

Ingles Color Classics

# EMD'S



EMD's "mighty mite" shows its heft as BN No. 88, ex-CB&Q 9143, hauls 10 hoppers of sugar beets at Great Western's Sterling, Colo., mill in fall 1970; built in 1940, the unit was retired in 1980. The distinctive profile of an SW1 is obvious with NYC 574 at Kankakee, Ill., in November 1961 (right). NYC had the most SW1s, 96, and while it stabled many in big cities, the compact units also served outposts such as Cairo, Ill.; Bay City, Mich.; and Fostoria, Ohio.

BN, Hol Wagner; NYC, J. David Ingles



# MIGHTY MITE

Unique in profile and sound, this switcher model found many buyers during its 15 years of production

BY J. DAVID INGLES • Photos from the author's collection



**Y**ou could turn a profit by operating an entire 42.5-mile railroad with a single 600 h.p. SW1. Ike W. Duffey did just that with the Central Indiana Railway and its only diesel, 1949-built No. 1, between Anderson and Lebanon for more than a decade beginning in 1951 [“Running a Railroad for Fun,” Spring 2013 CLASSIC TRAINS]. The CIR was a hobby for Duffey, as his salary as president and general manager of the road was \$1 a year. That a railroad of such length relied

on a single locomotive was unusual but far from unique. Many Class I carriers used SW1s on light-rail branches, mostly singly but also with two or more in multiple. Generally, though, Electro-Motive’s “mighty mite” labored in freight yards, toiled behind the fences of various industries, prowled rural branch lines and short lines, or hopped about at passenger terminals and coach yards.

The SW1 was easy to recognize, both by eye and ear. Like other early Electro-Motive switchers, it measured just shy

of 45 feet in length, but the SW1’s shorter hood gave it a stubby yet jaunty profile. Big “porches” fore and aft, with “seats” on which a tired ground crewman might rest between tasks, enhanced the effect. Below the radiator grille on the front, that “seat” hid the sandbox; behind the cab was the battery box. Enhancing their jaunty appearance, most if not all SW1s also sported their bell atop the hood up front.

Protruding up from the hood was a single exhaust stack, instantly separating the SW1 visually from its twin-stack



**Milwaukee used SW1s in multiple on its 105-mile La Crescent–Austin secondary line along the Root River in southeast Minnesota; crews called them “Pups.” The line had weight-restricted track and bridges, exemplified here as an eastbound quartet makes a side trip on June 14, 1976, to Preston, base for the 50-mile Isinours–Caledonia branch. MILW’s 25 prewar SW1s came in the 1620 series, later were 900s, then 800s.**

Terry Norton

Electro-Motive Corp. predecessors as well as the contemporary 1,000 h.p. NW2. (Produced during 1939–49, the NW2 would be succeeded by the 1,200 h.p. SW7, 9, and 1200, all with 12-cylinder 567 engines. EMC merged with Winton Engine Co. to become General Motors’ Electro-Motive Division in 1941.)

An SW1’s 6-cylinder 567 was rated at 600 h.p., and the throaty roar of that compact prime mover gave out a unique,

memorable, and easy-to-identify sound. It was almost a “chug.” Larger than a GE 44- or 70-tonner but smaller than a typical 124-ton 1,000/1,200 h.p. switcher, the 99-ton SW1 fit nicely in between, and it was the longest-lived model to grace the catalog of the era’s diesel king, EMD.

