



No. 121, May/June 2012

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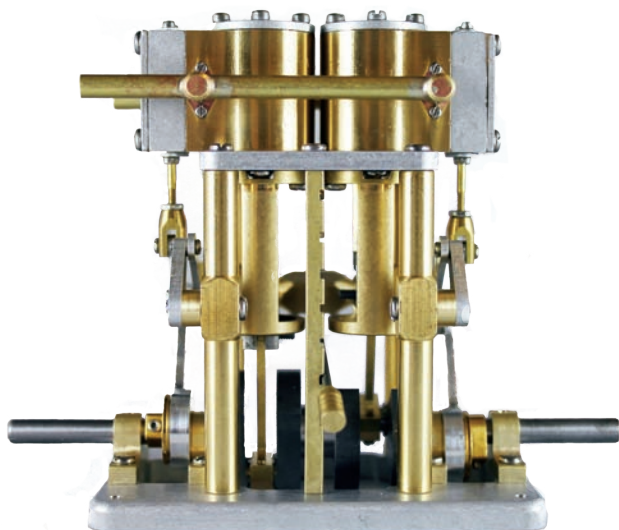


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- G401-92 Santa Fe
- G401-93 Burlington Northern
- G401-94 Union Pacific
- G401-95 Great Northern
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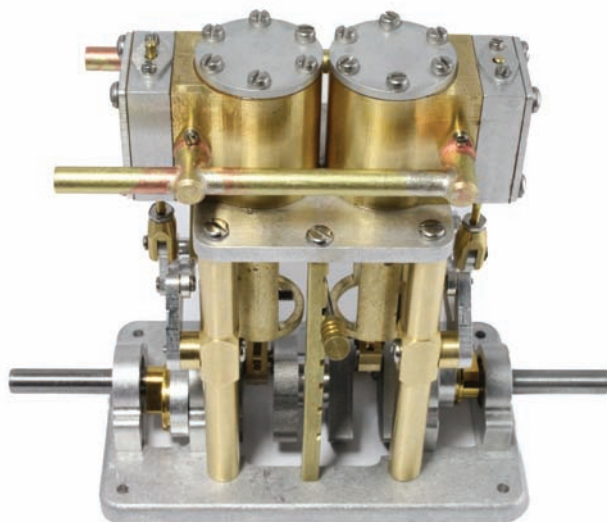
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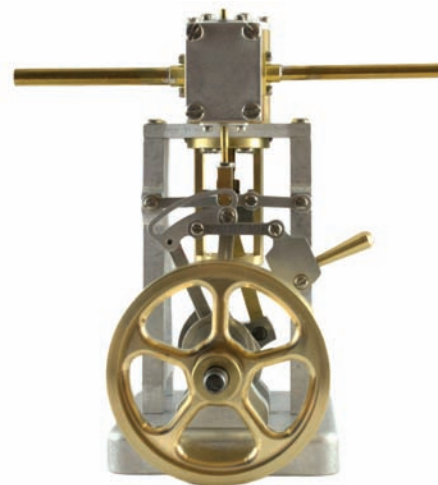
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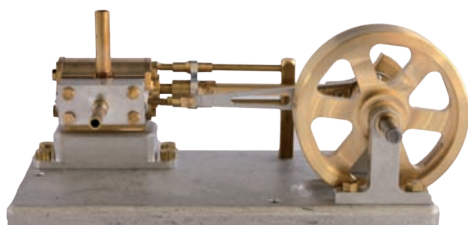


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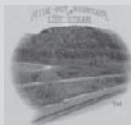
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Vol. 22, No. 3; Issue No. 121; May/June 2012

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

16

Computer-aided steam loco. Designed and machined by computer, this Maine Forney was accurate and easy to build. **By Eric Shade.**

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Layout facades. Creating some buildings for your railroad using simple tools and easy-to-acquire materials. **By Jay Kelly.**

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Gulf steam.

The 19th iteration of the Interna-

tional Small Scale Steamup in Diamondhead, Miss., had world-wide attendance and 24-hour running. **Text by Tom Myers;**

photos by Carol Jobusch and Peter Jobusch.



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Cabin Fever. Small-scale live steamers mix with model engineers at York, Pa.'s annual event. **By Scott E. McDonald.**

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Double Fairley. Constructing a model of a mid-1800s Welsh double-ended live-steam locomotive in 45mm gauge. **By Bill Allen.**

On Steamup.com: Aster 'Duchess of Atholl' coming soon • Pa. Gauge 1 steamers have 'Turkey Trot' • Celebrating 20 years at Houston Area Live Steamers • 16mm group releases new book

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POSTMASTER: Send Form 3579 to *Steam in the Garden*, P.O. Box 335, Newark Valley, N.Y. 13811-0335.

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Subscriptions for the United States, Canada or overseas should be mailed to *Steam in the Garden*, P.O. Box 335, Newark Valley, N.Y. 13811-0335. Phone, fax and e-mail subscriptions are gladly accepted and we take VISA, Discover and MasterCard. PayPal payments are also available. Phone: (607) 642-8119; fax: (253) 323-2125.

Hobby retailers: Contact Kalmbach Publishing Co. at (800) 588-1544, ext. 818, if you wish to stock *Steam in the Garden* in your store.

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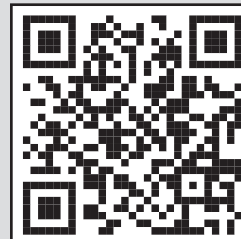
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Circulation: P.O. Box 335
Newark Valley, N.Y. 13811-0335.

Steam in the Garden (USPS 011-885, ISSN 1078-859X) is published bimonthly for \$35 (Canada: \$US42; Overseas: \$US72) per year (six issues) by *Steam in the Garden* LLC, P.O. Box 335, Newark Valley, N.Y. 13811-0335. New subscriptions, please allow six-eight weeks for delivery. Periodical postage paid at Newark Valley, N.Y., and additional mailing offices.



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Cover: An English small-scale locomotive backlit by Diamondhead Inn's atrium windows. Photo by Carol Jobusch.



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Find a group near you

I have often considered myself a pretty good modeler, from cars, boats and airplanes — even to a full-sized airplane. But then I went to trains.

At first it was fun kit bashing and then scratch building, but then I got into live steam. What a fun challenge — lots to learn. But this is when my bubble burst: I got together with a few of the live steamers from the Bay Area Garden Railway Society and found out how inferior my building really was. But I quickly learned from my BAGRS friends how to improve my skills and now I'm better than I thought I would be (and am still growing).

My dad always told me, "When you're green you're growing and when you're ripe you're dying." I have been modeling more than 65 years now and I hope I'm still green. So find a group near you and you will find lots to learn and keep your interest alive. Have fun and keep growing.

Gary Whaley
San Leandro, Calif.

More on stack talk

I wish to acknowledge Keith Bucklitch's expansion on my article "Stack Talk" (see "Railway Post Office," No. 120, March/April 2012). I must say that I expected some comments, as I thought my treat-

ment of the subject might be considered somewhat controversial. But in my enthusiasm I managed to ignore history and proceeded to reinvent the wheel. This might be attributed to senility, or maybe what is known as the "mind in behind syndrome."

A little more research before putting my article together, and the improvements in the Grasshopper performance would have been explained. One might assume that the proper draft alignment would have been done at the factory. But in hindsight it now seems obvious why it wasn't.

To my knowledge information on blast pipe alignment has not previously been published in *SitG*, and this is good information to have at hand. However a typo should be pointed out: the one-to-six proportion angle is $7\frac{1}{2}$ degrees. And further on in Keith's response he refers to "slower gas flow producing better transfer of heat into the water," good information for a study on gas burners.

With my Grasshopper breakthrough, I wasn't thinking about steam cones when I added the stack insert. I found the sweet spot by coming in the back door, so to speak. But the coal-fired K27 might be a different story. When I talked to David Bailey about the improvement, he informed me that he had gone through the blast pipe cone procedure. I later checked it and found the stack to be about a one-half degree oversize, and with the insert installed about a one-half degree undersize. But the amount of improvement in performance, brings me back to my articles premise which was, "there is an optimum stack diameter for a given size steam engine" and also makes me wonder about the accuracy of the steam cone sizes.

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To satisfy my curiosity on the steam cones, I set up an experiment in the shop using a Ruby boiler, a whistle valve, a short length of one-eighth inside-dimension tubing and a dark painted board with the large and small cones scribed on it. It was cold in the

shop so the condensation showed up real well.

A visual image of the large cone can be made out by ignoring the tenuous outer edges and concentrating on the area where the density starts to increase. However giving it an angle of one-to-three would be stretching it a little. I would say more like 12 to 14 degrees. The inner cone angle of coarse is not visible and I believe was probably arrived at using gas dynamics maybe involving pressure or temperature. At any rate using the same proportion we end up with an inner cone size of six to seven degrees.

So to add fuel to the fire — so to speak — I propose that at our smaller scale, reduced pressure and temperature, the steam plume may be more condensed and produces a smaller plume angle. It would be interesting to hear some opinions on the subject.

It seems to me that ideally, the stack diameter should be determined before the blast pipe alignment procedure is done, as the alignment procedure for a given engine can be successfully completed with several different stack sizes, depending upon the height of the blast pipe and the length of the stack. But in all the published examples of this procedure that I have seen, the stack diameter is always a given. So my question is: From whence does this given arise?

Historic footnote: The original Grasshopper Atlantic appeared to be naturally drafted. Steam was exhausted through a funnel topped pipe near the cylinders. So when Aster faithfully reproduced their model they incorporated the large bore stack which was never originally intended to be used with a blast pipe.

*Larry Bangham
La Mirada, Calif.*

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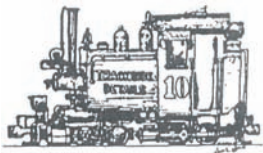


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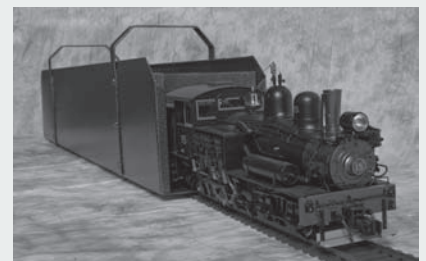
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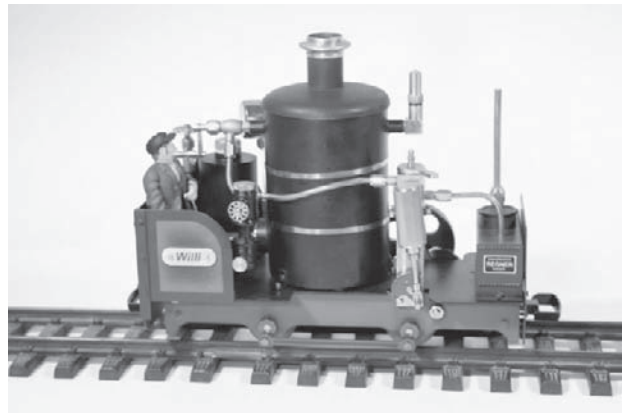


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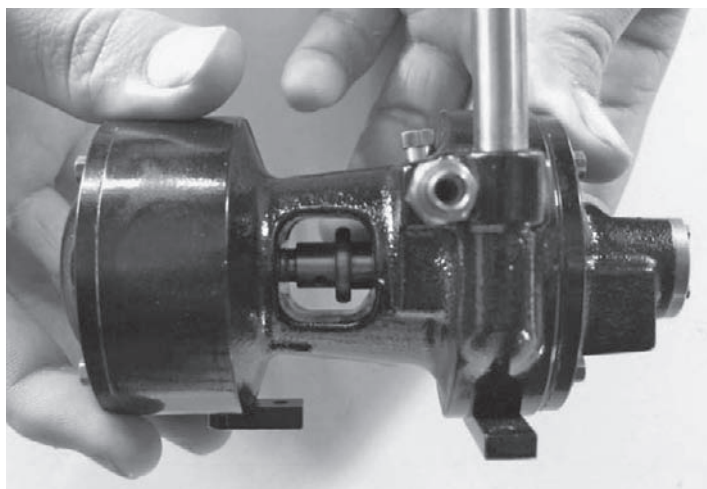
Gondolas, generators

Ride-on live-steam equipment is being highlighted by NGT Models of Lansing, Mich., with special offers in drop-bottom gondolas and turbo generators.

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Louisiana Railway Heritage Trust's prototype No. 745 steamed up on a 2007 test run.

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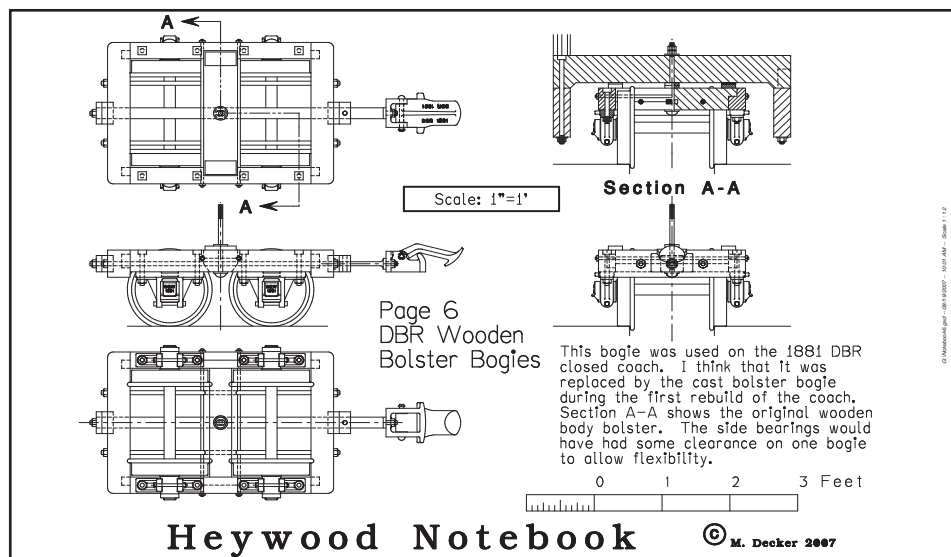
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"Southern Pacific," and will include one baggage car, three coaches and one dining car. They will be manufactured with cast-resin bodies, precision-milled acrylic sides, ball-bearing trucks, metal wheels by Gary Raymond and couplers by Kadee.

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"This is a once-in-a-lifetime offer," said Walt Permann, president of Custom Model Products. "A complete five-car train set — lettered as Southern Pacific — and a SP M-6 Mogul locomotive from Accucraft will make an ideal passenger train."

The cars are being sold as sets only at price of \$3750. Custom Model Products is taking deposits immediately and cautions it believes the sets will sell out quickly, with orders taken on a first-come, first-serve basis. Custom Model is at <http://www.custommodelproducts.com/> or by toll-free phone at (800) 443-8567.



Scale drawings: Decker reproduces Heywood's industrial rail cars.

15-inch gauge scale drawings

A new collection of scaled drawings of equipment designed by English industrial railway pioneer Sir Arthur Heywood has been released by Decker's Trains of Hot Springs, S.D.

The collection is being made available as Compact Discs with the drawings distributed in vector-based Portable Document Format (PDF) files, capable of being printed on 8½-by-14 (U.S. legal) pages on either Windows-

or Macintosh-based computers.

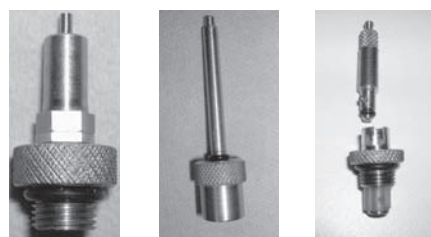
Heywood began designing railroads as a teenager and after many experiments, settled on a gauge of 15 inches, which he called "Minimum Gauge." Heywood's idea, writes Mike Decker of Decker's Trains, "was that a 15-inch gauge railway would be a viable substitute for the horses and carts in use at the time, for a location such as a large farm or small quarry which was hauling up to 6000 tons per year between two fixed points."

Decker, a Gauge One modeler, says he has been making drawings of Heywood's equipment "for about 20 years" and that he recently switched over to digital tools.

The first two editions of what Decker calls the "Heywood Notebook" CDs include one disc devoted to "the basic parts of the wagons and the assembly drawings of the known four-wheeled freight wagons." The second disc includes drawings of Heywood's eight-wheeled cars.

