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- Building a portable, live-steam layout
- Locomotive review: Accucraft UK's 'Peveril'
- A look inside the Portland steamup at Staver's
- Going backstage at a Toronto steamup in a roundhouse
- New small-scale live steam locomotives announced and much more!

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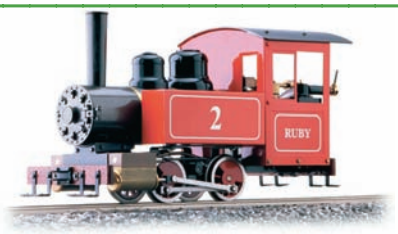

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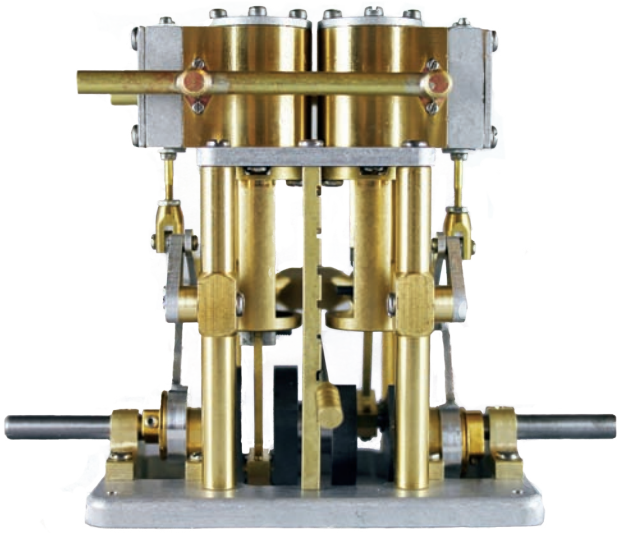

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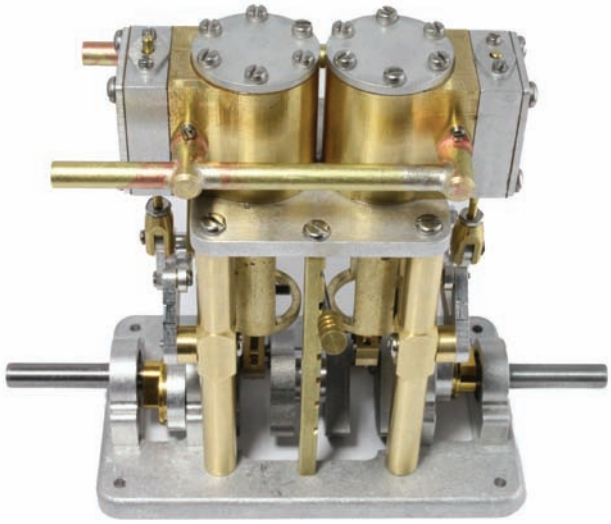
Height: 3.375"
Weight: 327 g



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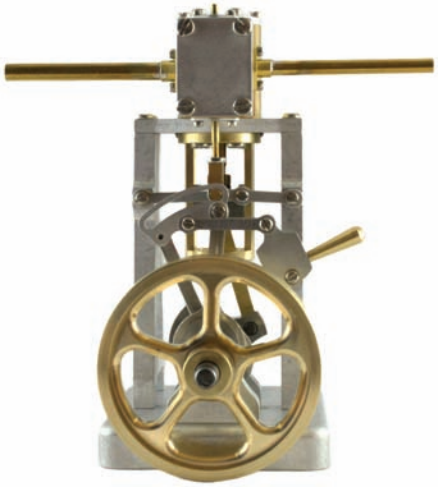

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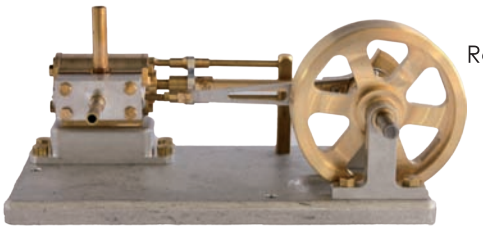

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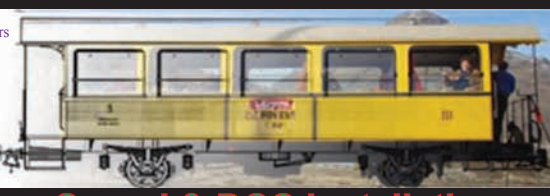

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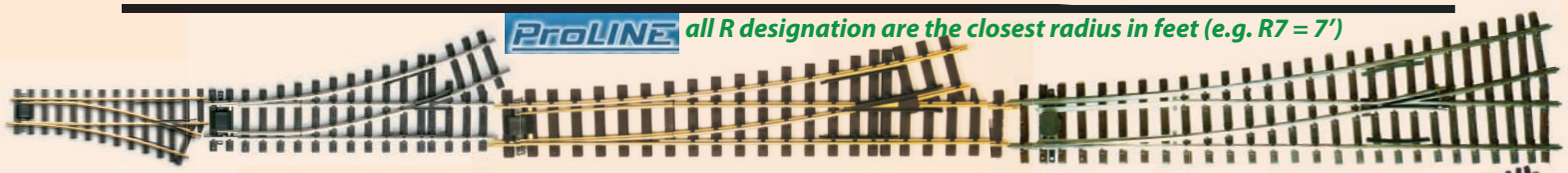

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Vol. 22, No. 5; Issue No. 123; September/October 2012

STEAM IN THE GARDEN

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

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Cover: Bill Allen's 'C.P. Huntington,' a 1:29-scale, scratch-built live-steamer from an 1860s prototype. Photo by Mike Martin.

RAILWAY POST OFFICE

And yet more on 'stack talk'

I have noticed some discussion on small-scale group Internet sites and in model magazines on the subject of blast pipe sizes and geometry for small, coal-fired engines, so I would like to add my thoughts after 50 years of designing and building lots of small, coal-fired engines.

Having experimented with many configurations, I have come to the conclusion that the one-in-six angle which is published in many articles is not the critical dimension in obtaining an efficient smokebox arrangement. I have found the most critical thing is the angle between the blast pipe orifice and the base of the petticoat pipe, which needs to be a one-in-three inclusive angle and ignoring the one-in-six angle to the top of the chimney stack, this angle was used in short chimney mainline engines and not in narrow-gauge engines where the height of the stack varies considerably.

To check the dimensions, I use a thin sheet strip the width of which equals the inside diameter of the chimney, with a one-in-three angle cut (19 degrees) on the end, which can be slid down the chimney and dropped into the blast pipe orifice, where the end of the angle should be level or just above the bottom of the chimney; the height of the blast pipe can be adjusted to achieve this. The other critical thing is that the blast nozzle must be in the center of the chimney and the blast pipe must be parallel to the chimney, otherwise the blast leaves the nozzle at an angle and does not hit the inside of the chimney, but could be "leaking" to one side, causing the vacuum in the smokebox to be affected.

The other main consideration is the ratio between the size of the cylinders and the blast pipe diameter, I always use one-seventh to one-ninth of the cylinder diameter. There are other design parameters in designing an efficient small-scale coal fired boiler, such as the grate area to flue area, number of flues and depth of firebox, but at present I am only concerned with the smokebox arrangements. I always run my coal-fired engines at 60 psi or higher, which ensures there is sufficient exhaust blast pressure to maintain a bright fire. Any lower pressure and you tend to be fighting the fire or you have to run with the blower on all of the time to maintain the fire.

To comment on Larry Bangham's observations about my K27 (see *SitG* No. 119, January/February 2012, "Stack Talk"), the 11 engines I built were all set up to the one-in-three dimension and not the one-in-six to the top of the stack.

To finish I would like to say that I have seen some very poor designs lately and this leads to frustration in purchasers of engines, which is not good for steamers and puts people off taking up coal firing. It's always the bad ones that get the publicity, while you hardly ever hear from satisfied customers.

David Bailey
DJB Model Engineering Ltd.
Bracknell, England

LATEST WAYBILL

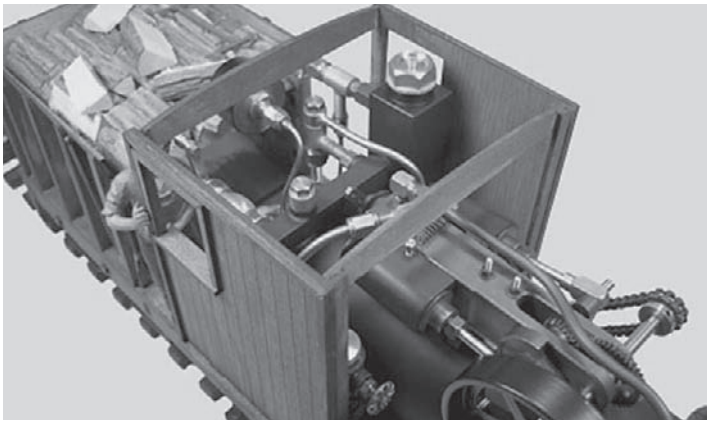
New 'Willamette' Shay kit

Regner Steam and Rail Technology's new Shay is based on an engine illustrated in the book "Willamette Locomotive," which says it was built by the owner, Ford Mill Co., using a Lima driveline and a traction engine boiler in the early 1900s.

Regner, based in Aurach, Germany, used the same driveline as in its first Shay, but this loco has a twin-cylinder oscillating motor mounted on top of the boiler and uses a chain to deliver the power from the crankshaft to the driveline.

The new Shay will be only available as a kit; however the boiler and motor are pre-assembled at the factory. It is advertised to be able to negotiate a two-foot radius track and the engine is gas fired, with a single-poker burner designed to use an isobutane-mix fuel.

The kit features a laser-cut wooden frame and decking with wooden superstructure. It also includes a pressure gauge, feed valve, adjustable oiler and sight glass. The wheel gauge is adjustable between 30mm, 32mm and 45mm.



Willamette: *Regner's latest Shay is based on a locomotive built by Ford Mill Co. in the early 1900s.*

The "Willamette" kit comes with an illustrated instruction manual in German with several exploded diagrams and a translation included by The Train Department, provided by Google.

This locomotive is available at $1350, plus shipping and handling, from The Train Department at http://www.traindept.com/ or (757) 971-8191.

Aster's next: a French 4-8-2

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French 4-10-2: *Aster's next locomotive will be a 1:32-scale SCNF mountain-type, circa 1945.*

built by Aster Hobby Co. Inc. of Yokohama, Japan.

In addition to its detail, other highlights of the new locomotive are that it will be sold as either a coal- or alcohol-fired locomotive and that it will have an extensive internal lighting system, with battery-powered LEDs for headlights, tender lights and drive-train side lights. The 4-8-2 configuration locomotive was commissioned by Aster Europe but will be sold worldwide by local dealers. Aster says the engine will be about 33¾-inches (860mm) long, including the tender, and support a 78¾-inch (two meters) minimum turning radius.

The SCNF 241P will support a super-heated steam line, two safety values, a water sight glass, pressure gauge, regulator and blower valves, a whistle, cylinder drain cocks, a boiler blow-down value, a reversing spindle or Johnson bar (selectable), a tender water drain and a Roscoe displacement-type oiler.

SNCF — *Société Nationale des Chemins de fer français* — ordered 35 of the 241P engines from Schneider Locomotive Works in October 1945 and they were designed to serve express passenger service.

Aster says the model is expected to have a Spring 2013 release; a limited number of models will be built and reservations require a $1000 advance deposit. North American customers should contact Aster Hobby USA LLC at http://www.asterhobbyusa.com/, or (864) 587-7999 for more details.

In memoriam: Bill Finegan

Avid hobbyist and small-scale live steamer Bill Finegan of Deland, Fla., died June 11 following a four-month battle with a rare blood disease; he was 65.

Finegan, who attended the International Small Scale Steamup in Diamondhead, Miss., numerous times, was a retired captain in the U.S. Air Force, and won a Bronze Star during the Vietnam War. He continued in public service as an air traffic controller for the Federal Aviation Administration for 32 years.

Finegan was born in Bronx, N.Y. and graduated

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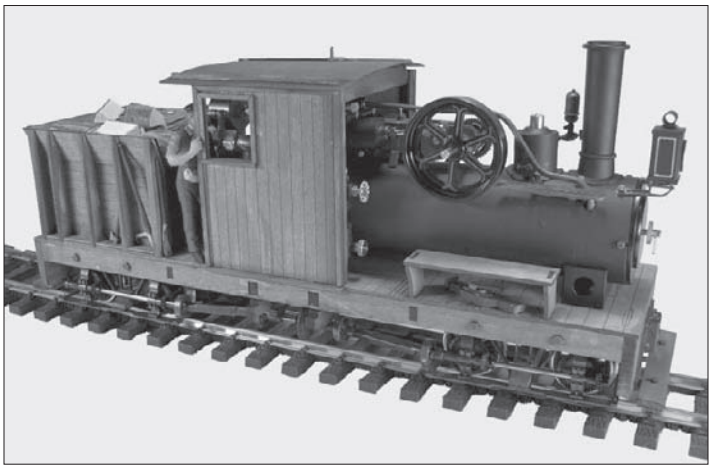
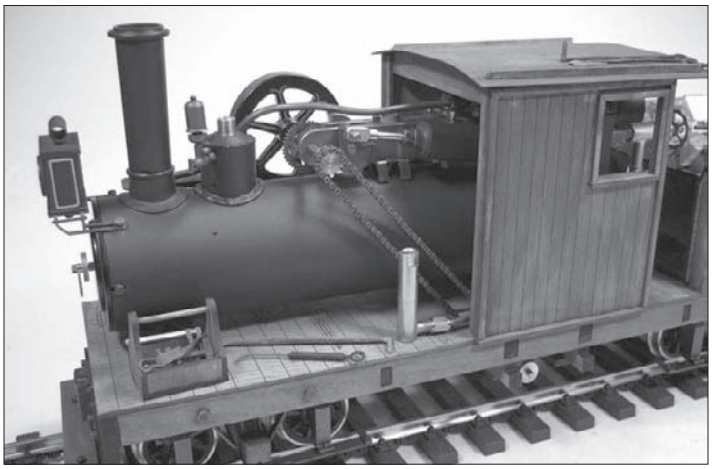
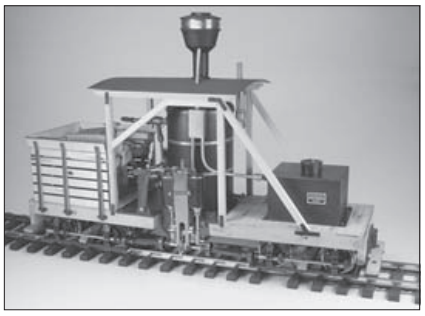




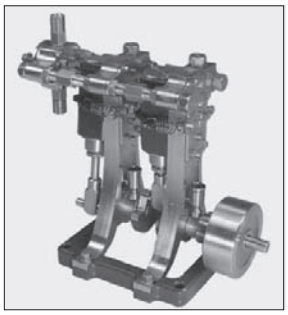
Also currently in stock:

Baluster Shay

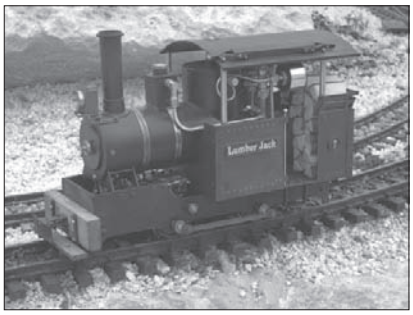


Sally steam plant

Lilly boat motor



Lumber Jack



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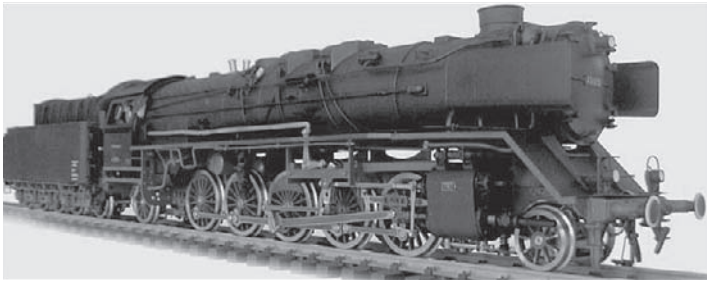


German 2-10-0: *MBV Schug based this large 1:32-scale live-steam locomotive on a pre-war prototype.*

from New Paltz State University in New York. He is survived by his wife Patti and three children, including Andrew Finegan, who is also a live steamer.

