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STEAM IN THE GARDEN

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Issue Nº 62

with Steam on the Pond

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FRONT COVER:

Accucraft's very popular C-16 pauses for a photo opportunity on Tom Bowdler's Shade Gap Railway, named for a defunct branch of Pennsylvania's East Broad Top railroad. The bridge was custom built by Eaglewings Ironcraft as a shortened representation of the Pogue Bridge on the EBT, the line's longest. The C-16 is hauling a mixed consist across the gap to the village of Great Notch, named for the photographer's hometown in New Jersey. Tom's review of the Accucraft C-16 appears in this issue...check it out!

photo by Tom Bowdler

Publisher/Editor Ron Brown

Mother of the Bride Marie Brown

CAD & Other Drawings in This Issue

• John Thomson • Keith Bucklitch

Regular Contributors Larry Bangham California Keith Bucklitch England Jim Crabb Texas Joe Lecesse Massachussetts Kevin O'Connor California Ken Parkinson Florida John Thomson Texas

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2002 CALENDAR OF EVENTS

January 11 - 13, 2002 – International Small-Scale Steamup, Diamondhead, Mississippi, USA. Don't miss this one....it's the biggest miniature steam railroad convention in the world! Three elevated tracks to accommodate gauge 1, gauge 0 and HO steamers - Clinics - Round the clock steaming - Dealer room - Steamboats and more. Attendees from around the globe! The Clack Valves and Cornets Steam Band will be back by popular demand, and we expect quite a few more foreign guests more international flavor. Make your reservations now so you don't miss out. Contact Jerry Reshew, 5411 Diamondhead Drive East, Diamondhead MS 39525. Phone (228) 255-1747, e-mail:
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January 26 & 27, 2002 - Cabin Fever Expo, Lebanon County Expo Center, 2120 Cornwall Road, Lebanon, PA. Gauge 1 and Gauge 0 Live Steam Track. Contact Harry Quirk, PO Box 215, Springtown, PA 18081 or call 610-346-8073. Web site: http://www.cabinfeverexpo.com

February 16, 17 & 18, President's Day Weekend - Pennsylvania Garden Railway Society and the Pennsylvania Live Steamers 5th Annual Meet to be held at the Electric City Trolley Station and Museum on the Steamtown National Historic Site Grounds in Downtown Scranton, PA. Hours are from 9:00am to 5pm. Gauge 1 and Gauge 0 Live Steam Tracks. For more info email Clem O'Jevich at wrunloco@aol.com or phone 570-735-5570. Or contact Harry Quirk, PO Box 215, Springtown, PA 18081 - 610-346-8073.

Because of publication lead time, please send info for Calendar of Events well in advance. Include name of host and location of event, with address and/or phone number to contact for complete information. Some basic info about the site is also useful (i.e., ground level or elevated, minimum curve radius, ruling grade, etc.)

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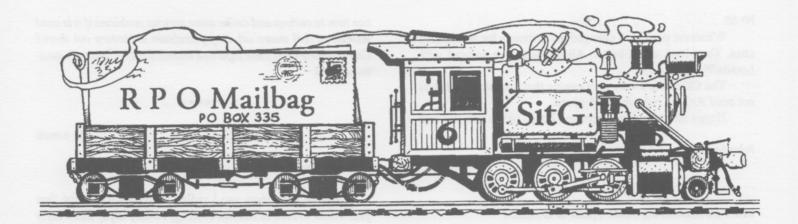
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via e-mail

Hi Ron,

I continue to be fascinated by the many different ways people figure out to enjoy the live steam hobby.

By the way, just to be sure you know, if it was not for *Steam in the Garden*, I probably would not have the SeaHorse today (see the Caddo Lake Steamboat report in issue #61). It was through your magazine that I began to learn the about the possible ways to enjoy live steam. You may recall that after getting my first edition I soon obtained Alexandra from Cheddar Models and began buying Roundhouse engines from Bayou Ltd. and Sulphur Springs Steam Models. These soon led to learning about how I could have a full size launch, thus SeaHorse.

Through your magazine I learned what great vendors the hobby has available for small scale live steam, and it led me to the great vendors for full size steam launches.

Thanks again,

Dave Young

The Netherlands

Hello Ron,

My Climax is running smoothly through the garden now. I made two versions of it; one with a roof as it should be and one without. You see, my track is laying on the ground, and for convenience sake it is more easy to handle and to look at the pressure





gauge without the roof covering it from above. And the bystanders have a better look at the running engine.

The only thing I don't like on the Graham engine is the aluminum parts, but a little black paint can do wonders. The engine itself is made very precise. In the beginning they are hard to move. You have to drown the engine in oil and then try to move it slowly. Later on I used a drill machine to let it run in. And finally I took an air pump from my bicycle to let it run on air. It is running like a sewing machine now.

So far I have no problems with the Graham engine. It uses a lot of steam, but that is not a problem, that is fun.

It strikes me that the Climax kit has changed several times. For instance, my blower, throttle and pressure gauge are mounted on a manifold. Different from the model that was shown in SitG

Nº 60.

Wherever possible I changed the fasteners for hex headed ones. They look much better. All fasteners are secured with Loctite TM .

The Climax is a very nice engine that runs slow and does not need R/C for reducing high speed.

Happy steaming over there and I hope to see you one day.

John Smit

More on Measuring Scale Speed & Distance (SitG Nº 60, pg. 31)

via e-mail

Hi Ron;

I did buy one of the Bell Bicycle speedometers at Wal-Mart. K-Mart sells the same thing. They work fine. I was concerned that they couldn't be programmed, but they can. The easiest way to mount them is to simply cut off the ring that goes around the handle bar. They'll lay flat that way and can be screwed in place or mounted with double sided tape. The pickup sensor can be mounted in a similar fashion. Hint: Make sure you slide the bracket on the right way or the electrical pickups will miss the pickup points on the bottom.

Phil Paskos

Ohio

Dear Ron,

I enjoyed the workshop project, Perk Up Your Ruby by John Thomson, in issue Nº 61. After reading about the superheater modification and talking to some other Ruby owners at Diamondhead 2001, I'm wondering what happens to the steam oil when it passes through the red hot superheater? Does it burn off? Are we getting proper lubrication to the piston and valves? Any comments?

What I did to my Ruby was this: I cut a piece of silicone tubing lengthwise through one wall and slipped it around the steamline under the boiler to insulate the steamline. I also purchased a #FVS-R 40 lb. safety valve from Sulphur Springs Steam Models. The performance is much improved with minimal work and expense.

For owners of locos with metric fasteners (ASTER, etc.), Sears sells a Craftsman™ midget combination metric wrench set, 4 thru 11 mm, part #42339.

Clement Rook Jr.

Clement, I've never heard of anyone having a problem with steam oil in their superheater line, though I have heard that motor oil

can turn to carbon and cause some serious problems if it is used instead of real steam oil. Any petroleum engineers out there? Can someone shed some light and knowledge on Clement's questions? - ed.

via e-mail

Morning, Ron...

Two or three days ago I pulled down a stack of the first year's *SitG* to read as bedside reading. I really enjoy those early issues. And I was astonished to see that they were dated 1990 and 1991. Amazing -- you and Marie have been doing this for over 10 years. Did I miss out on a 10th anniversary recognition of some kind? Congratulations are certainly in order!

Rob Kuhlman

Thanks for noticing, Rob. Yes, we passed the 10 year mark over a year ago, and we're now in our 12th year publishing SitG. We've enjoyed the ride, and have met some of the world's greatest people along the way. - ed.

via e-mail

Hi Ron:

I managed to damage my Roundhouse "Fowler" in August. I have it up and running again thanks to support from Barry Vaughan and the staff at Roundhouse Engineering Co. Ltd. in England and also Tom & Diana Eaton of Sulphur Springs Steam Models.

Roundhouse furnished the part along with technical information and Tom & Diana furnished technical information. Both Barry, Tom and Diana furnished moral support and told me not to worry that my Fowler would be repaired. They were right and I very much appreciate their assistance.

It is a real comfort to have charming, knowledgeable, and dependable people like these in our hobby. Thanks!

Max Whipple Williamsport, Pennsylvania



THE WHAT'S NEWS

G1MRA has a new contact in the USA - Jim Curry, c/o PO Box 40, Warren, ME 04864 • Phone: 207-273-3699 • Fax: 207-273-3999 • e-mail: jjc@structureguard.com

Carlsbad, CA 92009 produces a neat little butane stove that can easily be adapted for use in live steam engines. The burner itself is only 1.1/16" in diameter, perfect size for a 2" diameter vertical or tee-boiler. The unit is designed to mount onto a camping-style butane tank, but the burner/mixing chamber conveniently unscrews from its base, exposing the removable brass gas jet below it. A new mixing chamber with a 90° turn could easily be turned up on the lathe and soldered in place to reduce the clearance height of the burner assembly. The Bleuet 270 micro 1300W butane stove is manufactured in France, and retails for \$19.99 at Sportmart sporting goods stores.

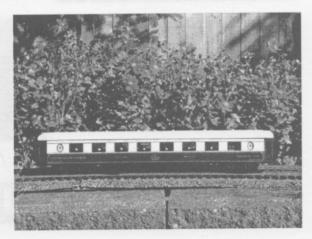


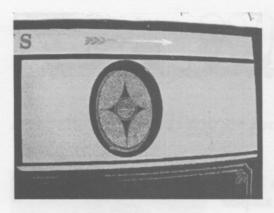


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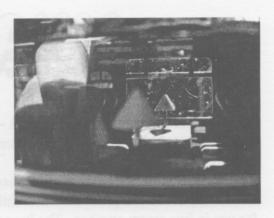
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The latest Gauge One, 1:32 scale passenger cars to come out of the shops of David Leech are the Wagon-Lits, Fleche Díor Pullman Cars. These Pullman cars were constructed in 1926 for use on the French portion of the 'Fleche Díor' (Golden Arrow) train, which ran between London and Paris. The cars were built in England by the Birmingham Railway Carriage and Wagon Co., and the Midland Railway Carriage and Wagon Co. Two types of coaches are available; First class - 24 seat / kitchen numbered 4001 - 4015; and First class - 32 seat Parlor numbered 4016 - 4030. The livery is 1926 to 1932 Chestnut Brown and cream with white roof. Coach length - prototype 76' 11", scale 28 27/32". Body is Aluminum

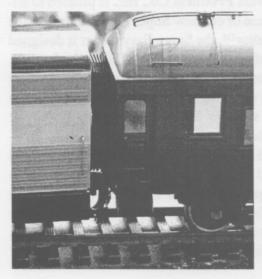




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small additional cost. The photos show the second pre-production model. Cars will be on display at Diamondhead 2002 in January. These cars were seen regularly on the SP, UP, WP and IC systems. The Finescale Locomotive Company, Marlborough, Wiltshire, England and I E & W Railway Supply, 38200 Charles Town Pike, Purcellville, VA 20132-2927 • phone: (540) 882-3886 • Fax: (540) 882-9670 • e-mail: jim@ieandwry.com, are producing a series of four different 60' Harriman passenger cars in 1:32 scale (Gauge 1). They include a coach (60-C-5), Baggage (60-B-1/8), Combine (60-CB-1), and Baggage-RPO (60-BP-30-1). The following paint schemes will be available; SP green with gold lettering, SP Daylight, SP two-tone grey with silver lettering, and UP green with gold lettering. The model is brass construction with etched rivet detail, complete underframe detail, and full interior. The trucks are fully compensated and have insulated steel wheelsets running in brass bearings. Prices range from £800 to £875 for the Pullman green paint scheme. Orders for the multi-colored schemes will involve a







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W W W . A C C U C R A F T . C O M

Accucraft's C-16

review & photos by Tom Bowdler

A Colorado narrow gauge classic in 1:20.3

Technical Specifications

Scale / Gauge	1/20.3, 45 mm Gauge
Wheel Arrangement	2-8-0 Consolidation
Total Weight	9.2 Kg, 20 1/4 lbs.
Length	746 mm, 30"
Width	118 mm, 4.9"
Height	182 mm, 7.5"
Driver Wheels	Dia. 45mm, 1.8"
Minimum Radius	0.76 M, 30"
Boiler / Capacity	Center flue type / 300ml
Working Presure	40 psi
Fuel / Capacity	Butane / 80 ml
Lubricator	Roscoe displacement
Valve gear	Simple Stephenson
Engine Cylinders	2 cylinders, bore 14.5 mm x stroke 12.5 mm
Drawbar pull	1.5 Kg, 3.3 lbs.

