

RAPIDO TRAINS INC. N SCALE GMD-1

N SCALE GMD-1 LOCOMOTIVE PRODUCT GUIDELINES

Thank you for purchasing this model of Canada's most unique locomotive, the GMD-1. This is the first N scale locomotive produced by Rapido, so we are particularly interested in hearing your feedback.

As always, please do not hesitate to contact us should there be anything wrong with your model. Whether you have a warranty issue (missing parts, exploding model, etc.), a question ("Why won't the headlights work with my 87-year-old AC controller?") or a comment ("Mmmm.... GMD-1. Aaaarrrglglghhhh.") please give us a shout. More warranty information is available towards the back of this manual.

You can reach us by email: trains@rapidotrains.com, by phone (1-855-LRC-6917 or +1-905-474-3314) or by snail mail at the address below.

Please do not send any models back to us without first speaking to us to get authorization. You'd be amazed at how many models arrive at our location with no documentation whatsoever. And if models get sent to one of our old addresses, they might as well have been beamed into the mouth of a wormhole as we'll never see them.

If you've finally got around to opening this model after your retirement in 2042, you're on your own. Sorry.

CONTACT US!

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GMD-1 DCC FUNCTION QUICK REFERENCE

(Items marked with a (S) only apply to sound-equipped models.)

F0	HEADLIGHT
F1	BELL (S)
F2	HORN (S)
F3	STRAIGHT TO 8 (ON/OFF) (S)
F4	BRAKE (S)
F5	DOPPLER HORN (S)
F6	SWITCHING MODE
F7	DIMMER
F8	STARTUP/MUTE/SHUTDOWN (S)
F9	SARCO VALVE (SPITTER) SLOW (S)
F10	SARCO VALVE (SPITTER) FAST (S)
F18	BRAKE SET/RELEASE (S)
F19	AIR RELEASE (S)
F20	SARCO AFTER SHUTDOWN (S)

YOUR DECODER

Sound-equipped GMD-1 locomotives are each equipped with an ESU LokSound Select Micro DCC decoder loaded with Rapido's own custom sounds recorded from GMD-1 1118 in Stettler, Alberta, while hauling 12 covered hoppers. If you hear wheel slip when you accelerate, you are supposed to!

Silent GMD-1 locomotives are each equipped with a Digitrax DN136D Wired Mobile Decoder.

The complete original manufacturers' instruction manuals for both of these decoders can be downloaded from the Support pages of our web site.

NOMENCLATURE

You'll notice that we only refer to the GMD-1 as the GMD-1, with a hyphen between the D and the 1. Some early sources such as *Extra 2200 South* used the incorrect "GMD1" and that

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incorrect name has become popular, but after a lot of digging we have determined that the hyphen should ALWAYS be there.

When we made the HO scale FP9A, it was a matter of choosing whichever name we thought was best. GMD refers to both “FP9” and “FP9A” in the pages of one locomotive manual, and CN refers to it as FP9 and FP9A, not to mention FP-9A and FP9-A. So there were plenty of names to choose from!

But the GMD-1 does not have a similar plethora of options. The original locomotive manual, the original documents from CN, and even the blueprints from General Motors all unanimously refer to the locomotive as a GMD-1. These are what are called primary sources – documents produced by the locomotive manufacturer and owner. The documents that refer to “GMD1” are secondary sources usually produced by railfans.

It’s obvious to us which sources should be trusted, and we hope it’s obvious to you too. We’re delighted that, since we brought out our HO scale GMD-1, a number of respected historians and publishers have “seen the light” and tossed “GMD1” into the dustbin of past nomenclatural

BREAK-IN

No, we don’t mean you should sneak into your buddy’s layout room when he’s on vacation to steal his GMD-1s. Instead you should buy more of your own.

Every locomotive needs a break-in period. Your GMD-1 has been tested at the factory... for about 30 seconds. That is 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.

There already should be enough grease in the gearbox so you don’t need to add any. Just let the thing run.

