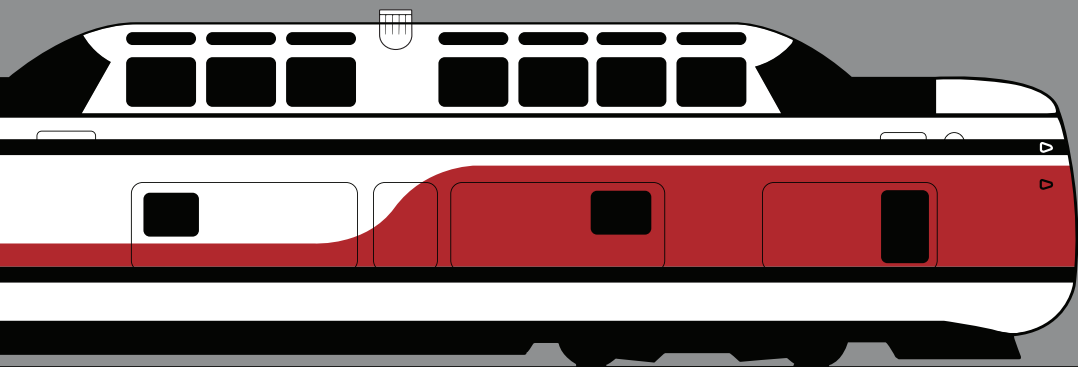


# Turbo

Speed.  
Style.  
Spirit.

FRANCAIS AU VERSO



## **N SCALE TURBOTRAIN PRODUCT GUIDE**

Thank you for purchasing the first accurate N scale model ever produced of the United Aircraft TurboTrain. The Turbo, as it was usually called, is a particular favourite of us folks here at Rapido. You can honestly say that the Turbo is why we exist. Jason created Rapido to, in his words, "increase the number of TurboTrains in the world." It was our first powered model in HO scale and let's just say that was the trial run for this new N scale model, which we think is far superior!

We're particularly pleased with how the sounds turned out, so if you have a sound-equipped model we hope you will enjoy them. Our friends at ESU did wonders with our original sound files and they are a huge improvement over the HO model. If you ordered a silent model, you might want to head to a buddy's house or the club to see the sound model in action. It may finally convince you to embrace sound-equipped model trains. Well, at least Rapido sound-equipped model trains.

As always, please do not hesitate to contact us should there be anything wrong with your model. Whether you have a warranty issue (missing parts, peanut-shaped wheels, the exhaust stacks really melted the roof), a question ("This model doesn't actually have working gas turbines. You liars! I want my money back!") or a comment ("This looks different than my Bachmann Bros. model from 1970 so you must be wrong.") please give us a shout. More warranty information is available towards the back of this manual.

Please note that we have nothing to do with Arnold Rapido so please stop sending us your old steam engines. We don't want to fix them. And for those of you who sent them in without giving us your contact info, thanks! We're welding all of the old Arnold Rapido models we receive into a life-size sculpture of Arnold Schwarzenegger. It's looking good so far.

Continuing that thought, please don't send your TurboTrain back for repair without getting authorization from us first. If this model has been sitting in your crawl space since 2019 and it's now 2072 and you've finally opened it, you may have some issues getting spare parts. Following that messy business on the moon a couple of years ago, we've had a serious rethink about our business model. We've abandoned model trains and we now specialize in cybernetic upgrade kits to replace your worn-out body parts with metal and solvent-resistant plastic. Our new company name is "International Electromatic Upgrades Inc." Consequently, we are fresh out of TurboTrain spare parts. However, should you need replacement spare parts for your cybernetically-enhanced body, we are the source for you. Contact us at Telos Ω and ask for the Customer ServiceMan or the Cyber ServiceMan.

Enjoy your model!

## DEDICATION

This N scale TurboTrain model is dedicated to the memory of Mike McGrattan. Mike was a bright light in the model railroad community and at Rapido. But he was a light that was extinguished far too young. When Mike fell ill we had all but given up on producing N scale models as we felt we just couldn't get them right. But with his encouragement we decided to stick with it.

