EMD Switchers 1935 - 1939 General Motors 201-A Winton engine

General Motors purchased EMC (Electro Motive Corporation) and Winton Engine in 1930. EMC was a subsidiary of GM until 1941 when it became a full division (EMD).

A total of 175 early EMC switchers were built with Winton 201-A engines between February 1935 and January 1939 and all of these but three oddballs can be distinguished from later EMD 567 engined units by small louvres at the top front sides of their hoods, as well as top-of-hood ventilation through several lifting vents rather than the large top grille of the later 567 units. The three exceptions being the solitary, centre cab twin-engined T transfer locomotive and a pair of unique NW4 Roadswitchers which included a steam generator to heat passenger cars during passenger terminal work and AAR type B trucks. Most EMD switchers were supplied with EMD built AAR type A trucks.

The 900 h.p 'N' series differs visually from the 600 h.p 'S' series as follows; The hood on the 'N' series is longer, leaving only a small amount of room before the front walkway, the 'N' series have centrally located twin exhaust stacks whilst the 'S' series have them offset towards the engineer's left, because of the inline diesel, and many 'N' series locomotives have a short electrical box with sharp-angled corners rather than the lower, longer, rounded-cornered "satchel" of the 'S' series.

References:

American Rails. *http://www.american-rails.com/emd*

Pinkepank, J A. (1973). *The Second Diesel Spotter's Guide*. Kalmbach Publishing Company, Milwaukee, WI.

Solomon, Brian (2006). *EMD Locomotives*. Voyageur Press, St. Paul, MN.

The Diesel Shop *http://www.thedieselshop.us/DataEMDIndexRS.HTML*

The Yard Limit. *http://yardlimit.railfan.net/*

SC Series
'S' 600 h.p., 'C' Cast frame
Straight 8/ 600 h.p.
45 units in total

Pre-prod. SC Feb. 1935
No tapering hood
Both units to DL&W
(Lackawanna)

SC 1935 -1939
43 units to 14 Railroads

The cast frame option was not offered after 1939

SW Series
'S' 600 h.p., 'W' Welded frame
Straight 8/ 600 h.p.
76 units in total

SW 1936 -1939
76 units to 21 Railroads

NC Series
'N' 900 h.p., 'C' Cast frame
V12/ 900 h.p.
13 units in total

Pre NC March 1935
(Model (90)
1 Demonstrator to PB&NE

NC 1937-1938
No MU (multiple Unit)
5 units to 5 Railroads

NC1 March 1937
MU only difference to NC
All 5 to Birmingham Southern

NC2 July 1937
Wiring only difference to NC1
Both units to Missouri Pacific

NW Series
'N' 900 h.p., 'W' Welded frame
V12/ 900 h.p.
38 units & 3 oddballs

T (Transfer) May 1936
V12x2 / 1800 h.p.
Centre Cab art. B-B + B-B
Only 1 unit to Illinois Central

NW 1937-1938
8 units to4 Railroads

NW1 1937-1938
Longer hood, no ft. elec. box
27 units to 7 railroads

NW1A 1937-1938
EMC traction motors
All 3 units to SOO lines

NW4 Aug. 1938
Lengthened Roadswitcher
for passenger terminals,
inc. steam generator
& AAR type B trucks.
Both units to Missouri Pacific

EMD Switchers 1939 – 1953 EMD 567 engine

The EMD 567 engine was designed specifically for locomotives and was introduced in conjunction with EMD producing all its own components from 1939, including their own electrical equipment, based on designs previously supplied by GE. Production ceased from 1942-1945 due to war restrictions, in particular the 567 engines was needed for U.S. Navy vessels, then recommenced with the upgraded 567A engine.

