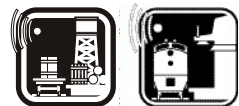




www.railking.com

No. 384 Steam Freight/ Passenger Set

Operation Manual
(3V PS-2)



Thank you for purchasing this Tinplate Traditions® product.
PLEASE READ BEFORE USE AND SAVE

Table of Contents

Set Up Checklist	3
Getting Started	4
Assembling Std. Gauge 42 Track	4
Connecting the Transformer	4
Lubricating the Engine	5
Priming the Smoke Unit	5
Coupling the Engine and Cars	6
Checking the Battery	6
Basic Operation	6
Z-1000 Transformer & Z-Controller	6
Manual Volume Control	6
Proto-Sound 2.0 Operation	7
Activating Proto-Sound 2.0 Conventional Mode Features	7
Freight Yard Sound (FYS)/Passenger station announcements (PSA)	7
Tips on Using PSA	8
Speed Control	8
Lock into a Direction	9
Reset to Factory Defaults	9
Automatic Sounds	9
Maintenance	10
Lubrication and Greasing Instructions	10
Cleaning the Wheels, Tires and Track	11
Locomotive Light Bulb Replacement	11
Freight Car Lubrication	11
Caboose Light Bulb Replacement	11
Passenger Car Light Bulb Replacement	12
Proto-Smoke® Unit Operation	12
Self-Charging Battery Back-Up	13
Troubleshooting	14
Compatibility	17
Transformer Compatibility Chart	17
Additional Features with DCS Remote Control System	18
Service and Warranty Information	19

CAUTION: ELECTRICALLY OPERATED PRODUCT:

Not recommended for children under 10 years of age. M.T.H. recommends adult supervision with children ages 10 - 16. As with all electric products, precautions should be observed during handling and use to reduce the risk of electric shock.

WARNING: When using electrical products, basic safety precautions should be observed, including the following:

Read this manual thoroughly before using this device.

- M.T.H. recommends that all users and persons supervising use examine the hobby transformer and other electronic equipment periodically for conditions that may result in the risk of fire, electric shock, or injury to persons, such as damage to the primary cord, plug blades, housing, output jacks or other parts. In the event such conditions exist, the train set should not be used until properly repaired.
- Do not operate your layout unattended. Obstructed accessories or stalled trains may overheat, resulting in damage to your layout.
- This train set is intended for indoor use. Do not use if water is present. Serious injury or fatality may result.
- Do not operate the hobby transformer with damaged cord, plug, switches, buttons or case.
- The transformer was designed to operate on regular US household current (120 volt, 50-60 Hertz). Do not connect to any other source of power.
- To avoid the risk of electrical shock, do not disassemble the transformer unit. There are no user-serviceable parts inside. If the unit is damaged contact M.T.H. Service for instructions.
- The transformer is equipped with an internal circuit protector. If the circuit protector trips, unplug the power cord from the electrical wall outlet, check your layout for any short circuits. The circuit breaker will reset automatically when the short is removed from the circuit.
- Unplug the transformer from the electrical wall outlet when not in use.
- Do not use this transformer for other than its intended purpose.

Transformer Ratings:

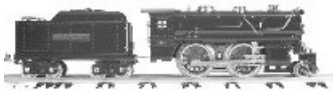
Input: 120 VAC, 60 Hz Only, Output: 14VAC 80W or 18VAC 100W

This product may be protected by one or more of the following patents: 6,019,289; 6,280,278; 6,281,606; 6,291,263; 6,457,681; 6,491,263; 6,604,641; 6,619,594; 6,624,537; 6,655,640. ©2004, M.T.H. Electric Trains, Columbia, MD 21046

Set Up Checklist

- Assemble Std. Gauge 42 Track and Lock-on
- Connect the transformer
- Lubricate the engine
- Prime the Smoke Unit
- Place the engine and cars on the track and couple them together
- Check to see whether the battery needs to be charged for full sound effects
- Apply power to run as described in the Basic Operation section of these instructions.

Set Includes



Steam Engine with Proto-Sound@ 2.0



Z-Controller



Std. Gauge
Lighted Lock-On



2 Passenger Cars
or
2 Freight Cars



8-Pieces
Std. Gauge 42 Track



Z-1000 Power
Supply Brick



2 Wires
(1 red, 1 black)

Tools Needed



Battery Charger (Optional)



Cotton Swab or Rag



RailKing Maintenance Kit or
Light Household Oil and Bearing Grease

You can obtain replacement parts and replacement instructions from the M.T.H. Parts Department

e-mail: parts@meth-railking.com

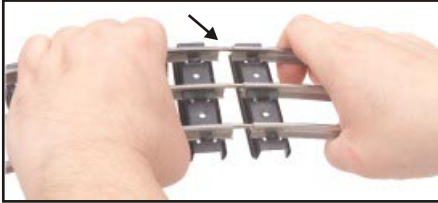
phone: 410-381-2580

mail: 7020 Columbia Gateway Drive, Columbia MD 21046-1532

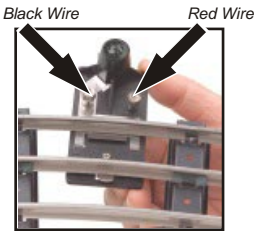
Getting Started

Assembling Std. Gauge 42 Track

The track pins allow you to set up the Std. Gauge 42 Track on any flat surface.



STEP 1 Line up and insert the track pins into the receiving holes on another section of track. Push track sections together for tight fit.



STEP 2 Clip Lighted Lock-on to track as shown in picture. Then Connect Red wire to the pin on the left of the light. And then connect the Black wire to the pin on the right of the light as shown in picture.

Connecting the Transformer

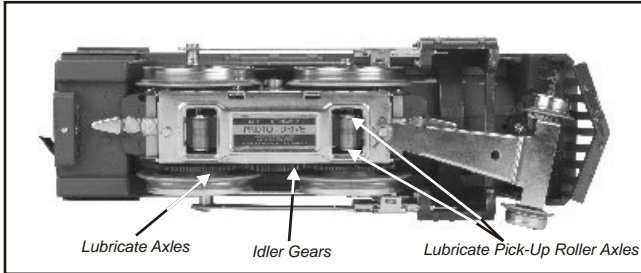
The 100-watt power supply included with this set provides an easy-to-use, safe power source for AC-powered trains and accessories. (see pg. 6)

- Plug the wire from the transformer into the back of the Z-1000 Controller.
- Plug in red and black wires from Lighted Lock-on to the corresponding ports on the back of the Z-1000 Controller.
- Then plug the transformer into the wall outlet.
- Unplug when not in use.