Two days before Mike passed away we spoke on the phone and I asked him what model he wanted us to do in N scale for him. Despite the painkillers and other medication he was on, there was no hesitation in his voice as one word came out: Turbo. I was surprised, but I told him then that I would make it happen.

We at Rapido miss Mike terribly. Especially me. He was my rock. When I had doubts or fears about Rapido's finances or viability, Mike would look at the books and show me why I had nothing to worry about. He understood the pitfalls and stresses of running a company and he always knew what to say to keep me sane.

We used to watch hockey games together on Saturday nights – I was at my house and he was at his, and we'd chat on the phone. His insights were hilarious. I try to tell his story of golfing in Scotland but I can't do it justice. We would always be rolling on the floor when he told it and his many other priceless anecdotes.

So Mike, I know that our petty physical needs and interests are very much beneath you now. Your soul is beyond us on a spiritual journey and we're the caterpillars to your butterfly. But if you ever do decide to check in on how things are going down here in the physical world, know that we still miss you and every time someone runs their beautiful TurboTrain on their model railroad they will be thanking you for making it happen.

This one's for you, buddy.

Jason Shron  
President  
Rapido Trains Inc.  
August 2018

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**TURBOTRAIN DCC FUNCTION QUICK REFERENCE**

F0	HEADLIGHT
F1	BELL
F2	HORN
F3	GYRALITE
F4	THROTTLE
F5	DOPPLER HORN
F6	ALL ABOARD
F7	DIM THE HEADLIGHTS
F8	STARTUP/MUTE/SHUTDOWN
F9	DOORS OPEN
F10	DOORS CLOSE

F11	TORONTO/NEW YORK
F12	MONTREAL/BOSTON
F14	GUILDWOOD/NEW HAVEN
F15	KINGSTON/PROVIDENCE
F16	DORVAL
F17	CANADA/USA TOGGLE
F18	SWITCHING MODE
F19	TORONTO ARRIVAL

## PUTTING YOUR TRAIN ON THE TRACK

When putting your TurboTrain on the track for the first time, we advise having the power off to avoid causing a short circuit which could fry your train's guts. On the bottom of each car is an arrow and a number. When assembling your train, the arrows **MUST** be facing the same way. The numbers on American TurboTrains are simple – 1 to 3 or 1 to 5. Assemble your train in the order of the numbers. On the Canadian Turbo, the numbers are for a 9-car train. If assembling a 5-car train, put the cars in numerical order and don't worry about the missing numbers.

The front of each car has a single connector and the rear of each car has a double connector. Starting with car 1 (PDC-26 or PDC-28 – more info on nomenclature below), clip the pole in the centre of the Single Axle Truck/Diaphragm assembly onto the connector in the rear of the PDC. The truck can be installed either way – there is no front or rear to the Single Axle Truck. The next car has a single connector on the front. Clip it around the pole in the truck, making sure it is nested between the two arms of the double connector from car 1. Continue doing this until you have assembled your complete train.

If you look down your train and one car seems higher than the others, you have installed a truck incorrectly. If any of the Single Axle Trucks are slightly askew relative to the rails, just straighten them with your fingers.

Your TurboTrain is ready for service. We advise that you read the rest of this manual to ensure smooth and reliable operation. Important sections are: Break-In, Checking and Adjusting Your Train, and Operation. If you have DCC, we highly recommend you read about the "Awesome Slow Speed Thingy" towards the rear of this manual. It improves operation by leaps and bounds.

**VERY IMPORTANT:** The Turbo is a long train. It is often stopped on switches – sometimes several. You probably get where we're going with this... Make sure you don't throw a switch that is under the train. You will cause a short circuit and melt your train. The warranty does not cover damage due to short circuits. If disaster does occur, get in touch and we'll see if we can fix it, but you may be charged for time and replacement parts, as well as shipping to return the model to you.

## BREAK-IN

Every locomotive needs a break-in period, and your TurboTrain contains two locomotives! Your TurboTrain has been tested at the factory... for about 30 seconds. That is not enough time to get the gears to mesh nicely or to even out any jerky operation in a new motor. We suggest that, after reading this manual, assemble your TurboTrain into at least a three-car set and put it on a test loop. Just let it run in each direction for an hour or two. Fast and slow. There already should be enough grease in the gearboxes so you don't need to add any. Just let the thing run.

