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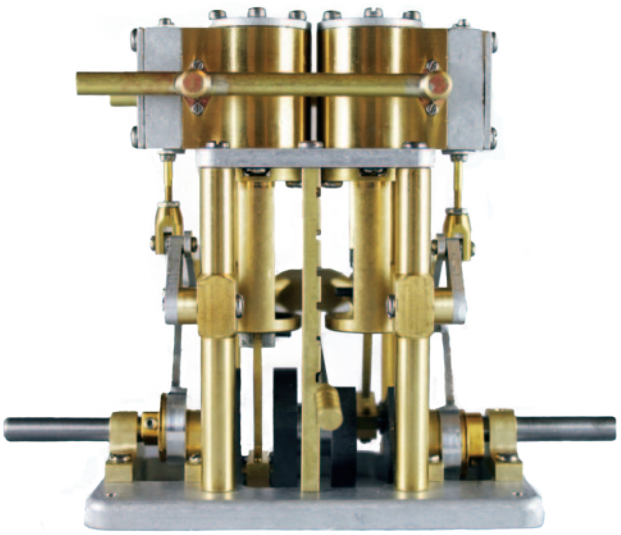

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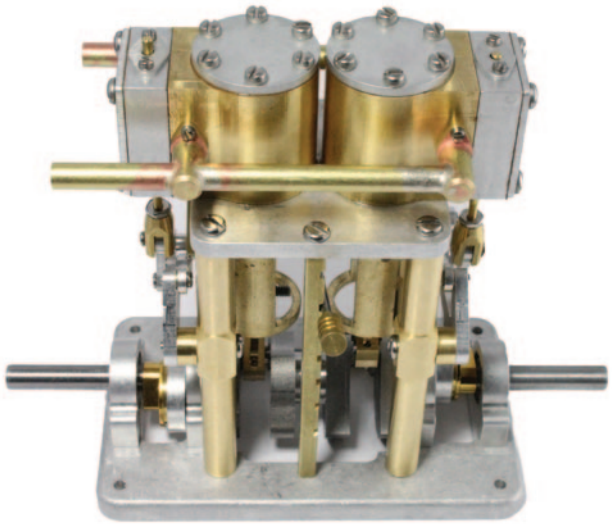

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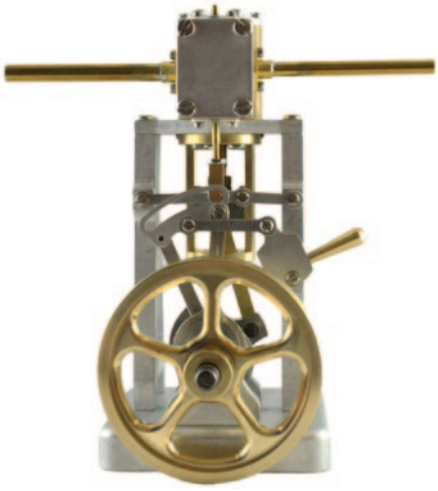

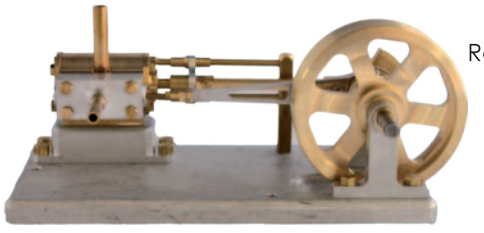

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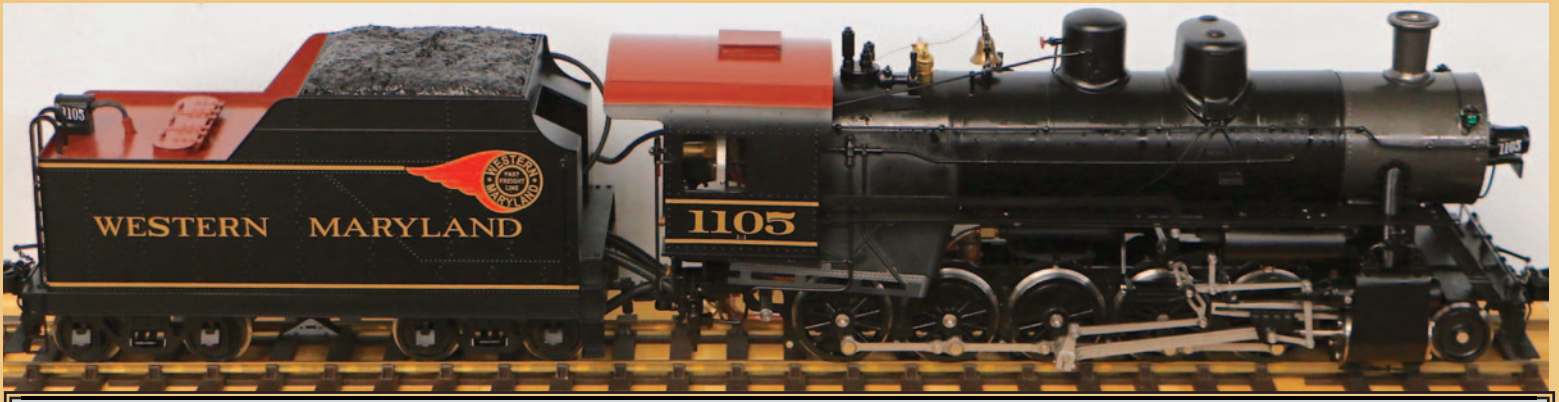

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Vol. 27 No. 3; Issue No. 151; September/October 2017

STEAM IN THE GARDEN

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

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Cover: Accucraft 'Dora' fitted with a cog climbs up a steep grade. **Photo by Marc Horovitz**

LATEST WAYBILL

Argyle / Accucraft Announces New Product - N.S.W. Govt. Railways 'C38' in 1:32 scale

Accucraft/Argyle Photo

Melbourne (Australia) based company Argyle Loco Works, in association with Accucraft, has produced two demonstration versions of the NSWGR C38 class express locomotive in 1:32 scale. The two pilot models are of the streamlined '3801' and the standard version as '3813'. Both are live steam but electric versions are also being produced. To be released later in the year the full range on offer includes 6 liveries and the choice of live steam in both alcohol or butane gas fired (ceramic burner) or electric power.

Argyle's development team has been working on the project since 2012. For full details see the Argyle Loco Works web site at: http://www.argyleloco.com.au/news.htm

Checking pilot model components for accuracy and detail are from left to right David Fletcher - Research and Design, Michael Ragg - Project Management, Channing Cheng - Product Development Manager Accucraft and Gordon Watson - Mechanical Design and Performance.

Accucraft/Argyle Photo

International Small Scale Steamup Announces 25th Anniversary Car

The Staff of the International Small Scale Steamup & Arts Festival (aka Diamondhead) has announced a limited edition 25th Diamondhead Steamup anniversary car to celebrate this momentous occasion.

You can place an order for your car, available in 1:20.3 or 1/32 scale at *http://www.trainsales.com.*

1/32 Scale Baggage Car Offered by Stoke'm & Smoke'm

Stoke'm & Smoke'm of Mt. Airy, MD is now offering the 1/32 steel-framed truss rod baggage car to accompany their RPO and coach. Both the RPO and coaches now have added details and the kits come with complete interiors, stoves etc. The RPO even has individual town letter bins! Rogers locomotive works sold locomotives identical to the Illinois Central's famed # 382 ten wheeler to the Nickle Plate, Great Northern and several other roads. To accommodate modelers who wish to have a nice turn of the century main line locomotive with a passenger consist and who model those roads they can use the Bowande Rogers 4-6-0! Bob Clark is offering a package deal of locomotive and cars at considerable savings. Call Bob Clark, US Agent for Bowande for details and ordering at 301-467-3348.

Sonny Wizelman - "A Moment in Time" Gallery Show

Steam in the Garden's own Advertising Manager Sonny Wizelman will be featured in an upcoming gallery showing of his hobby modeling. The following is from the the gallery's announcement on the event.

"Lois Lambert Gallery presents "A Moment in Time", a series of miniature narrative sculptures, by artist Sonny Wizelman. Wizelman's figures and miniature components come Tabula Rasa, allowing him to build and paint the narrative of his choosing. Sonny creates scenarios of a familiar and often romanticized time in American culture.

Wizelman spends a great deal of time on research and problem solving. In his studio there are rolls and rolls of architectural drawings for each of his creations. Sometimes Wizelman rethinks the original idea to fit the resources he has available. An example of this process is Steamers Carousel, which was inspired by Christmas ornaments that resembled carousel animals. "It is all about the creative journey," says Wizelman, "I don't want it to end".

The miniature sculptures present themselves as "blank canvasses" with endless possibilities. It's a medium that doesn't limit Sonny to one material. Sonny focuses on how to make his sculptures more compelling by adding lights, sounds and sometimes he even adds mechanization to his pieces. Steamers Carousel, is powered by a small steam locomotive that stands adjacent to the carousel. The scenes he has created with each of his pieces are stories that are familiar to us all. They are a slice of Americana that projects a more innocent and idyllic moment in time".

Sonny's "Steamers Carousel" powered by a 1:20.3 scale live steam locomotive.

Photo by Rick Parker

Sonny's "Pickle Barrel" roadside stand.

Photo by Rick Parker

Sonny's exhibit runs from July 15th - September 3rd, 2017 at the Lois Lambert Gallery, Bergamont Station, 2525 Michigan Aenue, E3, Santa Monica, Ca. www.loislambertgallery.com

Finescale modelling complete with detailed interiors and lighting.

Photo by Rick Parker

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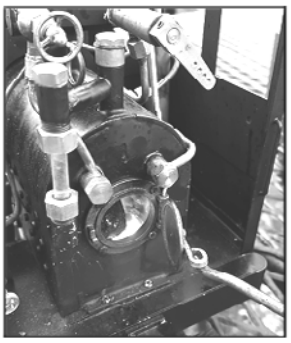

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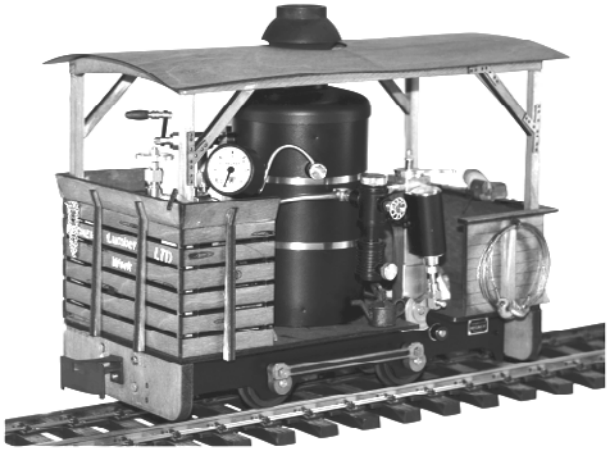

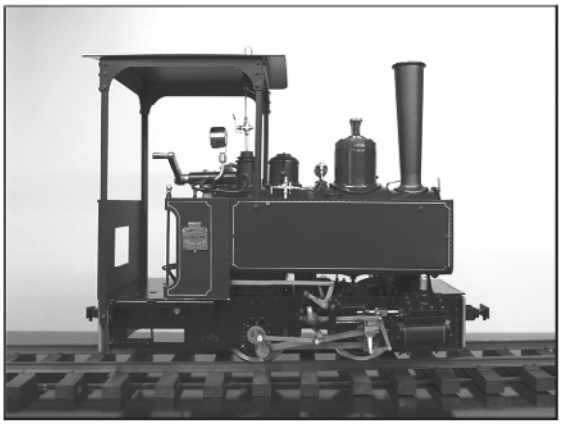

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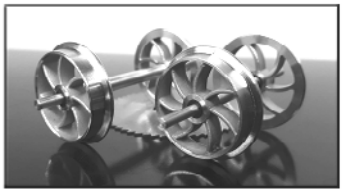

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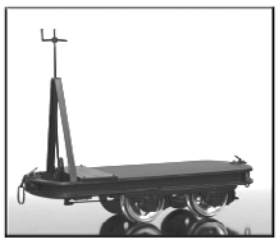

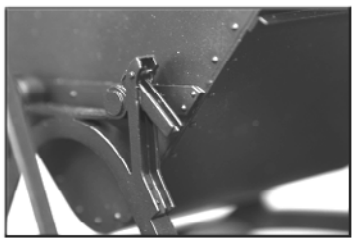

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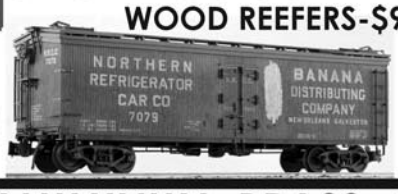

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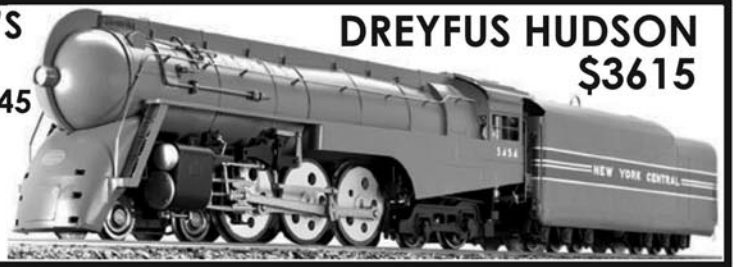

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Workshop Project - Making Dora into a Cog Locomotive

'Dora' Reaches New Heights

Text, Photos, and Illustrations by Marc Horovitz

(Left) Manitou and Pikes Peak cog locomotive on display in 1975 (Editor's Photo). On the right for comparison is Marc's project showing the similarities of his well executed final design.

Dora, as you may know, is a geared locomotive. The gear ratio is 2:1—the steam motor goes through two revolutions for every revolution of the wheels. Because it is geared, I always wondered if the engine could become a rack loco without changing the gear ratio.

Rack locomotives almost always have some kind of mechanical reduction, either through gearing or through the rods. On one or more axles there is a cog wheel—a sort of big gear—that engages the rack, which is the toothed section between the rails. The only company that I know of that makes a rack for Gauge One track is LGB, who also produced a couple of rack locomotives. The first was a cute little electric engine; the second is a nice-looking 0-6-0 steam-outline engine. Only Regner makes working live-steam rack engines.

I did some research on rack locomotives and found those owned by the Manitou & Pikes Peak Railway to be the closest to Dora. Their boilers appeared to be tilted at about nine and one-half degrees, so I took that as my standard.

I had acquired some LGB rack-engine axles with integral cog wheels, along with some sections of rack. In doing some preliminary thinking and measuring, I found that, coincidentally, the LGB rack engine's wheels and the Dora's were virtually the same diameter. If this had not been the case,

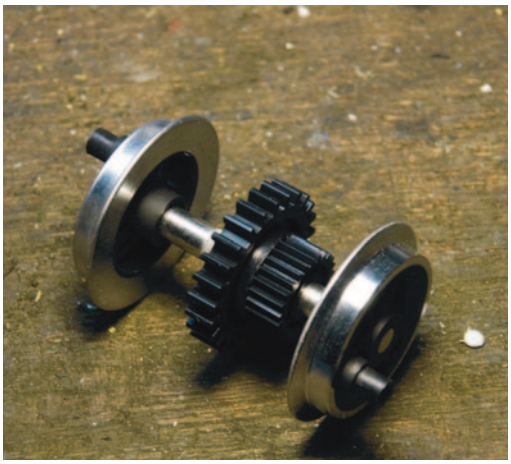
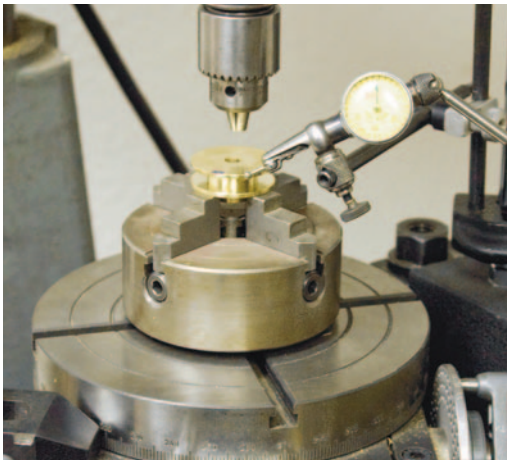


Photo 1



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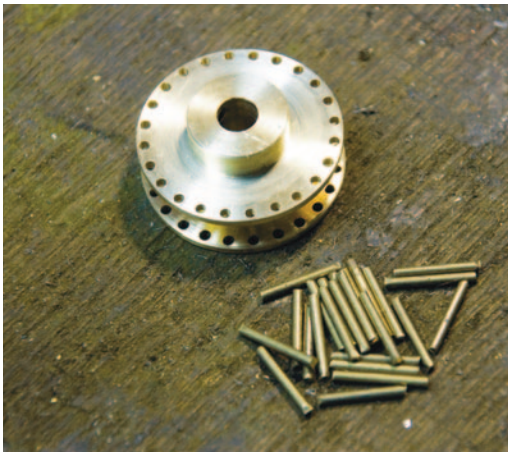

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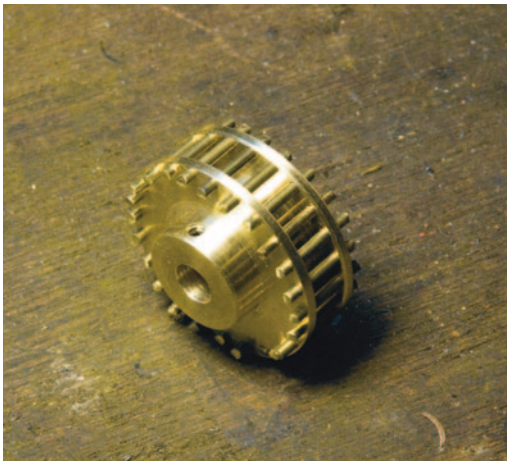


Photo 5

Photo 6

the project would have been much more difficult, if it would even have been possible at all.

