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BNSF Dash 8-40BW 516 races the Cadiz Turn through Lavic, Calif., on March 30, 2010. See page 68. Greg McDonnell

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On the cover:
Santa Fe Dash 8-40BW 535 leads a westbound freight on Cajon Pass.
See page 58. Greg McDonnell



CSX AC4400CWs 7017 and 7025 lead a southbound Canadian National manifest through Antioch, Ill., on Dec. 17, 2021. CSX has ordered 200 similar AC4400CW upgrades from Wabtec. Chris Guss

2021 NEW LOCOMOTIVE CONSTRUCTION

Wabtec: 1 new, 289 rebuilt, Progress EMD: 29 new, 21 rebuilt, Siemens: 19, NREC: 1

Railroad	Qty.	Road No.	Builder	Type	Order/serial	Build date	Notes
Amtrak	9 (125)	300-308	Siemens	ALC-42	CHR-100 - 108	04/21 - 12/21*	1
Bangladesh Railway	7 (40)	6611-6617	EMD	GT42ACL	20178580 - 011-017	05/21* - 11/21*	3
Bowen Rail - Australia	10 (14)	4601-4610	EMD	GT46CU-ACE Gen III	20188839 - 001-010	07/21 - 09/21	3
Brightline	2 (11)	111,113	Siemens	SCB-40		08/21* - 09/21*	1
Caltrans (CDTX)	2	2123, 2124	Siemens	SC-44		02/21* - 05/21*	1
Coaster (NCTD)	4 (9)	5005-5009	Siemens	SC-44		02/21* - 05/21*	1
DP World Canada (NREX)	1	101	NRE	2GS14B		11/21*	4
Ethihad Rail - United Arab Emirates	1 (31)	55001	EMD	SD70ACS	20198737 - 001	11/21*	3
NS	2	661, 662	NS	RP-M4C		01/21, 03/21	5
PTKA - Indonesia	11 (36)	CC20556-20566	EMD	GT38AC	20198899 - 001-011	05/21* - 09/21*	3
Roy Hill - Australia	1	1028	Wabtec	ES44ACi	66307	11/21	2
VIA Rail Canada	2 (32)	2200, 2201	Siemens	SCV-42		08/21*	1, 6

- numbers in parenthesis in quantity column are total number of units in that order, if different from the quantity delivered in 2021
* estimated build date, unconfirmed by publication deadline. All data courtesy Sean Graham White.

Notes: 1. Built Sacramento, Calif. 2. Built Fort Worth, Texas. 3. Built Muncie, Ind. 4. Built Mount Vernon, Ill. 5. Built NS Juniata shops, Altoona, Pa. 6. Model designation changed from SC-42.

voltage D.C. The latter would be achieved by using a pantograph system. One design would be similar to what Amtrak's electric locomotives use on the Northeast Corridor; another is an inverted pantograph system like ones used by transit agencies across the world to recharge buses. A high-voltage D.C. pantograph allows for a drastic reduction of charging time compared to the other methods.

While most of the early orders are for yard service, iron ore haulers in Australia have signed up for battery-electric road locomotives from both builders. Fortescue has ordered two BE14.5BB from Progress Rail for 2023 delivery that store 14.5MWh (megawatt-hour) of power. These full-

width-carbody, eight-axle locomotives are expected to use a frame design similar to Progress Rail's SD70ACe-BB that's previously been built in Brazil.

That model is currently in meter-gauge service in South America and has a frame that's more than two feet longer than the domestic SD70ACe-T4 to accommodate longer trucks. Based on a BE14.5BB illustration from Fortescue, it appears the unit will use the same truck design used under existing SD70ACe-BBs, but with larger traction motors to operate on Fortescue's standard-gauge track in Australia.

