Enginemen's Operating Manual

MODEL F7B
MODEL F9B

GENERAL MOTORS LOCOMOTIVES

RAPIDO® TRAINS INC.

FRANÇAIS AU VERSO

F7B/F9B LOCOMOTIVE PRODUCT GUIDELINES

Thank you for purchasing this Rapido Trains F7B/F9B locomotive. Much like the good neighbours of the FP7 and FP9A shared their own manual, we're making the F7B and F9B share a manual as well. Why? Well because they're largely the same, save for a porthole here and maybe a ladder there. Oh, and a few extra fiddly bits on the roof too.

Our sound-equipped F7B/F9B locomotive is powered by an ESU LokSound V5 decoder and can be operated on DC or DCC layouts. It is fully compatible with our old (like, REALLY old) FP9A locomotives included in The Canadian (containing SoundTraxx Tsunami decoders) and will MU with them smoothly. It's also largely the same as our previous CN F9B release, save for a couple of minor internal improvements. Please read "Operation – DCC/DC with Sound" to familiarize yourself with the ESU decoder in your locomotive.

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 a return authorization, and please be patient when you send something back. When it comes to repairs, it's something we don't rush. We'd rather get it right the one and only time we hope to ever see your model come into our warranty repairs department. If you want to know the status of your warranty return, you have two options: 1) contact us directly and ask, or 2) complain about us on an online forum or Facebook. One of these methods will result in a timely response and maybe a nice chat. The other will result in a decaying radioactive isotope being hidden somewhere in your model before it is returned to you.

If you are reading this and it's the year 2050 or later, what took you so long to read this manual? Of course, we're assuming that you bought this model when it was produced in 2020 (that was a wonderful year, wasn't it?) and that you just threw it on the track and didn't even read this awesome little book. I mean, it's filled with so many great things and notes and information ... you know what, if you're not going to read it, then I'm just not going to write them anymore! How do you like them apples?

Alright, now I'm hungry. Keep reading the manual. I'm going to get a snack.

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ESU LOKSOUND EST. 1999

This sound-equipped Rapido model features an ESU Loksound V5 decoder. For more information, please visit www.esu.eu.

F7B/F9B DCC FUNCTION QUICK REFERENCE

F1	BELL
F2	HORN
F3	FULL THROTTLE
F4	DYNAMIC BRAKE *(CN USERS LEAVE THIS ALONE)*
F8	STARTUP/MUTE/SHUTDOWN
F9	FRONT HEADLIGHT
F10	REAR HEADLIGHT
F11	BRAKE
F12	DOPPLER HORN – SLOW

PROTOTYPE NOTES

Many will ask "Do we really need another B-unit?" or "What makes this one different from the others?" Well, the General Motors Diesel Division (GMD) London -built F7B and F9B differed from their Electro-Motive Division (EMD) La Grange-built counterparts and have their own unique attributes. First and foremost, let's clear the air. There is no such thing as an FP7B or an FP9B. That's a misnomer. Whether it had a steam generator or not, it was simply an F7B or an F9B. That's it. End. Finish. Fin. The only difference in name would've been the internal classification number, which varied from railway to railway. This is because the carbody was the same length whether or not it was equipped with a steam generator unit. The A units were different, and there were in fact FP7s and FP9As (also referred to as FP9s, FP-9As, and FP9-As… often in the same source document; that's why we settled on FP9A).

Canadian Pacific

Beginning in 1951, Canadian Pacific took delivery of their first F7Bs, numbers 4424-4437, class DFB-15c. Of the first batch of 14 units, the first ten (4424-4433) were not equipped with steam generators, while the later batch of 4 (4434-4437) were so equipped. These units were followed in 1952 by an additional eight steam-generator equipped F7Bs (4438-4445) and 3 non-steam F7Bs (4446-4448). Finally, in 1953, CP took delivery of 4 more F7Bs, numbers 4459-4462, which were not equipped with steam generators. However, as a result of the transition to the F9B production at GMD, the last order came equipped with a 48" dynamic brake fan rather than the 36" fans on the previous F7Bs.

