CN

CONDENSED OPERATING MANUAL

GR-4I2 ROAD SWITCHER

RAPIDO TRAINS INC.
EQUIPMENT DEPARTMENT

2024

GMDD GMD-1 LOCO PRODUCT GUIDELINES

Thank you for purchasing a model of our latest run of Canada's most unique locomotive, the General Motors Diesel Division GMD-1.

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 GMDD GMD-1. 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 GMD-1, 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 GMD-1 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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EST. 1999

Sound-equipped Rapido models feature ESU LokSound V5 decoders. For more information, please visit www.esu.eu.

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PROTOTYPE HISTORY

Part of the initial order by CN, the 1900-series featured a B-B wheel arrangement with Flexicoil trucks. Classified GRG-12n, the 1900-series GMD-1 was geared for 83 MPH and had a Vapor OK-4625 steam generator in the short hood. The 1900s were intended for commuter and other short-run passenger services and were delivered in 1958 and 1959 with many remaining in service until the late 1990s.

In 1989, CN created the 1400-series rebuilds. Featuring a larger, 2000-gallon fuel tank with 4-wheel Flexicoil trucks, the 1400s also received upgraded EMD 645 power assemblies to the diesel engine. These units ran long hood forward and were equipped with ditch lights. CN retired the last of the 1400s from service in 2021.

BREAK-IN

Just so we're clear, that doesn't mean break into anyone's layout room to steal their GMD-1. 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 GMD-1 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 GMD-1 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 GMD-1 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 while wearing Bauer 15" hockey gloves. 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 GMD-1 fuel tank (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 GMD-1 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 GMD-1 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.

- 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 GMD-1 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 GMD-1 to install a crew or a decoder, things should be pretty straightforward. To get inside your GMD-1, 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 GMD-1, you have to remove the cab from the shell. Remove the short hood and long hood handrails from the cab sides. The cab itself is secured to the hood by four clips – two on each side. Using your forefingers and thumbs, grasp the front and rear cab walls. Pull outward to cause the clips to release while pulling up at the same time. With a little manipulation, the cab should come free and lift straight up. After the cab is separated, the cab floor can be removed from the cab using a small flat screwdriver to gently pry the clips on the floor to release from the latches molded into the cab sides. Install your crew figures and install in reverse order.

- 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, it's not our fault!

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 GMD-1 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 numberboards are always on and the headlights (and ditch lights – if equipped) are directional. The class lights are wired but they will not work in DC. Tough luck, eh?

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 GMD-1 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 GMD-1 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? Want some Timmies?

INSTALLING A DCC DECODER

The GMD-1 contains 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 GMD-1 function map so that you can make the function buttons and motor controls 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. We recommend an ESU LokProgrammer to write the function mapping to the ESU decoders. If you don't have a LokProgrammer, you can adjust CVs in the usual way but we hope you like lots of button pushing. If you have a fleet of GMD-1s like everyone should, remapping multiple units on a LokProgrammer (after the first one) takes just one button click. Remapping using a throttle? Clicks. So. Many. Clicks.

We will be selling GMD-1 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 ¾, multiply by √π, and then take the second to last number. Call that extension and you'll be directed to someone whom you can yell at. Or just e-mail us.

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 if you want everything to work. You will have to custom map all the functions. It's just how it is. We won't apologize for that. Sorry, eh?

OPERATION – DC (SOUND)

To operate your sound-equipped GMD-1 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. <u>Rapido always recommends using a power supply system that matches the quality of the models you are running</u>. 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, <u>PLEASE DO NOT USE IT</u> 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 GMD-1, 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 GMD-1 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 GMD-1 masses about 111,583kg/246,000lbs. 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 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 directly from the ESU website.

LOCOMOTIVE ADDRESS

Your Rapido GMD-1 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.

— ESU PROGRAMMER USERS —

To successfully program your locomotive using an ESU LokProgrammer or an ESU ECoS DCC system, our onboard Rapido MoPower capacitors must be fully discharged. Until a software patch and/or a hardware fix is available, please allow your ESU-equipped loco to discharge a full five minutes before using an ESU programming track, or allow to discharge one minute before using the ESU Ops Mode (on-the-main programming).