The "Heywood Notebook" CDs are priced at \$26 each, with shipping included, or \$46 for both. More information is at <http://www.deckerstrains.com/>, by calling (605) 745-5487 or writing Decker's Trains, 27400 Whitetail Road, Hot Springs, S.D. 57747.

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Photo by Michael Martin

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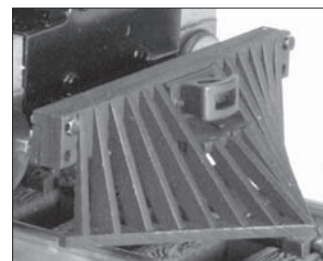
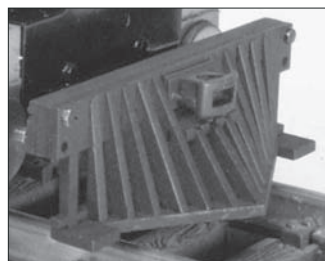
Although simple in design and easy to build, they will greatly enhance the look of the engine.

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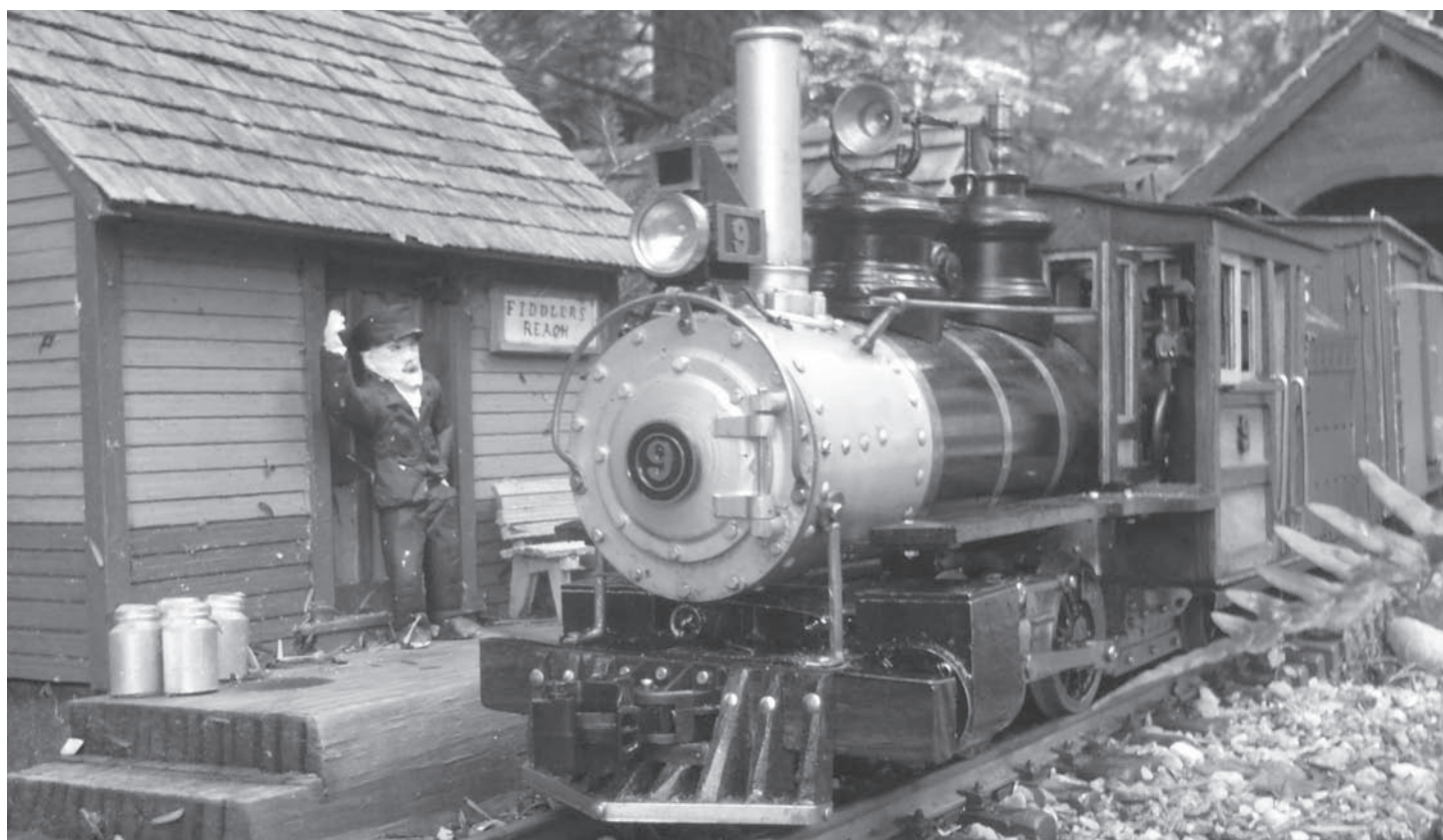
- **Accucraft** — Ruby, Ida, Mimi, Forney, 4-4-0 American, 2-6-0 Mogul.
- **Aster** — Climax.
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Designing and machining a Maine Forney by **Computer**

Text, photos and drawings by Eric Schade



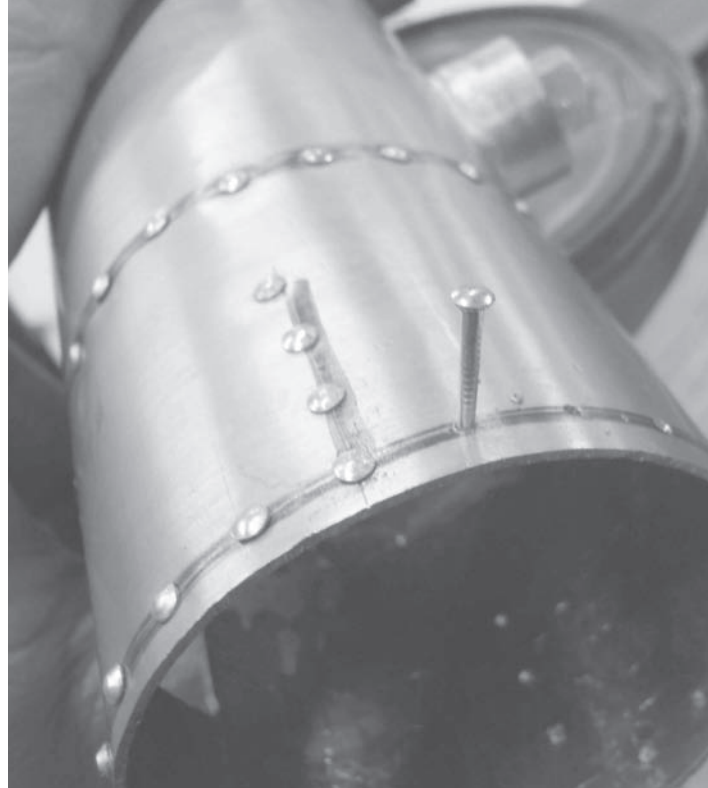
Into the station: *Schade's completed Maine Forney pulls into his layout's Fiddler's Reach station.*

During a 2005 family camping trip that included a visit to the Wiscasset, Waterville & Farmington (WW&F) Railway Museum, I met the prettiest of all two footers, WW&F No. 9. I had bashed an Accucraft Ruby into a Maine Forney, but wanted to build a model that more closely represented No. 9 and the other Portland engines.

Using as many off-the-shelf components as possible — I bought many from Roundhouse Engineering in England — and leveraging my experience as an engineer, I purchased a used Computer Numeri-

cally Controlled (CNC) Sherline milling machine and went to work designing the No. 9 on my desktop computer.

In the last issue, I detailed how I constructed the frame, wheels, cylinders and linkages. Now, I'll continue to add the engine deck and build the tender truck. The engine deck was just screwed to the frame spacers, while the tender truck was mounted on a swing link which was screwed to a frame spacer forward and supported the rear coupler back aft. The wheels for the tender truck were machined on the lathe and pressed



Boiler fab: Left, a boiler end cap is formed from flattened copper pipe with a hammer and hardwood die. Right, holes were drilled in the smoke box and brass escutcheon pins are used to simulate rivets.

onto pieces of one-eighth-inch stainless rod.

Journal blocks were machined manually on my mill and I then silver-soldered on journal lids. Using the scale drawings, I bent brass bar-stock into the arch bars for the truck side frames. I scribed, marked and center punched for holes for the bolts which would hold the trucks together. I started by drilling the top bar and used it as a jig to drill the rest so that the bolts would all fit.

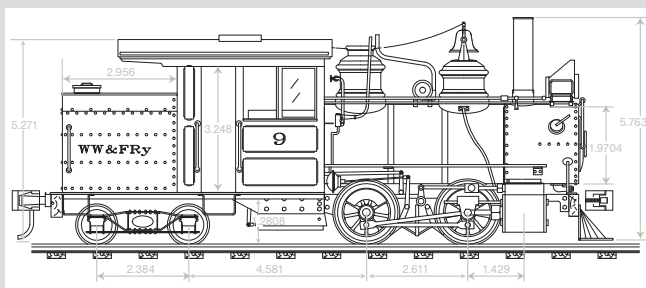
The bolster was formed by bending up brass plate to represent channel-beam stock and cast end caps. Then the center pivot was added; a block of brass drilled for the pivot pin was riveted between the channel beams. Short brass o-80 screws and escutcheon pins threaded o-80 were used to assemble the truck.

When designing the model, I determined that two-inch copper drain pipe would be about the right size for the boiler. To scale, the boiler is actually just a bit smaller

than the pipe but it was close enough. The pipe size did not allow me to insulate the boiler, however. Following the plans, I cut a piece of pipe to length. I marked the locations of the front end cap and boiler fittings. I drilled holes for the boiler fittings on my drill press. I could have done a better job of that — some of the holes are just a tad off center — thus the domes and smokestack do not all line up perfectly ... but close enough.

I slit open a “scrap” piece of the pipe and flattened it out for use as the end caps. I cut two disks about one-quarter-inch larger than the pipe diameter and heated each disk with my torch to anneal the copper, making it softer. I machined a wooden former smaller than the inner diameter of the pipe by an amount equal to the wall thickness of the pipe. Using the former, a vise and a hammer, I formed a flange all around the disk.

This flange would provide more surface area for the silver-solder

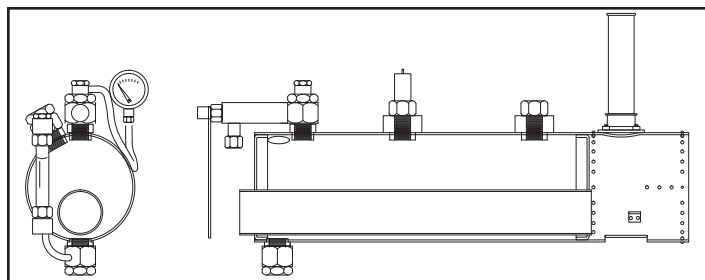
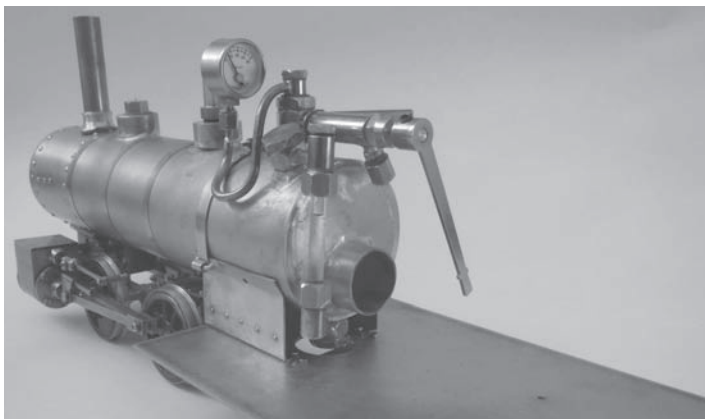


Building WW&F No. 9

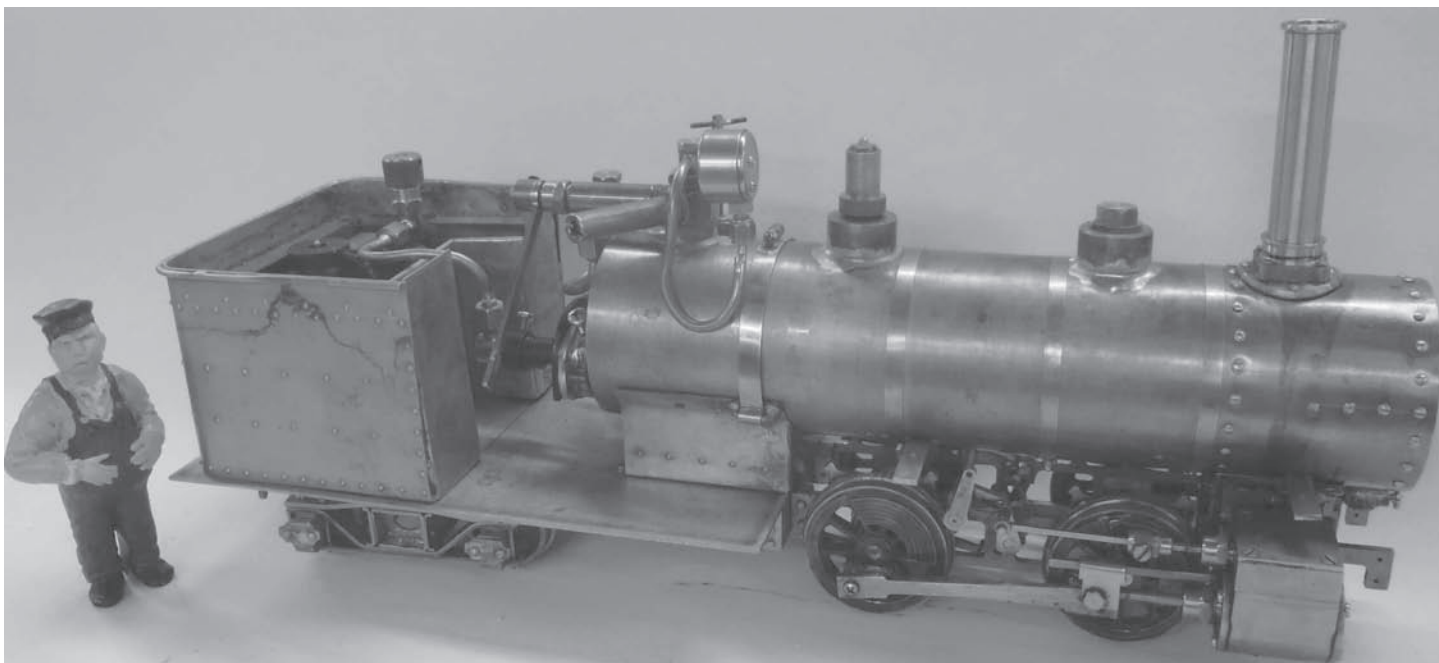
Maine two-foot gauge locomotives are pretty and unique. Eric Schade of Phippsburg, Maine, first bashed an Accucraft Ruby trying to get the look of a Maine two-footer but then realized he'd have to scratch-build one himself. An engineer by training, Schade had experience in computer-aided design (CAD) and computer-numerically controlled (CNC) machining, but had never put them together at home.

Part One: Background; design of the locomotive; machining and assembling the frame, wheels, cylinders and linkages.

Part Two: Fabricating the boiler; building the cab; making detail parts; final assembly.



More boiler fab: *Left, the boiler is supported on a brass “firebox” and held in place with a strap over the top and some screws inside the smoke box. Above, the computer drawing of the boiler.*



Tender: *The tender tank houses the butane tank. Designed to hold a water, the bath now holds radio control.*

which would hold it in place in the boiler pipe. Some filing was necessary to get a good snug fit. Holes were then drilled in the caps for the flue tube which was a piece of three-quarter-inch copper pipe.

I machined brass bushings for the various boiler fittings. Three were needed for the top: boiler fill/sand dome, safety valve/steam dome and one for the throttle/steam turret. Two more were needed for the water-glass.

All the parts were assembled dry to check how they fit. The bottom fitting for the water-glass had to be adjusted as it was very close to the flue tube. When I was satisfied, I disassembled the boiler and brushed onto each mating surface a liberal amount of silver-solder flux which is a white pasty substance. I reassembled the end caps and flue. I set the boiler on firebricks for heating.

