



CONDENSED OPERATING MANUAL

GR-418 ROAD SWITCHER

GY-418 YARD SWITCHER

GY-00 YARD SLUG



RAPIDO TRAINS INC.
EQUIPMENT DEPARTMENT

GMD GP9RM +/- SLUG LOCO PRODUCT GUIDELINES

Thank you for purchasing this model of the Canadian National rebuilt diesel-electric locomotive, the General Motors Diesel GP9RM with (or without) a slug.

If this is your first Rapido locomotive, we must ask – why is this your first Rapido locomotive? No, seriously, we've been around now for 20 years now and have been pumping out a lot of beauty Canadian products, eh? We've produced a metric tonne of Canadian products, like the *Canadian*, Royal Hudson, Dash 8-40CM, RS-18u, RSC-14, M-420, D10, F59PH, etc. So just for that, we're going to make sure you LOVE your GMD GP9RM and/or slug. And then you'll say to yourself, "What have we missed out on all these years? We need to find and buy every Rapido model that has ever been released, in every scale! Especially the UK ones!"

If you are a returning customer, welcome back! Just put your engine on the track. All we ask is you don't intentionally set it on fire, don't try to put real diesel fuel in it, and don't MU it to anything with pizza cutter flanges. Oh, and REALLY keep it away from cheap DC "train set" controllers. Poor-quality power packs can quickly and easily give any Rapido loco a melted makeover.


If this is your first Rapido Manual, we should warn you up front – there's usually a good amount of humour through these manuals. Well, at least we think so. We have gotten some comments from people that don't agree, but we suspect that they have had their sense of humor surgically removed (we think it's near the spleen). After all, model railroading is supposed to be fun!

As always, if there is anything amiss with your GP9RM and/or slug, please do not hesitate to contact us. We stand by our products 100%. The best way to contact us is through email (service@rapidotrains.com) but you can also try to reach us by phone, the postal service, or subspace transmitter (you must provide the krellide power cell). Our contact info is near the back of this manual.

However, PLEASE do not send a faulty model back to us without first getting authorization. You wouldn't believe how many times we get a delivery of a broken locomotive with only a name inside (sometimes only the FIRST name), meaning we have no idea what's wrong with it! (Hey Rick – your package of pantographs is still sitting on the shelf in our bathroom.) If the issue with your model is something simple – like a loose grab iron – then we'll likely tell you how to fix it yourself. While we generally will support repairs to your GP9RM for a considerable length of time, please realize that eventually the parts supply will run out. That, or the Earth will be overrun by tribbles and all humans will become their pets; whichever comes first. Unfortunately, that will dictate when we can no longer help you. Again, please make sure you contact us first so we can tell you whether there's enough parts (or quadrotriticale) left to do your repair.

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	<p>LOK SOUND EST. 1999</p>	<p>Sound-equipped Rapido models feature ESU LokSound V5 decoders. For more information, please visit www.esu.eu.</p>
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GP9RM +/- SLUG DCC FUNCTIONS

F0	Front Headlight	F13	Rear Headlight
F1*	Bell	F14	Strobe Lights & Remote Belt Pack <i>(if equipped)</i>
F2*	Horn	F15*	Isolation Switch
F3	Flange Squeal	F16*	Air Dyer On Shut Down
F4	Dynamic Brake	F17	Automatic Brake Set/Release
F5*	Doppler Horn	F18*	Ground Lights
F6*	Ditchlights <i>(if equipped)</i>	F19*	Numberboards
F7	Dim the Headlights	F20	Air Compressor
F8	Startup/Mute/Shutdown	F25	Emergency Automatic Brake
F9	Drive Hold	F26*	Manual Notching Up/Run 8
F10	Independent Brake	F27*	Manual Notching Down/Coast
F11*	Directional Class Lights	F28*	Manual Notching Logic
F12	Switching Mode		

**Not included on slugs.*

PROTOTYPE HISTORY

In the early 1980s, CN embarked on a rebuild program in their Pointe Ste. Charles shops to extend the operating lives of their GP9s. The "GP9RM" was the result, which was divided into three groups: The 4000/4100 series were rebuilt as road units, the 7000 series as switchers, and the 7200/200 series as "mother" and "slug" pairs. The slugs lacked a prime mover, instead drawing power from the mother to operate the traction motors. The hoods were cut down and ballast was added to help weigh them down.

The GP9RM fleet included a chopped short hood, the addition of three coloured marker lights on both ends, the bell moved to the side of the hood, and the dynamic brake blister converted to intake filters. Internally, the units had upgraded EMD 645 power assemblies in their original EMD 567 engine blocks with improved electrical systems. The 4000/4100 series road units were changed to have the short hood end designated as the front, with the control stand reoriented, while the 7000/7200 switchers retained the long hood designated as the front. One could see these locos all across the CN system.

