SAN FRANCISCO BAY AREA RAPID TRANSIT

TRAIN OPERATOR MANUAL

TRANSPORTATION AND SYSTEM SERVICE DEPARTMENT
RAPIDO TRAINS INCORPORATED

BAY AREA RAPID TRANSIT CAR PRODUCT GUIDELINES

Thank you for purchasing a model of our first rapid transit model, the unique BART Legacy Fleet of A, B, and C cars!

If this is your first Rapido product, we must ask – why is this your first Rapido product? No, seriously, we've been around now for 20 years now and we're not just a Canadian company, eh? We've produced an imperial ton of US products, like the C30-7, FA-1, PA-1, GP38, U25B, RDC, SP Dome, Comet car, Enterprise covered hopper, X72A boxcar, X-3 tank, etc. So just for that, we're going to make sure you LOVE your BART cars. And then you'll say to yourself, "What have we missed out on all these years? We need to find and buy every Rapido model that has ever been released, in every scale! Especially the UK ones!"

If you are a returning customer, welcome back! Just put your engine on the track. All we ask is you don't intentionally set it on fire, don't try to put 600VDC to it, and don't MU it to anything non-BART. Oh, and REALLY keep it away from cheap DC "train set" controllers. Poor-quality power packs can quickly and easily give any Rapido loco a melted makeover.

If this is your first Rapido Manual, we should warn you up front – there's usually a good amount of humor through these manuals. Well, at least we think so. We have gotten some comments from people that don't agree, but we suspect that they have had their sense of humor surgically removed (we think it's near the spleen). After all, model railroading is supposed to be fun! Don't have a cow, man.

As always, if there is anything amiss with your BART cars, please do not hesitate to contact us. We stand by our products 100%. The best way to contact us is through email (service@rapidotrains.com) but you can also try to reach us by phone, the postal service, or subspace transmitter (you must provide the trilithium crystal power cell). Our contact info is near the back of this manual.

However, 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 (sometimes only the FIRST name), meaning we have no idea what's wrong with it! (Hey Rick – your package of pantographs is still sitting on the shelf in our bathroom.) If the issue with your model is 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 BART cars for a considerable length of time, please realize that eventually the parts supply will run out. That, or the Earth will be visited by a large cylindrical alien probe that causes catastrophic storms to ravage the planet; 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 humpback whales) left to do your repair.

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PROTOTYPE HISTORY

Since its opening in 1972, Bay Area Rapid Transit trains have moved commuters and riders around the San Francisco Bay Area using these iconic cars. These pioneering cars were designed specifically to reduce association with aging transit equipment used in other cities. Instead of using traditional railcar manufacturers, BART signed a contract with Rohr Industries to create their first transit vehicles and contracted industrial design firm Sundberg Ferar to develop the trains' futuristic look.

Besides being recognized for its status as a ground-breaking achievement of civil engineering, BART is also known for its roster of very distinctive rolling stock. The original cab and center cars (A Cars and B cars) built by Rohr Industries between 1968 and 1975 were mechanically identical, with the exception of the cab overhanging one end of the A cars. Despite being the face of the system, the streamlined fiberglass cab became an operational issue as they limited flexibility in building trainsets. To resolve this, the first of the "C Cars" were delivered in 1987 by Alstom, featuring a more traditional flat fronted cab, allowing them to be used both on the ends as well as in the middle of the consist. Additional C Cars were built by Morrison-Knudsen between 1994 and 1996. The final runs of the A, B, and C cars was at a decommissioning ceremony on April 20, 2024.

BREAK-IN

Just so we're clear, that doesn't mean break into anyone's layout room to steal their BART cars. And don't break into a hobby shop either because that is really frowned upon. Just buy more for yourself. But this isn't about that kind of break-in.

Every locomotive needs a break-in period. Your BART cars have been tested at our factory for about two minutes…maybe…just to make sure everything functions as it should. 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 BART cars on a test loop and just let them run in each direction for an hour or two. Fast and slow.

There already should be enough lubrication in each gearbox so you don't need to add any. Just let them run. If you are running this on track on the carpet, please vacuum first. You have no idea how many models come back to us with gearboxes full of carpet fluff and pet fur. Our models are not cat-proof.

