RDC

by Rapido Trains Inc.

Français au verso.

RDC – Rail Diesel Car – Operating Handbook

Thank you for purchasing this ultimate model of the Budd RDC. We were completely blown away by the demand for this RDC model. Apparently we weren't the only ones who wanted a model of the RDC that is fit to operate on the finest model railroads of the 21st century. We hope you will operate your RDC with pride and let people know that it is a Rapido RDC and it is not powered by a rubber band drive. We tried the rubber band but gave up when the model wouldn't go slower than 200 MPH.

We will soon be announcing new RDC variations (such as the RDC-2 and RDC-3). If there is anything about our RDC model that you think can be improved for the next production run, please don't hesitate to get in touch. We always appreciate constructive criticism. (And no, we will not connect the model drive shafts to the trucks. Most people don't have a 72" minimum radius like the guy who requested that. Stop showing off.)

As well, please do not hesitate to contact us should there be anything wrong with your model. Whether you have a warranty issue (missing grab iron, moss growing on the floor, etc.), a question ("Why doesn't it go at a scale 186 MPH like it did in 1966?") or a comment ("Your 3D scan is wrong. The RDC should really resemble my pet salamander named Captain Fluffy.") please give us a shout. More warranty information is available towards the back of this manual.

Note that we have maxed out the speed in DCC at about 98 MPH as measured using our NCE system at the office. If you are the type of model railroader that likes to shoot his models around 18" radius curves at 400 MPH thereby launching them into the stratosphere, you are out of luck. We suggest strapping a real jet engine to the roof. (Note that this will void the warranty.)

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 on the next page.

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. Our TARDIS is malfunctioning so we can't return your model to you before you sent it to us. And if you complain online that you sent back your model for repair "months ago" even though the model has only been out for three weeks we reserve the right to put your picture up in our office and make fun of it.

If you've just bought this model at an estate sale in 2069 because the original owner bought it, shoved it under his workbench, and then died before opening it, then there is a very good chance that Rapido Trains Inc. is now operating as Galactic Salvage and Insurance. We specialize in accident and insurance claims involving sub-light and hyperspace starships, with particular expertise in shuttle services between various Earth stations and the planet Azure. As such, if you need some parts for your RDC you are on your own. But we will be more than happy to sell you gently used hyperdrive components at reasonable prices.

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TOWING AND YOUR WARRANTY

This is so important it even gets put in before the Table of Contents. Please read it carefully.

The real RDC came with a warranty from Budd, its builder in Philadelphia. If you, as a railroad, towed anything behind your RDC, you would void the warranty. The same applies for your Rapido RDC. The Rapido RDC has two very small motors which are strong enough to pull your Rapido RDC and nothing else. Similarly, the worm gears and universals are extremely delicate as they are only designed for the RDC to pull itself. If you tow anything behind your RDC you do so at your own risk. Your warranty is well and truly void if you pull unpowered equipment behind your RDC. If you send it back to us under warranty we can quickly determine if the damage was caused by towing (using the secret "tow-ometer" hidden in the RDC floor) and you'll have to pay for any repair work.

RDC #6133 NEEDS YOUR HELP!

If you would like to contribute to our efforts to restore our real RDC #6133, please visit

rapidotrains.com

to read our latest updates and to make a contribution.

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BREAK-IN

Every powered model needs a break-in period, and this is especially true with your RDC as it has not one but TWO motors. Your RDC has been tested at the factory but only for a minute or two. That is not enough time to get the gears to mesh nicely or to even out any jerky operation in the motors. We suggest that, after reading this manual, you put your RDC model on a test loop and just let it run in each direction for a half hour or so. Fast and slow. You don't need to add any grease or oil to the gearboxes.

CAUTION: APPLYING DECALS

Most of our RDCs come with decals for you to change the number should you be so inclined. Unlettered RDCs will obviously require you to add your own decals. We only recommend that you use Microscale Micro-Set and Micro-Sol to apply your decals. Solvaset and other strong decal solutions may cause the "stainless steel" finish to turn brown. If you are absolutely determined to use Solvaset despite us expressly telling you not to, please test it on a hidden spot to make sure it does not ruin the finish. We can't fix a model that has had its finished ruined by decal setting solution. If you used Solvaset and ruined your RDC and you have only now just read this…. Sorry.