Do not run the TurboTrain with just the two Power Dome Cars. It is designed to have at least one Intermediate Car installed.

## **PROTOTYPE INFORMATION**

The TurboTrain was designed and marketed by United Aircraft Corporate Systems Center (later Sikorsky Aircraft) as a gas turbine-powered, high-speed intercity train. Each train was powered by four or five Pratt & Whitney ST-6 gas turbine engines, with an additional gas turbine providing auxiliary power. The Turbo featured a unique pendular suspension over articulated single-axle trucks, which allowed the train to tilt in curves. That feature, combined with the short Intermediate Car length, meant that the Turbo could travel much faster than regular trains on conventional track. It was a high-speed train without the need to invest in high-speed train infrastructure.

The American Turbo operated mainly between New York and Boston between 1969 and 1976, first for Penn Central and then for Amtrak. It also had a short spell as the pork barrel special – sorry, the Potomac Turbo – between Washington, DC and Parkersburg, VA. In 1971, a Turbo was repainted into DOT colors of white, red and black. It toured the United States from coast to coast that July as a means of introducing Amtrak to the nation. The train was open for tours at stations and ran in revenue service. It was met by large crowds and broadly positive reviews.

In Canada, the Turbo operated first for CN and later for VIA Rail Canada. It had a rocky start in 1969 but re-entered service in 1973 as “new and improved” nine-car train. It operated between Montreal and Toronto (and, for a time, between Montreal and Ottawa). The Turbo became the most reliable trains in the country, achieving on-time performance of 97% and availability of almost 99%. However, by 1982 there were just two trains remaining and it became too expensive to maintain a fleet of two. Sadly, the Turbo era came to an end in October 1982. Each and every TurboTrain was scrapped.

## **NOMENCLATURE**

The first thing you need to remember is that this train is not, and has never been, a Turboliner. Turboliners were built by ANF in France and later Rohr in the United States. Apart from being gas turbine powered, the TurboTrain and Turboliner have nothing in common. So if you remember riding the TurboTrain out of Chicago or Albany at any time apart from July 1971, you are remembering the wrong train. And if you saved up all your money to buy this model and your world has just come crashing down... Sorry. Go sell this model on eBay and then head to the Pancake House to drown your sorrows in some comfort food.

The train is referred to either as the Turbo or the TurboTrain. As you can see from the packaging and from these instructions, the two names are equally valid and we flip flop between them all the time. The American trains were referred to both as the Turbo and the TurboTrain. The Canadian trains were only referred to as the Turbo. CN actually tried to get its employees to drop the definite article and just call it Turbo (we have the internal memo), but everyone calls it the Turbo. Turbo Train (two words) is just wrong.

The engine thingies are called Power Dome Cars, or PDC for short. The intermediate cars are appropriately called Intermediate Cars, or IC for short. Power is provided by a Dual Axle Truck at either end, and the intermediate trucks are called Single Axle Trucks.

Each PDC and IC received a code according to its function and layout.

**PDC-28** and **PDC-29** – these are the American Turbo PDCs. They are identical except that PDC-28 contained a beverage bar while PDC-29 had a valet (coat rack) in its place. These had 2+2 seating in the lower level and in the dome.

**PDC-26** – “TurboClub” first class Canadian PDC. This had 2+2 TurboClub seating in the lower level featuring leather cushions and integrated reading lights. In the dome were eight swivel parlour-style seats. Frequent travellers in first class used to run down the platform at Toronto or Montreal to try and snag those dome seats.

**PDC-27** – “TurboLuxe” coach Canadian PDC. This had TurboLuxe coach seating in the lower level and bar seating with drinks tables in the dome.

**IC-29** – The original IC built for the two American demonstration trains, containing coach seating and a snack bar

**IC-30** – “TurboLuxe” Canadian coach IC

**IC-31** – “TurboLuxe Buffeteria” Canadian IC with coach seating and an extensive take-out counter, referred to by CN as a buffeteria

**IC-33** – “TurboClub” Canadian first class IC with TurboClub seating and a galley for reheating meals

**IC-34** – “TurboLuxe” Canadian coach IC with two seats removed to allow for a larger luggage rack

**IC-35** – “TurboLuxe” Canadian coach IC, identical to IC-30

**IC-36** and **IC-37** – Additional American coach ICs built in 1972 to increase the American TurboTrains to five-car trains.