HOW TO HOLD YOUR BART CARS

Hold your BART cars gently, and with much love, care, and attention. Your model has numerous delicate parts, especially on the underframe. 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 while wearing welding gloves. We're assuming you don't want to do that, so the model should be picked up carefully. It is best to pick it up with your fingers along the bottom edges of the car (watch out for the 3rd rail shoes!). That way you won't leave greasy fingerprints on the windows, and you also won't stress any of the delicate parts. Always make sure your hands are free of shmutz before touching your cars, otherwise you'll be yelling *¡ay, caramba!* (Don't have a cow, man.)

If you are taking your BART cars to the club all the time and regularly handling them, stuff will likely break off. Sorry. The little bits are made of plastic and metal and attached with glue, which is all a bit fragile. We wanted to make the small parts out of unobtainium and use Steady-State Micro Welding to install them. Unfortunately, with the current global supply crisis, unobtainium has become unobtainable.

We suggest wrapping your BART cars in a plastic bag before placing it in the packaging or in your loco 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 or very brave. Remember to apply the CA to just the part and not the model (don't ask us how we know this).

CHECKING AND ADJUSTING YOUR TRAINSET

We try and make sure that every product is perfectly up to spec before it leaves the factory, but if it was a Monday morning and our factory workers were up late the night before placing bets on the big Mahjong game between Xiao Hong from engineering and Zhang San from accounting, 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, 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 appliances are firmly installed and clear of the track. If your track transitions from flat to a 12% grade in three inches, or if the crest of such a steep grade is less than the length of car, you might also want to cut off the ends and grind off the underfloor equipment boxes as they will foul the rails.

- Make sure that the trucks swivel freely and without binding. If they catch on anything, check to ensure that the 3rd rail gear on the trucks doesn't bind against anything. If they do, see that everything is firmly installed.

MISSING OR DAMAGED PARTS

If you open your BART 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 3rd rail shoe 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 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.

We try to make our models courier- and mail-proof, but there really is no way to protect a model from damage when it is used in a game of football at the UPS or FedEx distribution center. Model trains generally don't survive well after being "spiked" because Billy was imitating The Catch from Joe Montana in the back of the end zone.

If you see some parts are missing and they are not floating around the packaging, let us know and we will send you replacements. More information about our warranty can be found toward the end of this manual.

REMOVING THE SHELL

If you wish to install a motorman or some passengers inside your BART cars, you must remove the shell. Don't worry, it's pretty easy. All you have to do is to spread the sides of the body to release the four catches from the chassis. The four catches, two on each side, are located in the body shell just above the inner-most axle of each truck. If you're having trouble, try sliding business cards between the body and chassis. Once the catches are unlocked, just carefully pull the body shell off the chassis. **NOTE**: Do not pull on the trucks (the 3rd rail gear is delicate) or the center of the underframe where the zigzag wiring and insulators are located. However, the large box just behind the front truck is safe to pull on.

If you are working in a zero-gravity environment, then the chassis will slowly drift away from the shell. On the other hand, if you are not in a zero-gravity environment; remember – gravity sucks. If you hold your car upright the chassis will now plummet to the nearest solid object…like the floor. You may want to do this carefully over a workbench with some foam underneath.

At this point you should have the entire shell off the frame, as long as you followed our super simple instructions. We don't know how to put it back together, 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 backwards, !tluaf ruo ton s'ti

Any requests for replacement bodies 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 should model scrapper Schnitzer Steel in Oakland in mid-2024 and use your recently broken body as cut up scenery. We did warn you after all. If we can assist, then all joking aside we'll make every effort to do so. But note that we don't have an endless warehouse full of shells to replace the broken ones.

EXTRA DETAIL PARTS

Inside the box will be a polybag with user-installed detail parts plus extra decals:

"Finger" Guards

For all cars, you will find interlocking "finger" guards that are meant to keep passengers from falling off a station platform between cars. The BART cars were not delivered with guards, but they were added later in their service lives. Ours are photo-etched metal parts that will fit into the holes and vertical slots in the ends of the cars with a little white glue, or CA if you have courage; they just need a little pre-bending to conform to the curved slot. The C car guards on that go on the front of the cab are individual fingers that need to be drilled freehand and are not to be installed by the fainthearted. Good thing they weren't on every C car!

