Garden Railroading News Sept/Oct 2021
A Free Digital Magazine Produced by Volunteer Garden Railroaders

Happy Birthday, *Garden Railroading News*!

The first issue of *GR News* was published a year ago. Twelve months on we have:

- 129 clubs *with over 8,000 members* supporting the magazine around the world
- Thousands of readers from clubs and individual garden railroaders
- 7 published issues (including this one)

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How are we doing?

Reader Survey Details on Page 4.

In This Issue

Regularly Scheduled

Specials

Mixed Consist Club Interchange

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Go to **Page 40** for An Online Magazine Explainer
How to Download a PDF & Customize Page View to Your Preference.
Magnifying GR News and the "Hamburger" Icon.

Seen On the Tracks

Photo by Mick Spilsbury

Above: *Supplies arrive at the BS Ventures Distillery, recently built by J.S. Woodcrafts construction to supply adult beverages for Baron Spilsbury's Black Canyon Drinking & Mining Co. Railroad.* • Marin County, California

Below: *The Frostbite Falls Hotel at Southpaw Bridge on the basement division of Warner Swarner's Bearspaw Southern hides a house support post.* • Portland, Oregon

Photo by Warner Swarner

The Garden Railroading News:GRNews.org Mission

Growing the garden railroading community

We are building connections between
garden railroaders and garden railroad clubs wherever they are located,
the vendors who supply everything from our trains & power supplies, bridges & structures to
miniature plants & more, and the people who love visiting, viewing & photographing
garden railroads and who share the magic of garden railroads,
often with their children and grandchildren.

Since we're garden railroaders ourselves, we've tried to craft Garden Railroading News to the interests of people like us. We would like to know how you think we are doing and have set up a short, six question reader survey to find out.

GR News READERSHIP FEEDBACK

We Want To Hear From You!

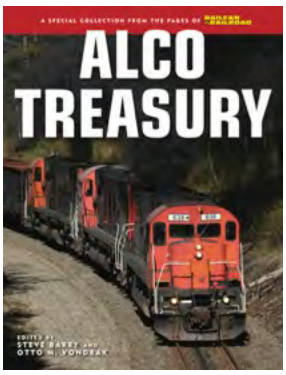
You can complete the survey by copying and pasting this link:

https://www.surveymonkey.com/r/HDVBDV7

or go to **www.GRNews.org** and click the link there.

White River Productions Offers Prototype Histories for Fans of Baldwin Steam and Alco Diesel Locos

Alco Treasury edited by Steve Barry and Otto M. Vondrak collects stories about the American Locomotive Company (Alco) diesels and the railroads that used them. Alco articles selected from the pages of Railfan & Railroad Magazine cover development, railroad use and detailed dives into these well loved locomotives, with an introduction by noted author and photographer Greg McDonnell. This 96-page, softcover book is available for $24.95 plus shipping.



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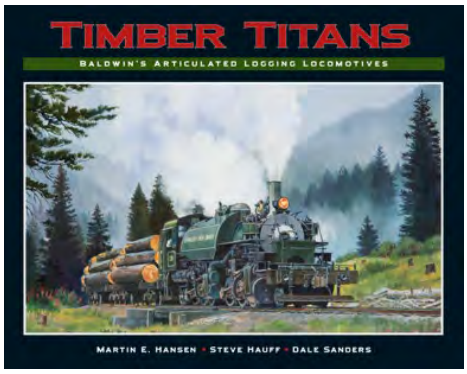
A second printing of ***Timber Titans: Baldwin's Articulated Logging Locomotives*** by Martin E. Hansen, Steve Hauff and Dale Sanders is coming after the original December, 2020 printing sold out. Featuring exhaustively researched text, 455 black and white and color photographs, ***Timber Titans: Baldwin's Articulated Logging Locomotives*** tells the complete story of these fascinating logging locomotives in this 256-page hardcover volume. $79.95 plus shipping.



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37244 DRG II BR-50 Steam Loco
37245 DRG II BR-50 Steam Loco, DCC/Sound & Smoke

37927 DRG II 2-Axle Third Class Coach

37400 OBB VI Rh1116 Taurus Electric Railjet w/Sound

37840 DR IV Luggage Van Pwg88

37748 Wascosa VI Tarp Car Shimmns-tu718

37666 OBB VI First Class Coach, Railjet (retouched HO image)

37665 OBB VI Second Class Coach, Railjet (retouched HO image)

37576 DR III BR V180 Diesel, 4-Axle, with Sound

37657 DR III Reko Second Class Diner, MITROPA

Coming Soon in *GR News*: Experiences with a Battery Conversion Part Two

"A Railtruck"

by Pete Hendel from the Denver Garden Railway Society *Newsletter*

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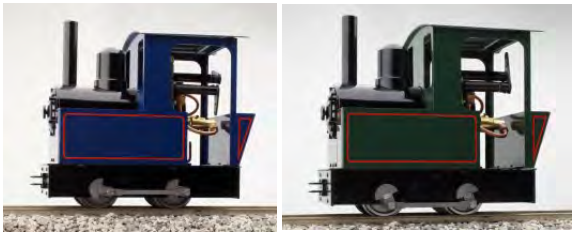

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The Denver Garden Railway Society Club Layout on Public Display at the Colorado Railroad Museum

By Alan Olson
Photos by DGRS Members and from your GR News editor's 2015 NGRC visit

1994 was an eventful year for the Denver Garden Railway Society. The club hosted the 10th National Garden Railway Convention, and the Colorado Railroad Museum (CRRM) agreed to allow the DGRS to build a garden railroad as a permanent display. The museum allocated an unused, swampy plot of land covered with tall weeds, brush and poison ivy that would eventually be transformed into a premier public garden railway.

A couple of tall cottonwood trees provided shade for the club members constructing a ten-foot diameter demonstration loop and preparing the site for additional loops, water features, plants and trees.

Survey & planning crew at work.

The Demonstration Loop in operation.

Photo by Alan Olson

Long trains can run on multiple mainlines on a summer day.

Twenty-seven years later that modest loop of track has grown to 7 track-powered loops and 3 loops dedicated to live steam operation. The DGRS layout now encompasses an area 97′x70′ encircled by a metal fence and concrete sidewalk.

Above: *In 1994, work began.* Below: *Today families crowd the fence.*

Photo by Alan Olson

Photo by Alan Olson

Thomas in two scales runs during a Day with Thomas.

Photo by Michelle Miller

A Halloween train takes the track during Halloween Haunt.

The initial agreement with the museum required the club to run garden trains during museum-sponsored special events like the Easter Bunny Train, Wild West Days, Dinosaur Express, Day Out with Thomas and, more recently, the Polar Express.

Over the years our relationship with the museum has grown into a partnership. A substantial number of DGRS members work to support the museum's special events, work on track and train crews, volunteer in the museum library, work on restoration projects, and help with day-to-day museum maintenance. DGRS members serve on various museum committees including the board of directors. The DGRS has given substantial financial donations to help fund various museum projects and show our overall support for the CRRM.

This public layout is on display in all weather conditions.

Paul Hammond, Executive Director of the Colorado Railroad Museum, says "The Denver Garden Railway Society outdoor layout occupies a place of honor at the Colorado Railroad Museum in Golden, Colorado. Whenever the layout is operating younger kids and adults alike are right there to enjoy the action. Both organizations benefit from the shared-site arrangement, and their ongoing partnership remains strong."

This symbiotic arrangement has many benefits. For example, during next year's convention the museum will admit all 2022 NGRC attendees for free — and they are hosting the convention BBQ including free guided tours and train rides. Of course, the DGRS garden railway will be operating during the convention.

The track plan is designed to accommodate many operators on multiple separate loops. This allows more club members without a layout of their own to run their trains. There were initially four track-powered loops and a separate elevated railway with two loops for live-steam operation. Later we were given a bit more real estate and added two much larger outer loops plus a switching yard and an area for a small rose

Photo by Carla Brand Breitner

Early on, landscaping was minimal.

Photo by Carla Brand Breitner

At the 2015 National Garden Railway Convention, layout detail was in place.

Photo by Carla Brand Breitner

Elevated track allows easy adjustments to the controls on live steam locomotives.

garden railway. Recently, DCC was added to one of the larger loops and soon another loop will offer DCC operation.

In 2012, we were able to rebuild the live-steam structure and add another loop with dual gauge (32mm Gauge 0 and 45mm Gauge 1) track. The steam track is all code-250 flex with various sizes of turnouts. There are two formal steam-up bays, a short passing siding and a long storage spur.

We used LGB flex track on the track-powered portions with #1600 LGB turnouts but, when the wider-radius #1800-series switches became available, we installed them instead. To keep the flex track aligned on the straight sections of the railway, we placed 2″x2″ cedar battens below the track. Wood screws every foot, through the ties, secure the track.

We built a full-size (though scaled down) version of the famous Alpine Tunnel Station to house our radio-control systems and rolling-stock collection, plus various maintenance tools. We added heat to keep us warm in the winter months, and there is a coffee maker and refrigerator—almost all of the comforts of home.

All of the buildings on the railway were scratchbuilt or kitbashed by DGRS members, while all of the bridges, both wood and metal, were scratchbuilt. There are small houses and mansions, water and coaling towers, stations, an oil-well derrick, stores, a gas station, and many more structures that give our railway a reason to exist.

We could not have a better home to show what garden railroading is all about. The public can see a huge variety of trains, many

Alpine Tunnel Station provides train storage and a crew breakroom.

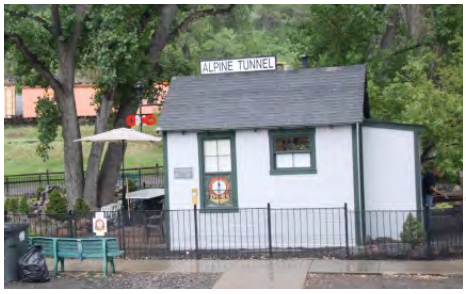


Photo by Carla Brand Breitner

Photo by Carla Brand Breitner

DGRS member-built buildings provide stops and destinations for the railway.

Photo by Carla Brand Breitner

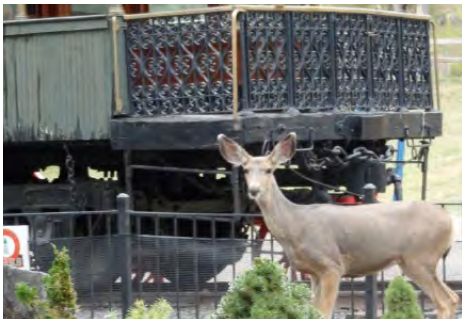
This water mill is a fine example of the modeling on the layout.

interesting structures, and all of the different plantings. There is a constant flow of tours visiting the Colorado Railroad Museum from local schools, groups from retirement communities, and international groups—plus civic gatherings in the pavilion. Our members interact with visitors and answer their many questions, which include, “Are those real trees?” “What do you do with the track in the winter?” and, of course, “How much does it cost to build a garden railroad?” The garden railway has also been very effective in recruiting new members to the club.