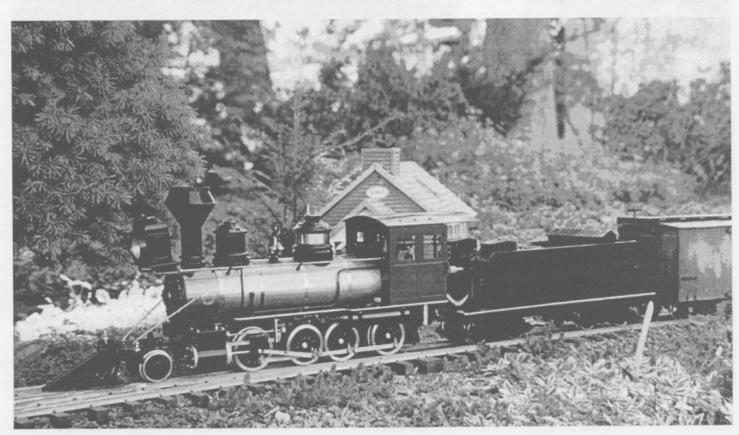
I just had to take a break from work to inspect the Accucraft C-16 in D&RG #42 livery which I had anticipated receiving for so long. It was only a few minutes from the time the big box arrived until it was unpacked, and the beauty of the maroon cab with dark gray roof, polished bands on the Russia iron boiler and the matching gold band around the footboards of loco and tender gleamed in the afternoon sunlight from my office window. How gorgeous she is!

This is the first live steamer I have owned which purports to be a model of a specific prototype, so I had some desire to find out more about the original. D&RG #42

D&RG draftsmen. This 3' by 7' (!) document, titled "Standard Consolidation Engine, Denver Shops, 1881" is reported to be the drawing on which Accucraft based this version of their live-steam C-16.

The eight page instruction manual, which arrived with the loco, is the equal of any I've seen. The illustrations are of the #268 Bumble Bee version, but excepting the location of the lubricator disguised as an air tank they serve to illustrate preparation, running and shutdown of all three versions of the C-16.

Beginning with an introduction and listing of the specifications of the loco, the manual takes us through



The author's Accucraft C-16 stops for a photo op on Kevin Strong's garden line in upstate New York.

was built in 1880 by the Baldwin Locomotive Works as their number 4938. It was designated a 60 class engine for its weight on the drivers of about 60,000 pounds.

Later these locos were labeled "C-16" - the "C" for the 2-8-0 Consolidation wheel arrangement and "16" as an index of the tractive effort, about 16,000 pounds.

According to *The Rainbow Route*, #42 was sold to the Silverton Railroad in November of 1887 for the princely sum of \$6500 and, with added boiler and cab from another locomotive, became their Nº100, the Ouray.

I was able to obtain a drawing of #42 from the Colorado Railroad Museum, which I am told was drawn by

Steaming Safety, Operating the Locomotive, Cold-weather running, Notes on Radio Control, and ends with some Parts and Accessories that could be useful.

Eager to see how she would run, I set up my roller blocks to the spacing of the drivers, with a wood block supporting the tender to allow the fuel line with integral jet to reach the burner on the locomotive backhead. I unscrewed the sand dome and the underlying filler plug and filled the 300ml boiler with distilled water, then drew out 30ml to allow for expansion space as the water heats.

The faux air tank / lubricator located under the fireman's running board was uncapped, test run liquid con-

densate removed with a nifty brass tube syringe I obtained from Norm Saley at Diamondhead, and filled with fresh steam oil using a plastic bottle with needle tip from Sulphur Springs Steam Models.

The tender mounted fuel tank received its fill of butane, the blowdown valve was opened as directed and fire lit.

Deviating from the instructions, I decided to see if I could light her off from the stack instead of opening the smokebox door as the instructions suggest. My Accucraft

ing chuff and an excellent steam plume in the rather dry conditions of my basement workshop. First impressions were magnificent.

Several runs in forward and reverse were made on the roller blocks, all over 50 minutes in length from lighting off until the fuel was used up. I carefully watched the water glass to note that even with no water visible 20 pounds on the gauge was maintained and steam production was strong, indicating to me that water remained in the boiler.



This angle affords a better look at the tender and the back of the cab.

Ruby smokebox door latch needs constant adjusting to keep the door closed, and since the C-16 latch looks similar to me I decided that opening the door the fewest times possible was in my best interest. It was no problem getting the flame to pop back to the burner and I've lit her the same for every run since with no trouble.

While waiting for steam pressure to build I lubricated the drive mechanism with machine oil and sat back waiting for the safety valve to lift. I closed the blowdown when water was replaced by steam from its exhaust, similar to the procedure I'm used to with my Pearse Colorado.

In about seven minutes from lighting the safety spouted forth at a reading of about 50 pounds on the pressure gauge. The throttle was opened, the cylinders warmed and she started off quite smoothly with a wonderful sound-

It was easy to adjust the fuel valve to maintain 30 pounds pressure without the safety lifting to waste steam. During one of these indoor runs a small disaster occurred. The bolt holding the drive rod to the cross head loosened and fell out and I didn't notice it until after the run was completed, since it was on the side of the loco I couldn't directly see.

The bolt has no slot or hex head so had to be retightened with a needle nose plier. I have observed it carefully ever since, but the problem has not repeated itself.

I was anxious to run the C-16 on my ground-level garden railway. The manual says the loco will negotiate a 30" minimum radius, so my 60" radius should be no problem. It wasn't but the long wheelbase and leading truck arrangement revealed every defect in my tracklaying.

Most of my locomotives are geared loggers and the aforementioned Colorado, which sail over all my railway's imperfections. Not so the C-16. Track work was called for and accomplished, and I stretched the leading truck spring for more downward force. Just in time, too, as I hosted a small steamup with several local friends and one guest from Wisconsin, and the C-16 performed flawlessly, slowly chugging around for 45 minutes unattended.

Eager to test its pulling power, I coupled up all 12 pieces of appropriate rolling stock I own, including three log flats with real, heavy logs, three box cars, one tank, one hopper, three passenger cars and a caboose. The Kadee #1 size couplers I use would not stay coupled to the Accucraft coupler on Nº42's tender, so I replaced one of them with a Kadee "G" coupler and have had no unwanted uncoupling since.

The aforementioned load was no problem for the C-16 and I believe she would haul several more cars without breathing hard.

I have since run this loco at two open days and numerous other runs on my own railway, the Central NY club's Garden Railway Weekend in July, a couple of friend's railways and on a temporary track on tables at Ridge Road Station, our local large-scale train store where I have given live-steam demonstrations for the last several years. She has always acquitted herself well, impressed steamers and non-steamers alike and merrily hauled her consists no matter what the track conditions. So much power is available that she will slip her drivers if the track is oily, but either cleaning the track or shortening the consist will solve the traction problem.

I hope soon to install radio control so I can fine tune the throttle setting without reaching for the cab lever.

Lest you think I am on Accucraft's payroll as a publicist, I do have some dislikes about the C-16 that I will mention. Earlier I told of the cross head bolt with no mechanical means to easily tighten it. The fuel line from tender to loco has a shiny coiled wire protective cover which I would like to see blackened so it is less obvious. A gasket of some sort is needed to seal the forward tender wall where the fuel line passes through, so the area around the fuel tank can act as a water bath in cold weather. The horizontal lubricator tank requires more time and care to drain and fill than the vertical lubricators I am used to. It does, however, look great as an air tank.

It seems in my example of N°42 that the gas supply outlasts the water supply visible in the gauge glass. This is OK for an experienced steamer used to looking at the glass, but may turn out to be a problem for a beginner. I can find no mention in the manual of how to access the safety valve for testing. The metal carrier supplied with the loco has no method of preventing the locomotive from rolling off either end if the carrier is tipped, and the top

corners of the carrier are very sharp and should be rounded on future versions.

I also have a wish list of things I'd like to see Accucraft add to the C-16. First would be a Goodall-type valve on the backhead to allow easy topping up of water in the boiler without having to remove the heavy (and hot) threaded sand dome and filler plug. I have heard that a tender pump will be available which might be OK for the large tender reservoir of the Bee version, but I'm puzzled as to how it will work with the small space around the fuel tank of Nº 42. I would also prefer a hinged roof rather than the slide-off version Accucraft provides.

Overall I am almost totally smitten with this locomotive. It is beautifully constructed, runs fabulously, looks great, sounds magnificent, pulls a good load, arrives with a comprehensive, well written instruction manual and is reasonably priced. I highly recommend the Accucraft C-16 to experienced steamers and relative newbies alike.



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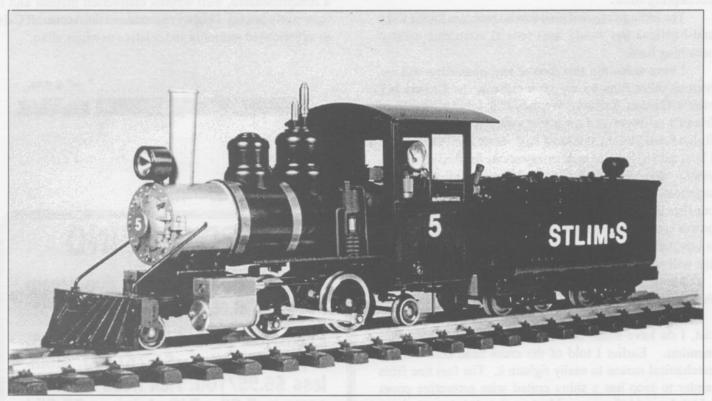
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Perk Up Your Ruby Part II. 2-4-2 "Columbia" Conversion

article, photos and drawings by John Thomson

More personality and performance for this popular steamer



Ruby "Columbia" version with Roundhouse tender

Baldwin first demonstrated the 2-4-2 wheel arrangement at the 1893 Columbian Exhibition in Chicago. Called "Columbia", this type of loco was designed for high-speed passenger service. The Columbia also pioneered the use of a trailing truck.