## TRAIN LENGTH AND ARRANGEMENT

American Turbos originally had three cars: **PDC-28 – IC-29 – PDC-29**

In 1972, these were expanded to five cars: **PDC-28 – IC-36 – IC-29 – IC-37 – PDC-29**

In addition, Amtrak purchased one Turbo from CN. It was the only four-car Turbo ever to operate. This contained Canadian PDCs and ICs modified to be more Amtrak-ish: **PDC-126 – IC-131 – IC-134 – PDC-127**

*continued ...*

Canadian Turbos operated briefly as seven-car trains:

**PDC-26 – IC-33 – IC-35 – IC-34 – IC-31 – IC-30 – PDC-27**

The trains were rebuilt between 1971 and 1973, re-entering service as nine-car trains:

**PDC-26 – IC-33 – IC-33 – IC-35 – IC-31 – IC-34 – IC-30 – IC-31 – PDC-27**

We did not tool IC-34 as it almost identical to IC-30 and IC-35. Tooling the one blank window would have raised the price of the train considerably. So on your model, all CN/VIA TurboLuxe coaches are referred to as IC-30/35.

More information can be found in Jason's definitive book on the train, ***TurboTrain: A Journey***. You can occasionally find a used copy online that doesn't cost an arm and a leg.

## **CLEAN THE WHEELSETS (IF NEEDED)**

Before operating your TurboTrain, check that the wheelsets are clean. The trains are handled extensively in the assembly process, and it is possible that the wheelsets have picked up some grunge. For Single Axle Trucks, put some 99% rubbing alcohol on a paper towel and roll the wheelsets back and forth on the towel. For Dual Axle Trucks, these are best cleaned when the train is on the track. Give a bit of power to the train while holding it in one place. Hold a Q-Tip charged with rubbing alcohol against each bare metal wheelset as it turns. There is no need to clean the traction tires...

It is a little tricky to remove the wheelsets from the train, and we don't recommend it unless it's a wheelset emergency. To remove a wheelset from a Single Axle Truck, use a small, flat screwdriver to pry it out from one end. The challenge is not to distort the wheelset while prying it out. Good luck with that. As we said, we don't recommend it.

To remove a wheelset from the Dual Axle Truck, use a sharp pair of tweezers. Insert both tines of the tweezers into the forward end of the truck between the gearbox cover and the truck, and carefully pry open the gearbox cover to access the wheelsets. If the entire truck pops out, you need to disassemble the PDC to reinstall it. Oh what fun!

## **TRACTION TIRES**

Yes, I know we all hate traction tires. But with only four axles pulling a train that is up to nine cars in length, the traction tires are a necessary evil. If you've ordered a three-car TurboTrain, traction tires are not installed. They are included in the polybag but you should not need them unless you are running your Turbo on the Coney Island Cyclone. Five-car Turbos have the traction tires installed. They do not negatively impact performance of your train. Remember – every wheel on the whole train picks up power. Obviously, you absolutely do need them for a full nine-car train. If they bug you, you can replace them with the standard wheelsets included in the polybag, but we don't recommend it. If you break the gearbox trying to access the wheelsets, we may be out of replacements.



## REMOVING THE SHELLS

First off, you should know that removing the shell may void your warranty. If you scratch or break an IC or PDC while trying to remove the shell, you are on your own. If you still want to continue, read on...