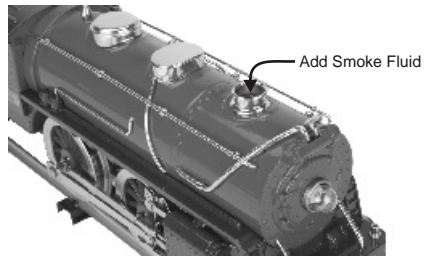
Lubricating and Greasing the Engine

Before operating, lubricate all exposed moving parts using a multi-purpose oil (available with M.T.H.'s Maintenance Kit, sold separately) or a light household oil. Follow the lubrication points.

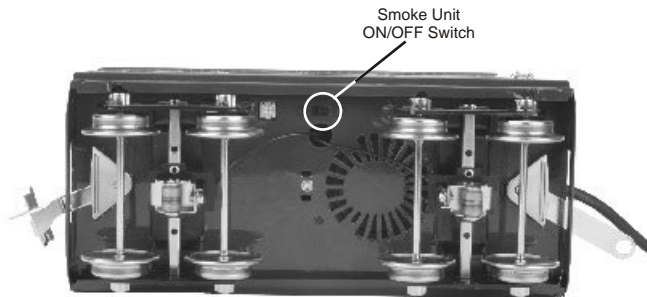


Priming the Smoke Unit

When preparing to run this engine, add 15-20 drops of smoke fluid through the smokestack. We recommend M.T.H. ProtoSmoke, Seuthe, LGB, or LVTS fluids. Do not overfill the unit or the fluid may leak out and coat the interior engine components.



If you choose not to add the fluid (or have already added the fluid but choose to run smoke-free), turn off the smoke unit switch located under the engine. **Failure either to add fluid to the unit or to turn it off may damage the smoke unit heating element and/or wicking material.**

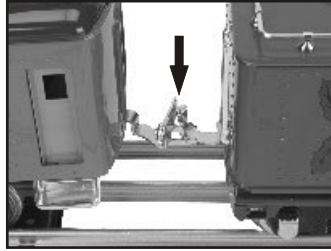


Running the engine without a primed smoke unit may cause damage

Coupling the Engine and Cars

STEP
1

Position armature for proper operation by lifting up on the coupler latch arm making sure the couplers are together and then releasing the coupler latch arm.



Checking the Battery

You may find, if your set was built several months before you set it up, that the rechargeable battery has run down and needs to be charged before operating. If you notice that the sounds are garbled, test and charge the engine as described in “Self-Charging Battery Back-Up” on page 13.

Basic Operation

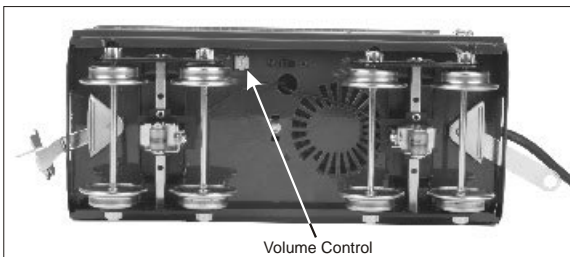
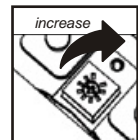
Z-1000 Transformer & Z-Controller

The powerful 100-watt U.L. Listed transformer sets up quickly and easily. Use the enclosed banana jack wire harness to connect the controller to the track lockon. Plug the power supply cable into the back of the transformer controller and then plug the power supply wall plug into a 110V AC outlet. The power indicator LED on the face of the controller should glow, indicating that the controller is receiving power from the power supply.



Manual Volume Control

To adjust the volume of all sounds made by this engine, turn the master volume control knob located under the engine clockwise to increase the volume and counter-clockwise to decrease the volume.



Proto-Sound 2.0 Operating Instructions

This manual contains the operating instructions for Proto-Sound 2.0 in conventional mode only. Instructions for accessing DCS command mode features accompany the DCS Remote Control System equipment.

Activating Proto-Sound 2.0 Conventional Mode Features:

Proto-Sound 2.0 features are activated by sequences of Bell and Horn button pushes described below. Please read the full descriptions of each feature before using it. To use these buttons to activate features rather than to blow the horn or ring the bell, you should tap the buttons very quickly with a ½-second pause between button presses. You may need to practice your timing to make this work smoothly.

Timing Chart				
Press Horn Short & Firm	½ Sec. Pause	Press Bell Short & Firm	½ Sec. Pause	Press Bell Short & Firm
Total Time Lapse: 1 ½ Seconds				

Feature to Be Activated	Button Code:
FYS/PSA	1 Bell, 2 Horns
Speed Control On/Off	1 Horn, 2 Bells (from Neutral only)
Lock into a Direction	1 Horn, 3 Bells
Reset to Factory Defaults	1 Horn, 5 Bells (from Neutral only)

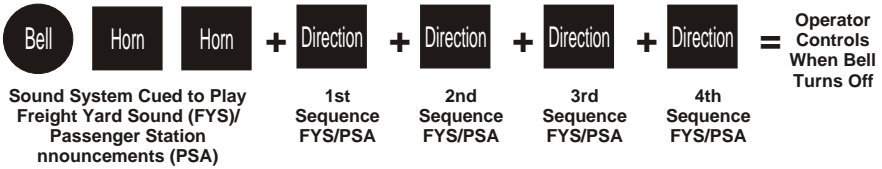
Freight Yard Sound(FYS)/

Passenger station announcements (PSA):

Your engine is equipped with a sound package of passenger station announcements that you can play when you pull into a station. **Each sequence described below will play as long as it is left on, randomly generating sounds, but be sure to allow approximately 30 seconds between the button pushes described below to allow the FYS/PSA sufficient time to run through each sequence.**

- To cue the sound system to play the FYS/PSA, quickly but firmly tap the Bell button once followed by 2 quick taps of the Horn button while the engine is moving. Tap the buttons quickly but allow approximately ½ second between each press.
- Press the Direction button once to stop the engine. This will trigger the first sequence of FYS/PSA. The reverse unit is temporarily disabled so that the train will not move as you use the Direction button to trigger the sounds, and Proto-Sound 2.0 has disabled operator control over the Horn and Bell buttons until the full FYS/PSA sequence is complete.
- After waiting about 30 seconds for that sequence to run, press the Direction button again to trigger the second sequence of FYS/PSA.
- After about 30 seconds, press the Direction button again to trigger the third FYS/PSA sequence.
- Again, after allowing about 30 seconds for that sequence to run, press the Direction

button one more time to trigger the fourth and final FYS/PSA sequence. The FYS/PSA will continue, and within a few seconds, the engine and bell will start and move out on its own at the current throttle setting, in the same direction it was traveling when you began the sequence. Once the bell turns off, the operator regains control of the transformer's bell and Horn buttons and can ring the bell or blow the Horn as usual.