1. Replace side tanks with wood running boards (walkways). NOTE: If you order one of Vance's wood cab kits, running boards are included.

Materials:

2 pieces - 5/8" x 4" x 1/16" basswood

4 - 4-40 x 3/16" flat head screws and nuts

Remove side tanks. With cab in place, position walkways on top of side tank brackets. Walkways should extend from front of cab to just above rear edge of cylinder valve blocks. Mark and drill holes with # 32 bit to correspond to holes in brackets. Countersink the holes on walkway top, so flathead screws are flush with walkway. Paint walkways, screws, and nuts black. When dry, install on loco.

2. Front Frame Extension

Materials:

2 - 5/32" x 1" square brass tubing

- 2 4-40 x 1.1/2" long hex drive screws and 4 flat washers
- 2 3/32" Dura-Collars, Du-Bro™ # 138
- 2 12" threaded model airplane pushrods with 2-56 thread on one end (Du-Bro™ #801)

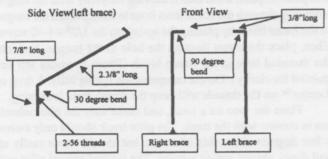
4 - 2-56 nuts and small flat washers

Remove front buffer beam by removing two bolts (one on each side of the coupler). Remove the front frame block (one bolt on each side of the block). Drill out the front block holes with a #43 bit and thread with 4-40 tap. Enlarge the two buffer beam mounting holes with a #32 bit. With a #37 bit, drill brace rod mounting holes from top to bottom in buffer beam. These holes are centered 7/8" inboard from each end of the buffer.

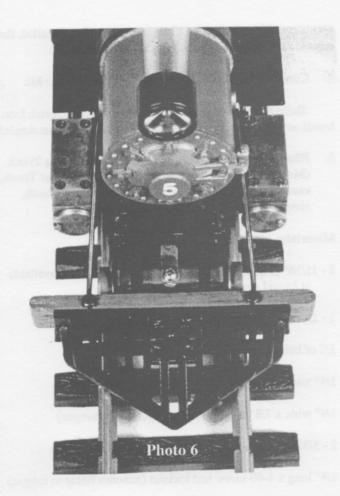
TIME SAVER: While the front frame block is off the loco, do the pilot truck modification (# 5). Reinstall front frame block on loco. Leave bolts slightly loose.

With #37 bit, drill holes in the smokebox at the 9:00 and 3:00 positions, and centered vertically with the smokestack. Buffer brace rods should be formed according to the diagram in Figure 4, using the 2-56 push rods. Mask threads, and paint brace rods black. Run a 2-56 nut to the end of the threads on each brace. Place a flat washer next to the nut, and insert the threaded ends of the brace rods into the vertical holes of the buffer beam from top to bottom. Make sure the right-angle ends of the brace rods are pointed inward.

Figure 4 Buffer beam brace rods



At the bottom of the buffer beam, install a flat washer and nut loosely on each rod. Reinstall frame block on loco, using 4-40 x 1.1/2" bolts. Place bolts through buffer beam from the front, using flat washers on each side of the buffer. Slide square tubing pieces over each bolt, and attach bolts loosely to frame block. Turn brace rods so that right angle bends can be inserted into holes in sides of smokebox. Place Dura-collars over brace rod ends inside smokebox, to hold in place. Adjust brace rod nuts to square buffer beam with loco frame. Make sure frame extension is level. Then, using straightedge to keep square tubing spacers level, tighten 4-40 buffer beam mounting bolts and front frame block bolts (Photo 6).



3. Wood extension platform with imitation pilot spindle.

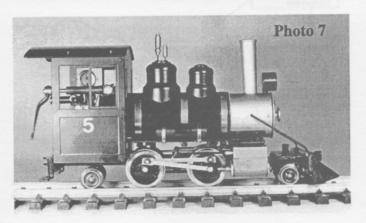
Materials:

1" x 2" x 1/8" basswood or plywood

4-40 x 1/2" flathead screw and nut

1/4" length of 1/4" brass tubing

Using #32 bit, drill hole in center of platform. Insert 4-40 screw through platform from bottom side. On the top side of platform, install 1/4" tubing and nut on screw. Paint black, and install in extension space between front frame block and buffer beam. This should be a snug friction fit. Shim platform for fit, if



necessary. With platform in place, and front pilot installed, the spindle should appear centered on the pilot (Photo 7).

4. Cowcatcher. You will need Vance's cowcatcher kit.

Build the kit and paint with Bar-B-Q black to match loco. Install on front buffer beam with two, 3 mm bolts - it's that simple!

 Pilot Truck Note: Construction of the Trailing Truck (Modification #6) is identical to that of the Pilot Truck, except for tongue length. If you want to build both, simply double the following materials list

Materials:

- 2 11/16" diameter (at tire) used Lionel car wheels (available at Lionel store, repair dept.)
- 1 1/8" x 2" steel music wire (pilot axles)

1/2 of ball point pen spring

1/4" wide x 2.1/2" x .035" brass strip (pilot frame)

1/4" wide x 7/8" x .035 brass trip (mounting tongue)

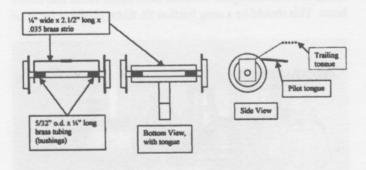
2 - 5/32" o.d. x 1/4" long brass tubing (axle bushings)

1/4" long x 4-40 screw and locknut (attaches frame to tongue)

1/2" long x 4-40 screw (mounting screw)

Before bending pilot frame strip into a "U" shape, drill #32 hole in center, and two 5/32" holes, 3/16" from each end. After drilling, bend frame into "U" shape per diagrams in Figure 5. Press fit the 5/32" axle bushings into the 5/32" holes in the pilot frame. They should be flush with the outside (wheel side) of the frame. Slide the 2" steel axle through both bushings in order to center them. Using Stay BriteTM, solder the bushings to the frame, taking care not to get solder inside the bushings, or on the axle shaft.

Figure 5 Pilot & Trailing Truck

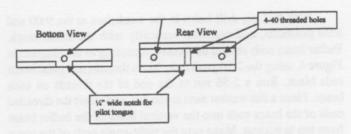


Drill #32 holes in each end of the mounting tongue. Attach the tongue to the center of the pilot frame, using the 1/4" x 4-40

screw and locknut. Drill out wheel hubs to 1/8", using a drill press to keep holes true. With the axle mounted in the bushings, install a wheel on each end of the axle. The gauge should be correct when the axle ends are flush with the outside of the wheel hub. The wheels should be a snug friction fit on the axle. If not, use a small amount of super glue.

While front frame block is removed for front frame extension modification (Modification # 2), cut out a 1/4" wide notch, centered in the bottom front flange of the frame block (Figure 6). This notch will limit side to side movement (swivel) of the pilot truck, yet allowing up and down movement of the truck. The easiest way to cut this notch is to mill it out. If you do not have a mill, the job can be done with a rotary tool and cutoff wheel. Be careful not to cut the notch wider than 1/4", as the pilot tongue is held centered in this notch to limit pilot swivel. Once the notch is cut out, drill a hole in the center of the frame block from top to bottom with a #43 bit, and thread the hole with a 4-40 tap.

Figure 6 Front Frame Block



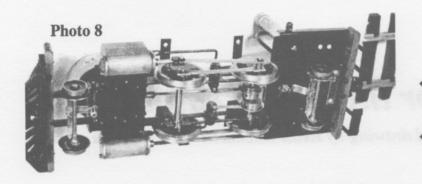
Reinstall the front frame block on the loco. Position the pilot truck assembly in front of the front frame block (the tongue will push the pilot, when loco is moving forward), with the tongue extending through the notch from front to back. Attach the tongue to the frame block by placing the spring on the 1/2" x 4-40 screw. Then, place the screw through the hole in the tongue, and into the threaded hole in the frame block (Photo 8, trucks left unpainted for clarity). Do not compress the spring fully. A drop of LoctiteTM on the threads will keep the screw from loosening.

Place the loco on a track, and make sure the pilot wheels are in contact with the track. The pilot truck should only swivel a few degrees either side of center, but should move easily up and down against spring tension. The limited-swivel pilot will help Ruby to track better, and eliminate most of the "hunting" associated with the 0-4-0 wheel arrangement. With this pilot design, Ruby will still be able to run through curves as little as 4" radius without problems. Pilot weight plus spring tension should not exceed 3 - 4 oz. More than that will tend to lift the drivers, causing loss of traction.

6. Trailing Truck

Materials:

Same as for the Pilot Truck, except the mounting tongue is slightly longer, and a locknut is needed for the mounting screw:



1/4" wide x 1.3/32" long x .035" brass strip (mounting tongue)

1/2" long x 4-40 screw and locknut (mounting screw)

The trailing truck is constructed exactly the same as the pilot truck. The only difference is the mounting tongue, which is slightly longer, and which will pull the trailing truck like a caster.

After constructing the trailing truck, center punch and drill a #32 hole in the cab floor, 1/4" behind the rear boiler mounting bolt. Install the trailing truck by placing the spring on the 1/2" x 4-40 screw. Then, place the screw through the hole in the tongue, and through the hole in the bottom of the cab. Attach the locknut on the topside of the cab floor. Place the loco on a track, and make sure the trailing truck wheels are in contact with the track, and will swivel properly. Adjust by bending the mounting tongue slightly, if necessary. Truck weight plus spring tension should be no more than 3 - 4 oz., the same as for the pilot truck, in order to avoid driver slippage.

In the next issue, we'll move on to Part III - Simple Lathe Project Accessories for the Columbia.





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Knurling Tools For the Taig/Peatol Lathe

article, photos and drawing by Keith Bucklitch

Making your small lathe more useful

A knurling tool is used to apply a raised pattern to a round workpiece held in the lathe chuck. The pattern provides a firm grip for the fingers when holding the piece and also imparts an attractive finish to the surface. This knurled surface is usually formed by applying a hardened wheel with the pattern engraved in it.

This wheel is pressed against the rotating workpiece and the pattern is in turn formed in the work surface. This process produces a powerful side thrust against the workpiece and con-

sequently severe strain on the mandrel bearings. In order to reduce this lateral strain, it is common to have two knurling wheels which are applied to opposite sides of the workpiece and progressively tightened together.

Some knurling wheels have a pattern engraved parallel to the axis of rotation. Others have

the pattern engraved at an angle, usually 30 degrees. When two wheels, each with a 30 degree angle, are applied the result is a neat crosshatch pattern. Such wheels should be purchased in opposing pairs.