Since a project like this would most likely have limited appeal, I've made this story more of a "how I did it," rather than a step-by-step how-to article. Even so, it's pretty long.

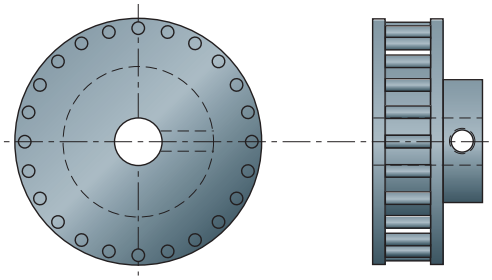


Figure 1—Cog wheel

The cog wheel

LGB's cog wheel is plastic and has an integral secondary gear (**photo 1**). These two facts make it unsuitable for use with a live steamer. I would have to make a new one for my Dora.

In examining LGB's cog wheel, I found that the tooth shape was not that of a standard gear. Neither did the teeth of the rack appear to be standard. On both, the sides of each tooth were parallel and the tops of the teeth seemed to be cylindrical. Obviously, no off-the-shelf gear was going to work. I first thought of trying to grind a form tool and cut a compatible cog-wheel myself but I didn't feel confident about that project.

Then I got to thinking. Perhaps, instead of a proper gear, a pinwheel gear would work. This would be sort of the reverse of the Mt. Washington Cog Railway in New Hampshire, whose rack is made up of horizontal pins instead of gear teeth.

I carefully measured the LGB cog wheel. The width of each gear tooth was 0.055-inch. The space between the teeth on the rack was 0.088-inch. If I used 1/16-inch rod (0.063-inch) for the pins, that might just work. I worked out the P.D. (pitch diameter) of a theoretical pinwheel gear and came up with **Figure 1**, taking into account the width of LGB's rack. I also had to measure Dora's axle diameter for the center hole. The cog-wheel hub would contain a 4-40 set screw to fix the finished

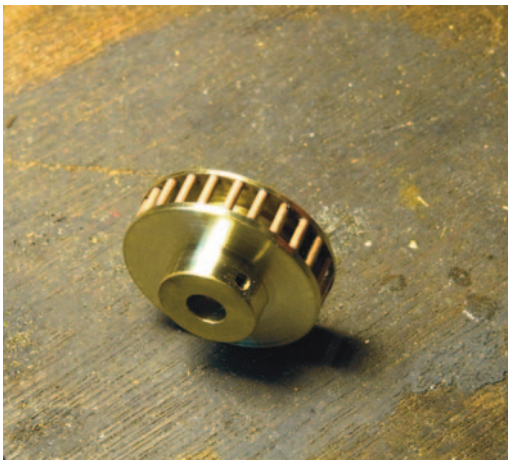


Photo 7

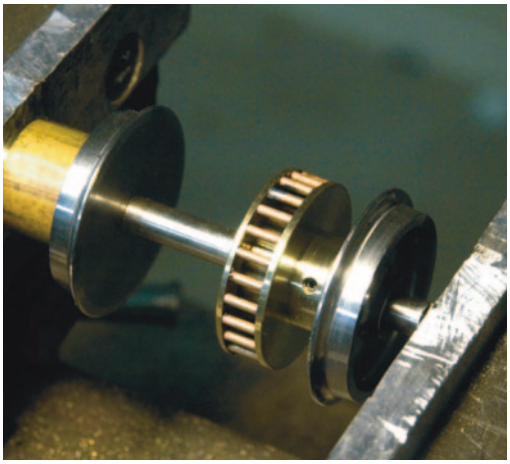


Photo 8

Photo 9

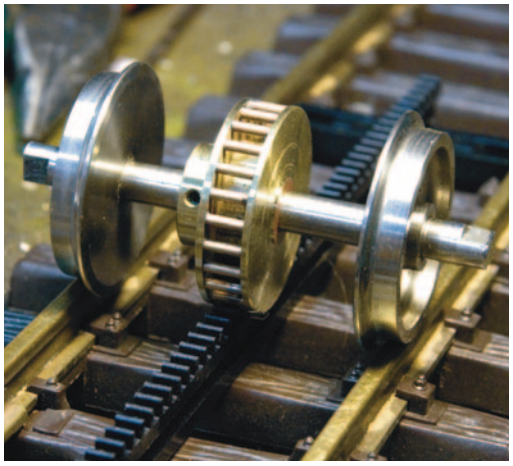


Photo 10

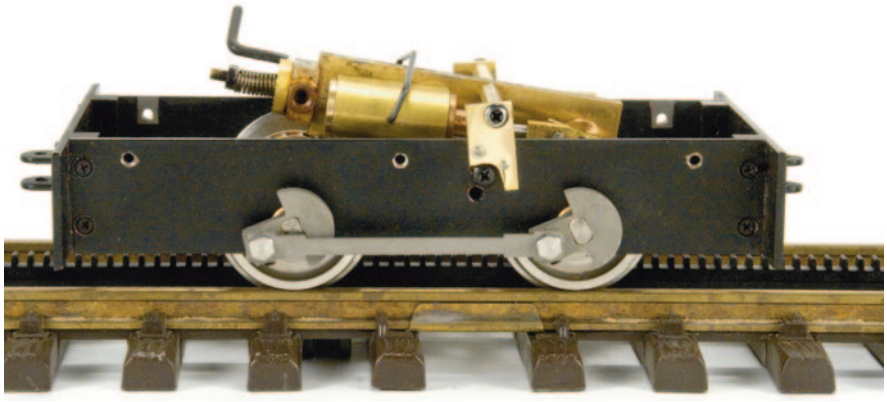


Photo 11

wheel to the axle.

Using the drawing, I turned up the cog-wheel blank from a chunk of brass. Then I mounted it in a four-jaw chuck on my rotary table, which is fitted with a dividing attachment. I dialed it in using a dial indicator (**photo 2**). The wheel needed 24 teeth, or pins. Once it was properly set up, I used a tiny center drill to spot each hole around the circle at 15-degree intervals (**photo 3**). I then swapped out a 1/16-inch drill bit for the center drill and drilled the holes through both flanges. The drilled wheel, along with two dozen pins, can be seen in **photo 4**.

The pins would need to be soldered into place. Soft solder should suffice for this project. **Photo 5** shows the pins inserted, ready for solder, while **photo 6** shows them after soldering. Once the soldering was finished, I remounted the wheel in the lathe and cleaned it up (**photo 7**). I also reduced its diameter until it was just a smidge less than Dora's wheels, ensuring that it would still go through switches.

To get the cog wheel onto the axle, I had to first remove the axle from the chassis by removing the counterweights, then remove one wheel. I was able to remove the wheel by sliding the wheelset between the jaws of my vise, then tapping the end of the axle with a hammer until the wheel came off. It was pressed on hard and did not seat against a shoulder on the axle. That meant that I'd have to be very careful about gauge when putting it all back together.

I slid the cog wheel onto the axle, then pressed the running wheel back into position in the vise (**photo 8**). I then centered the cog wheel between the running wheels and tightened the set screw against a flat that I'd filed onto the axle. The finished wheelset can be seen in **photo 9**, next to an LGB wheelset. **Photo 10** shows the wheelset on the rack track. It rolls smoothly, the pins engage the rack teeth, and all seems well.

Repositioning the steam motor

When re-inserting the axle, it became apparent that the cog wheel now interfered with the steam motor; so the motor had to be repositioned. It

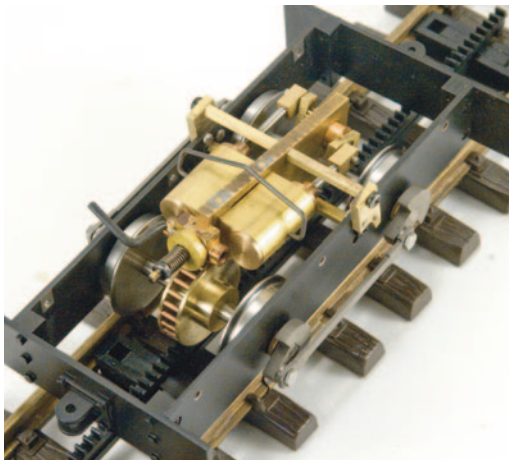


Photo 12

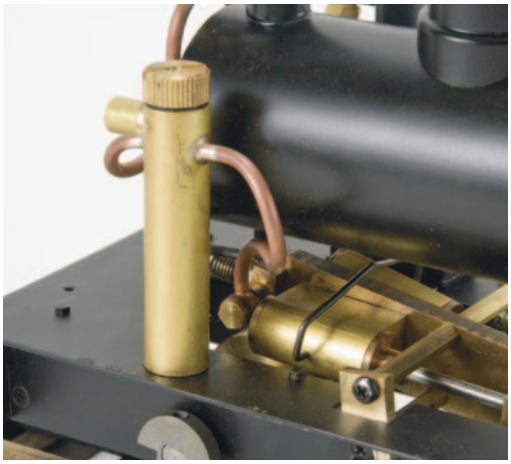


Photo 13

Photo 14

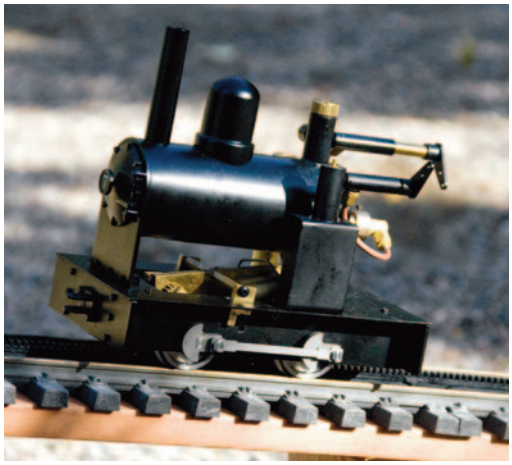


Photo 15

Photo 16

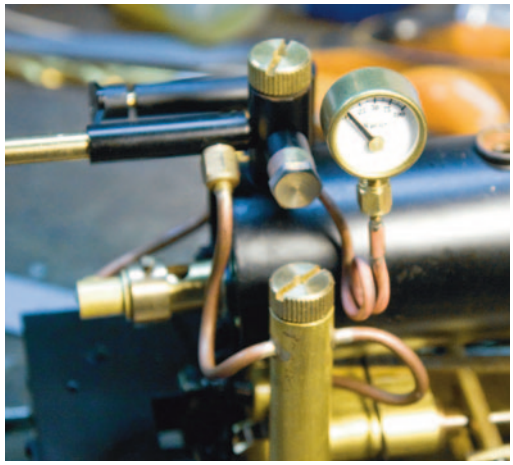


Photo 17

doesn't really matter where the motor is, as long as it engages the gear on the front axle. My intention was to simply rotate the motor about the axle a few degrees, just enough to clear the cog wheel. I couldn't raise the motor too far or it would then interfere with the boiler.

I made a measured drawing of Dora's frame as accurately as I could. I placed my drawing of the steam motor in it, then rotated the motor the required amount, which gave me the new placement of the mounting holes for the motor. With that information, it was a relatively simple matter of drawing up some new brackets that would hold the motor in its new position. You can see the repositioned motor in **photos 11** and **12**. A quick air test showed that all was well.

Steam test

The next logical step was to give the engine a steam test to prove the theory (if possible) and help to determine where to go from here. I replumbed the motor, which just involved bending the steam line into a new position and reinserting the banjo bolt (**photo 13**). I didn't reattach the exhaust line for the test.

I made a straight test track, eight feet long, using LGB track and rack sections. After mounting it to a board and propping one end up at a 17-percent grade (9.5 degrees —**photo 14**), I fired up the engine. The first test told me a lot. The loco actually climbed the grade (**photo 15**), but only with a full head of steam (i.e., 20 psi). Starting at the bottom with 20 pounds, it barely made it to the top. If the line was longer, it wouldn't have enough poop to make the climb.

The obvious solution was to increase the boiler pressure. I decided to modify the existing safety valve, as I didn't have a die of the proper thread to make a new one that would fit. I did this by removing the existing spindle, saving the spring and O-ring. I made a new spindle out of one-eighth-inch rod, threading one end 5-40 and soldering a cap to the other. I made a pair of nuts, with which I could adjust the blow-off. I set it to around 30 pounds. The modified valve can be seen at the left in **photo 16**, next to a stock Dora valve.

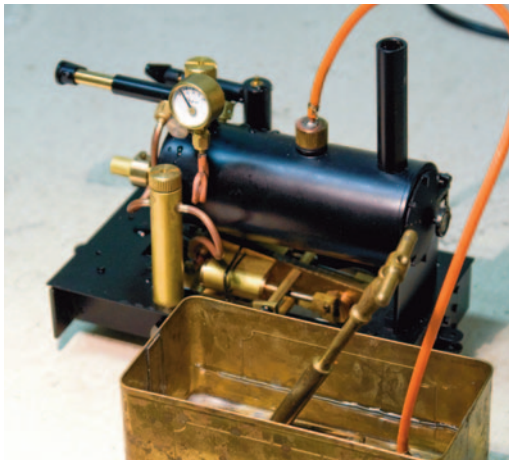


Photo 18

Photo 19

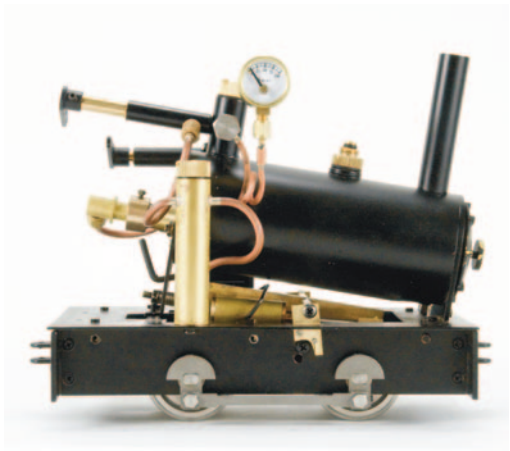


Photo 20

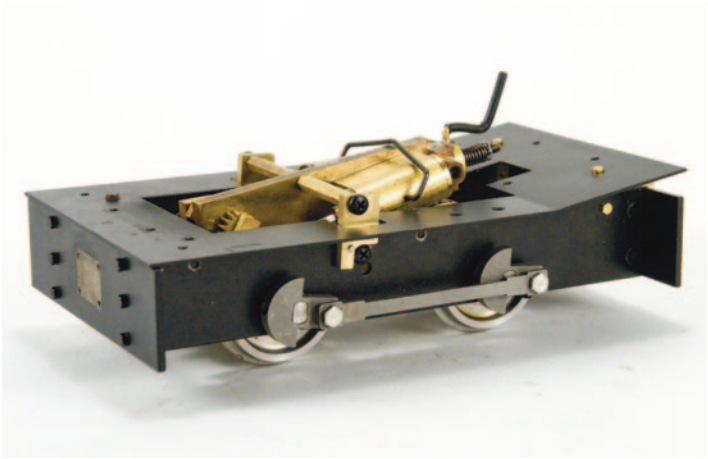


Photo 21

Photo 22

The second steam test was better. At full pressure the engine just walked right up the grade. Downward travel was most impressive! However, this could be controlled with the throttle just cracked. Also, I felt that a pressure gauge would be advantageous, so I added that to the engine (**photo 17**), as per Steam in the Garden May/June 2014, No. 133.

I thought the engine could do better, though. I wanted to set the safety valve to 40 psi. I know that tampering with safety valves goes against all safety rules. Given that, I decided to first hydro-test the boiler. **Photo 18** shows my simple test rig, using an Aster hand pump. I had a spare Accucraft boiler plug, which I drilled out and soldered a 3/32-inch tube into, to tie into the pump. As I sort of expected, the hydro test was a success—little boilers tend to be really strong. I tested the boiler to 100 psi (**photo 19**) and the ends didn't even bulge. I'm sure I could have gone much higher but I didn't want to damage the little gauge.

The point is that I can quite safely run the boiler at 50 psi if the cylinders will handle it. Oscillators, which are held in place by springs, themselves act as safety valves. The spring needs to be stronger than the boiler pressure to hold the cylinders against the port faces. It becomes a trade-off, though. As you increase the spring pressure on the oscillators, you're also increasing friction. I suspect there's a balance point in there somewhere, where the extra pressure (energy) created by the boiler just gets used up in overcoming the friction of the oscillators. To recalibrate the safety valve, I made an adaptor for my bicycle pump, which I connected directly to the boiler. This made resetting the valve to blow at 50 pounds an easy task.

