No. 150, July/August 2017 US $5.95 - Canada $7.95

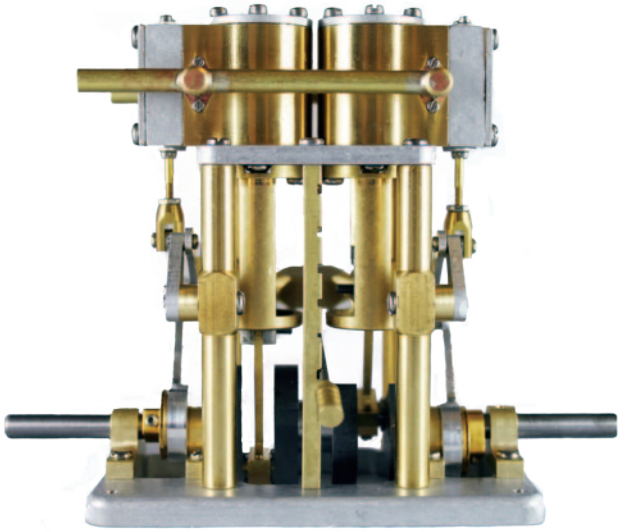
STEAM IN THE GARDEN

Celebratory Issue #150

Gather friends, while we inquire,
into trains, propelled by fire ...

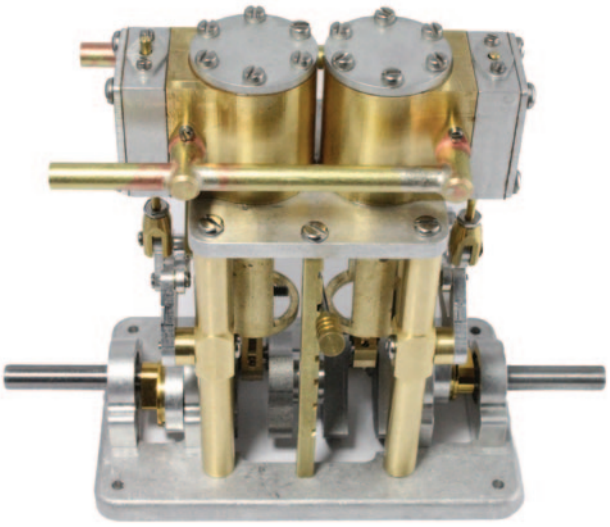
- Coal Conversion - Episode VI
- Aster Tigerli 0-6-0
- Shay Days... and more

Fully Machined Steam Engine Kits



TVR1A

Ready to assemble steam engine kit: $245
Fully Assembled and Tested: $350
Includes all hardware
Double acting, twin cylinder
Hackworth reversing gear
Includes full-color assembly manual
Dimensions:
Base: 3.000" x 1.844"
Crankshaft end-to-end: 4.344"
Height: 3.375"
Weight: 327 g



TVR1ABB

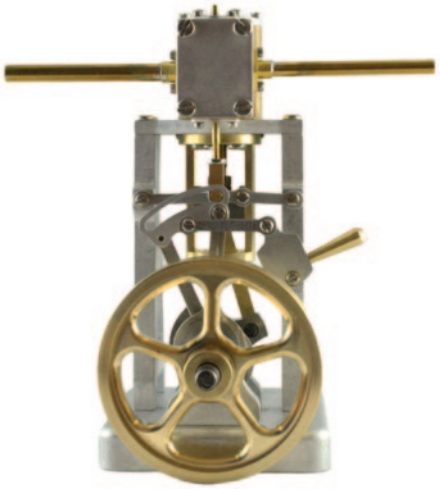
Ready to assemble steam engine kit: $295
Fully assembled and tested: $400
Includes all hardware
SAME AS TVR1A but with shielded ball bearings
Includes full-color assembly manual
Dimensions: Same as TVR1A
Weight: 323 g

Flywheels for TVR1A / TVR1ABB

MFLY: $20
1 3/8" DIA
(Solid Marine)

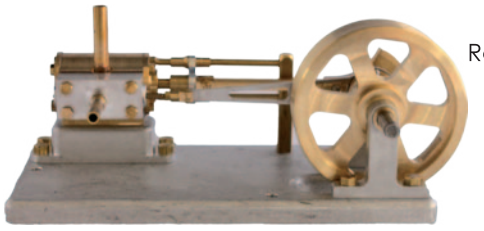
BFLY1: $25
1 3/4" DIA (5 Spoke)

BFLY2: $30
1 3/4" DIA (6 Spoke)



VR1A

Ready to assemble steam engine kit: $119
Fully Assembled and Tested: $175
Includes all hardware
1/2" bore, 1/2" stroke
Double acting, single cylinder
Reversing lever
Includes full-color assembly manual



HM1

Ready to assemble steam engine kit: $95
Fully Assembled and Tested: $145
Kit includes all hardware
.344" bore, .500" stroke
Double acting, single cylinder
Includes full-color assembly manual

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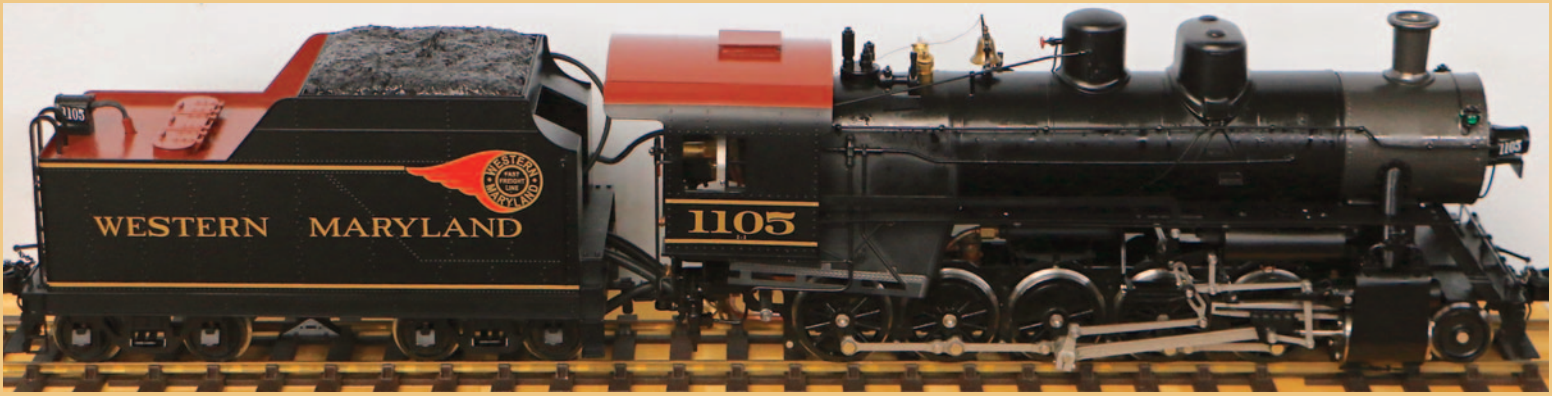

JUST RELEASED - Extremely limited production – by reservation only – **RUSSIAN DECAPOD 2-10-0** available in 4 liveries 1- Western Maryland "Fireball," 2- Erie with yellow diamond, 3-Frisco, and 4- factory painted but unlettered. Over 1/3 of production run is already committed! Easily pulls a 20+ car train. Brakeman doghouse will be available at no cost!

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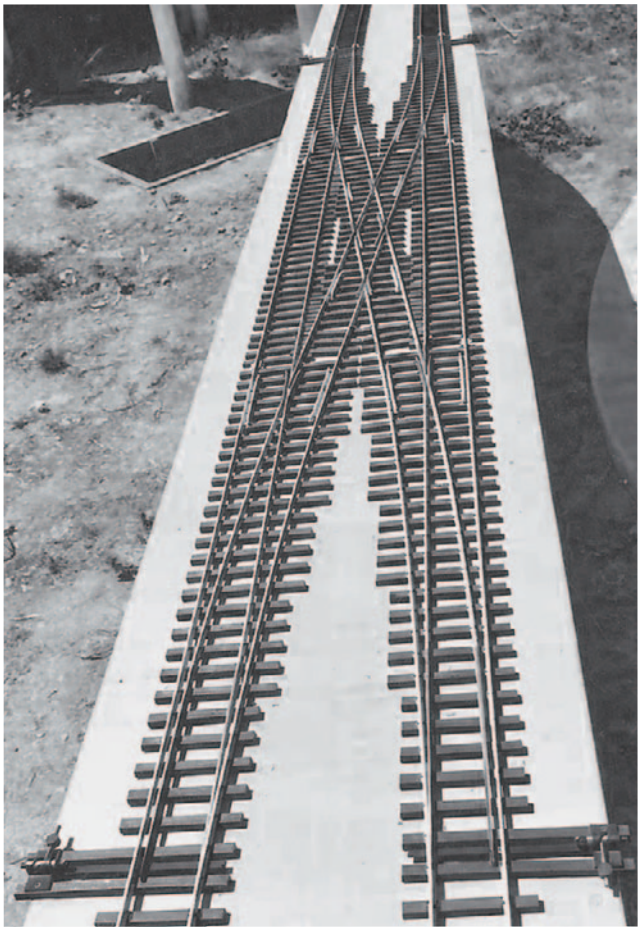

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Vol. 27 No. 2; Issue No. 150; July/August 2017

STEAM IN THE GARDEN

Gather friends, while we inquire,
into trains, propelled by fire ...

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Cover: Just a few of the covers over the past 149 Issues of Steam in the Garden. **Photo Collage by Scott E. McDonald**

LATEST WAYBILL

Annual Gathering of North American Members of the Association of 16mm Narrow Gauge Modellers

Members of the North American Association of 16mm Narrow Gauge Modellers making their presence known at the International Small Scale Steamup in Diamondhead, MS.

Photo by Scott E. McDonald

By Rob Kuhlman

Perhaps the most venerable of the many modeling groups and associations to which readers of Steam in the Garden belong is the Association of 16mm Narrow Gauge Modellers. Founded in the U.K. (note the double-'l' in 'Modellers') in 1977 the Association's thematic mission was firmly planted in the fertile soil of the many and diverse nominally two-foot gauge narrow gauge railways of the British Isles, typically modeled in SM32 (that is, sixteen millimeters to the foot scale; 32mm gauge track) . With the growth and evolution of the Association since its founding, one will now find many narrow gauge railways being modeled not only in SM32 but also SM45 as well as 7/8" scale representations in both gauges of ultra-narrow gauge industrial and estate railways.

In the U.K., the Association sponsors a national Annual General Meeting, and local groups host a number of frequent regional steamups. But...in North America, there's never been a similar national-scale gathering of Association members. With that in mind, and in celebration of the Association's 40th anniversary, they're going to hold their first North American Annual Gathering during October 13-15, 2017, in Columbus, Ohio. Chip Rosenblum will be the host, and in addition to his dual gauge ground level line there will be several dual gauge portable railways set up as well. All North American members of the Association are invited to attend; clockwork, battery, steam, ultra-scale, and whimsey – as long as it's narrow gauge, it's welcome.

More details and registration information can be found on the Annual Gathering's website: *http://www.northamerican16mmmodellers.org/*

Further information about the Association of 16mm Narrow Gauge Modellers, and an application for membership, can be found at: *http://www.16mm.org.uk/*

"Steamie" Video Award Winner

The Staff of Steam in the Garden announces the winner of the 2015 pageant of video entries for the 2015-2016 Contest. Congratulations to Shawn Viggiano of New Jersey. Shawn entered a wintery video of his garden railway and is the recipient of the "*Steamie Award*". Shawn received the coveted "*Steamie Trophy*" and an Accucraft "*Dora*" for his efforts and hard work. You can view Shawn's award winning video "*A Logger's Life on the Kittatinny Mountain Railroad*" at *www.steamup.com*.

Steam in the Garden Editor Scott E. McDonald presents the "Steamie Award" trophy and an Accucraft "Dora" to Grand Prize winner Shawn Viggiano. *Photo by Ryan Bednarik*

Roundhouse Engineering 2017 Offering

Roundhouse Engineering, of Doncaster, England announced their new model for 2017 to be a narrow gauge 'Hunslet' prototype locomotive named 'Lilla'. Initial images of the locomotive were presented online from CAD renderings of the 0-4-0 outside framed chassis. The

Roundhouse Engineering Company image of 'Lilla'.

working model was presented at the April 2017 National Garden Railway Show held in Peterborough, England. The model represents a locomotive that was introduced in 1891 for use on the Cilgwyn Slate Company Quarry at Natile Vale, North Wales. 'Lilla' was sold to be used on the Penrhyn Quarry Railway in 1928 and survives to this day on the Ffestiniog Railway.

'Lilla' will be butane fired and available in manual- or radio-controlled options. The wheel sets are regaugeable between 32mm or 45mm. Insulated wheels are another option, and the model will be available in any of Roundhouse Engineerings standard colors. More information on this model can be found at the company website, *www.roundhouse-eng.com*.

Stoke'm & Smoke'm adds Baggage Car to go with Steel Framed Truss Rod Pullman Coach & R.P.O.

Bob Clark of Stoke'm & Smoke'm is now offering a truss rod baggage car to accompany their 1897-1898 RPO and coach. A nice combination package of cars and loco for folks buying either the Rogers built Casey Jones or the Pennsy Class G-5 is also available. Decals will be included for either Illinois Central or Pennsylvania. The cars modeled are appropriate for dozens of roads, like NKP, GN, etc for the period up to the early 1940's. Contact Bob Clark at 301-467-3348 for more info. *www.livesteamg1us.com*

In Memoriam: Larry "Redbeard" Newman
By Will Davis

Larry running his Ruby-Mod Heisler at the International Small Scale Steamup.
Photo by Donna Bisset

Our colleague Lawrence (Larry) H. Newman passed away in the early hours of 30 January 2017. I first met Larry in 1982 at the Panhandle Gem and Mineral Society in Pensacola, while taking gem polishing and metal working workshops. Soon after his employment with an iconic soft-drink company soured, Larry decided to become independent and make jewelry full time. He and Michelle (Chellie) Davis acquired a business license in 1987 and they created and produced jewelry which they sold at specialized art shows through the next few years. With Jerry Reshew's emphasis on "Arts" being added to the steamup, Chellie told Larry that he should bring their custom jewelry to the steamup. And so, after being lured to Diamondhead in 2003, Larry became hooked on live steam. The international Small Scale Steamup soon became his favorite show.

Responding to the challenge of transforming the Ruby into other types of engines, Larry designed and built a Mason-Bogie, a steam truck (Steam in the Garden July/August 2009, No. 106) and his trademark Heisler, made from an Accucraft Ruby and his own custom parts. He enjoyed posting his building progress on live steam forums, where he provided detailed illustrated reports of each of these projects. He chose the nom de plume 'Redbeard" to fit with his railroad theme of 'Pirate Mines.'

One easily remembers Larry's famous smile which was the introduction to his warm and friendly personality, He was always interested in talking, trading, and searching for new ideas. You

might also learn of his many and varied experiences ranging from racing and restoring cars to gemstones and metal casting. The list of Larry's interests went on and on.

He was very dedicated to the care and assistance of his aging mother and responded as well to several health crises among family members. With his concern for the well-being of others in his extended family, he did not equally attend his own health care symptoms. At Diamondhead he complained of memory lapse and leg cramping. He especially enjoyed this gathering but was deeply stressed by the passing of Tom Myers.

Larry was also an elder in his church and active in the choir, always with a sympathetic ear ready to console folks enduring hardships.

Larry steamed whenever he could with the Tallahassee Live Steamers; especially at the annual train show. He was contemplating new projects and designing more 7/8ths-inch rolling stock. He was even toying with the idea of a steam creation in HO scale. But these will just be the stuff of his creative dreams.

Redbeard, you will be missed !!

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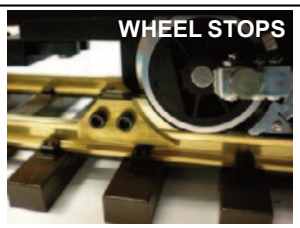
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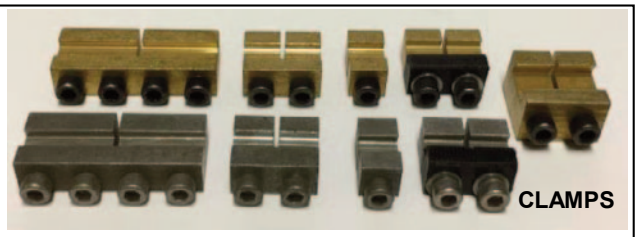
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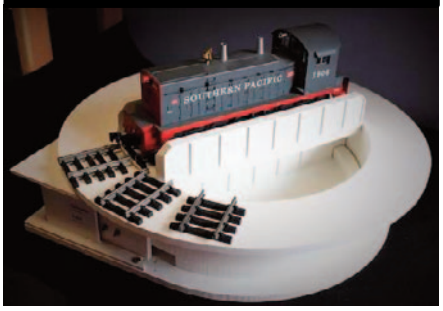

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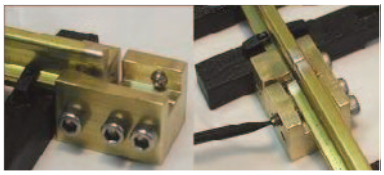

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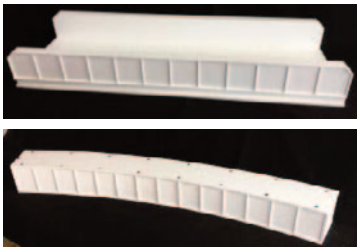
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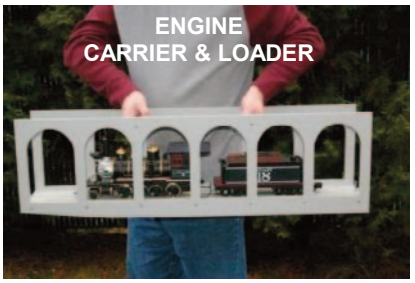
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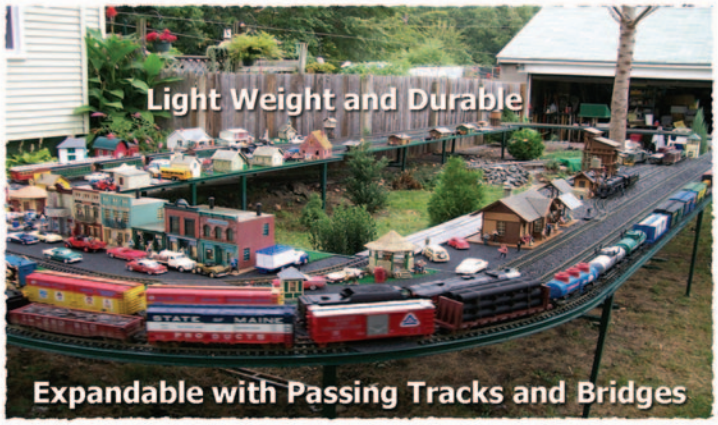