Wheels can be obtained with differing coarseness of engraving, so we can vary the knurled pattern from very fine to quite deep. A further use of knurling is to increase the diameter of a shaft, to provide a tighter fit in a hole, and a key for adhesive. The knurling process actually raises the surface and thereby increases the diameter slightly. This can also be used to provide a key for adhesive when securing a shaft into a socket hole.

Knurling wheels are by necessity extremely hard. They will rapidly wear away any axle they are mounted upon and hence should always be fitted with a bush of phosphor bronze to provide a smooth running and less damaging wearing surface.

A light coating of oil applied from time to time will then maintain your tool in good condition for many years. Wheels come in a variety of diameters and thickness. I used 13mm diameter wheels 6mm thick for my tools, but use whatever you can obtain that is similar in size and adjust the slots/dimensions of the rocker arms accordingly.

The tool consists of two mild steel rocker arms which are slotted to hold the wheels, running on silver steel axles, pivoted at the rear end on a bracket which can be either gripped in the toolpost or mounted on a small plinth at centre height. Pressure is applied to the rocker arms, and hence the wheels, on the

workpiece by means of a knurled thumb screw on a shaft with two boat shaped "washers". A light spring serves to separate the arms when the pressure of the thumb screw is released.

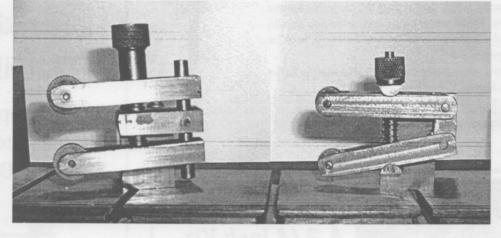
Construction is fairly straightforward and should be clear from the drawings. It is not essential to adhere

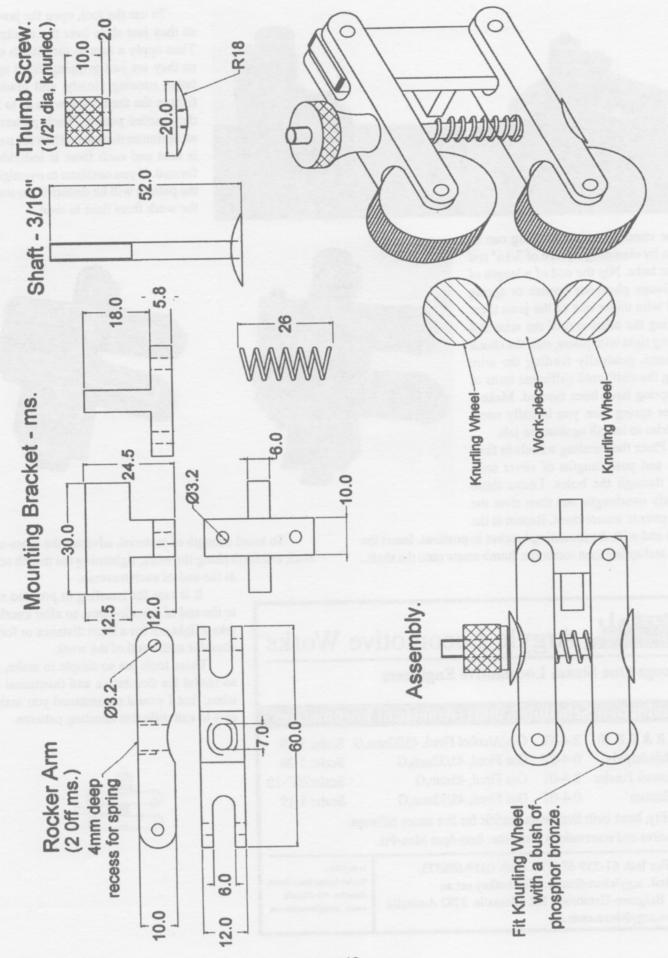
closely to the dimensions provided, and any suitable stock size of bar can be used for the rocker arms. To cut the slots, I would suggest that after marking out, two holes of appropriate diameter are drilled at the end of the slots. Hacksaw cuts down the bar can then be made to remove the unwanted material, and the slots cleaned up with a file, or by milling.

The mounting bracket can either be cut from a solid block or fabricated from two pieces, screwed together and then brazed or hard soldered. The shaft is made from a piece of 3/16" diameter steel rod. A boat washer is soldered on to the lower end, whilst the upper end is threaded.

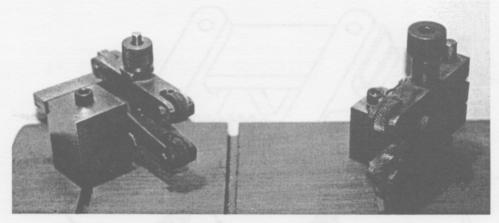
Make a thumb screw from a short length of 1/2" diameter steel held in the lathe chuck, faced, centre drilled, opened out and tapped to suit the shaft. I used the knurling tool to form a knurl on the thumb screw, initially using a suitable hexagon nut to tighten the rocker arms against the workpiece.

After knurling, the thumbscrew was parted off the stub left





all dimensions in mm unless otherwise indicated

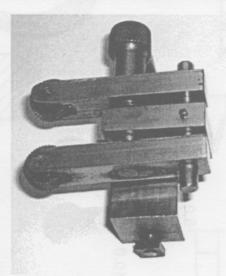


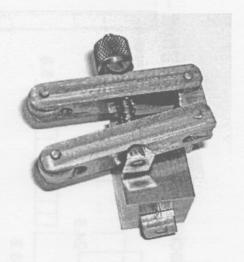
To use the tool, open the jaws out so they just slide over the workpiece. Then apply a turn to the thumb screw so they are just gripping. Start up the lathe, running slowly, and gradually tighten the thumb screw so as to form the knurled pattern. Each pattern has an optimum diameter when the pattern is neat and each facet is individually formed. If you continue to overtighten, the pattern will be distorted, so inspect the work from time to time.

in the chuck. A suitable spring can be made by clamping a piece of 3/16" rod in the lathe. Nip the end of a length of 24 Gauge phosphor bronze or spring steel wire under one of the jaws then, holding the other end of the wire and pulling tight with pliers, turn the chuck by hand, gradually feeding the wire along the shaft until sufficient turns of the spring have been formed. Make a longer spring than you initially need, and trim to length against the job.

Place the knurling wheels in their slots and push lengths of silver steel axle through the holes. Leave these slightly overlength and then rivet the ends over to secure them. Repeat at the

pivot end with the mounting bracket in position. Insert the shaft and spring then screw the thumb screw onto the shaft..





To knurl a length of material, advance the cross-slide back and forth along the work, tightening the thumb screw at the end of each traverse.

> It is rare for knurling to proceed right to the end of a work-piece, so after knurling, take a light cut for a short distance or form a chamfer at the end of the work.

> These tools are so simple to make, and so useful for decorative and functional finishes, that I would recommend you make 3 or 4 to suit different knurling patterns.



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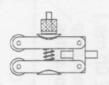
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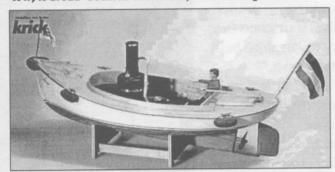
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The Daydream

text and photos by Jeff Bennett

Two years ago my wife and I attended a model boat show. This was at South Street Seaport in Manhattan. While many of the boats showed hours of detailed construction, what caught our eye was the steam powered boats. The combination of wood,

brass and the small working parts made for a wonderful looking model. Thus started our first try on a scratch built steam boat.

By doing some research we found some beautiful launches by a chap in England (Keith Townsend), but the \$8,000 to \$25,000 was not in our budget.

A fellow steamer, Mossimo Dell'Aria gave me plans for a French

launch. With this we were able to glean ideas. After looking at many pictures we cameup with a typical Windemere steam launch.

Mahogany was used for plank on frame construction. To get the curve for the bow and fantail a block of wood was shaped accordingly. After using a fast setting glue to hold the planks in place, the inside was coated with a water proof glue for strength. To hide any small gaps between the planks the glue was tinted with umber. The outside was coated with four coatsof alkyd based urethane and rubbed to a low luster.

Butane fires the Cheddar Pintail horizontal boiler, which steams the two cylinder Graham engine. Both are available through Sulphur Springs Steam Models in Missouri (see their ad in this issue).

Lead shot was used for ballast, with glue poured over it to set it in place. A two channel radio controls throttle and rudder. Space was tight, so both servos

were bolted back to back to allow them to fit in the cabin. Throttle control was helped by installing a return spring so the servo only has to pull in one direction. Friction was reduced on a 90° turn by using a small brass pulley.

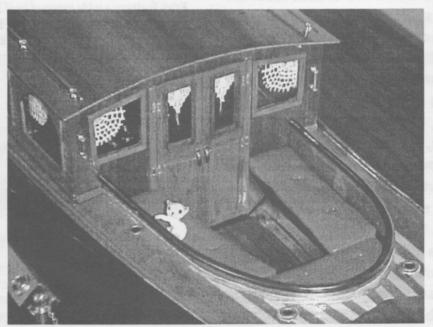
The size of the steamboat is 40" long x 6.5" beam x 9" high.

Materials for making stanchions, handrails and fittings were obtained from Dromedary in Texas. My wife was the

decorator; she made the lace curtains, leather tufted seat cushions and the canopy cover.

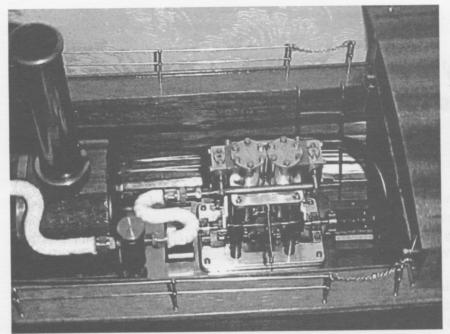
When I make another launch, I will use a fiberglass hull from Bob Underwood in England (011-44-1225-865-224). A very nice one and reasonably priced.

Many of my questions were answered by helpful 'steamers' along the way and I would like to thank them all for their time and patience.



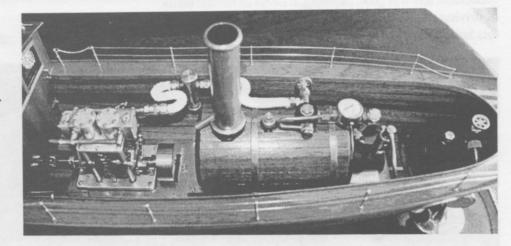
The boat cat finds the plush cockpit to her liking.

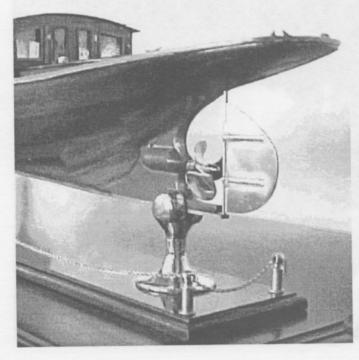




A very clean, neat installation of the twin cylinder Graham marine engine. Note the lagging on the steam pipes. This not only looks great - it significantly improves the efficiency of the power plant.

This photo shows the power plant installation, which uses a Cheddar boiler.