New German 2-10-0 locomotive

A 1:32-scale live-steam model of Germany's most powerful steam locomotive will soon be delivered to customers, its maker said in late June. MBV Schug of Detzem, Germany — the European distributor for Accucraft Trains Co. of Union City, Calif. — said that a pre-production model of the DB Class 45 — a 2-10-2 in 45mm gauge — No. 45 010, had arrived from China at its offices and was being reviewed. Schug said only 50 units of the 801.4mm (31½-inch) locomotive would be built and that it was the first German Gauge One locomotive to be built by Accucraft.

No. 45 010 will require a minimum diameter of 2.4 meters (eight feet) and will have three cylinders, using a D-valve, with full working valve gear. The butane-fired locomotive will have a dual-flue boiler and carry water in its tender. The working pressure will be 100psi and the engine will come with a pressure gauge, cylinder drain cocks, a water-level sight glass, a steam-oil lubricator, an axle-water pump and a hand-water pump in the tender.

Schug said the model is based on one of the 28 units built by Henschel for the Deutsche Reichsbahn built between 1936-1940 (another order for 103 more locomotives in 1941 was canceled because of the outbreak of World War II). DB retired all the locomotives except for No. 45 010, which in 2005 was badly damaged by fire at a museum in Nuremburg and it has yet to be restored.

DB Class 45s were designed as "goods hauling" locomotives ("freight trains" in U.S. railroad idiom) and following the war the locomotives were seconded to the Deutsche Bundesbahn of East Germany. Schug said the DB Class 45 in live steam would have a pre-production price of €5990 (including 19 percent German VAT) in Eurozone countries or $US6250 (no VAT), requiring a €850 ($US1068) deposit. MBV Schug's phone number is +49 6507-802326 and its email is info@accucraft.de.

Supporting East Coast live steamers with a portable

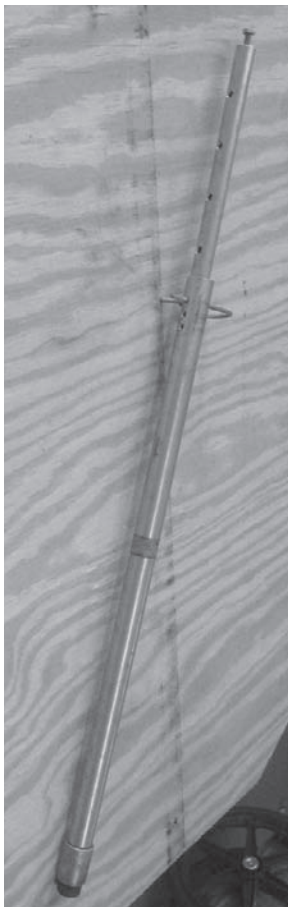
LAYOUT

Text, drawings and photos by Mike Moore

Throughout the 1980s and 1990s, the mid-Atlantic Gauge One live-steam community was well served by a portable layout built by Harry and Paul Quirk of Pennsylvania. The brothers Quirk used galvanized steel studs to build a ladder-like framework, topped with cedar planks and sectional track from Aster.

The legs of this layout were of two-by-four construction, about two feet long and level was adjusted by deck screws. The Quirks hauled this track around in a small trailer to such places as the Rough and Tumble Engineers in Kinzers, Pa., the Blue Mountain Antique Steam and Gas Association Show in Bangor, Pa., and the Pennsylvania Live Steamers spring and fall meets in Rahns, Pa. One memorable event was a full-week celebration of the dedication of the rebuilt railroad exhibit at Philadelphia's Franklin Institute.

By the end of the 1990s, the Quirks' track was definitely showing its age. I had met the Quirks at Diamondhead 1995, joined the Pennsylvania Live Steamers and had helped set up their layout at several events. I decided in late 1998 that I would build a new portable layout and carry the torch for the next couple of decades.



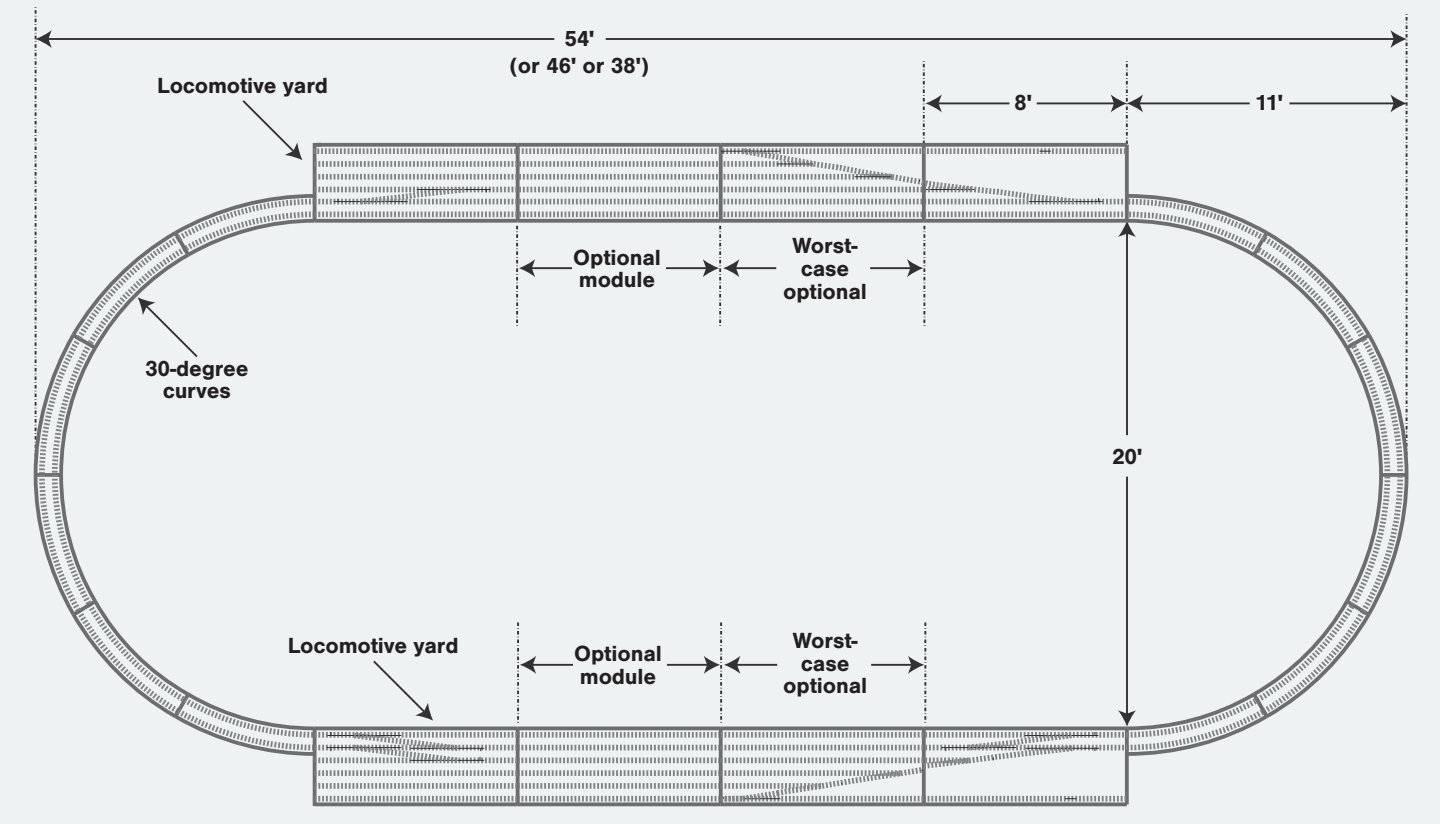
Leg: *One of the telescoping legs.*

Design criteria, track plan

As we began to think about a design for the new layout, we set down some design criteria:

- The curve sections should be 10-foot minimum radius to accommodate most live steam locomotives.
- Layout setup and tear down should be simple, intuitive and as quick as possible.
- The layout should be usable at both indoor and outdoor events, on level or sloping ground and able to accommodate sites of varying size.
- The layout should consist of two running circuits; a Gauge One circuit and a dual-gauge circuit supporting both Gauge One and 0-Gauge (45mm and 32mm track).
- The yards should provide enough trackage to hold a reasonable number and length of trains to support operations during an event.
- Both standard-gauge and narrow-gauge locomotives should be able to operate without interference.
- Have the ability to accommodate antique and tinplate trains as well as more modern finer-scale trains. Antique trains often do not conform to track standards for back-to-back distance, flange width and height, and the like.
- The entire layout should be transportable in a small utility trailer towed by a minivan.

As can be seen in the track diagram on Page 17, the layout is a simple oval consisting of 12 30-degree, one-foot-wide, 10-foot-radius curved sections and eight three-foot by eight-foot straight sections. The



Track plan: *If space is tight, two or four of the eight-foot-long locomotive-yard modules can be left out during setup to make the layout shorter, from 54-feet down to 48-feet (or even 38-feet if necessary).*

Layout set up: *The complete layout at the Pennsylvania Live Steamers for its Spring 2012 meet.*

inner circuit is dual gauge and the outer circuit is Gauge One only. Each straight side has one crossover in each direction between the two circuits. Outside of the Gauge One circuit on each side there is a four-track yard ladder.

The yard ladder ends in a crossover which leads back to a locomotive yard. At the end of the first yard track is a crossover allowing the track to be used as a passing siding. The switches on the layout are No. 8, with the exception of the two innermost yard tracks on each side, which are No. 6. Two yard tracks on each side contain some 0-gauge track while all the remaining yard trackage is Gauge One only.

The track on the straight sections is laid so that it is possible to set up the layout with two, three or four eight-foot sections per side. This results in possible layout lengths of 38-feet, 46-feet or 54-feet. This can come in handy when the space is limited.

We have set up the layout for events with only three sections per side but have never been reduced to the 38-foot minimum. Even with only one section removed the reduction in available yard space is keenly felt.

Frame, legs, platform top

The frames used to build the layout are Portable Elevated Track System (PETS) frames made by Walt Swartz of Istra Metalcraft in Naples, Fla. I saw an example of Walt's track system at Diamondhead and it seemed to meet many of my design criteria. Walt no longer supplies track frames, but frames of a similar construction are available from Triple R Services of Mount Holly, N.J.

I chose to use frames made of one-inch by one-eighth-inch square aluminum tube. The photos of the underside of the sections show how the tube is laid out. The tube is welded at each joint. A one-quarter-inch by four-inch aluminum plate is welded at one end on each curved section to attach the legs while four-inch aluminum channel is bolted at the corners of the straight sections. The first straight section on each side has four legs, while each subsequent section only requires two legs. To attach the legs a three-quarter-inch floor flange is bolted to the plate or channel.

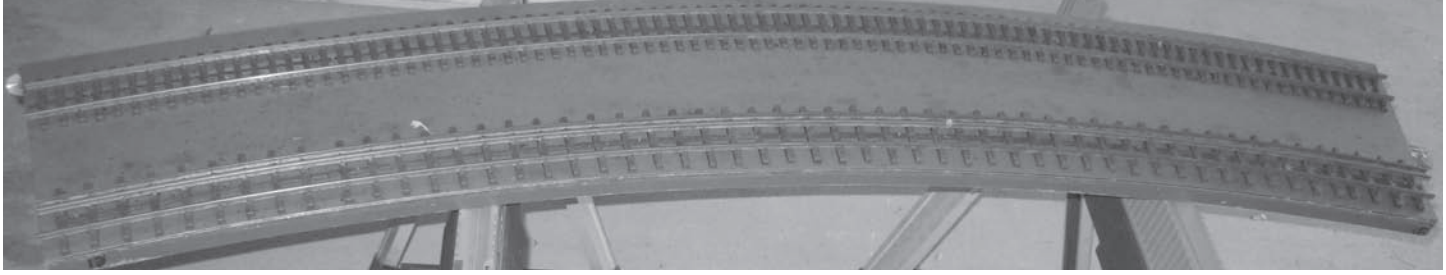
Alignment of each section is accomplished by three-quarter-inch square pins set into the square tube at opposite corners similar to sectional track. Stainless steel bolts, 5/16-inch, are placed through the section ends and held on permanently with a nylon insert nut. A single bolt on each curved section is placed at the same end as the leg and centered. On the straight sections one bolt is placed at each end and offset six-inches in from the pin at that end. A brass knurled nut holds the sections together while the track is set up. While somewhat difficult to describe in words, the attachment system is pretty simple and easy for newcomers to work out.

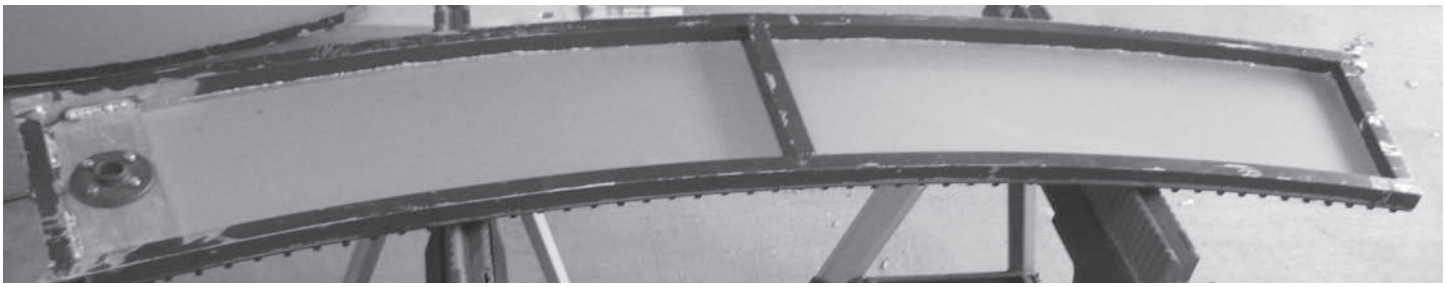
In order to meet the "ability to set up on unlevel ground" goal, a method of adjusting the length of the legs was required. I settled on telescoping legs made of three-quarter-inch aluminum pipe for the outer leg section and one-half-inch aluminum pipe for the inner leg sections. I drilled three, 3/16-inch holes spaced one-half-inch apart at the bottom of the outer leg and 3/16-inch holes spaced two-inches apart down the lower 18-inches of the inner leg. An appropriately sized hairpin type clip is used to set the length of the leg.

Further fine adjustment is provided by a one-quarter-inch by 20 stainless steel bolt and knurled nut inset into the bottom of the inner leg. The top of the outer leg is threaded for a three-quarter-inch pipe coupling and is screwed into the floor flange on a layout section.