The SW1 sold 661 units, succeeding EMC’s 600 h.p. Winton-engine series in early 1939 and bowing to railroading’s inevitable horsepower increases in Novem-

ber 1953, when La Grange’s last SW1 went to Cleveland Quarries Co. Restrictions during World War II temporarily eliminated its availability as EMD focused on FT road freight locomotive production, another factor being that 6-cylinder 567s were in demand for Navy vessels. No SW1s were sold new in Canada. The lone SW1 to be exported went to the private Bosque de Chihuahua railroad in Mexico, notable for also owning



**No SW1s were sold new to owners in Canada, but some worked there. Wabash kept two at CN’s Detroit River ferry slip in Windsor, Ont., where 102 and idler flats pose in July 1960 (above). Built in 1939, it and 101 were sold in fall 1961 to dieselize Mississippi’s Bonhomie & Hattiesburg Southern. Pere Marquette 11, built in 1942, has factory paint in March 1961 at C&O’s Erieau (Ont.) Lake Erie coal dock 14 years after the merger.**

Both, J. David Ingles

Fairbanks-Morse road-switchers. The NW2, meantime, sold 1,119 units in the U.S. and 24 to Canadian National.

At home almost anywhere, the SW1 sold to 35 Class I railroads, roughly two dozen short lines, and a like number of industrial pikes, according to EMD's 1957 *Product Reference Data*. Scores of SW1s are still at work, and well over a dozen reside at museums, several of which operate them. In fact, the quantities of SW1 resales, second (and beyond) owners, and preservation examples are too numerous to comprehensively cite here.

### THROUGH THE YEARS

The SW1 enjoyed strong sales from the get-go, many customers just continuing their practice of buying EMC Winton 201A-engined switchers. EMD's new 567 prime mover was the big difference, and the SW1's best year was 1940, with 123 sold. Interestingly, total SW1 production was split almost exactly in half each side of the year 1944, when none were built. In 1942, EMD turned out 54, and in 1943 it shipped just one, to Florida's Broward County Port Authority. In 1945, SW1 deliveries totaled 11.

The first SW1, with builder's number 755, appeared in late 1938, beating its big brother NW2's birth by a couple of months. It would be one of seven SW1 demonstrators (below), and would go to Inland Steel in 1940.

Slight changes in appearance occurred on the SW1 during its decade and a half of production. After mid-1950, the front



As seen from the tower at the Alton & Southern-Louisville & Nashville crossing in East St. Louis, Ill., May 27, 1960, Chicago & Eastern Illinois 96, one of the road's five 1942 SW1s, heads east on the former St. Louis & O'Fallon, a 9-mile pike that went to the Black Eagle coal mine.

M. L. "Monty" Powell



The owner's name fills the hood of 1946 Chattanooga Traction Co. SW1 No. 4, working on the city's north side June 1, 1966. A subsidiary of Southern's CNO&TP, CT also had an SW9. The line dates to CT's 1917 start as the electric Dry Valley branch to Red Bank, Tenn. CNO&TP absorbed CT in 1969. Southern's 8 SW1s and 3 of Central of Georgia's 4 wore the same livery.

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ELECTRO-MOTIVE SW1 DEMONSTRATORS		
Bldr's No.	Month/Year	Next owner
755	12/38	Inland Steel 51 (in 1/40)
804	2/39	Southern Pacific 1000
905	8/39	Central of Georgia 1
906	9/39	Western Pacific 501
911	9/40	Great Lakes Steel (Mich.) 11
3896	10/46	Manufacturers Junction 7 (Cicero, Ill., in 1/53); ex-EMD plant switcher 700
15557	6/51	Scullin Steel (St. Louis) 6; ex-No. 152

Source: 1957 EMD *Product Reference Data*



Pennsy's 85 SW1s, classed ES6, were the second-largest SW1 fleet, all but one (from 1942) built during 1946-50. PRR assigned some to remote, light-duty jobs such as with 5950 at Columbus, Ind., on June 3, 1964. Typical of Pennsy, the ES6s were in scattered number groups.

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It's two SW1s for the price of one on October 14, 1963, at Hammond, Ind., as Chicago District Electric Generating 3 (later Commonwealth Edison of Indiana) works at the State Line power plant while EJ&E 220 rolls west on the J's Lakefront Line to U.S. Steel's South Works in Chicago.