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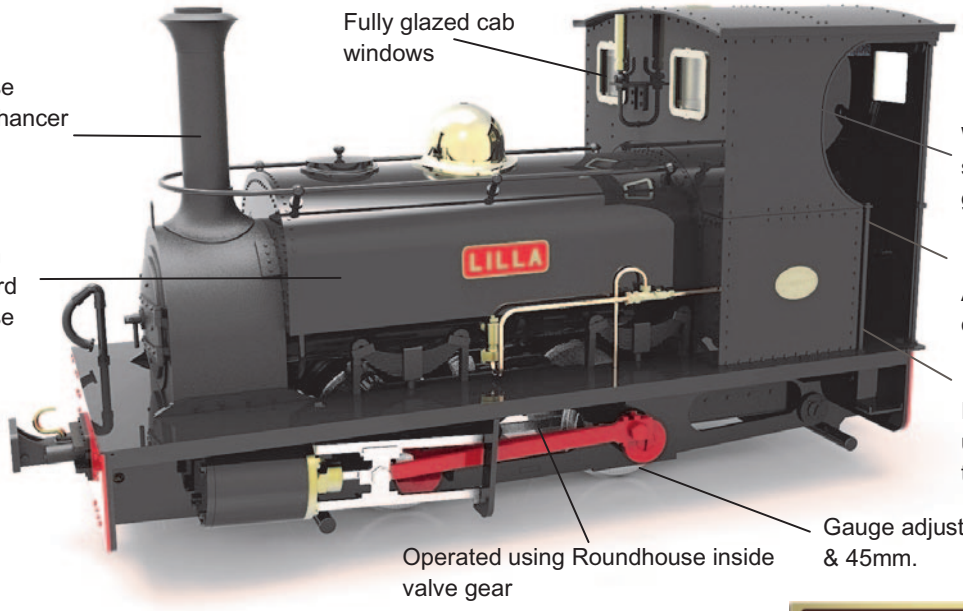

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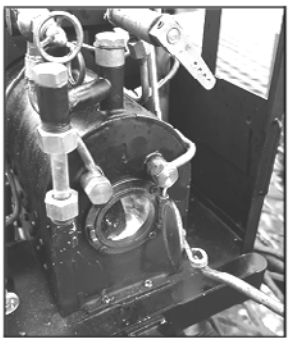

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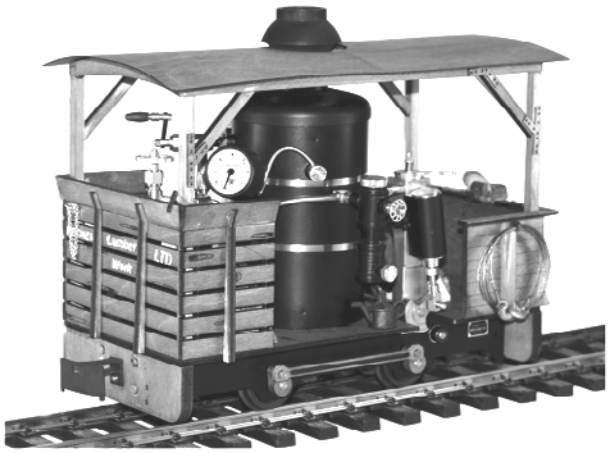

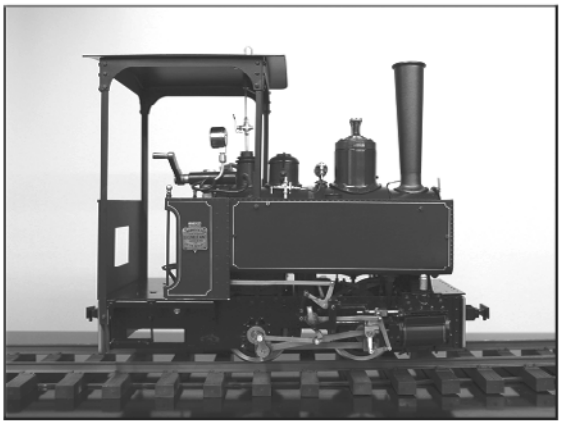

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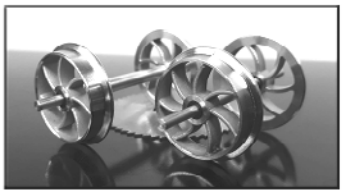

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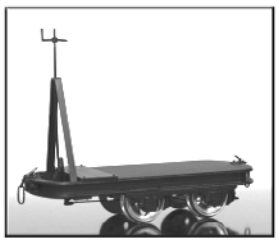

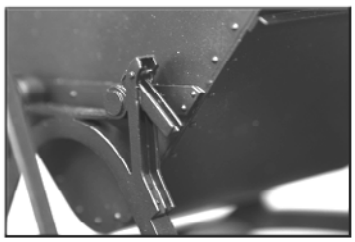

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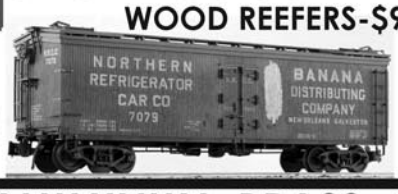

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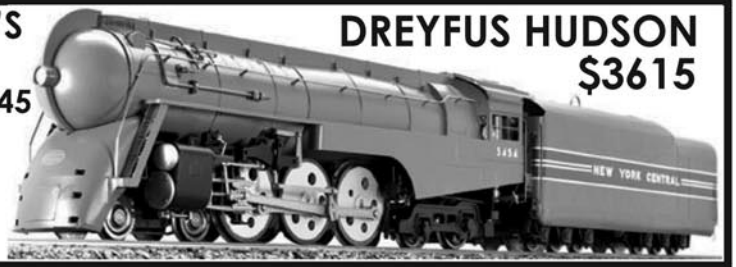

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Magazine Retrospective

Steam in the Garden

The Editor takes a look back at the evolution of North America's only magazine devoted to Small Scale Live Steam

Ron & Marie Brown's beautiful landscaped garden in full bloom for the annual steamup.

Beginnings

Do you remember your first issue of *Steam in the Garden*? Where you were when you first found out about the magazine? Did it convince you to dive into live steam model trains?

As this milestone of the 150th issue began to approach, I have thought about those questions myself. The answers for the first two for me take us back to 1990 when the magazine first began. I found out about it from a fellow live steamer in our garden railway society who used to publish his own small scale live-steam oriented newsletter, *The Journal*. When he was unable to continue, Ron Brown discussed the idea for Steam in the Garden with Marc Horovitz of Garden Railways. And with a simple "Go for it" from Marc, *Steam in the Garden* was born.

My first Issue was number 4. I held off getting a subscription because in 1990 I was in the Navy and getting ready to deploy overseas for Desert Shield/Desert Storm when SitG was first published. I got to see a copy from a fellow live steamer and I figured I could always order back issues once I got settled at my new duty station. I waited until I got situated onboard my ship and then placed my order for a subscription. The magazine helped to keep me in contact with the hobby, and I wrote my first article which appeared in Issue Number 12. I was a semi-regular steamer with my Aster Baldwin B-1 at the Yokohama Live Steamers from 1991-93. I won't go into all the details of that article as you can get access to it at *www.steamup.com* if you're interested, but suffice it to say that having the subscription made me feel like home wasn't that far away.

As for my answer to number three, it would be “no” as I was already an avid live steamer. I started steaming in 1989 after buying a Super Mamod at the Garden Railway Convention in Northern California. I had purchased an Aster Baldwin B-1 a year earlier and double checked my assembly with the directions but it wouldn't run. I wanted to be a live steamer so I got the Mamod. I took the B-1 to Japan with me when I got stationed there and asked Aster to tell me what I did wrong. I found out it wasn't me but a bad set of cylinders with ports that weren't machined to specs. They got it fixed and I became a happy customer.

In just a few short years SitG rapidly grew and full


$6.95

Steam in the Garden
Magazine

Gather, friends, while we enquire,
after trains propelled by fire.....

Volume One - Special Edition Spring 1991

Special issue! Combining No's. 1 though 3, with all new typesetting and printing, plus many new photos and new Adventures on the Castle Pacific!

Peter Mesheau's Kenversions Mamod, on time for a change, rolls into the station at Nether Wallop on Geoff Coldrick's Great Central Railway in New Brunswick. Photo by Ron Brown

The Premier Issue of Steam in the Garden was a simple newsletter with no cover. When the idea of a periodical devoted solely to small scale live steam started to catch on, demand grew. This resulted in the first three issues being combined into a special reprint issue by Ron and well known steam model supplier Sulphur Springs Steam Models, Ltd.

STEAM IN THE GARDEN

P.O. Box 335
Newark Valley, NY 13811
(607) 642-8119

Volume One - Number One July/August 1990

Editorial

A few months ago I was daydreaming about (what else?) small-scale live steam engines, and recalling how difficult it was to break into the hobby when I first got interested. Although steam engines are as common as fog in the UK, in the USA it was nearly impossible to get information on what to buy, where to buy it, how to use it and so on.

It occurred to me that others must surely be having the same problem - perhaps to the point where they were turning away from live steam and settling for electric trains. This thought was too horrible to contemplate!

It was at this point that the idea for a newsletter, ***Steam In The Garden***, was born. A letter to Marc Horovitz (editor/publisher of Garden Railways magazine and dedicated small-scale live steam enthusiast), detailing my idea, brought a very supportive response. In essence, Marc said, "Go for it!"

Although I'm a dedicated (some have used the terms "obsessed", "insane", or "certifiable") steam enthusiast, I certainly don't have all the answers. I don't even know all the questions yet! So a flurry of calls and letters went out to several experts in the field, asking if they would support this endeavor by lending their skill, knowledge and expertise. This brought the same gratifying results as the initial contact with Marc. Then a mention in Garden Railways magazine and a few GR Society newsletters started subscription applications and letters of inquiry rolling in - and here we are. So now you know how SITG came about - and here's the first issue, which contains columns and articles by experts in the field of small-scale live steam. You'll also find product reviews, a list of sources, a question and answer column, and a Buy - Sell - Trade listing - which is free to SITG subscribers.

A lot of people contributed to this first issue, and we hope that you will enjoy it and find it useful. Most of all, we hope that it will help you get started in the great hobby of small-scale live steam.

Happy Steaming!

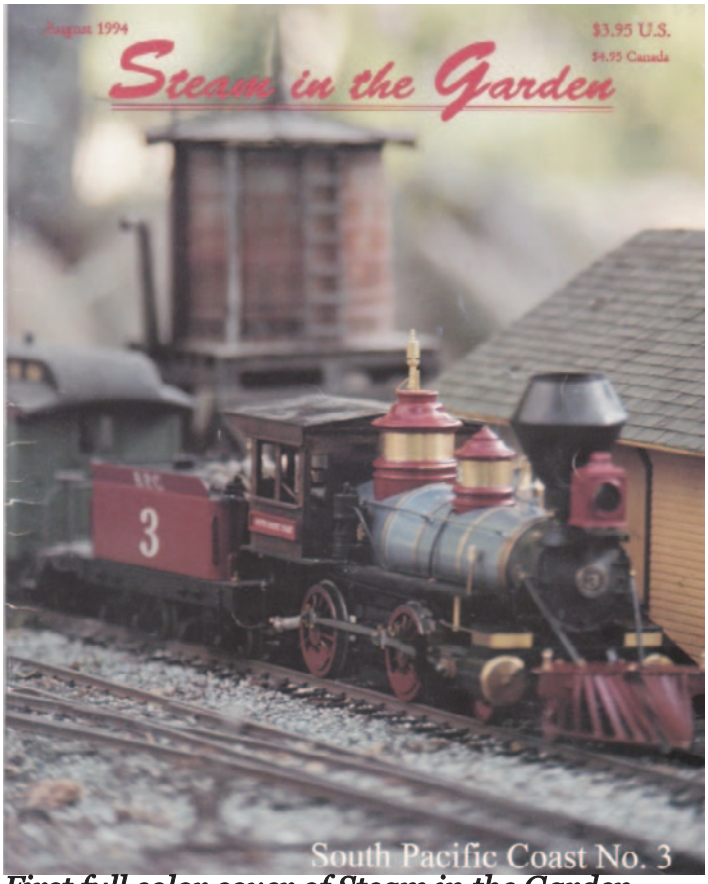
Ron

color covers arrived. I wrote a review of the Berkeley Locomotive Works "Cricket" in Issue 24, the second issue to have a full color cover, and I got the cover shot! That was also the first issue with the bold Steam in the Garden banner that would be evident until 2011. The time I had put in the backyard continuing to build my garden railway and the day I set up to shoot for the magazine had payed off. It was a personal proud moment.

When I was asked to be the US Representative for Wada Works of Yokohama, Japan, I became an advertiser in the magazine. I retired from the Navy and started my second career that put me on the road to where you would have thought that I was still on active duty doing deployments. But being a dealer got me out to more conventions, and steamups were beginning to show up around the U.S. Not just at Garden Railway Conventions but dedicated steamups, which were becoming conventions in their own right, and articles were being written for Steam in the Garden to show what everyone else who didn't attend was missing.

While I had been corresponding with Ron via the mail as a contributor and advertiser, we didn't meet face-to-face until the second Diamondhead steamup in January of 1994. I and fellow live steamers from around the Washington D.C. area all found ourselves onboard the same train en route to New Orleans with Ron and Marie. The trip down was like a family reunion even though we had just met.

So now here I am with this awesome responsibility to carry on with what Ron started and Dave transformed in 2011 to the current style and for-



First full color cover of Steam in the Garden - August 1994.

Trying to break new ground - Steam on the Pond September-October 1998.

mat. I never saw myself in this position, but as we move forward, everytime I sit down to work on the magazine and I get ready to write or make a decision I ask myself, "What would Ron Do?" and "How would Dave accomplish it?"

Breaking New Ground

Not everything has been smooth sailing for *Steam in the Garden*. There have been some missteps along the way. One was the introduction of "*Steam on the Pond*.' As popularity of the magazine grew, so did a wider interest in small steam engines in general. For founder Ron Brown, this meant not just trains but steam boats and stationary engines as well. In addition to trains Ron enjoyed the calling of the water on which to place a steam powered vessel and watch it glide smoothly across the pond. He knew he wasn't alone, and through the gatherings at Diamondhead, Mississippi he saw fellow live steamers running trains and bringing their steam boats as well. Ron saw a lack of information within the model boat magazines with respect to live steam, and experimented with bringing Steam on the Pond into the magazine.

The mailbox lit up and the response was split from the general populace. Some train enthusiasts felt betrayed as they begged for a magazine that was dedicated only to trains. Others praised Ron for showing how the little steam engines could be put to work in a different fashion. The "*Pond*" lasted through eleven issues with the front page banner only appearing on seven. The lack of boat supplier revenue through ads showed that it was not to be, so Ron went back to the tried and true content of keeping the magazine dedicated to trains.

The Next Generation

In November of 2010 the next misstep would happen. After a lengthy illness and even working from his hospital bed for a time, Ron Brown passed. The steam community and the magazine went into shock. Issue Number 113 would be Ron's last.

Through lots of phone calls, e-mails, and one-on-one discussions, the team came together to continue the magazine. Dave Cole, a professional editor, pioneer in digital publishing, and a live steamer with the Bay Area Garden Railway Society Live Steamers accepted the role. There were articles waiting in the wings and with lightning speed not only did a new issue come together, but a fresh new look. Issue 114 would be Dave's debut as well as a complete makeover of *www.steamup.com*.

Dave would give us a whole new playground for Steam in the Garden with his transformation of the website. Gone were the days of hand coding .html pages and we gained a Content Management System that would allow us to expand our digital universe. For those who are tech savvy, then you understand that last statement and how important it is to the magazine. In simple words — we have a safe place where we can store the the entire history of Steam in the Garden via digital media.

One of the key questions that many live steamers ask is "How do we inform and entice the younger generation to join in and keep this hobby alive? Dave knew the answer. Social Media. Dave knew through his experience as an editor with *Rolling Stones* magazine that to keep and gain a younger generation audience, you have to be where they communicate; Social Media. Dave was in the process of laying the groundwork for *Steam in the Garden* to be further into social media. While there are those who bemoan that part of our society, to stay relevant, you have to stay current.

Unfortunately Dave was only there to guide us through the past six years until a recurrence of cancer would strike him down. Another sad misstep. More phone calls, more e-mails and more personal discussions within the Steam in the Garden consortium and we moved quickly to get the next issue out as soon as we could. It was our digital presence that helped to make this happen. There was a solid-state digital media device in our archives that we maintained, a 'flash drive', that had all the bits and pieces for creating the basics of the magazine. That, along with the current backlog of articles on Dave's computer, were quickly transferred and Issue 149 was out the door.

Dave Cole's dramatic transformation of Steam in the Garden's electronic presence on the Internet.

This issue was originally destined to be completely devoted to a retrospect, but the electronic folder on Dave's computer labeled 'Issue 150' was empty except for the start of a cover. The cover design echoed what I had started prior to getting Dave's computer in hand. We both had the same idea. As to what else Dave had in mind for this issue, we'll never know.

We still have a basic outline of what Dave had planned for the next few issues. It's just a matter of bringing it all together. The website that Dave created has been professionally updated so that our system is current to include stronger digital security. The addition of more components to keep us relevant will make it easier to maintain. For those who missed the old Thursday night chats we now have that back as well.

So stay tuned as we move forward for another 150-plus issues. That's another twenty-five years of small scale live steam that I hope to be around to see. See you at a steamup!

Workshop project/Part VI

Changing an Accucraft C-16 from butane to solid fuel

COAL conversion

Text, photos and illustrations by Rob Lenicheck

You probably already know that coal locos need a bypass valve to route water from the axle pump back into the tender if the boiler gets too full. It's now time to get that all taken care of.

Bypass plumbing

Asides:

1. Since this valve is independent it's your choice whether you want to use a commercial product or make your own. The latter is described below.
2. Many of the fittings which mate with a cone and nut must be relieved for the mate with the cone. Do this using a #2, 60-degree inclusive, "drill and countersink" bit. Check the fit with a cone and nut prior to using it.

An overview:

Any bypass valve works the same way even though the plumbing may be different: when the bypass is "closed" the water from the axle pump is forced under pressure into the boiler through the check valve. When the bypass is open the water from the axle pump gets routed back to the tender. Now, you can see from the photo that the plumbing is all connected together but when the bypass is opened the water simply takes the path of least resistance (because the boiler is under pressure) and goes back to the tender.

If you study **[Photo 35]**, "Bypass valve overview," you'll notice that I like to route the bypass tubing back to the tender, which simulates the prototype injector lines. To make life easier I favor using the small quick disconnects which are available on the market. The smallest ones made come from the Rectus company, model 02KA; a source for these is Maryland Metrics. I prefer the 2mm barb version for use with 1/8-inch tubing. In any case, make sure you fasten the end of the tubing well to the bottom of the

Coal conversion of a C-16

Rob Lenicheck's Accucraft C-16 ran very nicely once he got it "peaked and tweaked" to his satisfaction. So nicely, in fact, that it grew boring. What to do? Rob, a committed coal-burner, decided that he would convert the engine to "the dark side." Here's how he did it:

- **Part I:** Designing the valve gear, disassembly, modifying the frame.
- **Part II:** Starting the boiler.
- **Part III:** Finishing the boiler, pressure-testing.
- **Part IV:** Smoke box, ash pan and grate.
- **Part V:** Steam manifold, fittings, blast pipe.
- > **Part VI:** Axle pump & bypass plumbing, water glass, wrapping it up.