Repeated screwing and unscrewing of the aluminum pipe was tough on the threads, so a steel coupling with a close nipple was added after a couple of years. So far, the nipple threads have held up well but will be easy to replace if damaged. Five curved sections of each semicircle have one leg each. Since the sixth section fits into a straight section it does not require a leg. One straight section on each side of the layout has four legs. The other three sections for each side only need two legs each.

When I originally built the layout, I used three-eighths-inch marine plywood for a top. The plywood was sealed with an epoxy sealer and painted with outdoor porch paint. The plywood was attached to the frame with self-tapping panel screws. This resulted in a less-than-optimal solution. In the sun, the aluminum frame would expand and the ply-





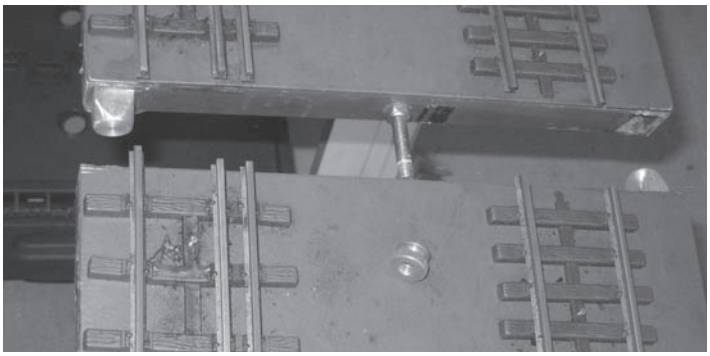
Curves: *Top, the platform is made from Dibond attached with Gorilla Glue; SVRR track is attached with screws. Bottom, a quarter-inch aluminum plate with a bolted floor flange on is welded at one end for a leg.*

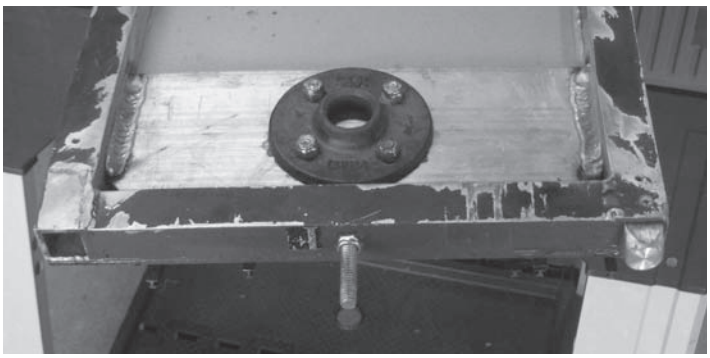
wood would shrink, causing a bowing of the straight frames. The fix for this was to remove most of the screws holding the plywood to the straight sections. Instead of screws, short aluminum angle pieces were used to clamp the plywood to the frame. This allowed the frame and plywood to expand and contract at different rates independent of each other. The eight-foot sections still bowed down from the weight of the plywood and track, so an additional telescoping leg "crutch" was added in the middle of each side. This worked reasonably for a few years, but I continued to search for a better solution.

Eventually, a panel material called Dibond was suggested to me. Dibond is an aluminum-clad plastic panel which can be used for exterior building panels and signs made by 3A Composites USA Inc. of Statesville, N.C. I decided on 3mm Dibond material and procured enough panels to replace all the plywood. The Dibond is attached to the frame using Gorilla Glue. This construction results in a lightweight composite with enough strength and stiffness to eliminate the need for the extra "crutch" legs. When the top was glued on, a slight reverse bow was added to counteract the effects of gravity. On a couple of sections we overdid this and now they bow up a bit. The set-up crew especially appreciates the reduced weight of each section. When a large locomotive like the Big Boy crosses the straights there is some deflection but not enough to cause concern.

Track

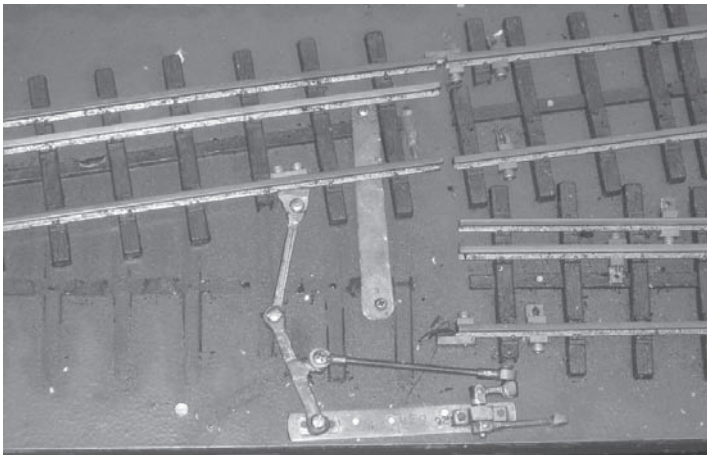
I used Code 250 brass track from Sunset Valley Railroad of Lake Tapps, Wash., with both dual-gauge ties and standard-gauge ties. The track is attached to the Dibond with one-half-inch 2-56 hex-head, stainless-steel machine screws. The holes in the SVRR tie strips are too small for the screws, so they must be re-drilled with a No. 43-clearance drill bit. The Dibond will hold the machine screws if pre-drilled with a No. 50 bit.

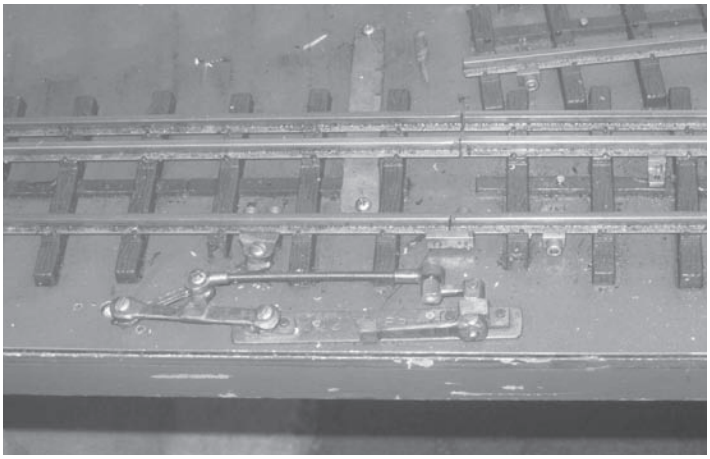




Curve ends: *Top, joining of two curved sections. The knurled nut is attached underneath and firmly drawn up against the frame. Bottom, the leg attachment, alignment pin and securing bolt.*

Rail clamps from Split Jaw Products of Portland, Ore., are used to join the Gauge One rails at each section joint. We found it somewhat tedious to fit the standard Split Jaw clamps, so we had some made without the split. Standard Sunset Valley sliding rail joiners are used to join the rails on the 0-gauge rails. These are left on the rail and pushed across the joint after the sections are placed together. While it would be possible to get tolerable rail alignment without the clamps, using them significantly reduces the





Frog-free switch: *Left, a length of dual-gauge track flexes enough to bend from straight into the almost-radius of a No. Eight switch. Right, the switch is thrown by an angled arm designed by the author's father.*

chances of rail alignment issues causing a disaster.

With the exception of the four unique stub switches on the dual-gauge circuit, the switches are all Sunset Valley Code 250, with Sunset Valley ground throws. One switch on each side crosses a section joint and is removable and joined to its adjacent rails with Split Jaw clamps. All the non-removable switches are clamped to the adjacent rails with Sunset Valley rail clamps. The differing size of the screws holding the Sunset Valley clamps prevents the inadvertent removal of the wrong switch by an enthusiastic take-down crew member. The tools for removing the SVRR clamps are not issued to the crew.

Frog-free stub switch

Remember the "accommodate antique and tinplate trains" design goal? Meeting this meant no frogs or guardrails on the dual-gauge track. How does one build a crossover without a frog? Initially I tabled the issue and just put in removable No. 8 Sunset Valley switches that I could remove and replace with a simple straight piece of dual-gauge track. Thus, I could set aside some time for running antique trains and just swap the track and switches as required. While this worked, it was not the best answer to the problem. One day while installing the dual-gauge straight section, it occurred to me that it just might flex enough to go from a straight section to a curve matching the radius on a No. 8 switch. A bit of experimenting showed that it just might work. My father, Dick Moore, is a retired mechanical engineer so I described my idea to him, gave him some track, clamps, and a ground throw and challenged him to create a prototype.

The result was just what I had envisioned: My dad fashioned the clamps into limiting blocks for rail alignment at each end of the switches travel. Additional clamps were modified to keep the rails from creeping along the ties when moving from one side to the other. To accommodate the increased distance that the switch needs to travel, my dad replaced the standard setscrew in the SVRR throw with a two-inch screw of the same thread. This solution passed its initial tests and was installed onto the layout.

The Sunset Valley ground throw is really not of substantial-enough construction to apply the force needed to work the switch. We found that two hands were required to throw the switch; one to work the throw and one to push the rails over. The ground throw was really only acting as a means to lock in the position of the switch. An appeal to our resident mechanical engineer resulted in the much-heftier ground throw shown. This version only requires one hand to operate and is adjustable.

Trailer storage, setup, improvements

The layout gets packed into a five-foot by eight-foot cargo trailer along with two EZ-Up canopies to keep the rain and sun off of us, a Werner work platform and a pair of wooden stools for a walkover, a couple of folding tables and a pair of toolboxes. The straight sections stow into a rack at the bottom and the curved sections fit two sections to each "shelf" above the straights. The straight section rack is made from two-inch aluminum angle bolted to three-quarter-inch plywood. The curved section rack is made using two-inch aluminum angle bolted to steel strut channel. Since the curved sections are about two feet shorter than the straight sections, there is space above the straights and in front of the curves for four flip-lid crates of freight cars. The legs fit in the space between the straight section rack and the side of the trailer.

Setup is relatively straightforward: If the layout is to be setup inside on a level surface, all the legs are set for the same length and the starting point for the first section is determined. If we are setting up at an outside location, we first need to assess the slope of the ground and determine not only the position of the first section

Tight trailer: *Track sections all fit into a specially constructed rack inside a five-by-eight cargo trailer.*

but the approximate length of the legs for that section.

Once the location of the first straight section is determined, four legs of the proper length are attached and the section is moved into position. After the first section is leveled, two legs are attached to the second section, the section installed and leveled. We use a transit or laser level for getting the level correct. These steps are repeated for the third and fourth sections. The first section for the opposite side is positioned across from the fourth side and leveled. Positioning this section is assisted by a string to gauge squareness and a tape measure for distance. Subsequent sections are installed following the same process as the other side. As each section is placed its distance from the opposite straight section is verified.

When the sides are complete the curved sections are installed in succession. Next rail clamps are installed on the Gauge One rails at each section joint and the sliding joiners are moved across their joints. Finally, the removable switches are installed, the walkover set up, and water buckets and spray bottles are distributed around the track in case of fire.

An experienced crew of six or so can get the track up and running in under two hours. Setup has been done with a minimum of three people, but it is lot of work. Taking the layout down and packing it into the trailer usually takes about an hour.

Over the years we have made some additions and improvements to the layout. As mentioned earlier, we replaced the original plywood top with a lighter Dibond top. At the same time we increased the spacing between the tracks to allow larger locomotives to pass without interference and cut steaming bays through the Dibond in the locomotive yards to assist in lighting and viewing wicks on alcohol-fired locomotives.

No ducking: *A walkover with railings eliminated the need to duck under the track to get inside the oval.*

For a few years we used a three-foot turntable at some events. The turntable turned out to be too short for Berkshires, GS4s and Cab Forwards, so we replaced it with a simple rectangular section laid with straight tracks.

To keep rolling stock from rolling off the edge of the layout we use wheel stops. This failed to prevent a runaway train from crashing to the floor. Fortunately, a strategically placed water bucket limited the damage. Instead of the wheel stops, solid fences were fashioned from one-quarter-inch plastic sheet and bolted to the ends of each side.

Another item is the walk over, constructed of a Werner work platform and SpeedRail railing. A pair of wooden step stools copied from a Jersey Central prototype make the first step up onto the walkover a bit less strenuous.

This portable layout gets used at between six and seven events each year and has been providing a reliable platform for live steam operations for 12 years. Over the years, we have had very few incidents that can be attributed to track problems. The layout had held up well requiring few repairs beyond the occasional replacement of burned ties. The layout as it exists today does a fine job of meeting our original design goals.

Going backstage at a Toronto steamup, held in a Roundhouse

Text and photos by Jeff Young

Roundhouse: *Above, the portable layout in a stall. Below, CNR 6213, a 4-8-4, on static display outside.*

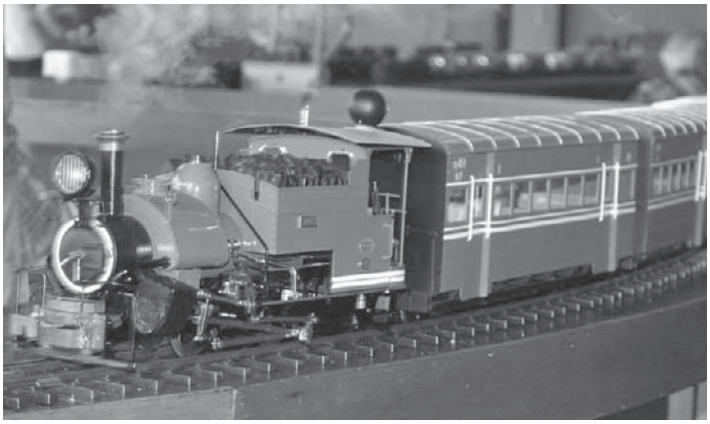
Think about it — what could be more appropriate that to have a steamup inside a railway roundhouse?

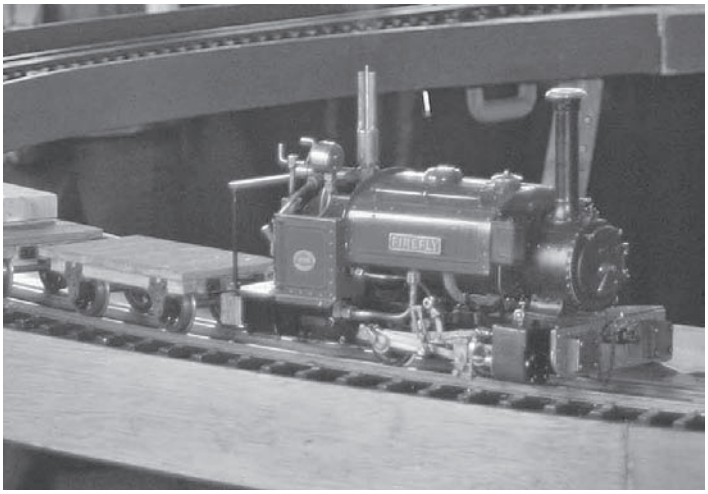
Canadian Pacific Railway's 32-stall roundhouse in downtown Toronto was built in 1931 to service the fleet of steam locomotives hauling passenger trains out of Union Station. In the centre of the roundhouse was a 120-foot turntable. In the late 1980s, Canadian Pacific shut down the roundhouse and it was then sold to the City of Toronto. About one-third of the roundhouse was taken down and the turntable was removed to build an underground parking garage for the Metro Toronto Convention Centre.