- Your TurboTrain has a dematerialization circuit hidden in its electronics. If you are removing a shell and anything goes flying off, the dematerialization circuit automatically activates and whatever part flew off will be beamed into the time vortex. Don't bother looking for it. It's gone.
- If you bite your fingernails, you cannot open the IC. Don't even try. Find someone with long, strong fingernails. Insert a fingernail between the car side and the belly, and pry out the side from the locking tabs in the belly. With your other hand, pull down on the belly so it doesn't lock in again. That's it – the belly pulls right out. We use Dan's fingers for this. You can order Dan's fingers from our web site, but we can't deliver them to you until we cut up Dan. We currently have no plans for that, but we can put you on a waiting list in case that changes.
- To open the PDC, pull the nose straight off (it is a friction fit) and then pry the sides out of the belly from the nose end. Use the nose weight – the bit of zinc chassis extending into the nose cavity – as a lever to pull down the belly. Note that the lower level of the PDC cannot have passengers installed as we needed to fill the space with the model's internal working bits.
- To reassemble the cars, make sure the belly is oriented the right way. If you mistakenly put the IC belly on backwards or you swap the PDC shells and get them mixed up, you can cause a massive short circuit and destroy your train, your layout room, your house, and probably your entire neighbourhood. The warranty doesn't cover that either. Sorry.

## EXTRA PARTS

We include extra guidance arms in the polybag in case yours break off. If you lose these or break off even more guidance arms, please contact us. We can sell you more guidance arms if we still have them available. Just get in touch. We also include extra PDC wheelsets with or without traction tires, and we include extra traction tires.

## OPERATION – DC (SILENT)

If your TurboTrain is a silent DC version, it should function like most other N scale locomotives. Follow the instructions in "Putting Your Train On The Track" and set up your train. Do NOT just set up the two PDCs to run alone. They are designed to run with at least one IC between them. Give the Turbo some juice. Watch the Turbo 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 TurboTrain as it may not be safe (for your engine and/or your wallet) for you to use your controller.

Some train set throttles put out a very high maximum voltage that is not suitable for scale model trains. The maximum recommended voltage is 15 volts DC. Similarly, controllers designed for large scale trains put out a much higher voltage than your TurboTrain can handle. If your train set transformer came with your Bachmann Bros. TurboTrain model in 1970, you really don't want to use it on your Rapido TurboTrain model. It will probably melt your train.

If you destroy your Turbo by using a cheap throttle, get in touch. In such situations, we'll try our best to fix it for you. But we may have to charge you for the replacement parts, shipping and the labour involved. That's because you didn't read this bit of the manual. In DC, you cannot turn on the forward Gyalite and the rear one does not flash.

## INSTALLING SILENT DCC DECODERS

The front and rear PDCs have different motherboards. You can't just drop in a pair of decoders and get the train to run properly. You will need to remove the blind plug from the motherboard in each PDC, install a DCC decoder, and test it independently.

The TurboTrain motherboards use Next18 sockets. The only way to install a DCC decoder is to use one with a Next18 plug, such as the ESU LokPilot Micro (54689). But once you start futzing around with silent decoders, your warranty is out the window. You are truly on your own.

If you are really, really keen to operate the TurboTrain in DCC without sound, we highly recommend that you buy a sound-equipped model and just don't turn on the sound.

## OPERATION – DC (SOUND)

To operate your sound-equipped TurboTrain on a DC layout, just give the throttle some juice. Once sufficient voltage has been reached (around seven volts), you will hear the gas turbines fire up. The train will not move until the gas turbines have settled into idle. See the note above (in Operation – DC (Silent)) about using train-set or large-scale throttles. With DC layouts, you have very little control over the sounds of your model. Do not use "pulse" control or a controller with "feedback" as it will fry your engine. And we mean completely fried, like onion rings.

**WARNING: If you have purchased a sound-equipped TurboTrain and you operate your trains with a Model Rectifier Corporation RailPower 1300-series DC controller, stop what you are doing immediately. Do not pass Go. Do not collect \$200. Don't go landing on the Reading Railroad either. The RailPower 1300 is notorious for voltage spikes and it WILL destroy your locomotive. There is no "if" about it. We will not repair any**

## **TurboTrain destroyed by a 1300 or any other “train set” DC controller. “Train set” DC controllers should not be used with sound-equipped models.**

MRC is really cheesed off that we include the above note in our manuals. Other MRC DC power packs are no problem, and we use them at our office. But please keep the 1300-series controllers away from your TurboTrain, cheese or no cheese.

In DC, the headlights, front Gyalite and rear Gyalite all work as they should, but obviously you can't turn them off. Some throttle manufacturers produce special thing-a-majigs which are meant to trigger the sounds in locomotives on DC layouts. As we have no involvement in the development of those thing-a-majigs, we have absolutely no idea how they will affect your TurboTrain, for good or for ill. As always, we'll try to help you fix your units if one of these thing-a-majigs scrambles your train's circuitry, but we can't guarantee we'll be able to, and we will need to charge you for the repair.