Once that was done, it was time for another steam test. This one seemed quite satisfactory. There was no hesitation and the engine easily climbed the hill with no particular loss of pressure. An odd thing happened, though. I couldn't figure out why, whenever I opened the throttle, the fire went crazy. Finally it dawned on me. I hadn't replaced the exhaust line, so the exhaust steam was ejected from the steam motor right onto the gas tank, heating it up far beyond what was intended. The result was

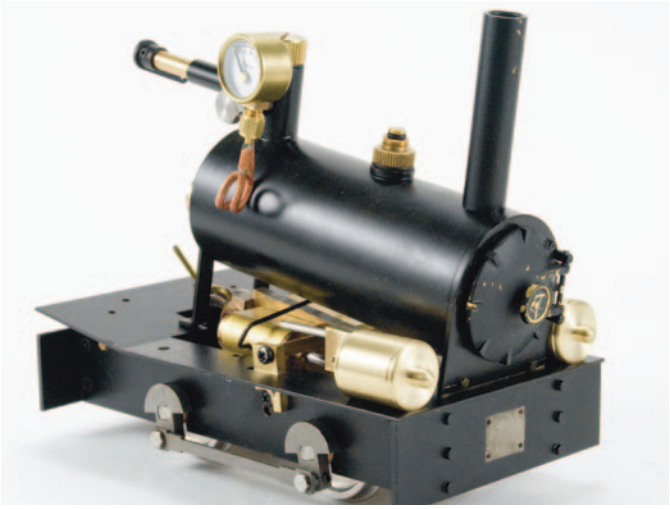


Photo 23

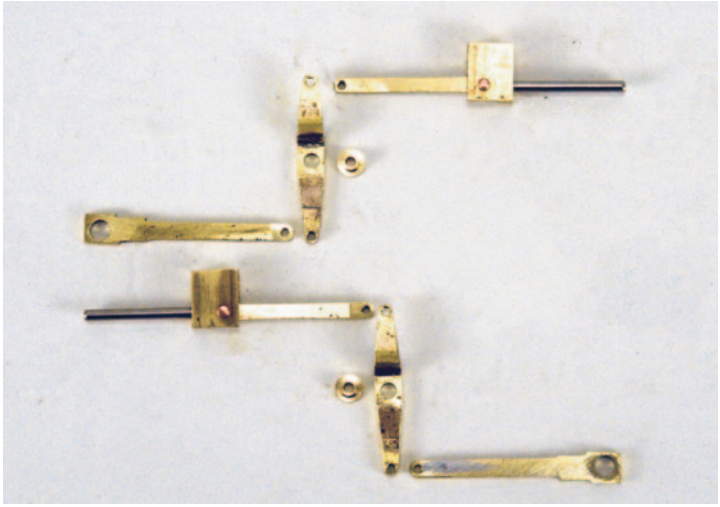


Photo 24

an instant raging fire in the boiler that could not be controlled no matter what. Duh! Lesson learned.

Repositioning the boiler

Now that I was fairly assured that the idea was feasible, I could get on with the rest of the project. The first thing to do was to reposition the boiler.

Many rack-only locomotives (as opposed to combination rack/adhesion engines) had their boilers angled down in front. This was so that, when the locomotive was on a steep grade, the boiler would remain relatively level and perform properly. Indeed, rack railways were often designed with as constant a grade as possible, so the tilted boiler was almost a must. This gave rack locomotives that distinctive "kneeling" look, which is what I wanted for this engine.

I did some sketches, using the magic 9.5 percent as my guideline. I determined that, if I cut down the front supporting plate built into the boiler and added about 1/16-inch to the height of the rear supports, that angle could be achieved.

I carefully marked the front plate, then cut it with a hacksaw. I then filed it to the line and also filed in the angle, so it would sit flush on the deck. I used the existing support bar behind the front plate to attach the boiler to the deck but had to take a section out of the middle to clear the boiler. I bent the feet of the rear supports to match the new angle of the deck and propped them up with washers between the feet and the deck. Once the plumbing was massaged back into place, the mission was accomplished (**photo 20**).

In examining photos of the Pikes Peak prototypes (and other rack locos from around the world), it was apparent that the cab must be at the same angle as the boiler, which is to say, relatively level with relation to the incline. Given that, my next task was to bend the deck plate under the cab to the same angle as the boiler. This I did in my sheet-metal brake. I made new pieces to attach the rear of the deck to the frame as well as wedge-shaped frame extensions to fill in the resulting gaps. The result can be seen in **photo 21**.

Cylinders and rods

Many rack locos have an indirect drive system, with the cylinders raised well above the centerline of the drivers, driving the wheels through a large rocker-arm system. I drew up a similar system for my engine, although it wouldn't be functional. Generally, this rocker arm had the pivot point closer to the end that drove the drivers. That gave the cylinders a longer stroke and some mechanical advantage, similar to what a geared system might provide. On my engine, though, there wasn't enough room for a longer stroke, so I had to place the pivot point toward the center of the arm.

Making the dummy cylinders and rods came next. The cylinders were made in much the same way as those I made for the Dora featured in the January/February 2015, No. 137 issue of SitG, with just some minor modifications (**photo 22**). **Photo 23** shows them mounted to the deck plate.

I carefully drew up the rods, figuring their working angles as I went. When all was well, I cut them out of 1/16-inch thick brass. The cylinders were not exactly in the same plane as the side rods, so the rocker arm had to be bent to accommodate the discrepancy. I designed some brackets out of 1/16-

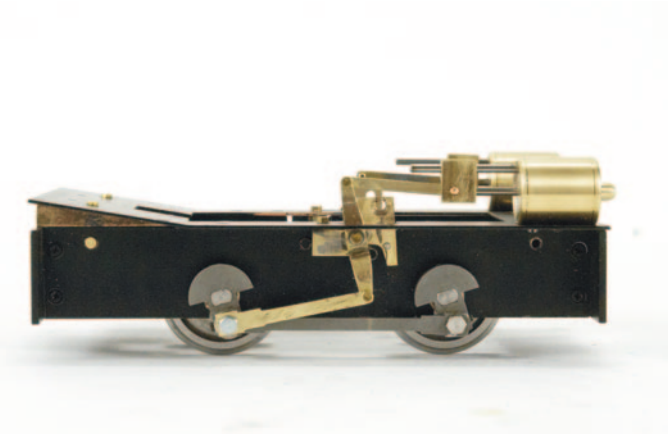


Photo 25

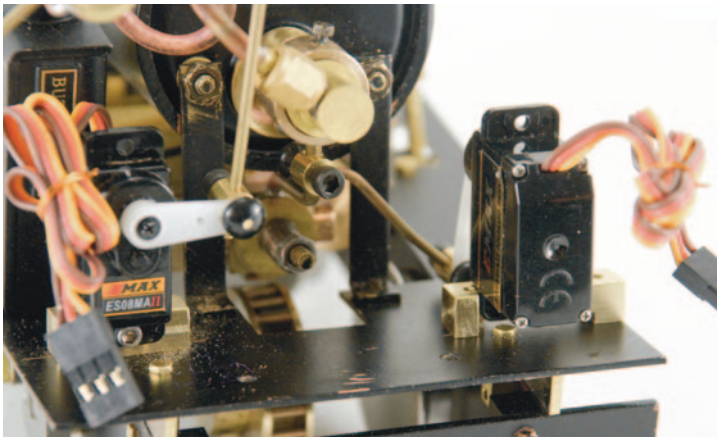


Photo 26

inch brass to support the rocker arms, which are screwed to the footplate. Also, the rod bearings in the rear counterweights were too short to take the new main rod, so I made new ones as per the same SitG article that described the cylinders. The finished rods can be seen in photo 24.

The rods that connect the crossheads with the rocker arms are riveted to the crossheads. However, I needed to be able to disassemble the rest of the rod assembly, so the connections between the rods could not be riveted. I could have made tiny bearings, with screws and washers but frankly, I couldn't be bothered for this particular engine. Instead, I used a dodge that would make a real model engineer shudder and that I'd never use if the rods were functional and load bearing.

Basically, I just threaded all of the holes 2-56. When I screw them together, I tighten the screw against the outside rod. The mating rod then just floats on the threads and is also trapped in place by them. As the rods work, they actually move along the threads a tiny amount, in and out. If I found that a rod bound up in part of the stroke, I could either back it off one thread or just file its thickness a little. In this cheap-and-nasty way, the rod assemblies went together pretty quickly and work smoothly. The finished assembly is shown in **photo 25**.

Once the mechanism was working well it was time to install the radio. This was not too difficult, as I followed the same procedure that was discussed in the May/June 2017, No. 149 issue of SitG. The reversing servo was placed in a slightly different position, so the servo arm, when fully extended to one side, was not sticking out the door. The installation can be seen in **photo 26**.

The gas tank had to be moved about an eighth of an inch toward the rear to properly clear the new cab. Because of that, as well as the throttle servo and the tilted boiler, the plumbing had to be rerouted somewhat (**photo 27**). With that finished, I could move on to the cab and side tanks.

The cab and tanks

I had designed the cab already, in a theoretical sort of way, but I hadn't drawn up all of the pieces nor had I figured out how to build it. The material alternatives were tinplate, steel sheet, or brass. After much deliberation, I decided on sheet steel for the cab because it could be soldered, spot welded, and/or drilled, tapped, and screwed.

I wanted to make sure that the cab would fit before I got too deeply into the metalwork. With that in mind, I decided to make a mockup out of cereal-box cardboard, which was more or less the same thickness as the sheet steel. I drew up all of the different panels and found that I was able to print the drawings out directly onto the cardboard, which made things a little easier.

After cutting out all of the pieces with a utility knife, I assembled them using PVA glue. I then just dropped it into place over the otherwise functional locomotive. The results can be seen in **photos 28** and **29**.

I was satisfied with the look and fit of the card mockup but was a little unsure how to proceed in metal. I decided to solder up the side tanks out of brass. They can be seen, standing on their ends, in **photo 30**. I added a little bling to each in the form of a dummy water hatch. In the end of the tank that abuts the cab, I drilled two holes, then turned a couple of little threaded fittings that I soldered in. Otherwise, the metal would not have been thick enough to take a thread.

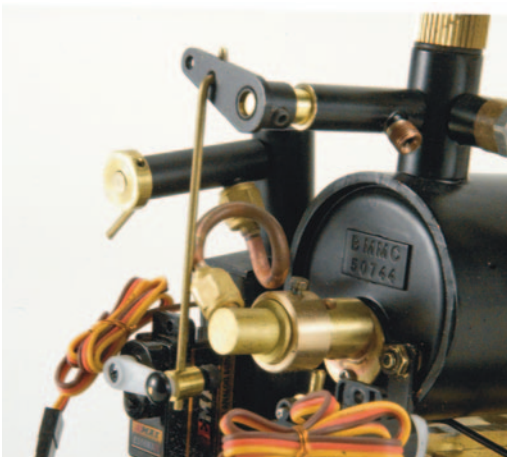


Photo 27

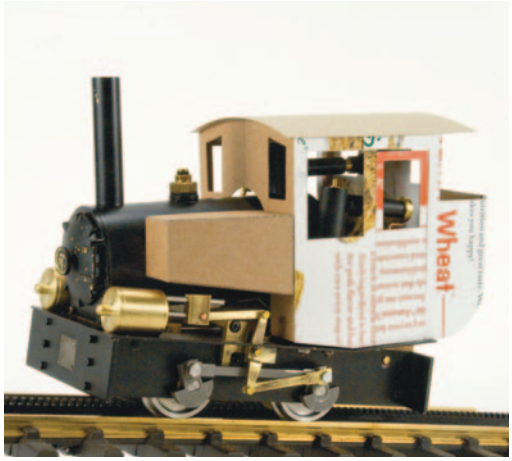


Photo 28


Photo 29

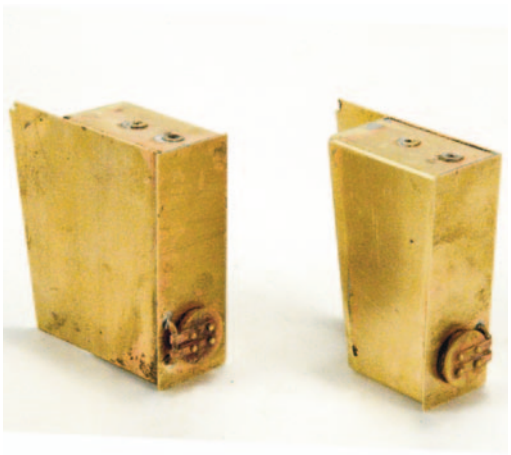


Photo 30

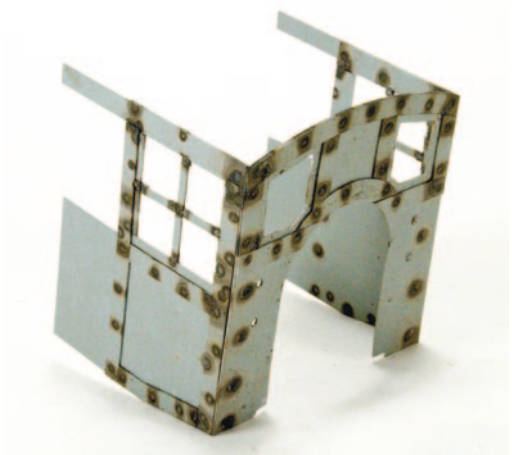


Photo 31

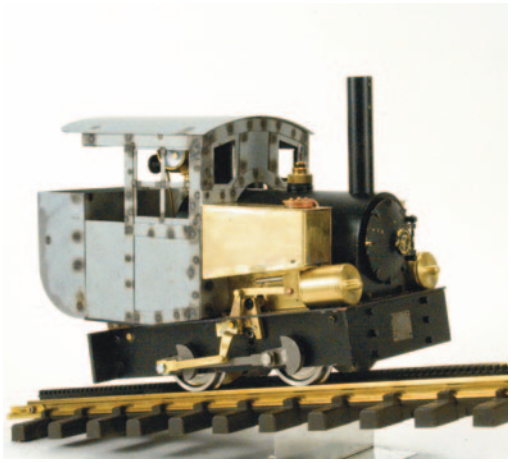


Photo 32

The cab I had decided to make out of steel. I drew up each piece on the computer, then printed it out. I glued the printout to a sheet of 0.020-inch steel and cut out the pieces. All of those with straight edges, I was able to cut on my shear. The curved pieces I cut with a jeweler's saw.

One of my favorite shop tools is an old spot welder that I picked up at a yard sale years ago for $5. It's a wonderful piece of gear. When all the pieces were cut out and lying on my bench, I just started sticking them together. I made the sides and front as separate assemblies, then put them together by spot-welding steel angles (which I'd bent up on my brake) in the corners (**photo 31**). All of the ugly welding spots will largely disappear under a coat of paint.

The removable roof was made by rolling a piece of steel in my little bending rolls. It's gratifying to be able to get a really nice fit. I spot-welded some angles onto the underside of the roof to engage the walls and hold the roof in position.

The rear bunker I made using a combination of spot-welding and soldering. After cutting and bending the pieces to size and shape, I welded them together with some small angles, just to hold things in place. Then I ran a thick bead of solder along the inside edges to fill any minor gaps. Once this assembly was finished, I soldered it to the back of the cab. The cab, with the bunker attached and the side tanks screwed on, can be seen in **photos 32** and **33**. I made three brass angles for mounting the cab to the footplate. These I soft-soldered to the cab. Steel solders as well as brass. I drilled holes in the angles and threaded them, then drilled larger, matching holes in the footplate for the screws, which are inserted from the underside.

Final details

There comes a time in every project where I realize that the end is closer than I had thought. In this project, that point came when the cab was complete and installed. Once this was done, it occurred to me that all that remained were a few details.