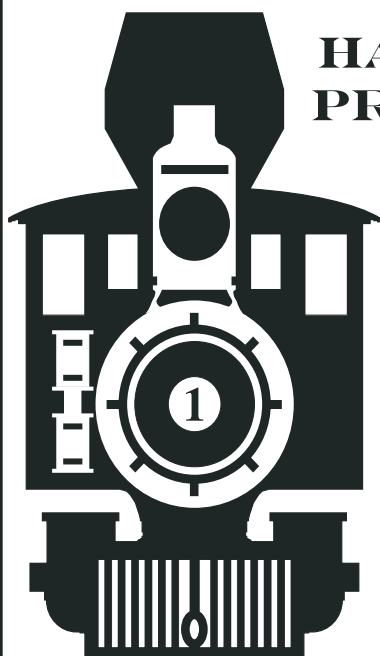
The oxy-acetylene torch that I have puts out a lot of heat and its flame is very intense and can melt copper or brass, so I had to take care not to hold the flame too close or for too long on any given point. I heated the

boiler until the flux started to melt. Working an area at a time, I melted silver-solder into the joint between the pipe and the end cap and around the flue.

I repeated the process for both ends and checked my work to make sure the joints were complete. I then cooled the boiler and soaked it in a bath of citric acid to remove the flux and clean the metal. After the boiler was clean, I could again check the joints for possible leaks. I re-fluxed any leaks and around the holes for the boiler fittings. I installed the bushings and re-heated the boiler to silver-solder the bushings in place. I took care not to heat the bushings directly as they are small and more likely to be melted. When I was done, I re-cleaned the boiler, rinsed it out and checked it for leaks.

I installed the boiler fittings and pressure tested the boiler by pumping water into it until it was full and the pressure reached 100psi which is more than double the working pressure of 40psi.

I decorated the smoke box section of the boiler with rivets made from brass escutcheon pins. I laid



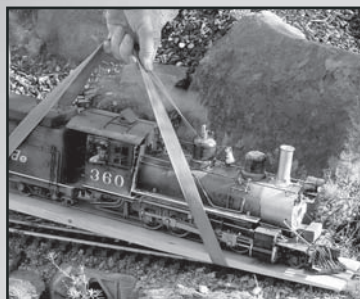
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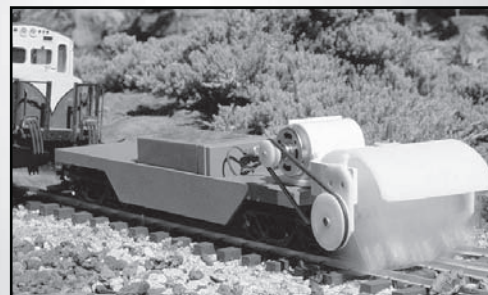
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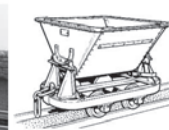
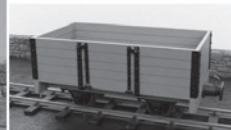
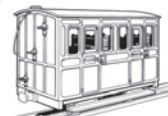
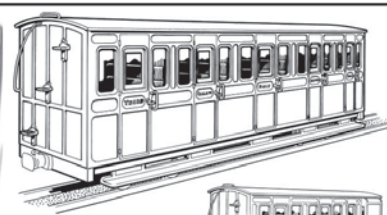


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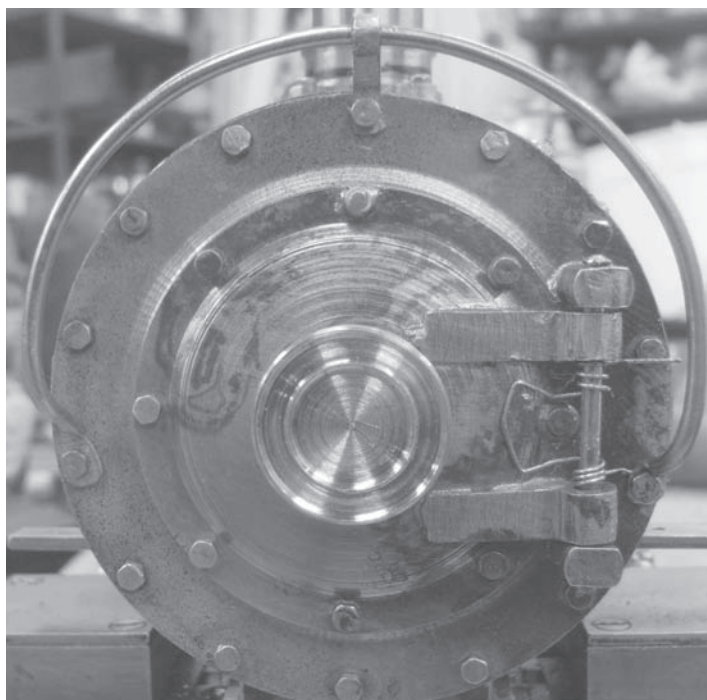


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Door and dome: *Left, the smoke box front was machined from disks of brass; it is in two major pieces — the door and the outside fixed portion. Above, domes were machined from round stock, which was then chucked in the lathe.*

out their position and center punched for holes. I drilled holes which were a snug fit for the escutcheon pins. I inserted the pins and cut them off with wire cutters as close to the inside surface of the smoke box as I could. I inserted a heavy bar of metal to act as an anvil and using a shaped punch, hammered the rivet to lock it into the hole. I should have done this step before soldering the boiler as it was softened by the heat and some of the rivets are pressed into the smoke box a bit.

Back when I was in high school I made some HO-scale engines and a little rivet embosser from then serves just fine in large scale as well. I just made a bigger rounder hole for the die portion. I made this using a large bolt bent around into an open “P” shape with the punch plunger closing the “P.” The whole thing is mounted in a piece of four-by-four left over from building the family house. The tool has a simple sheet metal guide which helps to align the rivets, keeping the rows straight. The plunger is a piece of high carbon steel from my shop class. It takes one hit with a small hammer to form each “rivet.”

To make the water tank, I cut a piece of 0.030-inch brass plate to size on my old paper cutter which is (just) strong enough to cut brass. I laid out the rivet pattern on the back side using a ruler, square and scribe. I set the guide on my rivet embosser and formed a row of rivets at a time following the layout marks.

When the rivets were done, I marked the bends for the rear corners of the tank. These are nice rounded corners. I made a simple die from a piece of two-by-four, in which I sawed a “V” groove with my band saw. I had a piece of half-inch rod with which I pressed the metal of the tank into the “V” form-

ing a nice, round bend. My drill press provided the controlled force to make the bend. I silver-soldered a piece of wire along the top edge to match the prototype.

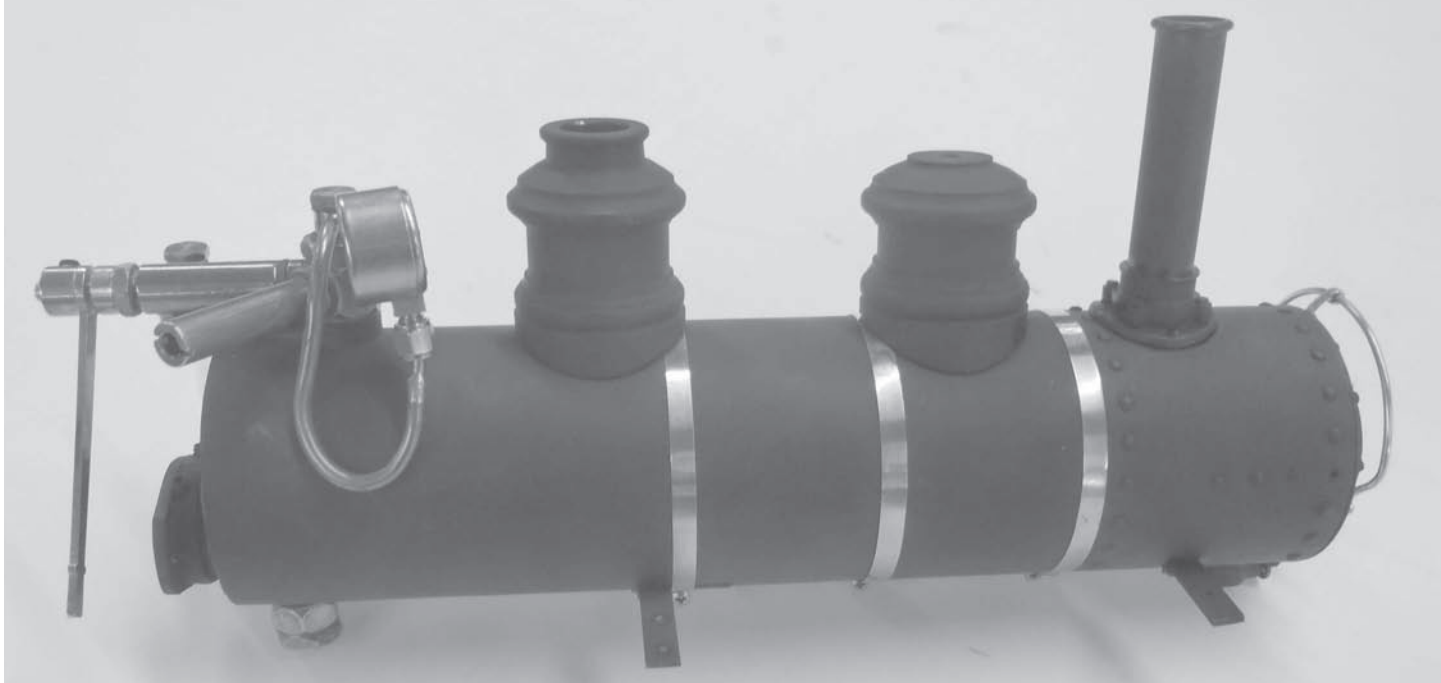
I soft soldered a floor, front, and brackets for the top to make the tank actually hold water. The butane tank is mounted in the water tank. I had thought it might be useful to be able to hold a bath of warm water to ensure proper butane supply. That has not been necessary. I have since sawn out the front portion of the tank to make room for radio control gear.

With the rear tank made, I could install the gas tank and perform the first steam run. I set up a loop of track on the shop floor because there was several feet of snow and ice on the track outside. She ran well which was another exciting day for me!

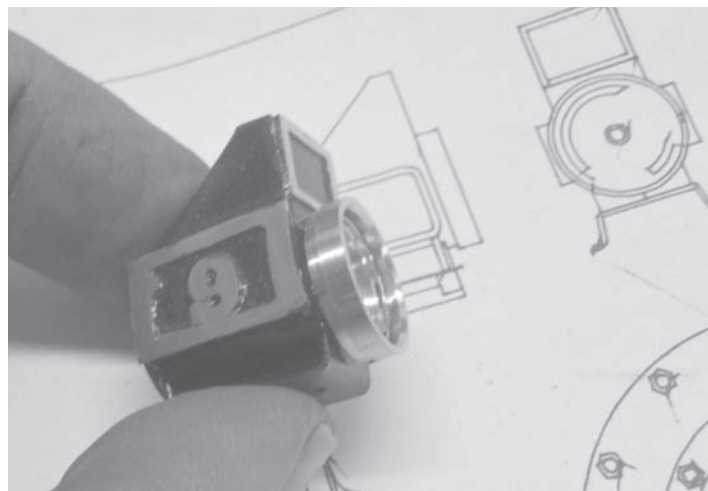
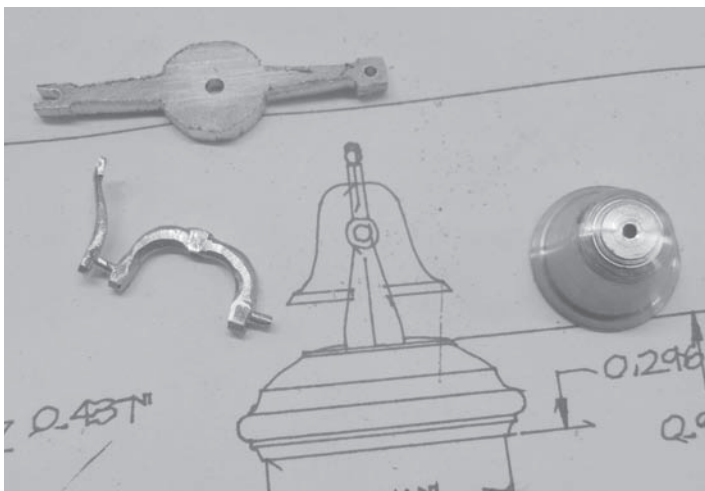
I machined the domes from solid bar stock. The first step was to saw a curve in the end of each piece to fit against the boiler shell. I used my band saw for this and got pretty close to the right shape. I wrapped an extra piece of pipe with sandpaper and used that to help tune the shape. It worked out pretty well.

From my drawing I got a set of dimensions that I could work with to machine a pretty good likeness of the dome. Much of the work was freehand, though the dimensions were a necessary aid to getting a “proper” looking dome. I bored the inside of each dome to fit the bushings for the safety valve and the water fill cap. The domes drop into place on these bushings. I made the steam dome tight enough that it would tend to stay put, but the sand dome wanted to fit more freely.

The steam dome is drilled through so that it is open at the top so the safety valve fits and steam can exit. A valve and piping for the Eames brakes was



Brass bands: *The boiler bands also hold some detail parts in place, avoiding drilling into the boiler.*



Bell and light: *Left, the bell was machined on the lathe and the stand and yoke were sawn out of brass stock then filed to shape. Right, the headlight is fabricated from various bits of brass sheet and tubing.*

added as was a whistle. As the sand dome must be removable, it is a bit tricky to add sand pipes, so I haven't yet done so.

I machined a bell on my lathe and sawed out parts for the harp and yoke. These parts required quite a bit of hand work with the file to look nice and graceful. The bell is screwed to the top of the sand dome.

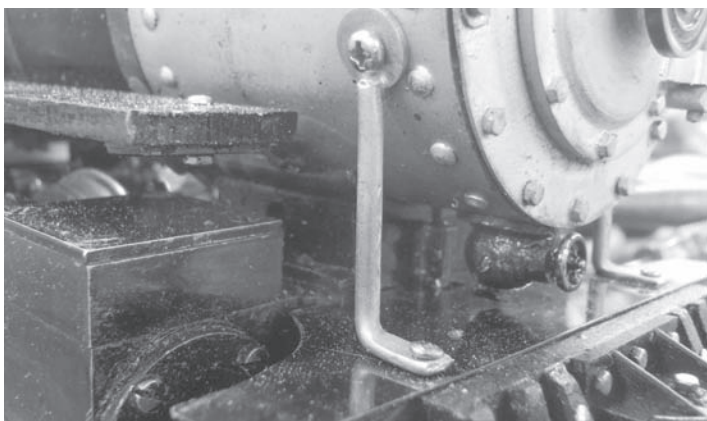
The cab is made of wood. The basic structure is one-eighth-inch birch plywood. The plywood is stable, strong and water resistant. I sawed the parts out using my miniature table saw and a jig saw. I added walnut trim which represents the frame of the cab. I beveled the edges of the frame pieces as was done on the prototype. The roof consists of plywood with sawn roof frames.

The Portland Co. Forneys had a distinctively double-curved roof, which is a part of their appeal to me. I made this by sawing out the deck beams with the curve and clamping the plywood to them. I added a

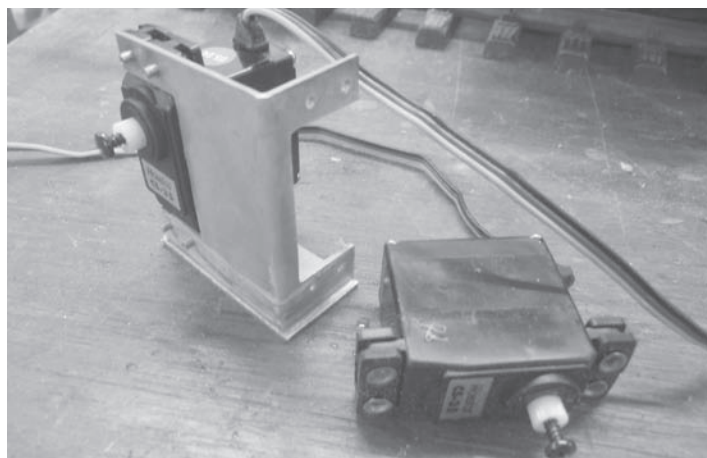
wire hinge to hold the roof in place and provide access while getting the engine ready to run.