Wabtec has received orders for its FLXdrive from Roy Hill, Rio Tinto, and BHP. While a model name hasn't been released,

all will receive 7MWh units similar to their current fleets of GE units to meet the clearance standards on each railroad. FLXdrive testbed GECX 3000 tested on BNSF in California for three months in early 2021 using a 2.4MWh battery.

FLXdrive prototype locomotive GECX 3000 is a proof-of-concept testbed used to evaluate the overall system and does not represent the final design of the production model battery-electric locomotive Wabtec will produce.

Each of the mining railroads will use a FLXdrive in consist with traditional diesel locomotives. Using Wabtec's Trip Optimizer software, the electric unit will capture energy or produce horsepower at the ap-

Locomotives: WHAT'S NEW FOR '62

Deciphering what's
doing these days in
dieseldom

David P. Morgan



Krauss-Maffei knocked the chip off the domestic diesel-electric's shoulder with six 4,000-hp diesel-hydraulics split between Rio Grande and Southern Pacific. D&RGW's three KM4000s mix with F units at East Yard, Colo.

TRAINS collection



These are lean days for the locomotive vendors. Their domestic customers, long since dieselized, are mostly broke; and overseas competition may be gauged by the fact that the last annual of the trade press *Railway Gazette* carried advertising by no fewer than 42 builders. The strain of adjusting from the feast of the early 1950s to today's famine is painfully apparent. Baldwin is out of the business and Fairbanks-Morse has had but one buyer (Mexico's Chihuahua-Pacific) in the last few years. Alco recently felt obliged to reassure stockholders and the press that it is still in the game, and General Motors has begun building buses at its London, Ont., plant in addition to moving Detroit Diesel under the roof of Electro-Motive at La Grange, Ill. Long gone are the glory years of steam replacement, when builder catalogs spanned the work of railroading with a half dozen or more basic units ranging from yard engines to 2,000-hp passenger cabs. Today, push-button humps have consigned many a shifter to storage and passenger units are as available and unwanted as the Pullmans they used to pull.

The market of the moment has virtually telescoped into a single model. Caught between the schedules of piggyback and the economies of long trains, the carri-

ers are moving 150-car freights at 60 per — and paying the price of six-unit locomotives to do so. Consequently, the demand today is for a high-horsepower, four-motor hood unit, preferably available on a trade-in basis. Such locomotives hold the promise of keeping the shipper happy, reducing the number of units necessary to keep big tonnage trains going like sixty, and obviating major overhauls on million-miler, 1,500-hp units.

GE GOT THE JUMP

These “second generation” units (i.e., those diesels which can economically supplant the diesels which replaced steam) mirror their heritage — or lack of it. Design-wise, General Electric got the jump on its rivals simply because it could and did build an ideal diesel from scratch with no commitments to previous blueprints or components. Despite its experience (more than 20,000 non-steam locomotives of all types since 1895), GE had limited its participation in the domestic road diesel market before and after World War II to supplying electrical transmission and control equipment to Alco, which, in turn, produced the engines and carbodies for a line of jointly sold Alco-GE units. When this partnership was quietly dissolved by mutual agreement, GE was obliged (1) to locate a diesel engine maker, and (2) to exchange the



Electro-Motive's 2,250-hp GP30 is billed as a combination "high speed and heavy drag" locomotive, a pair of which can replace three older 1,500-hp units. EMD

custom-built products of its Erie, Pa., works for a standardized line of units susceptible to mass production. The engines, for which GE assumed full responsibility, were subcontracted out to Cooper Bessemer; and following tests on the Erie with a CB-powered four-unit experimental (No. 750, later sold to UP), the works introduced its Universal series of hood units — initially available for export only in sizes from 700 to





Family portraits. LDSX SW900s 0176 and 7920 bask in the sun outside the Sarnia shop along with visiting Nova Chemical MP2000D 2003. At left, members of the Lambton Diesel Specialists staff pose with recently refurbished SW900 7920.

