

FRANÇAIS AU VERSO

OPERATING MANUAL



**MODEL RS-18
1800 H.P. ROAD SWITCHER**

**RAPIDO TRAINS INCORPORATED
MARKHAM, ONTARIO**



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MLW RS-18 LOCOMOTIVE PRODUCT GUIDELINES

Thank you for purchasing this model of the definitive Canadian road switcher, the MLW RS-18. We have been wanting to do this classic road switcher justice since the early years of Rapido and thanks to the support of our customers, we have finally made it happen. You made it obvious from the beginning you wanted us to make this locomotive – being our no. 1 requested unit – so we bring you the results of our blood, sweat and tears. Ok, they were Jason’s blood, sweat and tears. No project manager was harmed in the making of this RS-18.

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 almost 15 years and have been pumping out a lot of beauty Canadian products. Just for that, we’re going to make sure you LOVE your RS-18. And then you’ll say to yourself, “What have I missed out on all these years? I need to find and buy every Rapido model that has ever been released, in every scale! Especially that long tube thing that looks like a plane on rails with a red nose!” So we’re thanking you in advance for that ... if you can find everything.

If you are a returning customer, welcome back, eh! Just put your engine on the track. All we ask is you don’t intentionally set it on fire, don’t use it for a daredevil stunt off the layout, and don’t MU it to anything made by Tyco. Oh, and REALLY keep it away from cheap DC controllers. Crappy power packs can quickly and easily give any Rapido locomotive an unwanted makeover ... and not the good kind.

We would like to warn you that this manual contains a considerable amount of inappropriate linguistic innuendo – mostly Canadian things – and a fair amount of humour. We’re not tallying any scores on what you find, but if you can hit 36 points, then you’re doing pretty good!

As always, if there is anything amiss with your RS-18 please do not hesitate to contact us. We stand by our products 100%. The best way to contact us is through email (trains@rapidotrains.com) but you can reach us by phone, Canada Post or Messenger Goose as well.

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, meaning we have no idea what’s wrong with it! If it’s 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 RS-18 for a considerable length of time, please realize that eventually the parts supply will run out. That, or the oxygen on this planet will. 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 oxygen) left to do your repair.

CONTACT US!

Rapido Trains Inc.
500 Alden Road, Unit 21
Markham, Ontario
L3R 5H5 Canada



Tel. (905) 474-3314
Toll Free 1-855-LRC-6917
Fax. (905) 474-3325
Email. trains@rapidotrains.com



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LOK SOUND
EST. 1999

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

RS-18 DCC FUNCTIONS

- | | |
|-------------------------------|---------------------------|
| F0 Headlight | F10 Brake |
| F1 Bell | F11 Classification Lights |
| F2 Horn | F12 Switching Mode |
| F3 Flange Squeal | F14 Head-End Power |
| F4 Dynamic Brake | F16 Steam Generator |
| F5 Doppler Horn | F18 Ground Lights |
| F6 Ditch Lights (if equipped) | F19 Number Board Lights |
| F7 Dim the Headlights | F20 Spitter Valve |
| F8 Startup/Mute/Shutdown | F21 Brake Wheel (Ratchet) |
| F9 Full Throttle | |



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PROTOTYPE HISTORY

What exactly does the “RS” mean? In short: Road Switcher. The RS-18 is equally comfortable in the yard or on the mainline. Wait a minute, this sounds familiar. Did we just copy the SW1200RS manual?

“In short: Road Switcher. The SW1200RS is equally comfortable in the yard or on the mainline.”

- SW1200RS Manual

Alright, whoever did that is fired ... again!

The MLW RS-18 was the successor to the 1,600hp 244-powered RS-10 which proved to be somewhat unreliable. There were no such issues with the 1,800hp RS-18, with its 12-cylinder model 251B diesel engine. It is widely considered to be MLW’s most successful product from both an operational and a mechanical point of view.

Based on the Alco RS-11, the Canadian-specific RS-18 (which MLW designated DL-718) was alike in most aspects externally and internally except for the notchless hood ends (those indents where the number boards are on an RS-11).