To really bring the model to life I needed some more details. I machined a steam generator and mounted it on the boiler in the quirky way of the prototype. I made a headlight to represent the one installed when the Maine Central ran the Sandy River and Rangely Lakes Railroad. I made a number plate on the lathe and filed out a brass number 9 for it and silver-soldered it in place. The pilot is made of walnut wood. I built it as solid as I could because I knew it would catch the engine after a short flight through the air on more than one occasion.

There is a cleanout cover on the side of the smoke box and a valve underneath, both used to clean out the cinders. I tried my hand at making the Eames brake ejector on the side of the boiler in front of the engineer. There are many more details that could be added but these give the right impression.



Pilot: The deck is just a piece of brass sheet cut to shape. The boiler stay is bent brass rod with a 'washer' silver soldered to the end.



Radio control: A bracket was made from brass stock to mount two radio servos at right angles.

One thing that I am not really satisfied with is the paint job. Brass is notoriously hard to paint. The paint wants to chip off. Adding the fact that the boiler is hot and oily does not help matters at all. I used high temperature spray paint in rattle cans. The engine is basically painted gloss black. I left several parts bright brass and varnished wood for highlights which I think looks good. The smoke box was painted silver.

If I was patient enough to follow the recommendations on the cans I would have had better luck, but I really, *really*, wanted to take the engine out and steam her up. Several of the small parts were just painted with black paint and the paint chips or wears off easily. Those parts on which I used the self-etching automotive primer have stayed looking good. The high temperature paints need to be set with heat. When properly set they are pretty tough. Even properly applied these paints are not as tough as a commercial-made model, but they can always be re-painted.

I ran the engine for several months very happily

with manual control, but have now installed radio control, which I only had on one other engine. I like manual but radio control is fun too: I can more easily run slowly, I can stop at stations, I can do some switching. I made a little bracket which holds two servos at right angles to each other. One is linked to the throttle the other all the way forward to the reversing arm on the Stephenson valve gear. I now get quite good control on the engine. I can usually spot the baggage door at the end of the platform or couple up a train without smashing and derailing the cars.

They say nothing runs like a Roundhouse. Number 9's heart is all Roundhouse and she seems to run just as well. She is a smooth runner and a good puller. She will run for about an hour on a tank of butane and a full boiler without any attention other than where she is going. She has been a great learning experience both in the shop and on the rails.

Will I build another engine? You bet! The only question is which one?



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Facades

Text and photos by Jay Kelly

While preparing for my railroad's open house last July, I was trying to figure out what to do in a small area near the side of our deck. I wanted to have a town main street with buildings on both sides, but there wasn't enough space.

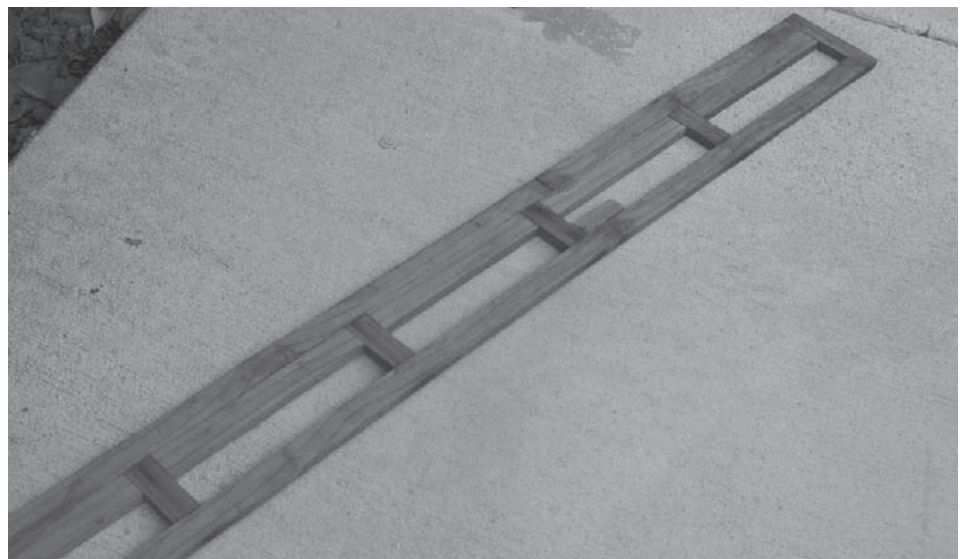
So I decided to use facades on one side of the street to give the feel of a town street without taking up so much space. There are several companies listed in hobby magazines that offer facades, but I couldn't find the types of buildings I was looking for. So I decided to build my own facades.

The first step was to build a base plate to which the facades could be attached, and that would provide a base for wooden sidewalks. I used one-quarter-inch by three-quarter-inch strips of wood laid flat to create the base plate, and nailed and glued them together. The pictured base plate is 32-inches long and 3½-inches wide, long enough for four separate facades. Then I allocated the sizes of the four buildings so they

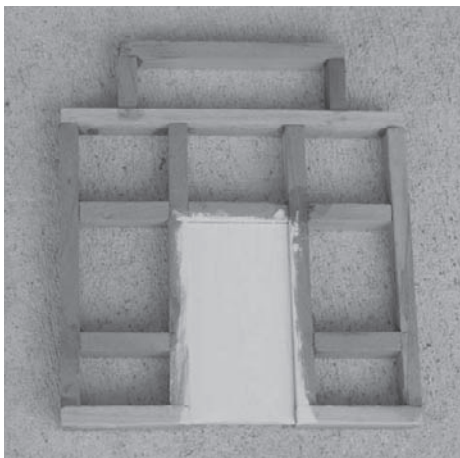
A slightly different version of this article originally appeared in the October 2011 edition of the newsletter of the Southern California Garden Railway Society, <http://www.socalgrs.com/>.



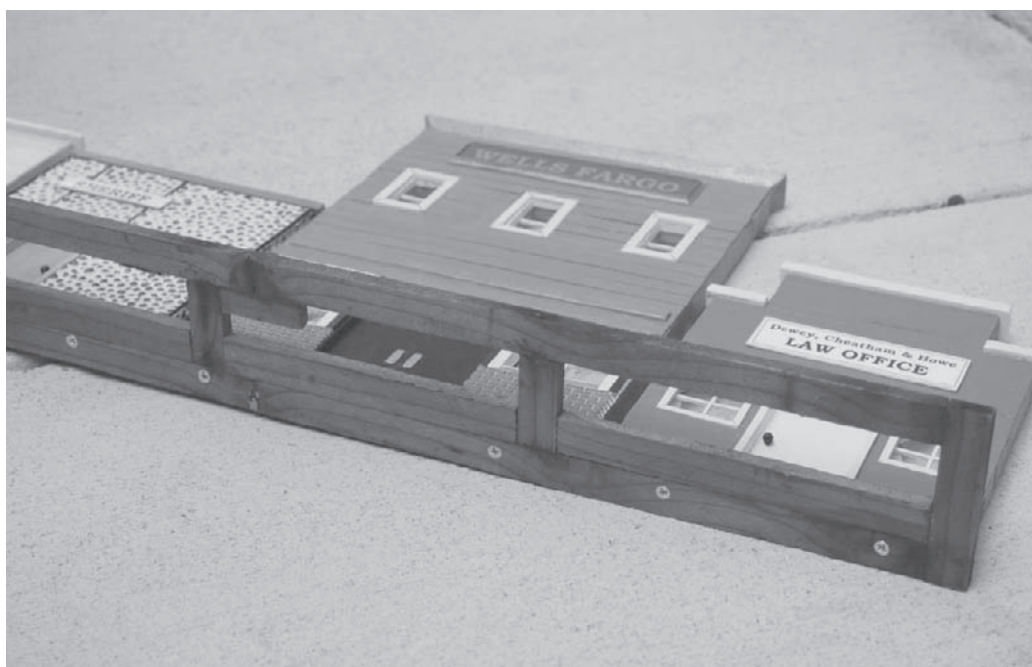
Quick town: Four buildings and a sidewalk, all in one package.



Base plate: Made with one-quarter-inch by three-quarter-inch strips.



Building a building:
Above left, the Law Office frame is made from 5/16-inch by one-half-inch strips. Above middle, siding is made from hobby store three-eighths-inch strip wood. Above right, completed Law Office with sign, windows, window frames and curtains. Right, the buildings are attached to the base plate with wood screws.



would all fit on the base plate. Each building was a little different, but the Law Office is described in detail.

Wall frames were built with 5/16-inch by one-half-inch strips which make the wall very sturdy.

I placed internal frame members to support the door and window openings, cut the door from one-eighth-inch balsa wood panel and glued it to the frame members. Windows were cut from 1/16-inch acrylic glass to fit inside the framed openings, and they were held in place by painted strips of wood glued to all sides of the window opening. Siding on the Law Office was cut from three-eighths-inch strip wood from a local hobby shop and glued to the wall frame. The completed Law Office is shown with fresh paint, framing around windows and door, window curtains and the official business sign.

The next step was to attach the completed facades to the base plate. I drilled and countersunk holes for wood screws, two per facade frame. The screws are shown on the bottom of the base plate with all

facades attached. The board sidewalk was made from three-eighths-inch strip wood glued to the base plate.

The completed set of facades — with a General Store, Sheriff's Office, Wells Fargo Building and the Law Office — all have signs that were printed on a home computer using paper that has adhesive on the back. Printed signs were attached to thin wood strips, sprayed with two coats of clear-coat sealer and glued to the facade walls. Curtains were simply painted on the interior side of the acrylic-glass window panels. Window panes are formed using painted 1/16-inch square strip wood cut with a utility knife and glued to the exterior side of the acrylic glass. All the paint is Rustoleum brand spray cans from my local hardware store. The brick panels on the Wells Fargo Building and the stone on the Sheriff's Office are cut from molded plastic sheets and surface painted.

I probably spent too much time on this project, but it was fun to build. With custom facades, you are only limited by your imagination.

A look at Diamondhead, Miss.'s annual steamup

GULF STEAM

Text by Tom Myers/Photos by Carol Jobusch and Peter Jobusch



At speed: A new Aster Challenger flies by on the main track at the International Small Scale Steam Up.

After two days and 18 hours of driving, we finally arrived in town for Diamondhead XIX, the premier live steam event on the planet. Where else can you drink India Pale Ale (or Scotch single malt), run steam trains 24 hours a day, and sleep next to your horse? This year would have been Diamondhead XX, if it were not for that nasty old lady, Katrina, in 2005.

For those who longed to be at Diamondhead, held Jan. 15-21 in a tiny Mississippi town's hotel atrium about half way between New Orleans and Biloxi, but for various reasons could not make the trip, they owe a debt of gratitude to Will Lindley. He set up a

streaming video camera covering most of the week's activities, and received more than 33,000 hits. Several very good recorded videos can also be found on the Steamup.com web site. The best I have seen is Scott McDonald's 15-minute effort, aptly titled, "Diamondhead 2012."

The big news this year was the replacement of the mainline track, courtesy of Richard Jacobs of Bayou Live Steamers. It was up and ready for revenue traffic late on Saturday, and proved to be a big improvement over the old track. It was here that all the big iron ran, requiring a sign up for 30-minute runs during prime time. For that reason I decided to run



The gang's all here: *The traditional all-hands photo, taken in the Diamondhead Inn's atrium.*



Blowing off steam: *Left, Dawn Brightwell, at her loco. Right, Peter Foley gets a patch from Jerry Reshew.*

my larger trains on the third shift, from midnight to early morning. The night shift regulars, Emily Kaldestad, Dave Hamilton and Will Lindley, kept me company. The early day shift, Bill Courtright and Caleb Roberts, arrived each morning about 5 a.m. to fire up with coal.

Diamondhead has traditionally been the place for manufacturers to showcase their new products and

this year was no exception. Bill Ford presented the much-requested reissue of his Water Level Detection System. Aster Hobby USA, was there with two pre-production pilot versions of the magnificent Challenger — one in black, and the other in a beautiful gray livery. Accucraft UK Ltd. was the most prolific, with engineering samples of the Southern B-4,

— Continued on Page 30



The doctor is in: Dave Hottmann, right, works on an AC-12 Cab Forward as Chris Scott, left, looks on.



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Photo by
Joe Dale Morris

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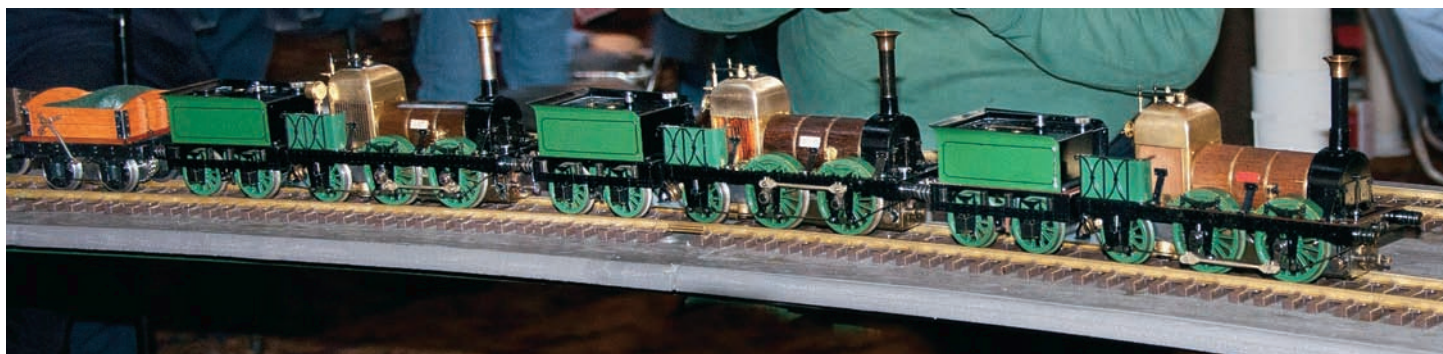
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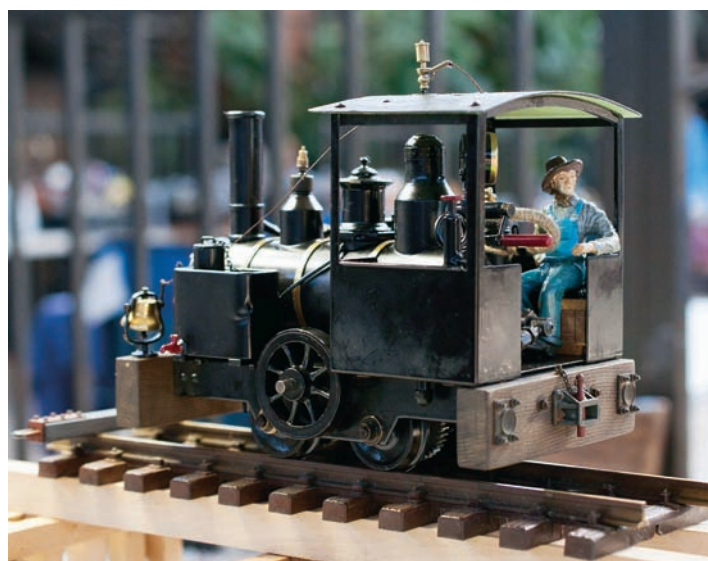
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A pride of Lions: *A lash-up of three of circa-2000 Aster Lion locos perambulate the Diamondhead track.*



Steamers, père et fils: *Left, John Shawe and young Jack, coal-firers both. Right, a detailed Cricket.*

— From Page 26

an O-4-O tank, a stunning Isle of Man 2-4-0 named “Peveiril,” a Lynton & Barnstaple Railway 2-6-2 Manning Wardle named “Lew,” along with the long-awaited live-steam Flying Scotsman. Coachbuilders are you taking notice?

Carol Jobusch, the designated photog since Day One, presented everyone with a compact disc containing a compendium of her photos going back to the first edition in 1993. It is amazing to see how great everyone looked 20 years ago. Russell Jones brought over two stunning scratch-built Wagon Lits coaches from the Orient Express. His attention to detail for both interiors and exteriors is unsurpassed. The coal-fired live steam duo of Jeff Young and his lovely wife Dawn Brightwell, put on a daily exposition of proper coal firing on the high track — a real crowd pleaser.

Joe Hall once again directed the concert of the Clack Valves & Cornet Steam Band. Outstanding music for a group that only meets but once a year, and probably practices less than three hours total.

