

Buckambool Model Trains

The home of DCC N scale in Australia

www.bmodeltrains.com

CR GM Diesel Locomotive Sound Project



Image credit Marcus Wong - <https://railgallery.wongm.com/>

The GM class are a class of diesel locomotives built by Clyde Engineering, Granville for the Commonwealth Railways in several batches between 1951 and 1967. As at January 2014, some remain in service with Aurizon and Southern Shorthaul Railroad.

- EMD-567C prime mover with Leslie S5T or Westinghouse A B horns
- Sound features via function buttons: Coast on demand, light/heavy load, drive lock, notch 8, manual notching and volume increase/decrease
 - Cue-able sounds: Dynamic brakes (prime mover drops to idle), brake squeal, coupler crash, air compressor, air release and spitters

Functions:

Function Button	Sound/Lighting Functions:
F0	Directional Headlights - front/rear light (white & yellow wires)
F1	Headlights dim
F2	Long Horn
F3	Short Horn
F4	Dynamic Brakes
F5	Coast
F6	Heavy Load
F7	Marker lights - function output 1 (green wire)
F8	Sound on/off
F9	Drive lock
F10	Alternate Horn
F11	Coupler Crash
F12	Notch 8
F13	Air Compressor
F14	Air Release
F15	Flange Squeal
F16	Manual Notching on/off
F17	Notch Down/-
F18	Notch Up/+
F19	Shunting (reduced momentum)
F20	Mute
F21	Decrease Volume
F22	Increase Volume

Description of sound features:

This sound project utilises custom sound features to provide highly prototypical operation.

- **Coast** - Pressing F5 will force the prime mover to idle regardless of the speed of the locomotive, pressing again will return the prime mover to the appropriate notch for the locomotive speed
- **Heavy Load** - Pressing F6 will make the locomotive notch up much faster across lower speeds, simulating a heavy load on the drawbar (it is best to activate this prior to setting off, and can be deactivated once full speed is reached)
- **Notch 8** - Pressing F12 will force the locomotive regardless of the speed it's travelling to rev up to notch 8, press again to return to the standard notch

- **Drive Lock** - Pressing F9 will lock the current driving speed of the locomotive, allowing the loco to be notched up or down using the throttle on your controller. Press F9 again to disable this feature and the locomotive's speed will return to the most current throttle setting
- **Dynamic Brake** - Press F4 to enable dynamic brakes, the prime mover will automatically drop to idle, then increase to notch one. The dynamic brake sound will then loop until disabled or speed of the locomotive drops below speed step 5

Momentum:

The decoder by default will have a reasonable amount of momentum set to ensure that the locomotive's speed best follows the sounds produced by the decoder. This can be increased or decreased to your preference by entering a new value in for CV 3 or 4. This can be temporarily reduced by pressing F19

Manual Notching:

This allows the notch or prime mover RPM to be manually raised or lowered regardless of the speed the locomotive is travelling. Pressing F16 will lock the prime mover into the current RPM regardless of the speed the locomotive is travelling, or if at idle. Pressing F17 will notch the prime mover down, pressing F18 will notch the prime mover up. Continue to press either F17 or F18 to adjust the prime mover as needed. Pressing F16 at any time will exit manual notching and will return the prime mover to the most current throttle setting.

Note, when pressing F17 or F18 on most types of DCC throttles, they are toggle on/off buttons. This feature has specifically been designed to work regardless of pressing these function buttons on or off. Pressing F17 or F18 on and off continues to notch up/down the prime mover. If you alter these function buttons to become momentary, the feature will also still work. The manual notching feature has been custom designed by Buckambool Model Trains using the scripting feature of Zimo decoders.

Sound volume:

By default the master sound volume has been set to 80. This can easily be increased/decreased by pressing F21 or F22 on your controller (to a maximum value of 100), or by changing CV266 to a value between 40 and 100. Use values above 100 at your own risk!

Note: CV514, 517, 520 etc. to CV568 control the volume for sounds cued by Fkeys F1-F19.

Similarly Keys F20-F28 are controlled by CV674, 677 etc. to CV698. Values of 1-254 will adjust the percentage (1-99.5%) by which the original sound is to be played back in volume.

CV's to change between different horns:

By default your sound decoder should have the correct horns programmed appropriate to your particular Gopher Models locomotive. For ease of programming different locomotive profiles, Zimo decoders feature the ability to have multiple locomotive sound sets programmed to them.

Your decoder contains 10 different sound sets to provide 5 different horn profiles and 5 matching profiles to provide the heavy load function.

If you wish to change the horn sets that are activated via Function Keys F2, F3 and F10, please use the following CVs...

Please note that the first 11 units (GM1-11) of the GM class were delivered with EMD 16-567B, 1,119 kW (1,501 hp) engines and four powered axles with the remainder (GM12-47) having 16-567C, 1,305 kW (1,750 hp) engines and six powered axles. The final 11 were fitted with dynamic braking.

Locomotive	Horns	Function Values	CV's
GM12-47 Leslie S5T	Long, short, alternate	F2, F3, F10	CV265 = 101
GM1-11 Westinghouse A&B	Long, short, alternate	F2, F3, F10	CV265 = 103

Decoder Reset:

In the event of needing to reset the decoder, please program CV8 = 8. This will reset the CV's to those defined by this sound project, a factory reset according to my sound project. Note, you will lose some CV's that adjust individual volumes for some function keys.

Contact Details:

If you have any further questions about this sound project or you are having an issue with your locomotive fitted with this sound project please don't hesitate to email me at bmodeltrains@gmail.com, call/text 0430 460 985 or send me a message through my Facebook Page if you have any questions.