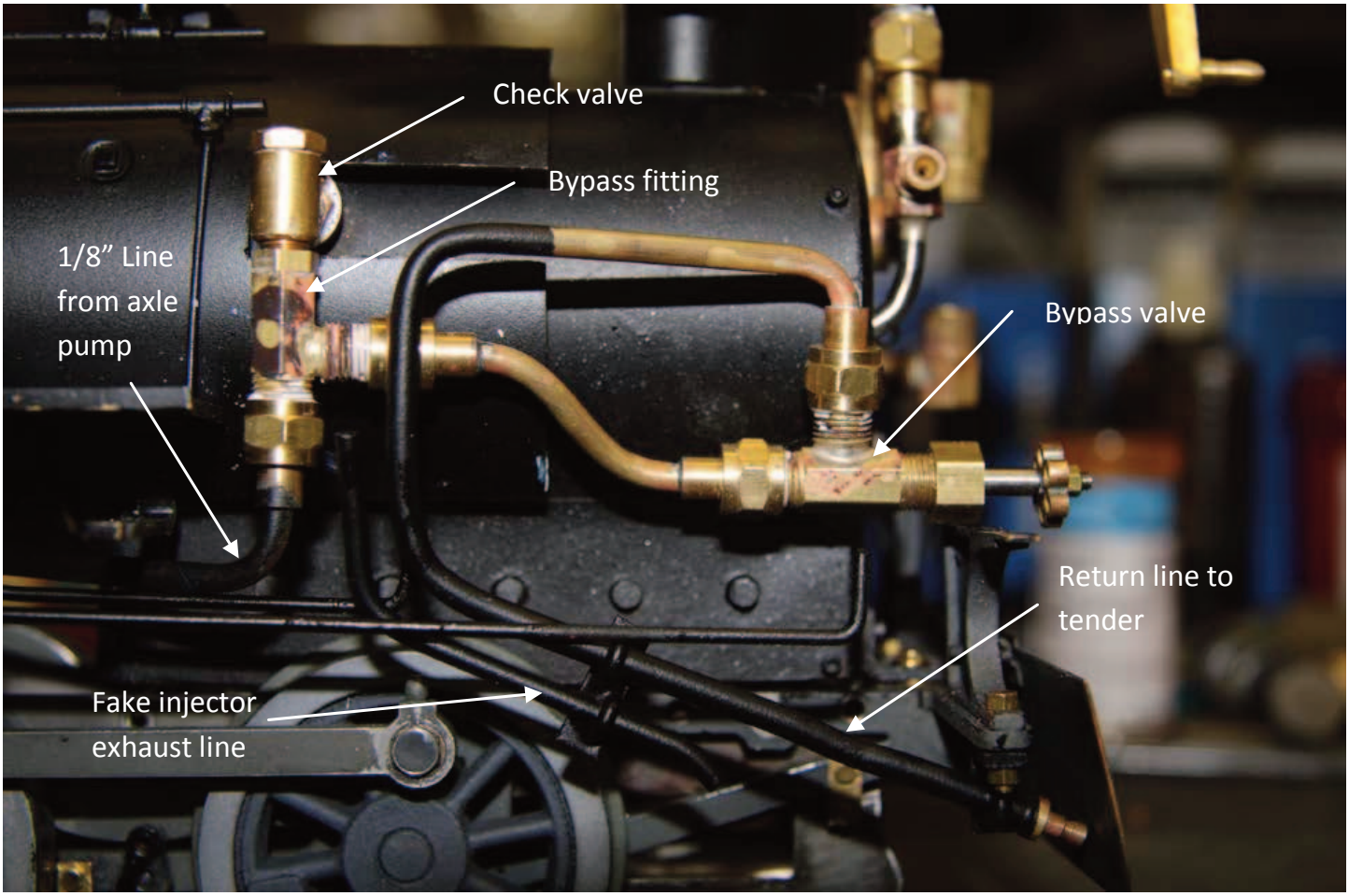


Photo 35 - Bypass valve overview

cab plate support piece. I made up a special angle bracket and soldered it to the line. It is held in place by the same screw which holds the cab grab iron.

All the 1/8-inch tubing for the bypass system can be made from either copper or brass. But you want to anneal it for easier bending. Make up the bypass valve and the check valve fitting to the prints shown in the "Miscellaneous parts, page 2" drawing in Part V (Steam in the Garden, May/June 2017, No. 149, p.21, Fig.25), using the threads you inherited from your check valve. I seal this valve using a Teflon "rope", created by rolling a piece of Teflon tape into a rope. Then tighten the gland nut enough to prevent leakage. (You can also use a Viton O ring for this purpose, if desired. Because of their small cross-section, metric O rings are preferred. McMaster-Carr Supply Co carries a nice assortment of sizes.)

A great and simple idea for control knobs came from Marc Horovitz. (I, for one, am proud to say that I am not ashamed to use other people's ideas.) To make them, gather up six 1/8-inch brass tubes and one 1/8-inch brass rod. Wire these up into a symmetrical bundle with the rod in the middle. Soft solder the bunch together, making sure that all the tubes get attached. Stick the bundle into the lathe and drill and tap the center rod 2-56. Then cut off each knob at about 0.100-inch thick. Attach them by threading them on the valve spindle, with the accompanying Loctite locker, and then back it with a 2-56 nut. Voila!

Once you have all the pieces you can begin the task of connecting the tubing from the axle pump. As mentioned before, I like to simulate the prototype injector tubing which delivers water from the tender to the left and right injectors. In our case, however, one of these is actually the bypass return line. It's up to you how you want to plumb them in, but keep in mind that the *bottom* of the axle pump takes water from the tender; the *top* of the axle pump delivers the water back to the bypass valve and into the boiler (or back to the tender).

To connect the two axle pump lines you need to make up fittings which go on the ends to fasten the cone and nut. (This is the same as the superheater

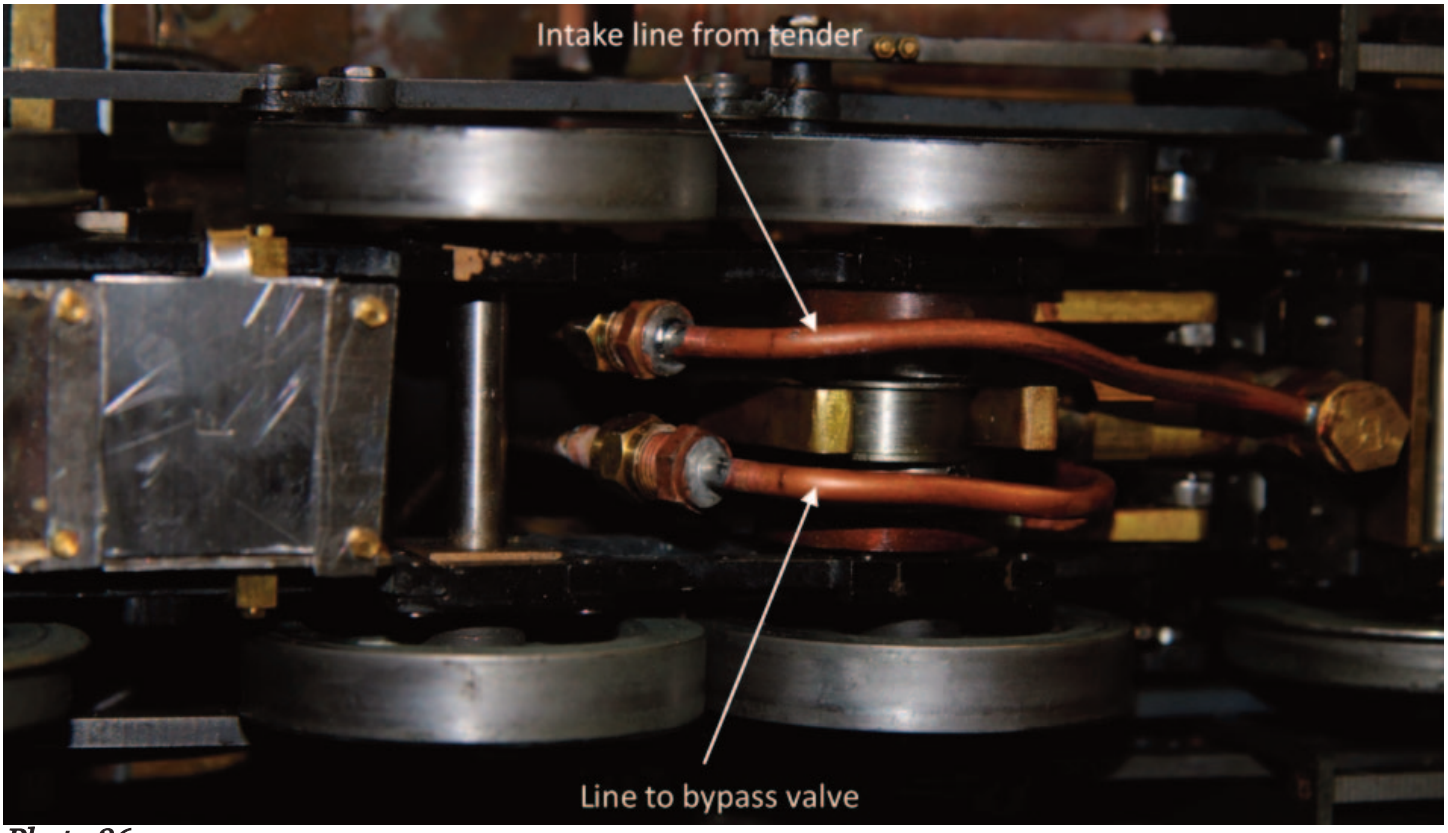


Photo 36

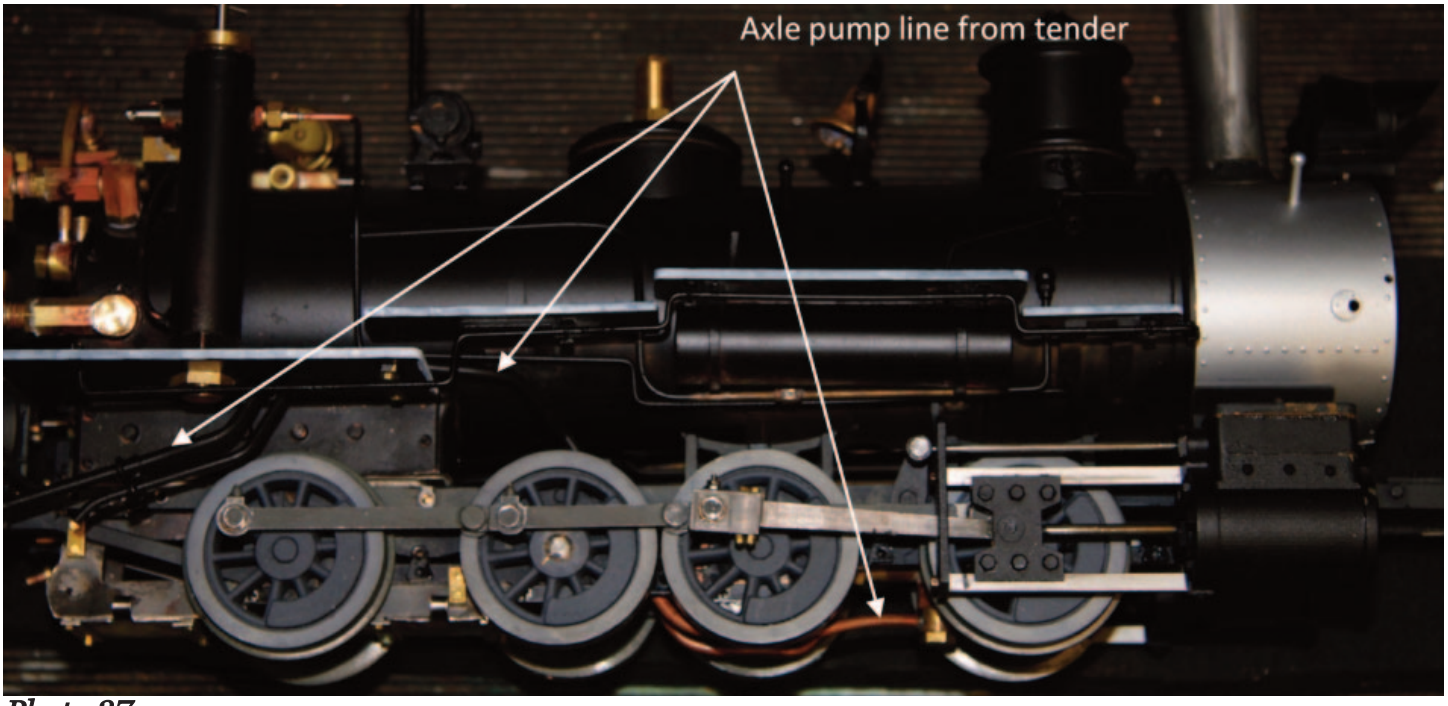


Photo 37

nut you have already had the experience making.) **Photo 36** is a pic of the underside of the engine showing the axle lines routing, and **Photo 37** shows the side view. Notice how the lines in Photo 37 get routed up between the third and fourth drivers. The intake line from the tender goes up and over the cab plate before going back down to the axle pump.

Blower valve

Prints for the two main pieces, the valve body and spindle, are located on the Miscellaneous parts, page two drawing in Part V. I did not include a print for the gland nut but you now already know how to make those.

Water Glass

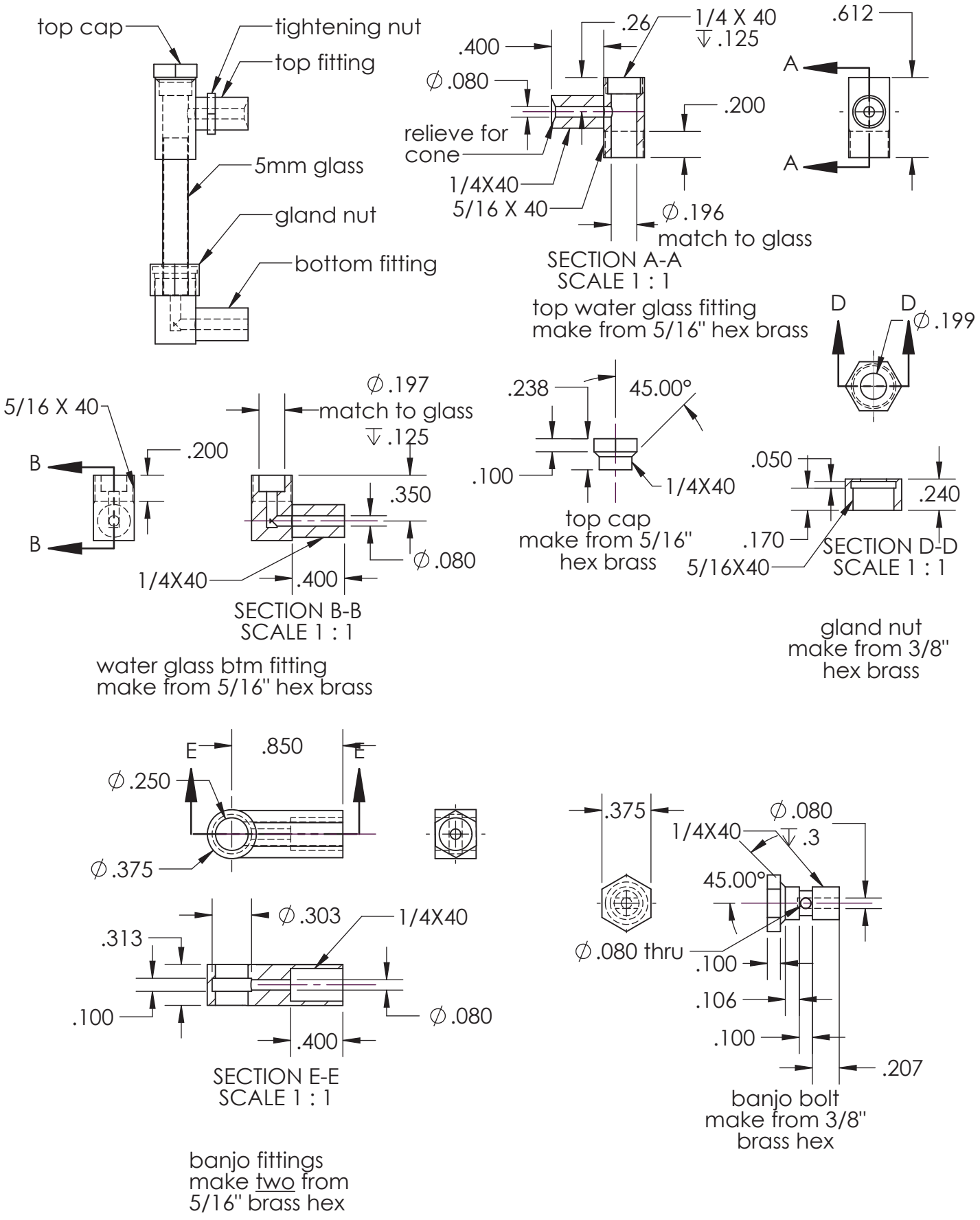


Figure 33

Other parts you need for the connection into the blower line are the banjo fitting and bolt. The banjo fitting is pretty straightforward except for the groove. I suggest cutting into the center to assist with the flow. The groove can be cut with a special grooving tool ordered from the MSC Corp on their page 870 (search under "grooving tools"). These are miniature, and will allow you to reach inside the fitting and groove it out a bit.

You will notice that the banjo bolt has a 120-degree inclusive chamfer on the back of the head. This allows the bolt to seal against the fitting without the need for using a sealant. (The back of the fitting which mates to the back head fitting still needs it.)

Once you have everything made up you can anneal and bend your 1/8-inch copper tube to make the connection. I would suggest silver soldering these joints.

Water Glass Assembly

This assembly **[Photo 38]** can be one of the more frustrating and challenging to make. Be sure that you have a decent supply of 5mm glass on hand and have learned how to cut it. (There's lots of info on the internet about how to do that.) The assembly is made up of many pieces which are all shown in **Fig.33**.

You will need to make two banjo fittings, top and bottom. *It's important to square up the face surfaces after you silver solder the two parts together*. They need to be parallel to each other to mate well with the banjo bolt itself. SO, it's wise to leave them a tad long to begin with so you have something to work with.

To make the banjo fittings, start off with making the round portion at the end. Bore out the center slot. Now make up the 5/16-inch hex leg, drilling and tapping per Fig.33. Using a 5/16-inch end mill, machine the end of the leg to a radius of 5/32-inch to mate with the round part. Clamp or position the parts together as best you can and silver solder them together. Now finish the fitting by drilling out the final length of the 0.080 dia hole into the banjo portion and then machining the two facing, parallel surfaces I mentioned earlier. Piece of cake, right?!?

You will need to make two 1/4x40 tightening nuts from 5/16-inch hex stock, which are used to secure the banjo fittings to the top and bottom water glass fittings. (Drawings are not provided for these. Your machining skills have been elevated to being a pro at this point so challenge yourself!)