The future is already here for us, as far as the aging of our membership is concerned, and it got here surprisingly fast. Soon we will have to determine how to make the garden railway more accessible to our senior members and also make ongoing maintenance easier. Several areas have been modified for easier loading of trains by people with limited mobility, and we will likely need to install unobtrusive handrails in some areas.

Our dedicated membership keeps the garden railway running well and looking great. Our museum garden railway operators include those in their teens (or younger) to those in their 80’s, with a wide variety of garden railway interests and experience. It appears that the DGRS garden railway at the CRRM will be around for a long time to come. Please come and visit us during the convention.

On A Day With Thomas, the full scale Thomas passing by draws attention away from the DGRS G Scale layout.



Occasional full scale critters visit the layout.

Light snow adds to the charm of a train passing.

Photo by Michelle Miller

Heavy snow requires that the DGRS crew bring out the snow plow equipped engines.

About the Colorado Railroad Museum
17155 W. 44th Ave., Golden, CO 80403

The Colorado Railroad Museum was founded in 1959 by Robert W. Richardson and Cornelius W. Hauck. It has evolved into one of the premier railroad museums in the world. Today it houses more than 100 narrow and standard-gauge steam and diesel locomotives, passenger and freight cars, and cabooses on its 15-acre site.

To learn more, visit: coloradorailroadmuseum.org

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The Denver Garden Railway Society Railroad • Colorado Railroad Museum

A school group from Aspen is shown enjoying the garden railway.

Photo by Michelle Miller

A long train crosses over the water on one of several large scratchbuilt metal bridges.

Photo by Sam Kunugi

Visitors always like to see one of the Geese in action.

Photo by Sam Kunugi

A Shay pulls a a string of ore cars headed to the mill.

Photo by Carla Brand Breitner

A pair of beautiful mansions can be seen among the Dwarf Alberta trees.

Photo by Carla Brand Breitner

A row of small store front buildings are set along a small street in a busy town.

Several trees changing with the seasons make for a beautiful backdrop for the garden railway.

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Club Corner

Curated by Bill Derville, Past President
Rose City Garden Railway Society • Portland, Oregon

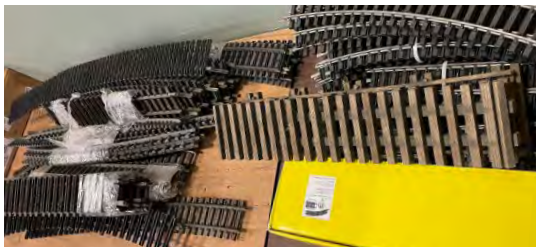
In the last issue, I discussed how clubs can hold work parties to help their members plan, build, repair, or even dismantle layouts. This is not only a great way to help members with their layouts, but also a great social and teaching activity. Members that are new to the hobby can learn by working side by side with experienced members to build roadbed and lay track.

But the biggest inhibitor to building a new garden railroad is really the cost involved. Building an elevated railroad can be expensive, but for most people the biggest cost is buying track. Amazon sells 12 one-foot sections of Bachmann track for $98 as of the writing of this column. One piece of new 39-degree LGB track (12 sections will complete a 4 foot circle) sells for over $14. You can find used track on the internet, as many people are selling off their railroads for much less, but shipping costs are still a big issue.

To help members build a new layout or expand an existing one, the Rose City Garden Railway Society started buying and stocking used track and selling it to members. When we hear of estate sales or people wishing to dispose of a layout, our track committee offers to pay about $2 per foot for used track, depending upon the condition. While this may seem like taking advantage of people, track is difficult to sell unless you know someone who wants to buy it. Garage sales usually don't attract people interested in our hobby. Selling track on eBay is difficult and involves packing complications and huge shipping costs.

Once purchased with club funds, the club then stores this track at a member's house or business warehouse. The total cost of track in inventory is usually less than $500. While this can be a big expense for a club, it can provide a big reward. A club does have to solve the storage problem, however.

We typically buy only code 332 brass track. We avoid one-foot sections unless we are buying the complete inventory of someone getting out of the hobby. If the track is primarily one-foot sections, the club passes on this purchase. We not only buy track, but also buy ties, turnouts, rail joiners and switch control mechanisms that are usually attached to the turnout.



We typically sell track to members for about $2.50 per foot, which is a great deal for anyone. The club also owns a rail bender which can be borrowed to change the radius or bend straight rail. The price on turnouts depends on what we pay for them, but they are marked up a small amount. Sometimes to dispose of old inventory, we will sell at the same price as we purchased it.

Track is available to club members who have been a member in good standing for at least a year. We don't want people to join our club just to buy track and then leave. Potential purchasers need to explain why they want to buy the track. Sometimes several members want to buy items, and preference is always given to a member who wants to start a new layout over members wishing to expand or upgrade.

Track sales are not a money-making venture for the club. (Making a small amount helps fund new purchases.) This is a venture to help club members build or expand their layouts. Making track affordable is a huge help in getting new layouts built, and one more reason why those interested in building a G-Scale railroad should join your club. Buying track also does a great service to those with track to sell, but who don't know any buyers. It takes a little work to buy, store, and sell track, but the rewards are more layouts and members engaged in the hobby who maintain their club membership.

Share your ideas to strengthen our garden railroad clubs with me by e-mail at:
bill@derville4.com
and your experience may be in a future column. I look forward to hearing from you.
— Bill

DUKE'S CORNER…….

A BIT OF CHANGE CAN IMPROVE THE LOOKS...

I recently picked up a generator flat car, used of course but in new condition, shown above.
One thing I noticed is the way the generators are chained down; in reality they would be chained on the frames. For the record, I'm NOT a rivet counter!! However I do still like things to be a little closer to the norm especially if it doesn't cost much.
Using a bit of my own bulk chain, as I saved the original chains for another project rather than cut them shorter. I chained down the generator by the frame base instead.
Secondly they needed something more….
For some reason USAT has stickers on some and none on others, maybe a different lot or something??

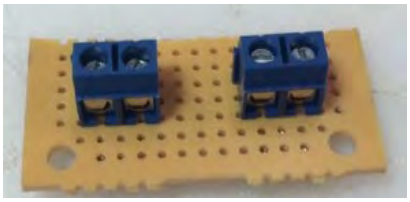
I used a printing program and "borrowed" some logos and printed them out on mailing labels to a size I liked. As long as I'm only using these for my own layout and not selling them, I'm probably gonna stay out of jail or be sued. I covered them with clear shipping tape before I cut them out. If one gets wrecked down the road, I do have spares.

Now ready to be delivered, these are a bit better looking than the way I got them. The car has also been modified with my locking couplers and metal wheels and lubed up for the season.
Remember to do this just for the fun of it!! I don't stress every little detail and neither should anyone else. I enjoy the hobby and it helps me to relax.
Thanks Duke!!!

Experiences with a Battery Conversion, *by Pete Hendel*
Part One *"A Doozie"*

A couple of years ago, the Hartland Locomotive Works "Doozie" rail bus caught my eye as an addition to my plans for an RGS themed railroad.

After purchasing the Doozie, I looked into converting it to DCC operation, since my indoor and garden railway is DCC powered. Since my other engines had QSI decoders, I checked and found that the QSI decoders did not have a "Goose" sound. I had to find other solutions. Looking over the specifications for various decoders and sound modules, the Soundtraxx Tsunami TSU1000 had a 1 amp decoder for the sound, but since the Doozie drew around 1.3 amps under stall conditions, I had to find a power decoder to drive the motor and lights. An NCE D13SRJ was chosen since it was small, inexpensive and could handle the power requirements.



After obtaining the Tsunami, the NCE D13SRJ and a 3" speaker, I started to take the Doozie apart. Electrical pickup was from the front trucks and the power unit, so that made pickup from the track easy. I had to separate the wiring so that the motor leads could be connected to the NCE decoder and the track pickup wires connected to the input of both of the decoders.

Since there were 2 decoders, I had to be able to separate them for programming, so I built up a small circuit board from a Radio Shack hobby board with miniature screw terminals so I could easily separate the 2 decoder connections. Each decoder used the same loco address so sound and power would synchronized. To separate them during programming, I could simply unscrew the wires from the decoder to the power pickups.

I removed the plastic freight boxes that housed the weights in the baggage compartment and carefully drilled holes in the base so the speaker would work correctly. For best sound quality, the sliding doors to the baggage compartment had to be closed.

The headlight was modified to use a small 5mm warm white LED. The LED was from Evan Designs, and included a full wave rectifier and a current limiting resistor, so that I could connect the LED to any power source without regard to polarity or voltage. They will work directly on the DCC track power.

After bench testing and programming, everything worked fine. I could control the speed, momentum, horn, bell, radiator fans, dynamic brakes (on a goose?) and coupler sounds. Everything worked as planned. I added a light in the passenger compartment using one of the LED assemblies from Evan Designs and rear marker lights, connected to the pickup power. That way the passengers can read their newspapers in the evening.

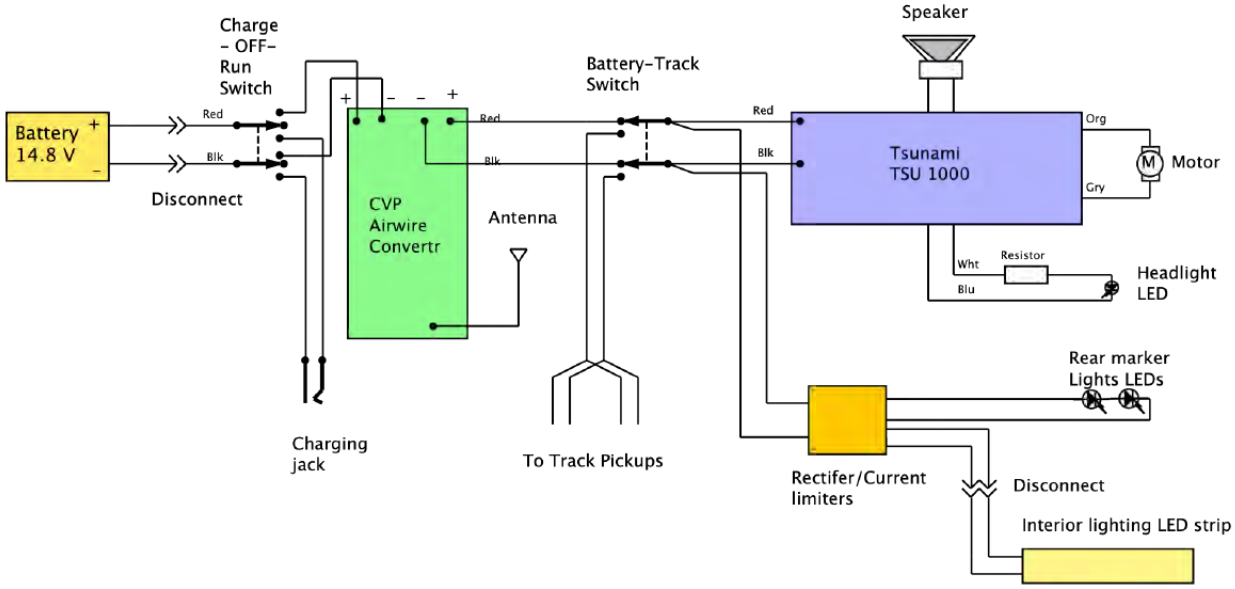
Over the first 2 years of operation, I made some enhancements. I connected the headlight to the Tsunami headlight output, so it would turn on/off with commands and direction. The front pickups were carbon brushes on the axles and they were not very reliable, as I had a lot of stalls on the track and turnouts. They also burned up if there was a short between the front and rear pickups during a derailment. I replaced these with Jay-Bee G scale wheels with electrical pickups from Caboose Hobbies. These worked a lot better and have lasted a long time. Shorts were solved by fusible links on the connection board.