Finally, in 1954, with the impending launch of The Canadian the following year, CP took delivery of eight F9Bs (numbers 1900-1907) to complement their order of 11 FP9As (1405-1415) purchased at the same time. These new units came equipped with steam generators and 48" dynamic brake fans, being essentially identical externally to their earlier F7B cousins, especially the later 1953 batch. At the same time, CP renumbered their steam-generator-equipped F7Bs from 4434-4445 to 1908-1919 respectively to match the numbering of the incoming F9B units, and to streamline the numbering of the fleet intended for use on passenger trains. They were also upgraded from 65 mph to 89 mph gearing at the same time.

In the later years when passenger service began to dwindle, CP reverted the numbering of their steam-generator equipped F7Bs back to 4434-4445, re-geared them back to 65 mph, and put them back into dual freight/passenger service for greater flexibility. None of the F7Bs went on to VIA Rail Canada in the late 70s, as they had all lost their steam generators by this point. While some were traded-in to GMD in 1965 towards new GP35s, most were retired from service by 1983. Two exceptions to this were 4445 and 4462, which became slug units wearing numbers 6800/6801 and later 1018/1019 respectively before ultimately being sold in 1999, 16 years after the last F7Bs were retired. For the F9B's, the remaining six units (1902 and 1906 were retired due to wreck damage) were renumbered to 4473-4478

in 1971 and remained in dual freight-passenger service but with reduced 65 mph gearing. Then in 1979, the five units still equipped with steam generators were renumbered 1961-1965 for transfer to VIA Rail. Of the five units transferred to VIA (renumbered by CP to 1961-1965, although 1961 was briefly numbered 1931 until a numbering conflict was discovered), most remained in CP Rail paint but were gradually repainted over time. In the early 1980s, three units were extensively rebuilt at CN's Pointe Ste. Charles shops and renumbered 6651-6653. Units 1961 and 1965 were subsequently retired and not part of the rebuild.

In summary, CP B units are a royal pain in the behind to make. We really should have followed all the other manufacturers and just slapped CP colours onto a stock American B unit. That would have been easier and cheaper and would have resulted in fewer grey hairs on Josh's head, but it is not The Rapido Way.

Canadian National

Unlike Canadian Pacific, Canadian National got into purchasing B-units much earlier - in 1948 to be exact - when they took possession of a pair of F3(B) units, numbers 9001 and 9004, to go along with their F3A units received at the same time. To complement this earlier experiment, CN then purchased 16 F7Bs beginning in 1951 with numbers 9029-9047 (odd numbers), followed by 9053-9063 (odd numbers), of which the last unit was delivered in 1952.

Seeing the advantages of using B-units more in passenger service than in freight, CN placed various orders for steam-equipped F9Bs totaling 38 units, which were delivered between 1954 and 1958. CN's order made them the last car body B-units built by either EMD or GMD. Beginning in 1954, CN received their first F9Bs, numbers 6600-6612 (classified as GPB-17a) and soon thereafter with 6613 (GPB-17b) in 1955. These were followed in 1957 by 6614-6620 (GPB-17c), and in 1958 by 6621-6630 (GPB-17d) and 6631-6637 (GPB-17e). All CN's F9Bs came equipped with two steam generators, however none was equipped with dynamic brakes. Eventually CN rebuilt their GPB-17a class F9Bs to remove the "laundry chute" stacks on the end of the car body with roof stacks like the rest of the fleet. While the as-delivered units (GPB-17c class and later) featured exhaust stacks with squared ends, the units modified by CN featured stacks with curved ends.

Along with some of their F7A fleet, ten CN F7B units were rebuilt by Transcona shops in the early 1970s as units 9190-9199, for continued freight service lasting into the late 1980s.

When all CN passenger services were assumed by the newly created VIA Rail Canada in 1978, all but four of the original 38 F9Bs were transferred to the new crown corporation and kept their original numbers. Most were retired in the 1990s. Units that were not transferred to VIA Rail included 6600 (wrecked 1974), 6601 (wrecked 1973), 6608 (wrecked 1960) and 6609 (retired 1974).

BREAK-IN

Don't break into anyone's layout room to steal their B-units. Or any units for that matter! We'll send some of our front-office staff after you if you do. Don't believe us? You should hear the threats we get from Lystra when she doesn't get her way! So just buy more for yourself. LOTS MORE! But this isn't about that kind of break-in.