To assemble the water glass fit two O rings into the bottom of the gland nuts. Not sure what size they are but you need to make sure that the glass will fit through them when they are in place. (Metric O rings will work better since they have a smaller cross-section.) A little steam oil will help the glass tubing slip past them. Fit the top and bottom banjo fittings into place on the boiler and lightly tighten. Now screw in the top and bottom fitting for the glass. At this point it's very advantageous to make up a piece of rod ***exactly the same diameter as your glass.*** This is used to get a final alignment of the fittings. Once you are close, cut your glass. (Hint: after you cut the glass use your propane torch to slightly heat up each end of the tubing. This smoothes off the rough edge so that the O ring has an easier time slipping on.) Now

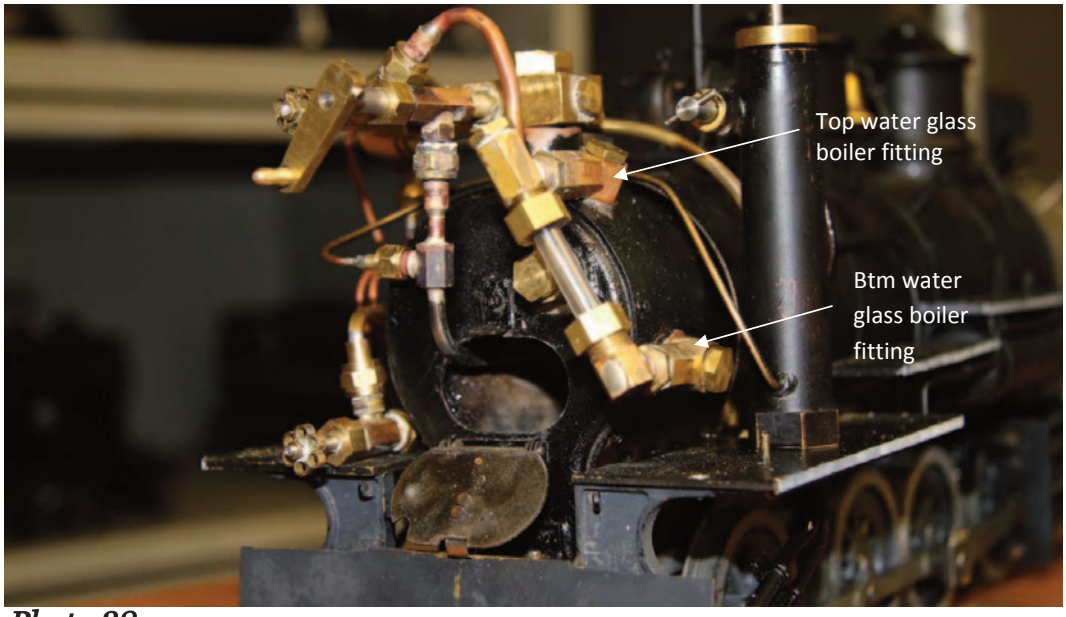


Photo 38

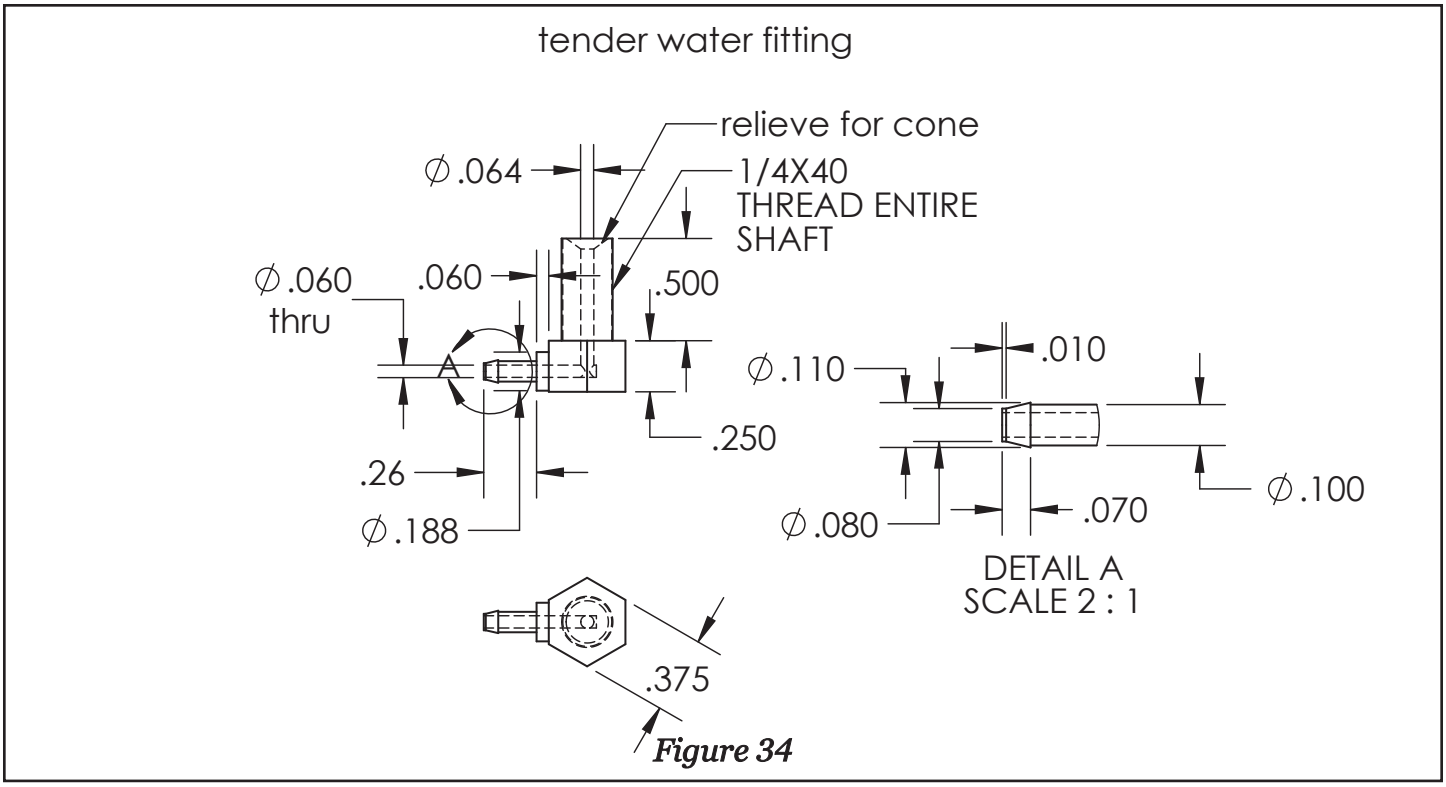


Figure 34

take everything apart and put your thread sealant and gasket maker material on the appropriate surfaces.

Use your alignment rod to get everything set and tighten up things. With any luck the only leak you will have will be around the gland nuts.

Blowdown Valve

I like to have the use of a blowdown valve to release the pressure in the boiler when you are finished running. It also allows air to be drawn into the boiler while it is cooling down so that it does not draw it from other places – like through the lubricator, which allows oil to find its way into the boiler. If you want to use one just make another blower valve assembly and attach it at the back of the manifold where there's a threaded hole for it.

Tender

So, the big stuff is done. The final step before you can build a fire and raise some steam is to adapt the tender to allow it to hold water, and put in a hand pump. The pump is really necessary for purging the lines of air initially and to put water into the boiler in case you get too low.

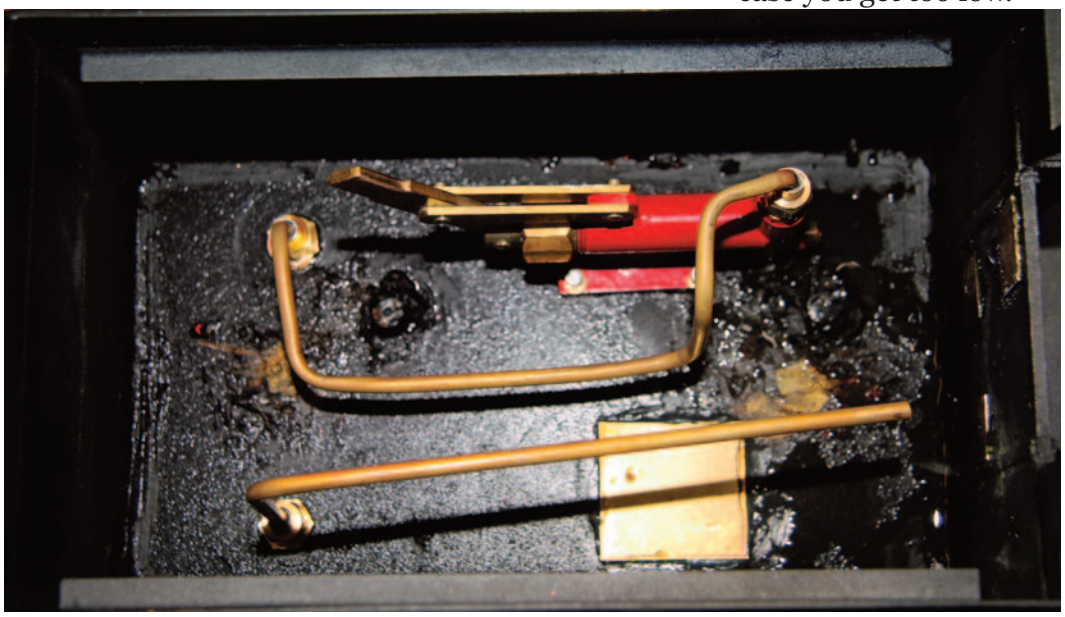


Photo 39

I took my tender apart many years ago and I seem to remember that the entire bottom plate is soldered to the shell. In any case, you need to figure out how to mount the pump and seal the tank against water leakage. **[Photo 39]**.

A local, live-steamer friend of mine, Steve Shyvers, showed me a great method for routing the water delivery and return lines out of the tender shell to the front of the tender. The use of flexible lines and a loop at

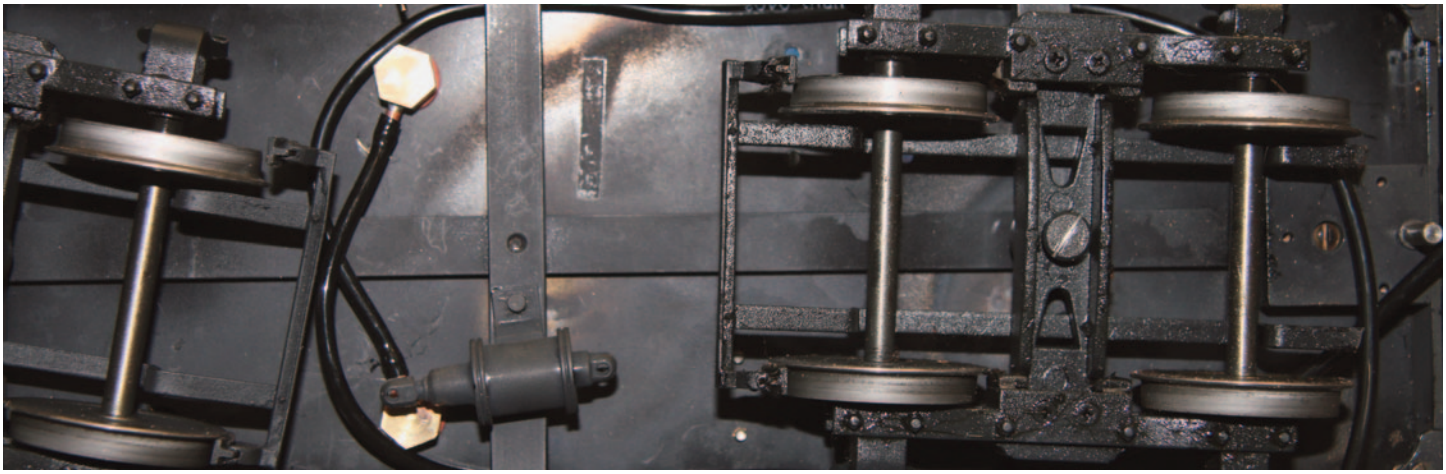


Photo 40

the back allows the lines to float so they can easily adapt to track curves.

The type of tubing I use came as an idea from Ryan Bednarick of Triple R Services. Despite the small, 1/8-inch OD, 1/6-inch ID, size the tubing works really well and easily provides the needed water even for a big boiler like my 2 1/4-inch dia C-25 boiler. Another nice side to the tubing is that it can make use of a barb fitting with no hose clamp. The tubing is available from the Clippard Co, their P/N URH-0402-BKS-050. They do allow an order over the Web but you must buy a 50-foot length. Find some friends!

To connect the tubing under the tender shell you need to make a couple of fittings which will go through the tender floor. (The last ones, I promise!) See **Figure 34**. You have a choice here with the barbed fitting which needs to be present for the tubing: either use one of the fittings which you ordered with the quick disconnects or you make your own. (Making your own is not that bad – and by now you're a pro, right?!?) Make up two 1/4X40 nuts for tightening the fitting to the tender floor. Seal with a couple of copper washers.

Keep in mind when you lay out and assemble your parts which line is the water feed from the tender to the axle pump. If you have copied my setup, that is the line which comes off the right front of the tender. (But wait – notice how the lines cross under the tender floor to do that! Oh, no, Mr. Bill!) **[Photo 40].**

Cab Roof

There's one other item which I need to cover. It's your option as to whether or not you use it but it's very handy to have a cab roof which lifts up for servicing, controlling the engine and adding coal during a run. The parts are pretty well covered in Kozo's Pennsy 0-4-0 book and that's what I based my design upon. One of the challenges is deciding how to put a hinge on the roof. Once that's done the rest is fairly straightforward.

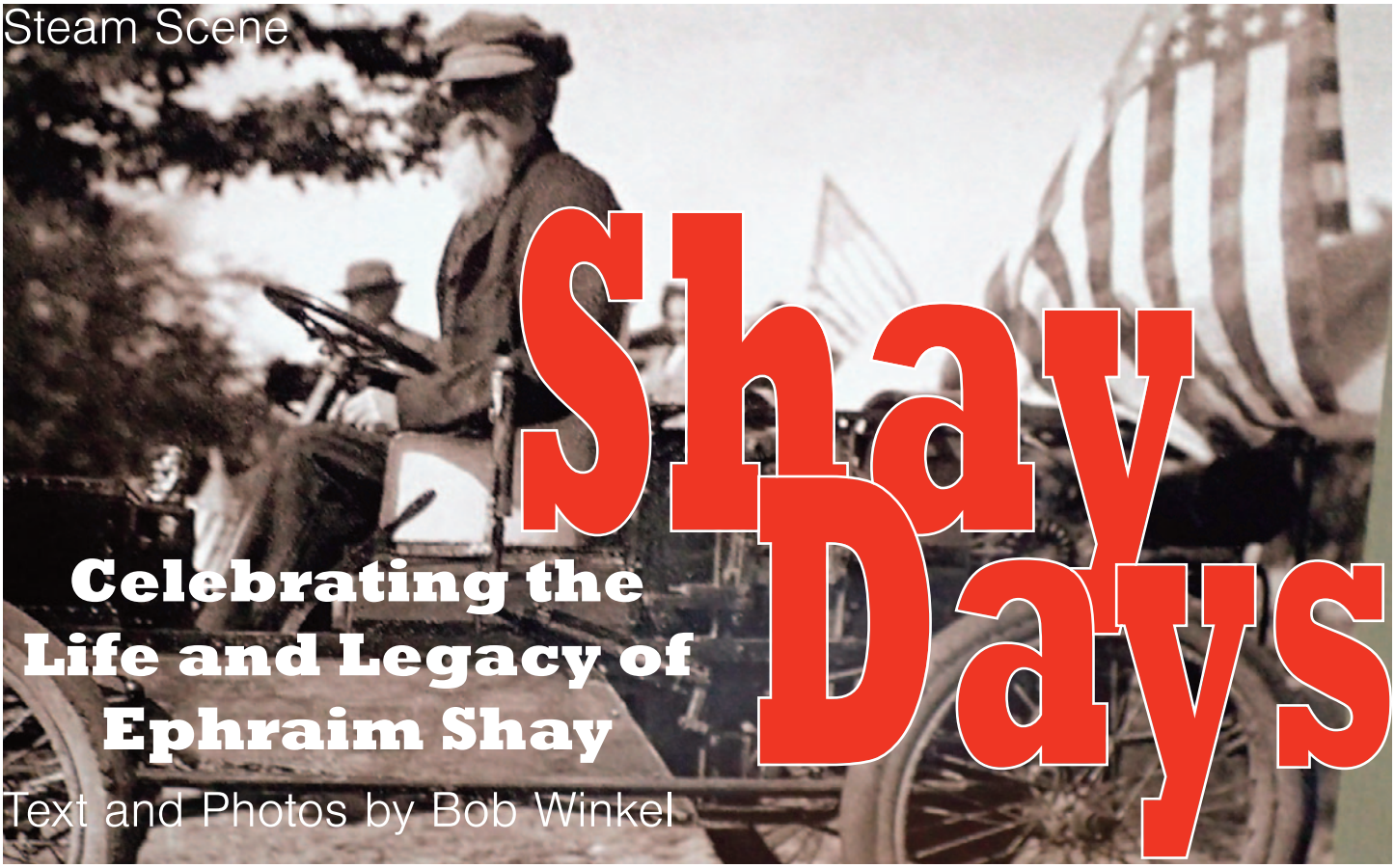
If your engine was like mine, the existing roof probably slides off. I believe the easiest way to hinge the roof is to solder on two tabs onto the inside of the roof which hang down vertically right next to the two side walls. These, then, can be fitted with hinge pins made of 2-56 screws through the side walls. Again, it's a variation of Kozo's design. The rest of his hinge design for the roof itself work very well and holds the roof open in the upward position when needed.

Firing

If you've built the engine per my drawings I can say with some level of confidence that it will work quite well. A couple of hints which help to make the first run a success:

1. Use good Welsh coal. The Train Department carries it.
2. The size of the coal has a dramatic effect of the engine's ability to keep a good fire going. Break the coal up into about 1/4-inch diameter pieces – no bigger.
3. Start with the boiler about two-thirds full.
4. Once you get going you should be able to just slightly crack the bypass valve to let a little water at a time into the boiler as you run.

Okay, I think it's a wrap. If you make it this far reading through the material I hope you will, indeed, get that queen off the mantle and convert it. It really is a blast running the C-16 with a real coal glow in the firebox!



Shay Days

Celebrating the Life and Legacy of Ephraim Shay

Text and Photos by Bob Winkel

Live steamers from all over Michigan gathered for a steamup last summer in the shadow of the Ephraim Shay home in the sleepy little community of Harbor Springs, Michigan. On the shores of the Little Traverse Bay, the local residents recognize Shay not only as the inventor of geared locomotives but also as the builder of his famous Hexagon House. In addition, in the late 1800s, he created one of the first municipal water systems in the state here and started a railway known locally as the "Hemlock Central."

The Shay Days steamup was hosted this year by local live steamers Ron Kurtz, Dave Comers and John Hussey. We out-of-town steamers met up with them on Thursday afternoon, July 14th 2016, to assemble the modular track sections that Ron built specially for this yearly event. His tables have room for two tracks, each with two sidings, and provided 20-foot diameter curves.