WHICH END IS FRONT?

In researching the RDC we used numerous sources from original equipment manuals to published books, from the 3D scans we performed on the model to our real RDC (ex-VIA 6133, exx-CP 9058, exxx-DAR 9058). We also relied on Jason's brain. Jason knows Canadian RDCs. Canada had a metric gazillion RDCs. And on Canadian RDCs, the front or "A" end is the end with five windows rather than six. That means if you are looking at the side of the RDC and the five windows are on the right, you are looking at the right side of the RDC. To your right is the front and to your left is the rear.

"Brilliant," thought Jason. "We'll program the decoders that way. Just to be certain the factory puts the RDCs together correctly we will mark the bottom of the chassis and the shell with big Fs and Rs. We'll never mess this up."

Until Bill saw the sample. And Bill pointed out that on American RDCs, the other end is the front. So much for being brilliant.

This has no effect on your operation whatsoever, and most locomotive engineers don't notice or really care which end of the RDC is designated "F" and which one is "R." We know – we asked a bunch of locomotive engineers.

But if you are an RDC expert and you notice that the five-window-end is leading when your DCC controller says "forward" and that bothers you so much that you haven't slept in four months, you've torn all of the hair off your arms, and you've cursed us for eternity to the sun god Ra on a cuneiform tablet buried in your back yard, then we suggest

you change the necessary CV to reverse your RDC's direction. Specifically, you need to give bit 0 a value of 1 in CV 29. No, we don't understand that either. Why couldn't the guys who developed DCC use plain English and a decimal system? Computer geeks. Harrumph.

CHANGING THE COUPLERS

We've put medium-length couplers on the RDC ends so they will look good while clearing the pilots on wide curves. But if you have tight curves, you may find that you need to replace the coupler at one end with a long one if you want to run two RDCs together. If you need to change the couplers at both ends your curves are too tight. You should be running high-rail buses and not RDCs.

Changing a coupler is very straightforward. Place a white table cloth on your workbench or kitchen table. Dining room tables are not recommended. Coffee tables are punishable by a fine and a possible jail term.

Place a foam cradle (available from Micro-Mark, product #80784) or a thick-piled hand towel (not a tea towel!) folded over a couple of times on top of the table cloth and lay the RDC on its roof.

Use a small Phillips screwdriver to unscrew the coupler box and slide it out without destroying the surrounding details, especially the really thin trapezoid-thing (we don't know what it's for either) that is liable to spring off into oblivion. Ping! Whooaaa!! There it goes.

Snap the lid off the coupler box, replace the coupler, and snap the lid back on. Slide the coupler box back in and replace the screw. Pick up the RDC and look around the white table cloth for all the grab irons and the horns that have fallen off. 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 over 400 individual detail parts, the RDC is a far cry from the rubber-band-equipped model it's replacing. To prevent inevitable frustration, we recommend checking your RDC as soon as possible to ensure that everything is where it should be. Don't wait until you've retired and we're all drooling in the nursing home. We'll be lucky to be able to say RD… RD… RD whatever. You can forget about us sending you parts at that point.

We try to catch all potential issues at the factory, but with literally ~~thousands~~ ~~hundreds~~ dozens of RDCs in each production run it is possible that the odd problem may slip past our quality control inspectors. Everyone gets their hair cut at, like, 2 a.m. in China. We don't know why, but it's true. Even Jason went for a late-night snip in Shenzhen last year. (Bill wanted a snip but then realized he had no hair.) The stylist was shocked that Jason wanted him to use clippers. He was ready to spend 45 minutes styling. Eventually Jason

took the clippers and did it himself in five, not 45 minutes. Where were we? Right – so maybe the person assembling your RDC was at the barber all night and consequently installed a grab iron crooked. Your model – her hair. Hmmm. Tough choice. Hair wins.