The highlight of the concert was the presentation of a bouquet of flowers to Charlotte Reshew for her support of Jerry’s running of Diamondhead for all

these years. In the early days Charlotte handled all the administrative details, which started out small, only 37 entries, but would eventually grow to 2008’s high of 236. We all know that without the support of a wife, the time and effort required to stage an event of the magnitude of Diamondhead would be impossible.

If any of you remember from past years, the wild goings on — far into the night and early morning — at the Diamondhead Bar, you will be happy to learn that things have definitely changed, for the better. This year the bar, even on a Friday night, was about as quiet as the reading room of the local library. A slight exaggeration, perhaps, but you get the drift.

In the recent past Bruce Gathman had continued running the Drawbar Competition, a tradition started by Walt Schwartz many years ago. This year Bruce jumped from the pan into the fire, volunteering to run the Swap Shop, open for a total of 32 hours throughout the week. Among other train-related items — like embroidered shirts, books, rolling stock — you could also find the locomotive of your dreams. Just ask Jim Fisher. He found two of them. Poor me, I only found one!

The Drawbar Competition was run this year by



Surveying the scene: *Gino Arrue, in blue, watches the trains on the main track in the atrium.*



Really small-scale: *An HO live-steam track.*



Steam boat: *Stern-wheeler 'Talisman' in the pool.*

Bob Pope, and a fine job he did. One might even wonder if Bob was recruited to make him ineligible to compete with his magnificent live-diesel electrics. There were 28 entries, covering one-, two-, three-, four- and five-axle rod-type locomotives, geared locos and wind-ups (clockwork). Surprisingly, the clockwork class had the most entries with 11.

The overall winner was Chris Mitchell with a four-axle Accucraft East Broad Top Mikado, pulling more than 5½ pounds.

As usual a fine compendium of seminars was presented. John Riley discussed Hank Povee's 4-2-0 Norris locomotive, Jerry Reshew gave a talk on logging steam, Jim Gabelich showed slides of his trip on the South African Rovos Rail train and Sonny Wizelman rounded up the seminars with a detailed rundown of his construction of the Adelaide and

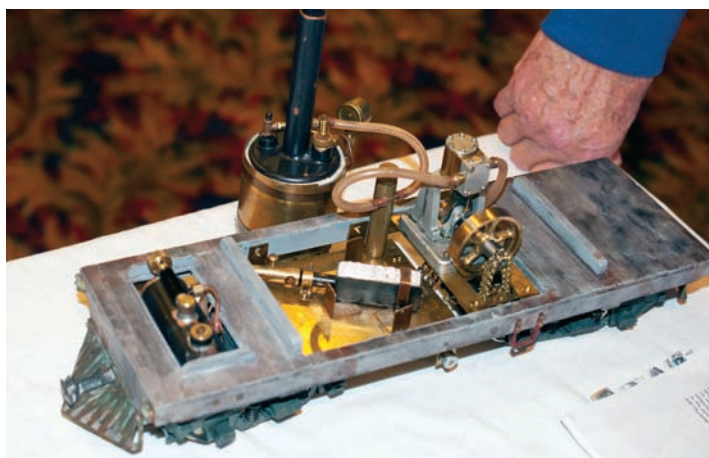
Lakeview Railroad steeple cab locomotive.

If 2005 was the year of the steam whistle at Diamondhead, then this was the year of the chuffer/bark box. Some of them, most notably on the EBT Mikados, were actually much too loud for indoor usage. They did sound good, however, and would probably be fine for use outdoors.

When you look around the pictures and videos of Diamondhead, you notice a sea of white hair. That just might indicate the average age of a live steamer could be creeping upward. We all agree we need younger converts to the hobby. This year we were fortunate to have one youngster running steam trains with us, 12-year-old Jack Shawe. And no wimpo butane-fired locos for this lad — it was pure Welsh coal for him. But then again, what would you expect from the world-famous coal firing family?



Mightiest of the mighty: *Chris Mitchell, left, pilots his award-winning Mikado at the Drawbar Pull, while Bill Boyle and Joel Neshkin look on. Bob Pope, far right, organized and officiated this year's contest.*



Seminar topic: *The innards of Sonny Wizelman's Adelaide and Lakeview Railroad steeple cab.*

You might think Diamondhead is just about steam trains — not so. This year there were stationary steam plants, running complete machine shops, steamboats, — including a stern paddle wheeler — steam lorries, clockwork locomotives and a couple sterling engines running flywheels. Add to that, thanks to Jim Sanders, two large radio-controlled balloons, one of a ferocious looking shark and one of a more friendly Nemo.

The Saturday Night Movie is always a hit. This year it was extra special, the 1964 Burt Lancaster movie aptly titled, "The Train." It is a classic World War II movie about a German colonel attempting to smuggle priceless French artwork back to Ger-

many near the end of the war. The ruse of renaming French train stations to simulate a trip to Germany that instead takes a large circle, only to return toward the starting point in France, is brilliant. The mid-1940s train shots are also commendable — actually pouring a main rod bearing, and especially of the engineer and firemen furiously stoking the fires and operating typical screw reverse gear and throttles, while trying to outwit the Nazis. Then who can forget the magnificent old French engineer (engine driver), Papa Bull.

Another reason for attending Diamondhead, perhaps even more important than the steam trains themselves, is renewing the old friendships of many years. Jerry even, albeit tongue-in-cheek, suggested that next year we just meet without the trains. Many sub-groups converged at Diamondhead: G1MRA, 16mmNGM, and The Scotch Tasting Group, just formed last year with six members, and growing exponentially, are just a few.

The one down side of Diamondhead was the regulars who were not in attendance. Some of them had the only good excuse for not being here, and for those persons we offered a moment of silent prayer. For others, and you know who you are, there is no excuse, especially since I have it on good authority that Cabin Fever will not conflict with Diamondhead next year. You had better be there. We *will* be taking names.

Until next year. ...



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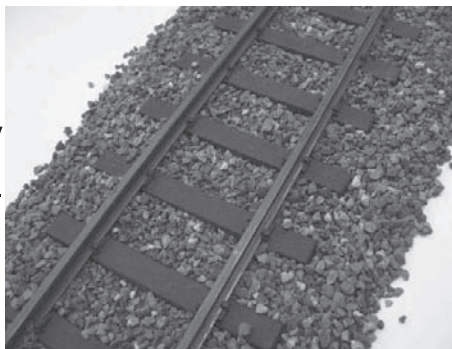
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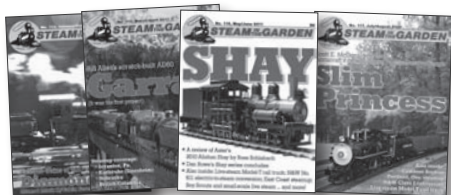
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Small-scale live steam a hit at York, Pa.'s annual

Cabin Fever

Text and photos by Scott E. McDonald

Like many annual events, the Cabin Fever Model Engineering Exposition has grown over the years and features a look at the hobby of model engineering with something for just about anyone's interests. Held Jan. 13-15 at Pennsylvania's York Expo Center, this year marked its 16th iteration.

As a model engineering gathering, the show is a place where engineering hobbyists can gather and show to their colleagues and the public their accomplishments over the past year or more. Displays include live steam models, internal combustion, miniature carousels, wooden Rube Goldberg marble runs, radio-controlled construction equipment, ride-on trains, restored antique steam cars, boats — as you see, the list is basically endless. If it is of engineering interest, and can be modeled, you will probably find it at Cabin Fever.

With the exception of one year since 1998 (Cabin Fever No. Two) small-scale live steam has been represented in operation for the enjoyment of the general public. As Cabin Fever has grown, so has the involvement of the small-scale live steam community. This year was no exception with more than 40 small-scale live steamers in attendance — the pace on the three tracks that were set up was non-stop.



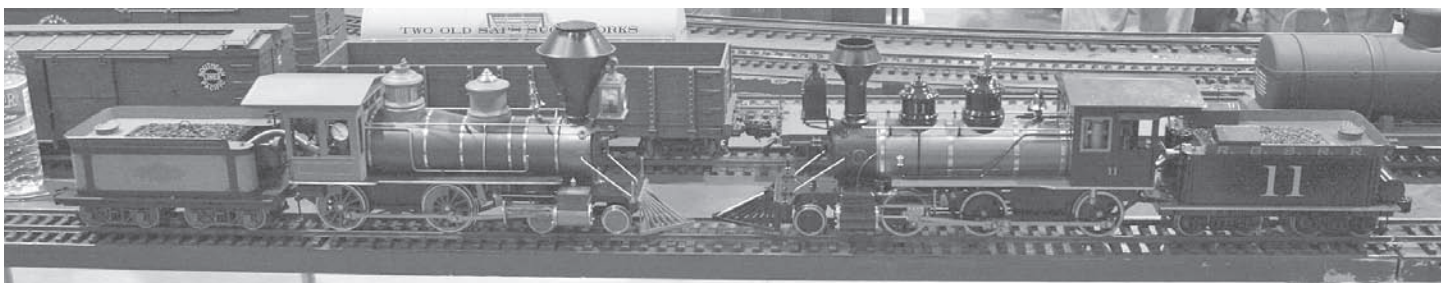
Under construction: Dick Abbott's 'Niagara' was on display.

Mike Moore of Ellicott City, Md., provided his two tracks along with one from Chuck and Ryan Bednarik of Mount Holly, N.J. The two large tracks from each provided a couple of loops in the 22-foot by 50-foot range and a smaller track in the eight-foot by 14-foot range. Moore's layouts also feature dual gauge track of 32mm and 45mm and many different scales of trains were making use of these features.

Our steamers in attendance



Enthralled crowd: *Eric Little, left, adjusts his locomotive's throttle as the Cabin Fever crowd looks on.*



Meet up: *An Accucraft 4-4-0 (painted as 'Lilly Belle'), left, nose-to-nose with an Accucraft 2-6-0.*

came from as far as Ohio, all along the North Eastern to Mid-Atlantic seaboard and Canada. Most arrived on Thursday to assist in setup in the Toyota Exposition Building at the York Fairgrounds. Since the majority of the steamers have been getting together as a loose-knit group for the many years that Cabin Fever has been around — in addition to other events — the old hands knew the routine and swung into action as soon as the door to Mike's trailer was opened.

This year fellow live-steamer Dick Abbott from Canada brought his current project, a scratch-built N.Y.C. 4-8-4 "Niagara" for display and operation. The details are exquisite and by the end of this year should be completed.

Coal firing was in abundance as well: With high ceilings and powerful ventilation of the exposition hall, the indoor firing of coal has been an acceptable form of fuel for operations. John Allman demonstrated his Aster 2-6-6-6 Allegheny with Ryan Bednarik assisting in the initial firing. Jeff Tomecek had



Water: *Jeff Tomecek works on his water bottle.*



More fever: Murray Wilson, left, reaches for one of his antiques; Chip Rosenblum, right, waters his loco.

his 7/8-scale “Mike Bigger” o-4-o and his DJB Engineering “Robert” in operation. Justin Koch fired up his Accucraft Mogul coal conversion which operated flawlessly for an hour.

On the scratch built side of the house, Mike McCormack brought his Cuban Plantation engine, a beautiful 2-8-0 30-inch gauge prototype sized for 45mm-gauge track. The laser-cut frames were provided by Jim Curry and Mike used Roundhouse cylinders and Walschaerts valve gearing for the motion.

Each year the antique-restoration side of the hobby grows, with more live steamers finding and restoring the toys of yesteryear. Murray Wilson had his late 1930s Bassett-Lowke O-Gauge Mogul with matching rolling stock and Rob Kuhlman had a similar setup.

Larry Green of Vermont showed his latest acquisition, the Accucraft East Broad Top narrow-gauge Mikado. Larry updated the exhaust on his with a Summerland Chuffer. That is one effective product! His locomotive could easily be heard above the din of the crowd in the hall.

As for yours truly, I also went narrow gauge this year and brought my Accucraft SPng 4-6-0 and Disney Lilly Belle.

Ancillary action

Cabin Fever offers a few extras that we don’t normally see at small-scale steamups. One of these features is the auction. With one quarter of the entire exposition hall reserved for the pre-auction display in addition to another smaller building nearby, Cabin Fever boasts one of the largest annual auctions for engineering equipment, tooling, projects in both finished and partial states, collections from



Avid: Brittany Grimm, a frequent steamer at East Coast events, is one of the youngest in the hobby.

estate sales, the list is endless. There was even an antique fire engine on the block a couple years back!

It is not unusual for one or two items for Gauge One to pop up. At this year’s auction however there was only one, an Accucraft C-16 with a few of the yellow bits and pieces indicative of a heritage from a No. 268 “Bumblebee” paint scheme. It looked to be in poor condition, and its ability to be a quality steamer without a lot of fix-it-up effort seemed dubious. None of the participants at our tracks made the plunge, but a gentleman from a neighboring dealer booth did. This was going to be his first foray into the hobby coming from the larger scales down to the smaller. He sought out some assistance from Jim Barker to give his new acquisition a test steamup to



Steam fans: John Allman, far right, and John Kling (to Allman's left) examine Kling's locomotive as the crowds gather at Cabin Fever, held Jan. 13-15 in York, Pa.

see if it was really as bad as it looked.

After going through the normal preliminary procedures, his loco came alive and operated nice and smooth on the side track. So even though it looked rough around the edges, he got a good deal and was very happy with his purchase.

The show also sets up a pond for model boats. Both electric and live-steam boats can be seen taking their turns around the pond. A perennial favorite is the fireboat that will give you a taste of its operations as it swings by the crowd and spritzes a bit from its fire spout.

Since the exposition tries to cater to all types of model engineering hobbies, in addition to the pond for the boats, there is a large pile of dirt that is brought in. Dirt you may wonder? Yes, a large pile of dirt. And playing in the dirt throughout the weekend are radio-controlled models of construction equipment. From dump trucks to steam shovels to a large drag-line set up, these hobbyists are having fun in the dirt. Maybe one of these years we'll have to build a steam-operated highline for logging operations and deliver the logs down the pile to waiting Shay locomotives.

Another fun aspect of being an exhibitor at the expo is that you get a little plaque for that year to put on your toolbox, train box, steamup kit, etc. It's sort of like getting a pin from the Diamondhead

steamup. Each year is a different design usually showing a model of either a stationary steam or hit-and-miss engine, locomotive, well you get the idea. I have my collection festooned on one of my locomotive carrying cases.

Unlike steamups where we are used to being able to steam into the wee hours of the morning, Cabin Fever does have set daytime hours. But that is easily compensated by other activities that we create for ourselves outside of the main hall. For this year we had a movie night and gathered at the hotel with a loaned big screen television from our generous Cabin Fever hosts. This year's offering was "The Titled Thunderbolt," a classic movie that is always fun to watch.

As always, the event was a great time, all thanks to Mike Moore who does the bulk of the coordination and correspondence with the organizers plus providing his tracks; Chuck and Ryan Bednarik for their track and generous siding for rolling stock, always a great asset, and all of the steamers who attended and enjoyed the company of steam. This year however, was the last year for the mid-winter Cabin Fever. For a couple of years in the past the timing conflicted with the Diamondhead Steamup. Not so next year as Cabin Fever will return in April. And as I like to call it, will be more of a "Spring Fever" Cabin Fever.

Want more live-steam fun? Double your pleasure,

Double Fairlie

Text and photos by Bill Allen

Ever since I first got into live steam, I have had a strong affinity for articulated engines. My first scratch build was a Garratt which went well so I wanted to do another articulated for my next locomotive. I thought about a Big Boy or Cab Forward, but both of those had already been commercially done. I was discussing this with my friends Dennis Mead and Henner Meinhold, and Henner said, “What about a Double Fairlie?” “A double what,” I asked.

Henner and Dennis proceeded to fill me in on the history and suggested I look it up online. I did and was hooked.