The first was a piece of 3/32-inch half-round, soldered to the top edge of the bunker. This gave it a more finished look. I make my own half-round on

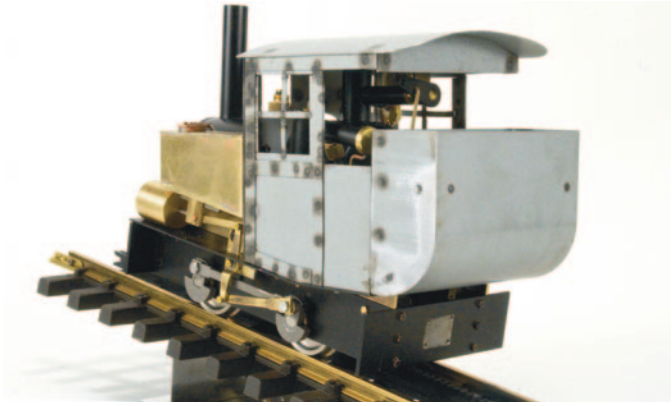


Photo 33

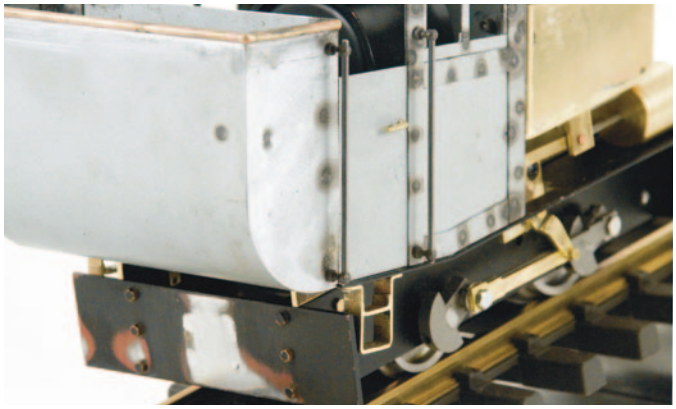


Photo 34

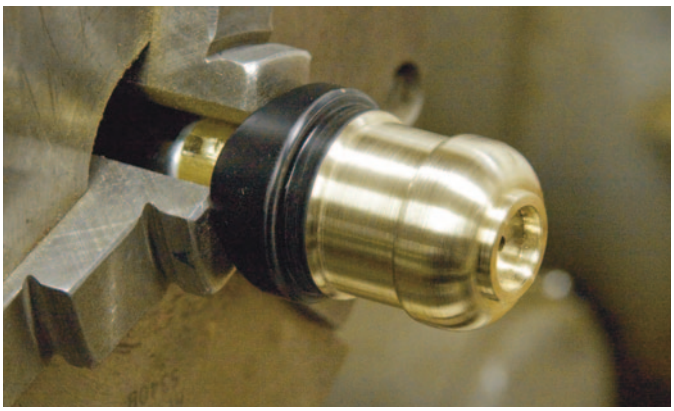


Photo 35

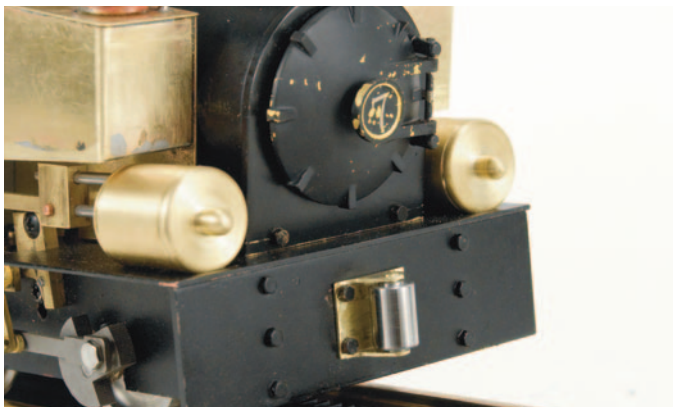


Photo 36

the mill, using a simple jig. Once everything is set up, I can just pull a 3/32-inch rod through with a pair of pliers—half of it gets shaved off.

No rear coupler was needed (these engines only pushed—never pulled) so I filled the coupler-mounting holes in the end beam with solder.

I made door handles on either side so the engineer could get in and out. I also gave him handrails on both sides of the engine. The handrail stanchions are Aster bits from my scrap box. I didn't have any rod the proper size for them so I drilled them out to accept 1/16-inch rod.

Cab steps were next on the list. These took a surprising amount of time. They're made of brass strips, bent to shape. The upper step is soldered in place. Each unit is screwed to the footplate with 0-80 screws. All of the above details can be seen in **photo 34**.

I decided to do a little dome reshaping to give it a more American look. I made an expanding mandrel with which I could hold the dome in my lathe. Then I changed its shape to suit (did you know that Dora has a brass dome?—**photo 35**).

If the route of a rack railroad is on a grade throughout its length, as it is on the Pikes Peak line, the engine always pushes its coach. Their engines didn't have couplers. Instead, they had a roller on the front end that contacted a roller, set at 90°, on the coach. I fitted one of these to the front of my engine (**photo 36**). I bent up the bracket from sheet brass. The roller itself was turned from a steel rod. Using the discarded coupler as a drilling guide, I drilled the bracket to mount where the old coupler had been. With that done, all that remained to complete the locomotive was paint.

Painting the engine was the usual nightmare and need not be gone into here in any depth. It took about a week. The nearly satisfactory lining was done with a ruling pen. The silver paint used on the smokebox is very soft for some reason, and marks easily. The finished engine can be seen on the cover and the lead photo on page 14. The batteries and radio receiver are carried in the bunker. I still need to make a dummy coal load to cover them.

All in all, this has been an interesting, challenging, and ultimately satisfying project. There were innumerable unexpected pitfalls along the way that had to be overcome and various parts of the engine ended up with extra holes. No matter. It is what it is and I'm glad I did it.

Jason Kovac Photo

Accucraft Pennsylvania E6 4-4-2

Text and Photos by Steve Shyvers

This is a BIG locomotive. Don't let the 4-4-2 wheel arrangement fool you. Accucraft's new Pennsylvania E6 Atlantic locomotive looks like a Pennsy K4 Pacific with one fewer set of driving wheels. Accucraft's Southern Pacific M-6 2-6-0 had been the largest 1:32 live steam locomotive I owned, and I was unprepared for the sheer size of the new E6.

First impressions did not disappoint. Beyond its appearance of massiveness, the model displays much fine detail, such as the exquisite marker lamps and the extensive piping along the right hand side of the boiler. This engine is available with alcohol firing using traditional wicks, or butane firing using a ceramic burner — the same boiler design is used for both versions. Lighting the fire is done through a drop-down fire door on the boiler back head, and both versions require an auxiliary chimney fan to raise steam.

I received locomotive serial number 003, which was one of the first to arrive in the U.S. in early January 2017. I chose the alcohol-fired version because of its uniqueness among currently available commercial North-American outline locomotives. Additionally, Jason Kovac, who championed the production of the E6, worked with Gordon Watson in Australia to develop a true Walschaert valve gear for the locomotive. David Fletcher, also in Australia, created the detailed drawings for Accucraft to work from, including beautiful color renditions of the original paint schemes. Atlantic 4-4-2 wheel configuration, real valve gear that notches up, working cylinder drains, axle pump, alcohol firing, and the prototype's historical significance all made for a very appealing live steam model.

Accucraft has modeled two different locomotive running numbers. Locomotive 1794, decorated in lined green, represents Pennsy's first production E6, which appeared in 1914. (**See Title Photo**). Locomotive 460, available from Accucraft in black or in unlined green, models the last E6 to be produced and the only one to be preserved. In 1927 the prototype 460, now known as the "Lindbergh Engine", famously hauled a special express from Washington D.C. to New York City with film of Charles Lindbergh's Distinguished Flying Cross award ceremony and was developed en route for showing in New York's movie houses that same evening.

The Pennsylvania Railroad began to develop Atlantic-type locomotives in 1899. After three early prototypes and several hundred smaller E2 and E3 Atlantic locomotives, the Pennsy started the development of the much larger E6 in 1910. When full production commenced in 1914 the design had acquired a superheater, and the production locomotives were designated "E6s".

Accucraft E6

Scale: 1:32
Length: 26 inches (660.4mm)
Width: 3.75 inches (95.25)
Height: 5.5 inches (139.7)
Min Radius: 10 foot radius
Gauge: 45mm
Boiler: Fire Tube (Draft Fan Required)
Working Pressure: 60 psi
Fittings: Pressure Gauge, Water sight glass, Lubricator, Axle Driven Water Pump, Full Walschaert valve gear, Cylinder Drains
Colors: Green, Black
Fuel: Butane (Ceramic Burner), Alcohol (3-Wick)
MSRP: $3500-3700

Photo 2

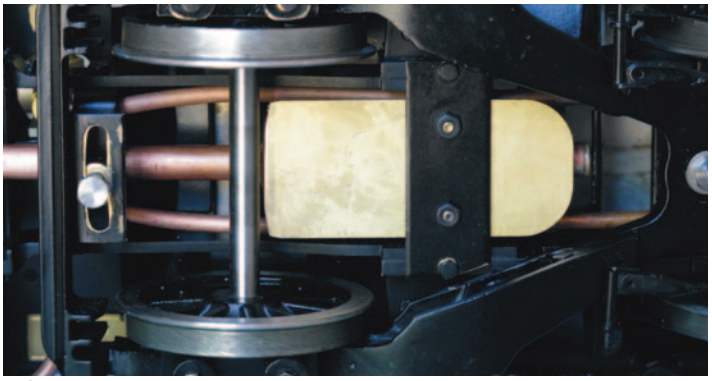


Photo 3

Equipped with Walschaert valve gear and piston valves, the E6s shared many design aspects with the renowned and powerful K4 Pacifics. Many E6s dimensions were only slightly smaller than those of the K4, and both the E6 and the K4 used the same wheel diameters and boiler pressure.

Is Accucraft's E6 a good first locomotive for a prospective live steamer? Well, several areas on the E6 were found where corrections or improvements were needed, in my opinion, to ensure good operating performance. Some of these could be beyond a newcomer's ability to recognize and to correct. I did a detailed inspection of the locomotive before ever attempting to run it, and although this delayed running it for a few weeks it definitely uncovered many items that needed adjustment or minor rework. When I finally did fire the E6, I felt that I knew it well enough that if something did go awry during steaming I would have a pretty good idea where to look to fix it.

Alcohol Burner

Before firing the E6 for the first time I removed the burner assembly to check the wicks. To remove the burner assembly the trailing truck and a bracket that supports the back of the truck must be removed. I found the three wicks very splayed out, and the wicks had come partially out of the wick tubes. The front wick tube is shorter than the other two because on the alcohol version the firebox is fitted with a stainless baffle that slopes upward from front to back. Its purpose is to force the alcohol flames outward against the sides of the firebox.

I also discovered that the copper pipe that delivers fuel to the wick tubes was bent downward in an arc along its full length. When the burner assembly had been installed this bend had the effect of tilting the wick tubes forward slightly, but it also created a high spot in the fuel line that could affect the flow of fuel to the burner. I straightened the copper pipe, but after reinstalling the burner and the trailing truck I found that the burner assembly rested squarely on the trailing truck axle! This not only prevented the truck from swinging freely, but it also raised the back end of the locomotive so that the rear driving wheels were no longer in solid contact with the rails! Cutting off the burner's bottom plate right behind the rear wick tube, plus elongating two mounting slots in the bottom plate, allowed the burner to be slid forward about 1/16-inch and eliminated the contact with the trailing truck axle. This lowered the back end of the locomotive enough to put the rear driving wheels back on the rails. **Photo 2** shows the modified burner bottom plate with the burner out of the locomotive. **Photo 3** shows the clearance between the trailing truck axle and the burner bottom plate after the modifications.

Trailing Truck

The trailing truck still did not swing freely, nor did the truck have enough vertical travel to deal with rough trackage. The heavy trailing truck is pivoted at the front, and at the back a shoulder screw fits through a curved slot and threads into a bracket attached to the locomotive frame. Mounted on the shoulder screw between the trailing truck and the bracket were a spring and a flat washer. Close inspection of the locomotive on a level track showed that the spring was already fully compressed. Furthermore it was discovered that the trailing truck's right wheel rubbed on the suspension spring castings below the wheel journal. Ten minutes with a file on the suspension spring casting eliminated the rubbing.

Understanding what to do about the fully compressed spring required more study. The trailing truck actually carries none of the locomotive's weight, and therefore no downward springing is needed to support the back end of the locomotive. It seems that no springing is needed to keep the trailing truck on the rails either. Ernie Noa also received an early E6, and on his locomotive there was no spring installed on the trailing truck rear shoulder screw. According to Ernie the heavy trailing truck has had no derailment problems even at high speeds.

On my E6 I increased the vertical clearance at the back of the trailing truck by adding two flat washers underneath the head of the truck's front pivot shoulder screw. This raised the front of the trailing truck a bit and simultaneously lowered the truck's back end. To compensate for the

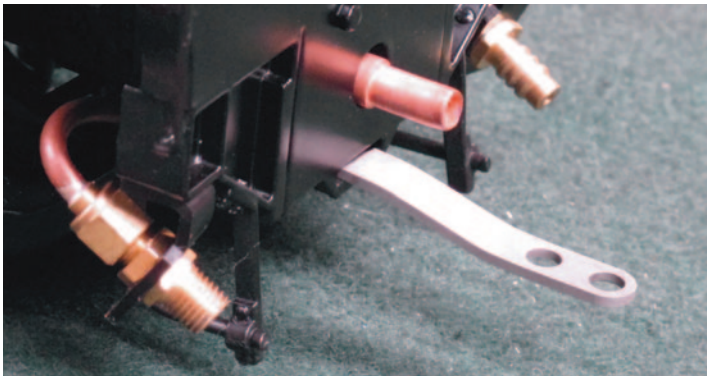


Photo 4

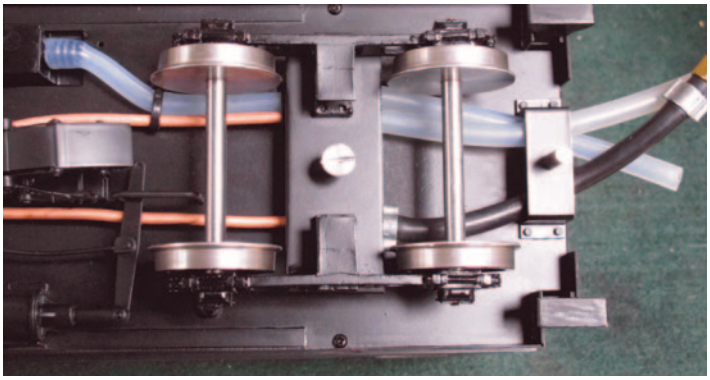


Photo 5

thickness of the two flat washers the existing spring on the front pivot shoulder screw between the truck frame and the locomotive frame was replaced with a shorter one.

The curved slot at the back of the trailing truck is cut in a bracket that screws to the back of the truck frame. The curved slot was smoothed inside with a file to eliminate rubbing on the shoulder screw, and then the bracket was removed, inverted, and reinstalled. Inverting the bracket provided a little more vertical clearance at the back of the truck frame. The shoulder screw is still long enough, and it was reinstalled with a longer spring between the bracket and the locomotive frame. The spring supplies a small downward force on the trailing truck as insurance against any tendency for the trailing truck to bounce on rough trackage. With these simple modifications to the trailing truck my E6 easily handles a track radius of 8 feet.

Hose Connections From Tender

The flexible hose connections to the locomotive include a silicone tubing fuel line that slips onto the copper pipe to the burner, and two water lines that supply water from the tender to the axle pump, and from the locomotive bypass valve back to the water tank in the tender. The water supply line is a black rubber hose that couples to a screw-on union below the left side of the locomotive cab. The water return line is silicone tubing that slips over a hose barb below the right side of the cab. The silicone tubing alcohol supply line slips over the end of the burner fuel pipe. See **photo 4**. As delivered the three hoses are routed through a bracket on the tender that holds the drawbar pin. The original hose routing is shown in **photo 5**.

On my E6 the water hoses seemed too short and were therefore not easy to attach to the locomotive without stretching them. Underneath the tender the hoses were free to rub on the lead truck wheels. I decided to replace the silicone tubing portions of the water lines underneath the tender with copper tubing, and to route them away from the wheels. I extended the existing lengths of copper tubing to two hose barbs that were fabricated from brass. These hose barbs mount on the bottom of the tender base plate and are positioned one centimeter to either side and one centimeter behind the tender

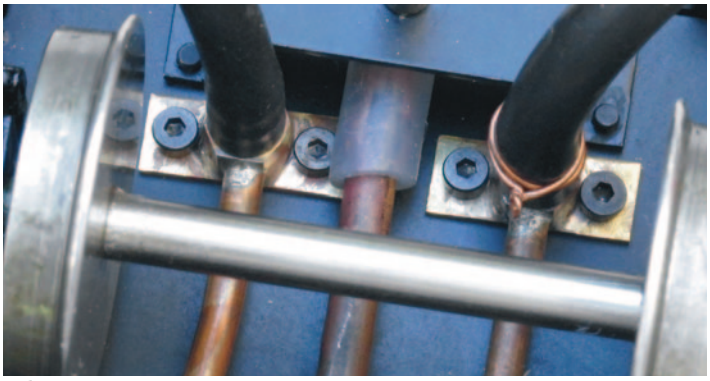


Photo 6

drawbar pin. **Photo 6** shows the new hose barbs positioned behind the drawbar pin. Because the "barb" part is vertical, the water hoses take a curve as they pass between the tender and locomotive. The curves provide flexibility to avoid straining the hoses as the locomotive and tender negotiate curves. The hoses are also short enough to avoid rubbing on the rails. **See photo 7**.

The bypass return water line to the tender is not pressurized, so the existing hose barb on the locomotive was turned down on a lathe to make a smooth push-on connection for the bypass return hose. A new length of black rubber hose replaced the silicone tubing between the locomotive and the modified bypass return hose barb on the tender. The water supply line is pressurized whenever the hand pump is used, so its screw-on connection to the locomotive was not modified, and the existing hose, after being shortened, was attached to the new water supply hose barb on the tender.

To prevent the fuel line from rubbing on the tender wheels the single length of silicone tubing from the sump was replaced by 5/32-inch outside diameter copper tubing that is attached to the sump using a short length of silicone tubing. Another short length of silicone tubing connects the new copper tubing section to the locomotive. **Photo 8** shows how all the new piping routes underneath the tender. All piping stays clear of the wheels, and no pipe crosses over another.