Our GP9RM represents the locomotives rebuilt from the original phase II GP9 locomotives, with details corresponding to the earliest rebuilds, right on up to the last, in 1988. The biggest variation of the slug rebuilds was the use of Blomberg or Flexicoil trucks. Starting in 1994, CN applied Belt-Pack remote control systems to the 7200/200 series locomotives which included extra antennas and strobe lights.

BREAK-IN

Just so we're clear, that doesn't mean break into anyone's layout room to steal their GP9RM or slug. And don't break into a hobby shop either because that is really frowned upon. Just buy more for yourself. But this isn't about that kind of break-in.

Every locomotive needs a break-in period. Your GP9RM and/or slug has been tested at our factory for about two minutes...maybe...just to make sure everything functions as it should. That is certainly not enough time to get the gears to mesh nicely or to even out any jerky operation in a new motor. We suggest that, after reading this manual, you put your GP9RM or slug on a test loop and just let it run in each direction for an hour or two. Fast and slow. Don't have it pulling anything either while you're breaking it in.

There already should be enough lubrication in the gearbox so you don't need to add any. Just let the thing run. If you are running this thing on track on the carpet, please vacuum first. You have no idea how many models come back to us with gearboxes full of carpet fluff and pet fur. Our models are not cat-proof.

HOW TO HOLD YOUR LOCOMOTIVE

Hold your GP9RM or slug gently, and with much love, care, and attention. Your model has numerous delicate parts, especially on the roof and underframe. If you want to back date it to be the quality of a model produced in the 1970s, then rip all the parts off and handle it like a big bowl of homemade poutine after playing in a hockey tournament. We're assuming you don't want to do that, so the model should be picked up carefully. It is best to pick it up with your fingers along the bottom edge of the GP9RM fuel tank, or on the slug, under the side sills (but avoid the stanchions and piping!). That way you won't leave greasy fingerprints on the sides and you also won't stress any of the delicate parts. Always make sure your hands are free of shmutz before touching your engine, otherwise you'll shmutz up your loco. Hey – if your hands have enough oil on them that could be realistic weathering.

If you are taking your GP9RM or slug to the club all the time and regularly handling it, stuff will likely break off. Sorry. The little bits are made of plastic and metal and attached with glue, which is all a bit fragile. We wanted to make the small parts out of unobtainium and use Steady-State Micro Welding to install them. Unfortunately, with the current global supply crisis, unobtainium has become unobtainable.

We suggest wrapping your GP9RM and/or slug in a plastic bag before placing it in the packaging or in your loco holder so you can catch bits that fall off. White glue is the recommended adhesive for reattaching the bits, although you are welcome to use CA but only if you are very careful or very brave. Remember to apply the CA to just the part and not the model (don't ask us how we know this).

CHECKING AND ADJUSTING YOUR LOCOMOTIVE

We try and make sure that every locomotive is perfectly up to spec before it leaves the factory, but if it was a Monday morning and our factory workers were up late the night before placing bets on the big Mahjong game between engineer Xiao Hong and Zhang San from accounting, there may be a couple of bugs. Doing a quick pre-service check will solve most operational glitches.

- Check to see that all wheelsets are correctly in gauge using an NMRA RP-2 Standards Gauge. Should any of the wheelsets be out of gauge, then remove the affected wheelset from the truck by prying off the bottom lid of the gearbox with a small flat screwdriver and then spreading apart the sideframes. The wheelset can be regauged by grabbing each wheel and twisting. Reverse the steps to replace the wheelset and ensure the gearbox cover is snapped into place before placing it on the track.
- Check that all underbody piping and appliances are firmly installed and clear of the track. Of particular note are the air hoses on the ends of the locomotive

and both coupler trip pins. Bend up any low coupler trip pins so they don't interfere with your switches and crossings. We recommend using Kadee part #237 (Trip Pin Pliers) or Micro-Mark part #80600 (Trip Pin Bending Plier). If your track transitions from flat to a 12% grade in three inches, you might also want to cut off the pilot and the fuel tank as they will foul the rails. Have you ever considered roller coaster modeling? That might be more your style.

- Make sure that the trucks swivel freely and without binding. If they catch on anything, check to ensure that the sides of the trucks don't bind against the steps. If they do, see that everything is firmly installed.