I was able to pick up a side view drawing of the original Double Fairlie and a front measured drawing of a



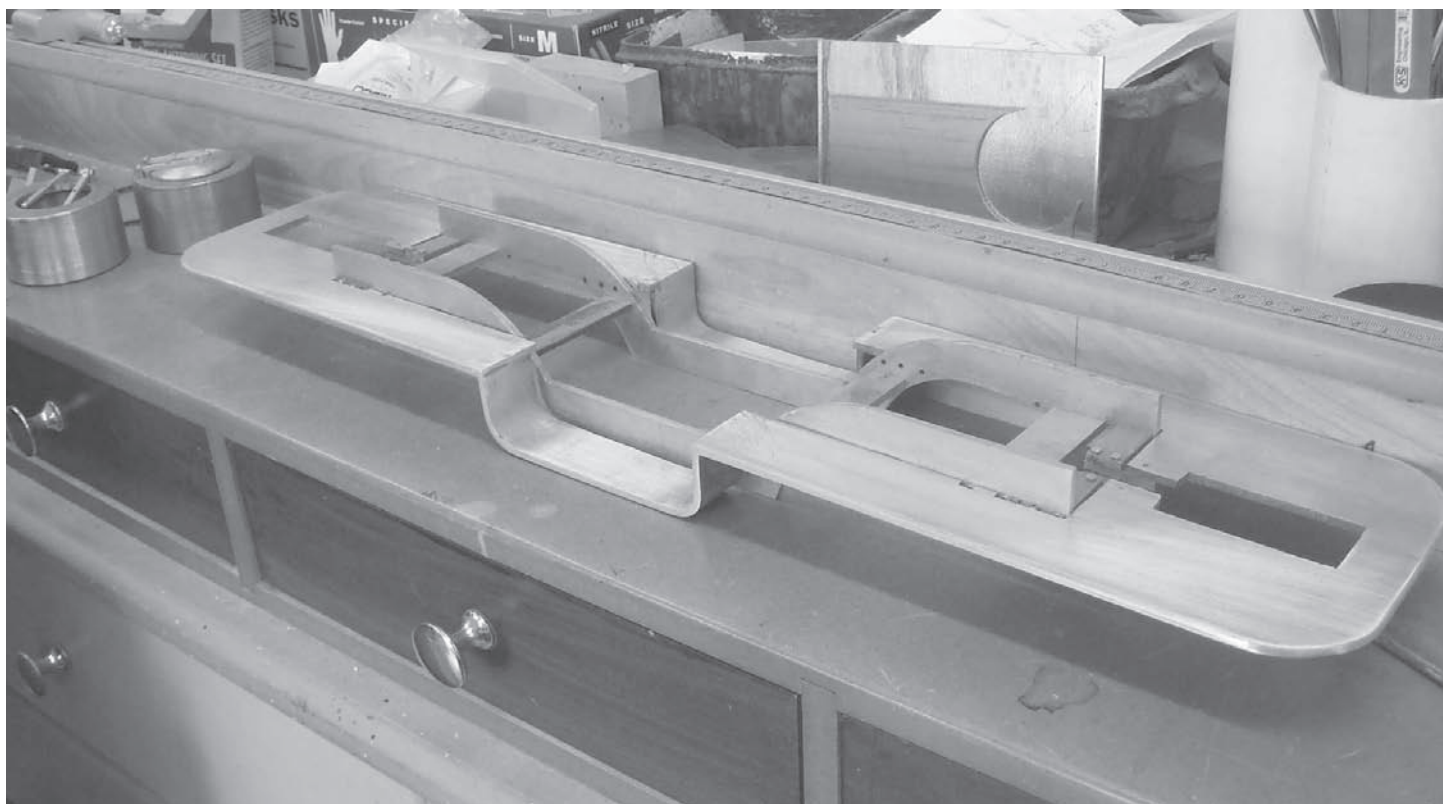
Single Fairlie. Using these and ratio and proportion, I was able to draft a complete set of plans to the exact scale of the model. I drafted one out at the proper scale for 45mm track (1:13) and it was larger than I wanted. I tried 1:19 or 16mm scale, but it was too small and made things look out of proportion. So, like Goldilocks, I decided on 1:16 — or three-quarter scale — and felt it was just right.

It is not too overpowering and still shows the very narrow gauge of the model. I pinned the plans on the shop wall and used calipers to regularly check measurements against the parts I was making. I also had a picture of the original for perspective. I was ready to start making chips by September 2010.

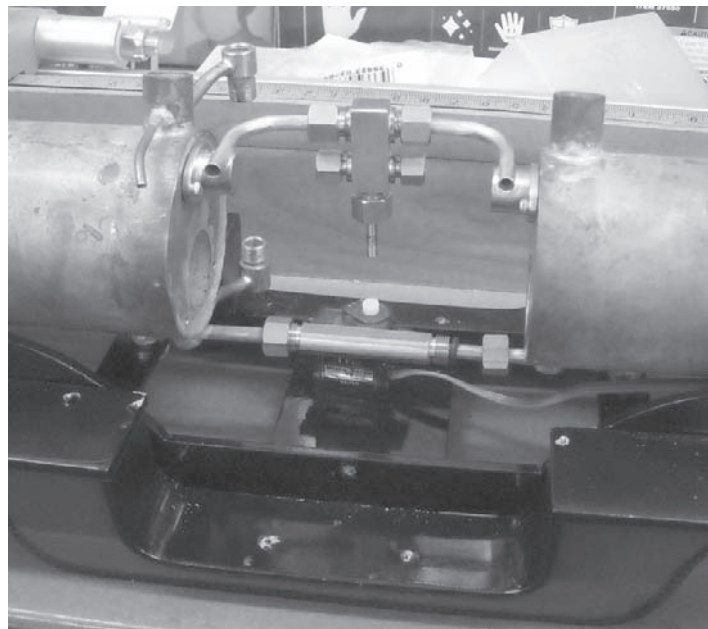
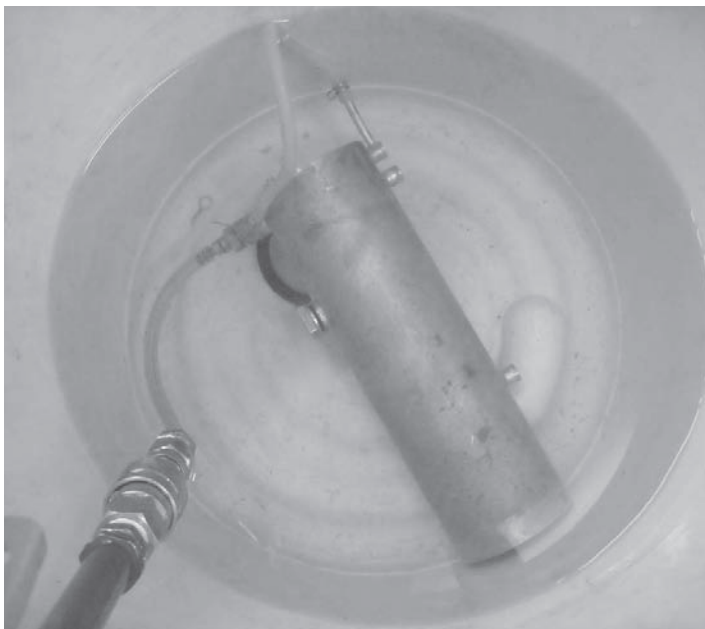
As on my Garratt (see *SitG*, No. 116, March/April



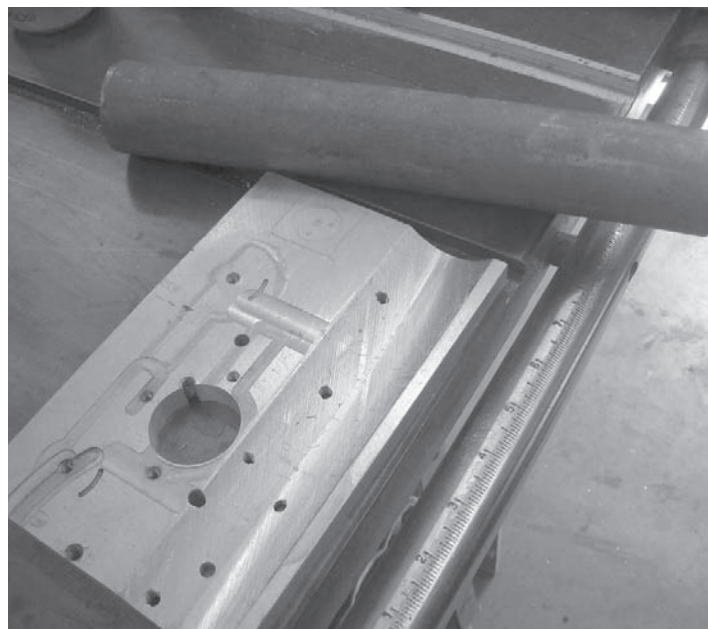
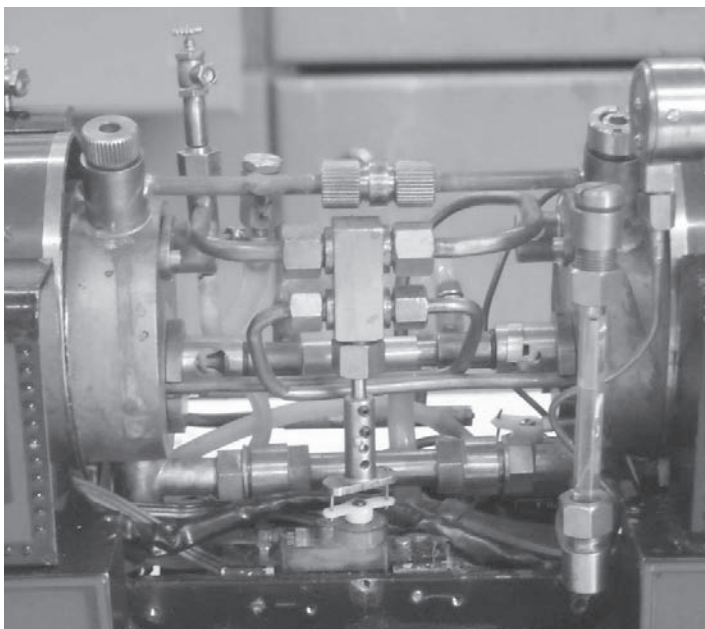
Welsh locomotive: *The completed 'Merddins Emrys' on the author's Woodside, Calif., backyard railway.*



A frame inside a frame: *Two 'U-shaped center pieces silver-soldered together support cab and sides.*



Boiler: *Left, completed vessel tested in water bucket; right, initial top and bottom equalization tubes.*



Fine tuning: *Left, larger bottom equalization tube in boiler; right, boiler wrap bending jig.*

2011), I did most of the plate and frame work as well as the cylinders, crossheads and such. Dennis did all of the valves and fittings as well as the whistles. We switched off on the Fairlie, though, with me still doing most of the frame and plate work but Dennis doing the majority of the bogies. With his computer-assisted design (CAD) expertise, we were able to make mating parts in two separate shops and have them fit perfectly.

For instance, Dennis made the engine valves and using coordinate milling, I was able to make the ported valve covers, which had to mate within thousands of an inch. I almost couldn't believe my eyes when everything fit perfectly. The key to doing this right is to have the digital readout mounted to the sliding member of the mill and not the adjusting knob, which has

backlash. I took \$10 digital calipers, cut off the jaws and depth rod and mounted them on the mill.

Having learned from Dennis earlier, this time I made many of the fittings, steam valves and the whistles myself.

Boilers and frame

The main frame needed to support the two boilers and the bogie pivots and then drop down for the low floor cab. Luckily, the drawings of the original frame worked out perfectly for my needs.

In order for the two engines to pull equally, it was imperative to equalize the pressure to them. We collected our steam from the domes on each boiler and T-ed them with a combination "T" and throttle



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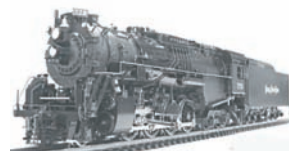
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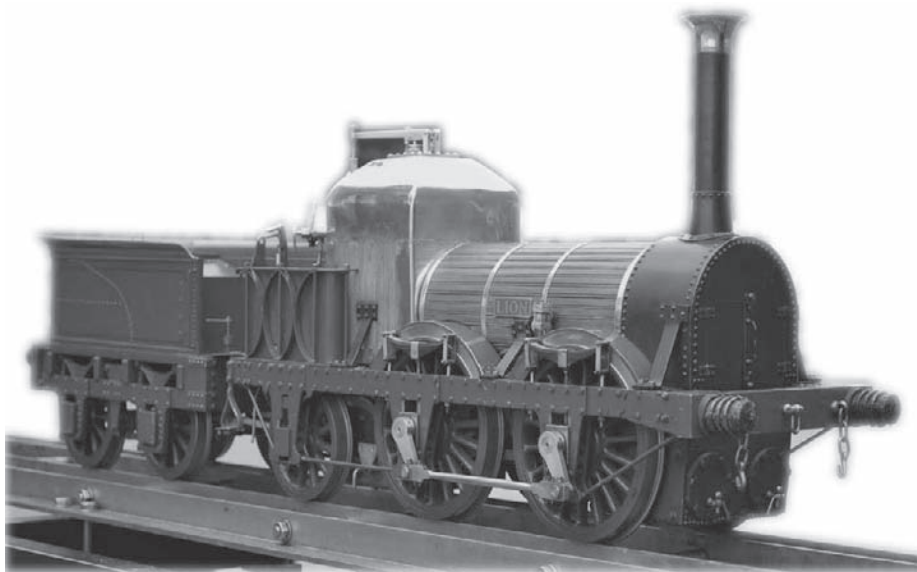
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Little wonder Fairlie was a success

Robert Fairlie had become convinced by the early 1860s that the then-conventional design of locomotives was seriously deficient: they wasted weight on unpowered wheels and on a tender that did nothing but carry fuel and water without contributing to the locomotive's tractive weight. Furthermore, the standard locomotive had a front and back, and was not intended for prolonged driving in reverse, thus requiring a turntable or wye at every terminus.

Fairlie's answer was a double-ended locomotive, carrying all its fuel and water aboard, and with every axle driven, which he patented in 1864. The double-ended part was accomplished by having two boilers on the locomotive, joined back-to-back at the firebox ends, with the smoke boxes at the ends. In Fairlie's original design, the boilers shared a common firebox, but with separate water spaces; it was found that this did not work as well as expected, and on later locomotives the fireboxes were partitioned into two sides.

The engineer worked on one side of the locomotive and the fireman the other; the joined fireboxes separated them. There were, of course, controls at both ends of the central cab to allow the locomotive

to be driven equally well in both directions.

Underneath, the locomotive was supported on two swiveling powered bogies, with all wheels driven. The cylinders on each power bogie pointed outward, toward the locomotive ends. Steam was delivered to the cylinders via flexible tubing, couplers and buffers. Fuel and water were carried on the locomotive, in the form of side tanks beside each boiler for the water, and bunkers for the fuel above them.

In 1869, Fairlie's company built a locomotive for North Wales slate hauler the Ffestiniog Railway named "Little Wonder," and this one

proved to be an outstanding success. Particularly important for a narrow-gauge line as small as the Ffestiniog, with a gauge of one-foot, 11½-inches (597mm), was the fact that the Fairlie design meant that the fireboxes were not restricted by frame or track width.

"Little Wonder" was such a success that Fairlie gave the Ffestiniog Railway Co. a perpetual license to use the Fairlie patent without restriction in return for using the line and the success of its Fairlie locomotives in his publicity. The Ffestiniog went on to own a total of six Fairlie locomotives, including the "Merddin Emrys," the prototype for my model.

— B.A.



Double-ender: Fairlie's 'Merddin Emrys,' built for the Ffestiniog Railway in 1879. Photo: 'Railway Wonders of the World — Part 39,' 1935.

valve which, in theory, gives both engines one steam source and hooks both steam domes together.

We then ran a tube on the bottom of the boilers to give it equalization at the top and bottom. Unfortunately, the laws of physics seem to go out the window when water starts to boil. The boilers would come up with different levels and the sight glass level would move with the piston beats and whistle blows.

After trying several fixes, we added another cross-over between the two filler tubes. This solved the problem.