Montreal Locomotive Works constructed 351 RS-18s between December 1956 and June 1968 for eight railways including Canadian National (225), Canadian Pacific (72), Pacific Great Eastern (29), and 25 for numerous other railways. The RS-18 was available in both “standard” and “lightweight” versions, which usually, but not always, rode on standard 9’-4” wheelbase AAR type B trucks or special lightweight trucks respectively. CN acquired examples of both (131 standard versus 94 lightweight units).

CANADIAN NATIONAL

Canadian National’s fleet of 225 units, numbered 3615-3893, was delivered between December 1956 and August 1960, designated MR-18a to MR-18g. This included 30 units with 80-mph gearing and steam lines for passenger service. The last was retired in 1993 after nearly four decades of service.

One colourful aside took place in 1967 when CN rebuilt six RS-18s with a new auxiliary HEP engine and extended length short hood for Tempo passenger service in southwestern Ontario. These six units were designated MRE-18g and lasted into the early 80s.

CANADIAN PACIFIC

Canadian Pacific’s units, numbered 8729-8800, were assigned classes DRS-18a and DRS-18b and were delivered between March 1957 and July 1958. All were equipped with a steam trainline so that they could be partnered with a steam generator equipped unit. Starting in 1980 CP began a major rebuild program at their Angus Shops in Montreal to extend their useful lifespan another 10-15 years. Eventually all 69 remaining locomotives were upgraded, gaining the designation RS-18u. Both the CN and CP fleets mostly worked across Ontario, Quebec and the Maritimes, although CP’s units occasionally worked west of Winnipeg.



BREAK-IN

Don't break in to anyone's layout room to steal their RS-18. And don't break in to a hobby shop either because that is really frowned upon. Like, REALLY! Just buy more for yourself. But this isn't about that kind of break-in.

Every locomotive needs a break-in period. Your RS-18 has been tested at our factory for about two minutes ... maybe. 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 RS-18 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.

HOW TO HOLD YOUR RS-18

The RS-18 has numerous very delicate parts. If you want to back date it to be the quality of a model produced in the 1970s, then rip all the parts off and handle it like one of those grab-o-arm claw machine games at the arcade. We're assuming you don't want to do that, so the RS-18 should be picked up carefully. We suggest you DO NOT lift by the long hood, because if for whatever reason the clips holding the hood don't hold its weight, your locomotive will have a brief skydiving experience. We don't want to risk that, so 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 lower edge of the fuel tank. Always make sure your hands are free of shmutz before touching your engine.

If you are taking your RS-18 to the club all the time and regularly handling it, stuff will break off. Sorry. The little bits are made of plastic and metal with glue, which is all a bit fragile. We attempted to make the small parts out of unobtainium and use Steady-State Micro Welding to install them. Unfortunately, the unobtainium was unobtainable.

We suggest wrapping your RS-18 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 are welcome to use CA, but only if you are very careful and very brave.

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 Jason or Bill was in the factory when your model was being assembled there may be a couple of bugs. They are always breaking stuff. Doing a quick pre-service check will solve most operational glitches.



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- 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).
- 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 RS-18 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 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 and they are not floating around the packaging, let us know and we will send you replacements. More information about our limited warranty can be found towards the end of this manual.

REMOVING THE SHELL

If you need to open up your RS-18 to install a crew or a decoder, things work a little differently than most of our previous models, so please read carefully. In a perfect world, you should never have to open your locomotive up, but sometimes things happen. Like dropping your HO scale cell phone down through the exhaust fans. Yeah sorry Chris, that's not coming back. But if you must retrieve it, then 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,



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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?
- If you wish to install a crew inside your RS-18, then removing the cab is the easiest task out of these instructions. The cab is held on by 4 clips – two forward, two rearward – and with a little manipulation the cab should come free. We recommend pulling the cab straight up and not twisting or tilting it in anyway. Oh, and remember to disconnect the hand rails from the cab too or they're going for a ride.
- If you wish to change out the decoder, then unfortunately you're going to have to remove almost everything above the frame. As much as the RS-18 body is a modular design, it doesn't lend itself well to a simple decoder replacement.

First, start by removing the cab as explained earlier. The next step will be to remove the short hood. This can be achieved by first removing the railings from the equipment boxes on either side of the short hood.