Steamers began arriving Friday morning and soon enough the tables were covered in locomotives—all Shays. It was hard to imagine such a large assembly of Shay steamers; with engines made by Aster, Accucraft, Geoff Coldrick and others, it was a good show both days. Tom Myers got his Aster Shay running early Friday morning and the shipment of logs got underway. Leroy Paterson put a Norm Saley backwoods Shay on the track for the railfans who stopped by. These geared locomotives are certainly not speedsters, and viewers got a good look as the engines trundled past.

Over in the Ephraim Shay home they had an actor

Track Going Up! - The crew heads out for more supplies as Ron Kurtz's portable track gets set up for the festivities.

Shays putting on a show! An Accucraft Mich-Cal Shay takes the lead as Tom Meyers' shay closes the gap.

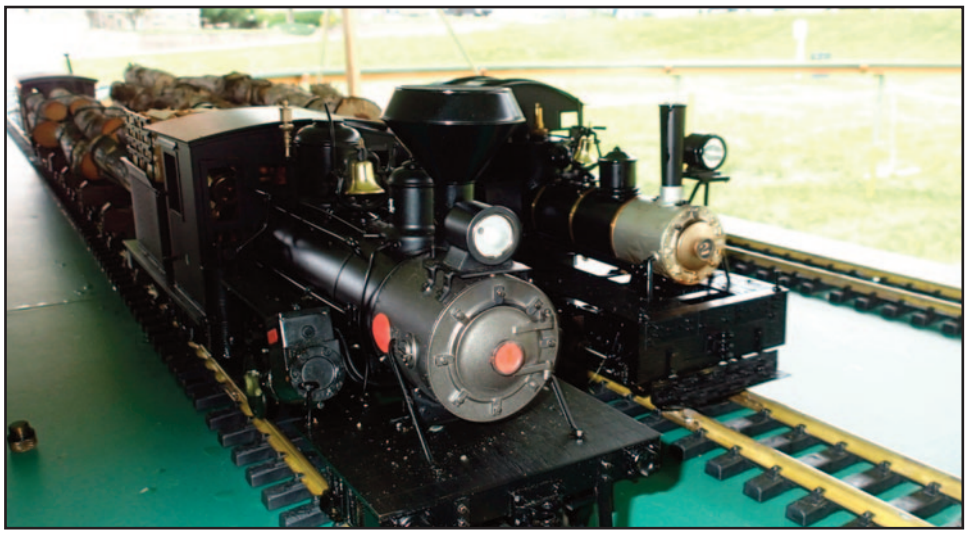
outside, dressed as Ephraim Shay, to answer questions from tourists. Inside they put down a little loop of track and a large scale electric train for the amusement of young visitors. Also inside were numerous old photos and information about Mr. Shay's endeavors in Northern Michigan including boat making, local waterworks and the creation of the "Hemlock Central Railroad."

After a tour of the Shay home, we found Tom Toth, who fired up his model of an Alco Shay and pulled a four-car logging train. This loco had a custom stack made by Norm Saley. Will Lindley brought along a Mich-Cal Shay that had a train of four-wheel cars hauling cut wood and sugar cane.

John Wessels, ever a Shay devotee, showed off his well-weathered log train. Needless to say, this run was not about speed. Although the track was pretty level, it would not have made much difference with all these low-speed, high torque engines running. Despite the cool, overcast weather we had a fairly good crowd of onlookers throughout the day on Friday.

Later in the afternoon we saw John Hussey's 3-cylinder Shay running happily around the track. This is a model of a more "modern" Shay and it looked good with its tapered boiler. A gentleman named Joe Rishel displayed four large wooden models, three automobiles and one very nice model of a Shay locomotive.

Craftsmanship on Display - Joe Rishel's all wood cars and a Shay.



John Wessels' Climax (left) passing a Shay.

Friday evening we were all invited for dinner at Dave and Pam Comers' home, on the shore of Little Traverse Bay. After admiring the view for a while we received a tour of Dave's shop and checked out his garden railroad. Will Lindley and Bob Winkel ran steamers on his track, much to the approval of the 3-5 year old neighbors!

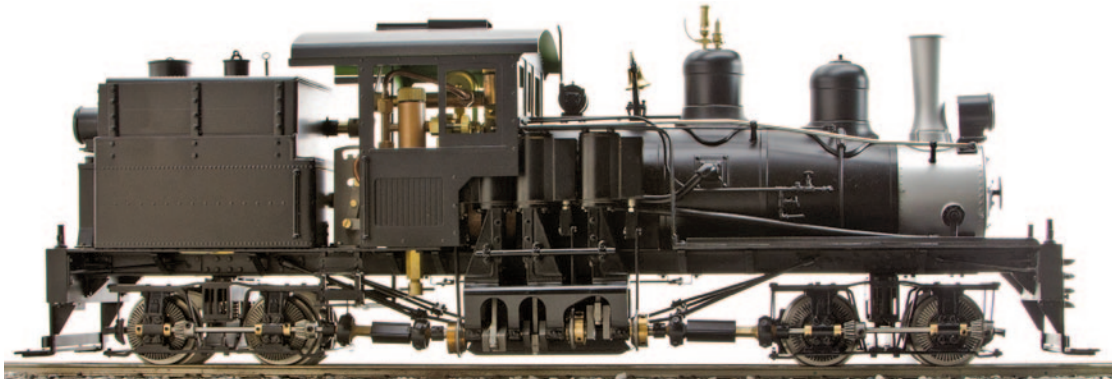
-- Continued page 30

ACCUCRAFT MODEL TRAINS

D&RGW C-25 2-8-0

1:20.3 Scale, 45 mm Gauge
Brass & Stainless Steel Construction, Coal Fired/Butane Fired (Ceramic)
Available in Black Unlettered, #375 Black w/ Flying Rio Grande, and #375 Green Boiler w/ Moffat Logo
Limited Production

SHAY 28-TON CLASS B



1:20.3 Scale, 45 mm Gauge
Brass & Stainless Steel Construction, Butane Fired
Available in Oil Burning Bunker & Coal Burning Bunker

DECAUVILLE 0-4-0T

1:13.7 (7/8ths) Scale, 45 mm Gauge
Brass & Stainless Steel Construction, Butane Fired
Available in Maroon, Green and Black

SANDY RIVER & RANGELEY LAKES FORNEY #6 0-4-4

1:13.7 (7/8ths) Scale, 45 mm Gauge
Brass & Stainless Steel Construction
Butane Fired

Price is FOB Union City, California. Items subject to change in price, color, specification design and availability without notice.

ACCUCRAFT COMPANY, 33268 CENTRAL AVE, UNION CITY, CA 94587, USA TEL: (510) 324-3399, WWW.ACCUCRAFT.COM

ACCUCRAFT MODEL TRAINS

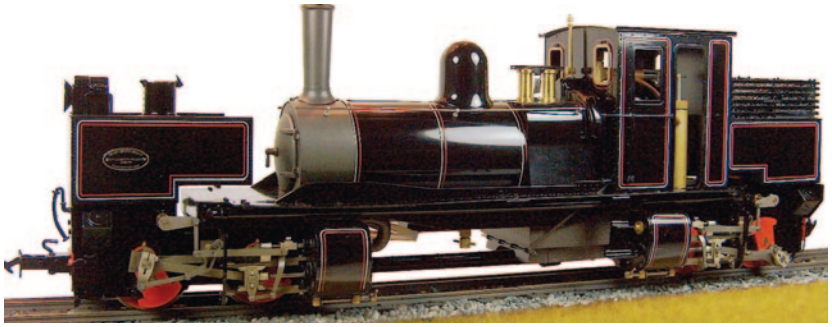
SOUTHERN PACIFIC P-8 CLASS 4-6-2

1:32 Scale, 45 mm Gauge
Brass & Stainless Steel Construction, Alcohol/Butane Fired
Available in #2467 and #2472
Limited Production

PENNSYLVANIA E-6 CLASS 4-4-2

1:32 Scale, 45 mm Gauge
Brass & Stainless Steel Construction
Available in #1794 Green Lined, #460 Black and #460 Green, Alcohol/Butane Fired
Limited Production

TASMANIAN K1 GARRATT 0-4-4-0



1:19 Scale, 45 mm Gauge
Brass & Stainless Steel Construction
Available in Fully Lined Black, Plain Black, and Works Gray, Butane Fired
Limited Production

Price is FOB Union City, California. Items subject to change in price, color, specification design and availability without notice.

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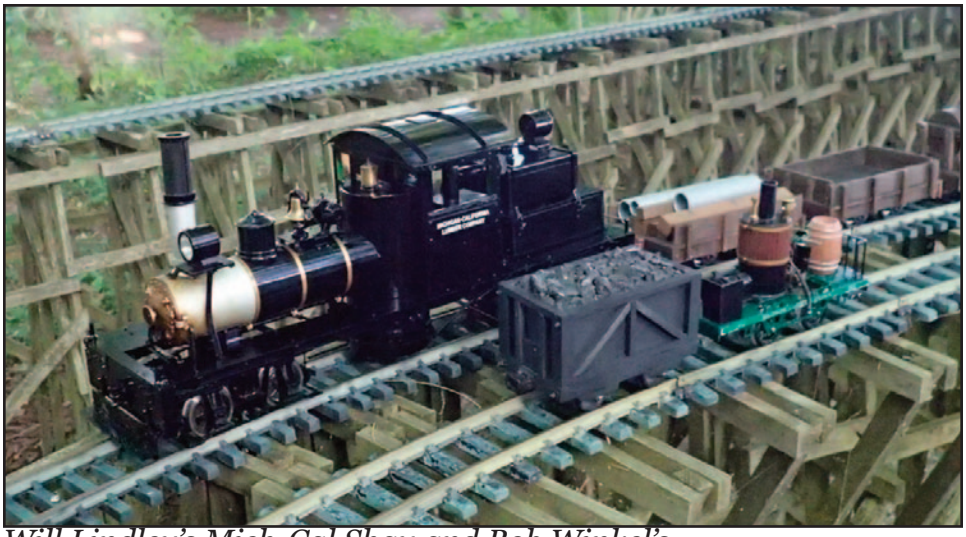
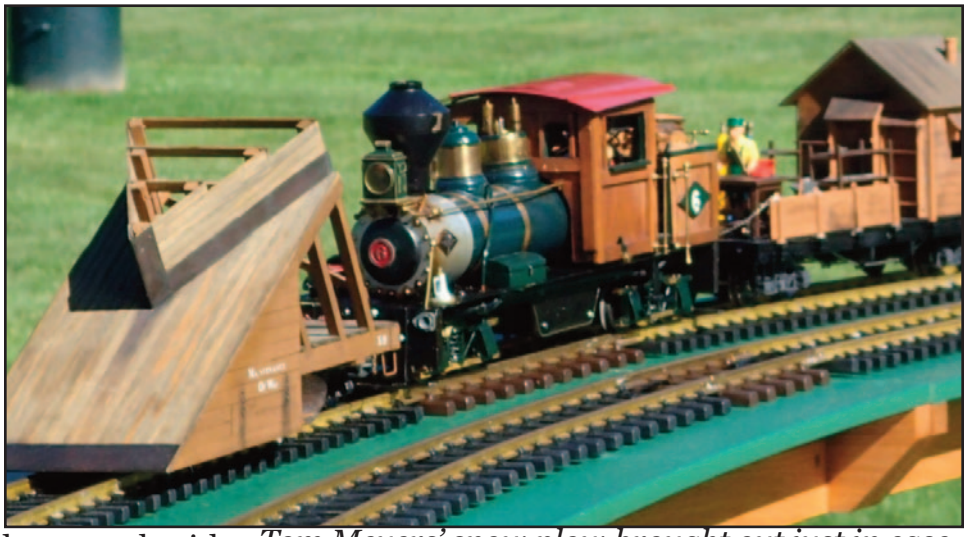


Will Lindley's Mich-Cal Shay and Bob Winkel's Tom Thumb ply the rails at Dave Comer's beautiful garden railway.

to remind viewers of the difference between geared and side-rod type locomotives, pulled a train loaded with forest products, which included models of winter log sled equipment as seen at the Hartwick Pines logging museum.

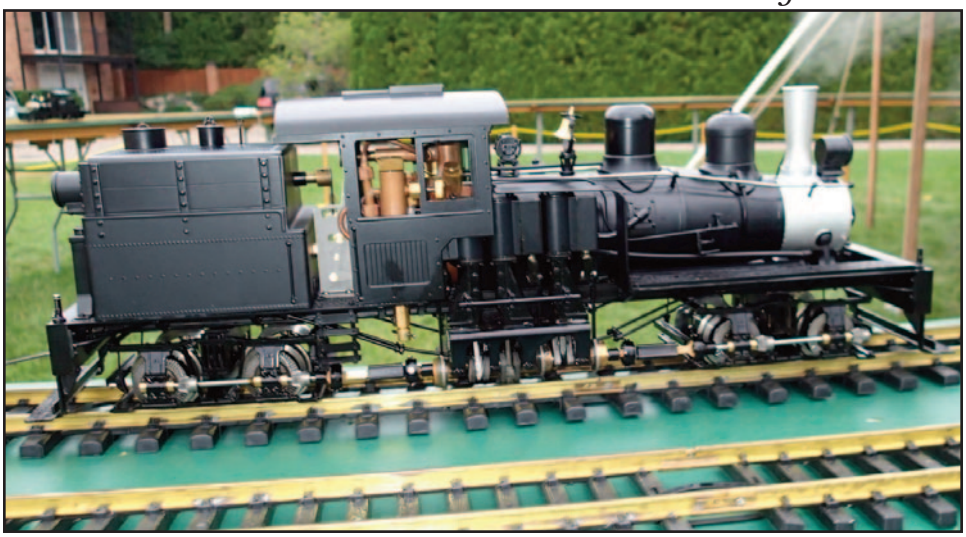
Dave Comer got into action Saturday afternoon with his Aristo 2-8-2 and a mixed freight from his G.R.I.&P. railroad. About 1pm Saturday, at the Shay home, a small crowd gathered to sing happy birthday to the long-gone machinery designer. Then there was free birthday cake for everyone, while it lasted.

Friday night temperatures were relatively cold so Tom Myers brought a snow plow train to the track Saturday—just in case. John Wessels fired up his Shay early and later on he also brought out his Climax geared loco. Leroy Patterson was pulling log shorts and a short section of MOW equipment. A nice perk both days was the hot coffee and delicious scones the Shay Day volunteers brought for us.



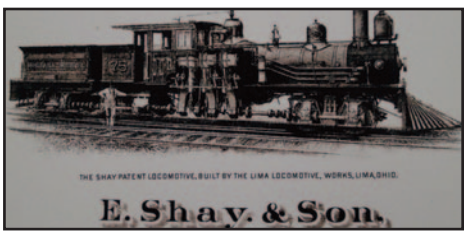
Tom Meyers' snow plow brought out just in case a freak snowstorm hits Northern Michigan in August.

Also on Saturday, Will Lindley got out his collection of four-wheel cars, each with lots of advertising. Your reporter, who ran a Mogul



John Hussey's Accucraft 24 Ton Shay stretches its gears at the Shay Days Steamup.

It was a very pleasant steamup and we hope that the spectators enjoyed it as much as the steamers did! Our thanks to Ron, Dave and John for all their efforts. (And many thanks to Ron Kurtz for the use of his track!)



SBB E 3/3 'Tigerli'

Text and photos by Charles & Ryan Bednarik

I have been involved in Gauge One for thirty years. During that time there have been models or situations that would make myself or Ryan ruminate, "That is not going to go over well.". Now, this is coming from a person that thought LGB would outlast Aristocraft, the Accucraft Ruby would not be popular, and Aster Hobby would celebrate 50 years of producing live steam locomotives in Japan.

When Aster announced the production of the Tigerli with 300 units available, I said to myself, "Well, they must know something I do not." After all, 40 years of success in the business usually centers around building what the customers want. This was confirmed when two of the five versions (the Gotthard Bahn and Dutch Railways) sold out in short order. Yet, in the back of my mind was the common knowledge that most current production models are targeted at 100 units or less for worldwide sales success. This is, as we all are aware, due to the shrinking market and general aging population in our relatively small niche of the hobby.

So, despite having built and/or repaired a majority of the Aster locomotive lineage, I was sure that we would not have the opportunity to get our hands on a Tigerli, as no US customer would be interested. Wrong. A kit was sent to us to build with "urgent" marked on the notice.

ASTER 'Tigerli' Loco

Scale: 1:32, 45mm gauge.
Wheel Arrangement: 0-6-0
Length: 272mm/10.7-inches
Width: 94mm/3.7-inches
Height: 124mm/4.8-inches
Boiler: C type boiler (non-superheated) w/five fire tubes
Fuel: Alcohol
Min. Radius: 1.5m/5-feet
Water pumps: Axle Drive optional
Cylinders: Bore 12mm/.472-inches x Stroke 17mm/.669-inches
Valve gear: Walschaert
Fittings: Regulator valve, blower valve, reverser, by-pass valve, water level gauge, pressure gauge, safety valve, axle pump (optional)
MSRP: $2800 - Base
$4950 - As Tested

Tigerli History

Designed as switcher engines, these standard-gauge locomotives were first used by the Swiss Federal Railways (SBB) for main and branch line operations. The SBB operated 83 units. All of them were built by the Swiss Locomotive Works (SLM) in Winterthur between 1902 and 1915. Nicknamed "Tigerli" (Swiss German for "Tiger Cub") these two-cylinder engines with saturated steam boilers proved to be very dependable and remained in regular service until 1966. Several locomotives were sold to private industrial works and served there for many more years. Weighing in at 35 tons (including 4.2 tons of water and 1.7 tons of coal), their operational speed limit was 45 Km/Hr. (Some were modified to operate at 50 Km/Hr.)

Due to a coal shortage in Switzerland during World War 2, two locomotives were converted to raise steam by electric water heating. This required a pantograph on the cab roof, and transformers and electric heating elements inside the boiler. Allthough this worked well, both engines were eventually converted back to coal firing.

Not all locomotives were identical. Later engines featured a platform on front of the smoke box while others were equipped with larger coal bunkers which extended over the cab roof. From 1935 onwards 24 locomotives were modified to allow one-man operation. Several of these well proportioned engines are exhibited today in various museums while a few are still in operation by private railroad clubs.

History and Photos Courtesy of ASTER Hobby USA- www.asterhobbyusa.com

My initial thoughts on the offering of the Tigerli: Not overly expensive for the base model ($2800), but how does one refill the boiler with the demise of the ubiquitous Aster trackside pump? It is then that the options start to rob the wallet: The only version that makes it possible to enjoy this excellent runner beyond 10 minutes of fuel capacity is the full version for $3750, inclusive of an axle pump and fittings for connection to a water car. However there is one large caveat to this solution; the engine will have no on-board fuel tank with the axle pump installed. In order to run the fully equipped version, one must purchase the optional water/fuel car for an additional $1200. The dilemma; either have an engine that runs for a shorter haul than the B&O Grasshopper, or own one that will put in an enjoyable 30 minute run, along with a sizable dent to the wallet.

In comparison, what could one get for a range of around $3750-5000 in Gauge One? An Accucraft PRR E6, Roundhouse Darjeeling Garratt, Bowande PRR G5 and so on.