Is there anything so elegant and pleasing to the eye as the graceful compound curve of a steam launch stern?

Steamboats Only Meet on Kimberton Pond

by Dlanor & Eiram Nworb

Fun on the water in Pennsylvania

Having spent a great couple of days at the Pennsylvania Live Steamers Labor Day Meet, Faithful Assistant and I drove a few miles on Sunday afternoon to enjoy a steamboat regatta at Kimberton Pond, a delightful venue for model boats.

This is an annual event hosted by the Valley Forge Model Ship Society, and this year they intentionally scheduled it to coincide with the PLS meet. As far as we were concerned, this was good planning. It saved us several hours of driving time, and we were able to enjoy both meets on this holiday weekend.

A good number of steamboats turned out for this fun event, and the care taken in building and detailing these boats was something to see. Check out the photos on these pages - and more in color on the back cover - to see for yourself.

Thanks, VFMSS, for a great time. We'll be back again next year!





Photo - opposite page: A participant looks over Bill Ray's (Maryland) *Paula Ann*, a scratchbuilt steam launch. Bill used a 41" fiberglass hull on this project. Check out the beautiful inlay job on that deck planking!

Photo - right: Carl Berg of New York scratchbuilt this marine steam V-8 with oscillating cylinders. It got a lot of well deserved attention. With all those cylinders, it runs smooth and sweet...and we can't wait to see it installed in a hull!

Photo - below: Ken Parkinson of Florida chats with Robert Brent of New Jersey about tugboats. Robert built the beautifully detailed 42" tug, *Long Beach*, from a Hartmann kit.

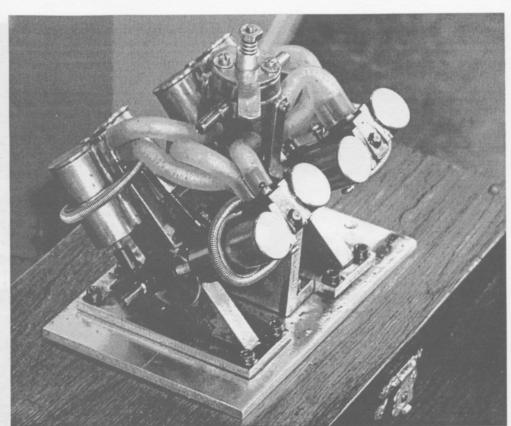






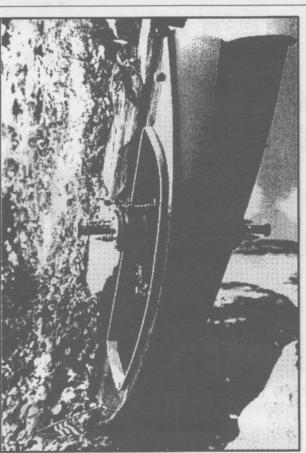


Photo - above: Faithful Assistant gathers information on the tug *Imara*, built by Ray Suder of Pennsylvania. The hull is fiberglass, 43-1/2" in length, and the completed model weighs in at 32-1/2 lbs.

Photo - left: 40" Krick Victoria kit built by Elliot Smith of Delaware. Elliot shared captain's duties with his wife, Betty. This steam launch looked great and performed just as good as it looked.

Photo- opposite page: Charlie Roth came from New Jersey with his venerable scratchbuilt *African Queen*. Charlie is a tireless promoter of steamboating, both model and passenger carrying.

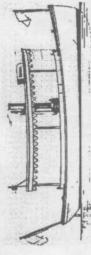
Diana Steam Launch



Famed marine architect Weston Farmer designed this graceful and beautiful steamboat in the style of the Gay '90s. Diana is impecably modelled in fiberglass-reinforced polyester resin. The hull is gloss white, and the deck is Boston Buff. The planking, boot-top and deck seams are clearly incised. Supplied are hull, deck, complete drawings and material for the shaft alley and rudder tube. We guarantee its safe delivery to your home. \$276.00 plus \$24.00 shipping and handling.

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LO.A. 50" 25.0"
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Bob Paule, 53, of Manchester, Missouri passed away after a lengthy illness on Wednesday, Sept 12, 2001.

Bob was born December 15th, 1947 in St. Louis, the son of Art & Fran Paule. He married Carol Boller 32 years ago. Bob was a plant engineer at Nooter Boiler in St. Louis, his first and only job. He was a 20 year member of the St. Louis Live Steamers.

Surviving are his wife, Carol, three daughters, his father and mother.

Bob's hobby was being everyone's friend. His second hobby was Small Scale live steam of any kind. Bob started and ran Sulphur Springs Steam Models, a supplier of parts and FREE advise for modelers in the Small Scale Live Steam hobby. Bob was never too busy to answer questions or help with a problem. I am sure most of us have a bit of Bob in or on our steam projects.

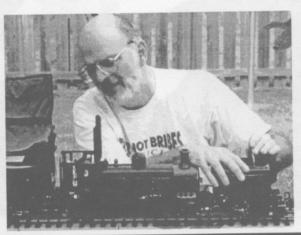
Do not stand at my grave and weep.
I am not there. I do not sleep.
I am a thousand winds that blow.
I am the Diamond's glint on snow.
I am the sunlight on ripening grain.
I am the gentle autumn's rain.
When you awaken in the morning's hush.
I am the swift uplifting rush
of quiet birds in circled flight.
I am the soft stars that shine at night.
Do not stand at my grave and cry.
I am not there. I did not die.

Whenever we visited Bob's home, either Jazz or Classical music was playing. If the TV was on, it was tuned to the BBC or Travel channel. Bob loved Dark British beers. He had a multigauge, 175' elevated railroad in his back yard, and he ran 7.5", 4.75", 3.5", 2.5", 1.75" & gauges 1 and 0. Often he would ride behind his coal fired Gauge 1 Garrett on a 3.5" gauge riding car.

Carol said Bob requested that all steamers at the funeral wear steamup shirts. His father remarked to me how nice it was to see so many of Bob's friends supporting his favorite pastime.

After Bob's funeral everyone returned to the Paule home and had food and drinks. We also ran Bob's Garrett and several other of his locomotives to celebrate his life. That evening at 4 PM we returned to DeSoto, MO to the First Erv Mueller & Bob Paule Memorial Steam up.

Submitted by Larry Herget





Argyle Philadelphia, a Baldwin 0-4-2T, on test on the Burnham & Berkshire RR siding at Alder Creek.

photo by David Pinniger

Upgrading Argyle Loco Works' BANTAM

article & photos by John Causer

Polishing a little gem...



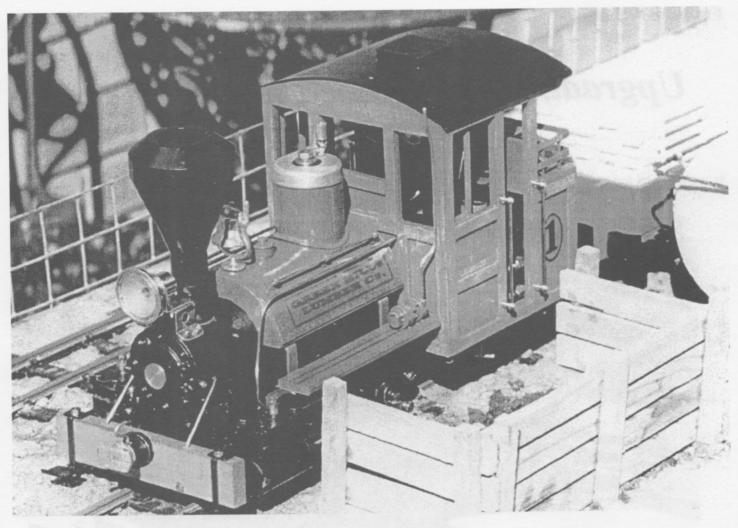
Gordon Watson introduced me to Steam in the Garden by way of an annual subscription for my 60th birthday and I have since renewed so as not to miss the informative and enjoyable reading provided.

I have several of Gordon's models (Argyle Loco Works), the last being a Bantam, which I have found to be a great little locomotive. It is free steaming and provides troublefree runs of 15 - 20 minutes on a full gas tank.

After enjoying the Bantam in its original form (Falls Mining N° 1 on Gordon's web site) I decided that I would substitute an enclosed cab and dress it up a bit.

In the end I made the following changes:

- moved the cab floor to the top of the frames
- fitted a wooden cab constructed of 3mm MDF and 1.6mm ply
- fitted a balloon stack as per the Philadelphia drawings



- fitted a revised rear drag beam to allow full use of the cab floor area
- fitted a rear pony axle with 16 mm diameter Brandbright wheels and a light centring spring
- installed a fully enclosed radio control system on the regulator using a sub-miniature FM receiver and servo powered by a small 2 hour Ni-cad battery pack. The R/C gear is accessible by lifting out the bunker and is mounted on a single brass plate retained by a single BA screw
- clad the saddle tank with a brass sheet with simulated rivets - this is held on by a single 6BA screw through the dummy water filler - and fitted handrails
- fitted front and rear lamps (these are simple brass turnings which could easily be converted to working lamps)

 mounted a dummy turbo generator and associated pipework on the new running boards which are hung from the saddle tank

I must say that I am very pleased with the end result and I am attaching some images which you may use in the magazine.

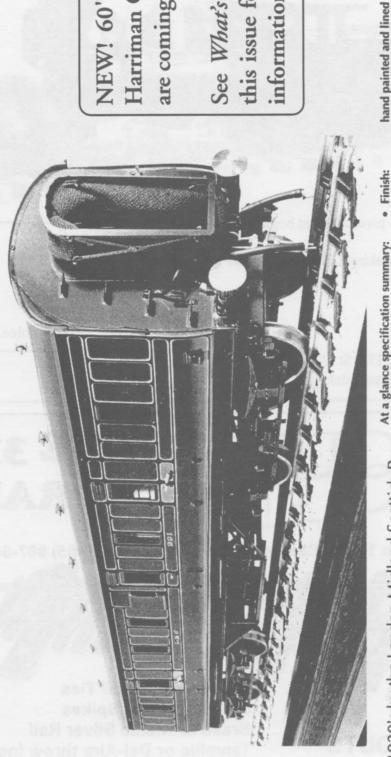
I would recommend the Argyle Bantam to anyone seeking a well-engineered small loco, to either run "as is" or, if they are a tinkerer like me, as the basis for a freelance facelift.

Another Bantam is on order, as I have some thoughts for a British outline as the next project. If all turns out well, look for it in these pages in a future issue.