MISSING OR DAMAGED PARTS

If you open your GP9RM (with or without slug) box and discover that something has obviously been bumped in transit and is damaged, please contact us. We know that some of you don't like the idea of human beings touching your models, but if it is a matter of gluing an exhaust stack back on you can do it yourself in less than a minute with a drop of white glue. If you really want to send your model back to us for us to install that, we would be happy to. But if you do send it back for us to put that one part back on and other stuff falls off when we send it back to you, then tough tooties. We're not fixing it again.

We try to make our models courier- and mail-proof, but there really is no way to protect a model from damage when it is used in a game of football at the UPS or FedEx distribution center. Model trains generally don't survive well after being "spiked" because Billy scored a touchdown near the warehouse receiving doors.

If you see some grab irons are missing and they are not floating around the packaging, let us know and we will send you replacements. More information about our warranty can be found toward the end of this manual.

REMOVING THE SHELL

If you need to open your GP9RM to install a crew or a decoder, things should be pretty straightforward. To get inside your GP9RM, you will need to follow these steps:

- We recommend that you only attempt opening up your locomotive in a zero-gravity environment. That way, if a part does break off, it will just be suspended there, right where you broke it, ready for you to reinstall it. If you don't have a zero-gravity chamber, then we suggest not installing shag carpet in your workspace. Yes, it looks great and yes it feels great on bare feet, but Rapido employees have experience in understanding that whatever detail bits fall into shag carpet are gone forever. No questions, it's not coming back.

The only way to find it is to walk barefoot and hope that it impales your foot in the most painful way possible. And if you decide to use this method to find the missing parts, you're not covered by our health plan.

- To that end, please make every effort to ensure nothing flies away. We normally suggest you work in a room with everything white – walls, floor, ceiling, workbench, tools, clothes – everything. But doing so would be very boring (albeit practical) so that's likely not the case, is it? Instead, wear a shop apron but attach the bottom of it to the underside of your workbench. That way, at least some parts will be saved from hitting the floor.
- To remove the shell, you have to remove the screws from the coupler boxes and pull them out of the pilots. Then just carefully pull the body shell and walkway assembly off the chassis. If you are working in a zero-gravity environment, then the chassis will slowly drift away from the shell. On the other hand, if you are not in a zero-gravity environment; remember – gravity sucks. If you hold your loco upright the chassis will now plummet to the nearest solid object. You may want to do this carefully over a workbench with some foam underneath.
- If you wish to install a crew inside your GP9RM, you have to remove the cab from the shell, but the cab and all the walkway boxes are cast as one piece. Remove the short hood wire handrails from the sill steps, then the long hood wire handrails from the cab. Next, the tricky bit is removing the single handrail stanchion from the walkway box on the long hood side. The cab itself is secured to the walkway by four clips – two on each side. Using a small flat screwdriver, pry the clips towards the cab to release them and push up at the same time. With a little manipulation, the cab should come free and lift up. Be careful not to yank too hard as the wires for the cab lights are attached between the cab and body. After the cab is separated, the cab floor needs to be removed from the cab by gently prying the cab apart in order for the floor to release from the snaps molded into the cab walls. Install your crew figures and install in reverse order. If you want to install a crew inside the slug...*are you out of your mind?*
- If you wish to change out the decoder, then just follow the previous steps about removing the shell. It will expose all the wonders that lie within.

At this point you should have the entire shell off the frame, as long as you followed our super simple instructions. We don't know how to put it back together, so from here you're on your own. Just read the instructions backwards and you should be OK. If you find a cryptic message while reading backwards, *Itlud? 1uo ton e'ri.*

Any requests for replacement bodies because you broke the little clips will be met with laughter, followed by sadness, then laughter again, and then a very polite suggestion that you should model a locomotive rebuilder and use your recently

broken body as scenery. We did warn you after all. If we can assist, then all joking aside we'll make every effort to do so. But note that we don't have a warehouse full of shells and cabs to replace the broken ones.

OPERATION – DC (SILENT)

If your GP9RM +/- slug locomotive is not equipped with a sound decoder, it should function like most other HO scale locomotives. Put it on the track. Give it some juice. Watch it go. In DC, the number boards are always on and the headlights are directional. All other lights – including class lights and strobes – are wired, but they will not work in DC.

If you are new to the hobby (or just like to occasionally “play trains”) and you have a DC-powered train set, please contact us before operating your GP9RM and/or slug as it may not be safe (for your engine and/or your wallet) for you to use your controller.

Some train set throttles put out a very high maximum voltage that is not suitable for scale model trains. The maximum recommended voltage is 15 volts DC. Similarly, controllers designed for large scale trains put out a much higher voltage than your GP9RM or slug can handle. Please see the highlighted warning not too much further in this manual.