Bottom line–if you like Swiss locomotives, this one is worth the cost. Of course if you desire to make your collection more international, then this engine also fits the bill for the fledgling Swiss production market. However, for a beginner's engine, the cost of even the basic model is extremely prohibitive to those just starting out.

Build up process:

The kit arrived and within a week we had finished the build–the locomotive and two cars. The kit is not a difficult build, thankfully, as there were no written instructions available at the time of the build (June 2016). Instructions have been made available now, and the illustrations are very nicely laid out and fairly easy to follow, even for a beginner. The items in the kit were assembled and organized as one has come to expect with Aster kits, nicely packaged away in boxes and with labels to guide you to the correct part. The only situation that had to be overcome were the missing bolts and nuts for building the cars, which were common enough that we were able to use what was on hand. However they could have easily been ordered through Aster Hobby USA or direct from Aster Japan. There were the typical "if only I had known that in the earlier step" scenarios causing one to take apart a finished portion in order to complete the next step, but that was due to the optional axle pump kit being incorporated into the build, and not having looked at the supplement that came with the K2 water car.

Aster's assembly book notes

(Step numbers refer to the steps in the assembly instructions)

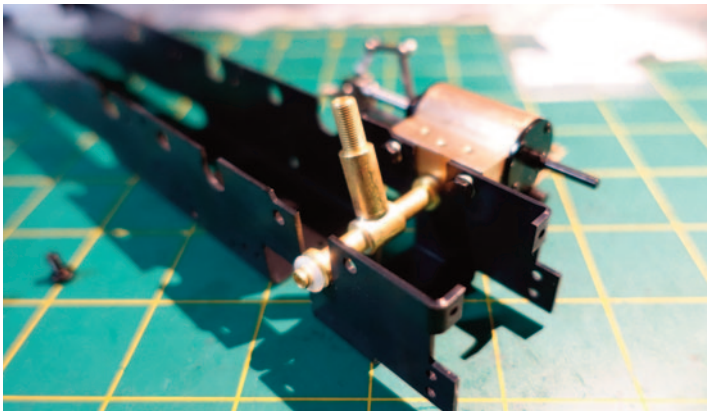


Photo 1 - Step 2

Step 2:

The parts (steam tee, exhaust manifold and oiler listed on step 3) are best arranged and fitted at the same time as securing the valve chest/cylinders. **[Photo 1]**.

The difficulty comes with the structural bracket over the assembly area. This design should have been reduced to the area of the steam tee extension only. That would allow ease of access to the area during fitting of the parts. Beware of the orientation of the cross head guide support bracket (part 2-32), otherwise it can cause a problem with the crosshead motion. **[Photo 2]**

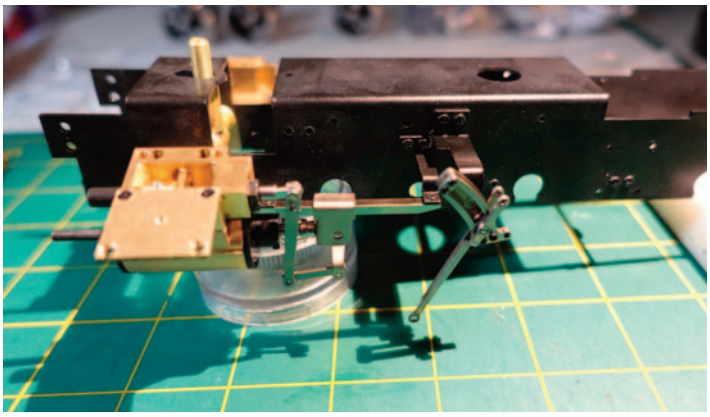


Photo 2 - Step 2 Crosshead Alignment

The center wheel set (part 38) needs attention in setting the quartering of the wheel set on this axle. If not set properly (there are no flats to guide setting of quarter), then you will have to take the axle pump off and reset.

Step 2 (for optional axle pump):

The illustration for the bypass return line (part K2 2-2) is shown going through the wrong hole in the cab floor. It should go through the smaller hole as the larger one on that side (as per illustration error) is for the sight glass fitting. **[Photo 3]**

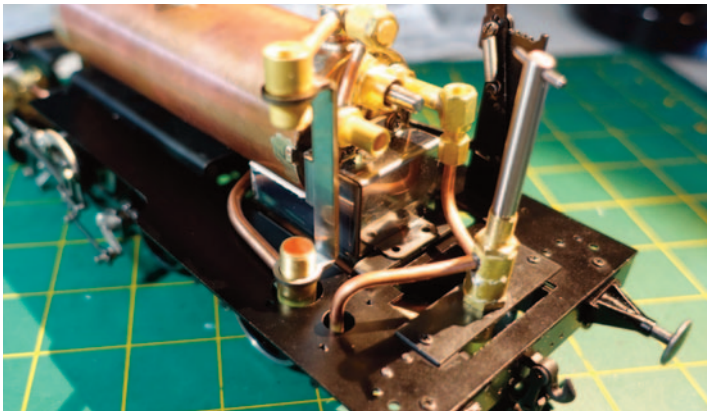


Photo 3 - Step 2 Return Line Routing & Sight Glass Hole

Step 3:

The most critical aspect of this step in the build is the proper alignment and length of the lubricator

feed tube (part 3-18) relative to inserting the compression cones (part 3-19, 2x). Then the compression ends have to be slip fitted onto the pipe ends while denoting the 0.5mm difference between the two sides of the ends. Failure to do this will result in oil leakage and no oil feed to the cylinders.

This change is different than the original design from Aster, which used a banjo fitting which was much easier to service on the bottom of the 3-19 steam distribution block. The current setup requires some forethought towards assembly, given the solid top of the frame in that area. It is recommended to put the lubrication line on with the steam tee left loose to gain better access with a wrench. Reference the above in the step 2 build tips.

Step 6:

Photo 4 - Step 6

Be sure to check the banjo fitting mating surfaces on part 6-3 (upper sight glass fitting/steam distribution tee) for any excess solder. The example built had a lump of solder on the mating surface that prevented a good flat seal and caused a leak. Quick work with a file, but potentially aggravating to fix once the boiler is in the shell and on the chassis. **[Photo 4]**

Step 9:

This is not so much a build note as an assembly critique. There is no reason to have used nuts to secure the 9-10 stanchions on the cab. In step 7 stanchions on the boiler shell were threaded. To put the nuts on in this step makes it take longer than threaded holes would. Not to mention, they can be more frustrating to get right this way.

Performance

The Tigerli ran like it had a "tiger in the tank!"The locomotive tracked surprisingly well given that there was no suspension or springing, although it did bounce slightly through the switches. This was to be expected given the small drivers and short wheelbase. In particular, both of the optional cars behind the engine were fairly light and again have no springing. So, any rough track work will result in the engineer and fireman holding on for dear life! The water/fuel car weight helped a little to challenge the engine, yet it still had plenty of power in reserve.

With the initial runs satisfactory, it was off to the National Summer Steamup with the engine for our customer to enjoy.

At the National Summer Steamup we welcomed the opportunity to show Aster's latest offering, knowing the results thus far with the test runs. So, why not a little anxiety– let's find some coaches to put behind the locomotive. The client had two Dingler Swiss coaches to go along with the two cars, a fairly sizable and heavy train for the little engine, but it was worth a try.

The engine came up to steam within five minutes. Without hesitation the locomotive moved sharply along with its train for the time slot of 30 minutes (one tank of fuel). A second successful run was a bit longer than 30 minutes, but this was due to topping the tank off after lighting up. This purpose-built switcher engine had the power necessary to perform any task in yard service. In addition the engine could easily keep up with a mainline locomotive, despite the fact that it looks very out of place doing so, and the real engines were limited to 45kph (28mph).

The Aster kit of the Swiss Tigerli is a quality product. The performance is excellent, the build (while not entirely for the novice) is remarkably stress free and it does well to represent the prototype.

Epilogue

We are all now aware of the end of this story. The

Tigerli connected to the Water/Fuel Car Option

Photo 5 - Optional water and fuel car for use with the Full Version with axle pump installed.

Photo courtesy of Aster USA.

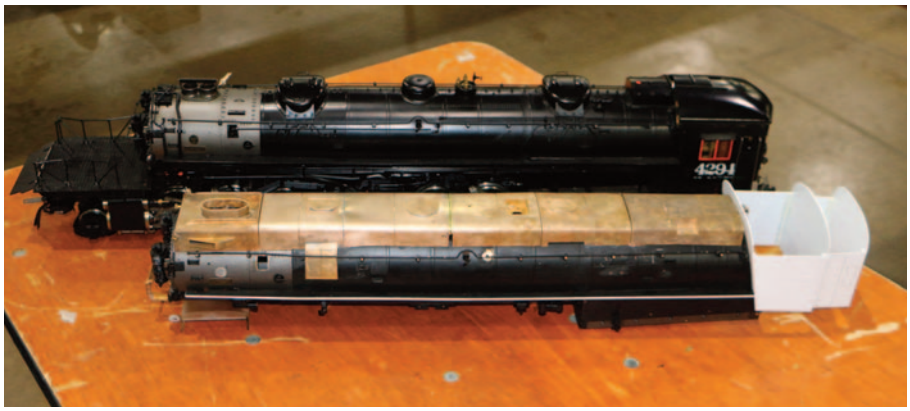
label of excellence we have come to associate with Aster of Japan has now begun a new chapter by partnering with Accucraft. The outcome of this merger will be much anticipated, and many are anxious to see the first joint venture of an Aster product to be made in China. I for one will hope that the offerings stay true to the reputation of Aster products of the past, including the unsurpassed availability of parts and their trademark kits.

The success of the Union Pacific FEF represented the 40th year of Gauge One live steam offerings by Aster. If only Tigerli could have made enough inroads to hobbyists, thus allowing for other future reviews of locomotives from Aster Hobby of Japan, then maybe in 10 years time another milestone would have been reached.

Tigerli putting on a show at the National Summer Steamup 2016 Sacramento, CA

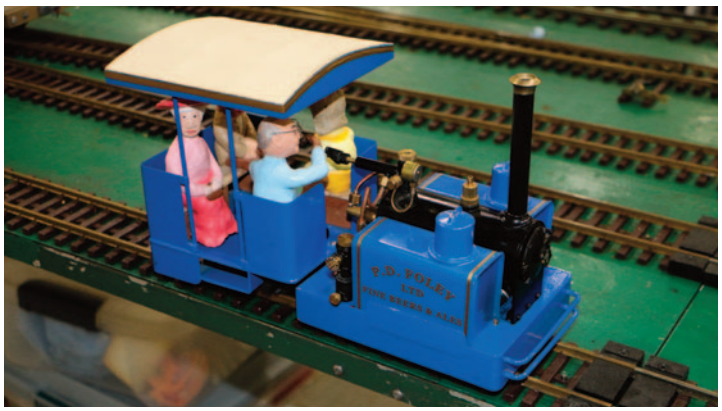
Steam Scene - East Coast Large Scale Train Show 2017

Photos by Scott E. McDonald



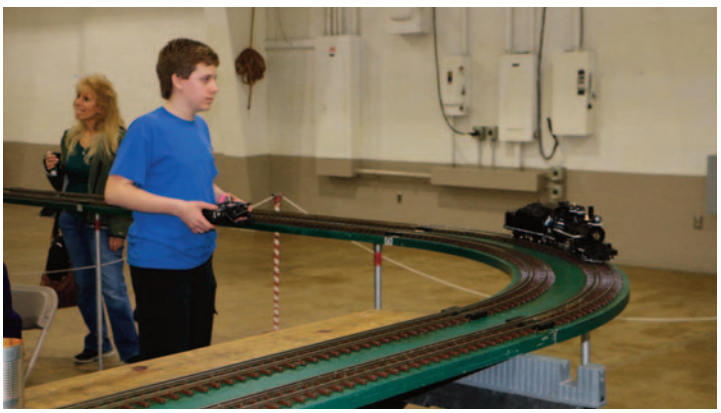
Left - Alan Redeker's latest project is to reverse-engineer the Accucraft AC-12 into an AC-9 Yellowstone. A mock up of Southern Pacific's only modern coal fired articulated, the AC-9, is shown next to the AC-12. Both are offspring of the earlier AC-8 Cab Forward. The lower unit shows a few of the over 80 custom castings being created for this project.

Right - Tom Bowdler's Accucraft "Dora" conversion into a 7/8's scale passenger tram. Can you spot the Dora tucked into the lead unit?. The side tanks on either side are recycled pepper spice tins with a copper pipe cap glued on top with a small wire handle attached to the top of the cap. Custon decals finish out the ensemble to create a pleasant form of whimsey to grace the rails. The custom figures are also by Tom.



Left - Bob Mansfield of Albany, NY readies his Aristocraft Mikado to head out onto the main line.

Right - Nate Heffner of York, PA gives his Roundhouse Engineering Sandy River a workout in his home town show.



Aristocraft 1:29 flatcar gets a 1:32 makover

Aristocraft Flatcar Plastic Surgery

Text, illustrations and photos by Steve Shyvers

Aristo-Craft flatcars, built to 1:29-scale, can be modified to fit in with true 1:32-scale rolling stock. Currently there are few commercial sources for new 1:32-scale North American freight cars. Recent years have seen plenty of new 1:32-scale boxcars and refrigerated cars that fit steam-era railroading, and the efforts of the suppliers are much appreciated. Unfortunately some of the older makers of 1:32 rolling stock have disappeared or have reduced their range of products. Sorry, no helicopter-launching flatcars are required in my railroading operations.

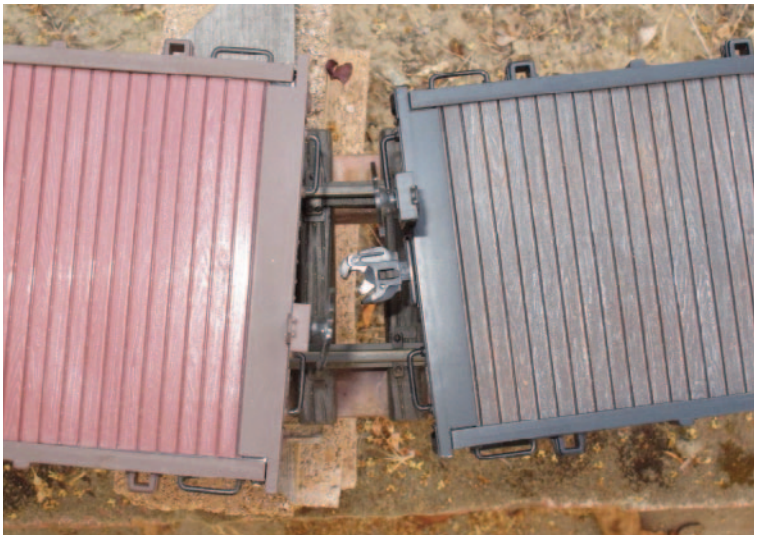


Photo 1 Before: 1:29 After: 1:32

Flatcar conversion process steps.

1. Make the decks narrower by cutting 1/4-inch off each side of the deck
2. Shorten and modify the end sills
3. Install body-mounted Accucraft couplers
4. Patch, paint and weather the wood-grained plastic deck
5. Reassemble and glue together
6. Substitute 1:32 metal-wheel trucks for the original 1:29 plastic-wheel trucks

Finding a couple of second-hand and not-too-beat-up 1:29 Aristocraft flatcars for sale at the 2016 National Garden Railroad Convention got me wondering whether they could be modified to look okay together with 1:32 cars. At 1:32-scale the unmodified flatcars are about 45 feet long, which is fine, but they are much too wide. Fortunately Aristo-Craft flat cars consist of a molded plastic deck with separate side sills, which means that the deck can be cut down to be narrower, and then the side sills reattached. No messy cutting a slice out of the center of the car to make it narrower and then trying to patch and repaint when the two halves are glued back together. The two flatcars that I bought were Aristo-Craft's model 46305, Pennsylvania Railroad, and model 46308, Baltimore & Ohio Railroad.

The conversion process started with disassembling the flatcar. The various plastic parts—deck, side sills, and end sills—are designed to fit together

with molded slots and tabs, and then be fastened in place with self-tapping screws. Additionally four small metal brackets reinforce the attachment of each end sill to the deck and to the side sills. This conversion eliminates the side sill metal brackets, but the metal brackets between the end sills and the deck are retained. Both of my cars came with plastic stakes that were fitted into stake pockets. The stakes were removed and discarded.

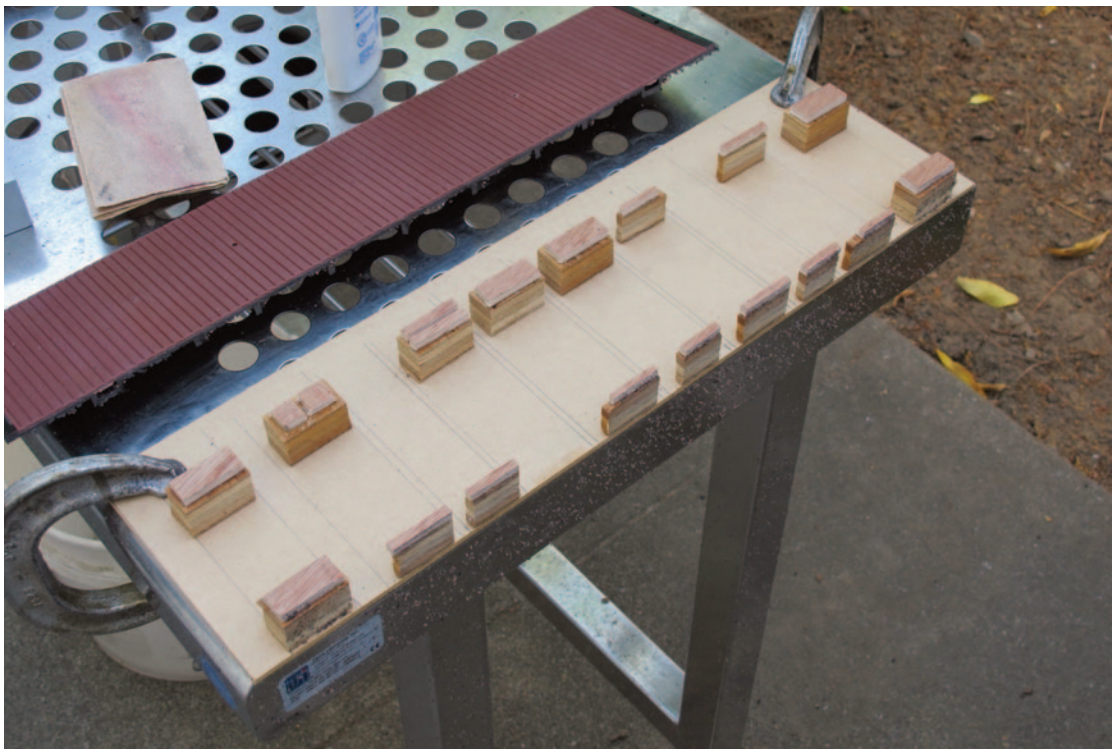


Photo 2

At some time during the flatcars' lives it appeared that "super glue" was used to help hold the flatcars together. Fortunately I was able to separate the various parts without breaking anything. The deck, however, consists of an upper piece, with nicely molded wood-grained planking, and a lower piece with all the underbody detail. I was unable to separate the upper and lower deck pieces on either flatcar, but this was not a problem because both pieces needed to be narrowed by the same amount. Having them permanently glued together simplified the cutting process.