L. M. S. Period Piece...

D. 1778 Gangwayed Passenger Full Brake in Period I livery. Beautifully presented in 1:32 scale (GAUGE 1)



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> design and construction practice down to the sumptuous Uilt in the 1920's by the London Midland Scottish Ry (LMS) the Corridor Full Brake built to plan D. 1778 was almost a pure extension of Midland Railway coach livery of Black, Gold, and Crimson Lake. Some cars entered British Railways ownership in 1947. Our model is available in three paint schemes; LMS Period I (shown),

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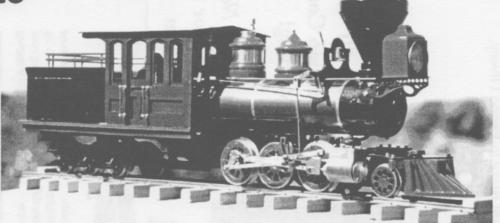
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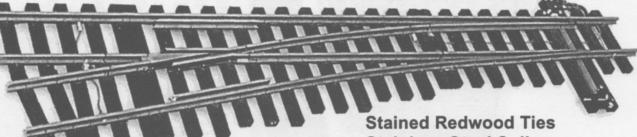
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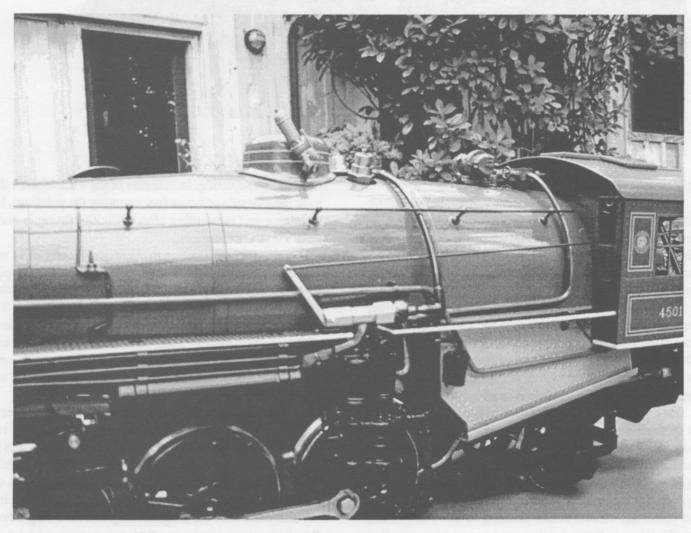
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The Bangham Steam Whistle ASTER Light Mikado Installation

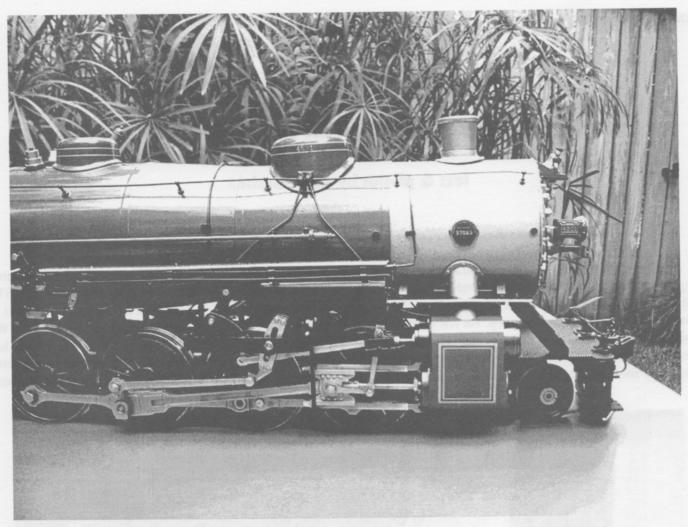
text & photos by Jerry Reshew

A couple of Diamondhead Steamups ago Larry Bangham introduced an astounding development to our hobby - a locomotive whistle that sounded like a steam whistle, rather than a chickadee peep. He has written extensively about the first development and subsequent refinements. One of his latest is a two tone resonator whistle which may soon be available as an after market addition

for the ASTER USRA Light Mikado, and to be distributed through the ASTER Hobby Company dealer network. The whistle will be sold as a ready to install set of parts, but in the period between agreeing to produce this item and the actual engineering and source selection process, Larry has decided to make a limited number of kits and completed assemblies for the Mikado owner who just has to have one



View of whistle and valve actuator



Resonator tank installation

right now.

The kit will have all machining, brazing, and some of the soft soldering completed, but will be in an as-soldered condition. This means that all of the trimming and filing of sheet brass, braze and solder joints remain to be completed. According to Larry, this is not particularly difficult, but it is time consuming.

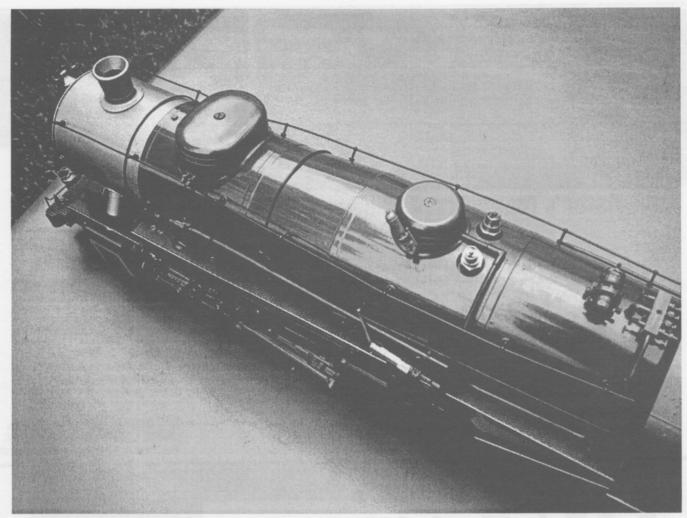
A finished assembly will be produced on a limited basis and will first be available to those who got on Larry's production list during this year's Diamondhead Steamup. I think that most people will select the finished assembly for their Mikado, and with that in mind, here's my experience with the finished whistle assembly installation:

Larry furnished a sheet of instructions and a three page set of drawings that are excellent. They are full size and show the working mechanism for the valve and the location for the resonator and chimes. The parts are brass and stainless steel and they really should be painted to look right on the locomotive. I recommend that you assemble and install the whistle before painting so that you can test it under steam in the event that you have a leak or two that

needs some adjusting. Installation of the whistle and valve took me a couple of hours (not counting the painting), but takedown and reinstalling after the initial fitting is really only a matter of minutes.

The only modification to the original locomotive was the need to remove two front spacers on the dummy pipe line assembly (part 9-15). I cut the spacers off with a Dremel™ cutoff wheel, but I left the lugs in place. The modification was needed to raise the tanks up to the level of the original dummy tank, but the resonator that Larry supplies might be of a different design and might not need the modification. Test fit before doing anything else and you might be OK.

A slot needs to be cut in the steam dome in order to install the whistle steam supply pipe. I did mine in two steps. I marked the center of the dome rim while it was on the locomotive, then I removed it and filed a groove with a Swiss file on the underside, lining up the mark with the center hole (more or less). I then chucked a #31 drill into my drill press and held the groove against the drill grooves. It took about ten minutes to get a lovely semicircular groove



Installation and routing of steam pipe from dome

in the dome, and it fits the pipe perfectly. The metric screw that holds the dome in place will have to be replaced with a 4-40 screw from the hardware store.

The whistle assembly is fitted first, the silicone tubing having been wired to the pipe as Larry describes in the instructions. The dummy piping will have to be removed for the tank installation (this is where you'll discover whether you must remove those pesky spacers). I had to substitute 2x6 mm screws for the original ones since the spacers were not there to take up the slack and the resonator holes are a bit shallower than those in the original dummy tank.

Install the banjo bolt and steam supply pipe, then snake the silicone tubing under the boiler and toward where the valve will be installed, bringing it out where the dummy compressor resides. Wire the tubing to the valve, install the valve to the steam supply line, lubricate the valve, and you are finished and ready for the steam test. I had some piano wire (I think .031) about and fashioned a control rod from it, but I needed to enlarge the hole in the valve lever to accommodate it - a # 61 drill in a pin vise did the trick. I can now operate the whistle from the cab!

The steam test should bring pressure to about $5.0~{\rm Kg}$ / ${\rm Cm}^2$ for maximum effect , but you'll have a nice tone at about half that. If you notice steam escaping from the banjo bolt or the valve, this is the time to tighten everything up. If there is a leak in the stainless steam supply pipe, a bit of soft solder will easily take care of it.

I painted the resonator assembly and the steam supply pipe. I first cleaned the metal with vinegar, masked off the whistle and banjo bolt (be sure to block the screw holes and the small resonator holes with a toothpick) and then spayed everything with red primer. The color coat is Rust-OleumTM Semi Gloss Black and it looks great!

The photos give you a view of what the finished installation looks like on my Mikado.

For information on availability, or anything else about the whistle, you can call Larry at (714) 521-6254.





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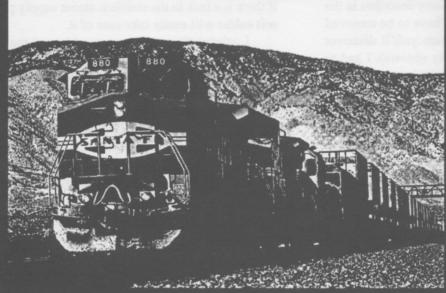
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National Summer Steamup - 2001

by David Leech

It is 10pm on Sunday, July 29th. Dan Pantages and I have just returned to the hotel from a steak dinner, to celebrate having had such a wonderful visit to Sacramento and the 49'er steamup. We see a group of people loading parts of the new portable track into a truck, and then enter the convention center to see if we can help. To our surprise the room, now void of any



Morgan Jennings (Colorado), one of the many avid steamers at the National Summer Steamup.

parts of the track, is still showing many clues of what had happened here during the last three days.

A rectangle of six tables which had been in the center of the big track, usually full of locos and rolling stock, now sit empty, as do other tables and chairs around the perimeter of the room where many locos were worked on during the event.

On the floor a few fragments of ash and coal lay where the *coal firers* had been cleaning their engines, and a couple of garbage cans are overflowing with empty containers that once held water and fuel. The whole weekend seems to have gone by so very quickly, but perhaps I should start at the beginning of the story.

The event was the National Summer Steam up, this year

called the 49'er Summer Steamup, presented by the Pacific Coast Live Steamers. This, it's fifth year, was held in Sacramento at the Canterbury Inn & Convention Center.

Dan Pantages and myself had driven down from Vancouver, Canada, a one-way trip of about 1,000 miles, and a day and a half of relatively easy traveling straight down I-5. Changing drivers on a regular schedule, and stopping for meals actually helps the drive go quickly. We drive rather than fly because of all that we bring with us.

We made a slight detour this year to the east of Portland, Oregon, so that Dan could meet up with Jim Hadden, in order to pick up a Heisler loco that Jim had built for Dan. The meeting went as planned, and we continued on our way. An overnight stop in Medford, Oregon in our trusty Motel 6, and then onward to the south and into California. We drove into Sacramento and found a gas station to fill up the car and to ask directions. Not really knowing where we were going, we were happy to find that we were a matter of blocks from the hotel, where we arrived at about 1 pm.

The previous four events had been in the San Francisco area and held in the spring, so moving it to Sacramento means that we save a couple of hours of driving. As the information sheet from the organizers puts it, the Canterbury Inn is "an older, but well maintained, motel complex". Three large, two storied buildings contained the rooms, all with external doors surrounding the swimming pool. During the heat of the day, it would have been nice to take a dip, but I always seemed to be too busy doing other things!