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LARGEST SW1 FLEETS		
Railroad	Qty.	Notes
New York Central*	96	1
Pennsylvania*	85	
Elgin, Joliet & Eastern*	27	
Milwaukee Road	25	
Boston & Maine*	24	
Republic Steel	22	
Union Railroad	22	
Chicago & North Western	20	2
Burlington Route*	20	3
Inland Steel*	20	
Illinois Central*	19	
Rock Island*	18	
Baltimore & Ohio*	16	4
Southern Pacific	15	
Great Lakes Steel*	14	
Lackawanna	11	
Wabash	11	
Missouri Pacific*	10	

Quantities are SW1s bought new.  
 \* = Also owned pre-SW1 EMC switchers

Notes:

- Plus 7 by subsidiary Chicago River & Indiana
- Plus 1 by subsidiary Omaha Road (CStPM&O)
- Plus 3 by subsidiary Fort Worth & Denver
- Plus 6 by subsidiary B&O Chicago Terminal

cab windows facing the hood were rectangular, vs. earlier units whose window tops followed the cab's curved roofline. Later SW1s had twin sealed-beam headlights. Early SW1s sported a short exhaust stack, which quickly gave way to EMD's taller switcher stack. The hoods on early SW1s joined to the cab in a two-stage taper, succeeded by a single taper.

SW1 production held steady, with 34 built in 1953, the model's last year, about half the number turned out in 1939, its first. Sales in 1939 were to 18 customers (all but 3 being railroads), vs. 10 in 1953, all industrial firms buying single units other than 14 for Boston & Maine and 12 for Chicago & North Western.

### WHO HAD THEM, WHO DIDN'T

The two giants of the era, New York Central and Pennsylvania, together wound up with just over one-quarter of total SW1 production. U.S. Steel's Elgin, Joliet & Eastern's fleet of 27 was a distant third, as evidenced by the list (left) of the 18 largest original fleets. Of the 35 Class I roads that acquired new SW1s, the smallest was 408-mile Georgia & Florida, which took three in 1950.

Did your favorite Class I buy any new SW1s? Among those that did not were Santa Fe; Chesapeake & Ohio; Chicago Great Western; Rio Grande; Grand Trunk Western; Kansas City Southern; Katy; Minneapolis & St. Louis; Northern Pacific; Frisco; and Union Pacific, plus Alco

loyalists Delaware & Hudson; Gulf, Mobile & Ohio; and New Haven; and steam holdout Norfolk & Western. A few of those had earlier EMC switchers, including Santa Fe, CGW, GTW, M&StL, and NP. Atlantic Coast Line did buy one SW1 but soon sent it to the Richmond Terminal. (Frisco did have an SW1, No. 10, buying ex-BN 77 in 1978 to replace a GE 45-tonner on Blakeley Island in Mobile, Ala.; SLSF 10 rejoined the BN, as No. 70, in the roads' 1980 merger.)

C&O inherited Pere Marquette's two SW1s, 10 and 11, when the roads merged in 1947. Both units stayed in their original PM blue and yellow into the 1960s, and today No. 11, as C&O 8401, works at the B&O Railroad Museum in Baltimore.



Black was initially IC's color for all diesels except passenger cab units, but this SW1, at Chicago in May 1970, got the new 1967 livery. It was among six IC sold to Columbus & Greenville; IC also sold five to Rock Island.

Craig Rutherford

# STEEL PLANT WORKERS

Speaking of the B&O, nearby tourist line Wilmington & Western in Delaware has two SW1s, one built in August 1940 as B&O 208 (later 8408). It worked on the same branch that now is the W&W. Rebuilt in 2016, it is W&W's regular power. W&W also has ex-Lehigh Valley 114, built in February 1940 but now stored.

Other Class I's besides ACL had, for whatever reason, only one SW1. Soo Line kept its 320 in a one-stall shed in Oshkosh, Wis.; today it is at Duluth's Lake Superior Railroad Museum. Others in the one-SW1 club were Erie; Seaboard; and Nashville, Chattanooga & St. Louis.