Tips on Using FYS/PSA

- You can terminate FYS/PSA at any time by turning off power to the track for 15 seconds.
- You do not have to be in Forward to use FYS/PSA. At the conclusion of the full sequence, the train will pull away from the station in whatever direction you were going when you activated the feature.
- You can use FYS/PSA even if you are double-heading with another engine. If the second engine is not equipped with Proto-Sound 2.0, you must remember not to leave the throttle at a high voltage level once you have stopped the engine to run the FYS/PSA. Otherwise, the engine without FYS/PSA will begin vibrating on the track as its motors strain to move the train, since they cannot be automatically disabled during the FYS/PSA cycle (or if an original Proto-Sound engine, FYS/PSA are triggered differently and that engine's motor-disable feature will not be active when you run FYS/PSA in Proto-Sound 2.0).
- FYS/PSA can be triggered from Neutral. It will operate the same as if triggered while in motion except that, at the conclusion of the FYS/PSA, the engine will depart in the next direction of travel, as opposed to the direction it was traveling before entering Neutral.

Speed Control:

M.T.H. engines equipped with Proto-Sound 2.0 have speed control capabilities that allow the engine to maintain a constant speed up and down grades and around curves, much like an automobile cruise control. You can add or drop cars on the run, and the engine will maintain the speed you set.

While the engine is programmed to start with the speed control feature activated, you can opt to turn it off. This means the engine's speed will fall as it labors up a hill and increase as it travels downward. It is also affected by the addition or releasing of cars while on the run. Because the engine will run more slowly at a given throttle voltage when speed control is on than when it is off, you should adjust the throttle to a lower power level for operation with speed control off to avoid high-speed derailments. When speed control is off, the volume will drop to allow for better low voltage operation.

To turn speed control on and off, put the engine in neutral, then quickly tap the transformer's Horn button one time then quickly tap the Bell button two times, allowing approximately ½ second to lapse between each quick button press. Two horn blasts will indicate that the engine has made the change. Repeat the 1 horn, 2 bells code to return it to the other condition. You will want to do this during the initial neutral upon start-up if you ever couple this engine to another engine that is not equipped with speed control to avoid damaging the motors in either engine. Each time you shut down the engine completely, it will automatically turn speed control on.



Lock into a Direction:

You can lock your engine into a direction (forward, neutral, or reverse) so that it will not change directions. To do this, put the engine into the direction you want (or into neutral to lock it into neutral), run it at a very slow crawl (as slowly as it will move without halting), and quickly but firmly tap the Horn button once followed by three quick taps of the Bell button, allowing approximately ½ second to lapse between each quick button press. Two horn blasts will indicate that the engine has made the change. The engine will not change direction (including going into neutral) until you repeat the 1 horn, 3 bells code to return the engine to its normal condition, even if the engine is kept without power for extended periods of time.



Reset to Factory Defaults:

To override the settings you currently have assigned to the engine and reset it to its factory defaults, while in Neutral tap the Horn button quickly once, followed by five quick taps of the Bell button, allowing approximately ½ second to lapse between each quick button press. Two horn blasts will indicate that the engine has made the change.



Automatic Sounds

Certain Proto-Sound 2.0 sound effects automatically play in programmed conventional mode conditions:

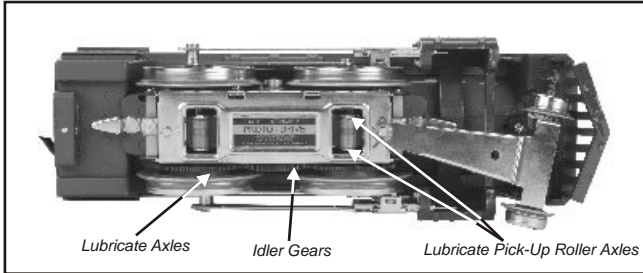
- **Squealing Brakes** play any time the engine's speed decreases rapidly.
- **Cab Chatter** plays at random intervals when the engine idles in neutral.
- **Engine Start-up and Shut-down** sounds play when the engine is initially powered on or is powered off for five seconds or more.

Maintenance

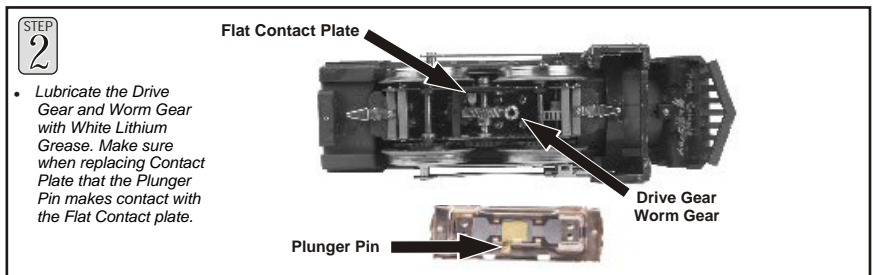
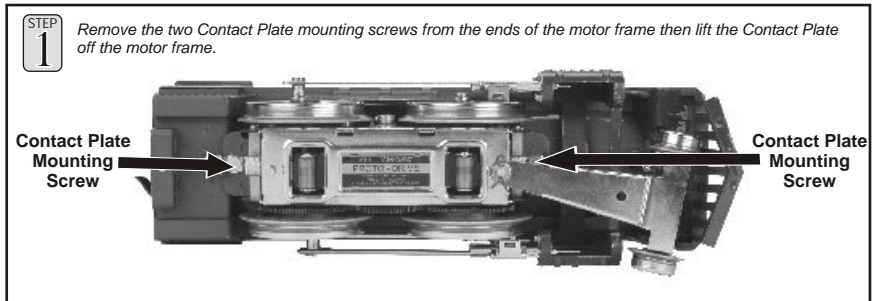
Lubricating and Greasing Instructions

The engine should be oiled and greased in order to run properly.

Regularly lubricate all axles and linkage components, including pickup roller axles, to prevent squeaking. Use light household oil, such as that found in M.T.H.'s maintenance kit. Do not over oil. Use only a drop or two on each pivot point.