I also talked to the Soundtraxx people who told me that the 1 amp rating was somewhat conservative. Since the Doozie only draws 0.750 amp running, and DCC usually starts with a ramp up speed, I tried using the Tsunami alone. It worked fine, even pulling the Doozie trailer coach up my 4% grades.

continued on next page

Eventually after operating a couple of years, I got tired of cleaning the track before I wanted to run a train. Every time it would rain, I had to clean it. If it didn't rain, the brass would still oxidize and birds loved the track for target practice. Thus, the conversion of all my locos to battery operation started. (It's not finished yet.)

For the Doozie, I had to find a system that was compatible with other locos that I converted. Since I was using the QSI Titan decoders with the QSI GWire receiver on all the locos, I had to find a receiver that worked with the NCE GWire Procab transmitter. In the April 2014 issue of *Garden Railways*, Kevin Strong wrote a review of the CVP Airwire "Convertr" which he used for a conversion of his Goose. Also, later Kevin recommended Tam Valley Depot's DSR1 receiver, but that would not work with my NCE GWire controller. Thus, being constrained with what I had, I decided to try the "Convertr" approach. Next steps were to select a battery (Cordless Renovations 14.8V, 3000maH Lithium), switch and jack for charging circuits, a switch for selecting battery or track power, and new interior lights.



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-Vernon & Elly Guess

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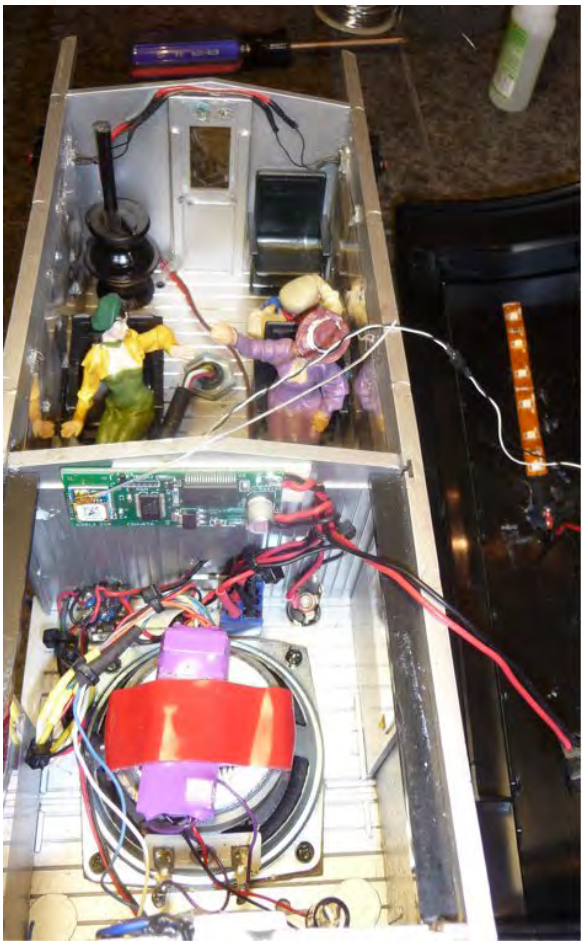

The photo right shows the speaker with the Tsunami (purple) taped to it to act as a heat sink. The "Convertr" is the horizontal board with the antenna. The switches and charging jacks are connected to the wire harness. No attempt was made to make the wiring look professional, just practical, in case I had to change something.

The biggest problem was the rear marker lights and the interior lights. Previously, I used a single LED for the interior light, but it gave uneven lighting and the passengers complained. I found a source of warm white LED strips and cut off a 4" strip and glued it to the top of the roof. I now had even lighting, but since it worked on 12VDC only, I had to devise a circuit for the interior lights and also for the too bright rear marker lights. Using a small full wave rectifier, some current limiting diodes and resistors, I utilized the terminal board used earlier.

The photo at left shows the terminal board with a pair of wires going to the rear marker light and the black & white going to the interior lights.

After connecting everything and testing inside, I took it for a drive on the outside track. Everything worked, lights, horn, bell, et cetera; but sometimes it didn't. Pressing the appropriate button on the GWire would sometimes work and sometimes not. Sometimes I would blow the horn, but not be able to turn it off until I turned the headlight off and on. Very strange and not consistent. I knew that there were some compatibility issues between the CVP Airwire and the NEC/QSI GWire Cabs, but I didn't think that it would result in this type of behavior. So I had to bite the bullet and buy an Airwire T5000 wireless throttle. Now everything works great with no problems.

I think the conversion was successful as I now can take the Doozie out anytime, even in the rain or snow, and let it run for hours without lugging power supplies out or cleaning the track (except for the big stuff). It will run for 3 or 4 hours before the battery protection shuts off. (It is protected from a full discharge.) When I clean the track, I can run it using the DCC track power and still control it with the Airwire throttle. I'm happy and it was a fun project.

My next project is to do the same for the Bachmann Rail Truck.

Pete Hendel

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Photos by Gary Tebo

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An Introduction to Live Steam Locomotives

By Pete Thornton

I am not sure why it came to be called "live" steam – was there ever any "dead" steam? Anyway, we call these locomotive power systems "live steam", to differentiate them from the electrically-powered "steam engine" locomotives more common on Garden Railroads.

Live steam locomotives are very different from electrics. They get hot; very hot, and we use the expression 'joining the burnt fingers brigade' to signify you found out how hot! They are heavy, especially when filled with water. They require almost constant attention, and often a lot of fiddling to make them work. All part of the charm.

And speaking of charm, one of the attractions is steam – real steam, and the appropriate chuff noises to go with it. Here's an Accucraft N&W J #611 popping the safety valve with a long coal drag somewhere in the hills of Maryland.

In this article I am not going to explain exactly how a steam engine works. Wikipedia and other reference sources have admirable descriptions of the elements of a real steam engine.

continued on next page

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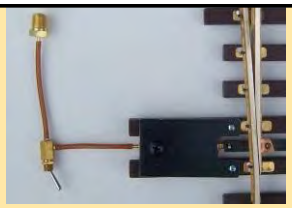

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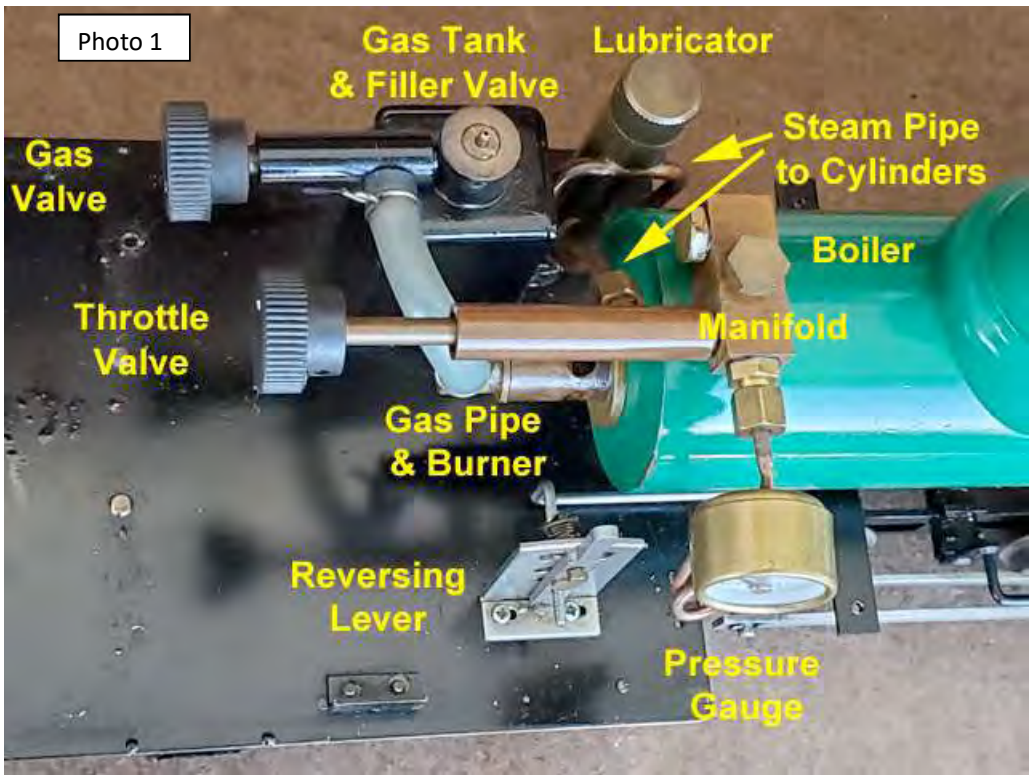
The Basics

You may be aware that in 1829 Robert Stephenson won the competition to supply locomotives to the Liverpool and Manchester Railway with his new design, "Rocket". What you may not realize is that the new features of this design – multi-flue boiler, tilted cylinders driving the wheels directly, etc., – are still the essence of a modern steam engine; even the Big Boy has the same basic design. Our little steamers follow the same path. A boiler with one or more flues (tubes) through it to maximize the heating surface, a firebox or burner tube applies the heat, the steam exhaust pulls the heat through the flue, and the cylinders turn the wheels.

I just happen to have a small locomotive (Accucraft Forney) which has a cab that lifts off completely. (Most locomotives have a lifting roof to provide access to the cab controls.) Here's the controls in the cab, at the back of the boiler.