Jim McDavid (California) prepares an Argyle loco for steaming.



John Coughran (California) with his coal fired Roundhouse Jack.

The separate, freestanding convention center contained three rooms; the largest, about 80 ft. by 30 ft., contained both the new portable track and the 32mm track of Charlie Lix. In a smaller room across the hall was Paul Brink's very nice double tracked, dual gauge layout that could take all but the large locos. The big track, as one must expect, had a few teething problems that the "track team" assures me will be fixed before it is used again.

Whilst the track had the 10 foot plus radius for the largest locos, the track laying caused a few problems for long wheelbases like the Aster Daylights, and the position of the outer steamup loop produced a radius of perhaps only six feet which caused buffer locking for any British stock. As I say, the team members I talked to said that it would all be fixed. The track did, however, get good continuous use, and in fact on the Saturday by the time I went to sign up on the sheet, because I had slept in to 9 am., the earliest time I could book was 10 pm.

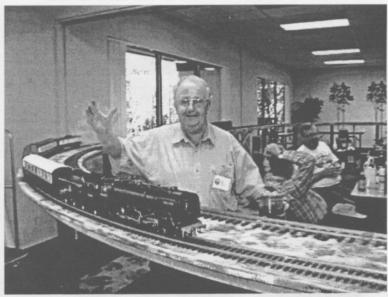


To the delight of onlookers, Sam DiMaggio (Wisconsin), a veteran steamer, raises a dense cloud of coal smoke.

The Canterbury Inn, whilst only three miles from the center of downtown, is a little isolated from stores and restaurants, so the organizers had rented a minivan that was made available to all who needed a ride at a very nominal charge. I used it on the Saturday in order to visit the California Railway Museum, and the adjoining area called "Old Sacramento". My driver was the daughter of one of the organizers. She dropped me off at the door of the museum, and was there to pick me up at the appointed hour. Much better than trying to find one's own way, parking, etc. The rail museum is of wonderful quality and well worth a visit.

At six o'clock on the Saturday, tables and chairs were arranged around the pool for the barbecue. We even had some entertainment after our meal when a short 'skit' was acted out, and there was a door prize draw. Many thanks to all those to donated the prizes.

On each day there was a long table in the lobby of the convention center, on which items for sale were displayed with de-



Tony Dixon (California) always seems to be enjoying himself.

tails of price etc. I guess that I never was in the right place at the right time, as *other* people seemed to get the great deals. I think that it would be nice if it were held more like an auction or something so that everyone had an equal chance.

Three seminars on Friday, and another three on Saturday had been organized, but I am sorry to say that I never found the time, or was busy doing other things, to attend any, so I cannot give any details. I am sure that they would have been most interesting, and I thank the speakers for their efforts.

On the Sunday, a group phone call was organized to send our best wishes and thoughts to Bob Paule who was fighting cancer. We all sat, or stood, on the grass outside one of the rooms where the speakerphone was placed on a chair. We all had our chance to talk, and Bob's wife Carol did the talking on Bob's behalf. It was a very special time for all of us that participated.

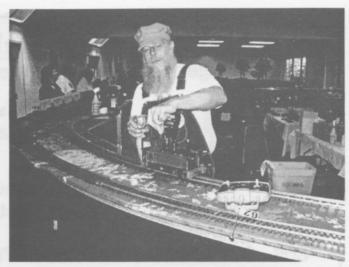
Each day the dealer room was open from 1-3pm. Having arrived halfway through the Friday session I had a quick look around, and found that there were five dealers this year,



Jim Reyer (Colorado) with an experimental scratchbuilt overtype loco. We hope to tell our readers more about this interesting loco in a future issue.

S.T.E.A.M., Brandbright, Llagas Creek dealer California & Oregon Coast Railway, Trackside Details and RCS. I made a mental note to go back in but being at the museum on the Saturday, I finally remembered to go back into the room on the Sunday and found that I was a little late as one dealer was already packing up. Again, I thank the dealers for being there as I personally find it important to see first hand what is available in our hobby.

During one evening meal at a Mexican restaurant with six other steamup attendees, I posed the question "in what direction did they think the Summer Steamup should be going?" A good discussion followed, but I think one member of the group put it very well. What he said was that he "was there to have a good

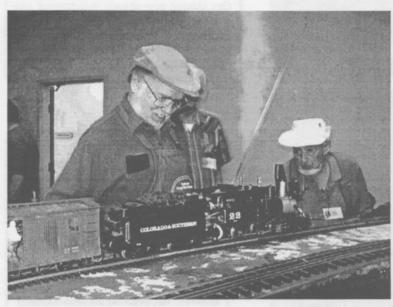


Tom King (California, turnout guru, with his Roundhouse Pooter.

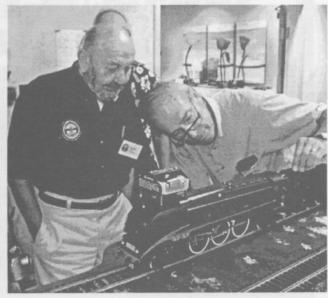
time steaming up", and from what I observed, I think that everyone who attended this year's event did just that.

Whilst I do not like to mention names, for fear of leaving people out, it would be remiss of me not to thank Kevin O'Connor for being in charge of the whole event. He and his team of hard working enthusiasts made the event run smoothly and efficiently, and I am already looking forward to next year.





Larry Bangham (left, California) puts his fully tricked-out Aster C&S Mogul through its paces as Arnold Hoffman (California) looks on.



Abe Cohen (left, New York) watches unidentified participant steaming up his loco.

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A Steam Streetcar for the Rivendell & Midland

article & photos by Les Knoll



The Christmas card that inspired the author to pursue this project.

By the time I read Carl Berg's article on the construction of a steam interurban in September/October Steam in the Garden, I had already begun construction of my own steam streetcar. Carl's fine article gave vital information on body construction, and generally gave me a push to complete my project. This article shows an alternate approach to building a steam streetcar or interurban using different components.

Anyone who has read previous articles about my Rivendell

& Midland railroad and its locomotives knows that I am attempting to recreate the essence of my former HO railroad in a 1:20.3 all live steam outdoor railroad.

Midland City was a fairly large Victorian era city on the HO version of the Rivendell & Midland featuring a street railway with a steam powered streetcar. This was inspired by, of all things, Christmas cards I purchased for my railroading friends sometime in the 1980's. The card showed a late 1800's Winter

scene with a train station and yard. The passenger train was letting off passengers and some of them were boarding a steam powered streetcar or interurban, presumably going into the city.

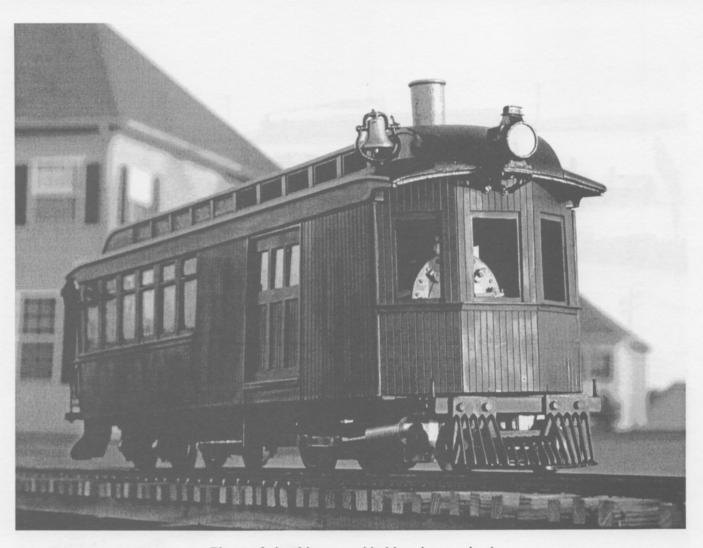
Portions of this scene were included in the HO Rivendell & Midland featuring an HOn3 scratchbuilt steam streetcar built from a Model Die Casting 'Old Timer' short passenger car and powered by a greatly modified Model Die Casting HOn3 steamer chassis. When the HO layout was torn down for the move to our new home, I saved the little streetcar and had many photos of the city scenes. This was surely something I wanted to recreate on the live steam layout.

ing the same time period 107 steam dummies were produced.

Steam interurban cars were built by Baldwin mostly for foreign markets. Large interurban type cars were produced for Puerto Rico, and for what is now known as Thailand.

Somewhat similar to the steam powered streetcar was the steam powered inspection car. These varied from 4 wheel affairs carrying several passengers to sleeper equipped units resembling coaches or combines with their front trucks consisting of an 0-4-0, 2-4-0 or 0-4-2 locomotive lower works.

The Detroit and Lima Northern number 100, built by Baldwin in 1898, was as large as a full size combine car and had

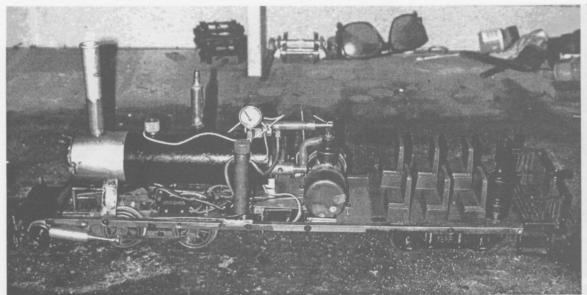


Plenty of visual interest with this unique project!

Most live steam hobbyists and narrow gauge fans know about steam dummies or steam motors, those 0-4-0, 2-4-0 or 0-4-2 locomotives pulling passenger cars along street railways. The steam dummies themselves carried no passengers and were shrouded like passenger cars so as not to scare horses on the turn-of-the-last-century streets. In addition to separate steam motors, Baldwin built passenger carrying steam streetcars as early as 1875. Between the years 1877 to 1880 a dozen more steam streetcars were produced for street railways. They were not as popular as the non-passenger carrying steam dummies, since dur-

an observation deck at the rear. It was powered by a 2-4-0 lower works at the front of the unit. With locomotive, baggage, passenger, and observation all in one, it was a single car train with the appearance of an interurban car. This unit more than any other is the basis for my steam powered streetcar. Mine is a decidedly shorter unit than the Detroit and Lima, so I refer to is as a streetcar rather than an interurban. A car this size could conceivably see street railway service.

Everybody works with what they know best. There are major differences in construction between Carl Berg's interur-



The naked chassis.

ban and my streetcar in firing, lower works, and control. While Carl chose an alcohol firing system, I utilized a gas fired Ruby boiler with increased fuel capacity, pressure gauge and Goodall-type valve.

We both utilize oscillating cylinders. Carl's scratchbuilt oscillating engine is enclosed within his car and powers the drivers via chains. My lower works is a 2-4-0 locomotive chassis pivoting like a Fairlie style locomotive. All rod motion is completely visible. The pivoting front engine chassis is typical of what the Baldwin inspection cars used. Instead of manual control, I have added two channel radio control since my track is at ground level.