Next, take a small flat screwdriver and through where the cab was located, pry the walls of the short hood outwards slightly to disengage the clips (there's one on either side). This should allow the short hood to be pulled up and clear of the body. Be careful as there will be lightways and wires within the short hood for lighting.

Finally at this point, you'll see that the remaining body shell is one piece. Actually we lied. It's two, because there's a separate part for the filters on the long hood. While we were originally going to recommend only removing that to access the decoder, because of how the decoder is wrapped and secured, you'd need to be a brain surgeon to be able to extract the decoder from that angle. We also attempted to remove this part by itself and because the filter pack is itself two parts, it doesn't lend itself to being removed very easily. Our first attempt yielded the filter pack off, but it ended up becoming about four pieces when it should've been only two. So you're more than welcome to try, because we just threw our hands up and said "nope!".



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Back on task. The remainder of the long hood is secured to the frame by a series of clips along either side. Exercise caution when attempting to remove them, as breaking them may render your shell unable to return to its normal position. Be aware of the battery boxes as well, as these are pinned to the long hood and not the chassis. And oh yeah, the railings. You'll want to remove those entirely to keep them out of the way just to be safe.

At this point you should have the entire shell off the frame. We don't know how to put it back together (we never tried) 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 the instructions backwards, it's not our fault.

Any requests for replacement hoods or cabs 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 find a nearby lake and jump into it. We did warn you after all.

OPERATION – DC (SILENT)

If your RS-18 locomotive is not equipped with a sound decoder, it should function like most other HO scale locomotives. Put it on the track. Give it some juice. Watch it go. In DC, the number boards are always on and the headlights and ditch lights (when equipped) are directional. The ground lights are installed and wired, but they will not work in DC.

If you are new to the hobby (or just like to occasionally "play trains") and you have a DC-powered train set, please contact us before operating your RS-18 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 16 volts DC. Similarly, controllers designed for large scale trains put out a much higher voltage than your RS-18 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 TV dinner 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 labour involved in restoring it to its former self. That's because you didn't read this bit of the manual.

INSTALLING A SILENT DCC DECODER

The RS-18 contains a motherboard specially designed for our decoders. This is connected



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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 21-pin decoder:

- ESU #54615 - LokPilot V4.0 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 the recommended decoder 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 an RS-18 function mapping which can be downloaded into the ESU non-sound decoder (54615) so that the function buttons and motor control are exactly the same as our factory-released sound versions. This should be available for download from the Support section of our web site. If it isn't, bug us. You will need an ESU LokProgrammer to write the function mapping to the 54615 decoder. If you don't have a LokProgrammer, you can adjust CVs in the usual way.

We will be selling RS-18 sound decoders separately; if they aren't on our web site by the time you read this, call our office, pick a random number between 1 and 62, divide by 3, multiply by 6, and then take the second last number. Call that extension and you'll be redirected to someone whom you can yell at. Look at us – we use the correct pronoun and then end the sentence with a preposition. This is a metaphor for the contradictory nature of human existence!

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

OPERATION – DC (SOUND)

To operate your sound-equipped RS-18 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.





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— WARNING —

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

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

The DC lighting is limited. Some throttle manufacturers produce special thing-a-ma-bobs which are meant to trigger the sounds in locomotives on DC layouts. As we have no involvement in the development of those thing-a-ma-bobs, we have absolutely no idea how they will affect your RS-18, 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 RS-18 if one of these thing-a-ma-bobs turns your locomotive's circuitry into something akin to burnt toast, 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 modellers 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 kidnapped by a band of journeymen from the masons' guild and being labelled a warlock. He still has nightmares about it. As long as we can keep reminding him of this event, he'll be nice to DC modellers. Not that we're calling DC modellers Luddites. We'd never do that.

OPERATION – DCC (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 a real 251B diesel engine. Yup, the same one in the FPA-4s. So you can rest assured that the sounds are bang-on accurate. We are also now using ESU's new V5 decoder complete with Full Throttle functionality.

As we do for all of our sound decoders, we recorded the prime mover under load – it was a dead unit in tow, up a grade, both ways, in a snow storm, in July. Or maybe it was August. Anyway, locomotives sound a lot different when they are actually working.