PROTOTYPE PRACTICES

The GMD-1 almost always operated in groups of two or three, and sometimes up to five in a train. If you ordered just this one, call your hobby shop immediately and see if they have any more. If they are sold out, sign up for our email newsletter so you won’t miss the next production announcement and you can get your locomotive a companion. You’ll make your engine even happier if you buy it ten companions. GMD-1 locomotives feel more confident and less anxious when they are in a pack...

Our model will pull far more than the prototype. Please ignore that and order more.

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SAND BOXES

The GMD-1 was delivered with eight sand boxes, and these were mounted to the trucks. They are included in a wee little baggy in the box. If you install all of them you will need a huge minimum radius and really easy vertical curves... But never fear! CN removed them over time, first cutting them down to four and then to none. In our opinion, reliable operation is more important than installing a detail that might cause you a big headache. If you plan to actually run your GMD-1, just leave them off.

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 the karaoke was particularly good the night before your model was assembled 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 N Scale Mark IVb Standards Gauge. Should any of the wheelsets be out of gauge, than remove the affected wheelset from the truck by prying off the bottom lid of the gearbox with a small flat screwdriver. 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 on the track.
- Check your couplers to ensure they don't suffer from droopage, and also check that the trip pins are not hanging down too low. To check these, we recommend the Micro-Trains Coupler Starter Kit #98800081 (old #1050) as it has everything you need. You can also order the parts separately. The Coupler Gauge is #98800031 (old #1055) and the Trip Pin Gauge is #98800034 (old #1056).
- 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). Thanks to Stu Parker at Credit Valley Railway for his help with these recommendations.
- Make sure that the trucks swivel freely and without binding. If they catch on anything, check to ensure that the ends 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 to touch your models, but if it is a matter of gluing a spark arrestor 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 spark arrestor, we would be happy to. But if you do send it back to us 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.

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REMOVING THE SHELL

If you need to open up your GMD-1 (to install a crew, install a decoder, etc.) it is actually quite easy to do. Just be sure to remember these important points:

- We have a transporter lock on the molecular pattern of your locomotive. If something pops off while you are removing the shell, our starship's transporters will automatically lock on to the little part and beam it directly into the heart of the sun. Don't bother looking for it. It's gone. You might hear the transporter effect as the part is beamed away. I know it would have been more useful for us to beam the part back onto your workbench but someone's been fiddling with our transporters and we haven't been able to fix them. Sorry.
- To that end, please make every effort to ensure nothing flies away. Work on a clean, white surface. In fact, paint all the walls, the floor and the ceiling white, wear white coveralls, and remove everything else from within a three-mile radius of your workbench, especially (but not limited to) vegetation, people and wind.
- Turn the locomotive upside down in a foam cradle (painted white, of course) and remove the coupler screws. Pull the coupler boxes out of the ends and turn the loco right-way up. Now wiggle the shell off. Carefully. Remember the transporter lock.
- That's it, really.
- No, really.

OPERATION – DC

All GMD-1 models have a DCC (digital command control) decoder installed. The silent GMD-1 works pretty much like any DC engine, but the sound-equipped GMD-1 will only start moving when the sounds go on - that's around 7 volts.

If you want to MU your GMD-1 with other engines (with or without sound), you'll need to adjust the starting voltage, but you need to use a DCC system to do that. Unless you are running your GMD-1 on a layout on Ellesmere Island, you probably have a friend with a DCC system living nearby who can help you make the adjustment.

If you are on Ellesmere Island and the nearest DCC system is in Iqaluit, then we respectfully suggest you upgrade to DCC or move.

OPERATION – DCC (SILENT)

Your Rapido/MLW GMD-1 comes from the factory with a decoder address of 3.

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FUNCTIONS

- F0 Headlight
- F6 Switching Mode
- F7 Dimmer

Explanation of F6 and F7 and more information about changing the decoder address can be found in the OPERATION – DCC WITH SOUND section below.

To get the GMD-1 to MU with your other DCC-equipped locomotives, you will need to adjust the start voltage, end voltage and speed curve. This is best achieved using Decoder Pro by JMRI or some other computer interface. It can be done the old-fashioned way, but that takes a lot longer!

More information about adjusting the voltage of your locomotive can be found in the DN136D decoder manual, which you can download from the Support pages of our web site.