A bigger issue is damage in transit. More than 99.5% of all models are perfect when they leave our warehouse. But our gentle courier and postal carriers use our models for their daily distribution hub's "loading dock volleyball" game. No packaging is designed to survive such punishment.

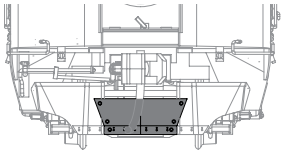
If underbody bits come loose in transit, they are easily reattached with CA (super glue). If grab irons or other parts on the shell come loose, we recommend white glue rather than CA. We prefer white glue over CA because it works just as well for most layout scenarios and is very easy to clean up. There is no risk of damaging the paint job – just wipe up the spilled glue with a bit of warm water on a paper towel. If the courier companies have been really cruel and there are a lot of parts loose, please contact us. You can send the RDC back and we'll glue all the parts back on and pack the thing in a mile of toilet paper before sending it back to you. As an added benefit, the toilet paper may come in handy for other purposes as well.

If any parts are missing or broken, please call or email us. We'll happily send you free replacements. We aim for 100% customer satisfaction… with one exception. If you are one of those people who calls us because the horn is slightly crooked and you don't want to move it back into place with your finger, please go away.

WHAT ARE ALL THE EXTRA BITS?

Like any real train, the RDCs went through several changes over their operating lives. We can't represent every possible variation on the model, but we can certainly include a bunch of goodies for you to customize your model to match a specific era or photograph.

American RDC models contain:



- Pilot cover. If your railroad installed this, you should too. White glue does not have the needed tensile strength to stand up to the rough handling this part will receive. Use CA or 5-minute epoxy. See illustration at right.
- Pilot. If your railroad usually did not have the pilot installed on their RDCs, we include it anyway just in case you are in possession of the ONE PHOTO that shows the pilot installed.
- Sinclair antenna. These were added later in life and were placed in different locations on almost every RDC. Match photos.
- Horns. It's amazing how many horns you can find on photos of the same RDC. We've included two sizes of single blatter horns in case you would rather use one

of them instead of what we've installed on the model.

- Wind deflector. This was installed on the roof of the New York Central RDCs. Match photos. You'll want to drill mounting holes to install this. Add a drop of white glue to each mounting post before inserting. If you plan to handle your NYC RDC (such as in taking it to the club), use CA rather than white glue. Be careful!

- Front window grilles. These protect your locomotive engineers from debris caused by the clueless pickup driver who ignores the flashing lights and drives in front of your RDC. In the northeast, they also protected the engineer from concrete blocks suspended on ropes from bridges. Yes, that happened. Two styles of grilles are provided. You need to bend the sides and install. We recommend drilling small holes to accept the legs and then dipping them in white glue before installing. If your RDC gets handled much, use CA instead of white glue.

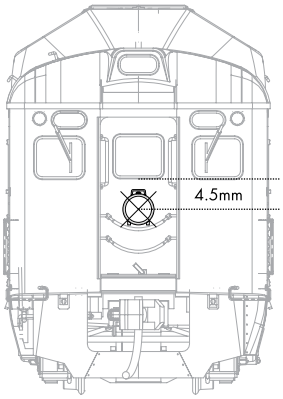
- Extra extra bits. We include extra windshield wipers and door handles in case one of yours gets beamed to the moon.

- Etched nose logos (B&O only). Definitely use white glue for these. You don't want CA dripping down the nose of your RDC.

Canadian RDC models contain:

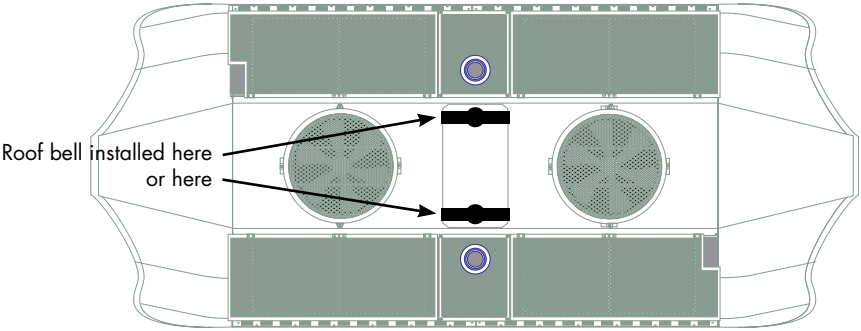
- Diaphragms. Install to match photos. Some RDCs had diaphragms at both ends. Some had a diaphragm at one end. Some had notched diaphragms. Some had straight diaphragms. Many had all of the above. We include two pairs of diaphragms. Have fun.