If you have decoders from other manufacturers in your locomotives you might want to check out the available line of Rapido decoders on our web site. All of our decoder sounds were recorded under load and we simply can't stand decoders that don't have this feature.

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. At the time of writing, this wasn't finished yet. Hopefully by the time you read this, it is available for download from the support section of our web site or directly from the ESU website.

LOCOMOTIVE ADDRESS

Your Rapido RS-18 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.

TURN ON THE SOUND

Press F8 and you will hear the RS-18 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. Ok – they just finished it. You can now download it from the Support section of our web site. The feature is called the "Prime Mover Startup Delay" and is Section 13.2 on Page 89 of the ESU LokSound V5 manual.

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

Note that if you are listening to your RS-18 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 RS-18 will promptly shut down. They will need to press F8 again.



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FUNCTIONS

The RS-18 features a new standard for function mapping that we will be attempting to match for all projects carrying forward. This is to better standardize our practices, as well as match locomotives available from other manufacturers. So if you note something missing below (like F13), it just means that the RS-18 doesn't have whatever function that could be. If you have any comments or suggestions regarding our revised function mapping scheme, please call, e-mail or dispatch a hoard of locusts to our address.

- | | | | |
|----|----------------------------|-----|-----------------------|
| F0 | Headlight | F10 | Brake |
| F1 | Bell | F11 | Classification Lights |
| F2 | Horn | F12 | Switching Mode |
| F3 | Flange Squeal | F14 | Head-End Power |
| F4 | Dynamic Brake | F16 | Steam Generator |
| F5 | Doppler Horn | F18 | Ground Lights |
| F6 | Ditch Lights (if equipped) | F19 | Number Board Lights |
| F7 | Dim the Headlights | F20 | Spitter Valve |
| F8 | Startup/Mute/Shutdown | F21 | Brake Wheel (Ratchet) |
| F9 | Full Throttle | | |

FUNCTIONS: MORE INFORMATION

F0 Headlight

Unlike the real thing, our RS-18 headlight is directional. It leads the way no matter which way you're going. Not like some fancy FP or FPA unit where it always stays on no matter which way it's going. If you want the headlight facing the opposite way of travel to be on, then read a little further on under the Switching Mode function.

F1 Bell

As was the case with many early air-operated bells across multiple roads, we really can't figure out an exact "factory standard" ring rate, as over the years the timing would've changed simply based on how clogged the air regulator became over time. Plus, there are steel bells and brass bells. And don't get us started on e-bells because the RS-18 isn't that modern! Check the "Horns and Bells" section for details and how to customize your bell from the standard.

F2 Horns

We love our horns. Like really! Seriously, who doesn't love a good sounding horn? So we're now providing a wide range of horns for you to apply to your locomotive as appropriate or as you see fit (even if it's not appropriate). To get a short "toot" just tap F2 or your "HORN" button. If you hear a long tail-off you are tapping for too long. If, no matter what you do, you just can't get the darn thing to make a short "toot," switch to NCE. The default horn is an M3H, but we've included many others. Refer to "Horns and Bells" below.



F3 Flange Squeal

Let's face it, when we introduced Flange Squeal on our SW1200RS, we created a monster. A really good looking and amazing-sounding monster. So, since it was never possible for anything to SILENTLY go around tight curves and switches without waking up half the neighbourhood – no matter what locomotive you have – we've included the flange squeal. Press F3 to turn it on. Press F3 again to turn it off. If your neighbour complains about that nasty racket, just keep F3 on and say you can't hear them and maybe they'll go away.

F4 Dynamic Brake

Press F4 to get dynamic brake sounds. Who does that? Well apparently a lot of people because once upon a time, we got flak for putting it in the upper echelons of functions on our old locomotives. So for that, we apologize and have brought it to the forefront of functions for your acoustic pleasure.

F5 Doppler Horn

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

F6 Ditch Lights (if equipped)

F6 turns on the ditch lights. Like the prototype, the ditch lights are not directional. Remember to turn off the ditch lights when approaching a station or an oncoming train as they are BLINDING and we currently do not offer HO scale sunglasses for your customers. The ditch lights do not flash as that is not a Canadian requirement. Hoser.