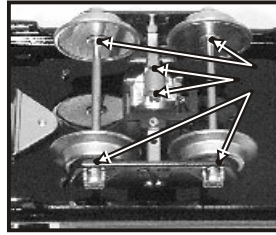


The locomotive's internal gearing was greased at the factory. Grease engine every 50 hours of use or at least once yearly if engine is not run. Use a lithium based grease and follow the greasing instructions.



Freight Car Lubrication

Use a light household oil for lubrication. Apply oil sparingly, using a toothpick or small applicator. Add a drop of oil to the axle holes in the front and rear of each wheel (see photo below). Wipe away excess oil with a cotton swab.



Lubricate pickup rollers, where axle meets wheel and where axle meets truck side.

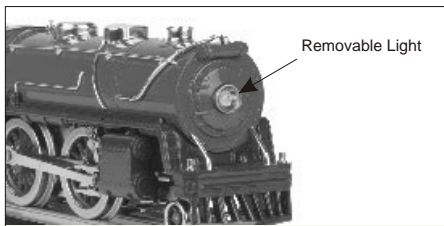
Cleaning the Wheels and Track

Periodically check the locomotive wheels and pickups for dirt and buildup, which can cause poor electrical contact and traction. Wheels can be cleaned using denatured (not rubbing) alcohol applied with a cotton swab.

To clean the track, use RailKing Track Cleaning Fluid or denatured (not rubbing) alcohol and a clean rag. Unplug the transformer and wipe the rails of the track, turning the rag frequently to ensure that you are using clean cloth on the rails. Keep an eye on the track and clean it when it gets dirty to ensure good electrical contact.

Locomotive Light Bulb Replacement

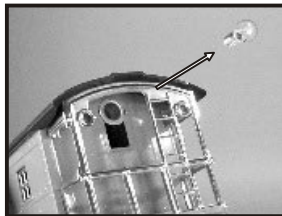
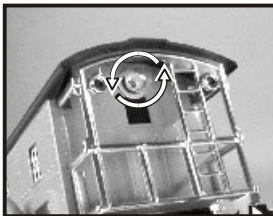
Rotate the headlight bulb counter-clockwise to remove.



You can obtain replacement bulbs directly from the M.T.H. Parts Department.

Caboose Light Bulb Replacement

To replace light bulbs located at the ends of the caboose, simply unscrew the light bulb and replace with matching bulb.



You can obtain replacement bulbs directly from the M.T.H. Parts Department.

Passenger Car Light Bulb Replacement

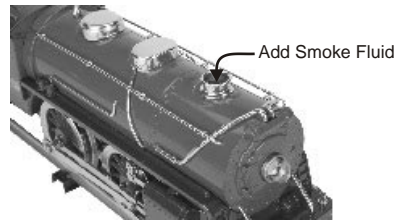
To replace the interior light bulbs remove the screw in the center of the roof plate.



You can obtain replacement bulbs directly from the M.T.H. Parts Department

ProtoSmoke® Unit Operation

This Tinplate locomotive contains a Proto-Sound 2.0 controlled smoke unit that outputs smoke through the smokestack on the roof of the engine. The smoke unit is essentially a small heating element and wick that soaks up and then heats a mineral oil-based fluid that emits smoke. The smoke is then forced out of the stack by a small electric fan. Smoke volume is controlled by the Proto-Sound 2.0 system.



With a few easy maintenance steps, you should enjoy trouble-free smoke unit operation for years.

When preparing to run this engine, add 15-20 drops of smoke fluid through the smokestack. We recommend M.T.H. ProtoSmoke, Seuthe, LGB, or LVTS fluids. Do not overfill the unit or the fluid may leak out and coat the interior engine components.

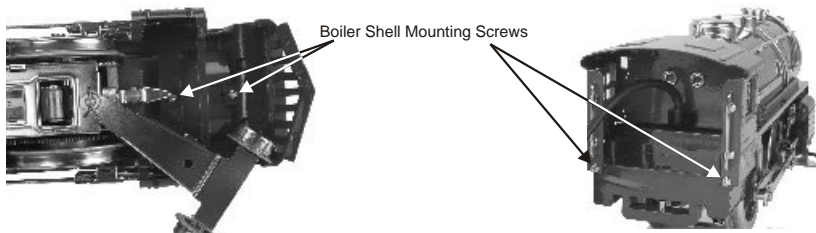
If you choose not to add the fluid (or have already added the fluid but choose to run smoke-free), turn off the smoke unit switch located on the bottom of the tender (see page 5). Failure either to add fluid to the unit or to turn it off may damage the smoke unit heating element and/or wick material.

When the smoke output while running the engine begins to diminish, add another 10-15 drops of smoke fluid or turn the smoke unit off.

When storing the unit for long periods of time, you may want to add about 15 drops of fluid to prevent the wick from drying out.

After removing the engine from storage, add another 25 drops of fluid, letting the wick soak up the fluid for 15 minutes prior to operation.

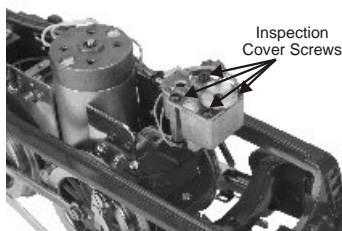
If you experience poor or no smoke output when the smoke unit is on and has fluid, check the wick to see if it has become hard, blackened, and unabsorbent around the heating element. To remove the smoke unit you will first have to remove the boiler shell (by removing the boiler shell mounting screws shown on page 13).



1. Once the boiler has been removed, locate the smoke unit assembly (see Figure 13).

2. Use a phillips head screwdriver to remove the inspection cover screws as seen in Figure 13.

3. After removing the inspection cover, inspect the wick. If it is darkly discolored and hard, it should be replaced.



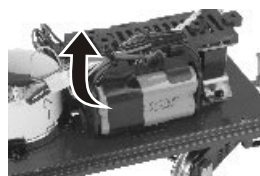
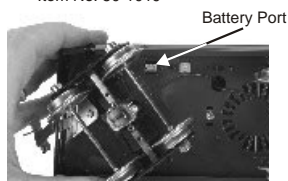
Replacement parts and wick replacement instructions are available directly from the M.T.H. Parts Department phone:410-381-2580 (order online: www.mth-railking.com, e-mail: parts@mth-railking.com; mail: 7020 Columbia Gateway Drive, Columbia MD 21046-1532, FAX: 410-381-6122).