- Gyralite. Many Canadian RDCs had a Gyralite which was mounted on the door in the direction of travel. We have installed a working Gyralite LED behind both end doors on Canadian RDC models. To install the Gyralite, drill a hole in the location shown in the illustration, 4.5mm below the end door window. You will need to remove the top safety chain. The hole should be big enough to clear the clear plastic lightway at the rear of the light. Glue on the Gyralite using white glue. If you want the Gyralite in use in both directions, install both Gyralites.



- Sinclair antenna. These were added later in life and were placed in different locations on almost every RDC. Match photos.

- Roof bell. In later VIA years the bell was finally mounted to the roof inside the blister as it was always filled with snow. Install it in the location shown on the next page. Note the roof bell installation usually came with stack modification.



- Frigidaire AC single condenser unit. Most Canadian RDCs were built with a Frigidaire dual condenser unit, and others received them later on. So we've installed the dual condenser unit on the models but for the two of you who care we've included the original Frigidaire AC single condenser unit. You need to hack off the dual condenser unit and install the single condenser unit. No, we're not going to illustrate it for you. If you have no idea what the dual condenser unit looks like, then you are fine with whatever is installed on the model.

- Horns. We've installed either K3Ls or M3Hs on your Canadian RDCs (except for PGE/BCR). We've included two variations of M3HR horns in the polybag for the purists who got a K3L or a plain M3H but want an M3HR. You can also use them to replace some of the totally wrong horns on your non-Rapido models. Yes, M3H horns really are that small. We've also included the raised horn bases used randomly on VIA RDCs.

- Stacks and stuff. VIA and CN did all sorts of stack modifications. We've included tall stacks (they are the ones with the bend in them) because some RDCs got one or two tall stacks. We've also included extra straight stacks for installation on the outside angled sections of the roof blisters. VIA moved most of their stacks to the outside. We've also included extra radiator cover grilles with holes in them to clear the outside stacks. An example is shown in the roof bell illustration above. Look at photos and install the needed bits to match the photos as there are far too many variations to illustrate here. We know the only person who is actually going to do this is Maritime modeller Tim Hayman, so these parts are all for Tim. Go win an NMRA contest with your Rapido RDC, Tim.

- Pilot cover. This is included for CP Action Red RDCs as they are the only phase 1 Canadian RDCs in the first run with an as-delivered pilot. White glue does not have the needed tensile strength to stand up to the rough handling this part will receive. Use CA or 5-minute epoxy to install this part.

- Front window grilles. These protect your locomotive engineers from debris caused by the clueless pickup driver who ignores the flashing lights and drives in front of your RDC. They were used mainly between Calgary and Edmonton but have been seen all over the country. Two styles are provided. You need to bend the

sides and install. We recommend drilling small holes to accept the legs and then dipping them in white glue before installing. If your RDC gets handled much, use CA instead of white glue.

- Extra extra bits. We include extra windshield wipers and door handles in case one of yours gets beamed to the moon.

- Note that your RDC has working ditch lights behind the ends. If you want to retrofit ditch lights, the LEDs are there. Contact us for a drawing showing where the LEDs are located. Again, we expect this will just be Tim, and he doesn't need the drawing. So we haven't actually drawn it yet.

CHECKING AND ADJUSTING YOUR RDC

We try and make sure that every model is perfectly up to spec before it leaves the factory, but if the QC inspector spent all night at the barber 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 gently prying off the bottom lid of the gearbox with a small flat screwdriver. OK, you need to use a bit more force. 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. A small drop of CA-type superglue 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 sand pipes do not interfere with any of the underframe components and that none of the underbody conduits is hanging too low.