Some people have mastered the art of stopping a sound-equipped train in DC without killing the sounds. You have to find the sweet spot and you have about a 0.1 Volt window to find it. If you can find it, you are a better DC operator than we are.

## **OPERATION – DCC WITH SOUND**

We go to extreme lengths for accuracy, in sounds as well as in looks. Our sound decoders are LokSound Select decoders by ESU, programmed with sounds Jason painstakingly restored and/or recreated from original BetaMax video recordings provided by Bill Morrison, who worked for CN and later VIA in the Turbo Bay at Central Station. The sounds are bang-on accurate for the Turbo, and we're really proud of them. We had to shorten some of the station announcements due to memory constraints, but they are still pretty cool.

More detailed decoder instructions, including all sorts of weird CV settings we still don't understand after all these years, can be found in the ESU Loksound Select decoder manual. This is available for download on the TurboTrain page in the Support section of our web site.

Please bear in mind that the two decoders in your TurboTrain are different from each other and are not interchangeable. The front decoder can only be used in PDC-26 and PDC-28, and the rear decoder can only be used in PDC-27 and PDC-29.

## **LOCOMOTIVE ADDRESS**

Your Rapido TurboTrain comes from the factory with a decoder address of 3. Both PDCs have the address of 3. We suggest if you are using DCC control that you first test that the Turbo responds on address 3. If it doesn't respond for whatever reason but other models do, we suggest you perform a factory reset. This solves most decoder issues. More info

on that below. Once you have verified that the train is responding you should assign it a unique address before going any further.

**Both PDCs must have the same address. You need to program both PDCs together, at the same time.** 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 Turbo on the main and you have any other locomotives on your layout assigned to address 3 (the normal default address for new locomotives) that ALL of them will likely also be changed to your new address! Also be aware that if you give your Turbo a four-digit address it will not work at all if you try to run it on a friend's DC layout.

Also please keep in mind that some DCC systems do not have sufficient power to program sound-equipped locomotives on the mainline. If it doesn't program properly, try using the programming track. If your sounds do not operate correctly on a Digitrax DCC system, this likely means that you need to clear the memory on your system, achieved by "clearing slot #36." A basic summary of how to do this can be found on the TurboTrain page in the Support section of our web site. More detailed information can be found on the Digitrax web site.

If you have a really old DCC system, you may find that the Turbo won't work at all – nor will many other new models. Go update your DCC system to a newer version. Your computer is updated regularly – or at least we hope it is. Your DCC system should be updated as well. If your DCC system was purchased when you were still buying VHS tapes, chances are it needs updating.

## TURN ON THE SOUND

Press F8 and you will hear the starter fire up the gas turbines. The Turbo won't move until the startup has finished and the train is in idle. When you advance the throttle, you will hear the turbines increase in power and the train will pull out. You will notice a time lag before it starts moving. This is intentional. If you wish to shut down the turbines, press F8 again while the train is stopped.

If you press F8 when the train 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 TurboTrain idling nicely and then you select another engine with your throttle, your train still thinks F8 is pressed so it will keep idling along. However, if someone else selects your Turbo's address and F8 isn't pressed on his or her controller, the Turbo will promptly shut down. He or she will need to press F8 again.

Note our use of "he or she" despite the fact that 99.9% of our customers are men. But we appreciate our three or four female customers. We are looking for a wife for Dan. Please get in touch if you can help.

## CANADA/USA

The default sound set on the Turbo model is Canadian. That's because we sold more Canadian Turbos than American Turbos. To change to American sounds, press F17. If you are in the USA and your DCC system only has eight function buttons, you will need to learn French.