F7 Dim the Headlights

When approaching a station stop or an oncoming train, press F7 to dim your lights and turn off your ditch lights – you don't want to blind your passengers or the oncoming train's engineers. See our note above about sunglasses. 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 shutdown sequence before the sound turns off.

But wait, there's more! By pressing F8 and turning on the sound, you'll also turn on the control stand lights inside the cab. How sweet is that? Press F8 again when you turn off the sound, and the lights will go out.



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If you have a DCC system that only allows eight functions, you can remap the 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 Full Throttle

ESU's "Full Throttle" feature allows you to play the prime mover of your RS-18 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, whether you're taking off from a commuter station stop at warp speed, or trying to get that long, slow freight over the grade.

"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 RS-18 may fly like a bird.

F10 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 start moving again. When we started making sound-equipped engines, very few people used the brake function. However, ESU's Drive Hold feature has made the brake function more popular. So we've moved it up to F10 to match the ESU standard.

F11 Classification Lights

We've stepped up our game with the most Canadian thing we can think of on a locomotive ... CLASS LIGHTS! Now by pressing just one button, you can cycle through almost any colour you want. White. Green. Red. Blue. Pink. Fuchsia. Cyan. Ok, maybe some of those aren't available. When you press F11, you'll get a colour. Press F11 again to turn off the class lights. Press F11 yet again and you'll get the next colour. We're sure you get the idea now. Oh, and they're directional too.

Information on Canadian class lights and what the colours mean can be found on the internet, so we hope that you will learn to use them appropriately.

F12 Switching Mode

If you press F12, the headlight and rear light will both be on dim. This is appropriate for switching operations, which would be common in yards and terminals. This is the only



way to turn on both the front and rear headlights at the same time. Press F12 again to turn off the switching mode and return to your regularly scheduled lighting.

F14 Head-End Power

You're probably thinking to yourself "Why does my RS-18 come with a HEP sound effect? They never had HEP!" and to that we would tell you that you're wrong. Did you seriously forget about the Tempo? Every time someone forgets about the Tempo, a random Rapido employee starts doing the moonwalk uncontrollably around the office. I mean, it's hilarious, but when they're in the middle of a meeting or trying to split an atom, it's not an ideal outcome. So please stop forgetting about the Tempo, press F14, and hear the unmistakable roar of the HEP generator come to life. If you don't want your passengers to have heat and hydro, press F14 again to turn the HEP off. Skinflint.

F16 Steam Generator

Press F16 at any time to start up the steam. Why did we include this when RS-18s don't have steam generators? Many fleets of RS-18s came equipped with pass-through steam lines, so there's a good chance you're running one in passenger service. So if you have a Rapido Steam Generator Car nearby or a non-sound equipped unit that has a steam generator, your RS-18 can pinch-hit with accurate steam sounds. We've moved this out to the back woods of functions because there's a solid chance you might be running a freight train and, as such, don't need steam heat.

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 CV value. Please refer to Sound Volume Settings section before attempting this.

F18 Ground Lights

The ground lights are on all the time by default, and we think the design improvement from the original SW1200RS inspection lights means that we created yet another monster and then made it even better! But should you want to turn them off, just press F18. We originally called these Track Inspection Lights, but were dutifully corrected by Richard that the switch in the cab said "ground lights".

F19 Number Board Lights

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

F20 Spitter Valve

To save you from the saliva clean-up should you try to mimic the sound of the spitter valve, we've provided it's sporadic sounds on F20. By default it's always on, as the real thing would always be going when the locomotive is running (and for a few minutes after it's shut down). But if you prefer to not hear it at all, just press F20 to silence the spit.



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F21 Brake Wheel (Ratchet)

If you want to make it sound like a crew member is manually cranking the brake wheel on or off your locomotive, press F21. That's all it does. Your locomotive won't work any differently, which is nice. We'd hate to see you leave F21 on and then have flat spots on your locomotive.

Please note: The Rapido warranty does not cover replacement wheels in the event of flat spots.

HORNS AND BELLS

Canadian Pacific and Canadian National both used two uniquely different horns – the Nathan M3H and the K3L – and we've included some of the best recordings out there of the real thing. The same goes with bells too, as they all seemed to have a unique tone or ring rate, whether they were brass or steel.