The roundhouse was then rebuilt painstakingly brick-by-brick and a new turntable pit then poured. The air-operated turntable was restored to operation and all the radial tracks from the turntable were relaid (although the roundhouse is no longer connected to the nearby Union Station trackage).

The Toronto Railway Historical Association has a number of pieces of rolling stock on display on the roundhouse trackage, including Canadian National Railway 6213, a U2g Northern class 4-8-4 locomotive. The museum has a rod-drive gas mechanical locomotive

Spectators: *Dawn Brightwell working on her coal-fired locomotive draws a crowd.*





Steam locos: *Above, a Darjeeling and Himalayan. Right, the 7/8ths-scale coal-fired 'Firefly.'*

in service to move the rolling stock displays around the site. Also part of the museum are the water and coaling towers, a fully restored interlocking tower, a suburban station and other railway buildings of historical significance from the Toronto area. The entire facility is now known as Roundhouse Park.

The Toronto Railway Historical Association uses three stalls of the roundhouse for the restoration of rolling stock and for a temporary museum of smaller railway artifacts. Another interesting feature of the museum is a rather large 7½-inch gauge miniature railway line with two steam locomotives and a diesel to haul visitors around the park. The miniature railway has its own turntable and the track, interestingly, crosses a number of the radial tracks. The other occupants of the roundhouse are the Steamwhistle Brewery and a furniture store. Great efforts have been made to maintain the historical integrity of sections of the roundhouse occupied by these two tenants.

Each year, during the last weekend in May, the City of Toronto runs an event called "Doors Open Toronto" in which spaces that are not normally open to the public throw open their doors for tours and special events. Both the Steamwhistle Brewery and the Toronto Railway Historical Association have been active participants in this event for the last 10 years. The association provides rides on the turntable and the miniature railway, as well as tours of the various historic buildings in the park. The Steamwhistle Brewery also offers tours and has entertainment and food vendors on its patio. Most importantly, the brewery hosts a model railway show in their event

Steamers: *Above, Mike Walton at the radio control of his 16mm-scale train. Right, Peter Foley tends to his Maxwell Hemmens 'Ogwen.'*

Riders: *Toronto Railway Historical Association's 7¼-inch gauge railroad gets a workout each year.*

space which spans three of the roundhouse stalls.

For the past five years, our local small-scale live steam group (Wednesday Night Water Boilers) have participated in this model railway show. We take our modest portable layout (originally constructed by hobbyist Tom Bowdler of Brockport, N.Y.) and run live-steam locomotives for two days. It is not your average model train show crowd, but a rather diverse group of visitors, many of whom have never seen a small-scale live steam locomotive before. We are continually amazed by the excitement and interest visitors show in our little corner of the model-railway hobby.

Finally, I should mention that our hosts, the fine folks at the Steamwhistle Brewery, are very generous with samples of their fine Pilsner beer throughout the event. Which is perhaps another reason we keep coming back year after year!

A 1:29-scale live steamer built from scratch — Central Pacific's 1860s-era C.P.

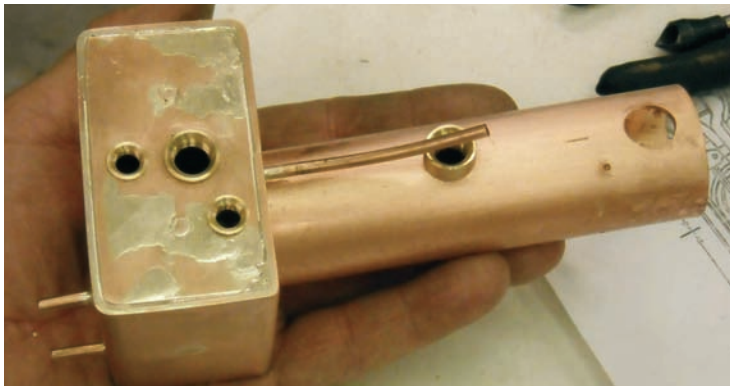
Huntington

Text by Bill Allen; photos by Mike Martin and Bill Allen

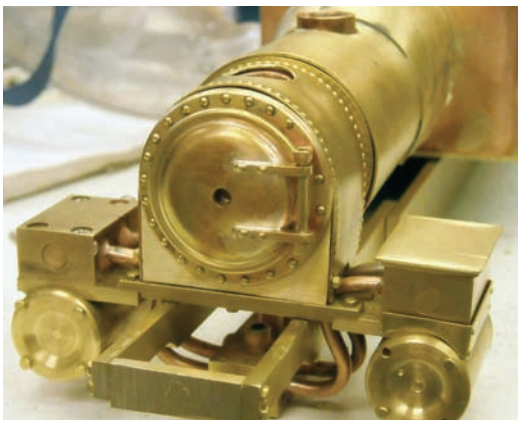
If you are lucky enough to visit the California State Railroad Museum in Sacramento, you will see the massive Cab Forward, Southern Pacific No. 4294, and next to it, the tiny Central Pacific "C.P. Huntington" (the Southern Pacific predecessor company's first locomotive). On my first visit there, I was struck by the "Huntington's" beauty and balance. I decided that if I were to ever build a model engine, this would be the one.

A while later, I started to sketch out plans to build one to scale, but couldn't figure out how to do it. I shelved the project and built another model. A few months later, I made a trip to Sacramento and got some original drawings from the museum library and, at home, started on the design again to no avail. Three completed models later, I decided again, to give it a try. The challenges I was facing were:

- Because the boiler is between the large drive wheels and a boiler wrap is necessary, the maximum outside diameter of the boiler is 1¼-inch. This would limit the run time to less than five minutes and there is no tender to carry extra water. Nor would there be room for an axle pump if there were.
- The single drive-axle configuration requires support in the front and rear without taking away from the weight on the drivers. The prototype ran on the same tracks as the Big Boys, so track radius was not a problem. This allowed the rear truck to be fixed to the frame and only sprung at the wheels. In a Gauge One scenario with our small radii, both the front and rear truck would need to be sprung and sliding, yet controlled enough, to prevent snaking and porpoising.
- The four-bar crosshead would be difficult especially in this scale.



Boiler: *Left, T portion ready to solder (nuts removed after soldering). Right, T-box and boiler tube ready for soldering.*



Wrap, smokebox: *Left, soldered boiler has wrap attached. Right, smokebox front detail and S-shaped tubes.*

• To match the original I would need to make the cow catcher. cab, and rear deck out of wood.

• The "Huntington" is a very small standard-gauge locomotive. The 1/32- or 1/29-scales are normally used for standard gauge models, but this one would be so small that everything would have to be miniaturized and shoe-horned in place.

Design work

I started with the one thing I couldn't make, the wheels. They scaled out to 1.69-inch in 1/32-scale and 1.93-inch in 1/29. The only wheels I was able to find in the 1/32-scale were 15-spoke, which would not work with the counter weight configuration. I was able to find some 16-spoke wheels (the same as the original) which would machine down to the size I needed, so I decided to go with 1/29-scale. I ordered the wheels and started my drawings. I took the drawings of the original and scanned them into the computer and then printed them to a 1/29-scale version by using the percentage tool in the printer setup software. My intention was to make everything to exact scale. The scale printout made it easy to measure and make the parts as I went along.

I had an idea on how to design the boiler, so I posted a question on an Internet forum to get input from fellow scratch builders. To say the least, there was some skepticism. My plan was to build a form of a T boiler (actually an L) with a rectangular section which would completely fill the inside of the cab, soldered to the small boiler tube thus substantially increasing the water volume above the burner tube. The main concerns were the ability to make steam and the strength of the rectangular section. I was pretty sure it would steam, but I took heed to the strength warnings and used heavy material (.080-inch copper) with stay rods.

As I am a member of the Railroad Museum, I contacted officials there and requested a visit behind the restraining ropes. They were gracious enough to allow me to go in before the museum opened and inspect the beauty. I had selected some paint chips for each of the colors, from the photos I had, and compared them to the actual paint. I took close-up photos of the back side and underneath suspension and articulation, as well as shots of the detail parts, striping and lettering.

Chassis

I had some leftover parts from an Accucraft Trains Co. "Ruby," so I started with them. The burner was the perfect size for my needs, so I ordered the correct size copper tube for the flue.

I also had some used valves and eccentrics. The eccentrics were worn out but I turned them down on the lathe and fit skateboard bearings on them. I now never have to lube them and they should last forever. The stroke is very short on the "Huntington" so the "Ruby" cylinder valves needed to be cut down. This

Huntington history

Collis P. Huntington is a landmark name in U.S. railroad history — he was one of the Big Four (who also included Leland Stanford, Charles Crocker and Mark Hopkins) who founded the Central Pacific Railroad, the western effort of the Transcontinental Railroad. Later, Huntington also co-founded the Southern Pacific Railroad (which in 1885 took over the Central Pacific) and was the SP's president in 1890-1900. He also led the completion of the Chesapeake and Ohio Railway from 1871-1880.

The locomotive "C.P. Huntington," a 4-2-4T, was originally purchased by the Central Pacific in 1863 as its No. 3, along with its sibling engine — "T.D. Judah" (No. 4), a 4-2-2 — from Cooke Locomotive Works of Paterson, N.J. Huntington (the man) wanted to purchase something larger, but because of the Civil War effort, only these two small locomotives were available (both were originally built for railroads that couldn't afford to pay for them). After ocean shipment around Cape Horn, the Central Pacific used the locomotive starting on April 15, 1864, during construction of the Transcontinental Railroad.

On Feb. 5, 1871, Southern Pacific (SP) — which was also owned by the Big Four — purchased "C.P. Huntington" from the Central Pacific, and used it in light service in Northern California. It was rebuilt twice, first in 1873 with new valves, and again in 1888 with a new boiler built by SP's Sacramento shops. Also in 1888, the locomotive was put on public display for the first time in Sacramento.

In SP's 1891 renumbering plan, "C.P. Huntington" was assigned road No. 1001. The locomotive was placed in storage for some time until it was rebuilt for use as a line-side weed burner in 1901. Its use in weed abatement proved unsatisfactory and the locomotive was again removed from active service.

In 1910, "C.P. Huntington" was again rebuilt and it was then kept at SP's machine shops where it remained for a few years. The locomotive was nearly scrapped in 1914; it was spared this fate by SP management so that it could be displayed at San Francisco's 1915 Panama-Pacific International Exposition after a cosmetic restoration.

"C.P. Huntington" is currently on static display at Sacramento's California State Railroad Museum. The unique design of the "C.P. Huntington" inspired the appearance of "The Little Engine That Could" in most storybook renderings.

— *B.A.*

On display: *Central Pacific's 'C.P. Huntington' is one of the major exhibits at the California State Railroad Museum in Sacramento. Photo courtesy of the California State Railroad Museum.*

was done with my cross cutting sled on the table saw. I then drilled new holes in the valves and made one-half-inch cylinders to fit on the newly formed valves.

I had to lower the reverse valve to clear the smoke box and did this by replacing the straight tubes with "S" shaped ones. The crosshead bars are 1/16-inch tool steel attached with 00-90 bolts. The clearance hole for 00-90 is .052-inch, so there wasn't a lot of room for error in the .062 material. Wheels were turned from steel stock in order to get the correct size and profile. The cow catcher was made from maple with brass reinforcement.

Boiler and stack

The boiler parts were cut, formed and silver soldered in three sessions. The wagon top boiler wrap was formed from .025 brass sheet. Accent parts were attached with 00-90 screws with holes tapped into the boiler wrap. Insulation is 2mm Fiberfrax refractory ceramic fiber.

The diamond stack, which is also a chuff box, was made from .025 brass sheet. My fellow hobbyist Dennis Mead did the drawing for the pieces in a computer-assisted design (CAD) program and print-

— *Continued on Page 30*

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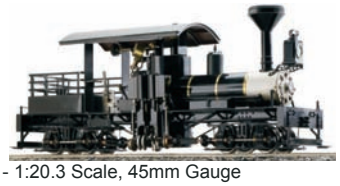

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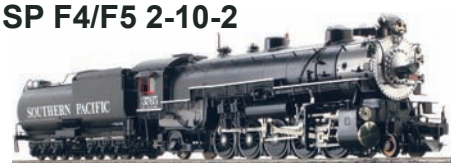

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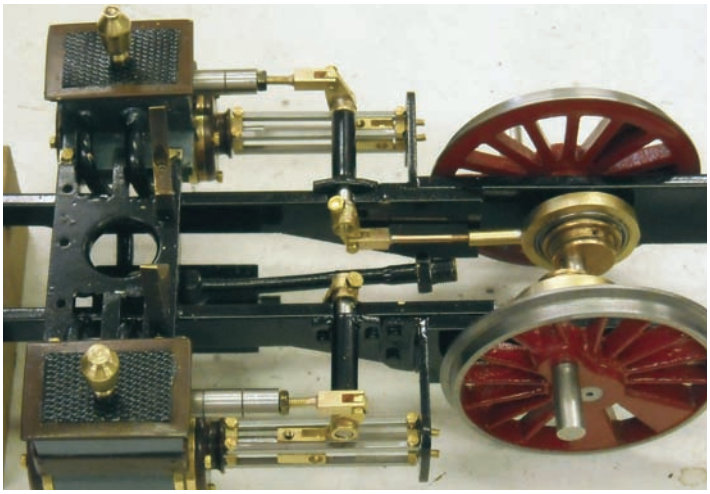
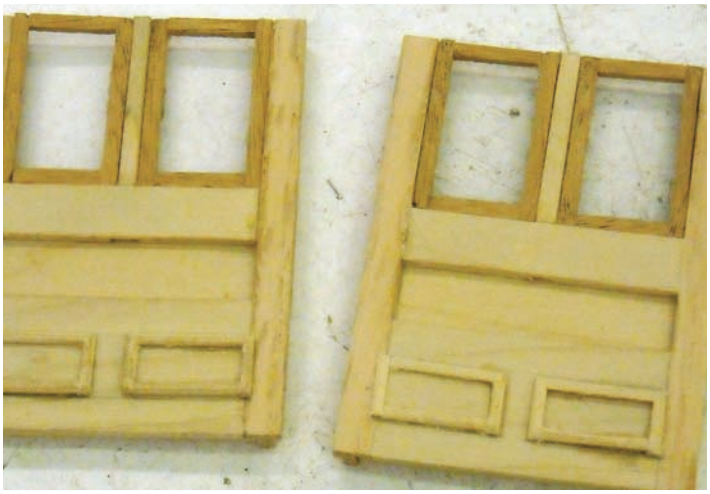


Drivers: *Ball-bearing eccentrics connect to the modified 'Ruby' valves through bell crank links.*



Cab: *Side panels are formed with maple. Window frames are mahogany and glazing is polycarbonate.*

Front, back: *Left, cow catcher shows interlocking joints. Right, bunker was formed from brass.*

— Continued from Page 27

ed them out to scale. I glued the printouts to the stock and used the band saw, one-inch belt sander and oscillating spindle sander to form the pieces and then silver soldered them together.

The chuffer is made by sealing off the outer section of the stack and drilling a hole in the inside which lines up with a hole in the exhaust tube. There is also a small hole in the bottom which allows the condensation to drain back into the stack. This creates a nice low tone chuff which is very realistic sounding.