Self-Charging Battery Back-Up

The special NiCad 2.4v self-charging battery recharges continuously during train operation and should last for up to five years. The battery is a dry battery that should not leak or cause any damage to your engine. **Depending upon when your engine was built, it may need to be charged right out of the box.** If engine sounds seem distorted or garbled at low voltages or become silent when power from the transformer is turned off, test the battery to determine whether it should be recharged or replaced.

- **Test:** Put the engine in neutral and leave the track voltage at 10-12 volts (high enough for the lights to shine brightly) for 15 minutes.
- **Recharge:** If the sounds are improved at the end of the 15-minute test charge, the battery charge has run down and can be recharged. There are a number of ways you can do this:
 - Leave the engine in neutral with track voltage at 10-12 volts for 6-7 hours so the battery can fully recharge (if your engine has a smoke unit, be sure it is turned off).
 - Use M.T.H.'s battery recharger (sold separately) that plugs into a wall outlet and a special port under the engine to recharge the battery overnight without leaving it on the track.
- **Replace:** If the sounds are not improved at the end of the 15-minute test charge, it is time to replace the battery, available through M.T.H. Parts. Remove the two phillips screws on the ends of the body shell and remove shell to gain access to the battery.

Battery Charger
Item No. 50-1019



Troubleshooting Proto-Sound® 2.0 Problems

Although Proto-Sound 2.0 has been designed and engineered for ease of use, you may have some questions during the initial operation. The following table should answer most questions. If your problem cannot be resolved with this table, contact M.T.H. for assistance (e-mail: service@mth-railking.com; telephone: 410-381-2580; fax: 410-423-0009; mail: 7020 Columbia Gateway Drive, Columbia MD 21046-1532).

Starting Up	Remedy
When I first turn the power on, the engine will not begin to run. I have to turn the throttle off and then on again to get the engine to operate.	This is normal behavior. To prevent accidental high-speed start-ups, Proto-Sound 2.0 is programmed to start up in neutral anytime track power has been turned off for several seconds. See the "Basic Operation" section for more details.
Horn	Remedy
When I press the whistle button, the bell comes on instead.	Reverse the transformer leads.
I can't get the horn to blow when I press the whistle button.	You may be pressing the button too quickly. Try pressing the whistle button more slowly, taking approximately one full second to fully depress the button.
Bell	Remedy
When I press the whistle button, the bell sounds.	Reverse the transformer leads.
I can't get the bell to ring when I press the bell button.	You may be pressing the button too quickly. Try pressing the bell button more slowly, taking approximately one full second to fully depress the button.
The bell won't work on a separate bell button.	Check the wiring of the separate button.
Coupler	Remedy
When I try to fire the coupler, FYS/PSA starts.	You are waiting too long between whistle button presses.

Cab Chatter	Remedy
Sometimes the Cab Chatter sounds don't play.	Cab Chatter plays only in neutral.
Lock-out	Remedy
I can't get the engine to run after I power up the transformer. It sits still with the engine sounds running.	The engine is locked into the neutral position. Follow the procedure in the "Lock into a Direction" section.
The engine won't lock into forward, neutral, or reverse.	Engine speed must be below 10 scale mph (approx. 10 volts or less in conventional mode).
Volume	Remedy
The sounds seem distorted, especially when the whistle or bell is activated.	Proto-Sound 2.0 volume is set too high. Turn the volume control knob on the bottom of the chassis counter-clockwise to reduce the volume.
Battery	Remedy
The engine will not leave the initial neutral setting	Check to be sure the battery is installed and fully charged. See the "Self-Charging Battery Back-Up" section.
I get no sounds when the engine shifts between directions.	The battery may be dead or need to be charged. See the "Self-Charging Battery Back-Up" section.
After I turn off my transformer, my engine continues to make sounds before quitting.	Proto-Sound 2.0 is designed to continue to sound for a few seconds after power to the track has been shut off.
FYS/PSA	Remedy
The FYS/PSA sounds occasionally repeat themselves.	Proto-Sound 2.0 has a built-in random number generator that randomly selects each sound clip to play. Because there are a limited number of sound clips available in each FYS/PSA sequence, it is probable that some of these sound clips will be repeated from time to time.

FYS/PSA	Remedy
Once in FYS/PSA, the engine doesn't go into reverse.	So that FYS/ PSA effects can be as realistic as possible, Proto-Sound 2.0 disables the reversing unit whenever FYS/PSA is enabled. This way the engine remains still at its stop as the operator cycles through the FYS/PSA sequences.
When the FYS/PSA enters its last sequence the bell automatically comes on.	FYS/PSA is programmed to start ringing the bell at that point. After approximately 12 rings of the bell, it will automatically turn off.
When FYS/PSA is enabled, pressing the whistle and bell buttons has no effect.	Because FYS/PSA must control various effects in each sequence, Proto-Sound 2.0 takes control of these sound effects until you exit FYS/PSA.
I push the direction button but the next sound clip in the sequence does not play or the engine does not come out of FYS/PSA after fourth press of the direction button.	Each FYS/PSA clip must play for approx. 30 seconds before FYS/PSA will advance to the next step in the FYS/PSA cycle. Wait at least 30 seconds in each FYS/PSA sound clip before pressing the direction button.

Compatibility

While this Ready-To-Run set is equipped with everything you need to operate it, the design allows flexibility. The train will operate on any traditional Std. Gauge 42 or larger track system. It is also compatible with most standard AC transformers, in addition to the hobby transformer packaged with your set.

Transformer Compatibility and Wiring Chart

Note that many of the operational commands described in these instructions require a bell button, so if you are using a transformer other than the one included in this set and your transformer does not have its own bell button, you should consider adding one to get the full benefit of the system.

