



# Bulletin: SBS4DCC 2 EMD 16Cyl 645E3

**Manufacturer**    ESU  
**Project number**    74408  
**Project version**    R4



First introduced in 1965, the EMD 645 series is still in production on a by-request basis. It is one of the most popular locomotive prime movers ever produced.

This version is an EMD 645E3 16cyl. It has been the most popular 645 produced. This is used in many prototypes including: GP40, GP40-2, GP40P, GP40P-2, GP40TC, SD40, SD40A, SD40-2, SD40T-2, SDP40, SDP40F, F40PH, Australian National BL Class, GT26CW, DSB Class MZ, DDA40X (dual engine), RENFE Class 333, F40C, V/Line G class (original), DSB Class ME, and British Rail Class 59.

- We have incorporated many New Features in this Sound File including:
- 2 Stage Shaft Driven Air Compressor that runs faster when the Prime Mover runs faster.
  - Hand Brake Ratchet.
  - Brake Wheel Type Hand Brakes.
  - Both Regular Prime Mover and "Smart Start" Prime Mover.
  - Proper working Dynamic Brakes. PM Spools down to Idle and then rises as Dynamic Brake Fan Runs. AND The Engine Brakes faster due to Dynamic Brake motor Logic.
  - Throttle Sensitive Prime Mover Sound Paths.
  - Brand New Spitter Sounds. Slow and Fast!
  - Spitter Sounds upon shutdown for 1 minute then automatically turn off.

Sound Slot 1 features an "EMD 16-645E with Turbo"  
 Sound Slot 2 features an "EMD 16-645E with Turbo" Equipped with "Smart Start"

If you would prefer the Smart Start Prime Mover change the following CVs to enable Sound Slot 2 instead of Sound Slot 1  
 CV31 = 16, CV32 = 2

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 CV430 = 2

**Horns:**  
 As Default this file is equipped with a Leslie RS3L Horn.  
 To use other horns please use the ESU Template pack. Template pack 1.5 and newer will contain many of the new North American sounds.

Copy the following link into your browser for a sample video of this Prime Mover in action:  
<http://youtu.be/qp3rs3w3Q6M>

Key	Function	Sound slots	Volume CVs	Volume values
F0	Directional Headlight			
F1	Bell	4	283	70
F2	Playable Airhorn	10	331	128
F3	Manual Notching (up)			
F4	F0R			
F5	Forward:AUX1 + AUX2 (Ditch Lights Front) Reverse: AUX4 (Ditch Lights Rear)			

F6	Dynamic Brake	6	299	100
F7	EMD 16 Cyl 645E3 #1	1	259	128
F8	EMD 16 Cyl 645E3 #2	2	267	128
F9	Manual Notching (down)			
F10	Dimmer			
F11	Sanding Valve	13	355	128
F12	Switching Mode			
F13	Brake Set / Brake Release			
F14	AUX3			
F15	AUX4			
F16	Coupler	5	291	128
F17	Radio Comm (crossing)	21	419	85
F18	Radio Comm (Detector)	22	427	128
F19	Short Air Let Off	14	363	128
F20	Compressor	7	307	90
F21	Fast Spitter Valve	23	435	128
F22	Radiator (Fan) Sound	8	315	64
F23	EMD Radiator Fan	24	443	128
F24	Fast Spitter Valve	15	371	80
F25	Slow Spitter Valve	17	387	80
F26	Handbrake Ratchet	20	411	100
F27	Handbrake Wheel	19	403	100
F28	Spitter on Shutdown Off			