Cab and bunker

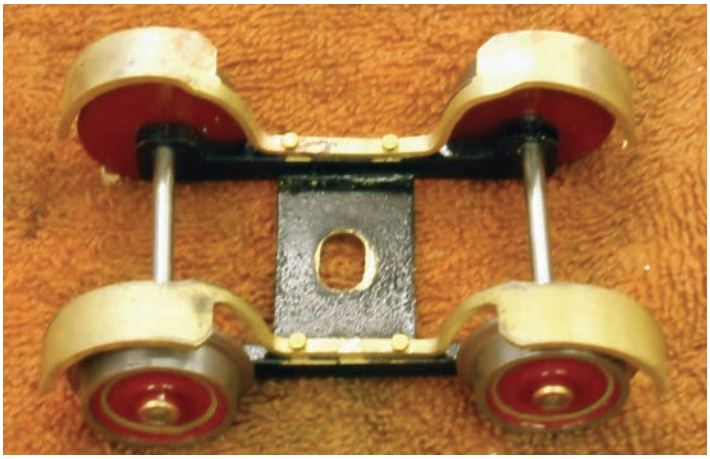
The cab has maple panels and oak rails; window frames are mahogany. From the photographs I had, I thought the windows were oak but the inspection of the original showed them to be mahogany. The hinged roof is maple. Since I filled up the cab with the boiler and wanted to have radio control, I needed to get creative on the component placement. The sight glass and pressure gauge needed to be seen, so they went between the cab and bunker. Everything else is either in the bunker or under it.

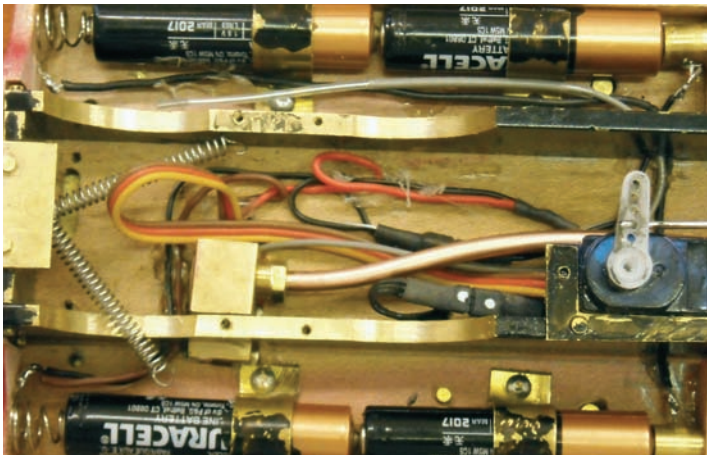
The pass-through lubricator, gas tank and radio-control receiver are nestled together in the bunker. The lubricator warms the gas tank up but is insulated from the radio receiver. The batteries, reverser servo and electrical connectors — as well as the steam line connection from the lubricator to the engine — are under the rear deck. The throttle is manual and the valve lever is hidden under the cab roof as is the on/off switch which controls the RC and six-volt headlight

Paint and decals

I was lucky to find the prototype's brown color in high-heat paint. The gloss wasn't quite right so I went over it with clear engine enamel after it had tacked up. I found the right red in engine enamel. The Russia iron was a different story. I did online searches on the subject and actually found some articles by Kyle Wyatt, curator of history and technology at the state Railroad Museum. I met with Kyle at the museum and he showed me the different boiler finishes.

Russia iron is actually gray in color, but reflects the blue sky when outdoors and becomes very blue. I





Wheels, works: *Left, pilot truck is low slung. Right, under rear truck, batteries, servo, lubricator steam line.*

tried various grey metal finishes, but the blue didn't come out in the daylight. I noticed that the engines in the museum were all painted with a very fine metallic paint to match the color indoors.

Using the paint chip I had selected at the museum, I started my search and found the Testors "Model Master" Silver Blue Metallic paint, which is almost a perfect match.

The decals were the finishing touch. I took a photo of the bunker emblem and Dennis scanned it into CAD. He then used the same cone formula to create the stack lines and we measured out the other shapes to get the proper scale.

We printed a sheet of paper and cut everything out to ensure the correct fit and then sent the file off to Stan Cedarleaf of Cedarleaf Custom Decals in Dewey, Ariz. Stan was able to match the "C.P. Huntington" script and green and gold colors to photographs I took at the museum.

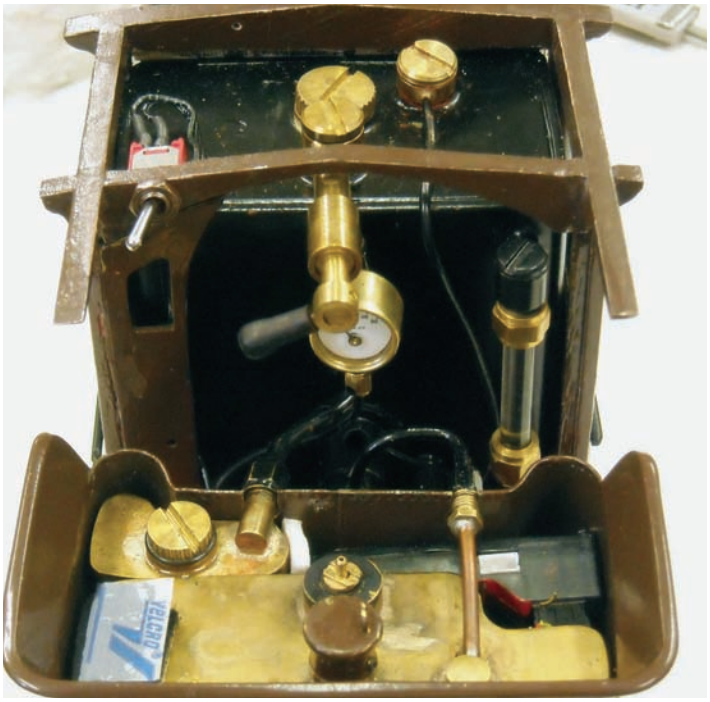
Trial run

Finally, after the decal work was done, it was time for the trial run. Most locomotives have a drive ratio of around 2:1, which means the diameter of the wheel is twice the stroke of the cylinder. This reduces the torque by 50 percent. The "C.P. Huntington" has a ratio of almost 4:1 (54-inch wheel and 15-inch stroke).

I hedged a little on the cylinder stroke (thus increasing the crank pin diameter and torque), and ended up with just under 3:1. I also hedged on the bore, which I increased from the scale .350-inch to one-half-inch.

My hope was to have enough torque to pull a few cars and the speed potential that the original would have had. I still wasn't 100 percent sure the boiler design would work as well as the lubricator, fuel system, radio control and the like.

It was a cold day, so it took a little while for it to get up to 40psi, but once I opened the throttle and cleared the condensation from the cylinders, the pass-through lubricator warmed the fuel tank up to where there was a noticeable increase in burner volume. I hooked up three small cars and went around the track one time and then added two more cars. The five cars didn't seem to slow it down a bit and it ran smoothly through the switches and gates.



Controls: *At the top, the on/off switch for radio control; the throttle is in the center above the pressure gauge, and the sight glass is on the right. In the bunker, lubricator is left front, RC receiver right front and fuel tank in the rear.*

I had the throttle about half opened and was easily able to control the speed and direction with the single reverse servo. I had to turn the gas down as the tank warmed up, which is what I expected would happen. After 15 or 20 minutes, it ran out of gas with a little water still visible on the sight glass.

My model of the "C.P. Huntington" definitely has exceeded all of my expectations.

A 'stellar runner straight out of the box' Accucraft UK's new 'PEVERIL'

Text and photos by Paul Hagglund

I first saw an Isle of Man, Beyer Peacock loco in the model press some years ago when Accucraft Trains Co. first introduced the electric version. I found the loco very interesting, but out of my scope as a live steamer since it was, well, electrically powered. Several years later, a friend was having a "fire sale" on some books he wanted to move out of the house, and one of these was a pictorial on the Isle of Man railways and tramways.

This time, I took the bait and began reading more about the island's railways in general and the Isle of Man Railway Co. specifically. After Accucraft UK announced production of "Peveril" (originally to be offered as "Mona" and "Peveril"), I contacted my dealer and put my name down, and I've been anxiously awaiting the loco ever since.

No. 6: *Accucraft UK's 'Peveril' was recently delivered to hobbyists.*

The model

Accucraft UK Ltd. of Shropshire, Great Britain, chose to model No. 6 "Peveril" in its rebuilt form with the "medium" boiler and side tank configuration. The Indian Red livery it carries is representative of the standard Manx livery from 1947 until 1965. "Peveril" worked regularly on the Peel line until the late 1950s when a weak boiler confined the loco to station pilot and banking duties at Douglas. Retirement finally came in 1960, and the loco spent most of its time in storage with short periods of public display until cosmetically restored in 1994.

The model arrived well packed and in the usual cocoon of foam and packing tape in a heavy red cardstock box. Unwrapping was a chore of a few minutes, and the locomotive that emerged was what

I waited nearly two years to see. The model is simply stunning, and I spent a great deal of time just admiring the model and taking in its exquisite lines. From the gracefully arched cab to the gentle radii of the frame cutouts below the cylinders, "Peveril" is most certainly a feast for the eyes.

Despite its rather small proportions the cab is quite airy and the controls fall neatly to hand. The gas tank resides in the rear bunker with the control valve in the left hand doorway instead of Accucraft's more normal position in the left hand side tank. The change of location was affected to reduce pressure surges from temperature change, and from my experience, this was very successful.

A tall water glass stands on the left side of the boiler, though only its bottom third is used if priming is to be avoided. The pressure gauge sits directly in front of the lubricator and is easy to read without standing on one's head. Per most of Accucraft UK's offerings, the lubricator cap sports a "T" handle and is supplied with a longer tommy bar to keep from frying one's fingers.

Similarly, a tommy bar is provided for the lubricator drain. Care must be taken to orient the bar ends on the drain fore and aft before running, otherwise they foul the coupling rod. The boiler holds a comfortable maximum of 180ml (6.1 oz.) of water in operation, which should outlast the gas tank according to the manual.

The model is very nicely detailed and captures the distinctive appearance of the Manx Peacock very well. The Indian red paint was matched from a sample held in Isle of Man Railway stores and is an integral part of the railway's identity in the post war years. The lining is nicely rendered and opaque and completes the appearance of the loco.

The lining finish is the finest I've seen to date on an Accucraft product, and if it is an indication of things to come, future customers are in for a treat. A dummy Wakefield mechanical lubricator stands in repose on the left hand running plate. Even the oil cans behind the front buffer beam are in evidence. The whole model is adorned with rivets where appropriate, including the riveted patches on the side tanks and the rivets that secure the driver counterweights on the prototype.

Mechanically, "Peveril" has the familiar piston valves and piston reverser that are a staple of Accucraft's products. It shares valves and cylinders with the model of Manx Northern/Isle of Man Railway's Caledonia released last year. The drivers are sprung and comprise insulated cast brass centers and stainless steel tires. The distinctive Bissel pony truck is also sprung on a stainless steel plunger, though no lateral motion control is provided. Additional adhesive weight is provided by a large lump of milled brass between the frames behind the rear axle.

I prefer manual control, but I know that a number of steamers prefer to add radio control. A preinstalled radio control option is available in the UK, but it is a single channel arrangement acting only on the regulator. Space is rather at a premium with the fuel tank in the rear bunker and a large weight under the bunker between the frames, though I would guess that a two-channel system could be fitted with a bit of creative component placement.

The run

My loco conveniently arrived a few days prior to a Puget Sound Garden Railway Society steamup at the Georgetown Powerplant Museum in Seattle. I gave the loco a good going over the night before and lubricated the axle-boxes, crank-pins, and eccentrics in anticipation of the first run. The run day was about

Accucraft UK's 'Peveril'

- **Loco type:** Three-foot gauge, 2-4-0T, Beyer, Peacock & Co. 1875, Builder's No. 1524. Cylinders: 11-inch diameter, 18-inch stroke. Drive wheels: 45-inches. Boiler pressure: 160psi. Tractive effort: 4960 pounds. Weight: 20½ tons.
- **Scale:** 1:20.3, 45mm gauge.
- **Length:** 14⅛ inches.
- **Height:** 6⅛ inches.
- **Width:** 4¼ inches.
- **Boiler:** Single center flue.
- **Water capacity:** 180cc (operating).
- **Fuel:** Butane.
- **Min. radius:** Three feet.
- **Cylinders:** Two outside cylinders with inside piston valves.
- **Valve gear:** Piston reverser simulating Allen straight-link valve gear.
- **Fittings**: Throttle, water glass, Goodall valve, twin safety valves, pressure gauge.
- **MSRP:** $1570.

Digital resources

- **Isle of Man 15mm Modelers Group:** https://sites.google.com/site/iom15milgroup/
- **Isle of Man Steam Railway Supporters' Association:** http://www.iomsrsa.com/

A brief history of 'Peveril'

While not a part of the United Kingdom, the Isle of Man — a 221-square-mile (572 square-kilometers) island nestled in the Irish Sea between Great Britain and Ireland — is a "British Crown Dependency" meaning that it has local rule but the United Kingdom provides foreign relations and defense.

The Isle of Man Railway was the first of the rail lines built on the island. The original mainline crossed the island from Douglas to Peel and opened to traffic on July 1, 1873. The south line from Douglas to Port Erin opened the following year. The Manx Northern Railway and Foxdale Railway were finished in 1879 and 1885, respectively, completing the three-foot gauge, steam-powered system. The Foxdale was operated by the Manx Northern until 1905 when both companies amalgamated into the Isle of Man Railway Co.

Initial motive power for the Isle of Man Railway was provided by Beyer, Peacock & Co. of Manchester, in the form of three 2-4-0Ts. The locomotives were based on a design originally produced for a railway in Norway in 1866. A further six locomotives arrived between 1874 and 1896, the last two carrying higher-pressure boilers.

Static display: *Built in 1875 by Beyer, Peacock & Co., 'Peveril' was cosmetically restored in 1994 and is on display at the Isle of Man's Port Erin Railway Museum. Photo by Jim Linwood via Flickr.*

Four additional locos with bigger boilers and side tanks were delivered between 1905 and 1910. The larger locos were quite successful and it was decided to rebuild several older locos to the larger specification. Nos. 4, 5, and 6 were selected for rebuilding to "medium" specifications with "Peveril's" rebuild coming in 1911. The design culminated with 1926-built No. 16 "Mannin," the largest and most powerful 2-4-0T on the line.

Though remarkably standardized for a narrow-gauge railway, each of the Manx Peacocks developed a slightly distinctive appearance with the passage of time. The ever budget-conscious IMR kept expendable parts like side tanks in use by patching, much like the Denver & Rio Grande Western did with cabs and tenders. Ardent fans (known in some circles as "rivet counters") can tell locomotives apart by their distinctive alterations, even in less-than-clear photos.

— P.H.