A FAMILY TRADITION

Lambton Diesel Specialists bring generations of skill to the locomotive trade

Story and photos by Steve Bradley



Freshly painted and pristine inside and out, LDS-lettered SW1200 7316 is ready to roll at the Sarnia shop. Upgraded by former owner CN and reconditioned by LDS, the locomotive features a 12-645C engine and other enhancements.



A quartet of GMTX GP38-2s overhauled and repainted for Cando Rail and Terminals rest in a former GATX shop rented for overflow work in 2022.

Tucked in the southwest corner of the Canadian National yard in Sarnia, Ontario, stands what remains of the railroad's roundhouse. It's down a short access road, past the railway police building, and appropriately across from what used to be the Locomotive Foreman's office building.

The old brick walls, tall windows, and massive wooden doors highlight the remaining eight stalls. Tracks leading to it are lined with SW900s, SW1200s, a GMD1, GP9, and an ex-CN slug. Behind doors that have seen generations of Grand Trunk Railway and CN apprentices, boilermakers, machinists, electricians and laborers, a young, enthusiastic, and highly skilled workforce continues the tradition. Welcome to the home of Lambton Diesel Specialists.

Kevin Thompson, founder of LDS, exudes enthusiasm and friendliness as he reflects on the company's origins and his family's multi-generation love of locomotives.

Both of Kevin's grandfathers worked for the railway. One was a steam locomotive engineer, the other a worker the CNR's Stratford, Ont., back shops. Kevin's dad started on the railway as an electrician and worked his way up to general foreman in Sarnia.

At age 15, Kevin started as a deckhand on tugboats working the St. Clair River in the afternoons and attending school during the day. He started an apprenticeship with CN in 1974. Earning trade certificates and a good reputation, he was soon holding supervisory positions at various CN shops before returning to Sarnia.

LDS got its informal start while Thompson was a supervisor at CN's MacMillan Yard in Toronto. Jim Davis, another Sarnia

native, worked as a locomotive mechanic at "Mac Yard" but had a second occupation that would soon lead to bigger things.

Davis, Thompson recalls, "was doing little side jobs on yard engines, little outpost yard engines. He needed an electrician, so I said sure, I'd help him. After all, we grew up together as kids as both our parents had worked for the railway as well. So, we did this for a while and then when we both relocated back to Sarnia, CN came to us ..."

That's when things got interesting, and Lambton Diesel was born.

CN in late 1992-early 1993 was preparing to spin off its Stratford-Goderich line to RailTex start-up Goderich-Exeter. Thompson said, "They want us to make sure that it worked. In other words, if the locomotives failed, they failed. To do that though, we needed to start a business."

Thompson and Davis established Lambton Diesel while both were still supervisors for CN in Sarnia. Not long after, CN downsized in Sarnia. "So rather than moving and disrupting our families, we took a buyout from CN and put our entire effort into our new company," Thompson said.

Lambton Diesel negotiated a lease agreement to

set up shop in remnant of the Sarnia roundhouse, constructed by Grand Trunk in 1903. CN had originally intended to demolish it until Thompson and Davis offered their proposal.

A READY MARKET FOR QUALITY

The petrochemical industry maintains a large presence in Sarnia and the numerous industrial switching locomotives assigned to these facilities presented a ready market for LDS. Respected for quality work and reliability, LDS quickly became the go-to locomotive service resource for local industries. As its reputation grew, LDS broadened its customer base and area of service coverage throughout southern Ontario and beyond. Mobile crews using well-equipped

trucks performed regular locomotive maintenance or as-soon-as-you-can-get-here repairs on motive power operated by industries and short lines.

Mobile service and troubleshooting became an LDS specialty. Kevin and Jim acquired tremendous knowledge during their years at CN, and if you were having trouble with a locomotive, these guys were amazing on the phone. From personal ex-



Working at the Barrie-Collingwood shop in Utopia, Ont., an LDS mechanic finishes up a new drawbar installation on GP9 1001.