If this is your first DCC locomotive, we recommend you connect with other DCC users to gain some experience before you call us asking how to turn the lights on.

OPERATION – DCC WITH SOUND

We go to extreme lengths for accuracy, in sounds as well as in looks. Our sound decoders are LokSound Select decoders by ESU, programmed with sounds we recorded from GMD-1 #1118 on the Alberta Prairie Railway in Stettler, Alberta. 1118's guts are original, so the sounds are correct for the 1000-series GMD-1 locomotives.

Most importantly, we recorded 1118 under load, pulling 12 covered hoppers at a good clip along the Alberta Prairie "mainline." Locomotives sound different when they are working. We were one of the first manufacturers to record locomotives under load for our sound decoders, and while others have since followed in our footsteps few manufacturers are as insane about it as we are. You know we've done everything possible to ensure the model sounds right — we even have wheel slip!

The 1600-series GMD-1 locomotives sound a wee bit different, but we have not yet recorded the prototype. When we record these rebuilds (actually the 1400s, which have the same guts) we will happily reflash the sounds on your 1600-series GMD-1 to be more accurate. Please contact us after we release the HO scale 1600-series GMD-1 and we'll make arrangements.

More detailed decoder instructions, including all sorts of weird CV settings we don't understand, can be found in the ESU Loksound Select Micro decoder manual. This is available for download

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on the N scale GMD-1 page in the Support section of our web site.

LOCOMOTIVE ADDRESS

Your Rapido/MLW 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. Once you have verified that the locomotive is responding you should assign it a unique address (we suggest the road number of the locomotive) 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 on your layout assigned to address 3 (the normal default address for new locomotives) that ALL of them will likely also be changed to your new address!

TURN ON THE SOUND

Press F8. It will start up. That was easy enough. 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 GMD-1 still thinks F8 is pressed so it will keep idling along. However, if someone else selects your GMD-1's number and F8 isn't pressed on his or her controller, the GMD-1 will promptly shut down. He or she will need to press F8 again.

Ah, bless... We're being gender neutral by saying "he or she" when 99.999% of model railroaders are male. There was one woman N scaler Jason and Bill met in Edmonton way back when... That might be it.

If you are operating with sound on a DC layout, the sounds won't come on until the voltage is up around six volts or more. This is normal.

FUNCTIONS

- F0 Headlight
- F1 Bell
- F2 Horn
- F3 Straight to 8 (On/Off)
- F4 Brake
- F5 Doppler Horn
- F6 Switching Mode
- F7 Dimmer
- F8 Startup/Mute/Shutdown

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F9 Sarco Valve (Spitter) Slow

F10 Sarco Valve (Spitter) Fast

F18 Brake Set/Release

F19 Air Release

F20 Sarco After Shutdown

FUNCTIONS: MORE INFORMATION

F3 “Straight to 8”

This unique feature simulates the prototypical operation of the GMD-1 locomotive. If you are switching out an industry and you are having trouble pulling those heavy grain cars out of the siding, you will want to put the GMD-1 consist straight into 8. That means you move right into notch 8 (rather than going through the notches slowly) and gun it - wheel slip and all (and there is a LOT of wheel slip).

Obviously, this sounds very different from a typical freight engine slowly notching up to 8 and back down again. When F3 is selected, applying any throttle to the locomotive will cause the locomotive sound to ramp up quickly to “Run 8” (full power). If you decelerate, it will go right back down to idle. If you push F3 when the locomotive is at notch 8 and then you decelerate, it will notch down normally. Note that this function controls the sound only and not the motor speed. Motor speed is still controlled using the throttle settings as normal.

If you want your consisted engines to respond to F3 when you press it, refer to your DCC system to check how consisted engines respond to functions. You may need to change some CV settings in your consisted engines following the detailed instructions in section 5.2.3 of the ESU Loksound Select decoder manual, available for download on the N scale GMD-1 page in the Support section of our web site.

F4 Brake

F4 works just like the brakes on a real engine. Press F4 and you put on the brakes. Turn off F4 and the brakes come off so you start moving again.