## FUNCTIONS

F0	Headlights	F10	Doors Close
F1	Bell	F11	Toronto/New York
F2	Horn	F12	Montreal/Boston
F3	Gyalite	F14	Guildwood/New Haven
F4	Throttle	F15	Kingston/Providence
F5	Doppler Horn	F16	Dorval
F6	All Aboard	F17	Canada/USA Toggle
F7	Dimmer	F18	Switching Mode
F8	Startup/Mute/Shutdown	F19	Toronto Arrival
F9	Doors Open		

## FUNCTIONS: MORE INFORMATION

### Single Play Sounds

For any sound that plays once, such as the Doppler Horn or a station announcement, it plays when the decoder is told that the function is turned on. After the sound plays, you must press the function button again to turn off that function. Otherwise, the next time you want to hear the Doppler horn or some other recording and you press the button, you will be turning off the function rather than turning it on, and the recording will not play.

### F0 Headlights

The dual headlights at each end of the TurboTrain cannot be operated individually. If you remember seeing just one operating on a real Turbo, the other had just burned out. You should have mentioned something to the train rider. Turning on the headlight also turns on the rear Gyalite. If tootling around the yard, you'll need to press F18.

### F1 Bell

Ding. Ding. Ding. It's a steel bell. The model actually sounds nicer than the original, which sounded like someone was sitting on it.

### F2 Horn

The Turbo was almost silent as it cruised by at 100 MPH. How to let people know it was coming? Simple! Use an ear-splitting, atonal horn that would wake the dead.

## **F3 Gyalrite**

The Gyalrite was always on unless the Turbo was meeting another train, pulling into a station, or switching in the yard.

## **F4 Throttle**

This is a modified version of ESU's Full Throttle feature. If you want to give the Turbo some extra roar without increasing the speed, press F4 and give it some juice. But we should warn you that when you turn F4 off, the Turbo model will immediately change speed to match the throttle setting.

## **F5 Doppler Horn**

This is an original recording of the Turbo flying across the level crossing at Perth Street in Brockville, Ontario. It was made by Jay Winn back in the day and we are eternally grateful to him for letting us use it.

## **F6 All Aboard**

Erm... This one is pretty obvious.

## **F7 Dimmer**

When approaching a station or an oncoming train, press F7 to dim your lights and switch off your Gyalrite. Pressing F7 again will go back to normal.

## **F8 Startup/Mute/Shutdown**

## **F9 Doors Open**

## **F10 Doors Close**

The Canadian sound set features the original announcement as specified in the CN operating manual. Hearing a terrible French accent from an Anglophone conductor was (and still is) normal on Canadian trains.

## **F11 Toronto/New York**

## **F12 Montreal/Boston**

## **F14 Guildwood/New Haven**

## **F15 Kingston/Providence**

## **F16 Dorval**

Some people wonder why we include station announcements with the model, seeing as they would not be audible from outside the train. Our view is that this model is the closest any N scale railroader will get to experiencing the real TurboTrain. Remember, all of the Turbos were scrapped. You can't visit one at your local train museum. So we include the station announcements to help recreate the Turbo experience.

## **F17 Canada/USA Toggle**

Press this to change the announcements to USA if you are operating an American TurboTrain. Unless, of course, you like when your model trains talks to you in French.

## F18 Switching Mode

When the Turbo was moved between Spadina and Union Station in Toronto, between the Turbo Bay and platform 12 at Central Station in Montreal, or around the yards in Providence, the front and rear headlights would be lit and on dim. Pressing F18 does this.

## F19 Toronto Arrival

This is included because Jason models the tracks approaching Toronto Union Station. He also models Guildwood and Kingston, and those announcements are on the model too. What an amazing coincidence!

## SOUND VOLUME SETTINGS

We've done our best to make the sounds loud enough for enjoyment but not so loud that we break your windows. This is an N scale model, after all. If you are looking for window-shattering volume from a model train might we suggest that you switch from N scale to 2:1 scale? Then you can really wake the neighbours with your sound-equipped models!

### **ALWAYS PROGRAM YOUR TRAIN AS ONE UNIT. DO NOT PROGRAM THE PDCs SEPARATELY.**

You can 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. Note that this can be done either on a programming track or on the main (ops mode) if your DCC system supports programming on the main.

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

**VERY IMPORTANT: Before you change any of the volume control CVs (except for the master volume), please make sure that CV 32 is set to 1. CV 32 is used as an index selection register and if you don't set it first then we are not responsible for your resulting rage and the fact that you will probably throw the locomotive against the wall in frustration.**

For example, to set the horn volume, first set CV32=01, then CV275=0-128.