At the locomotive it was not easy to push the silicone fuel line from the tender, which has a small inside diameter, onto the five millimeter diameter end of the burner fuel pipe. I cut off the five millimeter diameter portion of the fuel pipe and fitted a silver-soldered 5/32-inch diameter replacement

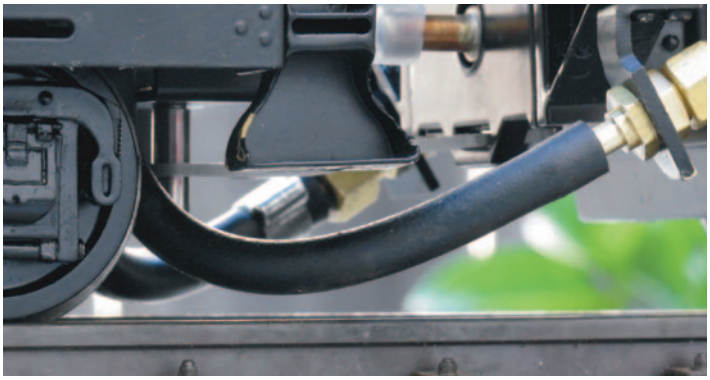


Photo 7

made from brass rod. The silicone fuel line is now easier to install, and there is still sufficient "grip" to keep the fuel line in place.

Steam Tests

First steam tests were with the locomotive on rollers and the tender blocked up to the correct height to ensure proper fuel delivery. The boiler must be filled using the tender hand pump. There is no separate boiler filler plug. The lubricator, located in a horizontal tank under the left-hand running board, was filled with steam oil. The tender alcohol fuel tank was filled (approximate 150 ml capacity) and the fuel tank valve opened. I waited a minute or so for the alcohol to flow through the fuel line and to saturate the wicks. After a visual check for fuel leaks the fire was lighted through the fire door. A butane lighter with a long flame is needed to reach inside the firebox, and I found that the auxiliary chimney fan could not be turned on until after the wicks are alight. Trying to light the fire with the fan powered on blows out the butane lighter's flame.

Three minutes after lighting the fire the boiler steam pressure came up to 12 psi allowing the steam blower valve to be opened and the chimney fan removed. Two minute later the pressure gauge showed 25 psi.

The E6's working cylinder drain valves were kept open and the regulator valve opened slightly during steam raising to heat the cylinders and to expel any condensate. The E6 drain valves operate by sliding forward and backward, unlike other Accucraft cylinder drain valves that are rotated to open and to close them. Sliding the valve forward opens the valve. Sliding the valve backward closes it.

At about 40 psi boiler pressure the reversing lever was put in forward gear and the steam regulator valve opened until the driving wheels began to turn. When no more condensate appeared at the drain valves they were closed, and the E6 proceeded to run steadily on rollers. The boiler pressure consistently climbed to over 60 psi. The E6 has two functioning "semi-pop" safety valves, and one safety valve appeared to lift at about 60 psi and the other at about 75 psi. It was a bit confusing because the 60 psi safety did not always lift first, therefore the boiler pressure often climbed as high as 75 psi. I

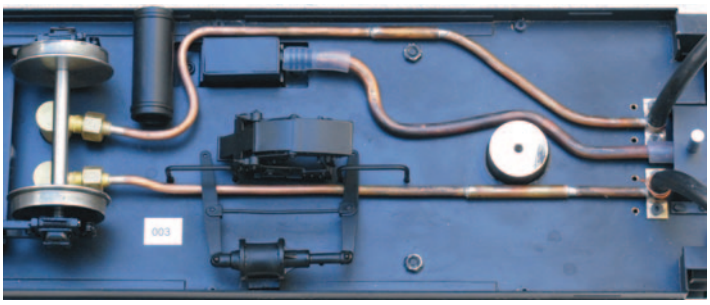


Photo 8

made notes to inspect and clean the safety valves and also, after some track testing, to trim the wicks to reduce the size of the fire. Ultimately I rebuilt both safety valves, and both work consistently now.

The E6 is a thirsty locomotive. During the roller testing I kept my eye on the water gauge and on the water level in the tender water tank, which holds only about 200 ml. The axle pump easily keeps the boiler filled at moderate to high locomotive speeds. The bypass valve needs to be no more than cracked open for the axle pump to keep up with water consumption but not overfill the boiler. When running at slower speeds the axle pump does not appear to be as efficient, the boiler water level drops steadily, and the tender hand pump is needed periodically to add water to the boiler.

Walschaert Valve Gear

According to Jay Kovac, the E6's Walschaert valve gear is designed to have 82-percent cutoff when the reverse lever is in its farthest forward and reverse positions. Additional notches in the reverser quadrant are at approximately 65-percent cutoff in both forward and reverse. Running the E6 at slower speeds revealed an uneven exhaust beat at the 82-percent position. At the 65-percent position the unevenness was much more pronounced, and the locomotive was almost stalling. Running the E6 on rollers at moderate and high speeds seemed okay, but definitely the valve gear needed to be looked at. This would be new territory for me, but I thought that if I were going to maintain the locomotive properly then the valve gear needed to be properly maintained too.

Some basic static checks showed that the right-hand return crank needed to be rotated slightly. This was done, and it was nice to see that Accucraft used not just one but three set screws to hold the return crank in correct position. The left-hand return crank, however, was missing one of the three set screws. A replacement set screw was easily installed. Further running tests showed that the exhaust beat was still uneven, and a look at the valve timing was needed.

It is a big job to get to the steam chest covers on the E6. All the detailed piping along the right-hand side of the boiler below the running board needs to be removed, as well as some piping on the left side. A few of the pipes must be bent in order to remove them, and then reformed after they are

reinstalled.

Removal of the steam chest covers showed that each slide valve is held in position on the valve spindle with a single stainless set screw. The right-hand valve timing needed a small adjustment, but the valve on the left side was very much out of adjustment. While I had the valve chests open I measured the steam port sizes and spacing as well as I could, and their dimensions corresponded to measurements of the combination lever and piston travel. Inspection and measurement of the exhaust ports and slide valve cavities could not be done because significant disassembly of the locomotive would be required.

After adjusting both valves and putting everything back together, the E6 could start itself rolling on only five psi of air pressure pumped into the boiler. More track testing eventually revealed that the left-hand lifting arm was coming loose on the weigh shaft, which had the effect of "notching up" the left valve gear compared to the right valve gear. There is only one set screw to hold the lifting arm in position. It took several attempts to tighten it before the lifting arm stopped working loose.

Fuel Delivery System

The alcohol-fired E6 uses a standard "chicken feeder" fuel control system to regulate the alcohol flow to the burner. Because the E6's tender profile is low compared to the height of the burner assembly in the locomotive the sump must be very shallow. I used a length of clear plastic hose to measure the actual level of the alcohol in the sump relative to the wick tubes and burner fuel pipe. I found that the alcohol level in the sump is almost up to the bottom of the fuel tank and that the alcohol level in the wick tubes just barely covers the burner fuel pipe where it passes through the wick tubes. To get adequate fuel saturation the wick material inside the wick tubes must extend down on either side of of the fuel pipe. Furthermore the silicone tubing fuel line from the tender to the locomotive must be level with no upward bends, otherwise the fuel flow could be cut off.

Raising the fuel level in the sump by shortening the sump air return tube is a typical way to raise the alcohol level in the wick tubes, which would ensure wick saturation. On the E6 the air return tube in the sump is already very short and the alcohol level is already near the top of the sump. An alternative way to raise the wick tube alcohol level would be to raise the fuel tank and the sump together. Ernie Noa, who also received an early E6, found on his locomotive that raising the tender by one-eighth-inch improved the fuel flow to the burner. To keep the tender at the correct coupler height, Ernie added a one-eighth-inch spacer between the fuel tank and the rectangular "pan" inside the tender body that holds the fuel tank and the tender water tank.

My E6 has had no fuel flow problems after I straightened the burner fuel pipe and pushed the wick material as far down into the wick tubes as possible. The fire lights easily, and the alcohol flow to the wicks remains uninterrupted during a typical 30-minute run. I will likely experiment in the future with different wick heights and packing, and if it seems that more saturation of the wicks is needed then I will copy Ernie's idea to put a spacer underneath the fuel tank.

Pilot Truck

Ernie Noa and I each increased the pilot truck spring tension on our E6 locomotives. The pilot truck has neither compensation nor independent springing of the axle journals. After his E6 experienced difficulty with tracking on a friend's outdoor layout Ernie installed a stronger spring between the pilot truck and the locomotive, which fixed the problem. Twice the pilot truck on my E6 derailed while going at high speed through a switch frog on a friend's track, but no problems occurred at slower speeds. I installed a stronger spring, which increased the downward force on the pilot truck from approximately eight and one-half ounces to 13.5 ounces. No derailments have occurred during subsequent running.

Conclusion

After implementing all the changes described above my new Accucraft E6 made many excellent runs (in front of a watchful audience) at scale speeds of 50-plus mph at the April 2017 Staver Locomotive steamup in Portland. The locomotive steams up quickly and maintains steam easily, which indicates that the "front end" proportions are just right. Nothing has indicated a need to look inside the smokebox front to check the blast pipe or blower nozzle alignment.

I have made various other changes on the E6 that are truly optional, and require no explanation. These include small handles on the regulator and blower levers, and moving the pressure gauge location to make it easier to check. Relocating the pressure gauge required the Johnson bar to be shortened, and while it was out of the locomotive I reformed its bend so that the Johnson bar no longer hits the cab roof when in the center position. **Photo 9** shows the cab with these modifications.

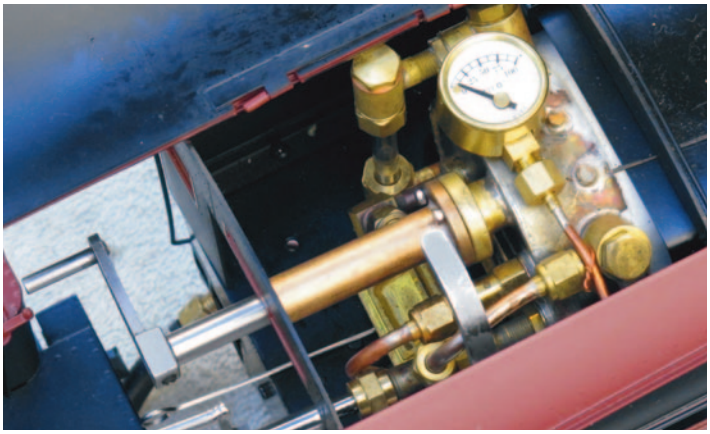


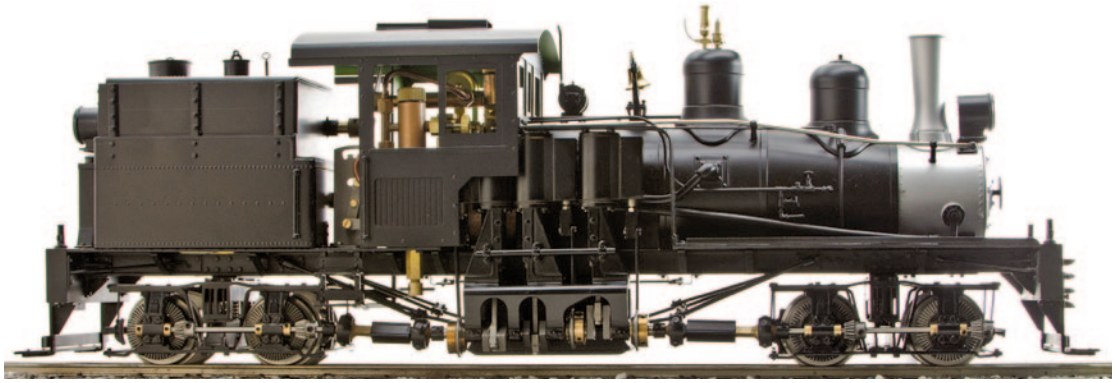
Photo 9

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

Decauville, Green

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

Engineering Sample

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

Engineering Sample

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

MK1 COACHES

MK1 Second Corridor (SK), Maroon

MK1 Brake Corridor (BSK), Carmine & Cream

MK1 Second Corridor (SK), Chocolate & Cream

MK1 Brake Corridor (BSK), Green

1:32 Scale, 45 mm Gauge
Available in BR MK1 Second Corridor (SK) and BR MK1 Brake Corridor (BSK)

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

Los Angeles Live Steamers Railroad Museum

Gauge One Track

Text and Photos by Rick Gross

The new Gauge One track at LALSRM has been years in the making. Some members recall presentations to our Board of Directors eight plus years ago, which certainly predates my membership. Over that time, many people have worked hard to move this rock and it's finally far enough along that we are running trains without mishap. As this is an all volunteer club, including the majority of the funding, this has NOT been a linear project with all plain sailing. The funding was so late in coming together for the track that we were laying switches and assembling track during our annual Spring Meet where we celebrated the museum's 60th Anniversary. There were some lost tempers and a couple of "inner four year-olds" needing naps but thankfully we are all friends again, proof that model railroading keeps you young! We learned a lot about completing a long term project in a democracy—clear goals, a known budget and strong leadership are plusses; day jobs and "experts", not so much.

After a couple of false starts at purchasing an elevated right-of-way, we leveraged the talents of one of our many extraordinary members, Robert Guzman, to fabricate the current steel support system. This substantial framework is plated to resist the outdoor environment and the running surface is built up of weatherproof backer board with three layers of color impregnated stucco as a finish layer. We used an air nailer and three-quarter-inch long staples to secure the track, which allowed us to assemble and lay approximately 600 feet of track and switches in two days. We had some raw fingers but also trains running on the mainlines by the end of the Meet. As the track plan morphed from our original configuration, we found we needed more rail and switches. Those

Custom steel framework comes together circumnavigating the SP bay window caboose.

Heavy duty backerboard painted in sand-colored stucco provides a rugged surface for track.

6-inch tracks and a coach yard of four, 50-foot tracks. All switches are controlled by manual ground throws with an eye toward a pneumatic system. A simple block occupancy system is envisioned for the "far side" to help avoid cornfield meets behind our substantial view block. While this track was built primarily as a live steam venue, other types of motive power are welcome and all eras have run. No track power is contemplated.

During the planning stages of this project we wanted this to be a facility where we could invite guests for small scale meets. We'll see when everyone has recovered from this multiyear project if anyone has the fortitude to organize a gathering. If you can't wait for that, please come on by and become a member!

With forty feet of passing siding there's plenty of room for long trains.

have recently arrived and the basis for the yards are now cut and assembled, awaiting the time when we can get the nailer back out and secure the critical switch locations. The drudgery of assembling another 200-feet plus of straight track will be mitigated by the knowledge that this completes the first phase. At least until we can think of more to add.

Some specifics—The track is located on the North side of our property in Griffith Park and encircles an SP bay window caboose. Each of the two mainlines is about 270-feet long with two, 40-foot passing sidings, a steaming bay of 4-feet

Lots of Southern Pacific in Southern California!

While I run the risk of leaving someone out, this project really was a labor of love, sweat and tears from an army of our members. Thanks go to the last three Boards of Directors of LALSRM who endured delays and tall tales but in the end, got the Gauge One group the resources required to finish the project. Thanks also go to the members

Nicely weathered extended gondola looks right at home on a desert sand-colored roadbed.

of tireless members bending their backs. Finally, thanks to our spiritual Gauge One leader, Bob Crone. For everyone I've missed, I apologize for the oversight and Thank You for your help in getting this done.

It would be remiss of me to not mention the corporate sponsors who helped us immensely with technical guidance and club pricing; Bing Cheng and Cliff Luscher of Accucraft Model Trains, Pete Comley of Sunset Valley Railroad and Ron Gibson of LGB-Marklin.

who contributed funds. I don't know them all but they include Dr. Russ Warr, Thaine Morris and Terry Spahr. The installation was completed without complaint or fanfare by a terrific crew, many of whom don't even have Gauge One equipment, (yet)—Tim and Andrew Lagaly, Robert Guzman, Gary Evans, Francis Barnes, Doug Young, Steve Ruatta and our heavy machinery wielding President, Les Kovacs. It's amazing how many projects on the property are completed by the same group

Battery power and live steamers share the right-of-way on regular run days.

1:13.7 SCALE Accucraft Decauville

Text and Photos by Carl Weaver

For many of us, small and lightweight are necessary locomotive attributes. This is usually due to age, health restrictions, a home track with tight radii, needing to travel to find a track to run on, cost or personal choice. For me, it is all of the above. Gone are the days when each succeeding loco in my arsenal followed my idea that bigger is better. As a result, I find the Accucraft live steam model of the Decauville Type 1, 3-ton, 0-4-0T in 7/8ths-scale to be the perfect small, lightweight locomotive.

During this review I will mention a few findings I classify as nuances. Please understand that they are not criticisms, but observations based on my experience with live steam. All nuances can be easily attended to. Problems, on the other hand, need to be resolved with some degree of effort if a new locomotive does not run well right out of the box.

It is with reluctance that I must report that, of all the locomotives I have reviewed for *Steam in the Garden* in the past or run new right out of the box, this is the only one that has a problem that must be fixed. Unfortunately, most locomotives in the first batch had two design flaws, one problem requiring fixing and the other merely an issue. Each will be discussed later in this article.

Inspection and setup

When I carefully opened the shipping container and examined its contents, I found the locomotive to be well protected, having been double-packed by Accucraft and properly handled by the shipper. The locomotive came in a strong cardboard box suitable for taking it to a steamup. The shipment also included instruction sheets, gas tank and boiler test certificates, registration/warranty card, a package of small parts to be installed, and a small and large syringe. Two spare nuts with hex-head bolts, two small screws, plus two small Allen wrenches and two small socket wrenches were also included.