Every locomotive needs a break-in period. Your F7B/F9B is no different and has been tested at our factory for about a minute ... maybe. Just long enough to know that everything is assembled and working right. But 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 F7B/F9B on a test loop and just let it run in each direction for an hour or two. Fast and slow. Actually, don't wait until you're done reading the manual. Put it on the track now! Start running it and let it run while you continue reading the manual. There already should be enough grease in the gearbox so you don't need to add any. Just let the thing run and keep reading.

MINIMUM RADIUS REQUIREMENTS

Being a reasonably small, 4-axle unit, the F7B/F9B will have no problems navigating 18" radius curves and #4 crossovers. If you want to run passenger trains on anything tighter, try rapid transit modelling. I hear streetcars can go around pretty tight corners.

Even though our model has sprung buffer plates, the F7B/F9B very much prefers broader curves, especially if coupled to another unit or to a full-length passenger car. For tight-radius curves, we include an extra-long long-shank coupler in the box to prevent interference with the rear buffer.

CHANGING THE COUPLERS

Changing the couplers is very straightforward. Place a white tablecloth on your workbench or kitchen table. Place a foam cradle (available from Micro-Mark, product #80784 or ESU, product #41010) or that CP-branded hand towel you stole from the Chateau Lake Louise on top of the table cloth and lay the F7B/F9B on its roof. Use a small Phillips screwdriver to unscrew the coupler box and slide it out without destroying the surrounding details, especially the yokes surrounding the couplers. Should the yoke break off, be sure to use the most colourful of language in the ensuing tirade. Snap the lid off, replace the coupler, and snap the lid back on. Slide the coupler box back in and replace the screw. Pick up the F7B/F9B and look around the white tablecloth for all the little roof details that may have fallen off. If you used the CP towel, look near the "P." Glue them back on with white glue. Hey – don't say we didn't warn you! And on that note…

MISSING OR DAMAGED PARTS

With about 300 individual detail parts, the F7B/F9B is a stupidly complex model. But that's what we're known for, isn't it? To prevent inevitable frustration, we recommend checking your locomotive as soon as possible to ensure that everything is where it should be. We try to catch all potential issues at the factory, but with literally thousands of locomotives in each production run it is possible that the odd problem may slip past our quality control inspectors. Even after all these years, they still have karaoke nights and can get tired during the day. Please cut them some slack. At least they know all the words to "St. Elmo's Fire (Man in Motion)" by John Parr.

A bigger issue is damage in transit. 99% of all models are perfect when they leave our warehouse. But everyone knows that couriers and delivery persons don't handle packages like they're filled with nitro glycerin, so between our warehouse and your front door there's a chance that your model may or may not have been bumped, tumbled, kicked or even given a pile driver or suplex in the process. Maybe the Hulkster wrapped his 24" pythons around it. No packaging (or wrestler sports entertainer) is designed to survive such punishment.

If bits come loose in transit, they are easily reattached with white glue, such as Weldbond. I can see a new horizon underneath the blazing sky. I'll be where the eagle's flying higher and higher! We prefer Weldbond over CA because it works just as well for most layout scenarios and is very easy to clean up. There is no risk of damaging the paint job – just wipe it up with a bit of warm water on a paper towel.

If any parts are missing or broken, please call or email us we'll do the best we can to take care of you, up to and including replacement parts if needed. I can climb the highest mountain, cross the widest sea.

I can feel St. Elmo's fire burning in me, burning in me! We aim for 100% customer satisfaction. Unless you are one of those people who calls us because the steam outlet pipe under the frame is slightly crooked and you don't want to move it back into place with your finger. In which case, please go away.

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 RP-2 Standards Gauge. Should any of the wheelsets be out of gauge, remove the affected wheelset from the truck by prying off the bottom lid of the gearbox

with a small flat screwdriver and then spreading the side frames slightly. Now go looking for the truck end beams that have flown to Jupiter when you stuck the screwdriver in there. Forget it – they are gone. We probably should have told you to take those out first. Sorry. The wheelset can be re-gauged 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 and steam pipes at the rear end of the unit, both coupler trip pins and the water tank on the CP unit. A small drop of CA-type super glue will sufficiently hold any loose parts securely. Under the body who cares if you spill a bit?
- Make sure that the trucks swivel freely and without binding. If they catch on anything, check to ensure that the brake cylinders and their associated piping do not interfere with any of the underframe components. If you really don't like underbody detail, return this model and go buy a Cox one instead. They are very nice.
- The end buffer plates should move smoothly and spring back quickly. If not, there may be binding – check for flash or plastic shards that may cause any interference.