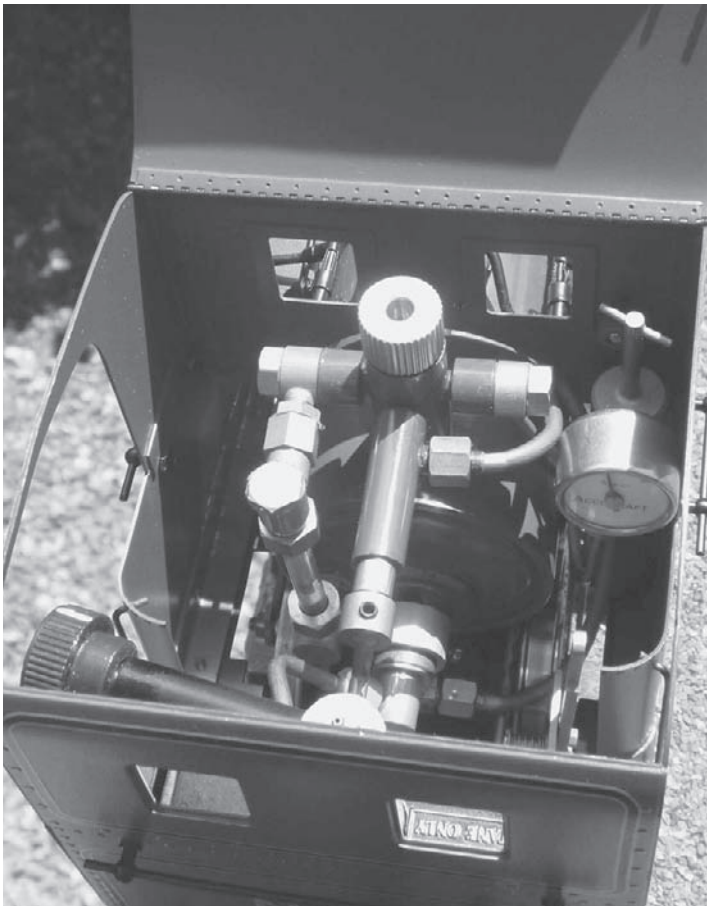
as perfect as a day could be for a May steamup with sunshine and a temperature around 60 degrees. I filled the boiler with 180cc of water, just over three-quarters of its capacity, then topped up the lubricator and filled the gas tank.

Prior to lighting, I loosened the air intake adjustment collar so I could find the proper air/fuel mix for conditions. The loco lit off after a couple of tries and the fire flashed back onto the burner. A bit of fiddling with the intake collar quieted the burner and made the flame more stable. The air adjustment collar is a fine addition that helps make the loco more efficient and quieter for an enhanced overall experience.

According to one report, "Peveril" is the first loco to carry the "second generation" burner along with a new, smaller gas jet. I have not dismantled the burner to examine the changes, but the end result is a much more controllable burner.

One trick that seems to help with lighting locos with this type of gas tank (outlet on the top of a tall turret) is to stop filling immediately after the gas starts to vent out the filler valve. This seems to keep from introducing as much liquid butane into the line, which has the secondary (and desirable) effect of reducing the probability of a gas line obstruction.

After about seven interminable minutes of steamup time, the pressure gauge showed 20psi, so I decided to start warming the cylinders. After a few forth and back maneuvers, the condensate cleared and the loco moved off gracefully toward the main-



Cab: *Inside, quite airy; controls fall neatly to hand.*

line. This is definitely a high-stepping machine that is very elegant and proper when under way. The large drivers and its pleasant stock exhaust beat mark its stately progress during the run. Even moving out at a brisk pace, it never seems harried.

It should be noted that this is a very clean loco. Despite a fair amount of condensate coming from the cylinders, nearly all of it drained out the bottom of the smokebox. The safety valve snaps open and shut instead of weeping, which adds greatly to the satisfaction and atmospherics of the run in my book.

Early in the run, "Peveril" showed that it can certainly move at a sprightly pace with large drivers and a free steaming boiler to keep things moving. After a couple of laps, I had found a good balance between fire and steam demand for scale speed running. "Peveril" seems quite happy to run on about 20psi with a typical Isle of Man mixed train with a bogie coach and a few freight wagons making a scale 20mph or so.

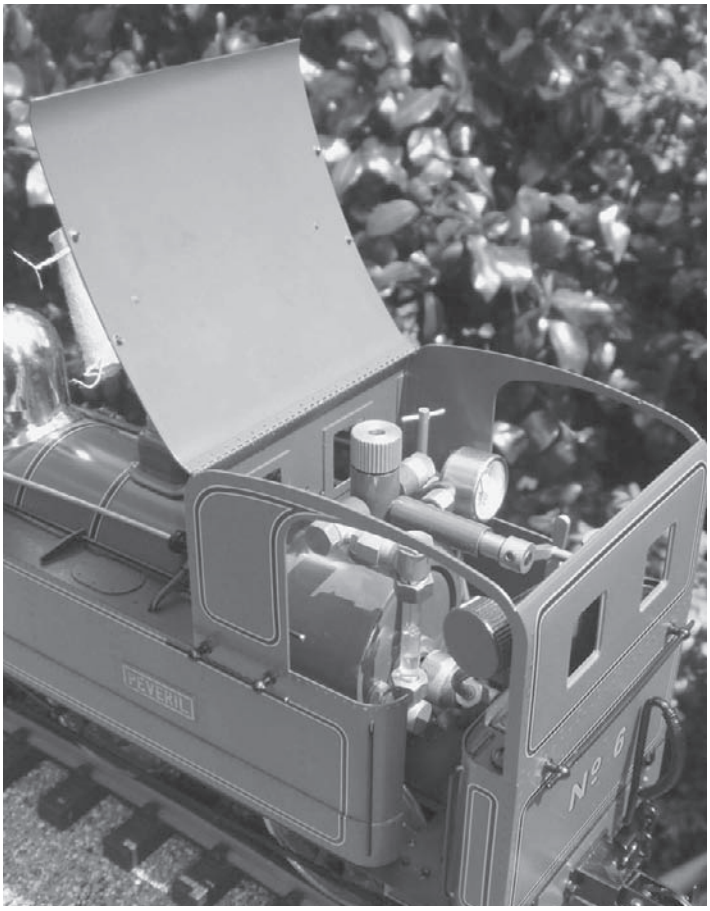
The loco also has the power and steaming capacity to handle a heavier train at higher speeds, though to date, I have not had the opportunity to give "Peveril" a full-load test. I would imagine that the model is quite capable of handling rather more than the prototype would have been asked to handle. From the first movement, the gas lasted 30 minutes giving a total burn time of 37 minutes. During both test runs, I added water through the Goodall valve twice. The first top up was done about 10 minutes into the run each time, and the second was about 12 minutes later.

I have found that my Accucraft "Caledonia" runs more steadily with a relatively consistent water level, and the same appeared to be true based on the two test scenarios with "Peveril." While refilling the water, the sight glass developed a bubble. I tend to run more by feel than by a sight glass, but someone who prefers a sight glass could fit a blowdown on the bottom to improve the accuracy of the water glass.

Points of improvement

Peveril is modeled essentially in the locomotive's current state on static display in the Port Erin museum with a couple of minor differences. The vertical rivet rows on the side tank patches are absent on the model, as are a couple of small patches that were added late in "Peveril's" career (after 1956 according to photographs). The buffer beams and nameplates are painted a bright red on the prototype and are rendered as Indian Red on the model. It is interesting to note that the plumbing (feedwater lines and the like) currently on the loco is actually comprised of life-expired parts from other locos.

If one were so inclined, the existing plumbing could be modified to reflect "Peveril's" appearance in service at a particular time between 1947 and 1960. Some minor livery changes were also made over that period of time, which is certainly beyond the scope of this review. The canvas draft dodger curtains



Gas adjustment valve: *Unique left-hand control.*

that reside atop the cab are a bit coarse in texture, but they could easily be replaced by something that looks a bit less like an elastic bandage with little effort. A "Peveril" owner could spend a nice stimulating evening (or two) poring over the photos of the loco in service to find the changes.

My only minor mechanical quibble with "Peveril" is that the springing on my engine's pony axle is quite heavy as stock, and takes a fair amount of adhesive weight off the main drivers. In fact, the pony truck held the lead drivers off the rails, which caused their flanges to climb the rail during testing on a five-foot radius curve. The pony truck also did not like returning to center on straight sections which caused further binding on the rails.

I discovered that the shaft of the suspension post on my particular model had some turning marks that hung up on the bushing in the top of the pony truck. I subsequently polished the post, which seems to have solved that problem. I have also reduced the spring pressure to reduce the tendency to bind, and this too seems to have been successful.

Submitting a question to other "Peveril" owners on the Isle of Man 15mm Scale Modelers Google group regarding the flange binding, I found no one there who seems to have the same issue. From what I have read, other "Peveril" owners have had very satisfactory experiences, which speaks well of the quality control.

I must say that I am thoroughly pleased with the product that Accucraft UK delivered in "Peveril." It is a stellar runner straight out of the box, and makes an equally fine sight while on display between runs. I have made a few minor tweaks to better represent "Peveril's" appearance during my chosen modeling period, 1947-1950. I modified the water feed lines to match period photographs and painted the stainless steel tires flat black. I have a few more small items I want to change to satisfy my own rivet-counting tendencies, but the model is phenomenal straight out of the box.

Peveril was so well received in fact that only a few models remain in dealer stock at this writing (mid-June 2012). Accucraft UK announced even before delivery that "Peveril" would not be produced again, but left the door open to model other Isle of Man Railway 2-4-0Ts. I would love to see one of the small boilered locos produced in the earlier Holly Green livery, but time will tell what Accucraft may model next.

With the upcoming re-release of Isle of Man coach and ballast wagon kits from DJB Engineering, the new Cleminson six-wheel coach kits to be released soon, the range of coaches marketed by Accucraft, and the goods wagon kits from IP Engineering, an accurate Isle of Man Railway train can be assembled to compliment "Peveril." These are exciting times for the Manx modeler, and I am really anticipating the sight of "Peveril" (and hopefully other Manx Peacocks) appearing at steamups for years to come.

One off from a small run: backdating the Cab Forward

Text and photos by Alan Redeker

What should have been a straightforward effort involving a little paint and a detail or two — a project to backdate a Southern Pacific AC-6 cab forward from a 1955 end-of-service appearance to a gray boiler 1930 "as-delivered" locomotive — ended up taking on a life of its own. And I'm a dyed-in-the-wool Southern Pacific fan who remembers seeing cab forwards in action, so one would assume that a 1930 backdate would be right up my alley and easily done.

1930: *SP photo of AC-6 No. 4126 after setup.*

The Southern Pacific AC-6 cab forward project started in 2008 when Accucraft Trains Co. of Union City, Calif., introduced the prototype of its Southern Pacific F-4 2-10-2 at the National Summer Steamup in Sacramento. Two East Coast miscreants "borrowed" the Vanderbilt tender from Cliff Luscher's F-4 and put it behind my AC-12 cab forward and asked, "What does this remind you of?" When I said, "A flat-face cab forward," Dwight Ennis of NPC No. 21 fame helpfully suggested that to get the proper flattening that I should calculate how fast to run my AC-12 into a concrete block.

Nonetheless, the flat-face subject had then been well and thoroughly broached. Subsequent early cab-forward research showed that in addition to the Vanderbilt tender, there were several opportunities to use 2-10-2 components to produce an accurate 1950s "flat face" cab forward.

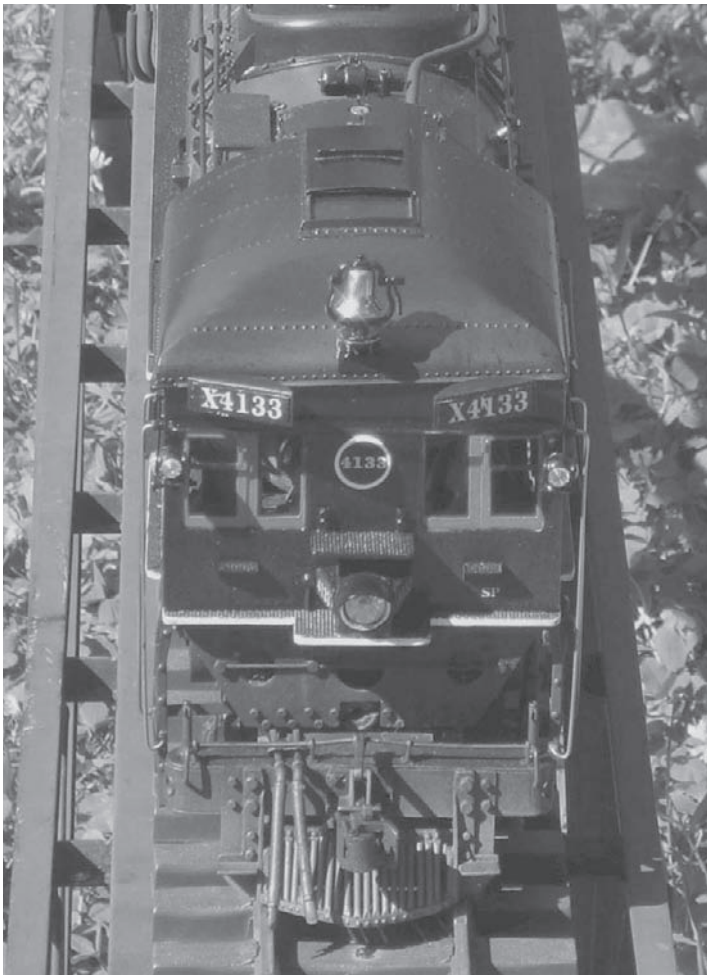
Background

In 1927 the Southern Pacific determined that while its 63-inch driver, 2-10-2 and 4-10-2 locomotives were faster in moving tonnage over Donner Pass in the Sierras, they were not a long-term solution because their long wheelbases were regularly turning over rails on the tight curves. As a trial, SP converted one of its slow-moving 57-inch driver compound Mallet Consolidation (MC) class 2-8-8-2s to simple operation and found that it could move the same tonnage as a 4-10-2 almost 50 percent faster - and not turn the rails over.

After a second more complete conversion was done in early 1928, SP placed an order with Baldwin for 10 simple 4-8-8-2 Articulated Consolidation (AC-4s) with 63-inch drivers, to be delivered later in 1928. (Class designations AC-1 through AC-3 were reserved for conversion of existing MC class locomotives.) This was followed by an additional 15 units in 1929, designated class AC-5.

Southern Pacific then made some design upgrades, increasing boiler pressure to 250psi, improving weight on the slippery rear engine by relocating the air compressors and feed-water pump to the smoke-

1955: *Model of No. 4145 after its last shopping.*



1930: *Model of No. 4133 as delivered.*

box door, moving the throttle and linkage to the engineer's side and lengthening the engine 15-inches (with a 10-inch longer cab for better arrangement and more room for the crew).

Twenty-five of the revised design cab forwards were ordered for delivery in 1930 and 1931, designated as class AC-6. The upgrade was so successful that SP eventually placed orders with Baldwin for 169 cab forwards using the same mechanical configuration (delivered over a 15½-year period). While cabs, frames, drivers and tenders evolved, locomotive specifications remained virtually unchanged — from AC-6 No. 4126 in 1930 through the last AC-12 No. 4294 in 1944.

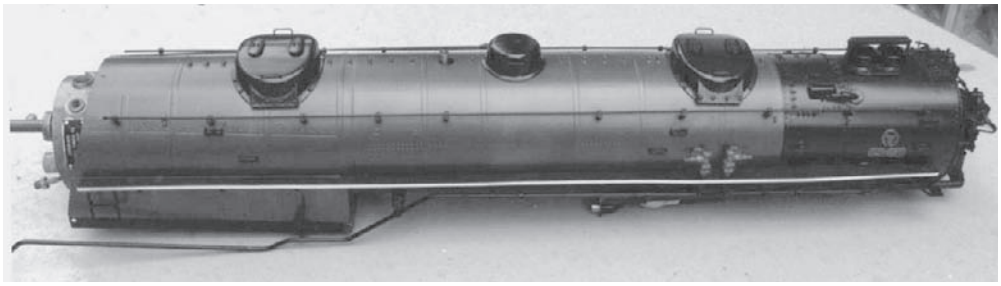
For modeling purposes, the immediate and obvious difference comparing an AC-6 with a later AC-12 is the riveted "flat face" cab plus a Vanderbilt tender. After obtaining copies of SP's 1½-inch scale erecting diagrams from the California State Railroad Museum and from cab-forward expert and author Dr. Robert J. Church, it was determined that a riveted model cab could be done with a major rework of the AC-12 cab. The back halves of the cab and separable roof were retained.