The reason is due to the long duration of our MoPower capacitors that are built into each locomotive's motherboard. There can be a software conflict between a still-powered-up ESU decoder and the ESU LokProgrammer (or ECoS system) where they fight for control, resulting in a failed programming attempt. We expect a fix to be coming soon from ESU, but until then, please follow the suggestions above to successfully program using ESU programming systems. If it doesn't work, wait a little longer and try again.

While waiting around like an impatient Spaniard while a man in black freeclimbs the Cliffs of Insanity is kinda boring, we say take advantage of this newly found free time! Wrestle a giant, pour some wine, or tour a fire swamp (avoid the ROUSes). To speed-a-things up, try using your loco like a flashlight to read freight car numbers, look for that knuckle spring you lost last week, or search for the Pit of Despair...as you wish!

NOTE: This does not apply to *any* other DCC system or controller, just ESU.

TURN ON THE SOUND

Press F8 and you will hear the GMD-1 startup sequence followed by the sound of it idling. 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 as of this writing.

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 GMD-1 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 GMD-1 will promptly shut down. They will need to press F8 again.

CN 1903 switches passenger cars at Winnipeg's Union Station in 1983. Paul Smith photo, Kaluza-Mueller Collection.

FUNCTIONS

F0	Directional Headlight	F10	Independent Brake
F1	Bell	F11	Directional White Class Lights
F2	Horn	F12	Switching Mode
F3	Flange Squeal	F13	Rear Headlight Off
F4	Steam Generator *(if equipped)*	F14	Air Compressor
F5	Doppler Horn	F15	Radiator Fan
F6	Directional Ditch Lights *(if equipped)*	F16	Sarco (Spitter) Valve
F7	Dim the Headlights	F18	Coupler Clank
F8	Startup/Mute/Shutdown	F19	Numberboards
F9	Drive Hold		

FUNCTIONS: MORE INFORMATION

F0 Directional Headlight

By default, our GMD-1 headlights are directional, which means that the headlight on the leading end of the loco will be turned on with F0. Hit reverse, and the headlights swap ends. This is useful if you frequently forget which way you left the reverser when you're switching.

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 slightly different bell sounds so that you can add a little variety to your huge fleet of GMD-1s. You DO have a huge fleet of GMDD GMD-1s, don't you? You can choose between bells by changing CV164 to a number between 0 and 3 (the default is 3).

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. We've picked a couple default horns based on the prototype (one for the 1400s and one for the 1900s) but we've included a few 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. It may also cause dogs to bark and children to cry, but those are the risks you take.

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F4 Steam Generator *(if equipped)*

Press F4 at any time to start up the steam on your 1900s. We don't include random loud blowdowns but we include the irregular hiss that you can hear coming from the regulator and blowdown valves all the time when the steam generator is operational. When you accelerate, the volume of the steam generator gets lower as you wouldn't hear it as clearly when the train is moving. If you want MORE STEAM! you can adjust the volume of the steam generator by adjusting the CVs.

F5 Doppler Horn

You can play this when slowly approaching level crossings or any other whistle post. The doppler is nicely timed for a moderately slow-paced train blowing for a level crossing.

F6 Directional 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. Unlike American ditchlights, Canadian ones do not flash. The 1400s have 'em and the 1900s don't, but if you want to, you can add your own ditch lights using the lighting traces on the motherboard.

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. 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 GMD-1 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

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 GMD-1 may fly off your layout and onto the floor.

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. 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 White Class Lights

If you press F11 when in forward mode, the front white class lights will turn on. Hitting F11 again will cycle the lights off. If you run in reverse and press F11, the class lights on the rear will illuminate. While we would love to see the GMD-1 flying green lights as a second section of the *Super Continental* during the Expo 67 rush or pushing GO trains in commuter service with red markers on, these events are not entirely likely. So we just put in the white class lights.

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. It doesn't effect the speed of the loco, just the lights.

F13 Rear Back-up Light

Turns off the light on the rear of the unit when in reverse; just in case you want to surprise your brakemen by sneaking up on them.

F14 Air Compressor

Pump that air up! *Dugga-dugga-dugga-dugga.* By pressing F14, this will activate the air compressor so you can run your windshield wipers. By default, the sound file will randomly play this feature.