The lower works is scratchbuilt around a pair of Mike Chaney's oscillating cylinders, originally intended to upgrade Mamods and Janes. These have also been used on some Geoffbilt Shays. They perform flawlessly on my Geoffbilt 'Tee' boiler Shay and I thought I would try to build a rod type engine using them. I had drivers similar to those on my Pearse Consolidation

made by Walsall of England with 5/16" crank throw. The lower works is designed around those drivers, the Mike Chaney cylinders, and the reversing valve Mike Chaney supplies for the cylinders.

The basic mechanism is that of a Fairlie type locomotive in which the locomotive chassis swivels about its center like a passenger or freight car truck. The steam lines, exhaust lines, and linkage to control reversing must be

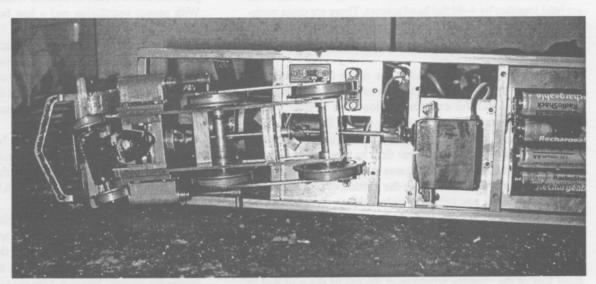
same type of conditions I faced when building 2-4-4-2 articulated locomotives. Familiar territory. The reversing valve, same as on a Mamod or Jane, faces inward instead of outward and is activated from a servo mounted on the car chassis. Motion is through a model race car universal to an offset lever that turns the reversing valve. The tricky part was getting the rotating shaft of the linkage to turn the valve, whose rotational axis is in line with the

able to track this motion. These are basically the

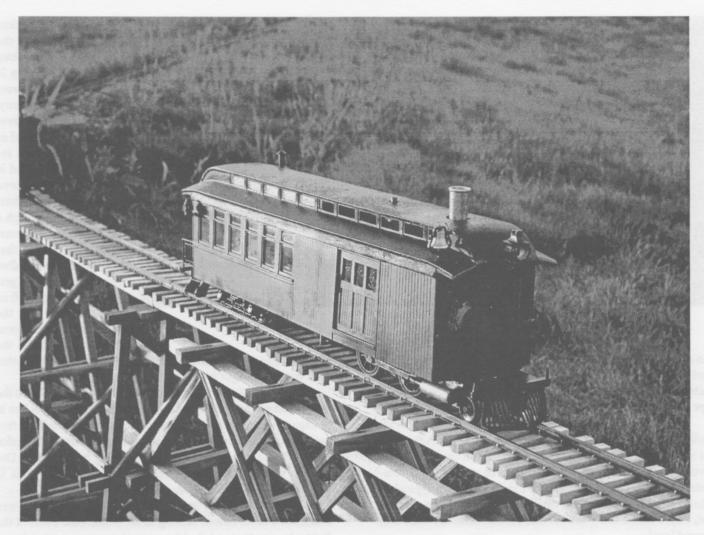
driver's axles. If this were done by direct coupling, the actuator shaft would run right into the driver axles!

The steam line is flexible neoprene fuel line, similar to the nylon tubing I used on my articulated locos. The exhaust line is an expanding and swiveling copper line assembly similar to that used for the front engine of articulated locomotives. The pilot deck utilizes the beautiful new pilot casting by Trackside Details, as well as their flag mounts. The 2-wheel pilot truck is scratchbuilt with wheels from Hartford Products.

The boiler is from an old Ruby project. The burner was shortened a bit to reduce heating in the smokebox. I rebuilt the fuel tank using the top 1/3 of the original as my expansion dome, filler, and gas regulator. This top section was silver soldered to a tank made of 1 1/2" copper water line tube. The tube is capped with copper cap fittings, then silver soldered. With normal running this tank will supply fuel for raising steam and a one hour run. Because of this the boiler has been equipped with a Goodall-type valve. The Goodall, safety valve, and pressure gauge are



A peek at the underside.



The little steam car rattles across a trestle on the author's Rivendell & Midland line, carrying commuters to work on a warm summer morning.

Ruby upgrade parts available from Sulphur Springs Steam Models.

The framework for the streetcar is 1/4" square steel obtained from a hardware store. The side sills and cross members are held together by 4-40 flat head screws. There are cross members located to mount all major components; engine pivot, boiler, fuel tank, R/C equipment, rear truck, etc. The rear truck is original Bachmann painted black.

Carl forged the way with the use of the Bachmann combine body. I originally thought mine would have to be made of wood, but with careful experimentation with venting, not to mention one melted body, I was able to use the Bachmann combine body too. I incorrectly assumed that an internal flue gas fired boiler would radiate less heat than an alcohol fired boiler. What I hadn't taken into account was that the smokebox on the gas fired boiler is a lot hotter than the portion of the boiler containing water. The smokebox is right behind the scratchbuilt styrene streetcar-type front that I built onto the Bachman combine body.

After some experimentation and melting of the first body, I determined that the front windows of the car as well as the front half of the clestory windows at the top of the roof had to

remain unglazed to allow for sufficient air flow. With 'glass' in all the windows, the temperature inside the car builds up rapidly because the rising hot air has nowhere to go. The sides, roof and plastic windows start to deform within 10 minutes of running. With proper ventilation and a low fire I have run for an hour straight with no deformation.

The body is equipped with much of the interior detail as was in the original Bachmann combine. There are seats with a pot belly stove at the rear. Two rows of seats had to be removed for the fuel tank. The lavatory stall at the rear of the car has been removed since as a streetcar the runs are short. Nonetheless I expect passenger complaints!

The passenger compartment is lighted as is the engineer's cab portion. There are functional Ozark Miniatures marker lights at the rear and a functional Trackside Details headlight at the front. A total of 7 bulbs were used. A bell from Trackside completes the additional detailing.

As with the Detroit and Lima Northern number 100, there is an observation car railing at the rear. The entire body, less the observation deck, lifts off to service the steam powered chassis. A detachable power line runs from the chassis to the body to power the internal lighting. One set of batteries powers lighting

and R/C components. Due to the amount of lighting involved, the batteries are Radio Shack AA type heavy duty rechargeables rated for 1600 mah mounted under the chassis. With all the lighting, this is a very fun steamer to run at night.

I actually have two sets of lower works for this car. The Ruby lower works that went with my boiler is also a good source of propulsion and the reversing linkage was not quite as tricky. I opted for the Chaney powered version because the cylinders look more like the type used on the Detroit and Lima Northern number 100, and after I built the chassis around the Mike Chaney components, I liked the way it ran. Using the oscillating cylinder based chassis also enabled me to lower the car floor 3/8" from where it was with the Ruby lower works, or to about the original combine height.

Carl's chassis and the two lower works I built suggests there are a number of ways a builder could go about creating their own steam streetcar. It could be built entirely from Ruby parts, altering the lower works to emulate a Fairlie mechanism, or be built entirely from a Mamod or Jane doing the same thing. I do not know the particulars of using the Mamod/Jane boiler, but I suspect a conversion to alcohol or gas firing might be recommended.

I am extremely pleased with the way the streetcar runs. It is controlled by two R/C servos, one for throttle and one for reversing. Mike Chaney told me that for slow speed operation to throttle off the exhaust a bit, and I did this in the exhaust swivel assembly. Mr. Chaney produces truly remarkable oscillating cylinder components. The car is capable of smooth slow speed running. This is probably because the steel framed car is fairly heavy, providing the equivalent of pulling several cars. At full throttle it can approach Mach I, nearly jumping the track on the 5' radius curves of my garage test track. I've never had the nerve to take it through a curve at full throttle on either the 5' radius in the garage or the 10' radius on the outdoor layout.

At present I do not know if I will build a Victorian city with a separate street railway, or use the car as an interurban to fill in passenger service from Hobbiton and Rivendell to Moria and Lonely Mountain. One thing is sure, this little steam car will be an interesting addition to passenger service on the newly reopened Rivendell & Midland.



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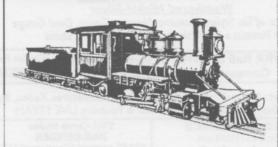


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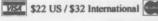


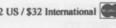
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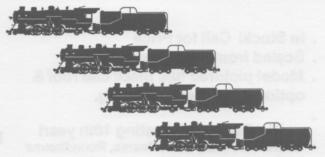
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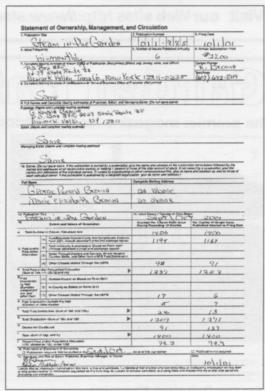
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Forney!



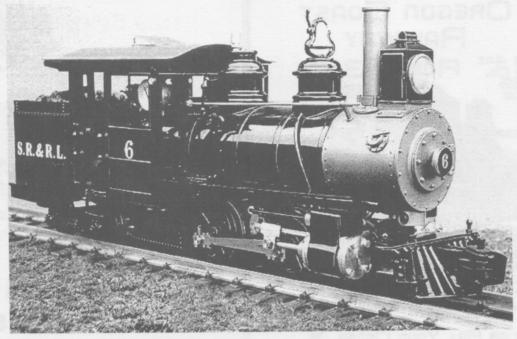
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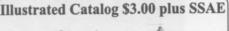


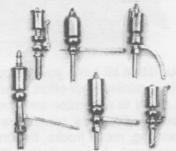
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Tragedy

Over the past few months we've all experienced tragedy. I'm speaking of the loss of good friends from our midst in the worldwide steam community and the atrocities of September 11th, which have affected all of us deeply.

I've been trying to think of what I can say in this space to comfort or uplift, but everything seems so trivial in light of the events of the past few weeks.

The best I can hope for is that our little publication will give us all a break from the harsh realities of life for a few minutes or a few hours.

Stay close to and cherish friends and family. Be safe and healthy.....





Photos - Outside Back Cover

Clockwise from top left...

John Causer's Argyle Bantam pauses at the loading platform on his line in Australia. See John's article in this issue for more.

photo by John Causer

Peter Watson's classic vintage steamer, an 0-4-0T Renown, 47 years old and still a superb runner. Our next issue will feature a full article and more photos of Peter's vintage steamers.

photo by Peter Watson

A Finescale Port class Hunslet on John Wenlock's garden line in Wales.

photo by John Wenlock

Ray Suder's might tug, Imara, seen at the Kimberton Pond all-steam regatta (see article in this issue). photo by Ron Brown

Beauty & Fin Art! Brass hardware on Bill Ray's Paula Ann, a scratchbuilt steam launch seen at Kimberton Pond. photo by Ron Brown

Long Beach, Robert Brent's wonderfully detailed tug, also seen at Kimberton Pond. photo by Ron Brown

Jerry Reshew drives his Aster Schools, beautifully repainted by Doug Pattman, with a rake of Peter Comley's teak coaches.

Max Whipple and George Lyon doublehead their Roundhouse Fowlers at a garden meet at Max & Louise's home.

photo by Michael Boretski

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