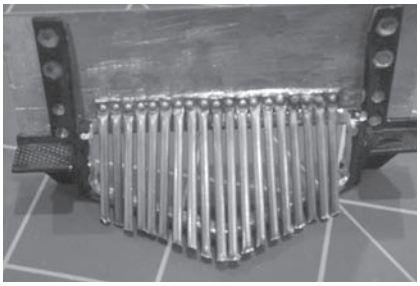
New fabrication included the riveted "flat face" cab front, new taller paneled doors and a new front-cab support assembly and cab floor. Roof modification required a new front section complete with bell mounting bracket and extended sides with rear-sloped drip rails. The model's reversing mechanism had to be reworked because of the smaller riveted cab, eliminating the right angle drive.

Other challenges were identified, including spoked drivers, a different pilot and pilot beam setup and numerous piping and lighting details. After consideration, the project moved forward when it was determined that an accurate model of a 1955 flat-face AC-6, No. 4145, could be produced, based on an Accucraft AC-12 cab forward — and that many of the differences could be addressed using components from Accucraft's F-4/5 2-10-2s. These components included:

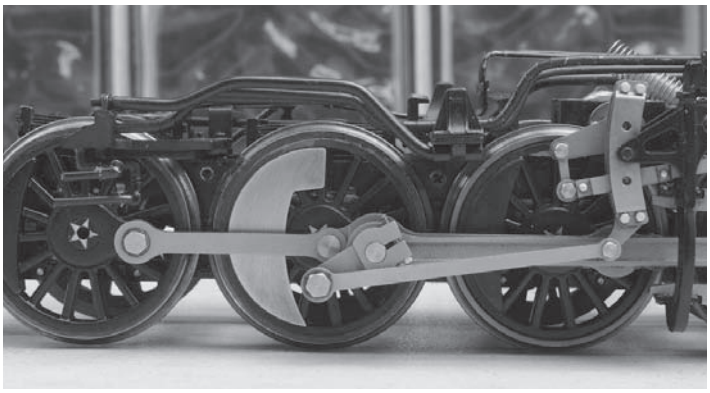
- A Vanderbilt tender, model 160-C3.
- Sixty-three-inch spoked drivers.
- Walker pressed steel pilot assembly.
- Centerline mounted turbo generator.
- Headlight, classification lights, train number boards and bell.

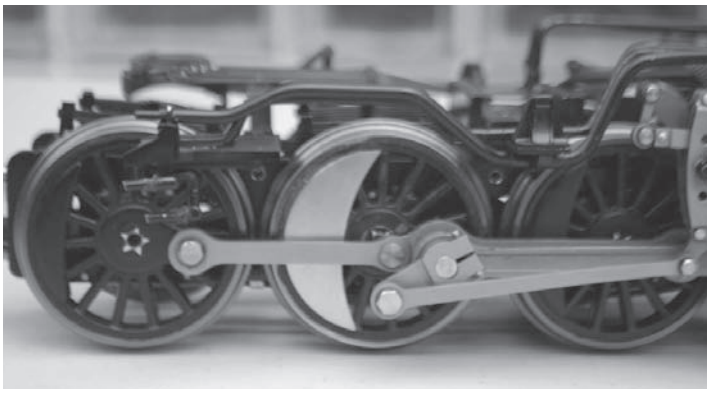
After the all the necessary parts and pieces were ordered, an initial AC-6 was completed, with cab





Boiler, pilot: *Left, boiler painted with buffable 'Gunmetal.' Right, 1930-era cow-catcher in mid-construction.*





Drivers: *Left, spoked wheels with 1940s counterweight extension. Right, in '30s counterweight not yet added.*

construction by Tom Stevens, mechanical conversion by Ryan Bednarik and Jeff Redeker and tender and pilot work by me. The initial unit was introduced at the 2010 National Summer Steamup in Sacramento.

As the AC-6 project planning progressed, it was decided that "blueprinting" the second run of Accucraft AC-12 cab forwards would result in the best final product because of upgrades such as forked side rods, revised crossheads and several other items including an adjustable lubricator.

Gray boiler AC-6

Then in late summer 2010, the trouble started. There was an inquiry about whether a gray boiler AC-6 might be produced since it was so distinctive. What ensued was a several-month voyage of discovery — on how to undo 25 years of Sacramento shop modifications (that by 1955 made the AC-6s more like later cab forwards) and to produce a model in "as-delivered" 1930 condition.

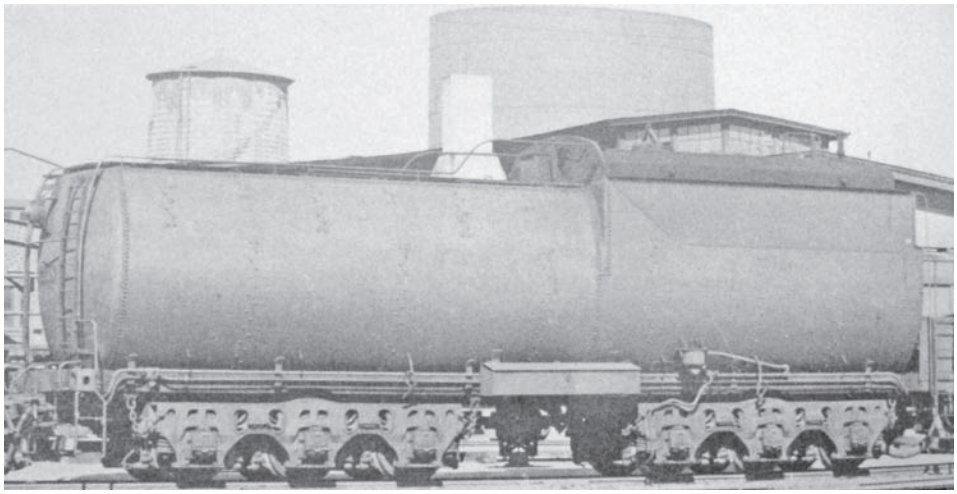
Some things were obvious: adding the external fireman's side superheated steam line; installing an original cab support; removing the blow down muffler/spreaders; replacing larger front cab windows with original small ones; removing the main driver counterweight extensions and building a boiler-tube pilot.

In 1930, Baldwin had wanted to produce an uncluttered, modern appearing locomotive meeting current railroad-industry style preferences. As a result, many of an AC-6's steam, air and water lines were hidden under the boiler jacket. Imagine being the SP Sacramento shop foreman trying to identify and fix a leak on one of those hidden lines to get an AC-6 back on the road! Based on six years of that kind of practical shop experience, it is little wonder that beginning with the AC-7s of 1937, new cab forwards had most piping located outside the boiler jacket and easily accessible.

The next question was to determine the actual 1930 boiler jacket color. After much research, including phone calls and e-mails to Robert Church, David Passard, Warren Weiss and others, it was determined that AC-6s No. 4126 and No. 4133 had actually been built with planished American Iron boiler jackets so each could serve as a "poster child" for the class. This was likely the last time that Baldwin did boiler jackets like this for SP, before adopting the less expensive industry practice of using water soluble flat gray paint for locomotive portraits.

In the accompanying photos, please note the reflections in the planished iron boiler jacketing above and below the running boards. In the Baldwin portrait of No. 4133 and the Sacramento setup picture of No. 4126 they clearly were *not* using flat gray paint!

For the 1930 gray boiler AC-6 model, it was decided to match its appearance as it would have looked in Sacramento after its first break-in run, following setup. Features included an American Iron boiler jacket, original small front windows, SP "Sash and Sill Red" window frames, shiny gloss black paint (including the smoke box), white edging on engine walkways and the cab floor and whitewalls on all wheels including the tender.



Tenders: *Top, An AC-6 tender showing Baldwin small backup light. Bottom, 160-C3 tender as modeled for 1930 with backup light bracket (light not yet installed).*

After many conversations while poring over photos, it was determined that Baldwin had not painted the AC-6 cab roof "Interurban Red" as Southern Pacific had done for Sacramento Shop built locomotives portraits of the period. So this sometimes incorrectly-modeled "flat face" feature was discarded in favor of gloss black.

There were both modeling and painting challenges for producing the 1930 "grayback" AC-6. The boiler painting process was tricky because of all the black details on the planished iron jacket. So builder Geoff Ringlé decided it was best to remove everything possible, even including the soldered-on domes that fortunately popped off.

Then the question was color. Following the lead of Colorado live steamer Kevin Strong, several Testors' "Model Master" buffable metallic paints were sprayed on test panels attempting to match the tone of the Baldwin photos. The buffable "Stainless Steel" color was selected, however this turned out to be much too light when applied to the entire model, even when recognizing that the model's boiler would eventually acquire a film of steam oil. In the end, the buffable "Gunmetal" worked out perfectly for the planished iron.

While the contrast initially seemed less than in the Baldwin photos, it became apparent that the boiler jacket takes on the appearance of its surroundings and light conditions. If it was reflecting a blue sky the boiler looks lighter and bluish; if reflecting a garden hedgerow the boiler looks darker and greenish. This may explain why many model manufactures over the years have selected a baby blue paint to simulate Russian or American iron finishes on early locomotives.

Modeling the details

Because of the SP's many shop changes to get to the final 1955 appearance of No. 4145, a list of photo-documented details to be modified was compiled, to return to the AC-6 to as-delivered appearance. While the available Southern Pacific erecting diagrams were helpful for several changes, piping details were not included in these drawings.

Some of the biggest changes to the AC-6s over the 25 years from 1930 to 1955 are best viewed from the front: cab support without the hole covers and extensions to minimize packed snow; original boiler tube pilot before snow shields were installed; smaller wood frame windows; access step over headlight, and different conduit routing.

The pilot

After consulting drawings as well as photos, it was found that the original 1930 boiler tube pilot was the same overall width, but slightly deeper and taller than the AC-6 Walker pressed steel pilot — so the Walker pilot could be used as a starting point. The pressed steel portion was removed, the extensions outside of the pilot supports fabricated (as part of an upper support plate for the boiler tubes) and the tubes bolted into place with round head bolts. After trimming and bending the tubes, an embossed rivet

strip at the bottom edge completed the unit.

Smokebox, fireman's-side piping

Also over the 25 years, the AC-6 feed-water heater supply and other piping on the smokebox engineer's side was modified to be the similar to the AC-7 through AC-12 classes. So to get the model back to 1930, feedwater heater piping was removed and less-conspicious steam and compressor discharge lines installed.

Further, through the years there had been similar maintenance-saving shop modifications to the fireman's side of the smokebox, included stubbing off the superheated steam line and using it for an air-actuated whistle and relocating various air lines and the air compressor steam supply line.

To backdate the model to 1930, the six air and steam lines were removed, a new compressor steam supply was installed and the whistle relocated to the far end of a newly fabricated superheated steam line that included a pop-off, plug valve, expansion joint, flanges and the like.

In addition to the superheated steam line and smokebox piping changes by 1955, other fireman's side shop changes included removing several lines from under the boiler jacket, relocating the injector and feedwater pump supply lines out of the cab and adding a blowdown muffler/spreader.

Drivers, tenders

In the 1940s, the AC-6s had counterweight extensions added to their main drivers to address balance problems. Since the counterweights for the late-in-service No. 4145 had modeled these extensions, they were removed for the 1930 model.

The 160-C3 Vanderbilt tenders used on the AC-6s were delivered in 1930 with a standard Baldwin small backup light on a bracket on the curved tender face. Soon after delivery these were replaced with Pyle visored headlights mounted on the tender deck. In order to get back to 1930, the model's Pyle headlight was removed, a bracket bolted to the back of the tender tank and a backup light installed.

Acknowledgements

The author would like to acknowledge Cliff Luscher and Bing Chen of Accucraft Trains Co. of Union City, Calif., for producing the second run of cab forwards and for supplying the F-4/5 components necessary for the AC-6 project; Dr. Robert J. Church, David Passard and Warren Weiss for drawings, photos and discussions; Ryan Bednarik and Jeff Redeker for working out design bugs to produce the initial AC-6; Tom Stevens for cabs including the unique 1930 unit and Geoff Ringlé of Old Iron Designs for doing the grayback mechanical work and surviving the paint color decision process.

Final thoughts

The "as-delivered" 1930 project started out as a curiosity and a "what-if" question, but soon became a challenge and a project unto itself. The results were very rewarding, especially delivery to the customer at the National Summer Steamup in July 2011.

Rain didn't dampen spirits at Staver's steamup in Portland

Text by Rob Lenicheck; photos by Harlan H. Chinn & Dan Pantages

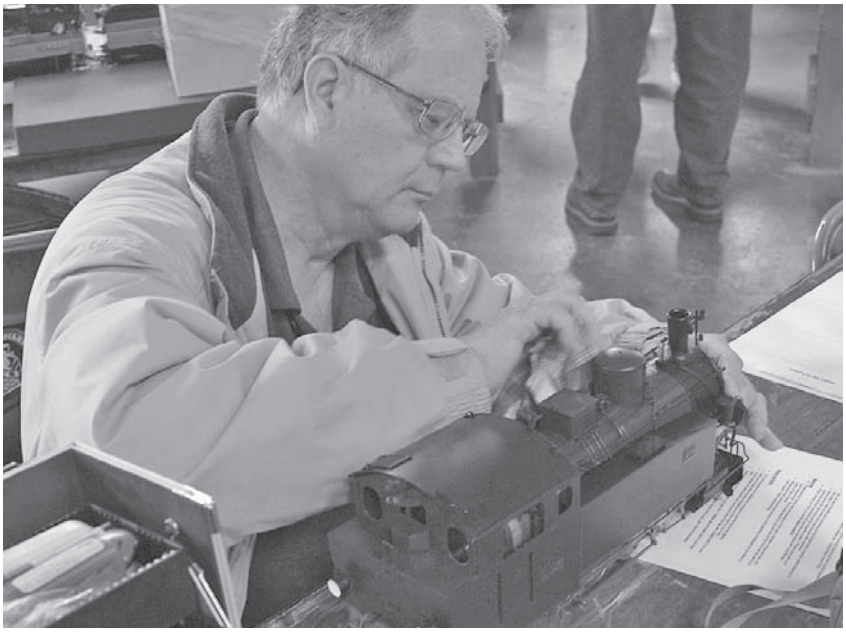
Staver steamers: *Jim Montgomery, left, and Don Scott talk over the Seattle live steam group's layout.*

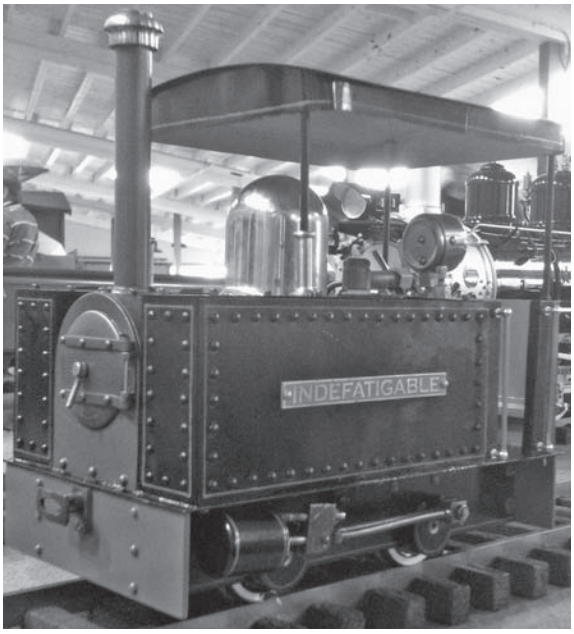
It rains in Portland.