The SW1 differ to its SW predecessor due to its single stack, shorter hood, larger rear platform, no small louvers on the front top hood sides, and a smaller sandbox in front of the radiator. Both the SW1 and NW2 underwent a number of improvements over their long production lives. The SW1's curved top two center cab windows over the hood, became flat-topped after mid-1950. But most notably was the stepped taper from the hood to the cab, of the phase I-IV NW2's and earlier SW1, which became a straight taper in Phase V and successive units. The later SW1 and NW2 units also introduced a tall exhaust stack, to lift the fumes for crew visibility. Phase IV was the most numerous phase of the NW2's and Phases I to IV also have slight differences in hood louvres and deck plate details. (See Tom Fassett's excellent drawings at http://yardlimit.railfan.net/emd/spotting/ and Brian Nicholson's articulate example photos and commentary at http://yardlimit.railfan.net/emd/nw2/index.html)

In 1949, when the NW2 was superseded by the SW7, the 'N' for 900 h.p. was permanently dropped, as the h.p. ratings was no longer standardized, making all subsequent models SWs. The SW7 has the same profile as the NW2 Phase V except for its full length, front intake opening

The SW8, SW9, SW600, SW900 and SW1200 are characterized by eight rather than prior stand of six louvered doors, hood door latches and triangular frame gussets, though the smaller V6 and V8engined SW8, SW600 and SW900 have a single forward exhaust stack. The SW600, SW900 and SW1200 has open risers on the steps for draft gear inspection.

SW1 1939 - 1953
567 & 567A, V6/ 600.h.p
661 units to over 80 RRs

TR (Transfer) 1940
Pre-war Cow & Calf
All 3 sets to Illinois Central

NW2 (phase I-V) 1939 - 49
567 & 567A, V12 /1000 h.p.
1145 units to over 50 Roads

NW3 1939 - 1943
Rs with Steam generator &
Bloomberg 'B' Road Trucks.
All 7 units to Great Northern

The NW3 and NW5 Roadswitchers were basically EMD NW2's on a stretched frame and riding on EMD's Blomberg B design road trucks, with large road-sized fuel and water tanks fitted between the trucks. The NW3 's steam generator was fitted in an extended hood section, whilst the NW5's had a short hood on the other side of the cab, for the steam generator, making it EMDs answer to ALCO's successful RS-1.

TR2 1945 - 1949
Post-war Cow & Calf
36 sets to 7 Railroads

TR1 1941
Cow & Calf
V16/1350 h.p. each
Both sets to Illinois Central

TR3 July & Oct. 1949
Cow & Calf & Calf
Both sets to C&O

TR6 1950 - 1953
Cow & Calf
12 sets to 2 Railroads

SW8 1950 - 1954
567B, V8/800 h.p.
374 units to over 50 Railroads

TR4 1949 - 1950
Cow & Calf
15 sets to 4 Railroads

SW7 1949 - 1951
567A V12/1200 h.p
489 units to over 50 Roads

NW5 1946- 1947
RS with steam generator &
Bloomberg 'B' Road Trucks.
13 units, 10 to Great Northern

DH2 May 1953
567B, V8/800 h.p.
1 Diesel Hydraulic Demo

TR5 1951-1952
Cow & Calf
10A &12B units to 2 Railroads

SW9 1951- 1953
567B, V12/1200 h.p
798 units to over 80 Railroads

SW600 1954 - 1962
567C, V6/600 h.p.
15 units to 13 Railroads

SW900 1954-69
567C, V8/ 900 h.p.
371 units to over 60 Railroads

GMD1 1958 -1960
567C, V12/ 1200 h.p.
Canadian built & operated
101 units, 96 to Can. Nat.

SW1200 & (RS)1954 - 66
567C, V12/ 1200 h.p.
1056 units to over 80 Railroads
(RS) Dynamic Brakes & Road Trucks for Canadian RRs.

RS1325 Sept. 1960
567D, V12/ 1325 h.p.
Roadswitcher similar to NW5
Both units to C&IM

EMD Switchers pt.3

1966 - 1987 EMD 645E engine

Both the SW1000 and the SW1500 were built on a frame which was about four inches longer than previous designs, giving them an overall length of 44 foot 8 inches (13.61 m).

