May - June 2000

Nº 56

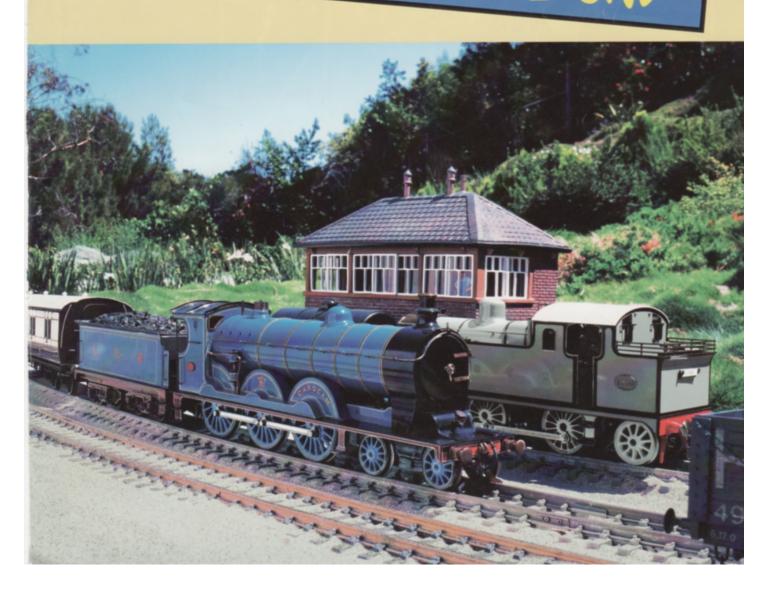
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#### STEAM IN THE GARDEN

with Steam on the Pond

Vol. 11, Nº 2 Issue Nº 56 May/June 2000

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FRONT COVER: Two Good Retired Runners. Both of these engines have belonged to Rick Runyon for nearly thirty years. They have been rebuilt and repainted. The gray G.E.R. (Great Eastern Railway) Nº 1000 was repainted in the mid eighties by Rick's friend, the English loco painter David Barrington Holt. David has painted many of Rick's locomotives through the years, but has now retired as a loco painter for a new career as a film executive.

Rick acquired this rare model of a spirit fired blue Cardean locomotive, which originally ran from Scotland on the Caledonian Railway. It was purchased in the mid eighties from Steam Age, the London train shop that so many of us remember as a mecca for Gauge 1 trains.

Again, Steve Crise's camera has captured some nostalgic English liveries in Rick's garden, with some help from Sonny Wizelman.

\*\*photo by Steve Crise\*\*

INSIDE REAR COVER: A new Aster Mikado with a consist of beer for the thirsty folks at the end of the line. The setting is Walt Swartz's PETS track in Florida, where cold liquid beverages are very popular, especially in the summer months.

\*\*Photo by Walt Swartz\*\*

Publisher/Editor Ron Brown

Faithful Assistant Marie Brown

CAD & Other Drawings in This Issue John Thomson

#### Regular Contributors

regum common	
Larry Bangham	California
Crankpin	The South
Harry Wade	Tennessee
Les Knoll	Illinois
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John Thomson	Texas

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#### 2000 CALENDAR OF EVENTS

(H)ouston (S)mall (S)cale (L)ive (S)teamers meet the third weekend of every month when there isn't a National Meeting held. If there is no other venue, the HSSLS meets on rotating Saturdays and Sundays at the home of Jim Crabb in Seabrook (Houston), Texas. Please call 281-474-5654 or email <saltycrabb@aol.com> for specifics and directions.

August 5, 6, 2000 - Summer Steamup in Warren, Maine. On the banks of the St. George River 220' of gauge 1 elevated railroad. 0900 to 1700 each day. For directions, motels, etc. contact Jim Curry @ <jjc@structureguard.com> or PO Box 40, Warren, ME 04864 - phone: (207) 273-3699.

September 1-3, 2000 - Pennsylvania Live Steamers Labor Day Steamup. Rt. 29, 1/2 mile north of Rt. 113, Rahns, PA. Gauge 1 track with additional sidings. Also available - ground level track for 1/2", 3/4" and 1.1/2" (7.1/4" gauge) scale trains. Food is available on site, lodging nearby. For more information contact Harry or Paul Quirk, PO Box 215, Springtown PA 18081 or phone (610) 346-8073.