Close examination of the paint scheme revealed it was flawless, including the pin-striping. This is a nice touch of reproduction accuracy, although the prototype maroon-colored "Bathala" has white pin-striping rather than yellow. The Bathala name plate on the prototype has not been incorporated into the model, but authentic

Accucraft Decauville Loco

Scale: 7/8ths-inch to 1-foot (1:13.7)
Length: 10.1 inches (257 mm)
Width: 4.9 inches (125 mm)
Height: 7.5 inches (191 mm)
Min Radius: 2-foot radius
Gauge: Adjustable to either 32 mm or 45mm
Boiler: Centre Flue
Working Pressure: 60 psi
Fittings: 1/2-inch Pressure Gauge, Water sight glass, Full back head detail, Slide valve cylinders with fixed cut-off, Full Walschaert valve gear
Colors: Maroon, Green, Black
Fuel: Butane Gas
MSRP: $1650

Decauville History

Decauville was a French company founded in 1875 to support light industrial railways. The company manufactured locomotives, cars and portable track sections with steel ties. The small size of its components made the Decauville suitable for farms, quarries, industrial complexes, construction yards, mountain railways and military applications. Although its gauge changed twice during its development, the company finally settled on 600mm or 1 foot, 11-5/8ths inches.

Decauville railroad equipment saw service in many countries up to the 1950s, especially in the European colonies. It also served during World War I when Decauville was the standard for both the French and British armies. Various examples of Decauville steam and diesel locomotives are still operating today.

Decauville Locomotive 302, the one after which the Accucraft model has been accurately copied, was manufactured in 1899 for the Dombe Grande Sugar Estates in Portuguese Angola. Producing only 10 horsepower, it was affectionately nicknamed the "Little French Lady." Later in its operational life, it was officially named "Bathala."

When the estate dieselized about 1930, the locomotive was placed in storage. Later, during the 30-year guerrilla war that ravaged Angola from the early 1970s, the locomotive was kept from prying eyes in a falling-down building, overgrown with vegetation. In 1993, the locomotive was placed in a museum dedicated to the sugar mill where it occupied center stage. It was discovered there by The Sandstone Heritage Trust. After extensive negotiations with authorities, "Bathala" was moved to South Africa in July of 2004 and completely rebuilt by March 2005.

Photos by Hannes Paling

looking reproductions of the builder's plates are attached to each cab side. The hobby's rivet counters will notice that the word "Decauville" is misspelled on the builder's plates.

Manufacturing and assembly of this locomotive are excellent overall and the modifications to the pre-production model suggested by Jason Kovac (The Train Department), David Fletcher, and their team of experts have been incorporated by Accucraft. A special thanks is extended to Hannes Paling of South Africa who provided hundreds of measurements and images of the prototype locomotive.

You should be careful unpacking the locomotive because it has many small details on the boiler, cylinder housings and back head that could easily be broken off if not careful. One nuance you should be aware of is that several items on the locomotive are not permanently attached. Care must be taken not to lose these items.

Setup is minimal and merely requires mounting of the small parts after servicing. The package of loose small parts to be installed includes a head lamp, sand dome, two caps for the side tanks and a coal load.

My first impression of the locomotive was that it was eye catching, due to its exquisite detail. Because of its size and weight, it is reminiscent of my Roundhouse Billy, which I have converted to 7/8ths-inch scale. But

the Decauville, except for the out-of-scale R/C compatible throttle lever, has many correctly scaled details right down to the rivets, piping and controls.

Examination of the head lamp revealed that without extensive modification, it is not easily suited for conversion to a working unit since it has no reflector, rear access hole for wiring, or bottom hole for a light source; but it does have a lens. It is painted white and not gold like the prototype. A working head lamp is a possibility, but it will require some ingenuity, fabrication, or replacement.

The cab is spacious, allowing for the addition of a 7/8ths-inch scale engine driver. For those who fancy radio control, there is sufficient room below the cab floor for a receiver and battery pack. The battery for a working headlight could also go under the cab floor. But where to place the throttle and reverser servos is a matter of choice, and would surely affect the overall detail of the cab.

The couplers are an interesting feature. Each is a single, centered, spring-buffer with a small free-swinging hook on the bottom designed to accept a chain link pinned to the first car. Cars with chains allow the buffers to meet during braking, rather than pushing on the links. Appropriately scaled industrial cars with chain and hook couplers are available and prototypical for this locomotive.

As expected, the safety valve is hidden underneath the steam dome. Unlike the loose sand dome, the steam dome is attached by one small set screw at the front near the base.

Preparation for running

Preparation for running is routine and as expected, nearly the same as most butane-fired locomotives. Typical Accucraft instruction sheets are included. This is a recommended read for everyone, including experienced steamers, because there might be one little thing that is not intuitive. When I read the instructions, I had the locomotive in front of me and noticed an error when it referred to a lubricator drain valve under the cab floor. There is no drain and what I found was a blow down valve connected to the bottom of the sight glass fitting. No drain could be an issue for some, but for me it was only a second nuance. So, after each run, accumulated water has to be removed with the small syringe provided. As for the blowdown valve, its lever is tucked up close to the floor of the cab and a little awkward to open without the assistance of something to carefully pry with.

The next step in your preparation is to lubricate all the moving parts, especially before the first run. According to the instructions, some parts require lubricating oil and others with steam oil. During the process, check for loose fittings and missing or loose screws or nuts and bolts. If you find any, use a dab of blue Loctite to keep them from loosening again. While the loco is on its side, be sure to check that the set screws for the wheels on the axle are tight and set for the gauge track you plan to run on. The drive wheels of this locomotive can be adjusted for either 32 or 45 mm (representing 18-inch or 24-inch gauge). Finally, look for and record the Accucraft serial number etched on a plate under the cab floor, which you will need for the warranty card before it is mailed.

Water is added through the boiler plug under the easily removed sand dome where 30 to 40ml air space must be left for steam. I noted that the locomotive does not come with a Goodall Valve, one modification some may want to make. One thing I do not like about the sight glass is that the bottom of the glass is considerably below the burner tube. I consider this a design flaw issue that is manageable. The low water level is actually 17 mm up the glass tube from the bottom fitting. A mark is needed at this point to indicate the bottom of the safe range.

Fuel is added to the tank via the filler valve under the removable cap on the right side tank. Filling the fuel tank with pure Butane is routine by using a canister

adapter to match the Ronson fitting on the fuel tank. An adapter is not included. Using a Butane/Propane mix with this locomotive is not recommended and is certainly not necessary on a cold day since the fuel tank is next to the boiler.

Steam oil is added by unscrewing the lubricator cap underneath the removable coal load. When adding steam oil, fill only to the bottom of the pipe inside the lubricator to avoid excess oil from being spewed out when a run starts. Due to a layer of paint, the coal load tray is a tight fit. Grinding away the paint on the sides of the tray results in an easier to manage fit.

Some new owners of the first batch found that their new Decauville had manufacturing debris in the fuel tank. As a result, there was intermittent fuel flow resulting in a flameout. One fix for a contaminated tank is to remove the jet, blow it out backwards with Butane and then empty a full fuel tank of Butane by letting it discharge out the unattached fuel line.

Second, most steamers found several minutes after lighting that the burner started a coughing sound, caused by fuel being surged from an overheated fuel tank. Overheating is due to a design flaw that must be fixed. The physical attachment of the fuel tank (threaded bottom studs) to the side tank and its proximity to the hot boiler and smoke box causes the overheating.

There is one very thin sheet of insulation between the side of the fuel tank and the boiler, and very little in the smoke box, including the smokebox door. To solve this problem, Accucraft first prepared a kit featuring additional insulation for the smoke box and fuel tank, (**See Above Photo**) but this fix was only marginal. Then they offered a redesigned tank with insulation that is a direct fit to the original. The insulation kit and a replacement tank are available at no charge to owners who received the first batch of locomotives and who registered their purchase with Accucraft.

Third, some new owners discovered that the flame would not pop back to the burner. For a few, all it took to correct this was to adjust the air inlet collar. For others, the problem was a defective burner. A few burners when mounted were not perpendicular to the back of the boiler because the slotted part of the burner is not parallel with the brass mounting collar. Several possible solutions have been applied to this issue. They are: obtain replacement burner from Accucraft, install a custom made burner, true the mounting collar in a lathe, slightly bend the mounting tab (the flange with the mounting screw hole), add stainless steel mesh, or place a spacing washer between the mounting tab and boiler before inserting the retaining screw. Most opted for adding mesh or by replacing the original burner.

If your Decauville is okay, lighting is through the smoke box door. Before lighting the burner, check to make sure the Johnson bar is in neutral (awkward to maneuver – a third nuance since it's below the edge of the cab), the blow down valve and throttle are closed, and the lubricator and water fill caps are tight.

Before the door can be opened, the small retaining clamp has to be rotated. Some clamps are too tight to turn by hand, so, one of the supplied socket tools can be used to slightly loosen its retaining bolt.

As with all butane-fired locos, make sure after ignition that the fire is back at the burner and not in the smoke box. Otherwise, serious damage to the smoke box could occur. Only a slight turn of the fuel regulator valve is needed to start an adequate fuel flow. This could be tricky since the valve, although it's Jason Kovac's design with a fine thread, is very sensitive – a fourth nuance. If you have trouble with stiffness, the O-rings might be dried out. A small amount of silicone oil on the O-rings will improve control.

Test runs

I am surprised at the high boiler pressure because all the other small, single flue locomotives I've owned have been set for and run very well at 40 psi. Once the safety started to seep, I inspected all the fittings in the cab to make sure there were no leaks. The safety valve released just shy of 60 psi.

The throttle (steam) valve is standard Accucraft, and it has an R/C compatible aluminum actuating lever which is not in keeping with the rest of the fine cab detail. Once the valve is opened, be prepared for some water in the steam chests. There are no drain cocks, so it takes a little forward and mostly back maneuvering to clear

Decauville with a load of tipper cars.

the cylinders. Once cleared, throttle sensitivity was as expected as a slight opening allowed the locomotive to creep forward. Both slow and medium speed running were very smooth and consistent in both directions. There was a slightly noticeable chuffing sound that may be louder with a heavy load. I shut the loco down when the pulsing started at about 8 minutes. Running time for the locomotive without cars is expected to be a little over 20 minutes without adding water or fuel after pressure is reached. Running time is expected to improve slightly as the moving parts wear in and the sweet spot for fuel flow is discovered.

I did not experience this, but some owners found that the blow down valve constantly dripped water during runs. I found in the past with other locomotives that by disassembling, then lapping the valve seat with powdered tooth paste, leaking usually stopped.

Impressions

What don't I like about the new locomotive? The locomotive has a serious fuel tank location design flaw, a water level sight gauge safe zone issue, a hard to manage lighting problem and a few nuances. I realize that for some, the problems degrade the locomotive, but since this is a tinkerer's hobby and occasional issues are expected, many owners will arrive at working solutions. It is hoped that along with the redesigned tank for the first batch, future releases of this locomotive will run as intended.

For those who plan to tinker further, the addition of the following features would add cost to the locomotive, so I mention them only as potential modifications: Radio control, Goodall valve (knurled, not hexagonal type), 7/8ths-scale driver figure, chuff enhancer, custom burner, scale steam valve lever or working headlight.

What do I like about the new locomotive? I especially like its exquisite detail, fit and finish and lightweight small size. I also like that it runs smoothly, is easy to service, intuitive to operate, has adequate pulling power and looks beautiful (or "Cute," as my wife says). This is a good locomotive for those who don't want, or whose layout cannot accommodate a larger locomotive. I conclude that the Decauville is an excellent locomotive, easily carried to steamups and sure to please onlookers.

Workshop Project - Servo Driven Water Pump

Text & Photos by Bob Winkel

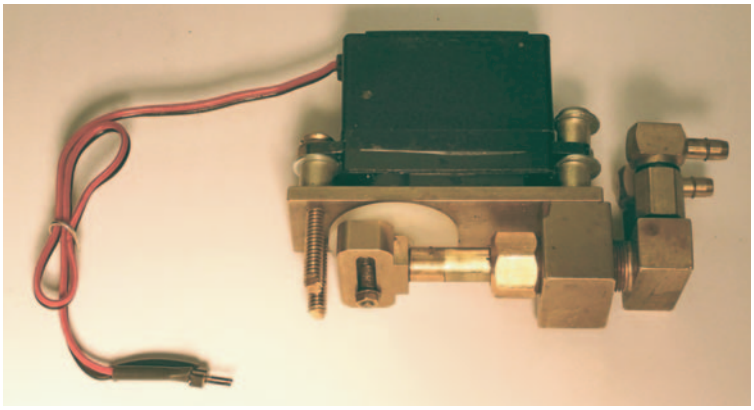


Photo 1 - BFI Electric Water Pump

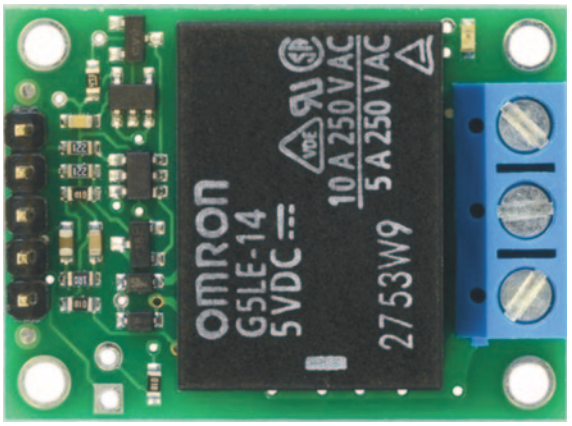


Photo 2 - Pololu module shown 2x actual size

The $9.95 Solution

What to do with a BFI Electric Water Pump?; that was the question. One of our club members had an unused Bill Ford Industries (BFI) electric water pump that was just begging for a good application. But once it was in my shop, the question became not "what" to do, but rather "how" to do it.

A few of the locomotives in my roundhouse did not come with hand pumps, and thus were prime targets for installing a BFI electric water pump, which is rated for 20-35ml per minute. An excellent way to control this electric pump is with one of BFI's Water Level Detection Systems (WLDS). These systems have a sensor in the boiler that detects a low water condition and automatically turns on the pump, without stopping the train. (Mr. Ford also wrote about using water glass level sensing with LEDs).(*Steam in the Garden #90, Nov/Dec 2006*)

However, a water pump control system with a special sensor can be expensive, often involves a fair-sized electronics package and usually requires wires from the tender to the locomotive. (Also, BFI sensors and electronic packages are currently out of production.)

BFI Electric Water Pump assembly

In *SitG #97, Jan/Feb 2008* Sal Martocci offered a unique solution to this problem. He mounted the BFI electric water pump (**Photo 1**), a battery, a water tank and a top-mounted switch in a boxcar. He ran this car behind the tender and routed the water line forward to the engine. When the

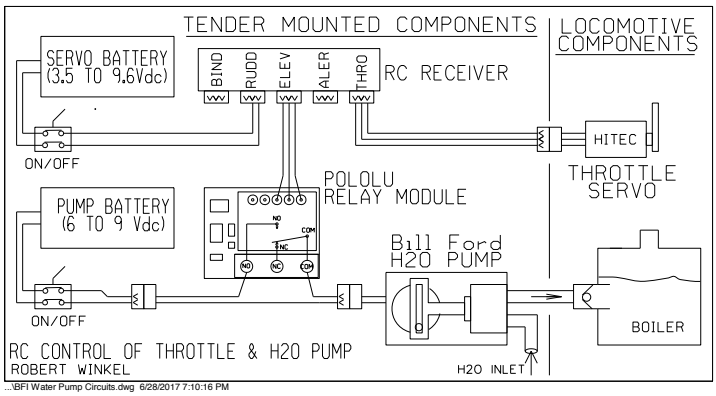


Figure 1 - BFI Electric Water Pump Schematic

engine passed by, he would look at the water glass and, if the water was low, he would tap the pushbutton switch on the top of the boxcar to start the pump. The next time the car passed by, if the water level was good, he would tap the switch and shut off the pump. This system saves the cost of the WLDS circuitry and sensor but requires physical interaction with the train to operate the pump.

After considering and discarding several alternatives, I could see that one fact remained: the tender and engine were already set up for remote control (R/C) of the throttle. If an interface could be designed to turn on the pump remotely, the operator would have wireless control of the water level.

In a short-lived bout of overconfidence, I set out to design a circuit that would plug into an R/C receiver and convert pulse-width-modulated servo signals into an on/off relay control signal. However, my preliminary schematics did not look promising. But I was determined to make this work since R/C control of the water pump would be close to prototypical operation.