If you use a train set throttle or a throttle designed for large scale trains, your locomotive's circuitry may end up looking like a bag of popcorn forgotten in the microwave after you accidentally punched in an extra digit into the timer. In such situations, we'll try our best to fix it for you, but it may be beyond salvaging. Please note we may have to charge you for the replacement parts and/or the labor involved in restoring it to its former self. That's because you didn't read this bit of the manual. For those of you who are reading this, hi! How's it going, eh?

INSTALLING A DCC DECODER

The GP9RM and slug contain a motherboard specially designed for our decoders. This is connected to the track, motor and lighting outputs. A blind plug is attached to the motherboard using a 21-pin connector. To install a decoder, remove the blind plug and install a 21-pin decoder. Your chosen decoder should have eight function outputs.

At the time of writing, we recommend only the following non-sound 21-pin decoders:

- ESU #59029 - LokPilot 5 Basic with 21MTC
- ESU #59629 - LokPilot 5 DCC with 21MTC

We feel the 21-pin connectors are superior because there are enough pins to ensure that all your lighting functions are connected. The necessary resistors are included on our motherboard so you don't have to futz around with resistors. Just plug in one of the recommended decoders and you have DCC. We know some of you prefer a different brand of decoder, but we honestly can't help you install it or map the functions.

We have made a GP9RM function map which can be downloaded onto ESU decoders so that the function buttons and motor control are exactly the same as our factory-released sound versions. This should be available for download from the Support section of our web site. If it isn't, bug us. You will need an ESU LokProgrammer to write the function mapping to the 59029 or 59629 decoders. If you don't have a LokProgrammer, you can adjust CVs in the usual way.

We will be selling GP9RM and slug sound decoders separately; if they aren't on our website by the time you read this, call our office, pick a random number between 1 and 75, divide by $\frac{3}{4}$, multiply by $\sqrt{\pi}$, and then take the second to last number. Call that extension and you'll be redirected to someone whom you can yell at.

If you want to install a decoder other than the one we suggest, it's more than just plugging in the decoder and then playing trains. You will have to custom map all the functions. It's just how it is. We won't apologize for that. Sorry, eh?

Unknown photographer, Kaluza-Mueller collection.



OPERATION – DC (SOUND)

To operate your sound-equipped GP9RM and/or slug locomotive on a DC layout, just give the throttle some juice. The engine will start up once sufficient voltage has been reached (around seven volts). See the note above (in Operation – DC (Silent)) about using train-set or large-scale throttles. With DC layouts, you have very little control over the sounds of your model.

— WARNING —

Rapido products are designed to operate safely between 0V and 16V. Voltages in excess of 16V - as well as irregular waveforms, voltage spikes or short circuits - may cause severe and sometimes irreversible damage to the product. "Train set" power packs are known to suffer from any one of these unexpected irregularities, whereas higher-end systems have safeguards in place to prevent this. Rapido always recommends using a power supply system that matches the quality of the models you are running. If you're reading this, you've obviously invested in top-of-the-line, museum-quality motive power and equipment, so we hope you've made the same investment with your model railroad power supply too.

While many power supply systems exist, some are known to have caused problems with model train circuitry in the past. If you have any one of the following systems, **PLEASE DO NOT USE IT** until you contact us for more information: MRC RailPower 1300/1370-series, Bachman Spectrum Magnum, Atlas 313 Universal Power Pack.

The DC lighting is limited. Some throttle manufacturers produce special gadget-like thingies which are meant to trigger the sounds in locomotives on DC layouts. As we have no involvement in the development of those gadget-like thingies, we have absolutely no idea how they will affect your GP9RM or slug, for good or for ill, for richer or poorer, in sickness and in...sorry, wrong transcript. As always, we'll try to help you fix your GP9RM or slug if one of these gadget-like thingies turns your locomotive's circuitry into something akin to glowing magma, but we can't guarantee we'll be able to.

It is usually at this point in the manual that Jason inserts a gentle dig at his fellow modelers who won't switch from DC to DCC. The rest of the staff continue to repeatedly remind him what happened the last time he did that. Something about being chased down the county highway by a group of townsfolk wielding transformers and potentiometers. As long as we can keep reminding him of this event, he'll be nice to DC modelers. Not that we're calling DC modelers Luddites - No, sir, not us!