REMOVING THE SHELL

If you need to open up your RDC to add people it is actually quite easy to do. Just be sure to remember these important points:

- Our factory in China is next to a Mexican Jumping Bean factory. Occasionally products from the two factories get mixed up and some of the little parts on your RDC may actually have been manufactured from Mexican Jumping Beans. That means that, as soon as you turn your RDC over and start fiddling, numerous bits may take the opportunity to jump to their freedom. We would never intentionally imprison a Mexican Jumping Bean, so we won't help you find the offending

part(s).

- If you would like to keep your RDC components imprisoned, please make every effort to work in a clean, uncluttered space. That way you can see the bits jumping away and tackle them.
- Turn the RDC upside down and lay it gently in the foam cradle you bought for the "Changing the Couplers" section above and remove the coupler screws. Pull the coupler boxes out of the ends using needle-nose pliers and turn the RDC right-way up. Now spread the sides and wiggle the shell off. Very. Carefully.

OPERATION – DC (SILENT)

If your RDC 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 following lights work:

- Headlight (directional)
- Rear red classification lights (directional)
- Number boards and interior lights (always on)
- Ditch lights (directional, if equipped)

You can't access the door-mounted Gyralite in DC, nor can you dim the lights or turn them off. If you want to have full control over lighting features, you might want to consider upgrading your layout to DCC. In every manual, at around this point, we make a (not remotely) subtle dig at people who choose not to upgrade to DCC. We've decided to skip that with this manual. We respect people who don't trust DCC, and we also respect people who don't trust unleaded gas, air conditioning, or FM radio. (It works under bridges so it can't be natural!)

Now that you DC users are really riled up, we'd like to inform you that effigies of Rapido employees are available to purchase. These can be burned on bonfires, at the stake, or even just propped up on your driveway. They are only $299.95 each, which is about the same price as an entry-level DCC system. If you buy five effigies, we'll throw in Dan Garcia for free. The real one, not an effigy. If you buy six, we'll also throw in the DCC system!

INSTALLING A SILENT DCC DECODER

The RDC 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 RDC, 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.

Your chosen decoder should have six function outputs.

We recommend the following 21-pin decoder:

- ESU #54615 - LokPilot V4.0 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 RDC 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 RDC 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.

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. 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! Our sound sales for the RDC outnumbered our silent sales more than four to one.

OPERATION – DC WITH SOUND

Operation of a sound-equipped RDC 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.

If you want to run your sound-equipped RDC on a DC layout, the Back-EMF circuit can cause issues when you're trying to bring your RDC to a stop. To turn off Back EMF, you will need to bring your RDC 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.

WARNING: *If you have purchased a sound-equipped RDC and you operate your trains with a Model Rectifier Corporation RailPower 1300 or 1370 DC controller, stop what*

you are doing immediately. Do not pass Go. Do not collect $200. The RailPower 1300 and 1370 are notorious for voltage spikes and WILL destroy your model. There is no "if," "might," or "perhaps" about it. We will not repair any RDC destroyed by a 1300 or any other "train set" DC controller. "Train set" DC controllers should not be used with sound-equipped locomotives.

Here's a hint. If your model train controller has the word TRANSFORMER written in big letters on its metal casing, you should not be using it with your RDC. If it says "Louis Marx & Co. Inc. New York Patent No. 2,019,196" then you REALLY REALLY REALLY should not be using it with your RDC.

OPERATION – DCC WITH SOUND

We recorded a real RDC in service on the Conway Scenic Railroad back in October 2015. (It was a lovely trip, by the way – you can watch our RDC videos at youtube.com/rapidotrains) On one of our videos you can watch Matt Herman revving the engine up and down on our RDC model while running at a constant speed. He was just fiddling with function F3 on his DCC controller, switching it on and off. You can do great things with our sound-equipped RDC on a DCC layout. Note that our RDC does not have ESU's new* "Full Throttle" control but using F3 you can get a pretty close approximation of that feature.

*new in 2016. If you've just opened your RDC in 2035 it's not so new any more.