Numberplates

The numberplates are photo-etched, and some are printed with car numbers while others are blank. These plates go on the sides of the car at the very end and center over the four blue stripes. The B and C cars use four number plates; the A cars just two at the rear. The blanks are for decaling more numbers for your super huge fleet of BART cars. For the A cars, matching number decals are included that go on the side of the white nose cone just in front of the four blue stripes (see page 19).

Antennas

For both the A and C cars, you will find three different kinds of roof antennas. If you remove the shell (see above on how to do that), the underside of the roof will have drilling dimples for you to easily locate the antennas. Not all A and C cars had all the antennas at all the same time; please use prototype photos or videos to apply the correct details for your modeling era.

High Light

When built, the A and C cars had a very sleek appearance that our model represents, but in 1998-2002 most received a center orangey "High Light" to see and be seen over slight humps in the track, especially coming into stations. By default, this light will turn on with the headlights and may give the impression of a cab light. To disable the high light, program CV 53 with a value of 255. However, if you want to model the modern BART era, we have provided drill dimples inside the end wall

for the two pegs on the back of the high light fixture. Drill for the pegs first to test fit the high light, then drill small holes between them. Attach the high light fixture and let the light shine through it.

C Car Diaphragm and Dummy Coupler

The C cars come with an add-on front diaphragm that wasn't always present on every C car; drill dimples are provided inside the shell. Also, a dummy front coupler is provided. Since C cars can be coupled mid-train, we've made them with the ability to use the snap-in couplers as used on the other cars. But what if you want your C car to lead all the time? Just remove the snap-in coupler socket on the bottom of the car and add the dummy coupler into the two holes in the floor.

COUPLING THE CARS

Each car comes with a double-ended snap-in coupler bar. These couplers pick up power using metal wipers that rub against the metal plates inside the coupler socket. Therefore, it is critical that these snap-in couplers be plugged in so that their metal connectors face *upwards* away from the track. To install, grab a coupler bar with your fingers and push gently into the spring-loaded coupler socket on the car until you feel it click into place. Now place the car on the track and add the next car you want to couple on the same track. Since both the coupler and coupler socket should be self-centering, simply push the two cars together until the snap-in coupler clicks into the second car. To separate the cars, gently pull the cars apart until the coupler lets go.

DO NOT TRY TO PICK UP OR CARRY A BART TRAIN WHILE COUPLED!

A two-car train will likely survive this but why chance it? A longer train will most likely collapse, the couplers will break, and the cars will tumble to the floor and then break some more. Your warranty does not cover such silliness.

OPERATION – DC (SILENT)

If your BART cars are 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.

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 BART cars as it may not be safe (for your train 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 15 volts DC. Similarly,

controllers designed for large scale trains put out a much higher voltage than your BART cars 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 bag of popcorn 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 labor involved in restoring it to its former self. That's because you didn't read this bit of the manual. For those of you who are reading this, you hungry? Wanna have some Rice-A-Roni?

INSTALLING A DCC DECODER

The DC (non-sound) BART cars contain a motherboard specially designed for our cars. This is connected to the track, motor and lighting outputs. A blind plug is attached to the underside of the motherboard using a 24-pin connector. To install a decoder, remove the blind plug and install an E24 decoder. **NOTE**: Unscrew the motherboard for easier access. Your chosen decoder should have at least eight function outputs.

At the time of writing, we recommend only the following non-sound E24 decoder:

- ESU #58925 - LokSound 5 Nano DCC with E24 interface

We feel the 24-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 one of the recommended decoders 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 a BART cars function map so that you can make the function buttons and motor controls 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. We recommend using JMRI software to write the function mapping to the TCS decoders. If you don't have JMRI, you can adjust CVs in the usual way, but we hope you like lots of button pushing. If you have a fleet of BART cars like everyone should, remapping multiple units on JMRI (after the first one) takes just one button click. Remapping using a throttle? Clicks. So. Many. Clicks.

If you want to convert your DC analog BART cars to use our DCC/Sounds, you have to replace the entire DC motherboard with a TCS DCC/Sound motherboard. The TCS DCC/Sound motherboard literally is the sound decoder; it is fully integrated because we wanted to give a clear view through the windows.