OPERATION – DCC (SOUND)

We go to extreme lengths for accuracy, in sounds as well as in looks. Our sound decoders are LokSound V5 decoders by ESU, with Full Throttle functionality. The sounds are about as bang-on accurate as we can make them. A GP9RM masses about 117,700kg/259,000lbs. in working order. Therefore a certain amount of

starting momentum has been pre-programmed into the decoder to replicate that massive weight. If you want to eliminate the delay to speed up, program CV3=00, but when freight customers complain about their damaged cargo, don't blame us!

More detailed decoder instructions, including all sorts of weird CV settings we don't understand, can be found in the ESU LokSound V5 decoder manual. It is available for download from the support section of our web site or directly from the ESU website.

LOCOMOTIVE ADDRESS

Your Rapido GP9RM and/or slug comes from the factory with a decoder address of 3. We suggest if you are using DCC control that you first test that the locomotive responds on address 3 to all functions – motor, lights, sounds, everything. Once you have verified that the locomotive is responding, you should assign it a unique address (normally the road number of the unit) before going any further. This can be done either on your programming track (recommended) or on the main if your system supports programming on the main. Be aware however that if you do program the locomotive on the main and you have any other locomotives assigned to address 3 (the normal default address for new locomotives) that ALL of them will also be changed to your new address! This is great if you want to simulate a bunch of kids getting into the engine shop, notching the controllers, and then heading for the hills.

Note that some DCC systems get a little wonky when programming sound-equipped locomotives on the programming track because of the high current draw. If weird stuff happens, try programming on the main or use a programming track booster.

TURN ON THE SOUND

Press F8 and you will hear the GP9RM startup sequence followed by the sound of it idling (not from the slug, of course!). You can adjust CVs to prevent the locomotive from moving until the startup sequence has played out. Most of us at Rapido are really impatient so we turned this feature off. Refer to a full ESU LokSound V5 decoder manual for more information. You can now download it from the Support section of our web site. The feature is called the "Prime Mover Startup Delay" and is Section 13.2 on Page 89 of the ESU LokSound V5 manual.

If you press F8 when the locomotive is already moving, it will skip the startup and the sound will just turn on. Press F8 again to turn the sound off.

Note that if you are listening to your GP9RM idling nicely and then you select another engine, your locomotive still thinks F8 is pressed so it will keep idling along. However, if someone else selects your locomotive's number and F8 isn't pressed on their controller, the GP9RM will promptly shut down. They will need to press F8 again.

FUNCTIONS

F0	Front Headlight	F13	Rear Headlight
F1*	Bell	F14	Strobe Lights & Remote Belt Pack <i>(if equipped)</i>
F2*	Horn	F15*	Isolation Switch
F3	Flange Squeal	F16*	Air Dyer On Shut Down
F4	Dynamic Brake	F17	Automatic Brake Set/Release
F5*	Doppler Horn	F18*	Ground Lights
F6*	Ditchlights <i>(if equipped)</i>	F19*	Numberboards
F7	Dim the Headlights	F20	Air Compressor
F8	Startup/Mute/Shutdown	F25	Emergency Automatic Brake
F9	Drive Hold	F26*	Manual Notching Up/Run 8
F10	Independent Brake	F27*	Manual Notching Down/Coast
F11*	Directional Class Lights	F28*	Manual Notching Logic
F12	Switching Mode		

FUNCTIONS: MORE INFORMATION

F0 Front Headlight

Just like the real thing, our GP9RM and slug headlights are not directional. No matter which way you're going, the front headlight IS the front headlight. If you want the headlight facing the opposite way of travel to be on, then read a little further on under the F13 Rear Headlight.

F1 Bell*

Probably one of the most difficult sounds to master is the bell because it's such a noticeable feature, and no matter what, chances are they all had their own unique tone to them. We have provided four slightly different bell sounds so that you can add a little variety to your huge fleet of GP9RMs. You DO have a huge fleet of GMD GP9RMs, don't you? You can choose between the bells by changing CV164 to a value of 0 through 5.

F2 Horn*

We love our horns. Like really! Seriously, who doesn't love a good sounding horn? So, we're now providing a wide range of horns for you to apply to your locomotive as appropriate or as you see fit (even if it's not appropriate). To get a short "toot" just tap F2 or your "HORN" button. If you hear a long tail-off, you are tapping for too long. If, no matter what you do, you just can't get the darn thing to make a short "toot," switch to NCE. The default horn is a Nathan K-3L, but we've included fourteen others in CV163. Refer to the "Custom Sound Settings" section below.

F3 Flange Squeal

Just as you're easing into a sharp curve on your layout, press F3 to hear the metal-on-metal squealing sound all trains are known for.

**Not included on slugs.*

F4 Dynamic Brake (*not equipped!*)

GP9RM and their slugs do not have dynamic brakes, but you can press F4 to get dynamic brake sounds anyways. You caDSn *think* about using F4, but that would be so wrong.