WHAT ARE ALL THE EXTRA BITS?

Thankfully (or not) when Josh ended up with the F7B/F9B project, things were a little bit more organized than the FP7 project of 2019. He still has nightmares about nose ladders. Thankfully, the B units didn't have noses, and only one style of ladder which not all units had. And because of that, the B units have very few additional parts.

The parts bag with your locomotive may include any combination of the following parts: diaphragms, speed recorder cables, and a ladder or two. That's pretty much it. If you find anything else in there, by all means go get a lottery ticket. If you win, Josh gets a slice of the winnings. I guess there are perks to writing these manuals! (Ed. It's also a bad sign when Josh refers to himself in the third person. You feeling OK, Josh?)

Josh is feeling great. The diaphragms are not installed for two reasons. Firstly, CN and CP both removed the diaphragms of their F7Bs and F9Bs locomotives soon after delivery. They were an unnecessary maintenance headache and the railways did not see the need to keep their crews protected from the elements as they regularly had to get out to line switches, couple/uncouple cars, clean signal heads, and sign register

books anyway. Secondly, in order to have functional diaphragms we would have had to make large cuts into the rear of the unit, which would have looked extremely silly once you took the diaphragms off. If you are displaying your F9B locomotive or you have 96" radius curves, you can attach the diaphragms with white glue or CA.

If your locomotive has a ladder in the parts bag, it's because they were installed on some F7B and F9B locomotives and tended to migrate. Refer to prototype photos for placement.

And finally, you'll also find a couple of speed recorder cables in the parts bag too. Some roads typically installed these on their locomotives, but CP and CN typically did not. That said, the parts are all in the same mould as ones actually on the locomotive, so we've included them anyway. Feel free to add them to whatever you feel like. Consider them freebies (and who doesn't like freebies?).

REMOVING THE SHELL

Removing the shell can be a real production. Here's how to do it. Oh, and if you damage, destroy or immolate your engine in the process, it is unfortunately not covered under warranty; once you open it up, you are on your own. If you break some bits and we have them available, we will of course be happy to send you replacements.

Go back to your workbench. You have to use the CP hand towel for this. Everything else is not allowed. Lay the F9B on its roof, on the towel. If you have a ~~"Pac Man"~~ *Multimark*-logo towel, it should be just to the right of the logo. If you have any other CP logo towel, please send it to us. In fact, we want the ~~Pac Man~~ *Multimark* towel too. Do you have any CN ones? We need more towels.

Remove both coupler boxes and slide them out from your locomotive. Then remove the four shell retention screws – they are located just inside of the trucks. Once the screws are out, just start wiggling the shell off. It will eventually pop off.

If any parts go flying in this process, pick the parts up off of the floor/table/chair/your lap/ceiling/air vent/bookshelf and place them on the other side of the Pac Man logo. The parts are easily reinstalled using a bit of glue.

Normally we'd have told you about a transporter lock on the molecular pattern of the part that flew away. That allows us to lock on to any little part that falls off your locomotive and beam it directly into the heart of the sun. Unfortunately, due to a failed software update (ok, someone dropped it on the floor), the transporter lock has been retired. We are currently attempting to replace it with Jason's vintage 1998 Power Macintosh All-in-One computer. It's currently stuck on the Happy Mac face.

OPERATION – DC (SILENT)

If your F7B/F9B locomotive is not equipped with a sound decoder, it should function like most other HO scale locomotives. The gear ratio is 14:1 so it should MU (multiple unit) with your existing fleet. Put it on the track. Give it some juice. Watch it go. Wheeeee!

In DC, none of the lighting features work. That's right, none of them. If you want to have the front and rear switching lights work, then you might want to consider upgrading to DCC. We know, we know, you are tired of people telling you to upgrade to DCC, to buy a solar-powered calculator, or to upgrade to a colour television set.

But if you want to make all those cool locomotive features work (yes, all two lighting features), you will need a DCC system. (And by the way, radios come in FM as well as AM now, and they work UNDER BRIDGES!!!!! Isn't technology wonderful?)