The heating process starts with tank of butane gas under pressure (labelled 'butane only' – more on that later,) with a valve that feeds butane gas through a plastic pipe to the burner which has a tiny jet inside a burner 'poker'. On top of the boiler is a manifold that takes steam out and feeds the pressure gauge which tells you there is steam, and also feeds the throttle valve. Steam released by the throttle valve passes by the lubricator, and into the cylinders through the valve gear that allows reversing.

The lubricator is interesting, as it provides 'steam oil' (thick gooey stuff,) to the cylinders, which would otherwise be running with no lubricant, just hot steam. It is a very simple device that relies on oil floating on water. The unit in the picture has the steam pipe passing along the side of the lubricator body, and it has a small hole on the inside.

The reversing lever on this locomotive merely moves a valve in the cylinder block at the front of the engine to reverse the order in which steam enters the cylinders, thus reversing the direction of motion. There are a few other types of valve gear on our models that perform a similar function, so I will leave you to research 'Stephensons' or 'Walschaerts' gear.

Most of our steam cylinders are double-acting – steam pushes on one side of the piston in the cylinder, and then steam is admitted to the other side to push back when the piston reaches the end of its stroke. If you are familiar with 2-stroke internal combustion engines, the steam engine has twice as many power strokes!

Running the Locomotive

Persuading your locomotive to move under its own power is a bit more complicated than turning on the track power. (Talking of track power, note that many live steam locomotives do not have insulated wheels, and cannot be mixed with electric track power.)

The instructions usually tell you to oil the bearings (axles, rods, pistons, etc., etc.) before each run, with "turbine" oil (not penetrating oil. Available at the same hardware store.) Synthetic oil, like Mobil 1, is also good and a quart will give you a lifetime supply. I don't oil that often, but then I only run my locos about once a year. You fill the boiler almost to the top. Put steam oil in the lubricator and fuel tank, turn on the gas and light it with a grill lighter or match. Wait 10 minutes, then put it in gear and open the throttle.

There is, of course, a lot more to it than that abbreviated description, e.g., where do you get 'steam oil'? Make sure you are lighting butane in a safe place [outdoors on a non-flammable surface.] What you need is this book: *Starting in STEAM, published by* Steam in the Garden Magazine.

https://www.steamup.com/index.php?option=com_content&view=article&id=207

At this time it is only available as a digital download, unfortunately.

Getting started with a live steamer is quite intimidating – especially after you paid money for one. The other course of action is to find some local fellow who has already done it, like myself. Old-timers (*who are you calling 'old'?*) are usually more than happy to help you get through the first steam outing.

The Complications - Different Fuels

We've now covered the basics, so let's look at some of the different aspects. Butane gas, as mentioned, is one possible fuel. It doesn't evaporate well at low temperatures, so in the winter months many steamers use 'camping gaz" sold for camping stoves, which is a propane/butane mix. This generates higher pressures in the gas tank, so Accucraft adds a warning "Butane Only". Most people ignore it, and it has never been reported that a gas tank ruptured.

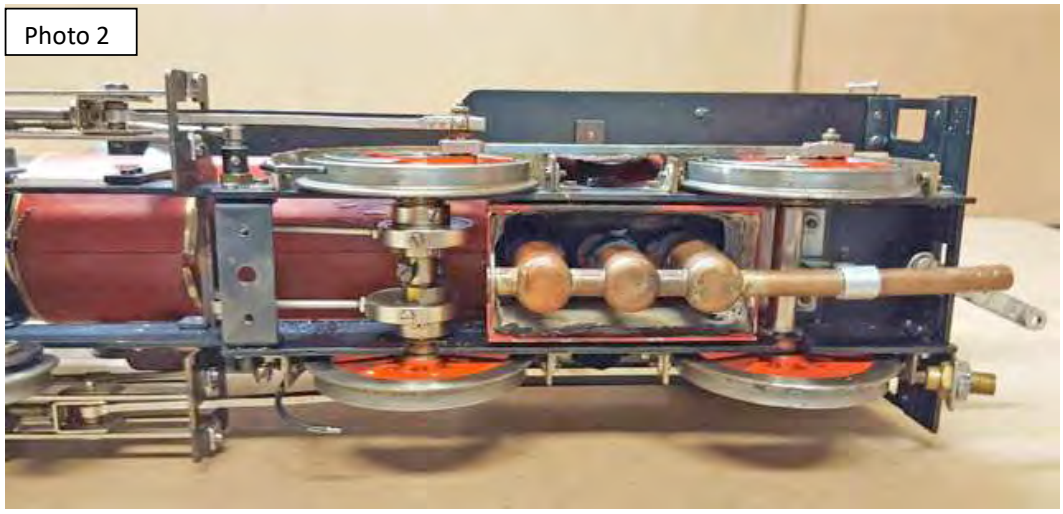
Talking of ruptures, don't worry about your boiler. Quite apart from anything else, there is a "safety valve" on top of the boiler set to 40 psi or maybe as high as 60 psi, depending on the model, which releases the steam when that pressure is reached. (Do not put your head over the locomotive when it is in steam.) Some years ago, there was a scientific attempt to verify that our boilers were safe, and it was discovered they will take about 10 times more pressure than we use. Some jurisdictions (not in the USA) require a Boiler Certificate (usually provided by the manufacturer when the loco is bought,) stating the pressure that this boiler was tested at – usually about twice the running pressure. (File the Certificate away to pass on to the next owner.)

Butane burners can be noisy, and some small locos have a high-pitched whistle that is tricky to get rid of. An older technology which is still favored is alcohol – specifically "denatured alcohol" (sold as a window cleaner, also known in the UK as methylated spirits.) Alcohol burns in/on a wick like a lamp, and our locos usually have 2, 3 or 4 wicks under the boiler. In photo 2, of the underside of an alcohol-fired Aster "Reno" 4-4-0, you can see the 3 big tubes sticking up into the 'firebox' with wicks on top. The tube leading out of the back connects with a flexible tube to an alcohol tank in the tender.

continued on next page

Alcohol burners need an airflow, which is achieved with a blower – a small steam pipe blowing steam up the stack. To get the steam started, you have to use a fan; usually a battery powered metal fan that rests on the stack, until there is enough steam to use the blower. Alcohol burners are very quiet but the burner smoke is pungent and will make your eyes water. Burning alcohol is invisible so if it spills (derailment?) and is set on fire, you need to dowse it quickly with water.

Photo 2



Finally, for true realism, a few operators love to burn real coal. It smells great and works well, as you would expect. However, it does take a special firebox on the locomotive (expensive) that can be cleaned after the run, with a different shape from the alcohol or butane burner types. As on a real locomotive, you need a special type of coal, and it does take a while to get the fire burning.

The Complications – Water Pumps

A basic locomotive will run for 15 to 40 minutes, depending on the size of the boiler and the fuel tank. You can stop the locomotive, turn off the fuel, refill the gas tank, and relight the burner/wicks. However, the boiler will probably be short of water by then. Any locomotive bigger than the 'entry level' will have a water glass – a glass tube on the end of the boiler that shows the level of the water. It can be seen in photo 3, which is the cab view of a much more sophisticated model – similar to that N&W #611 in the heading photo,

continued on next page

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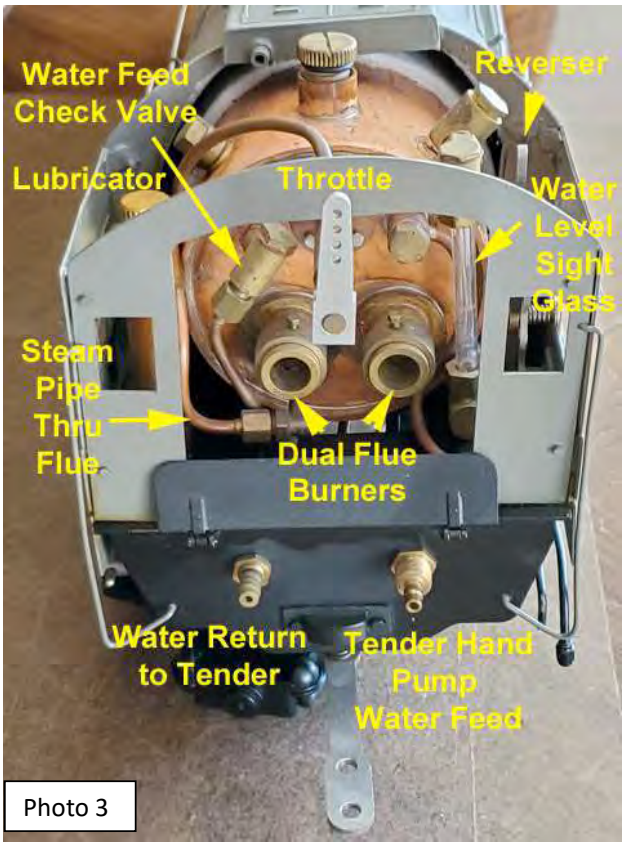

Photo 3

This locomotive has 2 pumps for adding water to the boiler while it is under steam pressure. There is a hand pump in the tender which feeds through the lower right pipe to the locomotive (see photo 4,) and an axle pump that pumps a small amount of water every time the driving wheels go around. A "bypass" valve can be adjusted to let all the pumped water go to the boiler, or to direct some of it back to the tender tank. The "check" or "clack" valve lets the water into the boiler but keeps the pressure from getting out.

The other difference you will notice is that this boiler has 2 flues and 2 burners. It is a very large locomotive and so the manufacturer provided enough heat to get it going properly. The gas tank in the tender (photo 4) holds enough fuel for a very long run. The steam pipe that feeds the cylinders runs through one of flues to gain a little 'superheating'.

Water can be added to a smaller locomotive using a hand pump; usually a squirt bottle. A "Goodall" valve on the boiler allows the water to be squirted in but prevents steam from getting out, just like the check valve in photo 3.

The main consideration in keeping your locomotive running for a longer period is the lubricator and steam oil. Once the oil is used you need to stop, let everything cool down, and refill with steam oil.