We will be selling BART cars TCS DCC/Sound motherboards separately; if they aren't on our website by the time you read this, call our office, pick a random number between 1 and 75, divide by ¾, multiply by √π, and then take the second to last number. Call that extension and you'll be directed to someone whom you can yell at. Or just e-mail us.

If you want to install a different DCC/Sound decoder other than the one that comes with the DCC/Sound version, you'll have to rip out the entire motherboard and hardwire your own. It's just how it is. We won't apologize for that. Sorry, eh?

OPERATION – DC (SOUND)

To operate your sound-equipped BART cars on a DC layout, just give the throttle some juice. The idle/HVAC sounds will start up once sufficient voltage has been reached (around seven volts). Increasing the voltage from there will cause the cars to move and, by default, a directional horn will sound. See the note above [in Operation – DC (Silent)] about using train set or large-scale throttles. With DC layouts, you have little control over the sounds of your model, but you can get a station approach horn if you rapidly increase then decrease the throttle while running. Change CV181 to 0 to turn off all automatic directional horn sounds on DC power.

Lighting control is also limited on DC. The headlights and red markers are directional on A and C cars while interior lights are controlled by our magnetic wand on all cars (behind the cab on the A and C cars, in the center of B cars). However, if you configure CV13 and CV14, you can change what is on and what is off in DC mode. You would, of course, need a DCC system or programmer to change these variables (but if you did, why are you running them on DC?). See the TCS website link at the end of the next chapter for more info on how to do that.

Some throttle manufacturers produce special gadget-like thingies which are meant to trigger the sounds in locomotives on DC layouts. As we have no involvement in the development of those gadget-like thingies, we have absolutely no idea how they will affect your BART cars, 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 BART cars if one of these gadget-like thingies turns your locomotive's circuitry into something akin to glowing magma, 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 modelers 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 chased down the county highway by a group of townsfolk wielding transformers and potentiometers. As long as we can keep reminding him of this event, he'll be nice to DC modelers. Not that *we're* calling DC modelers Luddites – No, sir, not us!

— 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.

OPERATION – DCC (SOUND)

We go to extreme lengths for accuracy, in sounds as well as in looks. Our sound decoders are made by TCS. The sounds are about as bang-on accurate as we can make them as they were recorded just before the BART cars were decommissioned. An empty BART car weighs in at about 63,000lbs. Therefore, a certain amount of starting momentum has been pre-programmed into the decoder to replicate that massive weight. If you want to eliminate the delay to speed up, program CV3=00, but when passengers complain about spilling their lattes, don't blame us!

More detailed decoder instructions, including all sorts of weird CV settings we don't understand, can be found in the TCS wiki website: www.docs.tcsdcc.com. Look for Rapido Trains, then click on the BART entry (or just use this QR Code on the right —>).

NOTE: Interior lights are controlled by our magnetic wand on all cars. The sensor is located right behind the cab on the A and C cars and in the center of B cars.

POWER CAR ADDRESS

Your powered Rapido BART cars come from the factory with a decoder address of 3. We suggest if you are using DCC control that you first test that the train responds

on address 3 to all functions – motor, lights, sounds, everything. Once you have verified that the car 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 car on the main and you have any other locomotives or cars 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 yard, 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 or use a programming track booster.

TURN ON THE SOUND

Press F8 and you will hear the BART car startup sequence followed by the sound of it idling (well, more like making air conditioning sounds, really). You can adjust CVs to prevent the car 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 the TCS decoder website manual (above) for more information.

If you press F8 when the car 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 BART car idling nicely and then you select another DCC address, your car still thinks F8 is pressed so it will keep idling along. However, if someone else selects your car's number and F8 isn't pressed on their controller, the BART car will promptly shut down. They will need to press F8 again.

FUNCTIONS

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F11 Horn - Forward Quill
F12 Horn - Stop Quill
F13 Horn - Reverse Quill
F14 Couple
F15 Uncouple
F16 Idle Sounds / HVAC On/Off
F17 Air Compressor
F20 Disable/Enable High Speed Sounds
F24 Change Horn Type

FUNCTIONS: MORE INFORMATION

F0 Directional Headlights, High Light, and Red Markers

The headlights, optional high light (see page 7 for installation), and red markers are directional on A and C cars (none at all on B cars). This means that the headlights on the leading end of the train will be turned on with F0 while the red markers light up on the other end. Hit reverse, and the headlights and red markers swap ends.