INSTALLING A SILENT DCC DECODER

The F7B/F9B contains an ESU-designed motherboard which is connected to the track, motor, and lighting outputs. It is located in the roof. A blind plug is attached to the motherboard using a 21-pin connector. To install a decoder, you will need to open your F7B/F9B, remove the blind plug and install a 21-pin decoder. You must use a 21-pin decoder rather than an 8-pin or 9-pin decoder. This is clearly written in Rapido's laws and statutes, section 43, subsection 122, paragraph 2175b.

We recommend the following 21-pin decoder:

- ESU #59619 - LokPilot V5 DCC with 21MTC

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.

ESU has made an F7B/F9B function mapping which can be downloaded into their non-sound decoder so that the function buttons and motor control are the same as our factory-released sound versions. This is available for download on the F7B/F9B page in the Support section of our web site. You will need an ESU LokProgrammer to write the function mapping to the silent decoder. If you don't have a LokProgrammer, you can adjust CVs in the usual way.

You know, if you want silent DCC it's a heck of a lot easier to just order the sound model and turn off the sounds. If you're known for mashing buttons on your controller errantly and want to avoid sound altogether, open your F7B/F9B and either remove the speaker or simply snip the wires to it. There, done! At any rate, after you've

bought the silent decoder and spent four hours fiddling to install it, fix the bits you broke off, and get all the functions to work correctly, you'll realize it would have been cheaper and less frustrating to buy the sound-equipped model and just turn off the sounds. Your time and sanity are worth something, after all!

For those of you reading this manual who have read all our previous manuals, we apologize for reusing some of the text from previous manuals. The following word is completely unique to this manual: iguana.

OPERATION – DC (SOUND)

Operation of a sound-equipped F7B/F9B on a DC layout is very similar to running a silent DC model, except that the model will not move until it has reached sufficient voltage for the sounds to fire up (around 7 volts). You cannot control user-activated sound features like the horn and bell if you are using DC. There are third party controllers that supposedly activate these sounds on DC but we've honestly never tested them so we have no idea how well they work or what they will do to your locomotive - for good or for ill. If they cause your F7B/F9B to spontaneously combust, contact us for assistance, then contact the third-party controller manufacturer and tell them they wrecked your brand new Rapido F7B/F9B. Crying is optional but highly recommended to get best results.

— NOTICE —

If you want to run your sound-equipped F7B/F9B on a DC layout, the Back-EMF circuit can cause issues when you're trying to bring your F7B/F9B to a stop. To turn off Back-EMF, you will need to bring your F7B/F9B to a model railroad equipped with DCC and set CV49 to 18. If you want to turn it back on, change CV49 to 19. If you have a large DC layout and you like to operate sound-equipped locomotives, it might be worthwhile to invest in an entry-level DCC system just so you can adjust the motor settings of your sound-equipped fleet off the layout.

OPERATION – DCC (SOUND)

Finding a fully working F7B or F9B with the original prime mover is rather difficult. Thankfully the Canadian FP9A we recorded in 2009 has the exact same acoustics and prime mover as all F7Bs and F9Bs, an unmodified 567C! Mazel tov! If you haven't seen the video of that recording, check out "The Really Cheap FP9A Movie" on our YouTube channel: youtube.com/rapidotrains.com The sound-equipped model sounds wonderful because it was recorded under load, which is very different than the sound one would make simply "revving up" while idling in the yard.

LOCOMOTIVE ADDRESS

Your Rapido F7B/F9B 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 (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 running into the woods.

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.

— 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.

TURN ON THE SOUND

Press F8 and you will hear the F7B/F9B 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 decoder manual for more information. You can download it from the Support section of our web site.

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 F7B/F9B 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 F7B/F9B will promptly shut down. They will need to press F8 again.

FUNCTIONS

PLEASE NOTE: These functions are designed to align with our FP7 and FP9A locomotives. Missing functions are those found on the FP7/FP9A but not on their B-unit counterpart, with a few exceptions.