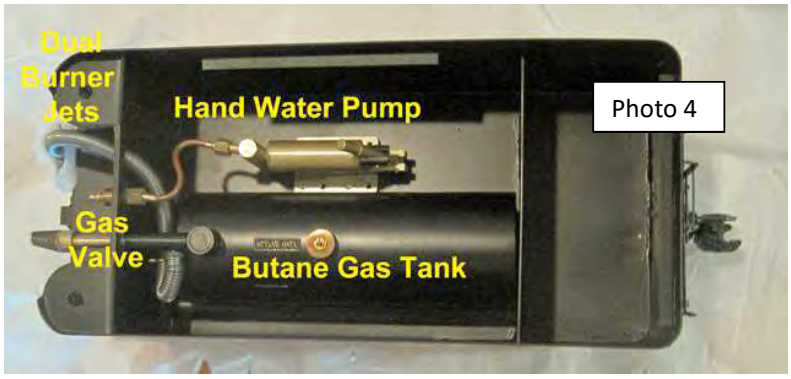

Photo 4

continued on next page

STEAM IN THE GARDEN

Starting in STEAM is *the* definitive handbook for those just starting in Small Scale Live Steam. Available in digital format, you can take this with you on your laptop or tablet. Assembled from articles in *Steam in the Garden*, this 148-page book not only introduces new hobbyists to the fun and excitement of small-scale live steam, but will also provide experienced steamers with tips and tricks from seasoned hands. Buy your digital copy of *Starting in STEAM* today.
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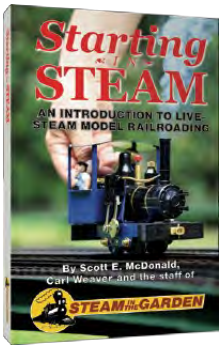


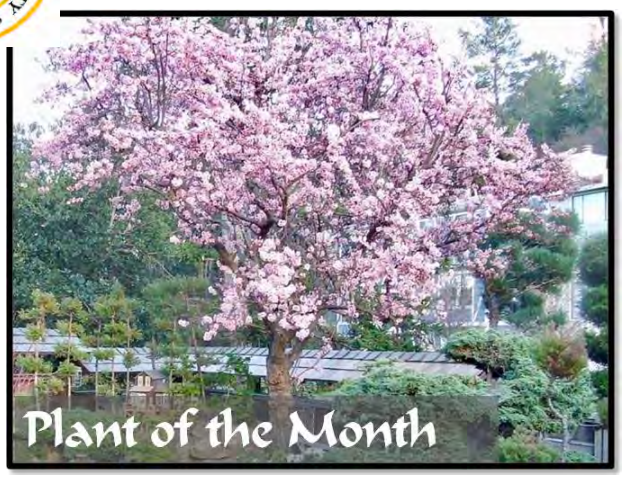
The Complications – Scale Fidelity

Well, scale in the boiler is a minor issue, but as you should be using distilled water it won't happen. The scale referred to here is the size of the model – the ratio of model size to prototype. Model live steam engines have been around for over a hundred years. The early ones were more concerned with operation rather than fidelity to the prototype, but in the early 1900s there was an attempt made to define some scales for model trains based on the size of the track. "Gauge-1" is the same 45mm/1.75" gauge track that is often used for garden railroads, but as many live steam engines were models of mainline prototypes, they are built to the correct scale of 1:32. This is still commonly used – the N&W J in the heading photo is 1:32 scale, gauge-1. Unfortunately, Aristocraft decided to use a scale of 1:29, so the live steamers look a little smaller than most electric garden railroad models. Just before that, LGB decided its electric models of European metre-gauge trains are 1:22.5 scale, and there are several Euro manufacturers that build to this scale. When the US manufacturers started making models of our narrow-gauge railroads, they switched to 1:20.3 scale, which is correct for models of 3' trains on 45mm track. A further complication is that live steam in the garden became popular in the UK long before it caught on elsewhere, and UK narrow gauge railways tend to be 2' gauge (unlike in the USA, where 3' is common.) They started using O-gauge track (32mm or 1.25") to represent 2' gauge, and picked a scale of 16mm:ft, or 1:19, which is close to our 1:20. This scale/gauge works very well in small, confined spaces typical of UK gardens.

In other words, the sizes of models are all over the place. While most look good pulling the nearest equivalent size trains, you can make your railroad more prototypical if you pay attention to the scale when buying your live steamer.

. . To be Continued – Next month, I'll cover adding Radio Control (RC) to your live steamer.

- Pete ***(And much more!)***



-- By Richard Murray

BOTANICAL NAME: *Citrus chinotto orange, Citrus myrtifolia*
COMMON NAME: Myrtle leaf orange
USDA ZONE: 9 (down to 20 degrees F)
SUNSET ZONE: 8, 9, 12-24

Description

Chinotto oranges, botanically classified as *Citrus myrtifolia*, are an incredibly sour orange variety that belongs to the citrus family. Also known as the Myrtle leaf orange because of its resemblance to the myrtle tree, there are four varieties of Chinotto oranges, including the dwarf variety which I may have. Whereas most chinotto orange trees can grow up to about 9 feet, my 15 year old tree is just 18 inches. They are about the only citrus to have thornless branches. The internodes of the branches are so short that the leaves are crowded, and, therefore, the growth habit of the tree is dense and compact. The leaves are very small, dark green, and usually pointed. The chinotto fruit is a small round citrus fruit, about the size of a ping pong ball. The fruits remain on the tree for most of the year providing bright color and making the trees highly ornamental.

Reportedly, the tree will sometimes produce fruit the year it is planted, but certainly one to two years after planting. Untypically, mine has never even flowered, let alone fruited. The yield can be about 20 fruit. The plant is self fertile and is not bothered by insect pests. Like all citrus, it likes plenty of sun. It likes coarse, acidic, well drained soil.

History

It is assumed that the myrtle-leaf orange originated as a mutation from the sour orange. The differences are sufficiently great, however, to justify a separate species. The plant was introduced to Italy in the 16th century, and then was spread to other parts of the Mediterranean. As the chinotto name implies, it was presumably introduced from China. Its commercial production is mostly limited to one province of Italy. Chinotto is one of the citrus fruits not well known outside of Italy.

Uses

Chinotto oranges are best suited for flavoring and are not typically consumed raw due to their sour, bitter taste. The fruit is used in marmalade, jams, and syrups because of their high pectin content, and the essential oils are used to flavor cocktails. The fruit is delicious when candied whole and consumed as a dessert. Chinotto oranges are well known as a flavoring agent for Campari, an Italian herbal liqueur.

The juice of the Chinotto fruit is also used to produce the popular Italian drink, "Chinotto," a dark brown carbonated drink. The drink was invented in the 1930's. Various brands claim to have been the first, notably San Pellegrino. Its appearance is similar to that of cola but it is not as sweet as cola, having a bittersweet taste. Chinotto was the answer, a patriotic alternative, perhaps, to Coca Cola. https://www.thegrandwinetour.com/favorite-italian-wines/chinotto-italys-national-soda/

The article link above discusses the chinotto orange and the soda, Brio Chinotto, with nods to its distinctive advertising from the 1950's, featuring oversized bottles on vehicle roofs and a young Sophia Loren in bikini on a billboard for "The Soft Drink of Italy."

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Shop Foreman

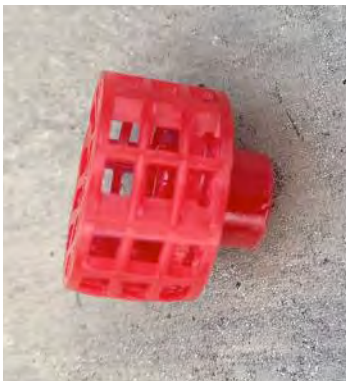
By Ted Yarbrough

[Ted Yarbrough says this important railroad component is readily available at a big box store near you. Think he's crazy? Think again. .....Editor]

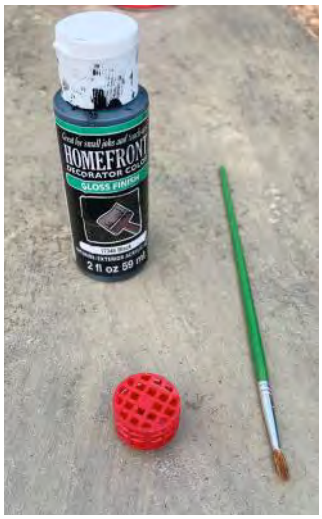
I have found a way to replicate the spark arrestor used on most Colorado Narrow Gauge Railroads and a few other lines. You simply need a hummingbird feeder.

You take the bee guard off by just pulling it straight out. You will get 5 spark arrestors from each feeder.

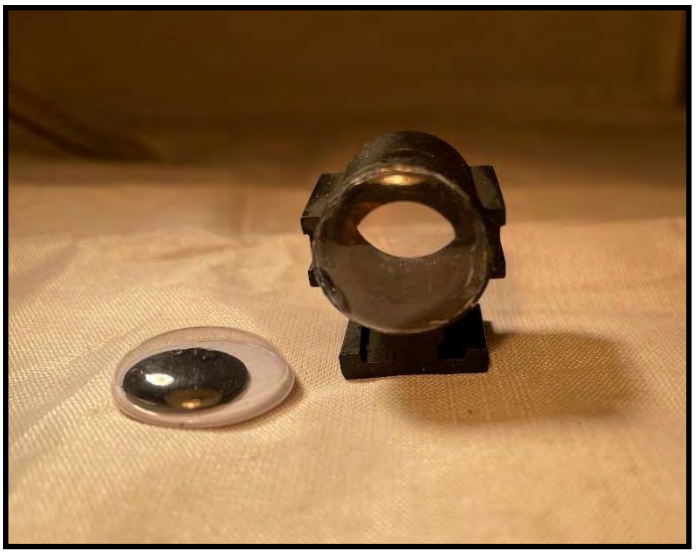
You may have to clean out some of the moldings of thin plastic. This is easily done with a hobby knife. The plastic stem will fit perfectly in Bachmann Big Haulers and Annie's. You may have to file or trim to fit other locomotives.



You will need to paint the bee guard (probably black or silver or graphite). You can brush or spray. I usually dip the spark arrestor in a small amount of paint to coat the inside. Once painted and dried, you are ready to install on your favorite locomotive.



A Modeling Idea from Dave Smith



I needed a headlight lens for a large scale locomotive. I found that Googley Eyes come in many different sizes at Hobby Lobby. Using a sharp #11 blade laid flat on a work surface, I was able to cleanly cut off the white backing and was left with a concave clear lens. .

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MORE TRACKSIDE DETAILS: A *Garden Railroading News* Article

In our last issue, we featured the amazing trackside details on Todd Brody's RR in Southern California. Now we share trackside details from farther afield. Some are simple, others more complex; all add character and interest to their railroads. We are delighted to share the artistry and creativity on display at these railroads.

We have to start with one more detail from Todd Brody's RR. Cowboys lead their charges across a creek.

Photo by Michael Hilliar

Grant Alexander's RR in New Zealand sports this scratch-built lumber yard. *(Photo: Michael Hilliar)*

Mark & Michelle Edwards on the Central CA Coast have got their cattle business well corralled!

Photo by Jim Rowson

Jim Rowson created a backwoods still and captured this colorful image. (No explosions to date!)

Photo by Jim Rowson

Jim Rowson also created and shot this dynamite store: It's not too close to the backwoods still, we assume.