F5 Doppler Horn*

You can play this when approaching level crossings or any other whistle post. The doppler is nicely timed for a moderately paced train blowing for a level crossing. When you change the default horn for F2, the doppler horn will also change to the appropriate tone as well. It's like we're wizards or something!

F6 Ditchlights (*if equipped*)*

Ditchlights were invented in Canada and installed in the 1960s on road engines to illuminate right-of-way ditches for rockslides and other obstructions. Yard engines, like the GP9RM mother and slug sets, didn't get ditchlights until the 1980s. Our "as-rebuilt" mother-slug sets don't have them but the single GP9RM do. Also, unlike American ditchlights, Canadian ones do not flash.

F7 Dim the Headlights

When approaching an oncoming train, press F7 to dim your lights and turn off your ditch lights – you don't want to blind an oncoming train's engineer. It will also turn off any other potentially blinding lights you may be running. Not dimming your lights is a direct violation of what's commonly referred to as "Rule 17". The internet can answer all your questions about said rule.

F8 Startup/Mute/Shutdown

While your locomotive is stationary, pressing F8 will begin the startup sequence of the engine sounds (except the slug, which has traction motor sounds). If your locomotive is silent but already in motion, pressing F8 will skip the startup sequence and simply turn on the sound. If the sound is already on, press F8 to mute the sounds. If your locomotive is stationary, then you will hear the engine shut down sequence before the sound turns off.

If you have a DCC system that only allows eight functions, you can remap the following functions following the guidelines in the ESU LokSound V5 manual, which can be downloaded from the support section of our web site. Or you can upgrade to a newer DCC system, which may be less stressful.

F9 Drive Hold

ESU's "Full Throttle" feature allows you to play the prime mover of your GMD GP9RM like a musical instrument. When you press F9, you turn on "drive hold." This keeps the speed of the engine constant at whatever speed step your throttle happens to

**Not included on slugs.*

be on. Then as you increase the throttle, you hear the prime mover revving up. This sounds awesome, especially when you're trying to shove a big string of cars.

"Full Throttle" is even neater when you throttle down, as it allows you to simulate "coasting" which is such an important part of running a real train. When you press F9 again you turn off "Full Throttle" and the engine will accelerate or decelerate to whatever speed step your throttle happens to be on. For realism it's a good idea to take note of what speed step your throttle was on when you turned on "Full Throttle" and be back at that speed step when you turn "Full Throttle" off. Otherwise, your GP9RM may fly like an eagle...to the sea. Fly like an eagle, let my spirit carry me. (Please don't make us sing the whole chorus.)

F10 Independent Brake

F10 works just like the brakes on a real engine. Press F10 and you put on the brakes. Turn off F10 and the brakes come off, so you can start moving again. ESU's Drive Hold feature has made the brake function more popular, so we've moved it up to F10 to match the ESU standard. The default sound is based on composite brake shoes but if you hate your eardrums, you can change it to cast iron brake shoes and writhe in pain every time the train stops. Change CV165 from 0 to 1 to hear the glory that is a cast iron brake shoe.

F11 Directional Classification Lights*

When you press F11, the white class lights will turn on. Hitting F11 a second time will cycle the lights off. Press it again to get green class lights, press again to shut them off. Press another time will result in red lights, and again to shut them off. White class lights were used to signify a train was running as an extra unscheduled train in train order territory, green class lights indicated a second section is following and running on the same authority, and red lights indicated the rear of the train.

F12 Switching Mode

Are you one of those folks who models a large yard or engine terminal, like, say Spadina Yard in Toronto? Do you have lengthy light engine moves between engine storage and the arrival/departure yard? Then this function is for you! It turns on both front and rear headlights but only on dim so as not to blind your trainmen on the ground.

F13 Rear Headlight On/Off

A common misconception on diesel locos is that the light on the rear should be on whenever the engine is moving backwards. Actually, it's only on when the engineer wants it to be, regardless of direction. Pressing F13 will simply toggle the rear light 'on' and 'off'. It's magic, I tell you!

**Not included on slugs.*

F14 Strobe Lights & Remote Belt Pack (if equipped)

Eventually the 7200-series units were equipped with red strobe lights that were activated when the unit was being operated remotely by a crew on the ground using a belt pack remote. F14 toggles the strobe lights on your unit on/off, if you're lucky to have them at all. It also triggers random remote control belt pack sounds.