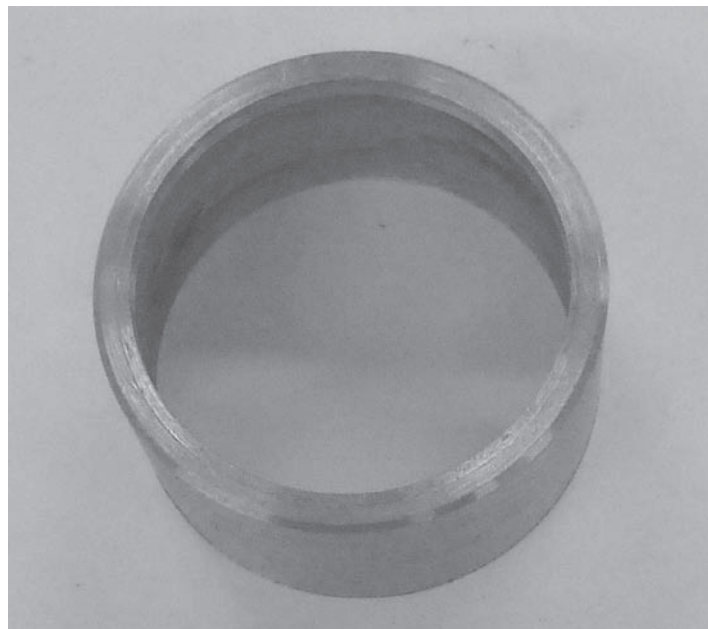
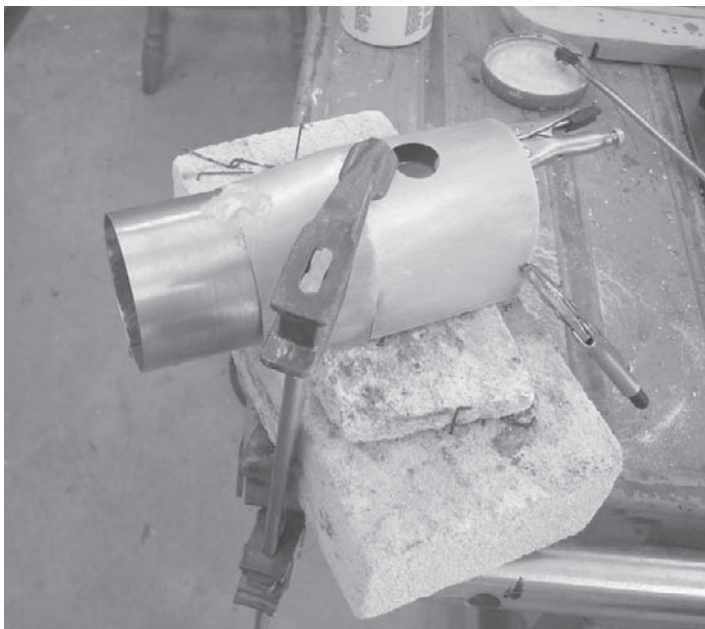
Sheet metal

The boiler wrap was going to be a problem because the "Merddin Emrys" — built in 1879, restored in 1988 by Ffestiniog, currently running in passenger duty and the prototype for my model — has a wagon-top boiler wrap and I couldn't find any-

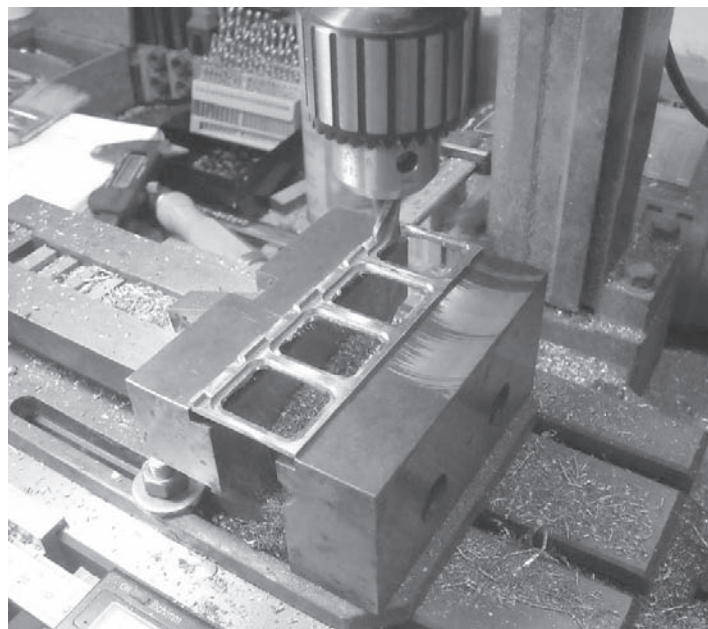
one who had done one before. I have been making most of my sheet metal parts out of .025-inch stock, mainly because it is readily available at the metal yard and because it makes for a sturdier finished product than lighter stuff.

To form the main wrap, I took a scrap piece of aluminum and by running it at an angle through the table saw, I was able to form the female part of my die; the male part was just a piece of pipe I had laying around. I made the radius slightly smaller than the boiler, which helps for the spring back. Since a wagon top is raised at the top of the boiler and not on the sides, the raised portion of the wrap has the same radius as the lower so I bent only the middle of this piece with the same tool. This produced the horseshoe-shaped piece I needed.

Then with a piece of paper and scissors, I carefully cut out a transition piece. It turns out that the two



Boiler accessories: *Wagon top riser, left, is soldered to the wrap. Smoke box, right, is two pieces of tubing.*



Cab: *Left, window frames ready to be soldered. Right, window frames gang-clamped in the mill vise.*

ends of the piece are made from concentric circles with the difference between the two being the length of the transition piece. With a large compass, I drew the outline of the piece on the brass and cut it on the band saw. This was then silver soldered to the main boiler wrap.

The cab has several curves, beading and working windows which needed to be designed and made.

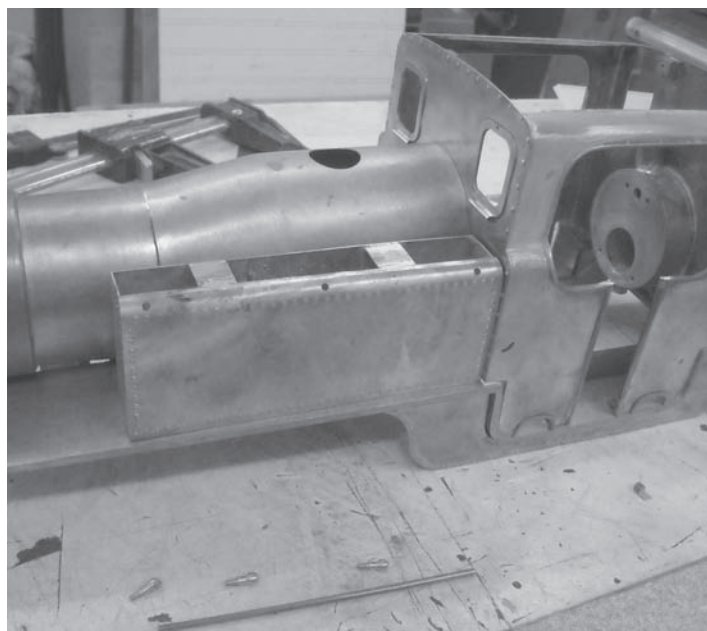
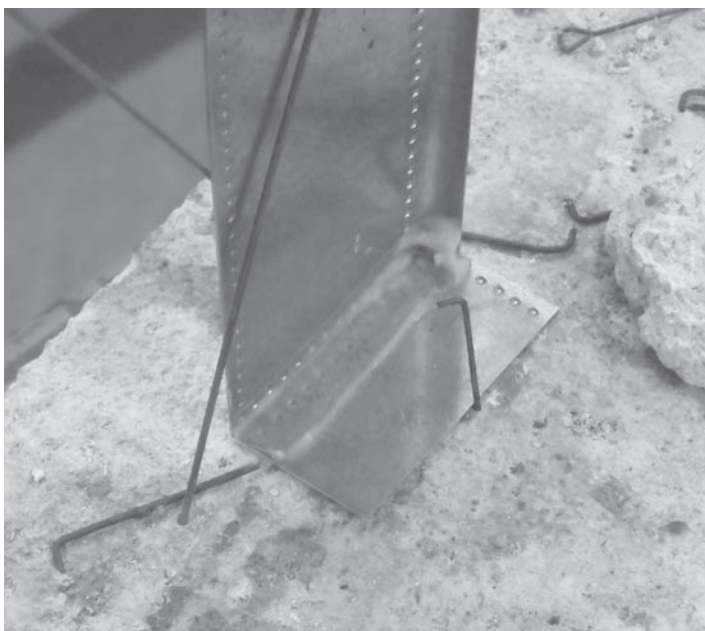
Two side tanks carry water, while one houses the radio-control (RC) components and one houses one of the fuel tanks. The most difficult part of making the tanks was the upper radius which had to be bent after the rivet detail was done and therefore had to start and end at precisely the same point on all four tanks.

This was done with a straight punch and calipers

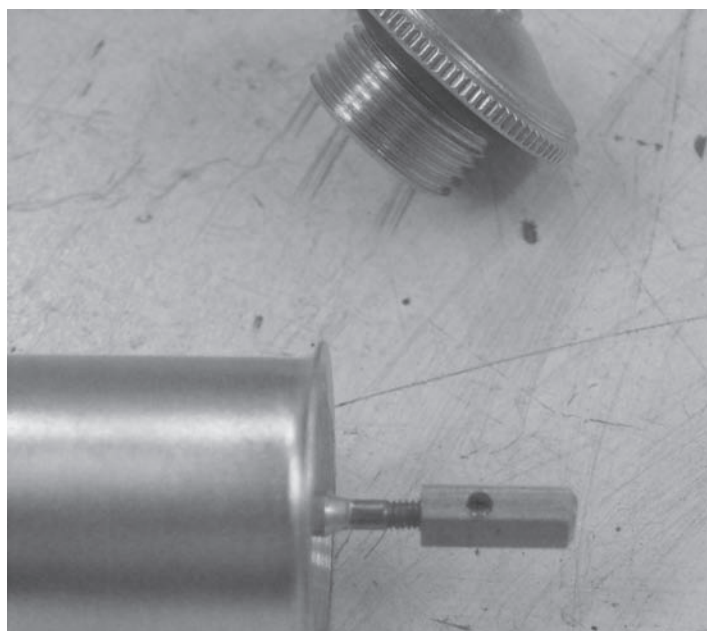
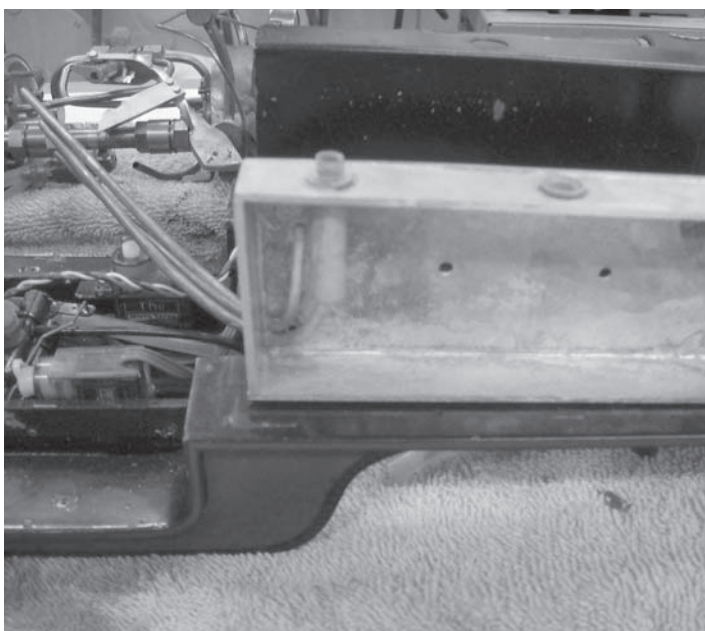
in the vise as with the cab. The water tanks were silver soldered all around with a removable top and the RC was made in two pieces.

The original fuel tank was next to the insulated boiler wrap. The thinking was to use the boiler heat to keep the fuel warm. The problem was that it worked too well and I had to constantly turn the gas down. The capacity was not great and making a smaller insulated tank would make the run time less than I wanted.

I decided to have two gas tanks, one insulated inside the side tank and the other under the cab. This gives me 40 minutes run time and the lower tank — which is insulated from the boiler on the top and open to the air on the sides and bottom — tends



Tanks: *Silver soldering the water tank (music wire holds things in place), left, completed tank, right.*



Gas and oil: *Left, installed butane tank (tubes fill and vent lower tank and jet output). Right, oil reservoir.*

to equalize the fuel temperature.

The Double Fairlie has four vertical cylindrical tanks mounted on each corner of the frame plate which I believe are for sand storage. These are perfect for the dead leg lubricators. I decided to make two of the tanks on the same side into adjustable lubricators.

Lubricator, domes, lantern

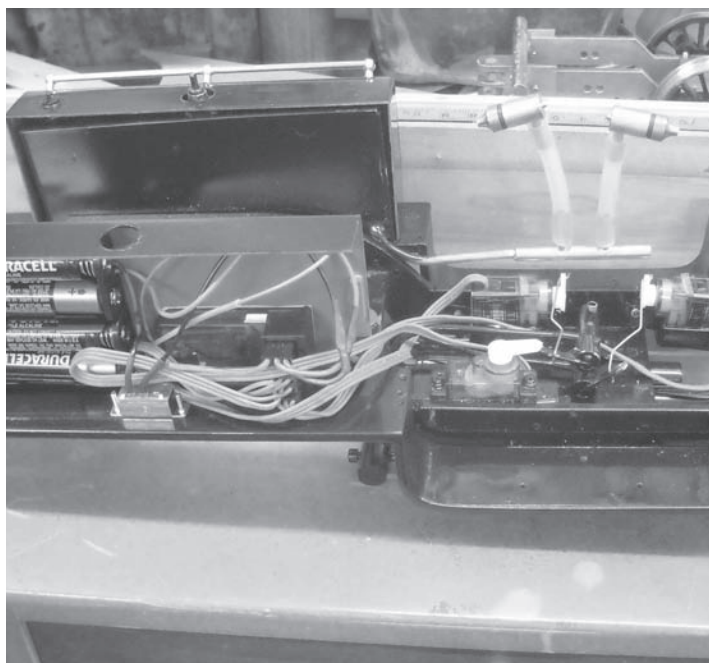
My Accucraft C-16 has 1/16-inch outside-diameter tubing which, is about .020-inch inside-diameter and about eight inches long. This has been converted from a larger metric factory tube but still makes things pretty wet. I decided to use the 1/16-inch tubing and throttle it down with a cap nut at the end.

I threaded the tubing with an o-80 die and then, on the lathe, I tapped out a piece of one-eighth-inch hex and cut it off ("parted") to make the nut. I then drilled a side hole even with the bottom of the tapped hole for oil flow.

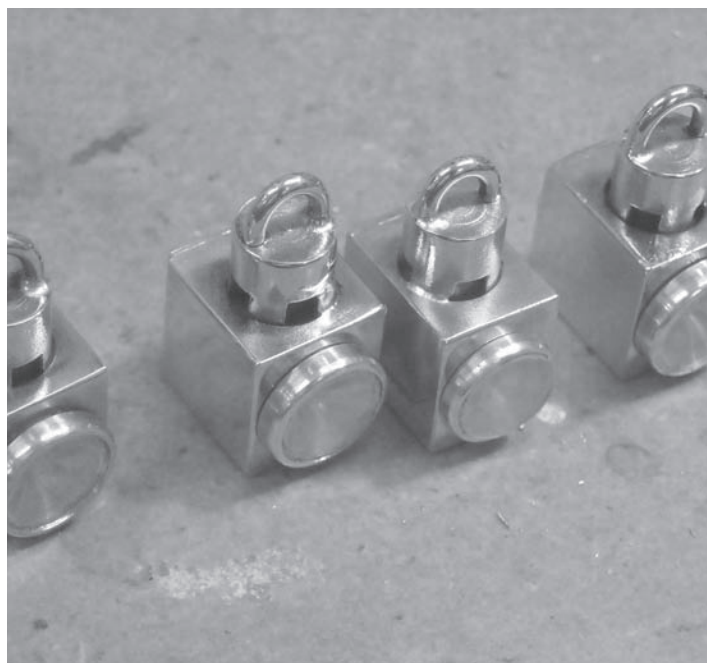
The lubricator is tied to the main steam line under the smoke box between the superheater and the cylinders.

The Double Fairlie carries at least one lantern and sometimes more. The placement of the lantern signifies the direction and service of the engine. I decided to make four which would be the most ever used.