F5 Doppler Horn

Play this when approaching level crossings. We planned to include our Doppler horn as used on the HO scale FP9A, but as that train was doing about 80MPH when the horn was recorded we didn't think it appropriate to use that recording for the GMD-1. The train in this recording is going a wee bit slower. This is an M3H horn, whereas the default horn is a K3L. See below for directions on how to change your horn to M3H at all times.

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F6 Switching Mode

If you press F6, the headlight and rear light will both be on dim. This is appropriate for switching operations. On the real GMD-1, it actually is not possible to have both the headlight and rear light on at full strength. Press F6 again to turn off the switching mode lighting.

F7 Dimmer

When approaching a station stop or an oncoming train, press F7 to dim your lights – you don't want to blind people on the platform or the oncoming train's engineers.

F9 and F10 Sarco Valve (Spitter)

These functions turn on or off the Sarco Valve. On the real GMD-1, it's always going. But you often can't hear it from a distance. In contrast, if you are close to the engine you can hear the Sarco valve pretty prominently. We feel that on many sound-equipped engines, the Sarco Valve is way too loud. So we've included two versions of it, controlled by functions. You can choose whether or not you hear the Sarco Valve, and you can choose how fast you want it to spit.

If you press F9, the Sarco Valve will be heard intermittently. If you press F10, it will be heard less intermittently. Make sure you turn off F9 first.

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 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.

F19 Air Release

This makes an air release sound. Ahhhhh....

F20 Sarco After Shutdown

On real engines you can hear the Sarco Valve after the engine shuts down. Some people like to hear this on the model, but Jason finds it annoying. So the default for this is "off." If you want to hear the Sarco Valve spit for a minute after shutdown, make sure F20 is pressed.

HORNS

There are numerous extra horn recordings included with your GMD-1, and you can change them around by changing the value of CV 48. Though why you'd want to change the horn from the GORGEOUS one that we recorded and is included from the factory is beyond us.

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CV48-0 Nathan K5LA
CV48-1 Nathan K3L (Default Horn - Rapido Recording)
CV48-2 Nathan M5
CV48-3 Nathan P3
CV48-4 Nathan P5A
CV48-5 Nathan K3L (ESU Recording)
CV48-6 Leslie RS3L
CV48-7 Leslie S3L
CV48-8 Leslie S5T
CV48-9 Nathan M3
CV48-10 Hancock Air Whistle (you can blame Dan for this....)
CV48-11 Leslie RS3K
CV48-12 Leslie Supertfon
CV48-13 Nathan M3H
CV48-14 Nathan K5H
CV48-15 ANOTHER Leslie 3 Chime

Note that you can only change the horn on a programming track or using a LokProgrammer.

SOUND VOLUME SETTINGS

We think you will be very impressed by the volume of the sounds on your N scale GMD-1. We tested more than 25 different speakers and settled on the one we felt was the best. Then we designed a unique sound box to amplify the sounds and give them a healthy rumble you would not expect in N scale and certainly not in a narrow-hood roadswitcher!

If the sounds are too loud for you, they can be adjusted. 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 might want to keep. **VERY IMPORTANT:** Before you change any of the volume control CVs, please make sure that CV 32 is set to 1. CV 32 is used as an index selection register and if you don't set it first then we are not responsible for your resulting rage and the fact that you will probably throw the locomotive against the wall in frustration.

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N SCALE GMD-1 SOUND VOLUME SETTINGS				
FUNCTION	CV	DEFAULT	RANGE	YOUR VALUE
MASTER VOLUME	63	40	0-192	
DIESEL VOLUME	259	128	0-128	
HORN VOLUME	275	128	0-128	
BELL VOLUME	283	99	0-128	
COUPLER SOUND VOLUME	291	128	0-128	
ODD VOLUME	299	128	0-128	
ODD VOLUME #2	307	128	0-128	
RADIATOR FAN VOLUME	315	90	0-128	
ODD VOLUME #3	323	128	0-128	
ODD VOLUME #4	331	128	0-128	
DOPPLER HORN VOLUME	339	128	0-128	
SHORT AIR LET OFF VOLUME	363	128	0-128	
FAST SARCO VALVE VOLUME	371	80	0-128	
SLOW SARCO VALVE VOLUME	387	80	0-128	
SARCO VALVE AT SHUTDOWN VOLUME	395	80	0-128	
ODD VOLUME #5	403	128	0-128	
RANDOM SOUND VOLUME	451	90	0-128	
BRAKE SQUEAL VOLUME	459	128	0-128	