F1 Bell
F2 Horn
F3 Full Throttle
F4 Dynamic Brake
F8 Startup/Mute/Shutdown
F9 Front Headlight
F10 Rear Headlight
F11 Brake
F12 Doppler Horn – Slow
F13 Rail Squeal
F14 Steam Generator
F15 Switching Mode
F16 Doppler Horn – Fast
F20 Brake Set/Release

FUNCTIONS: MORE INFORMATION

F1 Bell

These units never had a bell. We know that. Or if they did, it was well and truly hidden and only used for switching around the yard using the internal hostler controls. But its here in case you have an A-unit without sound, should you choose to use it.

F2 Horns

These units never had a horn. Well, they did, but not the type you'd expect on the roof of a usual locomotive. They often had a single-blatter horn on one end - almost like a truck horn - and was used exclusively for marshaling in yards when run solo using the previously mentioned hostler controls. Again, in the event you have a silent A unit and you'd like sound, we've included recordings of standard horns, but we've additionally included a single-blatter recording as well. See the next section about changing that.

F3 Full Throttle

ESU's "Full Throttle" feature allows you to play the prime mover of your F7B/F9B like a musical instrument. When you press F3, 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 up that long, slow freight over the grade. The prototype is normally very overpowered for the short trains it is hauling. The high power is used for high speed rather than high tonnage.

"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 F3 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 F7B/F9B may fly like a twin-prop plane.

F4 Dynamic Brake

Press F4 to get dynamic brake sounds. Now listen, we know how modellers think, and while we have included the sound, CN units DIDN'T HAVE DYNAMIC BRAKES! Look on the roof. See a single 48" fan by itself? No? That means it DOESN'T HAVE DYNAMIC BRAKES! We just want to get that point across. If you have a CN engine and you press F4, you have Green Cooties.

F8 Startup/Mute/Shutdown

F8 toggles the primary locomotive sounds on and off. If you're not moving, you'll get a nice startup sequence of the 567C prime mover. If your locomotive is already moving, it'll just go straight to the appropriate throttle step.

If you have a DCC system that only allows eight functions, you can remap the functions following the guidelines in the ESU LokSound 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 Front Headlights
F10 Rear Headlights

Each end of your B unit is equipped with a headlight. These were used primarily around yards and when reversing but have been known to be left on in error during regular service. Since CN and CP oriented their units differently, it's much easier for us to just pair these functions together to avoid getting the complaints like "My headlights are reversed - the front is the rear and the rear is the front". So just play with these functions and make your own conclusions.

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 Doppler Horn – Slow
F16 Doppler Horn – Fast

Having a Doppler horn on a B unit really doesn't make much sense. Then again, neither do we most of the time. But if you're the type that's running a silent A unit, just like we previously mentioned with the bell and the horn, then we've included the Doppler here for you to make it appear as though your A-unit is sound equipped. Neat trick, eh? Oh, and there's both slow and fast versions of the Doppler.

F13 Curve Squeal

Let's face it, the curve squeal has been the greatest success we've created in recent years. It's absolutely wonderful. It sounds wonderful and can be easily applied to any train. Since most yards and terminals featured rather tight-radius curves, it was never possible for anything to SILENTLY go around them. Press F13 to wake up the neighborhood, and subsequently press F13 again to turn off the noise and avoid a complaint. Now all we need to do is get Jordan a haircut and we'll consider it our next greatest success.

F14 Steam Generator

Press F14 at any time to start up the steam. We don't include random loud blowdowns, but we include the irregular hiss that you can hear coming from the regulator and blowdown valves all the time when the steam generator is operational. 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 value of CV 307. Please refer to Sound Volume Settings (below) before attempting this. If you want MORE COWBELL you are in the wrong hobby.

Note that not all B-units have steam generators. If yours does not, do not use this function. Don't make us get mad like we did back in the description for F4 Dynamic Brakes! You wouldn't like us when we're angry! And we should add that using steam on a freight F7B will get you Brown Cooties

F15 Switching Mode

If you press F15, the headlight and rear light will both be on dim. This is appropriate for switching operations, which would be common in yards and terminals. Press F15 again to turn off the switching mode lighting.

F20 Brake Release On/Off

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.

HORNS & BELLS

Generally speaking, no F7B or F9B had a full-size locomotive horn like their cab-equipped counterparts. They typically had a smaller single-chime "Blatter" horn on one end used for when they were being switched around a yard independently (B units had their own control stand tucked away inside the car body just in case).