See the next page for a chart showing the sound volumes as programmed on your Turbo.

**TURBOTRAIN SOUND VOLUME SETTINGS**

FUNCTION	CV	DEFAULT	RANGE	YOUR VALUE
MASTER VOLUME	63	192	0-192	
TURBINE VOLUME	259	64	0-128	
HORN VOLUME	275	128	0-128	
BELL VOLUME	283	80	0-128	
DOPPLER HORN VOLUME	379	128	0-128	
ALL ABOARD VOLUME (PDC-26/28 ONLY)	291	128	0-128	
TORONTO/NEW YORK VOLUME	299	90	0-128	
MONTREAL/BOSTON VOLUME	307	90	0-128	
GUILDWOOD/NEW HAVEN VOLUME	315	128	0-128	
KINGSTON/PROVIDENCE VOLUME	323	128	0-128	
DORVAL VOLUME	331	128	0-128	
TORONTO ARRIVAL	339	128	0-128	
BRAKE SQUEAL	459	45	0-128	

## FACTORY RESET

You can perform a factory reset on your TurboTrain by entering a value of "8" into CV 8. Remember to reset both PDCs together. 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 TurboTrain decoders by doing a factory reset. If you manage to lose all of the sounds on your Turbo then you have probably set fire to your decoder with a voltage spike. Open up each PDC and pour out the ashes.

## AWESOME SLOW SPEED THINGY

There is an awesome trick that you can use to get even better slow speed running and smoother operation. It's called the Automatic Motor Tuning Feature. This feature will automatically adjust the Back-EMF in most cases and give you phenomenal slow-speed performance.

In order to use this automatic adjustment you need to use Ops mode programming, i.e. programming on the main. Assemble a three-car Turbo with two PDCs and one IC between them. Make sure your throttle is in "forward" and that you have lots of room in front of it on your mainline.



Set CV 54 to a value of 0. Then get out of programming mode and turn on the bell (press F1). We'll say this again: Make sure you have plenty of room in front of your Turbo and it is not headed for the layout edge and the basement floor!!!

Your Turbo will quickly take off at full speed and then stop rather suddenly while the decoder reads the motor responses. You'll have fabulous motor control after you do this. If you ever have to do a factory reset, you can do the automatic adjustment thingy again – it just takes a few seconds.

This makes a huge difference and is highly recommended.

## **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 the ESU LokSound decoders installed in your TurboTrain. 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 TurboTrain 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 TurboTrain. If your model has any defects that originate from the factory, we will repair it using new components or replace it outright should a repair not be possible. However, we can only replace your Turbo while we have additional parts in stock. We normally keep spares for up to six months after a model is released.

If you purchased this locomotive at age 25 and you've only first opened it while receiving your pension, it is possible that we no longer have any replacements, we're retired, or we're pushing up the daisies. Please check to see if we still exist and give us a call or write us an email, and we will see what we can do to help you out. If the eastern part of North America is covered by one big glacier or under elevated sea levels, chances are we're extinct. Don't bother calling. We won't get your voicemail.

There are a number of things that this warranty cannot cover. If a guidance arm or PDC grab iron falls off, don't be afraid to glue it on yourself. We have at least a four-week turnaround time for repairs and five minutes with a toothpick and some white glue will get your Turbo back on the track with much less hassle.

If parts are missing, please call us or send us an email and we'll send you some replacements provided that we have them. As mentioned above, this warranty does NOT cover damage caused by train set controllers, nor does it cover damage caused by throwing a switch UNDER YOUR TRAIN and melting your entire layout. If you fry up

your DCC settings and can't fix it, we will be pleased help you. But depending on the nature of the problem we may have to charge for the repair.

Of course, damage caused by running your Turbo off an N scale cliff, operating your Turbo on a British layout with low bridges, using your Turbo as a hair curler, attempting to install a real gas turbine inside it, weathering it with latex house paint, or any other 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 Turbo 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 train for you. If there is an extra charge it will be reasonable. We want you to be happy. Don't be shy!

## ACKNOWLEDGEMENTS

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