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FACTORY RESET

On your GMD-1, you 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. You did keep notes like we suggested earlier, didn't you? You can NOT lose all of the pre-recorded sounds on your GMD-1 decoder by doing a factory reset. If you manage to lose all of the sounds on your GMD-1 then you have probably set fire to your decoder with a voltage spike. Open up your GMD-1 and pour out the ashes.

AWESOME SLOW SPEED THINGY

There is an awesome trick that you can use to get even better slow speed running and smoother operation. It's called the Automatic Motor Tuning Feature. This feature will automatically adjust the Back-EMF in most cases and give you phenomenal slow-speed performance.

In order to use this automatic adjustment you need to use Ops mode programming, i.e. programming on the main. Make sure your locomotive is in “forward” and that you have lots of room in front of it on your mainline. Set CV 54 to a value of 0. Then get out of programming mode and turn on the bell (press F1). We'll say this again: Make sure you have plenty of room in front of your locomotive and it is not headed for the layout edge and the basement floor!!!

Your GMD-1 will quickly take off at full speed and then **come to an abrupt** stop while the decoder reads the motor responses. You'll have fabulous motor control after you do this. If you ever have to reset your locomotive, you can do the automatic adjustment again – it just takes a few seconds.

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 Select Micro decoder manual. This is available on the GMD-1 page in the Support section of our web site.

LIMITED LIFETIME 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. We normally keep spares for up to six months after a model is released. If you purchased this locomotive or first opened it after that time, it is possible that we no longer have any replacements and that a repair is the only option. Please give us a call or write us an email, and

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we will see what we can do to help you out.

There are a number of things that this warranty can not cover. If your GMD-1 arrives with a loose stack or something similar, there is a very good chance that you can effect 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, such as Weldbond, 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 – call us or send us an email and we'll send you some replacements.

Of course, damage caused by trips to the basement floor, running your locomotive around 9.75" radius curves at ridiculously high speeds, throwing it to your friend across the room, picking it up with wet paint on your hands, or any other damage caused by you that we haven't been able to cover here is not covered by the warranty. However, if catastrophe does strike and your locomotive gets damaged, please give us a shout and we'll do our best to help you out. Yes, even if it was your fault we will try our best to fix your locomotive for you. Don't be shy!

ACKNOWLEDGEMENTS

A lot of people have been instrumental in ensuring this GMD-1 is both gorgeous and accurate. Special mention needs to be made of Mark Perry and Graham Wood for their extensive GMD-1 knowledge, experience and photos; Brian Schuff and Gord Hilderman for their extensive photo collections; Steve Lucas and Dave Minshall for all of their fabulous detail shots. For photos, research, recordings and advice, thanks also go to: Jon Archibald; Steve Boyko; Glen Brosinsky; Jon Calon; Paul Cordingley; Peter Cox; Dan Dell'Unto; David Emmington; Mark Forseille; Don Gillespie; Kelly Gillespie; Jim Gilley; Don Gordon; Ken Goslett; Matt Herman; Kevin Holland; Doug Hunter; Al Jaster; Don Jaworski; Mark Kaluza; Julian Lengauer; Lloyd Marshall; Lonnie McGowan; John Mellow; Jakob Mueller; Stu Parker; Ray Reinhardt; Mike Schafer; Shane Snideman; Matt Soknacki; Jeff Simpson; John Vincent; Tim Vitelli; Darrel Wendt; Bob Willis; Gord Wilson; Richard Yaremko; Chuck Zenius. Special mention must also be made of Jeff Arnold and Bob Scott for making it all happen, and of the Alberta Prairie Railway and the Winnipeg Railway Museum for giving us free rein of their GMD-1 locomotives. Finally, thanks go to Richard Longpre for doing this amazing translation into French.