Whilst they retaining the taper near the cab, slight changes included harder lines with less beveling on the hood and a wider, boxier cab that no longer included an arched roof, and a single, conical stack, as had been used on the earlier SW8 model.

The new 645E series engine had a deeper crankcase and oil pan than the 567 series engine. This required the engine to be mounted on risers for sufficient clearance, which raising the hood, cab eaves and walkway about 6 inch (152 mm) higher than previous models. This prevented the locomotive from fitting into the tight, confined spaces common within plants and industrial complexes, which had often been designed to the proportions of EMD's earlier switchers.

The SW1001 rectified this height issue by mixing the hood and powertrain of the SW1000 with the underframe of the earlier SW1200. Although the cab is longer than the SW1200's, has a different window arrangement and a flatter roof. However the most obvious spotting feature of the SW1001 is the pilot plates which protrude above the walkway deck height.

The SW1500 retained its large proportions as it was used in yards as well as approaching a road switcher in abilities, to the extent that the majority of them were delivered with the optional Flexicoil trucks, , which permitted speeds up to 60 mph (100 km/h.) rather than the standard AAR type A switcher trucks.

SW1000 1966 - 1972
645E, V8/ 1000 h.p.
119 units to over 25 Railroads

SW1001 1968 - 1986
645E, V8/ 1000 h.p.
Lower height for access
230 units to over 35 Railroads

SW1500 1966 - 1974
645E, V12/ 1500 h.p.
808 units to over 50 Railroads

SW1504 1973
645E, V12/ 1500 h.p.
Blomberg 'B' road trucks
All 60 units to Mexico Nat. RR.

MP15DC 1974 - 1980
645E, V12/ 1500 h.p.
Blomberg B trucks now standard
351 units to over 40 Railroads

MP15AC 1975 - 1984
645E, V12/ 1500 h.p.
AC version of MP15DC
246 units to 14 Railroads

MP15T 1983 - 1987
645E, V8/ 1500 h.p.
Turbo charged MP15AC
43 units, 42 to Seaboard System

The SW1504 was fundamentally a SW1500 mounted on EMD's Blomberg B road trucks, instead of the standard AAR type A switcher or Flexicoil trucks or trucks available on the SW1500. The Blomberg B truck, universally used on EMD's larger four-axle units, required a 2 (610 mm) increase in overall length. The visual distinctions include ventilation slots in the large box on the long hood between the rear stack and the front of the cab.

The SW1504 was in many respects a transitory design between the SW1500 and EMD's later MP15DC, as Blomberg B trucks became the new standard.

The alternator-rectifier MP15AC became the standard for new diesel-electric locomotives as it is more reliable than a generator. The rectifier equipment makes it 1.5 ft. longer than an MP15DC and the intakes are on the lower forward nose sides rather than a front-mounted radiator intake.

Table shows engines upgrades and corresponding power increases across both the lower and high horsepower series.
'Prod.' includes Canadian built and operated units and 'Total' includes all calf units and Roadswitcher variations in the series.

Dates	Engine	Cyl.	h.p.	Series	Prod.	Total	Cyl.	h.p.	Series	Prod	Total
1935 - 1939	201-A	St.8	600	SW & SC's	n/a	119	V12	900	NW/1 & NC's	n/a	54
1939 - 1950	567 /567A	V6	600	SW1	661	661	V12	1000	NW2	1145	1243
							V12	1000	SW7	489	519
1950 - 1954	567B	V8	800	SW8	371	396	V12	1200	SW9	815	837
1954 - 1969	567C	V8	900	SW900	371	371	V12	1200	SW1200	1024	1125
		V6	600	SW600	15	15					
1960	567D						V12	1325	RS1325	2	2
1966 - 1986	645E	V8	1000	SW1000 /01	n/a	349	V12	1500	SW1500 /MP's	n/a	1469
1983 - 1987	645E Turbo						V8	1500	MP15T	43	43