FRANÇAIS AU VERSO

GMD-1

GMD-1 LOCOMOTIVE PRODUCT GUIDELINES

Thank you for purchasing this model of Canada's most unique locomotive, the GMD-1. This is the first freight locomotive produced by Rapido and the first locomotive produced by the MLW factory. (Funny that MLW's first model is a GMDD prototype.... don't tell any Alco fans!)

As always - but especially as this is the first locomotive from the MLW factory - 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 class lights work with my 87-year-old AC controller?") or a comment ("Mmmm.... GMD-1. Aaaarrrglglglhhhh.") 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.

MLW®

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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 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 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. So it's the GMD-1 from now on!

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...

The 1000-series GMD-1 locomotives were not equipped with steam generators. If you wish to pull a passenger train with a pair of 1000s, you will need a Steam Generator

Unit behind it. Fortunately, we manufacture those too!

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

HOW TO HOLD YOUR GMD-1

The GMD-1 has numerous very delicate parts. If you want to back date it to be the quality of a model produced in 1978, then rip all the parts off. We're assuming you don't want to do that, so the GMD-1 should be picked up carefully. The fuel tank and the middle of the long hood are both easily accessed and well balanced — if your hands are big enough, the best way to pick up the unit is to grab it from above with your thumb and forefinger on either side of the fuel tank. Always make sure your hands are free of shmutz before touching your engine. I suppose a 1:1 fingerprint could look like the remains of an HO scale zebra that wandered onto the tracks, but I doubt that is the look you are aiming for on your layout.

If you are taking your GMD-1 to the club all the time and regularly handling it, stuff will break off. We suggest wrapping your GMD-1 in a plastic bag before placing it in the packaging or in your holder so you can catch bits that fall off. White glue is the recommended adhesive for reattaching the bits, although you can also use CA if you are very careful and very brave.

EXTRA STUFF IN THE BOX

You can run your GMD-1 right out of the box. You don't need to add anything to it as all of the basic grab irons and other details are installed. (The exception is the area on the long hood above the radiator for CN 1954 1000-series models. If that applies to you, see the next section.)

However, every GMD-1 locomotive is unique. Different crews in different parts of the country added extra grab irons and other details as and when they were needed. It is impossible for us to install all of these extra parts at the factory because, during the lifespan of a given paint scheme, a set of grab irons could be removed and replaced with a ladder, and then the ladder removed and replaced with a set of stairs. If we chose to install the stairs, the loco detailing would be wrong for those guys who model an earlier year.

The same holds true for the all-weather windows and sun shades and wind deflectors on the cab. On most units, we installed the sun shade and wind deflectors on the fireman's side because they remained there throughout the model's service life. But the engineer's side received an all-weather window around 1974. Because the 1954 scheme and the 1961 scheme both lasted well past 1974, we left everything off the engineer's side. You can choose to install the all-weather window or the wind deflectors according to the year you are modelling. As to whether or not to install the sun shade, refer to photos.

We had to make some decisions that will make the model inaccurate for the earliest classes in the very early days, so all units have spark arrestors installed and all have frame-mounted handrails. Note that all 1000-series GMD-1s from the second order onward were delivered with frame-mounted handrails, and that all 1000-series GMD-1s from the fourth order onward were delivered with spark arrestors. So if you are modelling 1959 and you want 100% accurate details, look at photos of your chosen unit before you start hacking away at your model. You may not need to.

The vast majority of early-order units were modernized with spark arrestors and frame-mounted handrails by 1965.

We suggest you refer to photos on www.cnrphotos.com and either find your specific number or look for other locomotives in the year you are modelling for guidance as to what details to include and what to leave off. You will find just about all of the details you need to accurately customize your locomotive in the polybags hidden in the foam insert.

WHAT IS THAT EMPTY SPACE ON THE ROOF?

For CN 1954 1000-series engines, we were in a quandary. All of these were delivered with standard radiator covers which were replaced on most units by tall radiator shutter frames starting in 1966 . As the units stayed in 1954 colours into the 1980s, we didn't feel we could force the later guys to hack off the normal rad covers or force the earlier guys to hack off the shutter frames. So we didn't install either of them.

If you are modelling the late 1950s or early 1960s, install the standard, low covers. If you are modelling the late 1960s or later, install the tall shutter frames.

We recommend using white glue sparingly to install the parts. If it oozes, you can clean it up with a damp cotton swab or a damp tissue or even a clean toothpick. White glue will not leave a permanent stain on your model the way CA does.

SAND BOXES

The GMD-1 was delivered with eight sand boxes, and these were mounted to the trucks. They are included with all the extra detail parts. If you install all of them on your 1000-series loco 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 as-

sembled 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, 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 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).

- 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.