A great example of the plethora of fine detail on Jack & Pauline Verducci's line.

Images were taken by Mick Spilsbury unless otherwise noted. Mick thanks garden railroaders up and down California and in Tennessee for letting him visit so many great railroads and for allowing Garden Railroading News to share these wonderful trackside vignettes.

Vehicles of all types parked in Larry Webb's layout in TN.

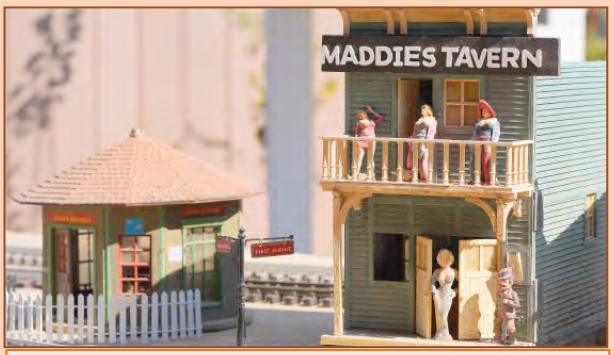
Perhaps the most realistic 'Old West' scene:
On Geoff Clinton's CA Central Coast RR.

Mark & Sheila Goodman have created a realistic rock supply company setting.

The customer service hut at the rock supply company seems utterly in character too.

'Thinker's Retreat is an apt name for this inn nestled in the woods on Don Watters' Bay Area RR.

A scale replica of a California Mission on the railroad of Walt & Julie Wajda.



Not unusual to see this type of building on garden railroads! This one on the Goodman line.

Another example of creative detailing on the Goodman's RR.

The band plays on at the author's Black Canyon Drinking Mining & Railroad Company line.

A simple but prototypical scene on the Edwards' line.

Photo by Russ Miller

One of many scratch-built structures on Richard Murray's SF Bay Area line. *(Photo : Russ Miller)*

Photo by Ken Brody

Dart & Dot Rinefort are renowned for their highly detailed structures in San Rafael CA. *(Photo: Ken Brody)*

A bewildered horsewoman and sad pumpkin bring this scene on the Edward's railroad to life.

The Burrill Mine in the SF Bay Area has been well and truly MOTHBALLED!

These images are just the tip of the creative trackside scenes seen on garden railroads in North America and beyond.

We will continue to celebrate the creative and ingenious artistry seen on garden railroads by posting images on the GR News Facebook Group, and on GR News' Facebook and Instagram pages. Look for them, especially on Tuesdays which we are designating as 'TRACKSIDE TUESDAY' for our social media postings.

If you would like to see YOUR artistry among our social media posts, send images to marketing@grnews.org. We will also likely share another collection or two in Garden Railroading News next year.

We do reserve the right to crop images and to upgrade contrast to make them work well on social media.

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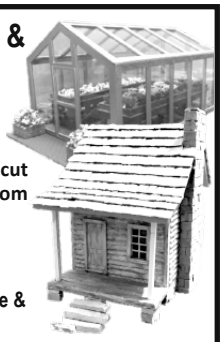

1:24 & 1:20

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Building a Control Panel in a Box

By Warner Swarner

Though my railroad is entirely “dead rail” (no power in the track), I prefer train crews to manually operate track switches as their trains progress along their route. Electric control is still required to operate switch machines in four difficult to reach areas. There are pneumatic switch control systems, but I am “old school” and still like to use LGB switch machines to throw the switch direction. LGB switch machines are simple, durable, reliable, and easy to service. Four screws hold on the cover, two wires go to a single electromagnetic coil and with only two moving parts. That’s a machine that even I can service!

DC electricity in one direction flips the coil, reverse the current and the coil snaps back. If you don’t use electricity to the coil you can still move the switch points by hand, and they stay put. A “DPDT” toggle switch allows you to reverse the current direction and the switch position can “show” you which way the switch was recently positioned. It’s best to not leave the current running through the coils so a push-button to energize the pulse through the wires to each machine is the most efficient method to control changing the switch throw.

Depending on space and the desired size for a control panel you will want to select the size and type of electrical switches you will use. The size below the panel will determine the width and spacing of your panel lines.

https://www.amazon.com/

For most panels, a convenient material is 1/8” thick Lucite acrylic plastic sheets. These come in conveniently sized small panels at Lowe’s Hardware or on Amazon. For a track diagram panel spray paint the entire panel gloss white. Get a roll of 1/4” wide masking tape in the paint section at any good hardware store and layout your diagram with the tape. (This is what “masking tape” is used for.)

Spray the whole panel gloss black and when dry remove the tape. This produces an easy custom track diagram panel! Measure the size of your electrical switch throat using an accurate measuring tool such as a digital micrometer. Electrical switches come in odd sizes and you might need to buy a custom-sized bit for this step to drill the right sized holes for DPDT and push buttons of your choice.

With the addition of some lettering or panel plates from Petersen Specialty you can whip out a sharp-looking control panel fairly quickly. (Petersenspecialty.net makes stamps, plastic signs, and engraved plates... and they have experience with garden railroaders.)

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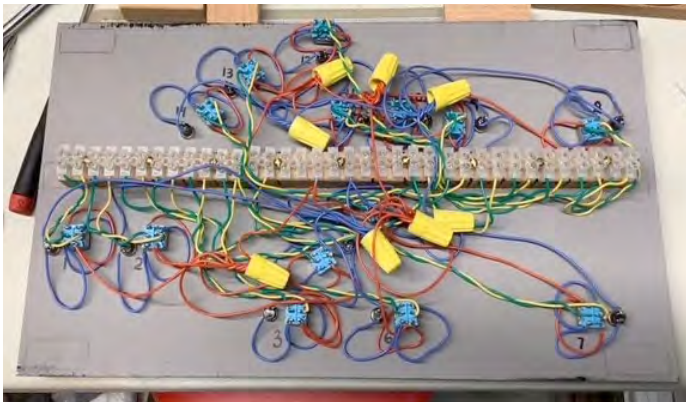


Wiring the backside will be easier with the switches attached to the panel board but require a bit more patience than the front. (I hate soldering wires but it is easier when the components are firmly held in place.)

Whether or not you use this system you might like some of these ideas for outdoor weather-resistant electrical boxes. There is a wide variety of weatherproof boxes to select if you just need tightly sealed enclosures. I was searching for an easy to open, somewhat transparent, relatively inexpensive enclosure. I stumbled upon a Harbor Freight large parts storage case which I use to keep assorted screws and parts handy in my workshop. I don't think it is weather "proof" but for $14 it seemed like a reasonable starting point for a control panel case. I have my panel on a long enough cable so I can

store it under more protective cover during winter months but this case provides enough protection to grab and go for quick action.

The inside dimensions allow for a panel at least 15" x 8-1/2" and almost 4" deep, plus extra space on either side of the handle to permit easy storage for 18volt 1amp power supply units. (By the way, 18-volt power supplies are available on Amazon for about $9 and work great for momentary power to throw LGB switch motors.) Keep the high voltage 110-volt wiring out of the panel for safety. 18 volts will give you a tingle but isn't dangerous.

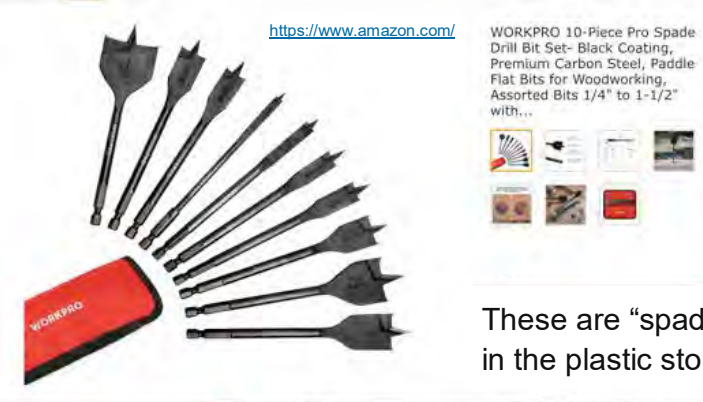
I cut some "standoff" legs about 2" tall which will support the panel away from the bottom of the case and leave clearance for the switches from the case lid.

For the wires to gain access to the case I found that

Continued on next page

wood cutting spade bits of the needed diameter will make very clean round holes through the plastic case side without tearing it up. Zip ties around the group of wires on either side of the wall will hold the wires tightly in place if you estimate your diameter close to the combined bunching of your wires in a cable. I glued a strip of 1”x1” wood down the middle back of the panel where there were no switches to add support and to give a mounting base for barrier strips to connect my switch wires to the cable wires that run to a junction box on the railroad.

This is not as hard as building a ship in a bottle.

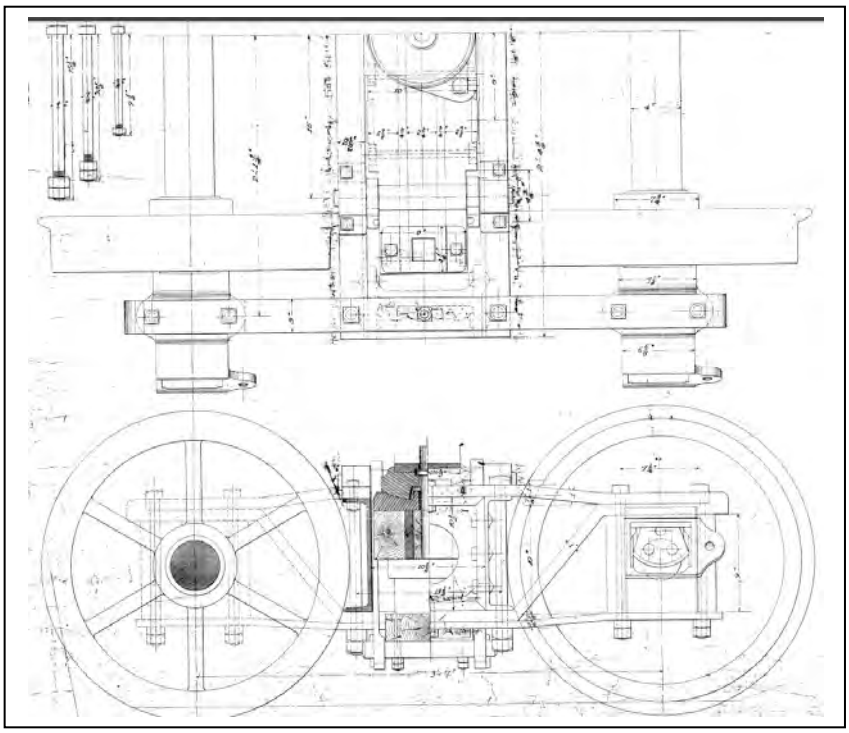


These are “spade bits” which cut a smooth large hole in the plastic storage box for cable insertion.