Cutting 1/4-inch off the sides of the decks was, I thought, the most critical operation of the conversion process. I wanted to make sure that the deck's cut edges would be straight and clean in order to simplify reattachment of the side sills, which would be held in place only by styrene cement. A fixture made from medium density fiberboard (MDF) and seventeen 3/4-inch plywood blocks supported the plastic deck during the cutting process. **Photo 2**. The plywood blocks were sized and positioned to clear the various underbody detail and to provide solid support for the deck while it was clamped in place for cutting.

The deck was clamped to the fixture for cutting using two large C-clamps and a thick aluminum bar, which also functioned as a cutting guide. **Photo 3**. The aluminum bar was positioned exactly 1/4-inch from the deck's edge. Cutting was done using hand-held 32 teeth-per-inch hacksaw blade. Before cutting I used a sharp utility knife to cut a deep score into the deck along the edge of the aluminum bar. This was intended to serve as a reference line in case the aluminum bar slipped during the sawing operation or the saw blade wandered.

Cutting each side of the deck took only a few minutes. The dust was cleared from the cut area several times during cutting in order to check progress. I purposely hand-held the hacksaw blade because a hacksaw frame might have contacted the aluminum cutting guide and skewed the cut. I also chose not to use a power-driven saw because of the possibility of melting the plastic. Those with better tools and more experience working with plastic can choose their own methods for cutting.

After cutting the deck edges were de-burred and cleaned up, and for this I used a sharp X-Acto knife and a strip of fine sandpaper glued to a "Popsicle" stick. Fortunately my saw cuts were straight. If the saw blade had wandered away from the the cutting guide, a woodworking block plane with a sharp blade could have been used to straighten the cut edge.

The flatcar end sills need to be shortened to match the narrower decks, and this involves making the notches at the ends of the end sills 1/4-inch deeper, as well as reducing the overall end sill length.

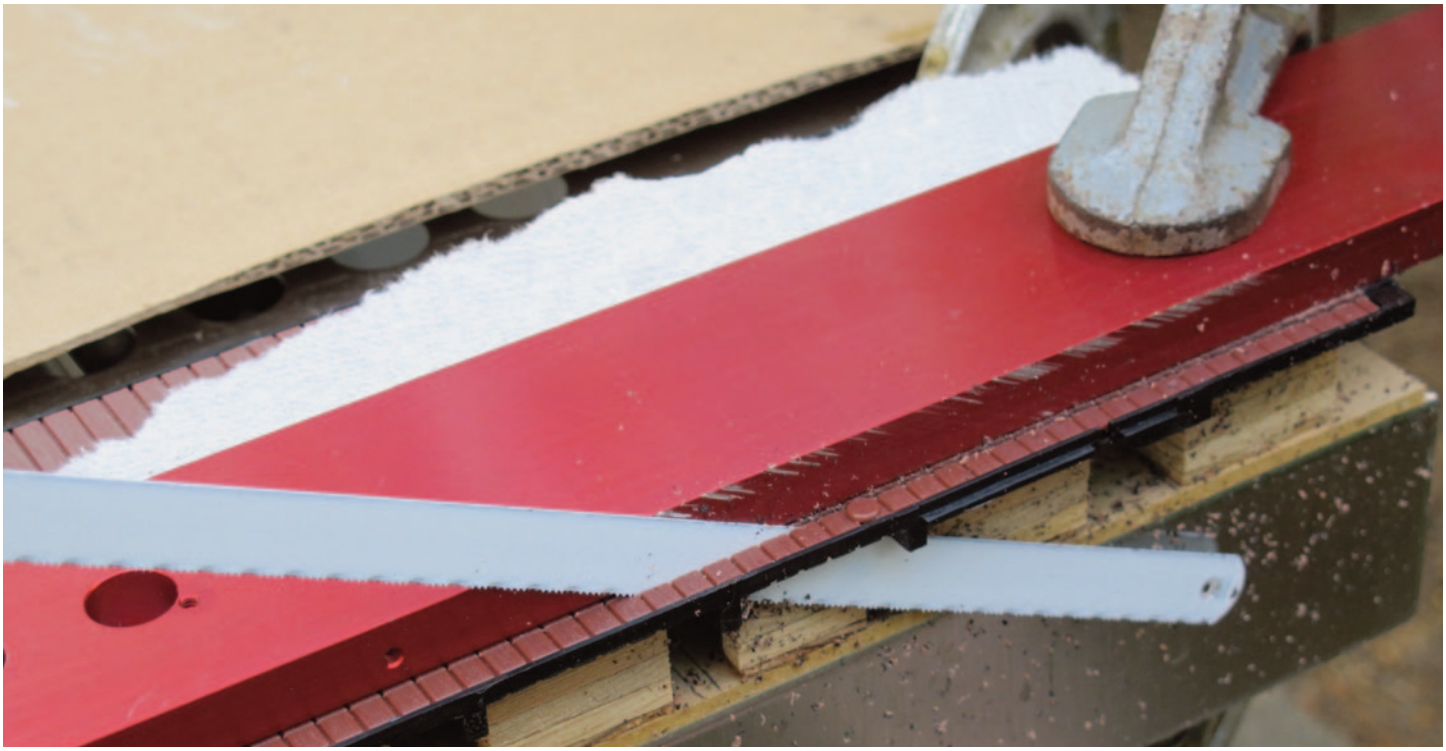


Photo 3

Photo 4 shows a pair of end sills before and after shortening. Cutting the notches deeper was done using careful measurement, a fine-tooth hobby saw, files, and a sharp wood chisel.

Photo 4

The end sills also need openings cut for the body-mount coupler draft gear boxes that will be attached to the underside of the deck. For Accucraft or Kadee couplers the openings are 3/4-inch wide and about 5/16-inch high. Once again careful measurement and sharp tools completed the job.

The underside of the deck at either end of the flatcar has molded-in "locators" that appear to be for a body-mount coupler, but they do not match either Accucraft or Kadee couplers. Removal of the locators took only a few minutes by shaving the plastic away using the sharp wood chisel. A rotary tool such as a Dremel with an appropriate cutting bit could have been used, but the sharp chisel left a clean, smooth surface.

Both Accucraft and Kadee coupler draft gear boxes are typically mounted using three self-tapping screws. The flatcar deck moldings are only a 1/4-inch thick and would not provide enough "bury" for screws, so shallow holes were drilled and epoxy used to "pot" 2-56 threaded studs in place. **Photo 5.** The studs were made by cutting the heads off stainless steel 2-56 machine screws.The epoxy, when cured, provided a strong and resilient bond between the stud and the plastic deck. The studs, of course, need to line up with the mounting holes in the coupler draft gear boxes after the epoxy cures. My method for holding the studs in correct alignment while the epoxy cured was successful, but it would have paid for me to have given this a

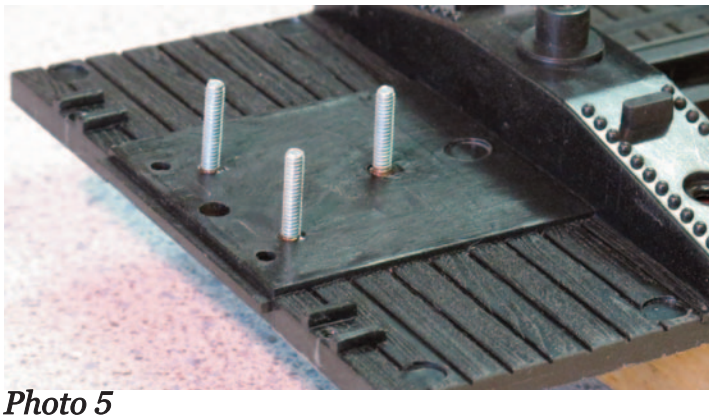


Photo 5

bit more thought before I mixed the epoxy.

The flatcar's molded plastic deck features nicely-patterned wood-grained planking, and I chose to paint and to weather the deck before reassembling the flatcar. Before painting, several small holes and mold marks needed to be patched. The holes were plugged with small pieces of styrene, and then the holes and mold marks were faired with Squadron Putty. After the putty dried the surface was roughed up slightly with the tip of a hobby knife, and after weathering the patched areas are not visually obvious. **Photo 6.**

Photo 6

An optional bit of modification involved filling in two small notches on the side sills where the side sill overlaps the deck molding. Originally the notches were used to align the side sills to the deck molding, but the matching alignment features were removed when the 1/4-inch was cut off each side of the deck. Tiny filler pieces were cut from styrene and glued in place with Plastruct cement. This was tricky to do without having the cement damage the existing finish on adjacent areas. After the Plastruct cement dried any gaps around the styrene fillers were puttied with Squadron Putty, sanded fair, and finally painted with acrylic paint to match the existing flatcar color.

The flatcar was reassembled upside down on a sheet of MDF that itself was on a very flat surface. Clamps were rigged and small weights positioned to make sure that the flatcar stayed flat against the MDF during gluing. This was to remove as much of the slight warping of the deck molding as possible, and to ensure that there would be no permanent twist in the assembled flatcar body after the glue dried. While the flatcar was clamped in place twenty small corner brackets, cut from Plastruct material, were glued between the underside of the deck molding and the backs of the side sills and end sills using Plastruct liquid cement. The flatcar was left clamped in place overnight while the cement dried. Finally the four small metal brackets, two at each end, between the end sills and the underside of the deck were reinstalled.

Accucraft couplers were installed on the 2-56 studs and secured with 2-56 hex nuts. **Photo 7**. A dab of flat black acrylic paint was applied to the nuts and exposed ends of the studs to function as a thread lock to keep the 2-56 nuts from working loose. A commercial thread-locking compound could have been used, but would have made it more difficult to remove the coupler for any needed maintenance.

Originally I planned to use the Aristo-Craft plastic

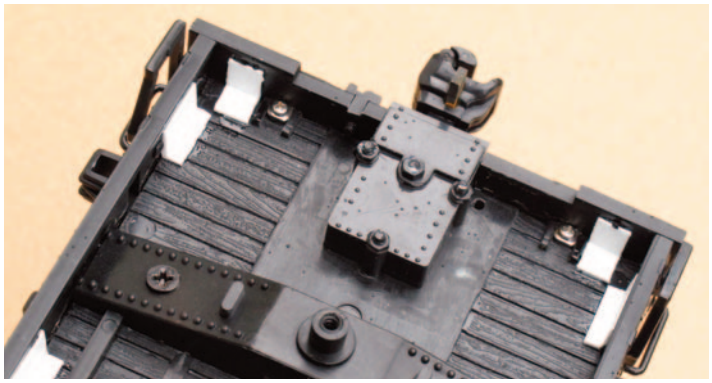
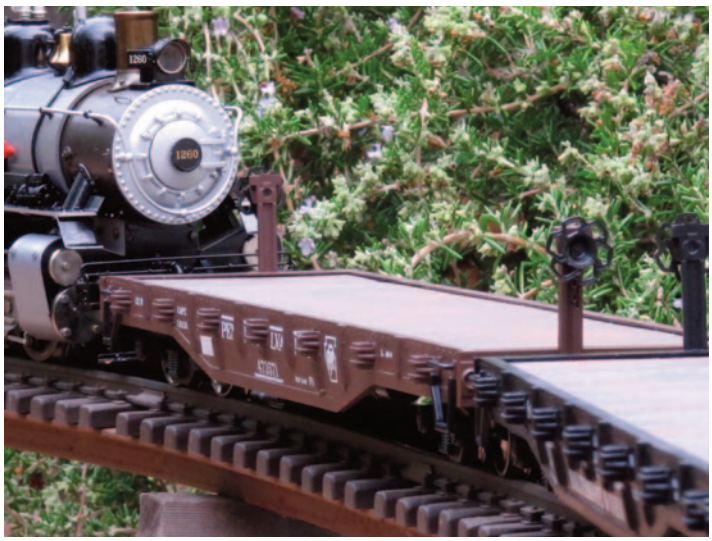


Photo 7

trucks and just swap the plastic wheel sets for metal wheel sets. However the original plastic wheel sets used longer axles than were on the available replacement metal wheel sets. An attempt was made to narrow the Aristo-Craft plastic truck frames, but properly-scaled Accucraft 1:32 trucks looked a lot better. Accucraft trucks could be mounted to the flatcar with no modifications required to the flatcar or to the trucks, and as a further bonus the height of the flatcar, when riding on the Accucraft trucks, put the flatcar's couplers at the correct height to match Accucraft 1:32 rolling stock.



Modified flatcar fits in nicely with the 1:32 scale scene

Spring Break

16mm Steamup and a Driving Day on the Talyllyn Railway

Text and photos by Paul Hagglund

Our Talyllyn experience began the day before we were to have our footplate course – an opportunity to drive a genuine Welsh narrow-gauge engine. The first order of business after an excellent breakfast at the Monfa Guest House was a visit to the Narrow Gauge Railway Museum housed adjacent to the Talyllyn Railway's Wharf Station. The museum is full of intriguing pieces of narrow gauge railway history from around the British Isles and beyond. The building is not as imposing as many museums here in North America, but the artifact collection is most impressive. By the time we had finished taking in the extensive collection in the museum, a crowd was gathering for the day's 16mm steamup at the Llechfan Garden Railway, nestled below the railway's volleteer hostel.

Glyn Valley Tramway model once owned by 16mm Association founder Graham Lamb called 'Phurcombe Hall'.

A Caradoc passes Compton Waterworks as it trundles around the Llechfan Garden Railway.

The garden railway itself is large and built around the bottom of a sheltered bowl, with two primary running loops along with a small inner loop, and an extensive steaming bay outside the main running circuits. The railway is looked after by a group of volunteers headed up by Kes Jones (daughter of author and modeler Peter Jones) and Steve Thorpe. Many of the buildings from Peter Jones' legendary Compton Down Railway have taken up residence at Llechfan, where they create a su-

perb atmosphere. At the time of our visit, the group had plans afoot to install a balanced quarry incline into the hillside above the layout. I look forward to the chance to return and see what progress has been made.

About a dozen local 16mm modelers came to run trains on the early spring Sunday afternoon, and they really made our visiting North American contingent feel very welcome. Several very historic 16mm locos made runs over the course of the day along with more recently made engines, notable among them a John Turner built model called 'Our Sam' and the noted Glyn Valley Tramway model once owned by 16mm Association founder Graham Lamb called "Phurcombe Hall". After the day's running was completed and the garden line suitably prepared for another week of slumber, our group met up with Kes and Steve at the Salt Marsh Café on the Tywyn High Street for an excellent dinner.

Our driving day began early with a surprise early breakfast to go, courtesy of the owners of the Monfa Guest House, consumed before our 8:00 start at Pendre Shed. We had elected to help clean and prepare our charge for the day which turned out to be ex-Corris Railway No.4, now called "Edward Thomas". Edward Thomas was the Secretary of the Aberllefenni Slate and Slab Quarries Company, a man instrumental in the longevity of the Corris Railway and ultimately the survival of the Corris' two lcomotives.

After filling out our required paperwork and a safety briefing performed by our driving instructor for the day (Malcolm), Jay Kovac and I were handed rags and an assortment of products to aid in the cleaning process. After making sure no ash from the previous day's running was on the paintwork, our first task was to polish the brasswork on the loco. Cleaning and polishing of the injectors, plumbing, and all the running gear was left to the two (trained) young volunteer cleaners who were working during their spring school holidays. With the brass gleaming, it was time to get the paintwork shining with some rather clever cleaner wax. Even with a relatively small loco tipping the scales a bit over nine tons, there was a fair bit of cleaning to accomplish. After all, we would be driving and did not want our charge to look less tidy than the other two locos in service. With the loco shining after an hour and a half of cleaning, our TR footplate crew for the day rolled the loco out into the April sunshine to await permission to take the train down to Tywyn Wharf station, where we would collect our small group of passengers as well as coal and water the loco.

Just enough time for a spot of tea before departure. Photo by Kes Jones

Paul brings the "Edward Thomas" out onto the mainline for a trip to the water stop at Dolgoch Falls.

As I was first up to drive, I rode in the cab with the TR crew as they collected and assembled our train for the

day out of one of the carriage sheds at Pendre. I should mention at this point that "Edward Thomas" has one of the larger cabs on the railway yet it is still quite chummy with three people on the footplate. We were very fortunate indeed to have a good selection of historic coaches for our train. Our train comprised the former Corris Railway bogie saloon which carried Diana, Princess of Wales, coach 7 built on the frames of a Penrhyn Quarry Railway coach, coaches 2 and 4 dating from 1865 and 1866 respectively, with brake van 5 of 1865 bringing up the rear. As the crew coaled and watered the loco, we had a cup of tea on the platform.

Jay (left) helps add water at the Dolgoch Falls Water stop.

With the loco (and crew) provisioned for the trip, I rode the footplate with the driver and fireman for another review of the controls in preparation for the seven-and-a-half mile climb to Nant Gwernol. At 11:07, I was shown the green flag by Nigel the guard, acknowledged with one sharp blast on the whistle, and we were off to our water stop at Dolgoch Falls. Having only four passengers (Jay Kovac taking the other driving trip, Peter Foley, Jeff Young, and Nick Fisher) and the guard on the train plus three on the footplate, the train was rather lighter than normal and the loco handled the slightly greasy conditions out of Tywyn Wharf with little fuss.

Running into Pendre, we had to make our first flying token exchange in order to have permission to occupy the next section of track. The Talyllyn Railway runs on a token system instead of an electric block signaling system that would be more familiar on this side of the Atlantic. The tokens are released by an electrically interlocked machine regulated by the block attendants who communicate by a series of bell signal codes. With token in hand, all crew on the footplate verbally verify that the token in the cab is correct for the next section and hang the token on the cab sheet.

Back on the line, Driver Malcolm suggested I notch the valve gear back on the flatter bits to take advantage of the expansive power of steam. I was a bit skeptical at first since Hackworth valve gear is known not to notch back very well, but was then informed that the loco is timed such that it can be notched up a bit in forward, but at the expense of reverse. This is no real problem as the locos primarily coast in reverse on the return to Tywyn.

Getting Certified: Paul Hagglund (left) and Jason Kovak (third from left) proudly display their certification with their driving school instructors. ***Photo by Kes Jones***

Beyond Rhydyronen, the climb begins in earnest at 1 in 50 and the reverser is used in conjunction with the regulator to maintain line speed of 15 mph. Line speed is plenty fast enough on a rather lively riding 0-4-2T. Passing through Brynglas block and exchanging tokens, the climb is redoubled to Dolgoch Falls station where water is taken. The guest driver has the privilege of spotting the hose in the tank filler and can be soaked quite easily if attention is not paid to water flow. After topping off the saddle tank, we whistled off for another token change at Quarry blockpost, and then Abergynolwyn for our first meet of the day with the returning first service train.

Jubilee 1897, an industrial locomotive used on the Cilgwyn Quarry in the Nantlle Valley on display at the Narrow Gauge Railway Museum housed adjacent to the Talyllyn Railway.