F15 Isolation Switch*

To save on diesel fuel, some locomotives can be put into low idle. To do so on our model, press F15 when stopped. NOTE: the engine will not move with F15 turned on. F15 must be off for it to move because the main generator has been isolated.

F16 Air Dryer on Shutdown*

Want to hear those air dryers lay down a sick beat? Pressing F16 will activate the air dryers on shutdown. This will sound neat and if you play your cards right, activate it when it's in a yard and the yardmaster has to work right next to it!

F17 Air Brake Set/Release

This function turns off the brake release and brake set sounds when you start or stop moving, respectively. It has no effect on the function of the engine – it just affects the sounds.

F18 Ground Lights*

These lights shine down onto the roadbed. Why did we include them? Because they look neat, of course. Oh, and your engineer will be happy at night when he's making a shove. By default they are on. Pressing F18 will turn them off.

F19 Number Board Lights*

The number boards are on all the time as a default. We hate having to turn number boards back on after a power failure. If you want to turn off the number boards, just press F19.

F20 Air Compressor

Pump that air up! By pressing F15, this will activate the air compressor but by default, the sound file will randomly play this feature.

F25 Emergency Automatic Brake

Pressing F25 will simulate the engineer making an emergency brake application ("the big hole"). It will slow and stop the model faster than using the F10 brake (see above), but not as fast as hitting the big red button on your DCC throttle. F25 will also automatically blow the horn for up to 10 seconds as part of this feature, so don't press it unless you really, *really* mean it.

**Not included on slugs.*

F26 Manual Notching Up/Run 8*

Kind of like the old "Straight to 8" function from several years ago, hitting F26 with F28 OFF will cause the prime mover to notch all the way to Run 8 and stay there. This will not effect loco speed, just the sound it makes. Great for pulling out of a station with a long train. Turn off F26 to return the prime mover sounds to normal operation.

F27 Manual Notching Down/Coast*

As a quick way to idle the prime mover sound without losing control of the loco speed, press F27 with F28 OFF to chop the throttle to idle. This is great when used with dynamic braking. Turn F27 off to return the prime mover sounds to normal operation.

F28 Manual Notching On/Off*

With F26 & F27 turned OFF, turn F28 ON. Now one can use F26 to manually notch up the prime mover and F27 to manually notch the prime mover down. This will not effect the loco speed, just the prime mover sounds. To go back to normal operation, all three functions must be turned off (F26, F27, and F28).

CUSTOM SOUND SETTINGS

The default horn on your model is a Nathan K-3L. We have justified doing this because most if not all GP9RMs had a Nathan K-3L horn. But if you don't like the sound of that, you can change the default horn by changing the value of CV163. We've also chosen defaults in the remaining categories because someone had to make the important decisions. They can all be changed by adjusting the value of their respective CVs.

Dan Darnell photo.



Horns

- CV163=0 Leslie S-3K-R
- CV163=1 Leslie S-3L-R
- CV163=2 Leslie S-5T-RR0-R
- CV163=3 Leslie SU-3L-R
- CV163=4 Nathan K-3H
- CV163=5 Nathan K-3L *(Default)*
- CV163=6 Nathan K-3LA
- CV163=7 Nathan K-5H
- CV163=8 Nathan K-5LA-R23
- CV163=9 Nathan K-5LA-R24
- CV163=10 Nathan P-2
- CV163=11 Nathan P-3
- CV163=12 Nathan P-5
- CV163=13 Nathan P-5A
- CV163=14 Nathan P-5-R24

Note that after you change the horn, bell or any other sound effect, you may need to cycle the power (turn it off and on). And changing the default horn automatically changes the doppler recording on F5 too.

Bells

- CV 164=0 Bronze Bell #1 *(Default)*
- CV 164=1 Steel Bell #1
- CV 164=2 Bronze Bell #2
- CV 164=3 Steel Bell #2
- CV 164=4 Steel Bell #3
- CV 164=5 Graham-White E-Bell

Brake Squeal

- CV 165=0 Composition Shoe *(Default)*
- CV 165=1 Cast Iron Brake Shoe

Air Dryer

- CV 166=0 Air Dryer #1 *(Default)*
- CV 166=1 Air Dryer #2
- CV 166=2 Air Dryer #3
- CV 166=3 Air Dryer #4

SOUND VOLUME SETTINGS

The sound volumes on your decoder have been pre-set at the factory to levels that we found comfortable on our test tracks.

Sound levels are very much a matter of personal taste, and what sounds great in one layout environment may sound too loud or too soft in another. Fortunately, the sound levels can be easily adjusted to best suit your own requirements and we recommend that you experiment with different settings if you don't care for the default levels.