3D PRINTING A SWING-MOTION TRUCK

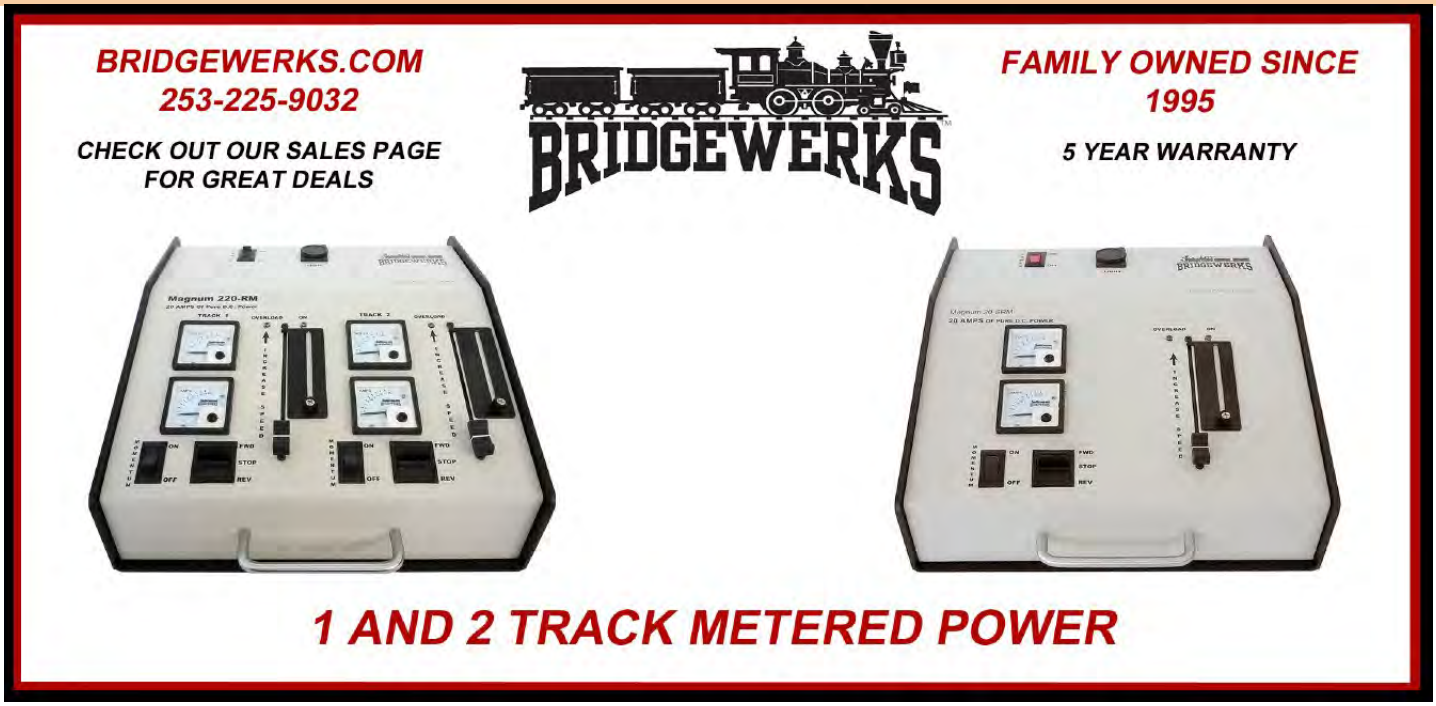
Bill Beck and Vance Bass

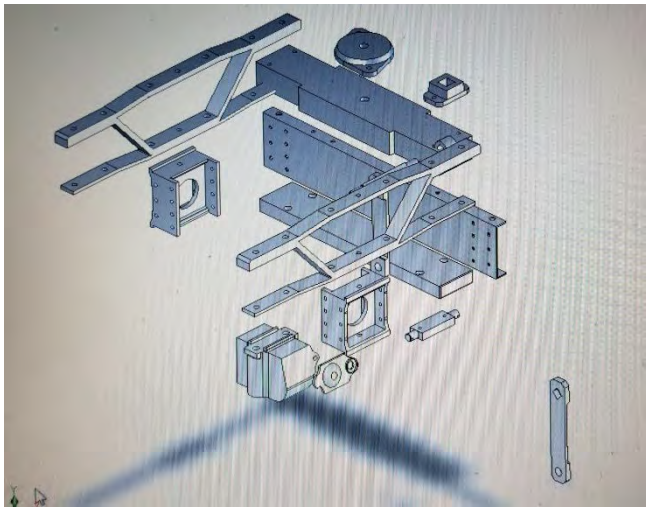
This project kicked off because Vance acquired electronic scans of hundreds of original 1:8 scale rolling stock drawings from the Denver & Rio Grande. Wondering if they would work as a basis for a model, he sent Bill the drawing for a Thielsen swing-motion truck from 1888, as a test.



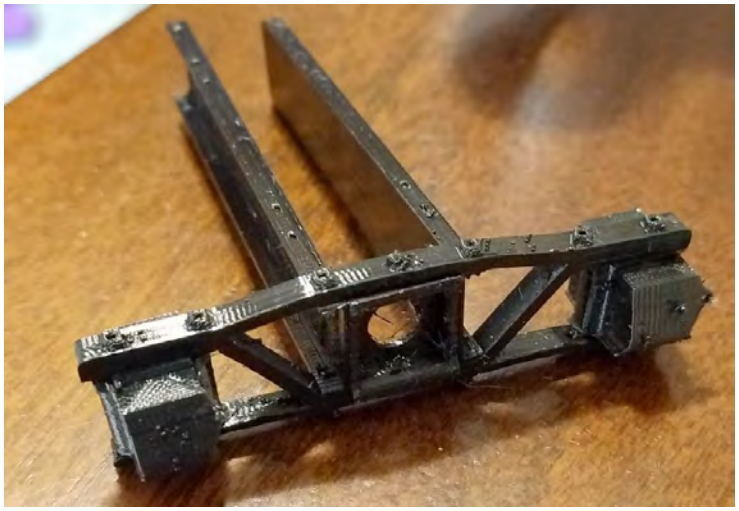
The swing-motion truck is an interesting variation on the archbar truck, with the sideframes rigidly connected by steel channels and the bolster and spring plank suspended between the channels on swing links. This allows the truck to move side to side, without taking the car body with it – perfect for wobbly, poorly maintained tracks. (But Class 1 standard gauge railroads used them, too, because of their smooth ride.)

So Bill studied the drawings and was fascinated by the design. He quickly began to draw 3D parts for one in his CAD program, eventually designing the entire truck in pieces that could be printed on his 3D printer.





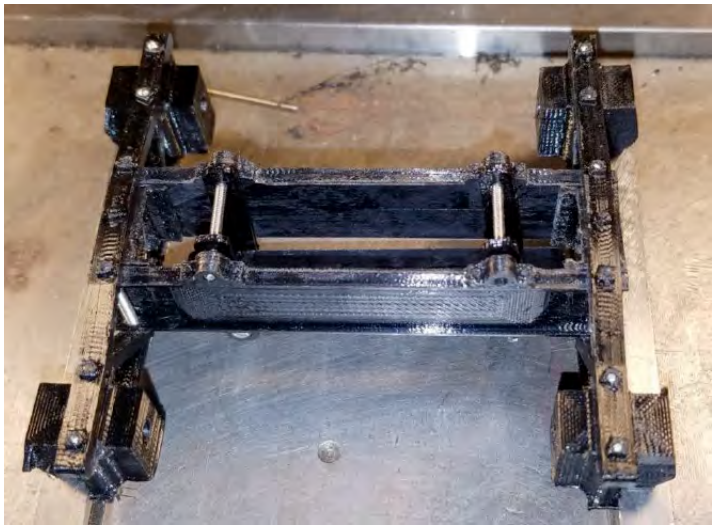
An exploded drawing of the structural parts.



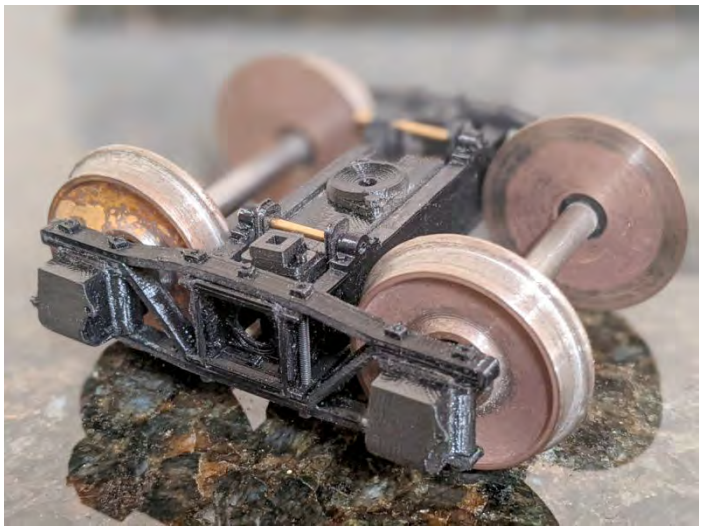
The first test print, showing the side frame and cross beams.

The first test print looked promising, so he continued refining the design until he had parts for a complete truck in 1:20.3. The truck components are printed separately (except for the sideframe bars), then bolted together as on the prototype. After a couple of test prints, Bill decided to use ball bearings in the journals, since bronze for bushings was unavailable. As a result, you can't set the completed truck on a slanted surface or it will roll away on its own.

The swing motion works perfectly on the model. The bolster and spring plank sandwich the four springs to smooth out vertical bumps, and the swing motion smoothes out sideways jolts. It's a brilliant design and the model captures the operation perfectly. This type of truck shows up on various boxcars, stock cars, and other types seen on the D&RG from the 1880s.

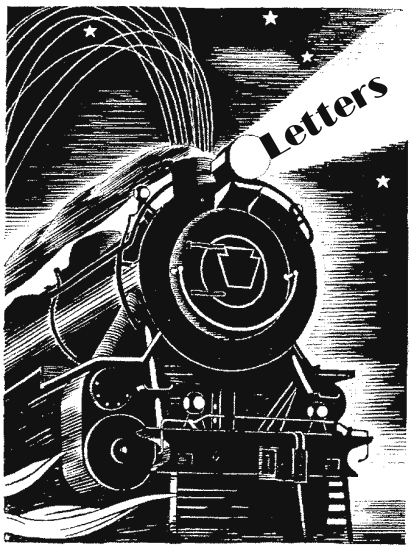


Completed frame with the spring plank suspended from the beams.



The assembled truck, completely functional.