If you see some grab irons are missing, read the section above about "Extra Stuff in the Box" and it may well be that we left off those grabs deliberately. If there are big gaping holes where grab irons obviously fell out, then please give us a shout as that should not be the case! More information about our limited lifetime warranty can be found towards the end of this manual.

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 (SILENT)

If your GMD-1 locomotive is not equipped with a sound decoder, it should function like most other HO scale locomotives. The gear ratio is 14:1 so there is a good chance that it will MU (multiple unit) with your existing fleet. Put it on the track. Give it some juice. Watch it go.

But please note that we can't guarantee that your GMD-1 will actually MU with locomotives from other manufacturers. There are just too many variables involved - things like how much or how little drag the gearbox has, the speed of the motor itself or the current draw of the lighting. All of these affect how a unit runs and what its start voltage will be. The gear ratio is only one factor, albeit a big one.

(Of course, you can easily ensure that all of your locomotives from all manufacturers MU smoothly together by upgrading your layout to DCC. Jason likes to say that DC is a great system, but so was Betamax...)

In DC, the number boards are always on and the headlights are directional. The class lights are installed and wired, but they will not work in DC.

INSTALLING A DECODER

The GMD-1 contains an ESU-designed motherboard which 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 (recommended) or a 21-pin adapter to attach an 8-pin or a 9-pin decoder. Your chosen decoder should have six function outputs.

We recommend the following 21-pin decoders:

- ESU #54615 - LokPilot V4.0 DCC with 21MTC
- TCS #EU621 - BEMF six-function decoder

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 ESU-designed motherboard so you don't have to futz around with resistors. Just plug in one of the two recommended decoders and you have DCC.

ESU has made a GMD-1 function mapping which can be downloaded into their non-sound decoder (54615) so that the function buttons and motor control are exactly the same as our factory-released sound versions. This is available for download on the GMD-1 page in the Support section of our web site. You will need an ESU LokProgrammer to write the function mapping to the 54615 decoder. If you don't have a LokProgrammer, you can adjust CVs in the usual way.

The silent ESU 54615 decoder with our GMD-1 settings can be purchased preprogrammed from your favourite retailer. Just order ESU item number 91644. As the sound version uses custom sounds we recorded ourselves, the GMD-1 sound file is not available as a download from ESU. We will be selling GMD-1 sound decoders separately; if they aren't on our web site by the time you read this, call Jason and yell at him.

OPERATION – DCC/DC 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 and 1900-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!

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

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 Headlights
F1 Bell
F2 Horn
F3 Straight to 8
F4 Sarco Valve (Spitter) - Slow
F5 Doppler Horn
F6 Sarco Valve (Spitter) - Fast
F7 Dimmer
F8 Startup/Mute/Shutdown
F9 Number Boards
F10 Class Lights
F11 Brake
F12 Switching Mode
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 GMD-1 page in the Support section of our web site.

F4 and F6 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 F4, the Sarco Valve will be heard intermittently. If you press F6, it will be heard less intermittently. Make sure you turn off F4 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.

F5 Doppler Horn

Play this when approaching level crossings. We planned to include our Doppler horn as used on the 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.

F10 Class Lights
If you have our FP9A locomotive, you might be wondering why the GMD-1 only has white class lights. Green class lights mean a second section is following. Red class lights mean the engine is pushing a passenger train. While we would love to see the GMD-1 hauling the Super Continental during the Expo 67 rush or pushing GO trains in commuter service, these events are not entirely likely. So we just put in the white class lights. When you press F10, all the class lights come on.

F11 Brake
F11 works just like the brakes on a real engine. Press F11 and you put on the brakes. Turn off F11 and the brakes come off so you start moving again.

F12 Switching Mode
If you press F12, 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 F12 again to turn off the switching mode lighting.

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.

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

The sound volumes on your decoder have been pre-set at the factory to levels that we found comfortable on our test tracks. This is considerably quieter than what you are probably used to when first turning on a sound-equipped locomotive, because we feel that most locomotive models are set to ABSURDLY LOUD out of the box.

Sound levels are very much a matter of personal taste (especially if you are going deaf like we are), and what sounds great in one layout environment may sound too loud or too soft in another. Fortunately all 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 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.

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	

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. This is a myth about ESU decoders that was related to function mapping settings using an early version of JMRI. Even then the sounds were still there; they were just not mapped to the proper function buttons. ESU has changed their software so that this cannot happen again. 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 gradually slow down to a 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 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 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 couple of loose grab irons or underbody bits, 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 18" 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; Jeff Arnold; 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; Ray Reinhardt; Mike Schafer; Bob Scott; 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 Birmingham 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, especially all the *Star Trek* stuff — I don't make it easy for him!

Packaging cover photo by John Mellow.

Instructions cover photo by Brian Schuff.