With my own designs looking "iffy", I looked on-line to

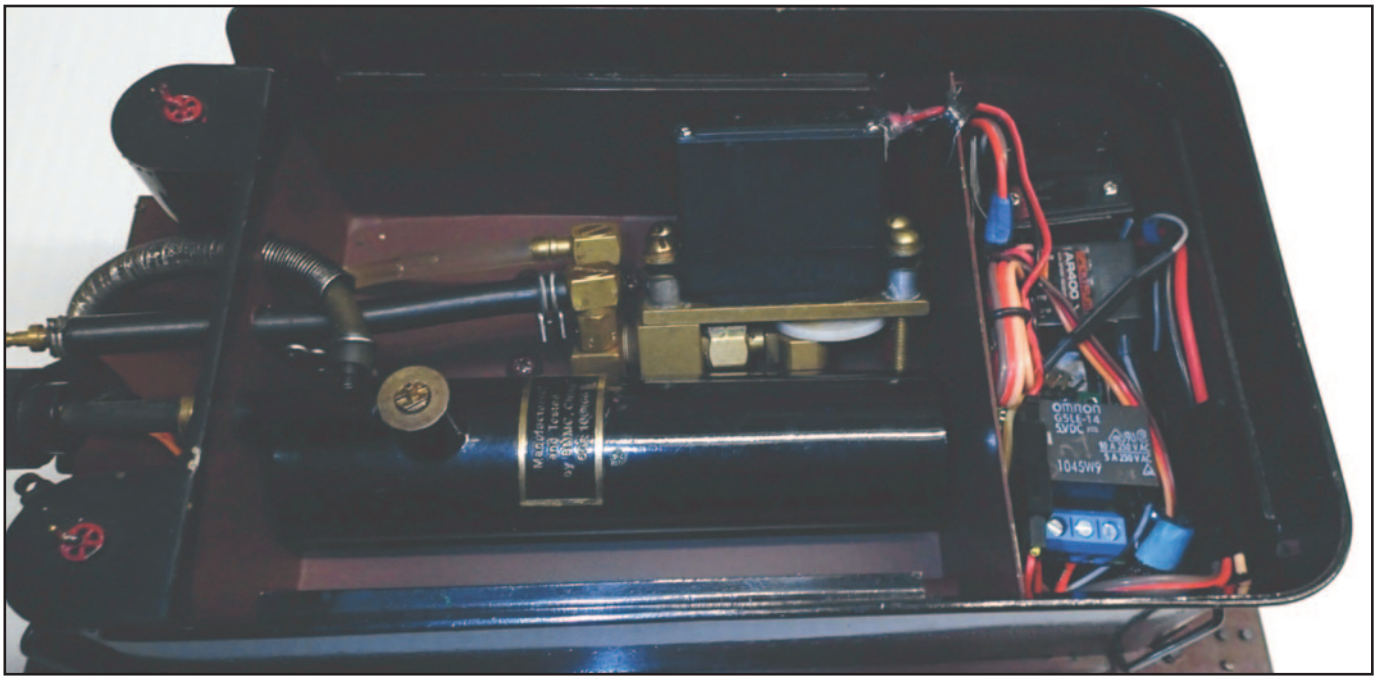


Photo 3 - Tender with wet and dry compartments and installed servo pump.

see if others were publishing schematics for home-built servo-to-relay control circuits. What do you think I found? Here was a pre-built module that plugged into the receiver and had a built-in relay with contacts good for 10 amps DC. It is relatively small (1.37-inch x 1.0-inch x 0.75-inch tall), available off the shelf, and the cost was only $9.95! Immediately, my schematics went into the trash!

Photo 2 is the Pololu module. The retailer states: "This R/C Relay (module) enables easy control of large, electrically isolated loads in R/C systems. The activation threshold and direction are configurable, and a safe-start feature reduces the likelihood of unexpected activation. This assembled version (Polulu #2804) ships with the 5V relay, terminal block, and straight male header pins soldered in, so it can be integrated into hobby R/C systems without the need for additional soldering. The included power relay is an Omron G5LE-14-DC5 and is rated for up to 10A under most conditions."

Now this project was aided by one additional factor; the tender on the most recent batch of Accucraft moguls is just about ideal for this type of conversion. The whole tender top comes off, there is a decent size dry volume for the electronics, and the portion of the tender for the butane tank and water-bath is (just) large enough to accept the pump.

Photo 3 is a view of the tender that shows the BFI pump and butane tank in the "wet" compartment and the R/C receiver, relay module and batteries in the "dry" compartment.

The project went together easily at this point. You can see from the schematic in **Figure 1** that the system is very simple electrically. Performance-wise it has the advantage of being able to add water at any time without stopping the locomotive. With the automatic WLDS, steam pressure would drop a bit when the pump was activated. With the R/C control, I just add a little water all the time, which seems to work well. At the end of the run, the tender is nearly empty and the boiler usually has plenty of water in it. Also, if the popoffs are lifting, water can be added to cool things down a bit (as long as there is room in the boiler).

However, there are two concerns with this approach. When first assembled, there was only one battery for the receiver, throttle servo and the pump. The periodic heavy current draw of the pump seemed to cause the throttle servo to have a jerky motion. But Mr. Ford clearly states (*SitG #90, Nov/Dec 2006*) that the pump "operates on a separate 6-9V battery". When the separate battery was added, everything operated smoothly.

The second concern is that this system is only as good as the locomotive operator. You must actively use the pump control – no sleeping on the job!

Product Review: Garden Railways 1984 - 2015 DVD

By Scott E. McDonald

Overview

This special compilation includes 192 complete issues of *Garden Railways* from 1984-2015, plus nine bonus issues of its predecessor, the *Sidestreet Banner* newsletter.

Introduction

My first in-the-flesh introduction into small scale live steam was through Marc Horovitz of *Garden Railways* magazine at the first Garden Railway Convention I attended in 1987. Prior to that it was only through magazines. I remember seeing the first advertisement for *Garden Railways* in *Model Railroader* magazine when I was stationed in Naples, Italy. Rather than immediately buy a subscription, I waited until I returned to shore duty back in the States and picked up a copy at the local hobby shop. At the 1987 Garden Railway Convention held in Denver I picked up the back issues I had missed including their 1984 premier issue, and started my collection. Through my subscription the collection grew and soon I had several shelves bowing under the pressure of printed matter in organized binders and boxes. I remember the first time I had to move that collection after twelve years. Then eleven years later when I downsized to a smaller house the twenty-three year collection also had to be downsized. I kept a few select issues that I held dear, the pull-out project drawings, and the rest went to the local garden railway society for redistribution.

The key factor about maintaining a paper library is finding articles. You need an index. *Garden Railways* from time to time printed out special issues of indexes and then provided a yearly index. But still, going through them manually to find an issue was time consuming. I always felt that technology would eventually provide a better answer.

That answer has finally arrived. I received the *Garden Railways 1984-2015 DVD* that has recently been released and was eager to pop the DVD into my computer and check out what I feel is the most important feature — the user interface experience.

Photo 1 - DVD Package.

Garden Railways Photo

Installation

Using the DVD requires that you load software on your computer. The install DVD has capability for both PC's and Mac's. You get two ways to do an install. The simple install takes the least amount of space on your hard drive. This is the program that allows access into the DVD to search and display the magazine pages. The full installation places the contents of the entire two DVD's onto your computer hard drive. The program takes up about 2GB of space and full install is rated at 9GB. This speeds up retrieval and you don't have to swap discs as you move between magazines or project files.

Interface

Once you have the software loaded, regardless of install type, you are presented with a clean simple

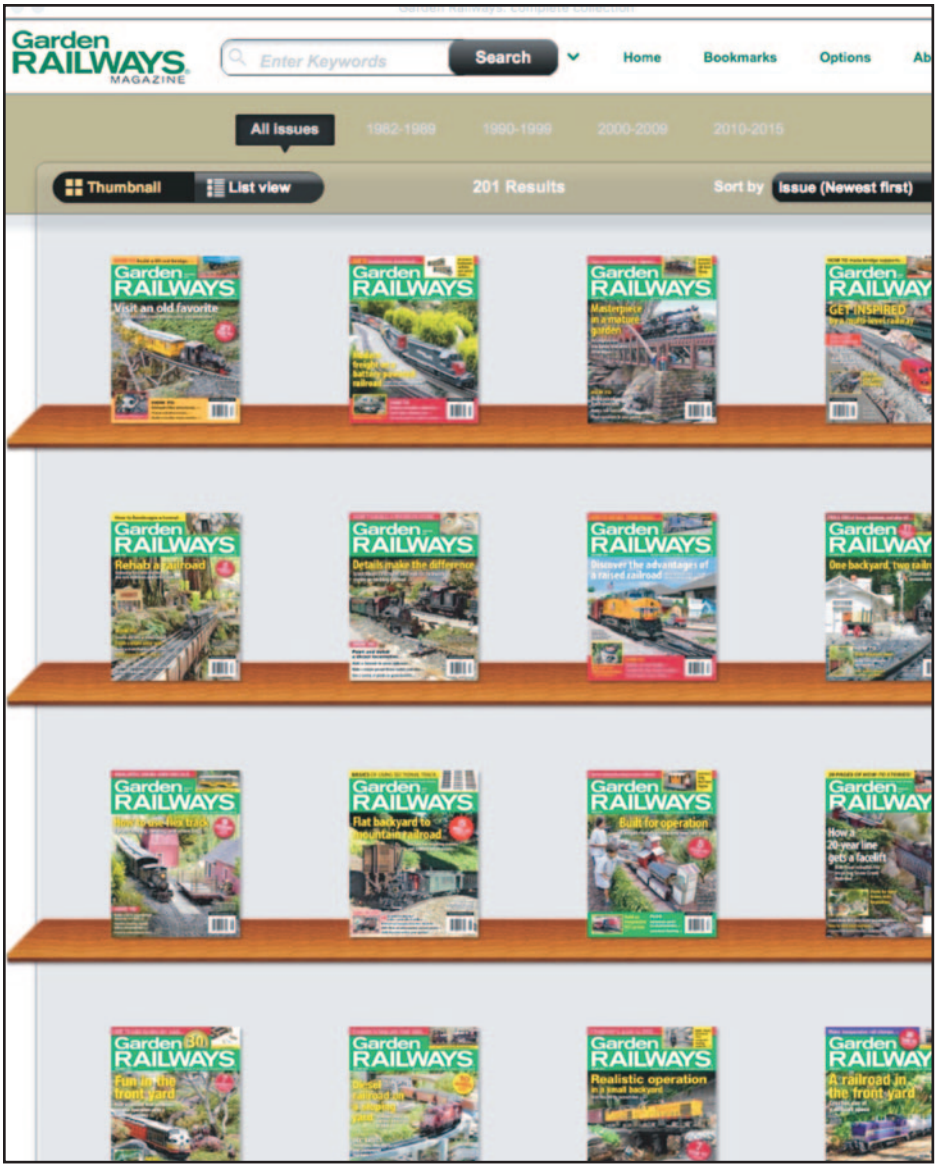


Photo 2 - Simple, clean virtual "bookshelf" magazine display. DVD screen-capture.

interface of a bookshelf, graphically represented with the covers of the magazines on display. (**Photo 2**). You can also elect to be given a simple listing of the magazine without covers by selecting the "List View" instead of the default "Bookshelf View". Either way, to view the magazine of your choice you simply double click on the cover thumbnail or listing and the magazine opens up for viewing.

The software uses a "flipbook" display that gives the reader the impression of actually flipping physical pages through animation. I'm sure you have seen this on many internet sites, including our own. It's a common interface. The flipbook display is pleasing on the eyes and behavioral psychologists say that it leads to less eye fatigue when reading than a sudden jump when changing pages.

There is a menu bar that shows three sets of magazine timeframes to select issues. If you don't know exactly what issue you want to view, there is a search function available. To me, this is the real benefit of having a digital collection. Search, click, and display the information. I, of course, had to try it by searching for the article I wrote back in 1989 on my first garden railway. I typed in my name and got nothing back. Hmmm. So I tried by searching on the name I used for my railway. Viola! The correct issue popped up and I was now looking at the first page of the article. Ok, ego satisfied. Let's do some digging. Searched for live steam, (of course) and got some hits including some steamup reports. I then searched on the word "plans". Got a few hits to articles in the magazines where plans were included, but didn't get the pull-out section of plans by the late Robert Stinson. Time to read the instructions that came with the DVD's.

Printing out Project Drawings

If you are familiar with Garden Railways, then you know about the pull-out plans that used to be included in the centerfold section of the magazine. Many of these were made by Robert Stinson of Northeast Narrow Gauge fame. Easy to follow simple projects that found their way into many garden railways around the world. Great stuff. These are loaded on one of the discs along with others. However, instead of using the software interface, you must use your operating system's view folder/directory function to navigate to the "Plans" sub-directory on Disc 1. I was unable to just double-click and open from the DVD. For the plans I had to drag the file to my desktop from the DVD and open from the desktop. These are the only files that you can copy straight off the DVD.

Since the original size of some of these plans were printed on an oversized piece of paper folded to fit into the magazine centerfold, what you have in some cases are several pages that make up the

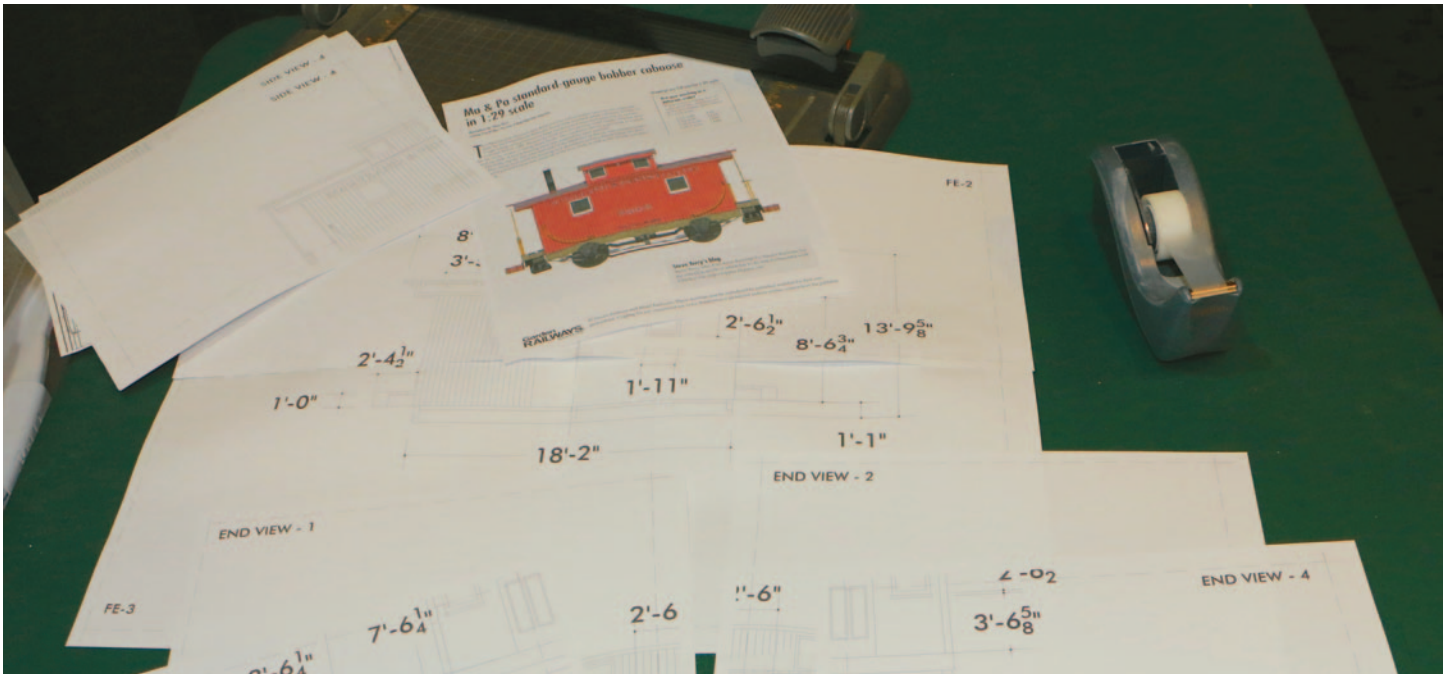


Photo 3 - Piecing the plans together.

Photo by Scott E. McDonald

plans. You might be printing out up to four pages to make up a page of the original large format plans to piece together with tape. (**Photo 3**). *Garden Railways* provides "break lines" so you can easily cut to line the pages up and piece them together.

Impressions

Fortunately, to review this product, I still have a computer that will accept a DVD. But that is through a separate drive that I had to add on to my newest computer which, at this writing, is only a year old. Unfortunately, technology is progressing to where we are now entering an era where CD's and DVD's are starting to go the way of floppy disc's (remember those?). Physical media is dying with online access and downloads from the "cloud" becoming more prevalent. Current industry estimate is that it will still take a few more years, so if you buy now, you can get good use out of the DVD's until the industry stops making drives. In the future, the producer will have to take a look at a "Cloud Solution" download capability.

The design of the software and the need for the user interface to access the magazines is a security feature for the publisher for their proprietary information. You can't just drag and drop a pdf file off of the disc for particular issue of the magazine and e-mail it out to your friends who don't want to buy the DVD's. As a publisher, I get that.

The search feature provides the real benefit in my book. There is a warning in the instructions that you may end up a page away if the item you are searching for is on a page that is considered a two page spread. You may have to click forward or backwards to find the item you're looking for, but it will get you in the ballpark. I didn't experience that and all of my searches were spot on.