Transformer Model	Center Rail	Outside Rail	Min/Max. Voltage	Power Rating	Transformer Type
MTH Z-500	Red Terminal	Black Terminal	0-18v	50-Watt	Electronic
MTH Z-750	Red Terminal	Black Terminal	0-21v	75-Watt	Electronic
MTH Z-1000	Red Terminal	Black Terminal	0-14v 0-18v	80-Watt 100-Watt	Electronic
MTH Z-4000	Red Terminal	Black Terminal	0-22v	390-Watt	Electronic
Lionel 1032	U	A	5-16v	90-Watt	Standard
Lionel 1032M	U	A	5-16v	90-Watt	Standard
Lionel 1033	U	A	5-16v	90-Watt	Standard
Lionel 1043	U	A	5-16v	90-Watt	Standard
Lionel 1043M	U	A	5-16v	90-Watt	Standard
Lionel 1044	U	A	5-16v	90-Watt	Standard
Lionel 1053	U	A	8-17v	60-Watt	Standard
Lionel 1063	U	A	8-17v	60-Watt	Standard
All-Trol	Left Terminal	Right Terminal	0-24v	300-Watt	Electronic
Dallee Hostler	Left Terminal	Right Terminal			Electronic
Lionel LW	A	U	8-18v	75-Watt	Standard
Lionel KW	A or B	U	6-20v	190-Watt	Standard
Lionel MW	Outside Track Terminal	Inside Track Terminal	5-16v	50V.A.	Electronic
Lionel RS-1	Red Terminal	Black Terminal	0-18v	50V.A.	Electronic
Lionel RW	U	A	9-19v	110-Watt	Standard
Lionel SW	U	A	Unknown	130-Watt	Standard
Lionel TW	U	A	8-18v	175-Watt	Standard
Lionel ZW	A,B,C or D	U	8-20v	275-Watt	Standard
Lionel Post-War Celebration Series ZW	A,B,C or D	Common	0-20v	135/190 Watt	Electronic

Additional Features Accessible with the DCS Remote Control System: (additional equipment required)

While conventional mode operation of a Proto-Sound 2.0 engine yields wonderfully realistic sound and several train control features, command mode operation allows the user to access a world of command functions never before accessible to O Gauge railroaders. With the addition of the DCS Remote Control System (including a DCS remote handheld and Track Interface Unit) users gain many advanced features, including:

- DCS Proto-Speed Control - Establishes desired locomotive speed in scale miles per hour increments via a thumbwheel control and allows operator to set maximum speed and acceleration/deceleration rates
- ProtoSmoke[®] Variable Output Control - Controls how much smoke each engine outputs and matches smoke to locomotive speed
- Locomotive Lighting Control - Controls locomotive headlights, marker and interior lights, beacon lights, ditch lights, and MARS lights
- Emergency Stop-Single button push stops all Proto-Sound 2.0 trains but does not turn off the power
- One Touch Global Mute/UnMute-Single button mutes or unmutes all DCS-controlled locomotives' user-defined actions, including sound, lights, and smoke
- Proto-Dispatch Operation-Public Address-like feature allows users to speak through locomotive speaker during operation
- Proto-Cast-Allows users to play audio recordings through locomotive speaker during operation
- Proto-Doppler Sound Effects Set Up-Users can configure locomotive for Doppler Operation, including setting distance points for Doppler start, repeat, and stop modes
- Independent Volume Control of Engine Sounds, Bell, Horn & Whistle for each Locomotive
- Control up to 50 different DCS-Equipped Locomotives at one time with multiple TIUs
- Proto-Effects[™] Set Up-User can select individual Proto-Effects[™] operations to be active or inactive, including cab chatter, train wreck sounds, coupler sounds, and wheel clickety-clack sounds
- Direction Control Set Up-User can set initial individual start-up direction (start in forward or reverse) for double-heading operations
- Locomotive Consist Set-up-User can determine locomotive values for consist make-ups, allowing multiple locomotives belonging to a consist to operate together
- Query Locomotive Information-User can query locomotive programming to learn locomotive address and engine data information, including scale miles traveled
- User Can Query, Set and Operate Track and Accessory Interface Units for Programming Digital Command Operations for up to 250 Accessories and 250 Individual Switches
- User Can Script, Record and Playback Train Routes

Operating instructions for all DCS Command features will accompany the DCS remote control equipment.

Service & Warranty Information

How to Get Service Under the Terms of the Limited One-Year Warranty

When you suspect an item is defective, please check the operator's manual for standard operation and trouble-shooting techniques that may correct the problem. Additional information may be found on the M.T.H. Website. Should you still require service, follow the instructions below to obtain warranty service.

First, e-mail, write, call or fax a M.T.H. Authorized Service Center (ASC) in your area to obtain Repair Authorization. You can find the list of ASCs on the M.T.H. Website, www.mth-railking.com. Authorized Service Centers are required to make warranty repairs on items sold *only* from that store; all other repairs may-- or may not be done at the store's own discretion. If you did not purchase the item directly from the ASC, you will need to select a National Authorized Service Center (NASC). These centers are compensated by M.T.H. to perform warranty service for any customer whose repair qualifies for warranty service. A list of NASC retailers can be located on the M.T.H. Website or by calling 1-888-640-3700. Should the warranty no longer apply, you may choose either an ASC or NASC retailer to service your M.T.H. Product. A reasonable service fee will be charged.

CAUTION: Make sure the product is packed in its original factory packaging including its foam and plastic wrapping material to prevent damage to the merchandise. There is no need to return the entire set if only one of the components is in need of repair *unless otherwise instructed by the Service Center. The shipment must be prepaid and we recommend that it be insured. A cover letter including your name, address, daytime phone number, e-mail address (if available), Return Authorization number (if required by the service center, a copy of your sales receipt and a full description of the problem must be included to facilitate the repairs. Please include the description regardless of whether you discussed the problem with a service technician when contacting the Service Center for your Return Authorization.*

Please make sure you have followed the instructions carefully before returning any merchandise for service. Authorized M.T.H. Service Centers are independently owned and operated and are not agents or representatives of M.T.H. Electric Trains. M.T.H. assumes no responsibility, financial or otherwise, for material left in their possession, or work done, by privately owned M.T.H. Authorized Service Centers.

If you need assistance at any time email MTH Service at service@mth-railking.com, or call 410 381-2580.

Limited One-Year Warranty

All M.T.H. products purchased from an Authorized M.T.H. Train Merchant are covered by this warranty.

See our website at www.mth-railking.com or call 1-888-640-3700 to identify an Authorized M.T.H. Train Merchant near you.

M.T.H. products are warranted for one year from the date of purchase against defects in material or workmanship, excluding wear items such as light bulbs, pick-up rollers, batteries, smoke unit wicks, and traction tires. We will repair or replace (at our option) the defective part without charge for the parts or labor, if the item is returned to an M.T.H. Authorized Service Center (ASC) or M.T.H. National Authorized Service Center (NASC) within one year of the original date of purchase. This warranty does not cover damages caused by improper care, handling, or use. Transportation costs incurred by the customer are not covered under this warranty.

Items sent for repair must be accompanied by a return authorization number, a description of the problem, and a **copy of the original sales receipt from an Authorized M.T.H. Train Merchant**, which gives the date of purchase. If you are sending this product to an Authorized Service Center, contact that Center for their return authorization.