Oh, and did I say it rains in Portland? Luckily for all of the steamers in attendance at Staver Locomotive's spring steamup, April 26-29, we didn't have to worry about this nasty aspect of the Northwest's weather behavior — we were inside. For those of you who have not been lucky enough to make one of Larry Staver's functions in Portland you should know that the facilities and track layout are "world class."

Staver Locomotive is located in a large, refurbished warehouse close to downtown Portland. The permanently installed track layout was designed and built specifically for our steamers and works flawlessly. All the track is hand-built and installed using a unique system which is both relatively inexpensive yet realistic.

The ties are gig cut and notched for precise rail location, while the rail is simply long pieces of one-eighth-inch by three-eighths-inch steel which then fit snugly into the notches. Most impressive are several slip switches incorporated into the track, again handmade and installed by Larry and his support team. (If you have never used a slip switch before seeing the alignment can be quite challenging. I found myself moving my loco quite slowly through them, not to check for derailments but just to make sure I was going the right way.)



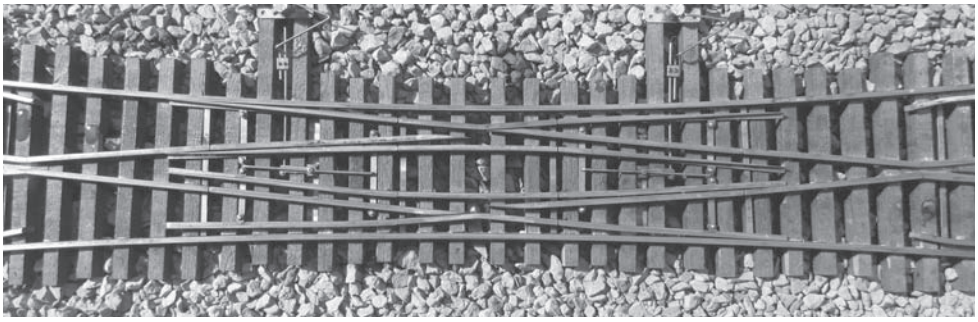


April showers: *Upper left, Peter Szolga doing some spitting and polishing. Upper right, Ron Bacon, left, and Michael Williams start a run. Mid-right, Marc Horovitz's 'Indefatigable' made its debut on the Staver track. Bottom left, Nick Fisher adding water, getting ready for a run.*

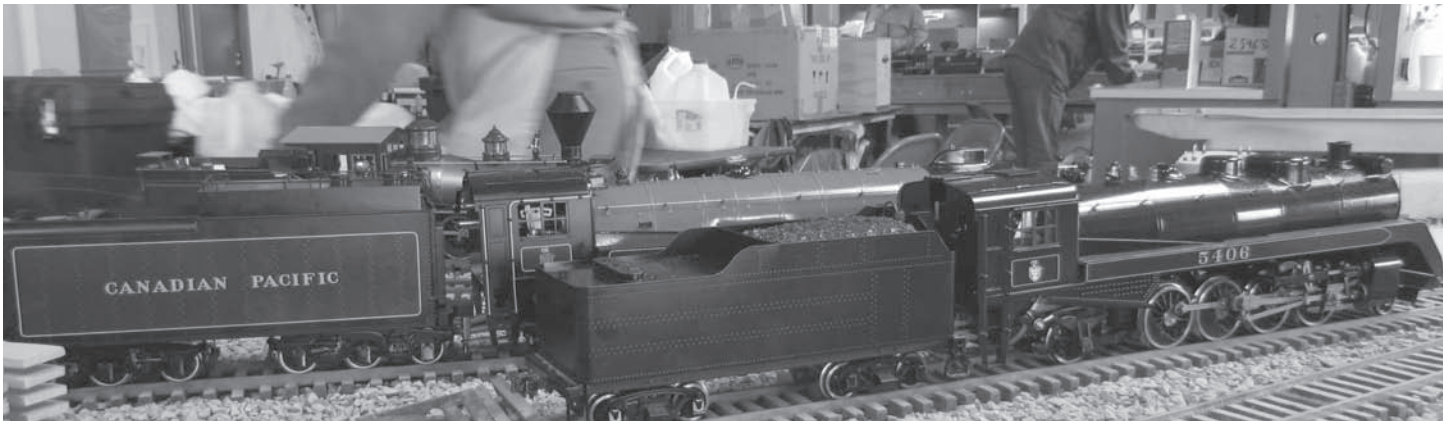
The track design is worth mentioning in that, as of this point, it is single lane but with several passing sidings. This allows both slow engines and speed demons to be out on the line at the same time. As in the past, certain times during the day were designated either "fast trains" or "slow trains," but when things were mixed, then the slow trains were encouraged to pull off at appropriate sidings. Since I know many of you out there are fitness buffs, you'll be interested to know that you'll be walking two-three miles a day if you run your engine here. That's because the layout is large enough that "watching your butt" (or caboose, as the case may be) forces everyone to walk with their train so as to minimize train wrecks. No, radio control is not necessary, just a good set of shoes.

The weather did keep us inside most of the time, but by Saturday it had cleared up enough so that a large door was opened and bridges inserted so that an outside loop could be used which added another 150 feet to the already large track plan.

In addition to the main track, there were two other, smaller tracks which were brought in for use by smaller engines, one from the Puget Sound Garden Railway



No rain on this parade: *Upper left, Howard Freed walks alongside his loco. Upper right, Mike Bennett on Staver's 'high-bridge' layout. Mid-right, One of the incredible slip switches found on Staver's layout. Bottom, on the turntable spurs, two of David Leech's engines.*



Society's live-steam special interest group and another which was fabricated by Larry's team. Some steamers decided that's all that they needed.

Almost 35 steamers brought their engines for this party, all from the West Coast: Oregon, Washington, California and, of course, our northerly brethren from British Columbia, Canada. One of the greatest aspects of our steamups is being able to meet new people, exchange ideas and catch up with old friends. The warehouse had plenty of seating for doing just that — and to watch trains.

Larry Staver has established a reputation for being a fabulous host and he didn't disappoint this time. Bagels, coffee and cream cheese were put out in the mornings, beer in the afternoons for downing after an exhausting run and an excellent Saturday night buffet. For lunch or other munching occasions there is a brew pub about 200 yards away and many other great restaurants within about two miles from Staver's. And if you really like beer, Portland is known for having its fair share of micro-breweries.

Staver Locomotive hosts two steamups a year, during spring and fall. Plan on making the trip — I doubt you'll be disappointed.

THE CUPOLA VIEW

'Cricket' redux

A year ago, all hope seemed to be lost: the "Cricket" locomotive — an 0-4-0, 1:20.3-scale engine with a single wobbler motor, a flywheel and a geared drive-train — had run through its second maker and the business had been put up for sale.

Shortly after I wrote about the demise of Maryland's Westminster Locomotive Works (see *SitG*, No. 116, May/June 2011), I heard that Art Ruiz of Bellflower, Calif., had bought the rights to the "Cricket," originally developed in 1994 by Michael O'Rourke, then of Berkeley, Calif.

O'Rourke says he based the engine on a line-cut advertisement seen in a circa-1896 publication calling it a "contractor's locomotive." He thought the prototype had a flywheel on the left side because the ad showed only the right side and a flywheel would allow the engine to be used as a power plant for other things, such as a sawmill; long after the "Cricket" was well into production, he found the original locomotive had cylinders on both sides and no flywheel.

O'Rourke built about 130 of his "Crickets" before he decided after five years that with the advent of the "Ruby" from Accucraft Trains Co., his shop could not compete against offshore manufacturing. It took O'Rourke a few years to find a buyer for the business, and then it took a few years for that buyer — Michael Krionderis of Westminster, Md. — to ramp up in his own manufacturing business.

Krionderis ended up selling about 40 "Crickets" before he too became discouraged with the business and put it up for sale.

When Krionderis sold the rights to the "Cricket" last year to Ruiz, I asked him to pass along my name and contact info to Ruiz.

I didn't hear from Ruiz until early July 2012, when he sent me a note, pictures and link to a video.

In the 11 months, Ruiz had not only resurrected the "Cricket," he had developed two new models and had built five locomotives.

Ruiz, a mechanical engineer who works for Los Angeles City College, quickly found the same problems as the "two Mikes": building the "Cricket" itself wasn't an issue, but sourcing many of the components was.

"Most of the people who made O'Rourke's parts are gone," Ruiz said. "And a CNC [computer-numeric control machining] shop wants orders for a couple hundred pieces or it's really expensive."

Ruiz even broached the unthinkable: getting parts made overseas. "Both the Mikes were opposed," he said. "The 'Cricket' has to be made in the USA *only*."

So, with "a lot of research and work," Ruiz found component makers willing to take orders for small quantities. He also redesigned some aspects of the original "Cricket" and came up with two more models.

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

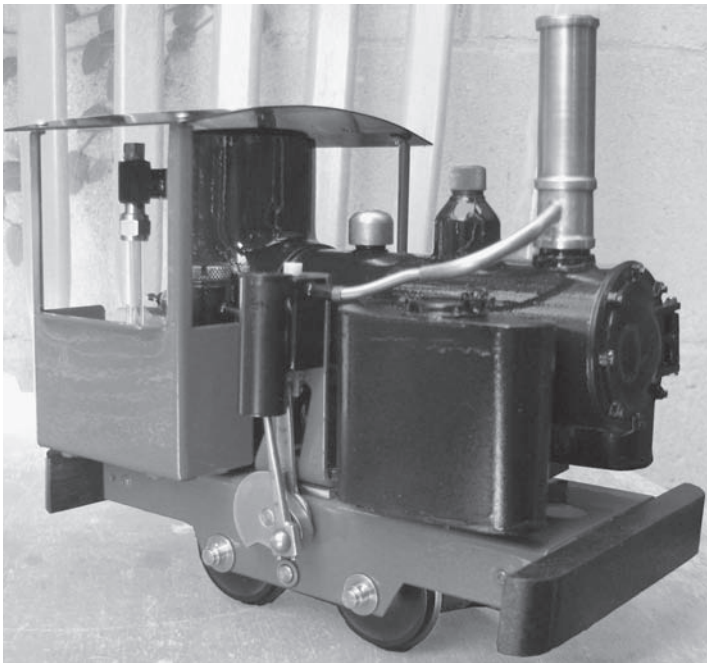
The first new model, the "Deluxe," has the same horizontal boiler as the original "Cricket," but uses brass in its flywheel instead of steel. It has a metal pressure gauge rather than a plastic one and includes an "oil catcher."

The second new model, the "Puller," has a much larger boiler (in a T-shape), has a high-density double flywheel, a redesigned burner, lead weights under the frame both front and rear and incorporates the same pressure gauge and oil mechanism as the "Deluxe." (Ruiz says he will only make four "Pullers" per year.)

While Ruiz had hoped to market the basic "Cricket" at $795, he found that he was "giving them away" at that price (there are apparently some lucky customers out there and he did honor his commitments). He's now decided to sell the basic for $850, the "Deluxe" for $950 and the "Puller" for $1300.

Ruiz, like Krionderis before him, works from a reservation list: you submit your name (no deposit necessary) and when you pop to the top of the list, he gives you a call. You send him some money and he sends you a locomotive (and if you are suddenly short of funds, Ruiz just goes to the next name on the list). Along with the rest of the "Cricket" legacy, Ruiz inherited those who were on Krionderis' list.

As I explained last year, I come to the discussion of the "Cricket" not dispassionately: I've owned a Berkeley Locomotive model since 1999 (I got one from O'Rourke's last big run) and find the little engine compelling. I'm also sympathetic to the notion of an all-American built locomotive, though the look and operational aspects of the locomotive were what attracted me back in 1999 when I ordered the locomotive.



Latest 'Cricket': *Bellflower Locomotive Works' 'Puller,' features a T-boiler with a double flywheel.*

I'm happy for Ruiz that he has relaunched the "Cricket," but I'm also happy for the small-scale live steam hobby, as there should be more than one American-profile locomotive available for entry-level hobbyists. I'm sure there are people out there who would never buy a "Ruby," but would be very interested in a "Cricket."

Bellflower Locomotive Works, http://cricketlivesteammotor.com/.

TIMETABLE

Sept. 6-9, 2012 — Adirondack Live Steamers Fall Meet, Wilton, N.Y. Info: http://www.adirondacklivesteamers.org/ or call Ben Maggi at (585) 506-2680.

Sept. 12-15, 2012 — National Narrow Gauge Convention 2012, Bellevue, Wash. http://www.seattle2012.com/.

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

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

Oct. 11-13, 2012 — Fine Scale Model Railroad Expo 2012, Lancaster, Pa. http://www.modelrailroadexpo.com.

Oct. 26-27, 2012 — Third Annual Gauge One Live Steamup, Baton Rouge, La. Info: Ted Powell, powell876@hotmail.com.

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

Jan. 13-22, 2013 — International Small Scale Steamup and Arts Festival, Diamondhead Inn and Suites, Diamondhead, Miss. Called "the most important small-scale event in the U.S.," Diamondhead includes 24-hour steaming, a "flea market," seminars, a dealer room, a festive meal and extracurricular activities. Info: reshew_j@bellsouth.net; http://www.diamondhead.org/ Diamondhead Inn & Suites: (228) 255-1300.

Regular steamups

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

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

Upstate N.Y. Steamers. Several steamups per year in various locations around Western New York. Info: http://www.tinyurl.com/upstatesteamers.

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

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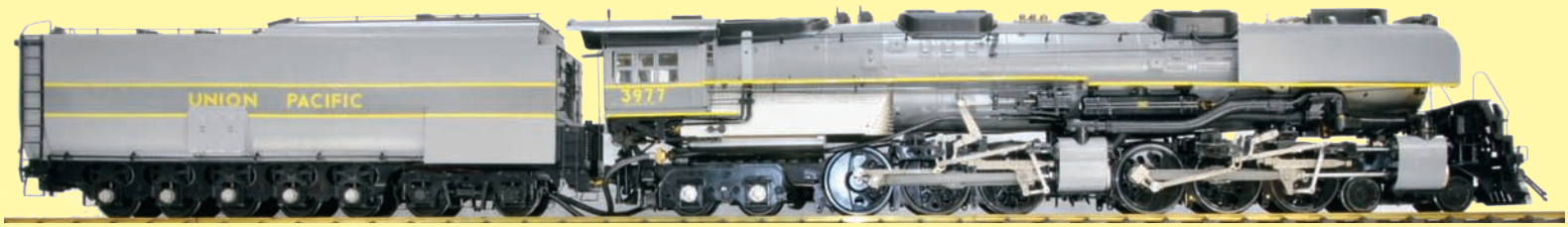

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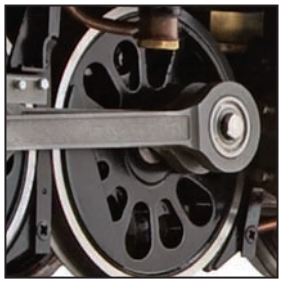

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