Value

With 192 issues at your fingertips, and all of the ones that are no longer available in print version from the back issue store, for the $90.00 investment you get a value worth over $1500 if you tried to put together a complete collection from scratch. Add to that the space required to maintain hard copies in boxes on shelves and this DVD is a great deal for the money. If you think you need to print out an article or plans, then have at it. You can do that. Take that project article that you print out to the workshop and if it gets smudged from paint or glue, you still have the original on disc.

Conclusion

As long as you still own a computer that will accept a DVD, then this product is the answer to give some relief to those burgeoning shelves of twenty plus years of magazines. That will give you more shelf space for new live steamers! I give this product five gold locomotive drivers.

Springtime Steam in Portland, OR

Staver Steamup 2017

Text by Bob Chapman Photos by Mike Martin

I look forward to April and September. Twice a year Larry Staver opens up his Staver Locomotive property in Northwest Portland, Oregon for my favorite West Coast steamup. I've only been going the last few years, but already I have it marked into my brain that I'm in for a real treat every spring and fall.

My father, Ed Chapman, got me into this hobby. He wasn't a live steamer, but throughout my childhood he made trains a family hobby. We had an HO gauge layout in the garage, built models and rolling stock for it together, planned family trips around railroads we would see, and spent a lot of time riding excursion trains. My father loved to spend time with my cousin, Jim Hadden, who from an early age had a knack for building or tinkering with things. Jim rebuilt antique automobiles; built, sailed, drove and flew RC boats, trucks, snowcats and a plane; and thanks to joining my father for a Queen Mary Big Train Show a couple of times, got deeply into small-scale live steam. Once my cousin Jim began hosting steamups of his own in Park City, Utah, my father made that a destination for himself as well.

Whimsical appearance and serious engineering come together in Jim Hadden's Poison Creek 7/8ths scale Shay.

After my father passed away in 2011, I decided I needed to go see Jim at one of his steamups and honor my father in the process. That first steamup was fun though I didn't get the bug right away. But the following year I went again, and after running my cousin's Accucraft Emma (renamed "Enima"), I was infected. I bought my own 7/8ths-inch scale Emma and began collecting appropriate rolling stock from Dave Frediani.

After a year of running my Emma, I purchased a 1:20.3 scale Shay and then a Heisler from Accucraft, and a nice used Mike Chaney Climax. That takes care of my love of geared locomotives and three-foot narrow gauge railroading. I'm venturing more deeply into two-foot gauge (1:13.7 scale) these days and hope to someday have a coal-fired locomotive.

Staver's was the first steamup I went to after going to my cousin's for a few years. Jim had introduced me to live steam, and to a collection of characters and friends who talked about Staver's more than any other steamup. All of them had been going to Diamondhead for years and that was regularly discussed, but Staver's seemed to get special treatment. Certainly, for those of us in the west it is more accessible than Mississippi, but the layout itself, and Larry Staver's warmth as the host, seem to draw us differently than the portable oval layouts and mega-meets of Diamondhead or even the National Summer Steamup in Sacramento.

For those who have never been to a Staver Locomotive Steamup, it is a different setup. Larry has built his permanent layout in an old industrial building and yard in the heart of industrial Portland. It's a no-frills metal building from the outside, but inside he has created various spaces to support his interests and hobbies. Side rooms from the large main area include a wood shop, a metal/machine shop, a computer/digital shop, a collection room for his locomotives and rolling stock, a lounging area, piano room, two spacious bathrooms, and a small commercial kitchen. The large open area inside still has a massive overhead

The author hovers over his Accucraft Heisler hauling redwood logs to the mill.

crane over the old loading area, but the rest of the production area is the layout.

The layout is essentially a single-track run with plenty of sidings, passings and yards. Though most of the layout winds around the confines of the building, there is a connectable run outside that is built upon trestle staging and decorated with rock, plants, water features and bridges. The exterior run will eventually be considerably larger than it is now, and each year the construction gets more and more exciting. The whole run is approximately an eighth of a mile and running a locomotive with a lengthy running time makes for a good workout, especially for the fast runners.

The steamup officially begins Thursday morning and goes until Sunday morning, though many steamers show up Wednesday afternoon and few actually run on Sunday. Larry has each day split into segments — hours for "fast trains," hours for "slow trains,"and hours for both. The track is open for running from 8:00 in the morning to 8:00 in the evening. Typically it's the standard gauge crowd running fast trains and narrow-gaugers running slow trains, though a few figure out how to manage speed regardless of scale. At times it is possible to have the layout to yourself, but most of the time three to eight people may be running at any given time.

Steve Shivers and Bill Wilbanks share the mainline and demonstrate the need for cooperation while running at Staver's.

Steve Shivers makes minor adjustments to his customized Roundhouse locomotive (converted to an alcohol burner) as James Gabelich looks on during a quiet time on the layout.

Because the layout is a single track, it's a cooperative affair, and requires attention to keep accidents from happening. For the most part, things go smoothly, but there are occasional raised voices and, rarely, an accident. For those who don't brave the permanent layout, a small, portable, two-track, dual-gauge oval layout is set up in the loading area. This is a new layout provided by the Puget Sound Live Steamers group, designed and built by Tim Miller. It's a beauty, and small equipment and collectable toy trains dominate that space.

The spring steamup has less organized together time than the fall steamup. The only meal is Saturday night's dinner, though bagels, cream cheese and muffins are provided in the mornings for those who do not eat in their hotels. The Saturday night dinner is as formal as we get over the weekend. Usually it begins with margaritas, then a fully prepared, simple, delectable dinner, and a dessert following. This time it was a taco buffet. It is also the time for Larry's welcome speech and our many thanks to him. Nearly all the participants attend the dinner and so we have two long rows of tables filled with happy and vocal small-scale live steamers. I look forward to Saturday night's dinner because I usually end up sitting near someone who I haven't spent time with over the weekend, and either gain a new friend or learn new things about the hobby or railroading.

This spring we had a large turnout (eighty-four attendees) and so the track was busy. As a narrow gauger, I run slowly, so I made sure to be ready when our hours were on. Generally, I was sharing track with people I know well: Jim Hadden, Kevin Schindler, Rob Lenicheck, Steve Shyvers, and James Gabelich. Mike Williams, a local friend and fellow educator from Humboldt County, where I live, and Jim Montgomery were out on the track nearly all the time. During the fast running hours it seemed as though Pete Comley, Harlan Chinn, Chuck Morton, and Eric Bowles got out the most. Obviously there are many I haven't mentioned here, but the track was busy and people got enjoyable running time.

Of course, a steamup is as much about socializing as it is about running trains, and there were some real professionals at spending time talking to people. I think Dan Pantages, Nick Fisher, Ryan Bednarik, and Paul Hagglund were the best at getting around. And the opportunities to purchase items from Accucraft, Silver State Trains, and off of the

Myron Claridge prepares his Accucraft Mason Bogie before heading outside and into the elements.

swap tables helped to bring us together too.

A few attendees rarely ran trains. Marc Horovitz, Howard Freed, and Mike Martin added a professional touch at Staver's, sharing ideas, providing insightful commentary, and in Mike's case, excellent photography (included for this article). And for non-steamers, there was a group working on jigsaw puzzles at a table right in the middle of the venue, so they could keep tabs on things as the hours passed by.

Eric and Tor Klokstad refuel their Ruby and prepare for more practice running on a section of siding. Tor was the youngest live steamer at the steamup this spring.

The usual choice for lunch, and afternoon adult refreshments, is just around the corner at Portland/Pyramid Brewing Company. My cousin's crew are well known there and have made quite an impression on the staff (and other patrons). IPA and garlic fries seem to get a lot of attention, as does the story of the pickle. This year, a new brewery opened up right across the street from Staver Locomotive, Sasquatch Brewing Company. After a soft opening a few days before, their grand opening was that Saturday and they poured beer into complimentary glasses, and fed us free hot dogs and snacks. Many of us took advantage of the grand opening. Breakfast at the sponsored hotel, the Silver Cloud Inn, is another place to connect with fellow live steamers before heading over to the venue.

The Spring Staver Locomotive Steamup was an enjoyable event. Many of us traveled long distances to be there. While most of the attendees are West Coasters (from Southern California to British Columbia), many westerners also made the trip (Colorado, Utah, Nevada). The more adventurous or determined ones came from as far away as Virginia, Pennsylvania, and South Carolina. And though most who attended are regulars, first-timers were welcomed as well. It was Brittany Grimm's first time, traveling all the way from Pennsylvania. And two new young members of the hobby had a glorious time running their locomotives; Tor Klokstad, running a Ruby, and Andrew Westman, running a Fairymead. All of us give a hearty thanks to Larry and his staff—Yolanda Moisa and Gabriel Flores—without whom, the weekend would not be possible. I sincerely hope we continue to enjoy more Staver Locomotive steamups, and that other readers of this magazine get a chance to come for one of these weekends.

Kevin Schindler and Nick Fisher double-head their Accucraft Garratts getting nice plumes in the cool Portland weather.

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.

Bob Chapman - Bob has been a lifelong fan of trains. He began his own pursuit in middle school by building his first N-scale layout in the garage. The pinnacle of his 1:1 experience was riding steamers in India while in the Peace Corps in Nepal in the mid-1980's. And though he lives in an area without a functioning railroad, he travels to trains regularly. He has built a small backyard, live steam layout that he likes to share with friends for regular and impromptu steamups. Bob recently retired from teaching English at Eureka High School and hopes to write more now that he's out of the classroom.

Rick Gross - Fortunate enough to have lived his life almost equally on the East and West Coasts, he currently resides in the city of his birth, Burbank. About the only thing that has matured about this ne'er do well is his vision, forcing him to divest himself of most of his Z, N, HO and O trains. He now "over collects" trains big enough to burn him, (Gauge 1), or crush him, (3 ¾-inch live steam Sweet Creek). He clings foolishly to the belief that he'll get his old race car back out on the track with the other vintage geezers. Unbelievably, he maintains gainful employment with NBC Regional Sports in Corporate Engineering. He attended Villanova University, forever sullying the name of that fine institution.

Marc Horovitz - Marc has been interested in steam locomotives — both large and small — all of his life. In 1979 he opened the Light Railway Division of his existing business, Sidestreet Bannerworks, for the purpose of importing small scale live steamers in the U.S. Sidestreet Bannerworks was the original US importer of the Beck Anna and other Beck locos. Marc began writing the "Small Scale Live Steam" column for LIVE STEAM magazine around 1980, and continued on for five years or so, until Garden Railways magazine began to evolve. He has kit-bashed and built many steam locomotives.

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.

Carl Weaver - Carl has been a passionate model railroader since the 1940s — his first train was a pre-war O-gauge Lionel followed by a Märklin OO set he received for Christmas in 1946 while living in Germany. His last and most significant electric setup was an 18-foot by 28-foot HO-scale layout dismantled in 1995. His interest in live steam started in 1976 with the purchase of an Aster "Old Faithful," followed by an SL-3 Mamod kit with a locomotive and two cars. Following his frustration with the Mamod and many aftermarket improvement parts, Carl purchased a first-generation Roundhouse "Billy" — the locomotive that really got him hooked on live steam. Carl has written three books about model railroading and for magazines such as Model Railroader and here in Steam in the Garden.

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.

THE CUPOLA VIEW

The Story of Three Sailors
By Scott E. McDonald

In addition to discussing the merits of live steam and various locomotives at steamups, sometimes a conversation will include a personal anecdote which might take the conversation off the original subject and stray into other interests. This happens all the time and in this particular case it went off to previous personal history that eventually came full circle to bring this small world a bit closer for myself and two other fellow steamers.

I retired from the Navy back in 1995. I met Wayne Colleran and his father in Diamondhead, MS around that time frame and discovered that Wayne was also retired Navy. We saw each other at a few other steamups; Cabin Fever, East Coast Large Scale Train Show, and fellow steamers' homes.

Once in a while a Navy "Sea Story" would come up. It's a sailor thing. Several years would go by in our live steam friendship before we realized that Wayne and I shared a couple of the same stories of events that happened to us while on sea duty—because we were both there at the same time! After several years of live steam camaraderie we realized that both of us were stationed on the aircraft carrier USS Nimitz at the same time in the mid 1970's. Of course with over 5,000 sailors on board, each of us working many decks apart, our paths may have only crossed at ship wide ceremonies, if at all. It had already been over twenty years since we were both on board at the same time that this fact came to light.

After the discovery phase at a steamup, I went home and pulled out my old Cruise Book and sure enough, found our pictures. How small of a world this is that our Navy and hobby paths crossed? I find that pretty cool.

Now I titled this article as a story of three sailors.

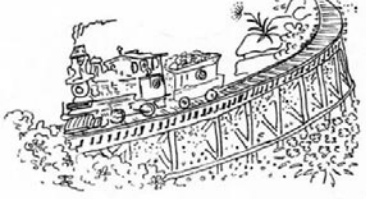
Three former shipmates steaming instead of sailing. From left to right: Dan Fuller, Wayne Colleran, Scott McDonald.

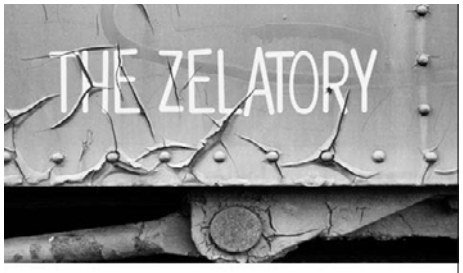
The discovery phase of sailor number three happened by chance while over on the other side of the U.S.

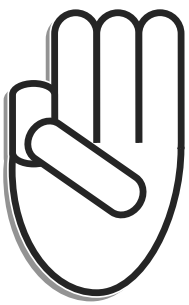
At the 2016 National Small Scale Steamup in Sacramento I was standing in line for the Saturday Bar-B-Que next to Dan Fuller. I've known Dan for a few years as he too is a regular attendee at the Diamondhead Steamup. There was a sea story conversation happening and one of the facts included the USS Nimitz. Dan was a Navy pilot and his squadron was stationed aboard the USS Nimitz.

I inquired as to the time frame and he came up with the same few years that Wayne and I were on board! Not only that, but Dan, being a pilot, could very possibly have been in my workspace. I was a Navy Intelligence Specialist and worked in the Intelligence Center that supported the embarked Air Group. So it is a real possibility that our paths may have crossed in the performance of our duties.

So there you have it. The small world gets even smaller as now, some forty years after a personal bit of history, I discover that not only do the three of us have the small scale live steam hobby in common, but that all three of us were together on the same cruise from Norfolk, VA to the Mediterranean and back. Our Sea Stories have now melded into our Steamup Stories.







TIMETABLE

July 10-15, 2017 — National Garden Railway Convention, Tulsa, Okla. Self-guided and motor-coach tours of area garden railroads; clinics, vendor hall. Info: http://thinktulsa2017.com.

July 19-23, 2017 — National Summer Steamup, McClellan, Calif. (Note new dates.) Multiple layouts. Lions Gate room reservations: (916) 643-6222 (http://www.lionsgatehotel.com). Info: http://www.summersteamup.com or (408) 776-1133.

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

October 6-8, 2017 — Los Angeles Live Steamers Fall Meet. Info: http://lals.org

October 13-15, 2017 — North American 16mm Association Annual Gathering, Columbus, Ohio. Info:*http://www.northamerican16mmmodellers.org/*

Regular steamups

Southern California Steamers. Contact Jim Gabelich for dates, places and other pertinent information. (310) 373-3096. jfgabelich@msn.com.

Crescent City High Iron. Steamups as necessary on an elevated backyard layout on Northern California's upper coast. Info: Don Cure, diamondd1947@msn.com.

On the Brink Live Steamers. Wednesday, and occasional weekend, greater Sacramento, Calif., steamups on elevated live-steam tracks at two locations, as well as special events. Info: Paul Brink, (916) 935-1559, paulbr@aol.com.

Puget Sound Garden Railway Society. Two steamups per month, one at the Johnsons' on the second Saturday and a steamup at a member's track on the fourth Saturday.
Info: http://psgrs.org/ or call Pete Comely at (253) 862-6748.

Michigan Small Scale Live Steamers (MSSLS). Info: http://www.mssls.info.

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.

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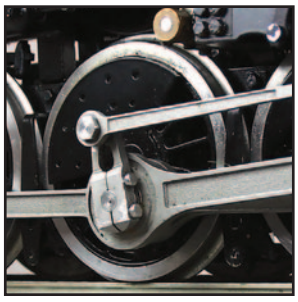
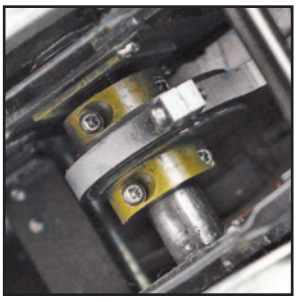


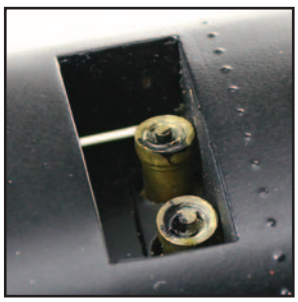


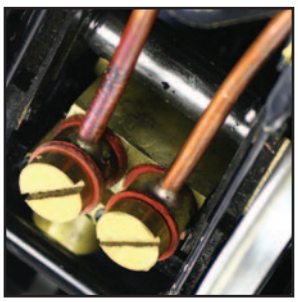

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