RDC ADDRESS

Your Rapido RDC comes from the factory with a decoder address of 3. We suggest if you are using DCC control that you first test that the RDC responds on address 3. Once you have verified that the RDC is responding you should assign it a unique address (normally the road number of the RDC) 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 RDC 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!

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 both RDC engines fire up along with the "fluup! fluup!" air compressor. You can adjust CVs to prevent the RDC from moving until the startup sequence has played out. Jason is really impatient so he turned this feature off. Refer to

a full ESU LokSound Select decoder manual for more information. You can download it from the RDC page in the Support section of our web site. The feature is called the "Prime Mover Startup Delay" and at the time of writing it is on page 35 of the ESU manual.

If you press F8 when the RDC 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 there is no change in the engine sound between idle and notch 1. That is prototypical. There is nothing wrong with your model.

Here is something to keep in mind. If you are listening to your RDC idling nicely and then you select another engine with your throttle, your RDC still thinks F8 is pressed so it will keep idling along. However, if someone else selects your RDC's number and F8 isn't pressed on his or her controller, the RDC will promptly shut down. He or she will need to press F8 again.

We've once again been "gender neutral" in our use of "he or she" in our product manual when we all know that the only woman who has bought this RDC is Kathy in Solihull, and we're not even sure if she ordered one. (Did you, Kathy? If not, we're very disappointed. We mentioned you in the manual and everything.) If you are the second woman on the planet who has bought a Rapido RDC, we're sure Kathy would like to hear from you.

FUNCTIONS

F0 Headlights
F1 Bell
F2 Horn
F3 Straight to 4
F4 Brakes
F5 Doppler Horn – M3H (Slow)
F6 Ditch Lights (Where Applicable)
F7 Headlight Dimmer
F8 Startup/Mute/Shutdown
F9 Red Classification Lights
F10 Door Gyralites (Where Applicable)
F11 Doppler Horn – M3H (Fast)
F12 Servicing Mode
F13 There is no F13.
F14 Doppler Horn – Single Blatter
F15 Doppler Horn – Hancock Air Whistle

FUNCTIONS AND PROTOTYPICAL OPERATION

F0 Headlight

In most of our locomotive models, headlights and other lights are not directional. Like the real thing, we make you turn on the headlight and turn it off if you are backing up and you don't want it on any more.

The trouble with the RDC is **IT HAS SO MANY LIGHTS!** So we had to make them directional otherwise we would have run out of function buttons. Please refer to "Which end is front?" above if you are wondering why your RDC thinks its tush is its nose.

F2 Horn

Choosing a default horn was a tough decision. Most American RDCs were delivered with A2 or similar single blatter horns, but a lot of railroads changed the horns. Almost all Canadian RDCs were delivered with M3H horns, which they kept until the 1970s when many were replaced by K3Ls. Because our sales of Canadian and American RDCs were about equal, and because more than 10% of all our US RDC orders were for SP10 which had M3H horns, and because the remaining RDCs had a bunch of different horns, we decided to use the M3H as our default horn. (Talk about a run-on sentence.)

You can change the default horn using CV 48. This should be done on your programming track or using an ESU LokProgrammer. You can't change the horn by programming on the main. The complete list of included horns is below.

- CV48 = 0 Large Single Chime
- CV48 = 1 M3H - Default
- CV48 = 2 M5H
- CV48 = 3 K3L
- CV48 = 4 A-125
- CV48 = 5 Hancock Air Whistle
- CV48 = 6 K5LA

Note to BCR and PGE modellers who are sending us angry emails:

PGE/BCR had a weird M5 horn with two bells on the bottom and three bells on the top. Unfortunately we don't have the ability to tool a brand-new horn just for PGE and BCR as our sales of these schemes did not warrant the investment. We've installed a standard M5 on the model. Sorry about that. With some careful fiddling, some brass wire and an X-Acto knife you can probably flip the M5s over on your model.