Another climb leads to Nant Gwernol, where the Talyllyn crew accomplish the runaround move and then give some final tips on the finer points of air brake operation.

As a historical note, Talyllyn Railway trains did not have continuous braking until the mid-1990s. Rather than relying upon rather large standard Westinghouse pumps, the TR made their own smaller pumps using their own patterns. The system operates at 65 psi instead of the 90psi that we are used to seeing on this side of the Atlantic. The locos very conveniently have two air gauges, one visible when running forward and the other visible when reversing down the grade.

Upon our return to Abergynolwyn, the tea room staff had laid on a first rate lunch for our enjoyment as we waiting for the second service train of the day to work up from Tywyn Wharf. After being passed by Dolgoch on the second service train, we were given the token and permission to descend to Quarry blockpost. Coming into Quarry, I inadvertently released the brakes instead of returning to the lap position, and had to wait for the line to come back up before applying brakes again. Fortunately enough space remained to bring the train to a smooth halt without running past the blockpost. In my own defense, the brake valve does go to release before the pin is out of the lap detent. Coming down the grade, I had expected that the weight of the train and loco would keep things moving at 15mph with the occasional application of brakes. I was quite surprised that I had to have the regulator open much of the time to keep things clipping along on all but the steepest parts of the descent. The regular crew mentioned that there is less need for regulator use with a fully laden train.

All too soon, we reached the yard at Pendre which was the end of my driving turn. After spotting the loco at the water column for the intermediate servicing, I swapped places on the footplate with Jay Kovac and he was given the brief on loco operations. We had a small wager that whoever had the most wheel slip on their watch had to buy the other dinner that evening. Both of us maintained adhesion the whole day, so a draw was declared. Riding up the line, I changed carriages at each station stop to get a broader spectrum of the atmosphere and ride qualities of the different pieces of stock. Nigel, our guard, kindly let us take turns riding in the brake van which was most enjoyable on a nice spring day with the doors open.

I would highly recommend doing a driving day to anyone with an interest and an opportunity to do so. A number of preserved railways in the UK offer such courses on both standard and narrow gauge lines. Opportunities for one-day and multi-day engineman experiences can be found in the U.S. at places like Roaring Camp, CA, East Ely, NV, and Chama, NM.

The Author, appropriately dressed for duty on the Talyllyn Railway. ***Photo by Kess Jones***

CONTRIBUTOR BIOS

The magazine couldn't exist if it were not for the dedicated individuals who take time from the hobby to chronicle their endeavors, interests, and joy of live steam. If you get a chance to meet any of our contributors at a steamup, please thank them for their contribution.

Charles & Ryan Bednarik - Charles & Ryan Bednarik are the faces of Triple R Services. Triple R Services grew out of an interest in several hobbies related to transportation. Charles & Ryan have enjoyed the hobby of models since their start with American Flyer and LGB products. Their passion for live steam on the road, along the river and traveling on the rails was the starting point to actively engage the functional operational aspects (how they work and making them work better) of steam vehicles. The ability of TRS to upgrade, repair, build or modify a steam engine requires experience. A working knowledge of various steam applications allows for a perspective in determining what is necessary to be done on a given job. The experience level of the TRS shop includes the working knowledge and ability to operate locomotives from Gauge 1 to a real 1:1 steam locomotive in actual revenue service.

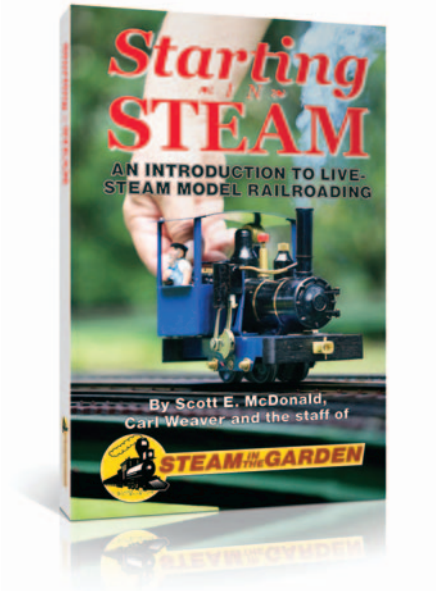
Paul Hagglund - Paul is a lifelong railway enthusiast and spent his formative years watching trains on Burlington Northern's Stevens Pass line. Paul started modeling in N scale until the friendly Puget Sound Garden Railway Society Live Steamers attracted him to live steam in 2002. His primary interests in live steam are vintage 16mm scale, 32mm gauge models and modeling the Darjeeling Himalayan Railway (DHR) in 16mm scale. Full size railway interests include the DHR, British industrial railways and tramways, Isle of Wight railways, Somerset and Dorset Joint Railway, Isle of Man railways, and Pacific Northwest railroads (Milwaukee and Northern Pacific especially).

Rob Lenicheck - Being a Colorado native, Rob Lenicheck was born with narrow gauge steam in his blood. He started modeling in HO in junior high, thanks to a suggestion from a friend, moving on to HOn3 in high school, and finally to On3 in his early twenties. Unknown to Rob at the time, the Gauge One live steam hook was set deeply about 20 years ago when that same friend revealed his collection. Rob now spends much of his time scratch building engines. He has degrees in Music Education and Mechanical Engineering.

Steve Shyvers - Steve's interest in live steam started with a Wilesco steam engine back in the third grade, along with Lionel trains, and later HO. Soon thereafter radio and electronics took over, and a career in the semiconductor industry followed. Twenty years ago he discovered some of the pioneer small scale live steam internet sites. After seeing genuine little steam trains Steve was hooked! First rustic 1:20 stuff with chain drives, oscillators, and four-wheel cars. Steve converted Roundhouse locomotives to alcohol and coal firing. His interests today are centered in UK and US 1:32 scale. Recently retired, Steve lives in San Jose, California, and is a member of the Bay Area Garden Railway Society (BAGRS) live steamers.

Bob Winkel - Bob is from Rochester, Michigan. His first live steam locomotive, a 7.5-inch gauge Conner beam engine, was purchased in 1997 and still runs at the Great Lakes Live Steamers track. He was introduced to G-scale steam by Bill Kay and joined the Michigan Small Scale Live Steamers in 2007. Bob's related hobby activities include a small garden railroad and making scale loads for his flat cars. He has written over a dozen articles about live steam activities that have appeared in Model-tec, Live Steam and Steam in the Garden.

11 AMAZING TRICKS TO HAVE MORE LIVE-STEAM FUN!



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THE CUPOLA VIEW

With this issue I hope that everyone is having a great summer and enjoying some great steaming! Since I have to write this editorial a few months in advance of the magazine release date, it's spring. My live steam year started out with the annual trek to Diamondhead, Mississippi, followed by the annual Scranton Steamup, and then the annual March Boy Scout Show followed by the annual East Coast Large Scale Train Show. April and May were reserved for at-home steaming on the new elevated railway and watching the annuals bloom in the garden.

This is the second year of my elevated railway that allows me to run the larger locomotives on 10-foot radius curves and I'm really enjoying that. Last year was the "kick the tires" year of Phase One–the initial installation phase. I knew when I designed the layout that I would eventually need more sidings and steamup areas for my guests. My first steamup proved that need and while we made do with what I had, wanting to be a good host I planned for this year to add more in Phase Two.

Phase One was semi-complete when I hosted my first steamup in May 2016. That experience showed that I needed a better way to get trains on and off mainlines in a smoother fashion. I ordered a crossover and three-way switch soon after the National Summer Steamup in Sacramento and got it installed in fall. The new crossover is great and showing its worth every time I change trains or new consists. With Phase Two I extend the sidings and get more storage area.

Mike Moore of Ellicott City, MD preps his locomotive at the Spring Steamup.

I hope to be able to spruce up the line with more plantings to add some color to the garden. I need nice backgrounds for photos and video.

Magazine Stuff

So far putting together the magazine has been fun and interesting. I like the creative outlet that putting together articles gives me and hopefully you are enjoying the results. Of course my concern is the same one Ron and Dave had and that is filling the magazine with articles. I was spoiled with a general plan of what would be in the first three issues that would be my responsibility. The electronic folders on Dave's computer showed his plan. Some folders were full, and some were empty, but I knew where I had to go to get the material.

Now I have to start my plea for more content to keep your magazine going. Tell us what you want to know about. We'll go digging for the information to provide you the content you desire. If you want to write, then by all means please do! In this issue we added short biographies about our authors. Time to get your name added to the list.

Our Web Presence

We started this year with some turmoil. Not only in losing Dave, but electronic bullies are constantly trying our patience with our website and trying to install malware. The electronic world moves so quickly and software updates to maintain our web presence happens at too fast a pace. We want to provide quality content in a family-oriented safe environment, but it takes a lot of effort. We initiated a major upgrade to our system to not only improve security and to stop attempts to place malware on our site; but to also improve our content.

Our first content improvement was to add a chat system. We have been asked many times about what happened to the good old days of Thursday Night Chats. If you have never heard of it, then you know how long it's been since we had that capability. With our updated web system we can now host the chats again. By the time you read this, this

should be old news and you have already joined us on a Thursday evening to talk about live steam. If not, here's your invitation. The chat line opens at 7:00pm eastern time every Thursday evening. We close it down at 3:00am eastern which gives west coast chatters till midnight. You will need to register at *www.steamup.com* to use the chat. It is same registration that you use for the forums.

Screen shot of our new webchat interface.

Our next planned improvement is the Forums. The forum software that Dave set up is one of the highest rated forum software packages available that is compatible with our web system. It has a lot of capability. So much so that many of our users found it to be complicated. The forums have an anti-spambot capability whereby you had to input a code based on a picture presented in order to post. You had to do this for only your first ten posts, and then the requirement goes away. That was too much and our live steamers went elsewhere. I have dialed that requirement down to the minimum our software will allow. So know that if you are new, it's only for the first couple of postings you make. After that, you don't have to do it anymore.The hunt is on to find a new forum software package, and this past paragraph may already be out-of-date, but either by chat or forums, we hope to see you online soon!

'Cupola view' is written by Editor Scott E. McDonald: you can contact him at sitg@steamup.com or P.O. Box 1539, Lorton, VA 22199.

Next Issue Highlights

Another Dora Conversion by Marc Horovitz

Los Angeles Live Steamers Add a Gauge One Line

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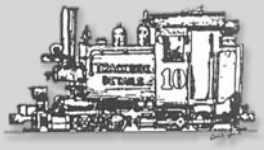

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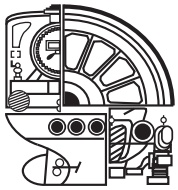

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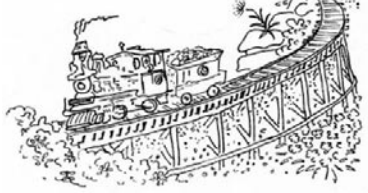

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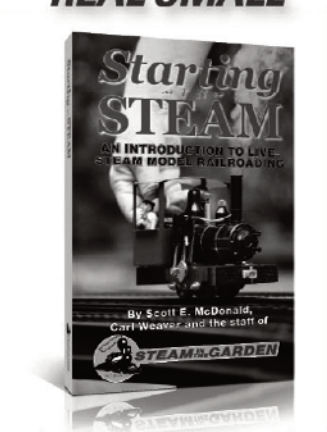

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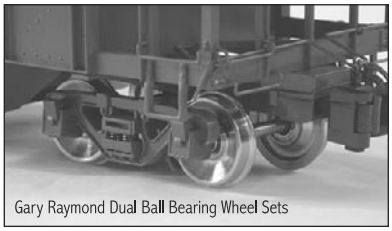

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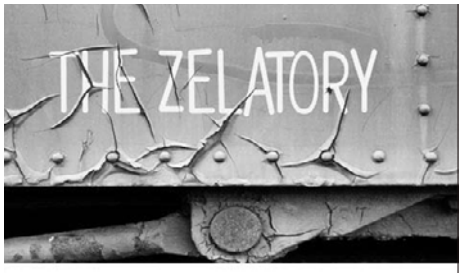

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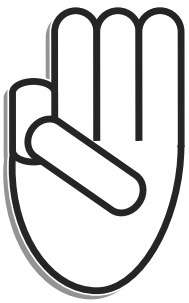

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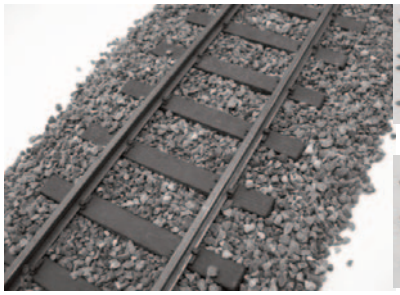

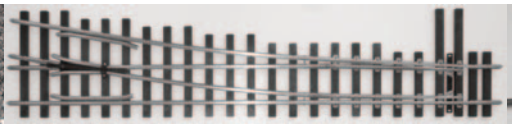

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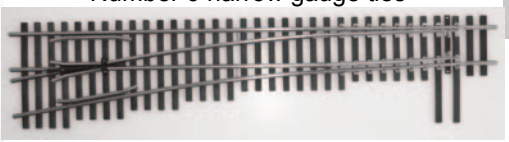

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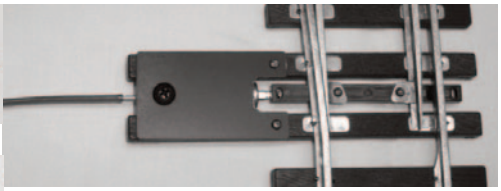

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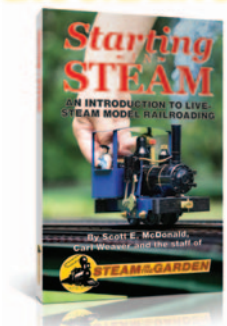

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July 30-Aug. 6, 2017 — National Model Railway Association Convention, Indianapolis. Clinics, layout tours. Info: http://www.nmra2017.org.

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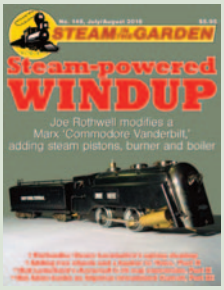
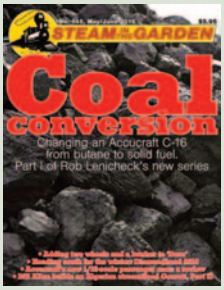
Vol. 26, No. 5; Issue 147/148; September/December 2016, Aster & Accucraft, 'Casey Jones' cars, Tasmania, Maine engines, Steam at the 32nd National Garden Railway Convention,Coal conversion: Part III and IV of six, National Summer Steamup, 'Dora' wheelie. Part III of 3,Project 23: scratch building the SR&RL 2-6-2, Stationaries: at National Summer Steamup

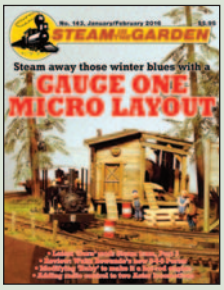


Vol. 26, No. 4; Issue 146; July/August 2016 Steam-powered windup: building a 'Commodore Vanderbilt' 32mm-gauge steamer • Portlandia: a photo essay from Staver Locomotive • Adding two wheels and a bunker to 'Dora," Part II • Accucraft C-16 coal conversion, Part II • Algerian streamlined Garratt, Part III •Latest waybill: Wuhu, Roundhouse.



Vol. 26, No. 3; Issue 145; May/June 2016 Coal conversion: Changing an Accucraft C-16 from butane to solid fuel • 'Dora' wheelie • Streamlined Garrett: 1:32-scale scratch built steamer. Part II of three • Pleasing Pullmans • Locomotive diversity: International Small Scale Steamup in Diamondhead. • Latest waybill: Aster, Accucraft, Regner.

Vol. 26, No. 2; Issue 144; March/April 2016 FEF-3: Locomotive review and workshop project building Aster kit • Resurrection of Bowman steamer • 'Dordlebug': A rail bus out of a 'Dora' and a plastic rail car • Streamlined Garrett: 1:32-scale scratch built steamer. Part I of three • Steam in the scenery • Latest waybill: Flair, Bates obituaries, bearing kits.



Vol. 26, No. 1; Issue 143; Jan./Feb. 2016 Micro layout: Building an indoor Gauge One track • Review of Wuhu Bowande Porter • Hot-rod 'Ruby': Hopping up a 1:20.3-scale engine • Rolex Asters: Adding radio control • Learning to model in tinplate with a 'Dora' modification, Part III • Latest waybill: Llagas Creek Railways sold, U.K. distributors merge.

Vol. 25, No. 5; Issue 141; Sept./Oct. 2015 Mamod's latest: 'Brunel' • Learning to model in tinplate with a 'Dora' modification, Part I • Live-steam group makes sixth appearance at Maker Faire • Adding mesh to Accucraft burner • Salute to Tom King • New products: Aster 0-4-0, Wuhu Bowande German 2-6-2T, Train Dept. with two 7/8ths-scale.

Vol. 25, No. 6; Issue 142; Nov./Dec. 2015 Sacramento stationaries: 2015 National Summer Steamup highlights • Review of Wuhu Bowande G5 • Building an Accucraft 'Ruby' kit • Learning to model in tinplate with a 'Dora' modification, Part II • 7/8ths WWI car • Latest waybill: 1:32-scale U.K. 'Victory,' 1:20.3-scale 8-driver Saxon.

Vol. 25, No. 4; Issue 140; July/August 2015 Classy Class A Climax — Regner steamer and kit review • Big 'Dora' — Making it a 1:13.7-scale rail bus • Spinning metal • Cabin Fever • Speedometer • Latest waybill: Garratt from Roundhouse; in memoriam — Peter Jobusch; Accucraft UK goes with an African steamer; Mamod saddle-tank loco.

Vol. 25, No. 3; Issue 139; May/June 2015 Steaming amongst the magnolias: Diamondhead 2015 • Laser Loco: Aspinall 0-6-0 (series Part Two) • Workshop: sample tools and equipment • Wicks: A new material • Open cab 'Dora' • Latest waybill: Swiss, U.S. locomotives on the way; a new version of Saxonian in 1:20.3 scale.

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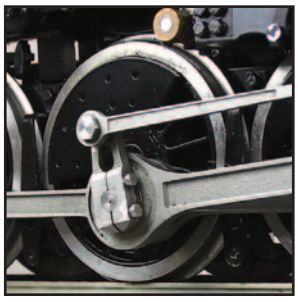
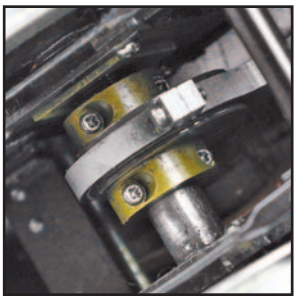


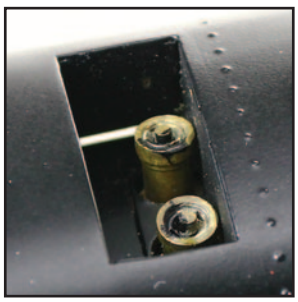


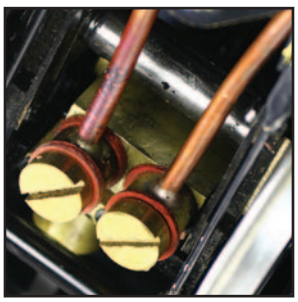

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