This warranty gives you specific legal rights, and you may have other rights that vary from state to state. Specific questions regarding the warranty may be forwarded to M.T.H. directly.

Service Department
M.T.H. Electric Trains
7020 Columbia Gateway Drive
Columbia MD 21046-1532



AUTHORIZED SERVICE CENTER

7020 Columbia Gateway Dr. - Columbia, MD 21046

Information: 410-381-2580 Fax: 410-381-6122

www.mth-railking.com

PARTICIPATING N.A.S.C. RETAILER LIST

CANADA

TOY TRAIN WORKSHOP
CUMBERLAND
613-833-8331

THE TRAIN ROOM
FERGUS
519-787-3280

CALIFORNIA

TIN PLATE JUNCTION
OAKLAND
510-444-4780

COLORADO

MIZELL TRAINS INC
WESTMINSTER
303-429-4811

CONNECTICUT

NEW ENGLAND HOBBY
SUPPLY
MANCHESTER
860-646-0610

FLORIDA

ROUNDHOUSE SOUTH
PORT ORANGE
386-304-7002

MARYLAND

PLAZA HOBBY
CUMBERLAND
301-729-6424

ENGINE HOUSE HOBBIES
GAITHERSBURG
301-590-0816

CATOCTIN MOUNTAIN TRAINS
& HOBBIES
THURMONT
301-694-8331

MICHIGAN

MICHIGAN MODEL TRAIN
CENTER
PINCKNEY
734-426-1651

BRASSEUR ELECTRIC TRAINS
INC.
SAGINAW
989-793-4753

NEW HAMPSHIRE

TREASURED TOYS
SALEM
603-898-7224

NEW YORK

AURORA RAILS & HOBBIES
EAST AURORA
716-652-5718

OHIO

DAVIS ELECTRONICS
MILFORD
513-831-6425

RICK'S TOY TRAINS
TOLEDO
419-478-0171

PENNSYLVANIA

BUSSINGER TRAINS
AMBLER
215-628-2366

FAIRCHANCE PHARMACY
FAIRCHANCE
724-564-7817

TOBY TYLER'S HOBBY
CENTER
PITTSBURGH
412-653-5030

VIRGINIA

LOCUST GROVE TRAINS
LOCUST GROVE
540-854-8955

DAVIS HOBBY SUPPLIES
PORTSMOUTH
757-397-1983

T S G HOBBIES
WARRENTON
540-347-9212

WISCONSIN

SOMMERFELD'S TRAINS
BUTLER
262-783-7797

GRAMPA'S TRAIN SHOP
RICE LAKE
715-234-2996



AUTHORIZED SERVICE CENTER

7020 Columbia Gateway Dr. - Columbia, MD 21046

Information: 410-381-2580 Fax: 410-381-6122

www.mth-railking.com

PARTICIPATING A.S.C. RETAILER LIST

CANADA

TOY TRAIN WORKSHOP
CUMBERLAND
613-833-8331

THE TRAIN ROOM
ERGUS
519-787-3280

CREDIT VALLEY RAILWAY
COMPANY
STRETSVILLE
905-826-1306

B H TRAINS
TERREBONNE
450-492-0317

ALABAMA
SOUTHERLAND STATION
HUNTSVILLE
256-533-4720

LIL' BOBBY'S HOBBIES
MONTGOMERY
334-277-1715

ARIZONA
ARIZONA TRAIN DEPOT
MESA
480-833-9486

CALIFORNIA
CENTRAL COAST TRAINS
ATASCADERO
805-466-1391

TRAIN SHACK
BURBANK
818-842-3330

ROUNDHOUSE
NORTH HOLLYWOOD
818-769-0403

DOLLHOUSES TRAINS & MORE
NOVATO
415-883-0388

TIN PLATE JUNCTION
OAKLAND
510-444-4780

RON'S WORLD
SAN CLEMENTE
949-361-5596

TRUCKS & TRAINS HOBBIES
SANTA ROSA
707-537-6586

COLORADO
CUSTOM RAILWAY SUPPLY
COLORADO SPRINGS
719-634-4616

CABOOSE HOBBIES
DENVER
303-777-6766

MIZELL TRAINS
WESTMINSTER
303-429-4811

CONNECTICUT
NEW ENGLAND HOBBY
SUPPLY
MANCHESTER
860-646-0610

FLORIDA
HOLLYWOOD STATION
HOLLYWOOD
954-921-2700

DEPOT HOBBY SHOP
LAKE WORTH
561-585-1982

READY TO ROLL
MIAMI
305-688-8868

FRANK'S TRAINS & HOBBIES
OLDSMAR
813-855-1041

COLONIAL PHOTO & HOBBY
ORLANDO
407-841-1485

WARRICK CUSTOM HOBBIES
PLANTATION
954-370-0708

ROUNDHOUSE SOUTH
PORT ORANGE
386-304-7002

ILLINOIS
BIKE & CHOO CHOO
CONNECTION
SCHAUMBURG
847-882-7728

INDIANA
Y. O. R. K. TRAINS
MUNSTER
219-838-9999

SAMUELSON'S TRAIN SHOP
VALPARAISO
219-462-2708

IOWA
CABOOSE STOP HOBBIES
CEDAR FALLS
800-642-7012

KENTUCKY
L&N TRAINS & THINGS
LOUISVILLE
502-897-9005

LOUISIANA
AMERICA'S TRAIN YARD
BATON ROUGE
225-926-5592

MAINE

WHEELS, WINGS & THINGS
LUDLOW
207-532-6277

MARYLAND

PLAZA HOBBY
CUMBERLAND
301-729-6424

HOBBYTOWN U S A
FREDERICK
301-694-7395

ENGINE HOUSE HOBBIES
GAITHERSBURG
301-590-0816

J & B TRAINS
HAGERSTOWN
240-420-4930

THE TRAIN ROOM
HAGERSTOWN
301-745-6681

PURKEY'S TOY TRAINS
SYKESVILLE
410-549-6061

CATOCTIN MOUNTAIN TRAINS
& HOBBIES
THURMONT
301-694-8331

MASSACHUSETTS

NORTHEAST TRAINS
PEABODY
978-532-1615

EAST BAY HOBBIES
SEEKONK
508-336-5573

MICHIGAN

MICHIGAN MODEL TRAIN
CENTER
PINCKNEY
734-426-1651

BRASSEUR ELECTRIC TRAINS