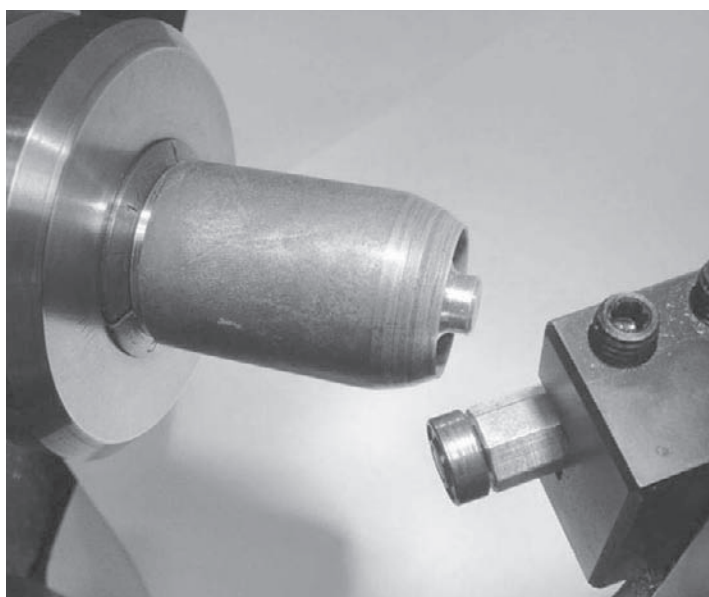
The steam domes were done on Dennis' lathe. He first made a forming tool out of aluminum and then took a piece of thin-wall brass plumbing tube (P trap)



Servos: Radio control for whistle and throttle, with battery pack on the left. Design was later changed.



Lanterns: Machined from brass stock, the light bezels were turned from aluminum.



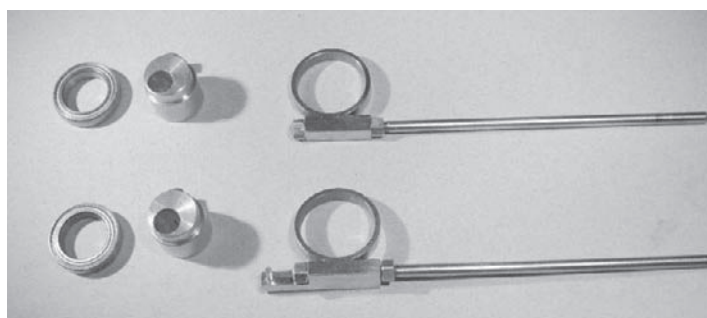
Domes: Thin-wall brass plumbing tube shaped on lathe, after annealing.

and shaped it using a tool. The piece was annealed and worked several times to get the finished result.

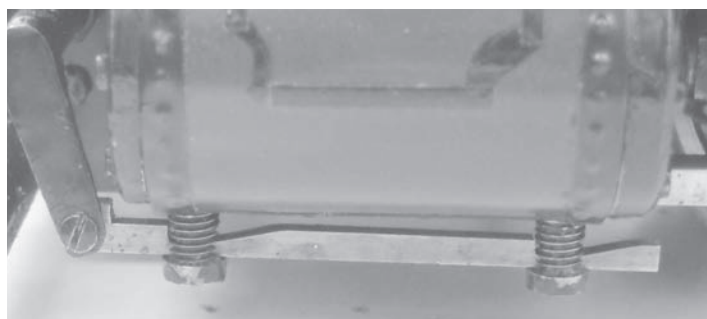
Running gear

Two identical bogies were needed. The wheels scaled out to a two-inch tread diameter. I picked up some Aristo-Craft wheels and Dennis machined them to the proper flange and needed axle diameter. The plan was to have the eccentrics work the valves and the axle feed water pumps. To do this, I decided to have ball bearing eccentrics. I picked up some skateboard bearings which fit the bill for that.

Everything else, Dennis and I made from scratch.



Eccentrics: Skateboard bearings, left, will eliminate the need for lubrication maintenance.



Drain: This cylinder drain is prototypical to the original Fairlie design.

The feed-water pumps and servo-operated cylinder drains required several retrofits to get them working properly and the heat from the bottom hole in the smoke box coupled with the superheated steam line caused problems with the flexible steam hoses and the frame mounted servos.

Baffles and insulation now protect the servos and the flexible silicone tubing has been replaced with PTFE (Teflon) tubing.



THE CUPOLA VIEW

Typefaces and rivets

When it comes to the question of prototype fidelity in our hobby, on the spectrum between whimsy and rivet-counting I fall squarely in the middle. I would never reject a model because its proportion is only slightly off and gladly mix 1:20.3-, 1:22- and 1:29 scales on my backyard railroad.

But get the typeface wrong when lettering a locomotive or a wayside building and I'd throw the object into the garbage can (well, probably not, but it would perturb me).

This undoubtedly comes from my personal history of being involved in printing and publishing from an early age — I was buying rub-on lettering and making pages as far back as the late 1960s, so I've been choosing type for more than 40 years.

This time span also means that I've been a direct

'Cupola View' is written by Editor Dave Cole; you can contact him at dmcole@steamup.com or P.O. Box 719, Pacifica, Calif. 94044-0719.

witness to the huge shift in typography, as it changed from a craft eerily similar to building steam locomotives to one now driven entirely by computer.

Before the mid-1960s, typefaces were created by craftsmen who drew lettering onto metal (or wood) and then carved out the letters individually. In the early days, wooden type was distributed directly, but later they were drawn reversed (which were actually right-reading) and used as molds, which were then cast into lead letters that were sold as "fonts" to print shops around the world.

The development of a new typeface took years and the cost to purchase a font was overwhelming to even the most prosperous printer.

But with the advent of photo offset lithography and phototypesetting, a typeface could be drawn on a piece of paper and photographed (or, later scanned by computer) and turned into a font in a relatively quick and easy process.

So, the development of new typefaces went from a years-long cycle to a months-long period. With the advent of Apple's Macintosh in 1984 and the Apple and Adobe development of the Laserwriter in 1985, typography zoomed.

Today you can sit down at virtually any type of computer — Mac, Windows or even Apple iPad — and have access to variety of typefaces that would

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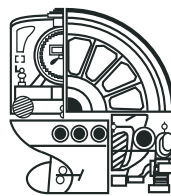
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have made designers from the 1950s swoon.

Conversely, you also have the opportunity to choose any number of bad or historically incorrect typefaces.

I was aghast a few years back when a model manufacturer claimed their product was completely accurate to its 1890s period, while the lettering was done in the Helvetica typeface, which was developed in 1957.

Helvetica came as one of the standard faces distributed with the Lasewriter and has now become ubiquitous in our lives (it's used by the U.S. Internal Revenue Service to typeset all of its forms and logos for American Airlines and Target are set in Helvetica). Making matters worse, a series of court decisions regarding the ability to copyright typefaces means that a type designer can legally copy a face and then give it a different name.

Arial? Helvetica by another name (there are differences, but they are slight).

So when I ran across Jay Kelly's article on building facades for a backyard railroad in the newsletter of the Southern California Garden Railroad Society last year (see Page 23), I was pleased he kept the lettering on his buildings accurate to the period. For the Law Office, Kelly used a typeface called Bookman, which while a new drawing, traces its history



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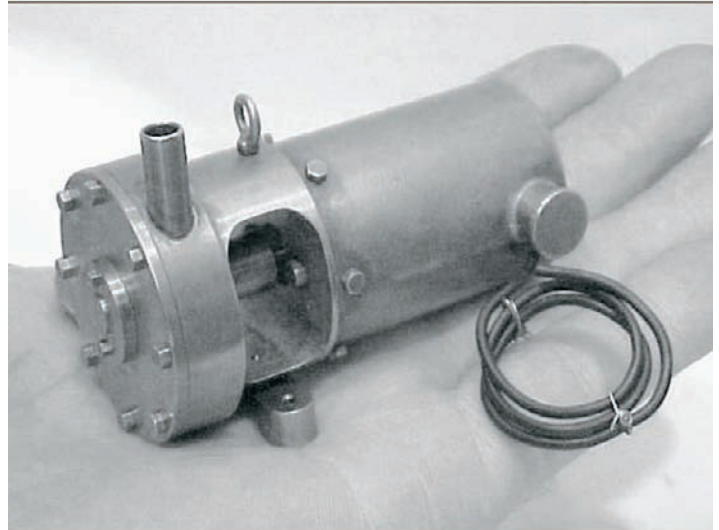
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Playbill circa 1850
Poster Bodoni circa 1850
 News Gothic from 1908
 Johnston from 1913

Accurate: *Typefaces that might work for your era.*

back to the 1850s, accurate for his buildings' period (I was also charmed by his use of an old vaudeville joke for the law firm's name).

You don't have to be a typographic expert to make sure your lettering is period accurate, but as with all modeling, you need to be careful. Most of the typefaces that come installed on your computer are not going to be historically accurate for the periods we live-steam hobbyists model. But there are many

available that are correct. And while I would encourage you to purchase good typefaces, a lot are offered as "freeware." Use your favorite search engine — Google or Bing or whatever — to research the name of the typeface you've chosen (but remember, names can be deceiving).

I've always been partial to a face named Clarendon, which many railroads used to letter numerals on the sides of locomotive cabs. A little search-engine use tells me it was developed in 1842, making it a perfect typeface for any number of uses between 1850 and 1950.

Bodoni — and most especially a variant called Poster Bodoni — are perfect steam-era typefaces.

Finding sans-serif lettering (Helvetica is a sans-serif, while Times and Bodoni are serif) that is accurate from the 1850s to the 1950s is more difficult. If your period is after 1916, you can always use a face called Johnston, which was designed for the London Underground. Also, look for the word "gothic" in the face's name.

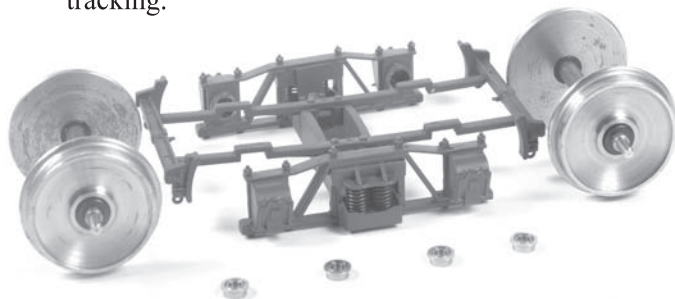
Depending upon your devotion to fidelity, choosing the right typeface for lettering a model can be as much work as any other aspect of modeling. I guess it doesn't make any difference whether you count all the rivets on a locomotive to make them accurate or spend hours researching the lettering.

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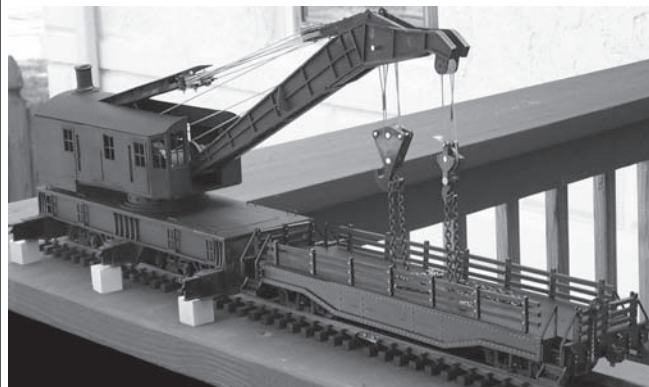
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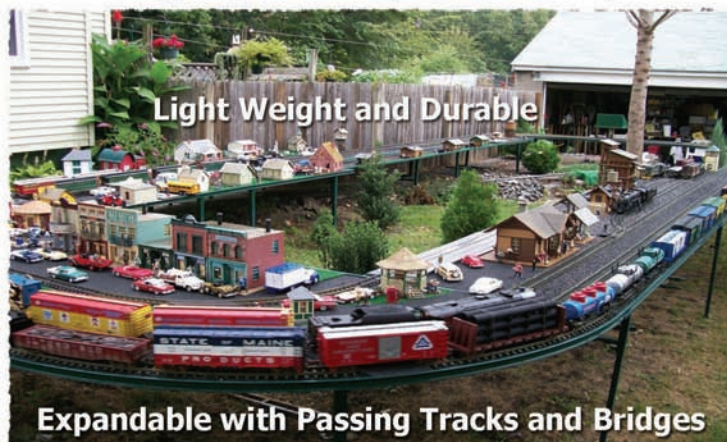
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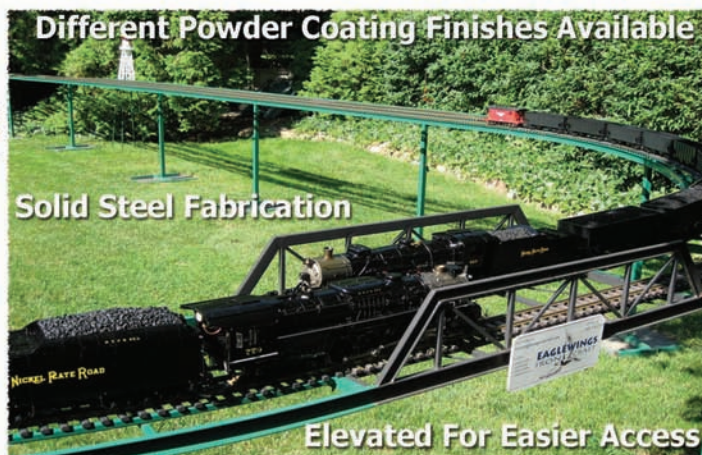
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TIMETABLE

May 5-6, 2012 — San Antonio Garden Railroad Society Open House, Texas Transportation Museum, San Antonio. Gauge One live steam as well as battery and electric operation. <http://www.txtransportationmuseum.org/>.

May 19, 2012 — Adirondack Live Steamers Membership Day, Wilton, N.Y. Multiple outdoor elevated and ground-level Gauge One tracks. Info: <http://www.adirondacklivesteamers.org/> or call Ben Maggi at (585) 506-2680.

June 7-10, 2012 — Adirondack Live Steamers Spring Meet, Wilton, N.Y. Info: <http://www.adirondacklivesteamers.org/> or call Ben Maggi at (585) 506-2680.

July 6-8, 2012 — West Coast Regional Meet, San Diego Garden Railway Society. Tours of backyard layouts. Info: <http://www.sdgrs.com/>

July 18-22, 2012 — National Summer Steamup, Lionsgate Hotel, McClellan, Calif. Featuring nine live-steam loops of 45mm and 32mm tracks in an air-conditioned hotel ballroom, a Saturday-night BBQ dinner, clinics and workshops, a dealer room and swap tables. Info: <http://www.summersteamup.com/>, steamup@steamevents.com or call (650) 898-7878. Lionsgate Hotel: (866) 258-5651.

July 29-Aug. 4, 2012 — Grand Rails 2012, 77th Annual National Model Railway Association convention, Amway Plaza Hotel, Grand Rapids, Mich.

Tours, clinics and workshops for all scales. Info: <http://www.gr2012.org/>.

Aug. 14-19, 2012 — National Garden Railway Convention, Pheasant Run Resort, St. Charles, Ill. <http://2012ngrc.com/>

Sept. 20-23, 2012 — Fall Steamup, Staver Locomotive, Portland, Ore. <http://www.staverlocomotive.com/>

Sept. 21-23, 2012 — Marty Cozad's Annual Steamup, Nebraska City, Neb. Dual raised track with 20-foot curves; 2000-foot dual ground-level track. Info: Jerry Barnes, juking@atcjet.net.

Oct. 27, 2012 — Annual General Meeting, Gauge One Model Railway Assn., Woking Park, Kingfield Road, Woking, Surrey, GU22 9BA, United Kingdom. <http://www.gaugeone.org/>

Regular steamups

Michigan Small Scale Live Steamers (MSSLS) hosts a large number of steamups. Info: <http://www.mssls.info/>.

Puget Sound Garden Railway Society. Two steamups per month, one at the Georgetown Powerplant in Seattle on the second Saturday and a steamup at a member's track on the fourth Saturday. Info: <http://psgrs.org/livesteamtimetable.html>.

Greater Baton Rouge Model Railroad Club Open House and Gauge One Steamup. Info: Ted Powell, (225) 236-2718 (cell), (225) 654-3615 (home), powell876@hotmail.com.

Southern California Steamers: Contact Sonny Wizleman for dates, places and other pertinent information. (310) 558-4872. sonnywo4@ca.rr.com.



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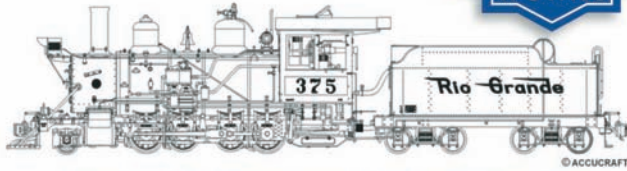
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