The SW1, like other builders' diesel switchers, was popular with steel companies and their affiliated common carriers, evidenced by U.S. Steel's EJ&E and Union Railroad (Pittsburgh) and three steel firms all being on the large-fleet list. Replacing steam power with diesels helped clear the air around smoky and dirty mill complexes.

## ANCIENT SURVIVORS

Remarkably, the second, third, and fourth ex-demonstrators, all from 1939, still exist. SP 1000, the oldest, is at the California State Railroad Museum in Sacramento; Central of Georgia No. 1 (which did not wear the "tuxedo" colors, being sold to an Atlanta-area short line, is at the Georgia State Railroad Museum in Savannah; and Western Pacific 501 is at the WP Railroad Museum in Portola, Calif. (WP also bought two new SW1s in '39).

In general, SW1s were disappearing from Class I rosters by the 1980s. Two new entities, Burlington Northern (1970) and Conrail (1976), inherited the model. BN got 25: CB&Q's 18 (1 of which was on subsidiary Fort Worth & Denver and also had been on Colorado & Southern); 5 of Great Northern's original 9; and 3 from

FW&D, including WWV 104 (below). One ex-Q unit had served on the Missouri & Illinois Bridge & Belt at Alton, Ill., but BN quickly sold it. BN retired its last 10 SW1s in 1983 and the system's last one, WWV 104, in 1984. Conrail inherited almost 200 SW1s, most from Penn

Central but also from Reading (which bought 9), Jersey Central (4), and LV (6). All were off the Conrail roster by 1984.

Similarly N&W, whose only diesel switchers were 40 Alco T6s from 1959, inherited Nickel Plate's two SW1s and Wabash's three youngest ones in the big



These three steel firms together owned more than 8 percent of new SW1s. Clockwise from top: Republic Steel 300 works at Youngstown, Ohio, in June 1969; Great Lakes Steel 36 is at a "Downriver Detroit" mill in April '64; and Inland Steel 69, seen from a passenger train, toils behind the customary fence in East Chicago, Ind., in July '59.

Republic, Ray Sabo; Inland and GLS, J. David Ingles



Colorado's Great Western Railway, which ran steam late, bought SW1 No. 61 new in 1952, after two SW9s in 1951, then added two EJ&E SW1s, 231 and 233, which became GW 62 and 63. Obviously at least one wore the J's "road colors" of green and orange, as unrenumbered 231 works with GW 61 at the short line's Loveland headquarters in the 1960s.

Hol Wagner



Tiny cab initials reveal this SW1 is on Walla Walla Valley, a BN subsidiary in Washington. Originally a 14-mile interurban, it came under NP control in 1921 and dieselized with Alcos in 1950. WWV 104, built in 1939 as Fort Worth & Denver 602, replaced another SW1, BN/WWV 77 (built in 1941 as GN 5103), circa 1973. WWV quit in 1985.

Hol Wagner



**Boston & Maine dolled up its 14 postwar SW1s, intended for branchline service, in road colors, with big, angled engine-number boxes atop the front corners of the hood. No. 1120 crosses the Connecticut River bridge leaving Woodsville, N.H., for Wells River, Vt., in October 1962.**

J. David Ingles collection



**Burlington wasn't alone in adorning the compact hood with a slogan (opposite page and page 46); witness C&NW 1268, one of the road's 12 SW1s of 1953, parked in May 1962 at Rhinelander, Wis., on the route of the Chicago-Ashland *Flambeau 400*. C&NW also had 8 SW1s from 1942.**

Robert C. Anderson

1964 merger. N&W repainted the NKP units and two from Wabash; one of the latter, formerly N&W 3110, is at the Minnesota Transportation Museum in St. Paul.

### COLORFUL, OR NOT

An interesting aspect of SW1 fleets was their color, or lack of it. In diesel-dom's early years, Henry Ford's motto for

his Model T auto — "You can have it in any color you want as long as it's black," or words to that effect — was true for almost all yard diesels. Several SW1 owners, Lackawanna, L&N, Soo, and Wabash among them, eventually fielded road units in colorful liveries but stuck with black, or a simple solid color (e.g., B&O blue, Rock Island maroon) on yard en-

gines. Some roads "colorized" switchers after encountering visibility issues. Detroit, Toledo & Ironton was one. DT&I had two 1941 SW1s in black, but when they were rebuilt to SW8s in 1952, their color became the orange all DT&I diesels wore until GTW took over circa 1980.