The default horn on your model is a Nathan M3H. Yes, we know, even after we told you it wasn't equipped with one, we defaulted to an M3H anyway. This is all

for the benefit of anyone who is pairing their F7B/F9B up to a unit that isn't sound equipped. 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
- CV 163-3 Nathan P5
- CV 163-4 Nathan M5
- CV 163-5 Single-chime Blatter horn

Bells
- CV 164-0 - Bell #1 (Default)
- CV 164-1 - Bell #2
- CV 164-2 - Bell #3

Changing the default horn automatically changes the Doppler recordings on F12 and F16 too. Some horns, such as the single blatter horn, do not feature a Doppler effect, so the Doppler functions will default to the standard sounds.

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.

F7B/F9B SOUND VOLUME SETTINGS				
FUNCTION	**CV**	**DEFAULT**	**RANGE**	**YOUR VALUE**
MASTER VOLUME	63	75	0-192	
DIESEL VOLUME	259	100	0-128	
HORN VOLUME	275	128	0-128	
BELL VOLUME	283	99	0-128	
DYNAMIC BRAKE VOLUME	299	60	0-128	
STEAM VOLUME	307	30	0-128	
CURVE SQUEAL VOLUME	379	128	0-128	
FAST DOPPLER HORN VOLUME	411	128	0-128	
SLOW DOPPLER HORN VOLUME	419	128	0-128	
BRAKE VOLUME	459	128	0-128	

FACTORY RESET

On your F7B/F9B, you can perform a factory reset by entering a value of "8" into CV 8. Note that this will cause all 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 the pre-recorded sounds on your F7B/F9B decoder by doing a factory reset. However, after performing a factory reset your F7B/F9B may begin to sing Engine of Love and recite lines from the musical Starlight Express. If that happens, you have probably lost your mind. But don't worry. Just sit back, grab some popcorn, and enjoy the show. Yes, we mentioned the same song and musical with our FP7/FP9A manual, but honestly, it's such a good number we couldn't say no!

~~AWESOME SLOW SPEED THINGY~~ *ELIMINATED!*

This is no longer a thing. That's right, **there is no more awesome slow speed thingy!** Period! End quote! ESU made refinements to the programming and with the advanced motor control of the V5 decoders, this is no longer necessary because your F7B/F9B should already have fabulous motor control. If you choose to try to implement it by reading an old manual and applying it to your locomotive, then your warranty is void. Yes, we said it. VOID! There should be no reason to apply changes to the Back-EMF of your decoder. If you feel inclined, then there may be an underlying issue that needs to be corrected. Please contact us if you're having any motor control issues or concerns regarding your locomotive and we'll be glad to assist. Actually,

contact ESU. We can even give you their home address if they don't get back to you. And we'll provide the noisemaker for you to let them know you are there at 3 a.m.

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 explore the capabilities of the decoder more fully we suggest downloading the ESU LokSound V5 decoder manual. This is available 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 F7B/F9B 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 one of many cardboard boxes in your storage unit or backyard shed for the better part of 30 years (or how long it will likely be until the Maple Leafs win the cup again)(that should be 75 years), then you are on your own if there are any issues. The entire Rapido crew will have hopefully won the lottery, and each bought their own private rail cars, since Jason set the bar so high himself with our sleeping car, Edmundston.

There are several things that this warranty cannot cover. If your F7B/F9B arrives with a couple of loose grab irons or underbody bits, there is a very good chance that you can do 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 off the cliff known as the edge of your 4x8 sheet of plywood, modifying your locomotive to work off diesel fuel, using your locomotive to re-enact the explosive derailment scene from your favourite railway movie, using your locomotive as an actual auxiliary power supply for your house, 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.

Keep in mind the following: the most common reasons for Rapido locomotives not working are dirty wheels or carpet fuzz/cat hair in the wheels and gears. Please visit our YouTube channel and watch Bobby's helpful video about how to fix both these issues and get yourself up and running again quickly.

ACKNOWLEDGEMENTS

The F7B/F9B project is another project that has evolved and come back to life from the early years of Rapido, and we hope that it gives you the same "WOW" factor as it did back when it was originally released. And since it's been a while since we acknowledged those original contributors, we'd like to acknowledge them here all over again.

Special thanks go to: the late Gord Hilderman, Kevin Holland, Don Jaworski, Mark Kaluza, Jakob Mueller, and Brian Schuff.

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