INC.
SAGINAW
989-793-4753

MISSOURI

SWITCH STAND
SAINT LOUIS
314-781-4458

MARK TWAIN HOBBY CENTER
ST. LOUIS
636-946-2816

NEVADA

RENO RAILS
RENO
775-337-6669

NEW HAMPSHIRE

RAILROAD SPECIALTIES
NASHUA
603-801-0801

TREASURED TOYS

SALEM
603-898-7224

NEW JERSEY

COUNTRY AND STUFF
ANDOVER
973-786-7086

COLUMBUS TRAIN STATION
COLUMBUS
609-518-1800

ATLANTIC RAILS
HAMMONTON
609-567-8490

GRAND CENTRAL STATION
KEARNY
201-955-6200

J & B TRAINS, INC.
MAPLE SHADE
856-414-0092

HOBBY SHOP
MATAWAN
732-583-0505

HOBBYMASTERS, INC
RED BANK
732-842-6020

RIDGEFIELD HOBBY
RIDGEFIELD
201-943-2636

TOM'S MODEL TRAINS
SCOTCH PLAINS
908-322-6122

TRAINS & THINGS
TRENTON
609-883-8790

COAST TRAINS AND
COLLECTIBLES
WALL
732-556-9005

HOLLY BEACH TRAIN DEPOT
WILDWOOD
609-522-2379

NEW YORK

AURORA RAILS & HOBBIES
EAST AURORA
716-652-5718

NASSAU HOBBY CENTER, INC.
FREEPORT
516-378-9594

HOBBY WORLD
MONTICELLO
845-794-8770

CITY DEPOT, INC.
NEW HAMPTON
845-374-3010

SCAG'S ELECTRIC TRAINS
STATEN ISLAND
718-727-7373

AMERICANA STORE
TIVOLI
845-757-4246

KROSS HARDWARE
WEST BABYLON
631-669-3069

NORTH CAROLINA

THE ROUNDHOUSE &
BACKSHOP
CARY
919-465-0810

TRAINS LTD.
CHARLOTTE
704-566-9070

DRY BRIDGE STATION
MOUNT AIRY
336-786-9811

THE FREIGHT YARD
SMITHFIELD
919-934-6229

TRAIN LOFT
WINSTON-SALEM
336-760-9817

OHIO

GLEN'S TRAIN SHOP
AKRON
330-253-6527

E & S TRAINS
AKRON
330-745-0785

T & K HOBBY SHOP
BRIDGEPORT
740-633-6607

PARMA HOBBY
CLEVELAND
216-741-6440

SANDY'S HOBBY'S &
COLLECTIBLES
ELYRIA
440-365-9999

HUDSON TOY, TRAIN &
HOBBY
HUDSON
330-653-2997

CLEARVIEW TRAIN & HOBBY
LORAIN
440-277-4488

DIXIE UNION STATION
MASON
513-459-0460

DAVIS ELECTRONICS
MILFORD
513-831-6425

TRAINS-N- THINGS
NORTH CANTON
330-499-1666

GRAND PACIFIC JUNCTION
OLMSTEAD FALLS
440-235-4777

RICK'S TOY TRAINS
TOLEDO
419-478-0171

ERIE RAILWAY DEPOT
TROY
937-440-9972

PENNSYLVANIA

AMERICAN HOBBY CENTER
ALIQUIPPA
724-378-3930

ALLENTOWN TOY TRAIN
SERVICE
ALLENTOWN
610-821-0740

ON THE RIGHT TRACK
ALTOONA
814-942-4345

BUSSINGER TRAINS
AMBLER
215-628-2366

JIM'S HOBBY SERVICE
BERWICK
570-759-2695

YE OLDE TRAIN & CHRISTMAS
SHOPPE
BOYERTOWN
610-369-0755

NICHOLAS SMITH
BROOMALL
610-353-8585

CHARLEROI SWEEPER
CENTER
CHARLEROI
724-483-3397

CRANBERRY HOBBY DEPOT
CRANBERRY TWP
724-776-3640

FAIRCHANCE PHARMACY
FAIRCHANCE
724-564-7817

TOY TRAIN STATION
FEASTERVILLE TREV
215-322-5182

THE CABOOSE
LEHIGHTON
570-386-5352

HOBBY CITY
MC MURRAY
724-942-2557

THE STATION
NEW CUMBERLAND
717-774-7096

FRYER'S STORE
ORWIGSBURG
570-366-2258

CHESTNUT TOYBOX
PHILADELPHIA
215-545-0455

TOBY TYLER'S HOBBY
CENTER
PITTSBURGH
412-653-5030

WILCOX GREENHOUSE &
NURSERY
TITUSVILLE
814-827-3823

EASTERN DEPOT
TROY
570-297-1975

J&J RAILROAD CROSSING
TURTLE CREEK
412-824-6009

TRAINS R FUN
FRAZER
610-644-4585

SOUTH CAROLINA

EMERALD TRAIN & HOBBY
GREENWOOD
864-223-2247

TENNESSEE

MODEL RAILROAD & HOBBY
SHOP
MEMPHIS
901-384-6500

TEXAS

HOBBY TIME
AMARILLO
806.352.9660

RIVERVIEW TRAINS
ANGLETON
979-848-3895

GREAT TRAINS & HOBBIES
LONGVIEW
903-757-2720

VIRGINIA

LEESBURG HOBBIES
LEESBURG
703-779-8600

LOCUST GROVE TRAINS
LOCUST GROVE
540-854-8955

TRAIN DEPOT
MANASSAS
703-335-2216

CHESTERFIELD HOBBIES
MIDLOTHIAN
804-379-9091

DAVIS HOBBY SUPPLIES
PORTSMOUTH
757-397-1983

TOY TRAIN CENTER
RICHMOND
804-288-4475

NUTBUSH EXPRESS
VICTORIA
434-696-1902

T S G HOBBIES
WARRENTON
540-347-9212

NORGE STATION
WILLIAMSBURG
757-564-7623

WASHINGTON

EASTSIDE TRAINS
KIRKLAND
425-828-4098

WEST VIRGINIA

PATRICK'S TRAINS
WHEELING
304-232-0714

WISCONSIN

WOODCRAFTERS SHOP
BURLINGTON
262-763-5239

SOMMERFELD'S TRAINS
BUTLER
262-783-7797

HOBBY OUTLET
FOND DU LAC
920-924-3770

G B T V & TRAINS
GREEN BAY
920-496-9697

GRAMPA'S TRAIN SHOP
RICE LAKE
715-234-2996

THE TRAIN STORE
WAUKESHA
262-650-6675