Other SW1 buyers whose early black switchers changed to road colors included C&NW, GN, MILW, and B&M, New England's only new-SW1 buyer. Burlington applied "Everywhere West" and "Way of the Zephyrs" slogans to switchers as well as road hood units. NC&StL's lone SW1 wore maroon and gold as on the road's GP7s; it joined L&N's 5 SW1s in the 1957 merger. Monon had 3 SW1s, one from 1942 (sold in the 1950s but still extant in Indiana) and two from 1949, sold off before the 1971 L&N merger.

Passenger terminals and/or coach yards worked by SW1s, not necessarily exclusively, included Terminal Railroad Association of St. Louis' Union Station; Central (IC) and La Salle Street (NYC, RI) in Chicago; and Memphis Union Station. Amtrak SW1s worked Washington Union Station in the post-Washington Terminal Alco RS1 era; Amtrak had 16 ex-NYC SW1s and still has one, No. 737, in service, at its Wilmington (Del.) shop.



The SW1 was ideal for passenger terminal work. Clockwise from left: Rock Island 538 pushes the *Rocky Mountain Rocket* consist toward Chicago's La Salle Street Station on November 4, 1961; NYC 676 is coupled to RI Aerotrains cars there in April 1960; two of St. Louis' Terminal Railroad Association's eight SW1s hostile head-end cars and the consist of the Wabash-Union Pacific *City of St. Louis* May 28, 1964.

All, J. David Ingles

## ONGOING PRESERVATION

Testifying to the design and durability of the EMD 567 prime mover and the SW1 itself is the fact that dozens of SW1s still exist, many operational. They serve short lines and museums, mostly, although Chicago commuter system Metra keeps two as shop switchers, both ex-Rock Island but built for Illinois Central.

An internet search reveals where and for whom many SW1s still toil, or shall we say entertain? Moreover, SW1 preservation continues. A case in point is B&M 1113, built in 1941 and sold circa 1960 to the FirstLight Power Resources utility to switch coal trains at the Mt. Tom Generating Station in Holyoke, Mass. Delivered in B&M's second switcher livery, black with four red stripes, the unit was painted solid yellow by the utility as No. 1849.

The Mt. Tom plant closed in 2014, but the unit has been saved and donated to the Berkshire Scenic Railroad Museum, which runs tourist trains out of North Adams, Mass. According to the Mass Bay Railroad Enthusiasts group, utility employee Neil Black and other volunteers, plus the firm clearing out the plant site, waged a campaign to save it. Last given mechanical work at Pan Am Railways' East Deerfield (Mass.) shop in 2013, the

unit is in good condition, and after an overhaul, is likely to haul BSRM trains.

In short, the saga of the SW1 continues. It is uncertain that they worked in all 48 contiguous states (they likely missed Nevada, at least), but the Alaska Railroad acquired four built in 1942 for the Army, Nos. 1201-1204, and they lasted into the mid-1960s. Dozens of Great Plains grain elevators employed hand-me-down SW1s, and some still do, although many

users have gone to larger units, and two SW1s, both now gone, are known to have emigrated to Canada. So let us salute EMD's "mighty mite": Long may it survive, whether to haul the public or quietly work for short lines or industries. ■

*J. DAVID INGLES, Senior Editor of CLASSIC TRAINS since its 2000 inception, draws on his large collection of slides to illustrate our "Ingles Color Classics" series.*



Mixed-train power: CB&Q SW1 9151 has halted for the crew's lunch stop at Donnellson, Iowa, 14 miles out of Fort Madison, on January 23, 1967. Train 77 will cover 65 miles to Bloomfield.

J. David Ingles