Having conquered that challenge, Bill is on to more new and exciting projects.



STRAIGHT FROM THE IRON HORSE'S MOUTH

Letters to the Editor should be sent as e-mails only to Carla Brand Breitner at:
Editor@GRNews.org

Letters will then be addressed accordingly and/or passed on to the author for further edification. Unless marked otherwise, letters to this publication are assumed to be submitted for print. Please include your name and club affiliation. Please note that we may not be able to print all letters, though we will try to respond to them. Letters may be edited for length and clarity. We are unable to answer requests for information about specific products or systems; these are best addressed to the appropriate manufacturer.

Compliments! Thank You!

I am enjoying reading and looking at the magazine. It is wonderful, unbelievable, took down a lot of notes and the sellers are so complete in their ads. I am so excited! This gets you energized again to go out and work on the tracks. I had no idea it would be so special like it is. Thank You for all the hard work; it is going to enjoyed by so many. Thank You again.

Marilyn and Richard Parker
Rose City Garden Railway Society

Our small, volunteer crew at Garden Railroading News and GRNews.org thank the newsletter editors and authors who contribute their articles to our free digital magazeine! We all share a love for garden railroading. We're glad your enjoying our magazine.

Sometimes the realistic takes second place to the Holiday Spirit. This Pumpkin Patch Express passes through the detailed Iowa downtown of Allan Warrior's childhood.

Photos Welcome for Seen on the Tracks

A G Scale Realistic Scene Photo Gallery

Please send uncompressed photo (with caption information describing the scene and rolling stock, railroad name & proprietors, location, and photographer's credit) to Editor@GRNews.org ; photos may also appear on the ***GR News*** website and social media.

Now we want your feedback!

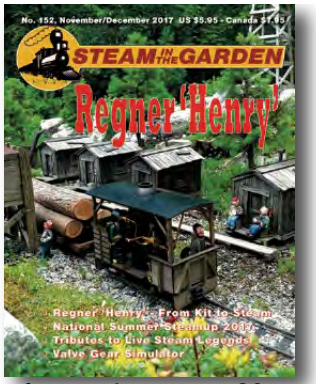
We've set up a short, six question reader survey to find out how we are doing. You can complete the survey by copying and pasting this link:

https://www.surveymonkey.com/r/HDVBDV7

or go to www.GRNews.org and click the link there.

STEAM IN THE GARDEN

We Are All About Real Steam on your Garden Railroad



For over 30 years, *Steam in the Garden Magazine* has covered garden scale *live steam* trains. We provide information that is aimed at live steamers of all skill levels, bringing together the best that we can for the hobby. Available in ***Print*** and ***Digital***. With a digital subscription you can download and take us with you on your laptop or tablet plus access our complete archive of magazines, over 30 years smallscale live steam of knowledge. Visit us online at *www.steamup.com* for more information. Until then — Happy Steaming!

Affiliated Clubs by State & Country as of 10/15/2021

AR	Greater Hot Springs Garden Railway Society
	Northwest Arkansas Garden Railway Society
AR/OK/MO*	Ozark Garden Railroad Society
AZ	Arizona Big Trains Operators
	Gadsden Pacific Div. Toy Train Operating Museum
	Oracle Community Learning Garden Kid's Railroad
	Tucson Garden Railway Society
	VDO Garden Railroad Club
CA	1:32 Scale Group
	Bay Area Garden Railway Society
	Central California Coast Garden Railroad Society
	Del Oro Pacific Large Scale Modular Railroaders
	Diablo Pacific Short Line
	Fairplex Garden Railroad Volunteers
	Gandydancers
	Gold Coast Garden Railway Society
	Mendocino Coast Model RR & Navigation Co.
	Orange County Garden Railway Society
	Redwood Empire Garden Railway Society
	Sacramento Valley Garden Railway Society
	San Diego Garden Railway Society
	San Joaquin Garden Railway Society
	San Leandro Historical Railway Society G&O Rwy
	Santa Clarita Valley Garden Railroad Club
	Santa Fe & Buthead Cove RR Train Group
	Shasta Garden Railway Society
	Southern California Garden Railway Society
	Upland Garden Railroad Society
CO	Denver Garden Railway Society
	Grand Valley Model Railroad Club
	Mile High Garden Railway Society
	Northern Colorado Garden Railroaders
CT	Central Connecticut "G" Gaugers Modular Club
	Central Connecticut "G" Scalers
D.C./MD/VA*	Washington, Virginia & Maryland GRS
DE	First State Model Railroad Club
	Shore Line Garden Railroad
FL	Emerald Coast Garden Railway Club
	Florida Garden Railway Society
	Model RR Division of Florida RR Museum
	Tradewinds & Atlantic Railroad, Inc
GA	Georgia Garden Railway Society
IA	Central Iowa Garden Railway Society
ID	Southern Idaho G-Scale Railroad Society
ID/WA*	Inland Northwest Garden Railroad Society
IL	Chicago Area Garden Railway Society
	LGB Model Railroad Club of Chicago
	Midwest RAILS (Railroaders Active In Large Scale)
IN	Illiana Garden Railway Society
	Indiana Large Scale Railroaders
KS/MO*	MO-KAN Garden Railroaders
KY/OH*	Greater Cincinnati Garden Railway Society
MA	Rusty Rails & Rotten Ties
MD	Mason Dixon Large Scale Railrod Society
MD/DC/VA*	Washington, Virginia & Maryland GRS
ME	Maine Garden Railway Society
MI	Lakeshore Garden Railway Club
MN	Minnesota Garden Railway Society
MO/KS*	MO-KAN Garden Railroaders
MO/AR/OK*	Ozark Garden Railroad Society
NC	Coastal Carolina Garden Railroad Society
	Gibsonville Garden RailRoad Inc.
	North Carolina Garden Railway Society
	Piedmont Garden Railway Society
NE	Rivercity Railroaders
NH	New Hampshire Garden Railway Society
NJ	South Jersey Garden Railway Society
NM	New Mexico Garden Railroaders
NV	Las Vegas Garden Railroad Society
	Northern Nevada Garden Railroad Society
NY	Central New York Large Scale Railway Society
	Finger Lakes Live Steamers
	Genesee G Gauge Railway Society
	Long Island Garden Railway Society, Inc.
	Western New York Garden Railway Society
OH	Buckeye State Garden Railroaders
	Columbus Garden Railway Society
OH/KY*	Greater Cincinnati Garden Railway Society
	Miami Valley Garden Railway Society
	Northern Ohio Garden Railway Society
	Riverside Railroad Crew
OK	Central Oklahoma Garden Railroad Society
OK/AR/MO*	Ozark Garden Railroad Society
	Tulsa Garden Railway Club
OR	Cascade Crossing Module G-Scale Group
	Medford Garden Railroaders
	Northwest "G" Railroad Club
	Rose City Garden Railway Society
	Train Mountain Railroad Museum
PA	Lehigh Valley Garden Railroaders
	North Central Pennsylvania Mountains GRS
	Pennsylvania Garden Rail Society
	Pittsburgh Garden Railway Society
	Southeastern Pennsylvania Garden Railway Society
	Susquehanna Valley Garden Railway Society
TN	Crossville Model Railroad Club
	Mid-South Garden Railway Society
	Nashville Garden Railway Society
TX	Houston Area G Gaugers
	North Texas Garden Railroad Club
	San Antonio Garden Railway Engineer Society
UT	Color Country Model Railroad Club
	Utah Garden Railway Society
VA	Piedmont Railroaders
	Tidewater Big Train Operators
VA/DC/MD*	Washington, Virginia & Maryland GRS
WA/ID*	Inland Northwest Garden Railroad Society
WA	Puget Sound Garden Railway Society
WI	Kenosha Garden Railroad Society
	Wisconsin Garden Railway Society

National US

Big Train Operator Club
LGB of America

* Club/Society includes members from multiple states and is listed under each state.

Canada

Canada	Black Mountain Railway Club
	BC Society of Model Engineers
	Burlington Model Railway
	Central Ontario GR Association
	Golden Horseshoe Live Steamers
	Greater Vancouver GRC
	London GRS
	Northern Alberta Garden Railroaders
	Ontario's West GRS
	Ottawa Valley GRS
	Rocky Mountain Garden Railroaders
	Vancouver Island GR Club

Countries beyond North America

AUS	Garden Railway Club of Australia Inc.
NZ	Auckland Garden Railway Group
	Christchurch Garden Railway Group
	Locos, Lads & Lasses
	Waikato Garden Railway Group
	Wairarapa Garden Railway Group
	Wellington Garden Railway Group
CH	US G-Scale Friends Switzerland
UK	G Scale Society United Kingdom
	Kent Group: G Scale Society

Check www.GRNews.org for an up-to-date Club Listing.

Advertiser Index

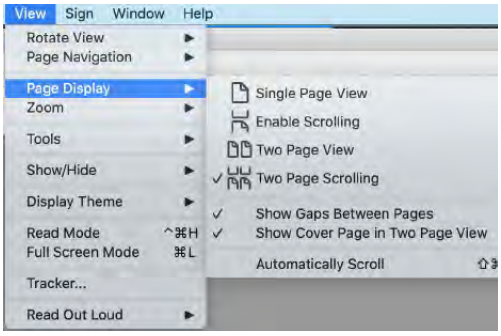
How to Download *GR News*

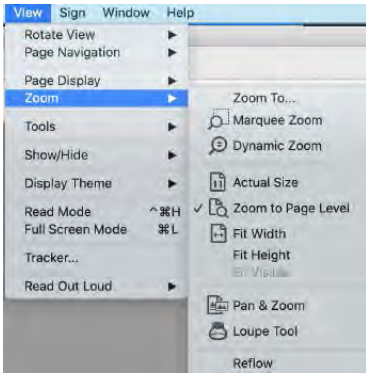
GR News is a PDF document meant to be read in Acrobat Reader. It can be read in many browsers, but is best inside Acrobat Reader where you can control more display options and jump around throughout the magazine. All browsers have a download option, but the icons can vary. Look for an arrow pointing down and try clicking on it; then choose "Save File" and a location on your device. Some icon examples are shown here. Look for the arrow.

How to Change Page Display

When *GR News* is read in Acrobat Reader, the display can be adjusted using choices under the "VIEW" menu. *GR News* is designed for Two Page Display with Cover, so the front page is alone and the rest of the magazine appears as a two-page spread as if it was a print magazine. You control this with the "Page Display" choices under the "VIEW" menu. You can choose "Fit Page" or "Fit Height" to see pages without having to select a percentage. Size of page controls can also be found above a PDF on screen or by clicking a magnifying glass icon with a "+" inside. (Not the "search/find" empty magnifying glass icon.)

Hope these explainers helps make reading *GR News* more fun. Enjoy.





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