F3 "Straight to 4"

This unique feature simulates the prototypical operation of the RDC. RDCs were (and are) often used in commuter or branchline service with many stops. To keep to the schedule, locomotive engineers would put the throttle straight into notch 4 and let the RDC accelerate up to track speed. (RDCs only have four notches.) When F3 is selected, you will hear the RDC sound ramp up quickly to notch 4 (full power). It will stay at notch 4 until you press it again. When you press F3 again, it will throttle down to whatever notch you

are currently in. Note that this function controls the sound only and not the motor speed, which is still controlled using the throttle settings as normal. That means that, if you forget to turn off F3, your RDC will still be roaring at full throttle even if you bring it to a stop.

F4 Brakes
F4 works just like the brakes on a real engine. Press F4 and your RDC will brake to a stop. Press F4 again to release the brakes.

F5 Doppler Horn – M3H (Slow)
Rapido's locomotive decoders are known for our awesome Doppler horn recordings. These aren't made by software. They are actual recordings from trackside. One failing of our earlier models was that our Doppler K3L recording was made when the locomotive was travelling at about 80 or 90 MPH. But everyone loved the Doppler, so they would play it even if the locomotive was tootling along at 40.

So we've fixed that for our RDC. F5 is a recording of an M3H horn on a locomotive travelling around 35 MPH. If you are barreling along at 85, use F11.

F6 Ditch Lights (where applicable)
F6 turns on the ditch lights. If your RDC does not have ditch lights, the LEDs are still there, and you can make your RDC glow like it's possessed by turning them on. The ditch lights are directional. They are located where VIA Rail Canada installed ditch lights, so if your railroad installed ditch lights in a different location the LEDs will not be in the right place. Why did we choose VIA's location for ditch lights? Because we own a VIA RDC. With ditch lights.

F7 Dim the Headlights
When approaching a station stop or an oncoming train, turn off your ditch lights and then press F7 to dim your lights – you don't want to blind your passengers or the oncoming train's engineers.

F9 Red Class Lights
Pressing F9 turns on the red class lights. They are directional. When F9 is pressed, the red class lights will always be lit on the rear as determined by the direction of travel.

F10 Door Gyralites
Canadian Pacific, PGE, BCR and VIA Rail Canada often mounted a Gyralite (oscillating headlight) to the front door in service. At the end of the run, the Gyralite was removed and mounted at the other end for the return trip.

We have included a Gyralite LED on the circuit board behind the door on Canadian models and Amtrak models. If you choose to install one or both Gyralites, the LED will already be there. Canadian and unlettered RDC models have Gyralite castings in the polybag. The Amtrak style was different and the two of you who will actually add it will need to find the part in your scrapbox.

The Gyralites are directional.

F11 Doppler Horn – M3H (Fast)
This is the first time we've ever included a proper, blistering, fast-moving M3H horn recording on one of our models. If your RDC is flying along at 80 or 90 MPH and you are approaching a level crossing, this is the horn for you.

F12 Servicing Mode
When switching, rules indicate a locomotive should have both front and rear headlights on dim. So if you are tootling around your yard or locomotive maintenance facility, press F12 to put both front and rear headlights on dim.

F13 There is no F13

F14 Doppler Horn – Single Blatter
The RDCs were delivered with a variety of single blatter horns, such as the A2 and its deeper cousin, the S2. We had a heck of a time finding clean Doppler recordings of any of these. An anonymous donor gave us this recording, which sounds like an armadillo trying to play the bagpipes. It sounds "sort of" like an A2 (if you cover your ears and go "la la la") so we're using it.

Hopefully someone will hear your RDC in action, get really angry, and shout **"THAT IS NOT AN RDC HORN! I KNOW BECAUSE I HAVE 47 RDC DOPPLER HORN RECORDINGS. WHY DIDN'T THEY JUST ASK ME?"** Once he has cooled down, please have him get in touch with us and we will use his recordings on the next run. And we'll mention him in the manual in a most appreciative way.

F15 Doppler Horn – Hancock Air Whistle
This the same recording of a Doppler Hancock Air Whistle that proved very popular on our HO and N scale FL9 locomotives. Thanks again to David Magill for the recording. If your RDC is equipped with a Hancock Air Whistle you can change the default horn to a Hancock by following the instructions under "F2 Horn" above.

SOUND VOLUME SETTINGS

The sound volume is adjustable. If maxing out all the volume settings does not make it loud enough for you, we suggest buying a real RDC.