F1 Doors Open/Close

What's the purpose of a subway train without doors? Nothing! Which is why we have included the sounds of the doors opening and closing. Press F1 to hear them open, hit F1 again to hear them close. No, the doors don't really open and close. We're crazy, but we're not *that* crazy. Besides, do you want the price doubled?

F2 Horn - Playable

Yes, subway cars have horns. Surprise! You can activate it by pressing F2. You can change between the default "beeper" and the loud emergency air horn by turning on F24. You know, just in case you want to chase off any large birds or slow track maintenance workers. If you have a playable F2 button on your throttle, you can mess around with it.

F3 Flange Squeal

Just as you're easing into a sharp curve on your layout, press F3 to hear the metal-on-metal squealing sound all trains are known for. It may also cause dogs to bark and children to cry, but those are the risks you take.

F4 Station Announcements (Spoken)

This function plays a random station announcement recorded from an actual BART operator stating the different destinations for each line. This would be spoken each time a BART train left a station.

F5 Station Announcements (Robot)

This function plays a random station announcement recorded from a BART station. These were created for BART by a "robot" voice generator and would be heard by passengers waiting on the platform for the next train.

F6 Brake

By default, this function will stop the train at a pre-determined rate, which is controlled by CV183 (the larger the value, the longer it will take to stop). Press F6 once and the train will slow and eventually stop; press it again (or throttle up) to resume speed.

F7 Hostling Lights *(C Car Only)*

On the ends of a BART C Car, you'll find an extra set of lights above the headlights. These are angled downwards and are used when moving equipment in yards

and terminals, i.e., "hostling" in railroad terminology. Now your motormen can see the switchpoints at night more easily and not have long, awkward morning conversations with his superintendent on what happened the previous night.

F8 Startup/Mute/Shutdown

While your train is stationary, pressing F8 will begin the startup sequence of the idling and HVAC sounds. If your train 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 train is stationary, then you will hear the shutdown sequence before the sound turns off.

> *If you have a DCC system that only allows eight functions, you can remap the following functions following the guidelines in the TCS wiki page (see link above). Or you can upgrade to a newer DCC system, which may be less stressful.*

F9 Woosh/Run By

If you press F9, you'll randomly get one of seven different recordings of BART cars rushing past. If you press F9 again while the runby sound is playing, it will shut off.

F10 Horn - Approach Quill

When entering a station, a quick series of tones is played on the "beeper" by the motorman.

F11 Horn - Forward Quill

Just before leaving a station, the "beeper" sounds a few times.

F12 Horn - Stop Quill

When the BART cars come to a stop at a station, a simple note is played.

F13 Horn - Reverse Quill

If you are reversing in a yard situation, yet another series of "beeper" notes are sounded.

F14 Couple

If you are making up train sets in a BART yard facility, you'll need to connect multiple cars together. As the cars touch, press F14 to hear it happen.

F15 Uncouple

At the end of the day in a BART yard facility, you might want to disconnect cars for maintenance reasons. Just as the cars start to pull away from each other, press F15 to hear what that sounds like.

F16 Idle Sounds / HVAC On/Off

Since these are electric cars, there's not much going on when they are powered up and sitting still. It's not like you're going to hear the idling sounds of a V-16 diesel. Instead, you are mostly going to hear the Heating, Venting and Air Conditioning (HVAC) system running.

F17 Air Compressor

Like most things in the railroading world, BART cars use air brakes. To supply it, an air compressor is fitted under each car. These normally sound at random times, but to take control of your own air supply, press F17.

F20 Disable/Enable High Speed Sounds

Once a train reaches a set speed, it will randomly start playing sounds heard when traveling at high speed. This includes the sounds heard when traveling underground through a tunnel, when running above ground on the raised rail platforms, etc. The decoder will select a random high-speed sound to play, play it for a random amount of time, and then wait a random amount of time before playing another one. If the speed drops below the minimum speed for high-speed sounds to play, the sound will stop playing immediately. This feature is enabled automatically on every power cycle but can be manually disabled and re-enabled by using F20. You can configure the speed at which the high speed sounds will start playing using CV 194.