The default horn on your model is a Nathan M3H. Because your locomotive is equipped with the new LokSound V5 decoder, if you wish to change the default horn, you can do so by changing CV 163. For changing the default bell, change the value of CV 164.

Horns

- CV 163-0 Nathan M3H (Default)
- CV 163-1 Nathan K3L #1
- CV 163-2 Nathan K3L #2

Bells

- CV 164-0 - Steel Bell (Default)
- CV 164-1 - Brass Bell

Note that after you change the horn or the bell you may need to cycle the power (turn it off and on). And changing the default horn automatically changes the doppler recording on F5 too. How's that for a beauty way to go?

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 (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, the sound levels can be easily adjusted to best suit your own requirements and we recommend that you experiment with different settings if you don't care for the default levels.

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

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

— VERY IMPORTANT —

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

RS-18 SOUND VOLUME SETTINGS

KEY	FUNCTION	CV	DEFAULT	RANGE	YOUR VALUE
	Master Volume	63	192	0-192	
F1	Bell Volume	283	50	0-128	
F2	Horn Volume	275	128	0-128	
F3	Flange Squeal Volume	403	80	0-128	
F4	Dynamic Brake Volume	299	45	0-128	
F5	Doppler Horn Volume	339	128	0-128	
F8	Diesel Volume	259	128	0-128	
F10	Brake Set/Release Volume	483	50	0-128	
F14	Head-End Power Volume	315	40	0-128	
F16	Steam Generator Volume	299	45	0-128	
F20	Sarco “Spitter” Valve Volume	387	90	0-128	
F21	Hand Brake (Ratchet) Volume	371	50	0-128	

FACTORY RESET

On your RS-18, 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. You’re out of the band. Again!

You can NOT lose all of the pre-recorded sounds on your RS-18 decoder by doing a factory reset. However, after performing a factory reset your RS-18 may begin to sound like Foster Hewitt calling a Maple Leafs game. If that happens, you have probably lost your mind. We also don’t know how to change it to Dick Irvin calling a Canadiens game either. But don’t worry. Just sit back, grab some popcorn and enjoy the game. Pay no attention to the person breaking into your layout room attempting to steal your Rapido RS-18 because they misread the instructions on Page 4.



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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. **WE HIGHLY RECOMMEND YOU DO THIS FOR ALL YOUR ESU-EQUIPPED RAPIDO ENGINES.**

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. You may have to set up pylons or a work block to keep other errant model railroaders from entering your territory. 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 RS-18 will quickly take off at full speed and suddenly stop. If you had previously installed an HO scale crew without HO scale seatbelts, you may want to dispatch an HO scale ambulance to attend to the injured. After that, you'll have fabulous motor control. If you ever have to reset your locomotive, you can do the automatic adjustment thingy again – it just takes a few seconds. Just remember to install the seat belts if you haven't already.

MORE INFORMATION

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

LIMITED "FIVE-YEAR-ISH" WARRANTY

We will do our best to solve any problems or issues that you may have with your RS-18 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 are like most of us and – after purchasing this locomotive – you dismissed it to 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 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.

There are a number of things that this warranty cannot cover. If your RS-18 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 running your locomotive at full speed around a 15"-radius curve along the edge of your layout, modifying your locomotive to work off diesel fuel, somehow adding a performance exhaust system to really make it sound like an old MLW, pouring fuel on it and lighting it on fire to make it smoke like an old MLW, 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

The RS-18 project was one of those born from devotion and passion, right from the beginning. The RS-18 has long been one of those locomotives that just screams "I am Canadian" and whenever a locomotive can say that, we go the extra mile to ensure that it's been given the Rapido treatment from start to finish. Of course to do so means that we have to call upon some experts for their input.

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And we have Richard Longpre to thank once again for yet another attempt at understanding the English language. We often don't give him enough credit for translating this manual word for word, letter for letter, but somehow he manages to do it. In the event there's an error in here, it is entirely the fault of Richard and certainly not the fault of the person trying to copy and paste his translation into this manual. No, certainly not.



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CN RS-18s 3126 and 3115 with the "Barrie Flyer" at Maple, Ontario. August 18, 1981



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Don Jaworski photo