To set the volume levels go into the program mode on your DCC system (refer to your system's manual for instructions on how to do this as each system is slightly different); enter the desired CV number; then enter the desired levels. Note that this can be done either on a programming track or on the main (Ops mode) if your DCC system supports programming on the main.

We strongly recommend that you keep notes on which settings you have changed, and which values were used. If you ever need to do a reset on the decoder (see "Factory Reset" below) then having good notes will allow you to easily re-enter any changes that you wish to keep.

— VERY IMPORTANT —

Before you manually change any of the volume control CVs, you must set CV 31 to 16 and then CV 32 to 1. CV 31 and CV 32 are used as index selection registers and if you don't set them first, unspeakable things may happen to your unit. You must set the CVs every time before changing any volume CV settings.

Or just get a LokProgrammer. No, we will not teach you how to use it!

GMD GP9RM +/- SLUG SOUND VOLUME SETTINGS

KEY	FUNCTION	SOUND SLOT	CV	DEFAULT	RANGE	YOUR VALUE
	Master Volume		63	155	0-192	
F1	Bell	4	283	60	0-255	
F2	Horn	3	275	128	0-255	
F3	Flange Squeal	23	435	50	0-255	
F4	Dynamic Brake	6	299	75	0-255	
F5	Doppler Horn	28	291	175	0-255	
F8	Diesel	1	259	128	0-255	
F10	Independent Brake	11	339	50	0-255	
F14	Belt Pack	31	499	150	0-255	
F15	Isolation Switch	21	419	30	0-255	
F17	Brake Set/Release	29	483	80	0-255	
F20	Air Compressor	7	307	70	0-255	
F25	Emergency Auto Brake	9, 15	323, 371	30, 205	0-255	
F28	Manual Notching Logic	27	467	20	0-255	



FACTORY RESET

On your GP9RM and/or slug, you can perform a factory reset by entering a value of "8" into CV 8. Note that this will cause all of your new volume and motor settings to be lost, so you will need to reprogram any settings that you want to keep. What do you mean, you didn't take any notes? WE JUST TOLD YOU TAKE NOTES! If we had a band, you'd be kicked out of it. Again!

You can NOT lose all the pre-recorded sounds on your GP9RM decoder by doing a factory reset. However, after performing a factory reset, your GP9RM may begin to binge watch *Goldorak* episodes or recite the lyrics from *O Canada!* If that happens, you have probably lost your mind. But don't worry. Just sit back, grab some popcorn, and enjoy the show.

By the way, pay no attention to the person breaking into your layout room attempting to steal your Rapido GP9RM and/or slug because they misread the instructions on Page 4.

MORE INFORMATION

While addressing the features that most modelers will need for normal operation, these instructions have covered just a small number of the many customizable features of your ESU LokSound decoder. For advanced users who want to more fully explore the capabilities of the decoder we suggest downloading the ESU LokSound V5 decoder manual. This is available in the Support section of our web site.

LIMITED WARRANTY

We will do our best to solve any problems or issues that you may have with your GP9RM and/or slug locomotive. If your locomotive has any defects that originate from the factory, we will repair your locomotive using new components or replace it outright should a repair not be possible. However, we can only replace your locomotive while we have additional ones in stock. While we would love to have an infinite supply of spare parts and do our best to keep as many on hand as possible, eventually these will run out too. In some cases, future productions of the same locomotive may result in a parts supply being restocked, but that is not always guaranteed. If you are like most of us and – after purchasing this locomotive – you put it on the collection shelf under the darkest corner of your layout and are now just discovering it 30 years later after your friend at the club ran theirs, then you are

on your own if there are any issues. Jason is long retired and probably touring the country on our restored sleeping car, *Edmundston*. The rest of us have also retired but probably don't have the luxury of our own private rail car. And we're not bitter at all. Really. Not...at...all...

There are several things that this warranty cannot cover. If your GP9RM or slug arrives with a couple of loose grab irons or underbody bits, there is a very good chance that you can affect a repair in less time and effort than it would take to contact us. Don't be afraid to do some model railroading! White glue works wonders for securing all sorts of parts and will not mar or damage your paint. However, if parts are missing that is another story – contact us directly through our website or give us a call and we'll send you some replacements.

Of course, damage caused by running your locomotive at full speed around a 15" radius curve along the edge of your 60" high layout, weathering it with canola oil, or any other unique damage caused by you and that we haven't been able to cover here is not covered by the warranty. If catastrophe does strike – even as the result of your own actions (or possible inactions) – and your locomotive or slug gets damaged, please give us a shout and we'll do our best to help you out if possible. Don't be shy.

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