You can also adjust the relative volume levels of the different elements of the sound recordings.

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. For reliable results we recommend using a programming track, a LokProgrammer or JMRI to make sound setting changes.

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 RDC against the wall in frustration.

RDC SOUND VOLUME SETTINGS				
FUNCTION	CV	DEFAULT	RANGE	YOUR VALUE
MASTER VOLUME	63	192	0-192	
DIESEL VOLUME	259	80	0-128	
HORN VOLUME	275	128	0-128	
BELL VOLUME	283	64	0-128	
COMPRESSOR VOLUME	419	100	0-128	
F5 DOPPLER VOLUME	339	128	0-128	
F11 DOPPLER VOLUME	395	128	0-128	
F14 DOPPLER VOLUME	403	128	0-128	
F15 DOPPLER VOLUME	411	128	0-128	
AIR LETOFF VOLUME	363	128	0-128	
BRAKE VOLUME	459	128	0-128	

FACTORY RESET

On your RDC, 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, right?

You can NOT lose all of the pre-recorded sounds on your RDC decoder by doing a factory reset. If you manage to lose all of the sounds on your locomotive then you have probably set fire to your decoder with a voltage spike, and chances are you have an MRC 1300 and didn't read the instructions before running your RDC… specifically the bit about not using an MRC 1300 with your RDC. Open up your RDC and pour out the bits of fluff and goo that used to be a decoder.

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 RDC is placed in the middle of a very long stretch of mainline – it should have at least eight feet clear on either side, longer if possible. 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 and behind your RDC and it is not headed for an immovable obstacle or vertiginous drop in either direction.

Your RDC will quickly take off at full speed and then 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 RDC 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 RDC. We recommend that you operate your RDC within a few months of receiving it as we will not have an everlasting supply of spare parts.

If your RDC has any defects that originate from the factory, we will repair your RDC using new components at our Markham office. Please contact us through our web site or using the telephone before sending any models back to us. As well, please bear in mind that models shipped from the United States must be sent by mail rather than by courier, and must state explicitly on the customs label that the models are being returned under warranty. We always return your model with some free stuff to cover your shipping costs. It can take up to two weeks for mail to get from the United States to Canada. Our record is 91 days from Boston to Toronto. We could have walked there to collect the package and been back sooner. Thank you USPS and Canada Post.

There are a number of things that this warranty can not cover. We've already gone over the bit about reattaching loose parts yourself – don't be afraid! The hassle of packing up a train, going to the post office, waiting a month for it to come back, and then finding that something else broke off when we shipped it back to you can be avoided by two minutes with a toothpick and some white glue.

Of course, damage caused by attaching real jet engines to the roof of your RDC, using it as a golf club (even just for putting), trying to put real people in the seats, strapping a pair to your shoes to use as HO scale roller skates, or any other new and usual damage

caused by Acts of You that we haven't mentioned here is not covered by the warranty. However, if catastrophe does strike and your RDC 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 RDC for you. Don't be shy!

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And of course thanks to Richard Longpre for the amazing French translation. He has almost earned his 7 billion free models. Almost.

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Single Car "Limited"

Here is the new railroad car which is a train in itself—the self-propelled, diesel-powered, all-stainless steel RDC-1. The Budd Company created it to perform a service both to railroads and their patrons, by carrying more passengers on short or long hauls at lower operating cost.

The RDC-1 seats ninety in air-conditioned comfort. With power transmitted hydraulically, from an effortless start it picks up speed like a whippet and stops in a fantastically short space . . . with the easy softness of pushing your hand against a pillow.

Railroad men foresee a wide usefulness for this car. It may be operated as a single unit, or a number of cars can be coupled into a train, operated by one engineman.

Improvement in any field of endeavor begins with imagination. The RDC-1 is another example of Budd practice which is first to envision clearly the need and then bring to bear all the resources of inventive engineering. It follows the modern stainless steel streamliner, the all-steel automobile body, the tapered steel disc wheel and so many other products in which Budd has translated imagination into practical accomplishment. The Budd Company, Philadelphia, Detroit.

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