F15 Radiator Fan

By default, this fan is automatic, meaning the sound turns on and off at seemingly random times. But if you need to take direct control of all the fans in your life, press F15 to hear that buzzing whine whenever you want. We can barely hear the fan, so either we're deaf or the volume is too low. You can have fun with it if you have a particularly strong love of radiator fans.

F16 Spitter Valve

These functions turn on or off the Sarco Valve. On the real GMD-1, it's always going but if you find it annoying *(Psst! Psst!)*, you can shut it off by press F16. If you have a silent GMD-1 and you want to recreate the Sarco Valve effect, please aim away from the models. Your GMD-1 warranty does not include malfunction due to spit.

F18 Coupler Clank

Imagine an object that weighs well over 100 tons running into a string of other objects that weigh over 50 tons each at 5mph. This is going to make a sound, even if there's no one around to hear it. You can replicate that sound by pressing F18 but only at the moment the couplers touch! Unless you're coupling to a ghost train.

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.

CUSTOM SOUND SETTINGS

The default horn on your model is either a Nathan M-3H on the 1900s or the Holden K-3L on the 1400s. We have justified doing this because most if not all GMD-1s were so equipped while in their respective number series. But if you don't like the sound of the one we picked, 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.

Horns
- CV163=0 Nathan M-3H*
- CV163=1 IEC-Holden K-3L[†]
- CV163=2 Nathan M-5
- CV163=3 Nathan K-5LA

Bells
- CV 164=0 EMD Bronze Bell #1
- CV 164=1 EMD Steel Bell #1
- CV 164=2 EMD Bronze Bell #2
- CV 164=3 EMD Steel Bell #2 *(default)*

Default on 1900s. [†]Default on 1400s.

MoPower

Mo⚡Power

This model is equipped with MoPower, our capacitor-based temporary energy storage system that lets a locomotive travel over dirty (or dead) rail spots without stopping. The length each loco can move without track power varies by condition of both track and model, your mileage my vary, long-distance rates may apply. **NOTE:** _You will not have control of the loco_ when running on MoPower energy, and if you're used to a loco stopping when it shorts at a mis-aligned switch, forget it. Like the prototype, it's not going to stop just because the points are thrown against you (at least until the capacitors are drained). The lengths we go to for more realism!

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 change any of the volume control CVs (except for the master volume), you need to set the index CV. Using an index CV is like using the index near the back of the Eaton's catalogue to find the right page. It tells the decoder what CV you actually want to change. To set the correct index CV, set CV31 to 16 and then CV32 to 1. Then change the CV you want to change. If you find that really annoying, consider using a LokProgrammer or JMRI DecoderPro.

For example, to change the horn volume, first set CV31=16, then CV32=01, then CV275=X (a number between 1 and 255).

GMDD GMD-1 SOUND VOLUME SETTINGS

KEY	FUNCTION	SOUND SLOT	CV	RANGE	YOUR VALUE
	Master Volume		63	0-192	
F1	Bell	4	283	0-255	
F2	Horn	3	275	0-255	
F3	Flange Squeal	23	435	0-255	
F4	Steam Generator	30	491	0-255	
F5	Doppler Horn	12	347	0-255	
F8	Diesel	1	259	0-255	
F10	Independent Brake	9	323	0-255	
F14	Air Compressor	7	307	0-255	
F15	Radiator Fan	8	315	0-255	
F16	Sarco (Spitter) Valve	17	387	0-255	
F18	Coupler Clank	5	291	0-255	

FACTORY RESET

On your GMD-1, 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 GMD-1 decoder by doing a factory reset. However, after performing a factory reset, your GMD-1 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 GMD-1 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 from the Support section of ESU's website. For all the different

exploded view drawings showing the stupendous number of detail parts for each version of this loco (along with their part numbers), see the Product Support section of our website. By the time you read this, they should be there.

LIMITED WARRANTY

We will do our best to solve any problems or issues that you may have with your GMD-1 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 GMD-1 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 gets damaged, please give us a shout and we'll do our best to help you out if possible. Don't be shy.

ACKOWLEDGEMENTS

CONTACT US!
CONTACTEZ NOUS!

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