the Fraser River Canyon, CN 2427 and Dash 8-44CWL 2511 approach Boston Bar, B.C., with an eastbound freight on Oct. 11, 1995.**

electrics delivered in 1950 for Montreal suburban service. In fact, until CN's initial order for 30 Dash 8-40CMs — Nos. 2400-2429 — GE had not sold a single road locomotive to a Canadian customer.

Workers in Building 10 admired their handiwork as the imposing machines took form, and GE engineers spoke to me enthusiastically of the challenges presented in merging a conventional product with a radically different design. The backstory on the groundbreaking deal that led to the Dash 8-40CM is likewise one of confronting challenges and radical concepts.

### Lawless called the shots

Railway historian and author Ken Goslett got a first-person account of it all. "I fondly remember meeting (former CN



**Only on CN: SD60F 5537 and Dash 8-40CMs 2427 and 2439 form an all-cowl lineup as eastbound freights pause at Boston Bar, B.C., in October 1995.**

## Dash 8-40CW roll call

Road Nos.	Build date	Qty.	Notes
CN 2400-2429	1990	30/8	
CN 2430-2454	1992	25/19	Built on MLW-Dofasco trucks from C630M/M636 trade-ins
BCOL 4601-4622	1990-04	22/10	Upgraded to 4,400 hp and Dash 9 specs. CN merger 07-15-2004
BCOL 4623-4626	1993-02	4/3	Upgraded to 4,400 hp and Dash 9 specs. CN merger 07-15-2004
QNSL 401-403	1994-03	3/0	Scrapped in 2013

President) Ron Lawless while researching 'Canadian National Railways Diesel Locomotives,'" says Goslett, referring to the book he coauthored with Kevin J. Holland in 2012. "He was one of several retired Canadian National alumni that we interviewed. But Ron Lawless' interview stands out as the most entertaining. We met at his home in a south-facing sunroom. Unsure what to expect, I found him frank and forthcoming. His health was failing but there was no mistaking the twinkle in his eye as he recounted stories about former CN company presidents and even a former prime minister of Canada.

"But he truly lit up on the subject of CN's first purchase of modern GE locomotives and his sparring with then GE Chairman/CEO Jack Welch over the price of the 2400-series locomotives. He delighted in needling Welch that his locomotives were too pricey while at the same time requesting many optional extras such as the comfort cab and

Draper Taper. In the end, of course, Lawless succeeded and a deal was struck. It was a triumph he recalled with delight."

Goslett calls Ron Lawless "an exceptional man. Not merely the president of Canadian National and VIA Rail, he was devoted to helping Montreal's homeless through his support of that city's Old Brewery Mission."

The account is well documented in volume two of "Canadian National Railways Diesel Locomotives," published in 2014 by the Canadian National Railways Historical Association in cooperation with the Canada Science and Technology Museum.

CN's placement of the Dash 8-40CM order was due as much to the persistence of GE Chairman Jack Welch as it was to any shortcomings of General Motors' product line at the time. Welch arranged to sit next to CN President Ronald E. Lawless at a 1987 Association of American Railroads dinner in Washington, D.C., and soon raised the topic of locomotives. Lawless remembers



**All 84 Dash 8-40CMs built rode on MLW-Dofasco designed ZWT-3 high-adhesion trucks.**



**Heart of the matter: 7FDL-16 prime mover nestled in the full-width cowl carbody of CN 2401.**



**Custom CN features on the first order included nose-mounted class and marker lights as on No. 2413.**







# Jurassic Park for old EMDs

Story and photos by Elrond Lawrence

Climbing out of an ancient lakebed, Trona Railway SD40T-2 2006 and five fellow EMD veterans roar past Trona Pinnacles with southbound loads on Feb. 25, 2021.