F24 Change Horn Type

Want to make people waiting on a station platform jump? Switch to the loud "blat"-style air horn by pressing F24, then hit F2. They might spill their coffee or even look up from their cell phones for a microsecond.

KEEP-ALIVE®

This model is equipped with Keep-Alive®, a capacitor-based temporary energy storage system that lets a powered car travel over dirty (or dead) rail spots without stopping. The length each car can move without track power varies by condition of both track and model; your mileage my vary, long-distance rates may apply. **NOTE**: You will *not* have control of the train when running on Keep-Alive® energy, and if you're used to a train stopping when it shorts at a mis-aligned switch, forget it. Like the prototype, it's not going to stop just because the points are thrown against you (at least until the capacitors are drained). The lengths we go to for more realism!

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, 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.

"...San Francisco, here is your wanderin' one, Saying I'll wander no more. Other places only make me love you best, tell me you're the heart of all the golden west." Oh, sorry, got distracted there for a minute...

BART CAR SOUND VOLUME SETTINGS

KEY	FUNCTION	CV	DEFAULT	RANGE	YOUR VALUE
	Master Volume			0-100	
F1	Doors Open/Close	205	100	0-100	
F2	Horn - Playable	209	100	0-100	
F3	Flange Squeal	207	50	0-100	
F4	Station Announcements (Spoken)	225	80	0-100	
F5	Station Announcements (Robot)	226	80	0-100	
F6	Brake Squeal	198	50	0-100	
F8	Mute/Traction Motors	227	75	0-100	
F9	Whoosh/Run By	230	80	0-100	
F10	Horn - Approach Quill	210	100	0-100	
F11	Horn - Forward Quill	208	100	0-100	
F12	Horn - Stop Quill	213	100	0-100	
F13	Horn - Reverse Quill	211	100	0-100	
F14	Couple	202	15	0-100	
F15	Uncouple	202	15	0-100	
F16	Idle/HVAC On-Off	215	15	0-100	
F17	Air Compressor	195	15	0-100	
F20	High Speed Sounds	201	100	0-100	

FACTORY RESET

On your BART cars, 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! If we had a band, you'd be kicked out of it. Again!

You can NOT lose all the pre-recorded sounds on your BART cars decoder by doing a factory reset. However, after performing a factory reset, your BART cars may begin to binge watch *Full House* episodes or recite the lyrics from *(I Left My Heart) In San Francisco.* If that happens, you have probably lost your mind. But don't worry. Just sit back, grab some popcorn, and enjoy the show.

By the way, pay no attention to the person breaking into your layout room attempting to steal your BART cars because they misread the instructions on Page 4.

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 TCS sound decoder. For advanced users who want to more fully explore the capabilities of the decoder we suggest visiting the TCS website using the QR Code on page 11. For all the different exploded view drawings showing the stupendous number of detail parts for each version of these cars (along with their part numbers), see the Product Support section of our website. By the time you read this, they should be there.

LIMITED WARRANTY

We will do our best to solve any problems or issues that you may have with your BART cars. If your train has any defects that originate from the factory, we will repair your trainset using new components or replace it outright should a repair not be possible. However, we can only replace your BART cars while we have additional ones in stock. While we would love to have an infinite supply of spare parts and do our best to keep as many on hand as possible, eventually these will run out too. In some cases, future productions may result in a parts supply being restocked, but that is not always guaranteed. If you are like most of us and – after purchasing this trainset – you put it on 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 the restored 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. Not…at…all...

There are several things that this warranty cannot cover. If your BART cars arrive with a couple of loose grab irons or underbody bits, there is a very good chance that you can affect 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 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 – contact us directly through our website or give us a call and we'll send you some replacements.

Of course, damage caused by running your trainset at full speed around a 15" radius curve along the edge of your 60" high layout, weathering it with peanut oil, or any other unique damage caused by you and that we haven't been able to cover here is not covered by the warranty. If catastrophe does strike – even as the result of your own actions (or possible inactions) – and your locomotive gets damaged, please give us a shout and we'll do our best to help you out if possible. Don't be shy.

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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
service@rapidotrains.com

BART A car #1234 in Oakland, California, June 17, 2017. *Craig Walker photo.*

2024

BART

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