September 3, 2000 - North American Steamboat Modelers Assn. Steamboats Only Steamup. 10 a.m. to 4 p.m., at the Valley Forge Model Ship Society pond in Kimberton, PA. For more information contact Ernie Morris, 929 Spring City Rd., Phoenixville PA 19469 - phone: 610-948-8107 or Bob Verish, 1245 Tyler Ave., Phoenixville PA 19460 - phone: 610-933-8606.

February 17 - 19 2001 - 4th Annual Meet at Steamtown National Historic Site in Scranton, PA. There will be two large layouts 24' x 50', one for live steam and one for electric. For more info call Clem O'Jevich at 570-735-5570 or email at wrunloco@aol.com.

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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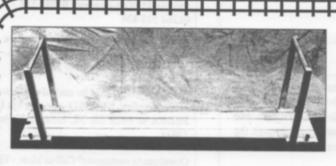
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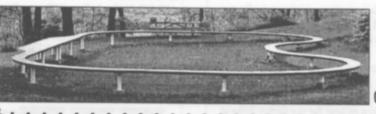
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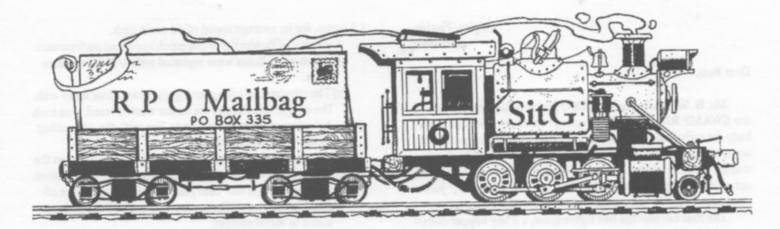
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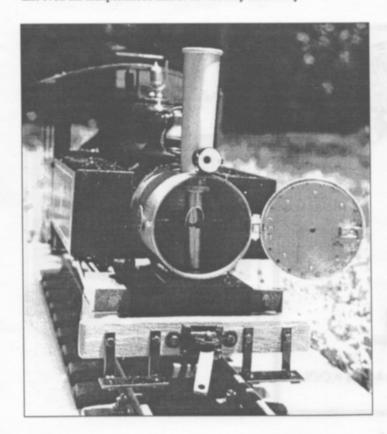
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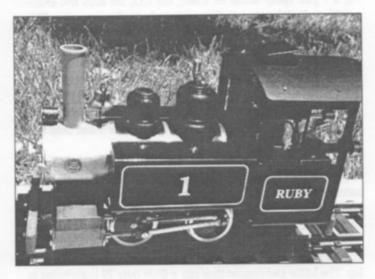
Cincinnati, Ohio

Dear Ron,

I saw the advertisements for the "RUBY" in *Steam in the Garden* and purchased the locomotive. It seemed the thing to do since my wife's name is Ruby.

Enclosed are photos of the modifications we made to the little beauty that even the inexperienced and/or novice may elect to try.





From Jerry Hyde we added an Aster headlight for a Western Maryland Shay. From Trackside Details we added Lima Builder Plates, Brass Bell, Whistle (peanut), Pop Valves (2) and a Cab Roof Vent. 3/8" brass tubing came from the local hobby store.

Both the headlight and bell are bolted to the smokebox as are the builder's plates. I threaded the sprue on the bell hanger base and bolted the bell, plates and headlight through small holes drilled in the smokebox.

While working at the smokebox I shortened the factory installed steam exhaust pipe to 1" and surrounded the shortened pipe with a 3/8" brass tube slotted like a kid's whistle. The idea of modifying the exhaust was to enhance the chuff sound. Frankly, this make little or no difference in the chuff at normal running speeds.

To our dismay, neither the builder's plates nor the cab roof vent had any obvious way to mount them. Our goal was to dress up the "RUBY" without making it necessary to repaint, so we elected not to solder if it could be avoided. Well, we had to solder. We soldered No 80 x 1/2" bolts to the back side of the builder's plates, drilled the smokebox and bolted them in place. We removed the heads from the tiny bolts and soldered them at the four inside corners of the cab roof vent, then drilled the cab roof and bolted the vent in place.

Since this locomotive has no prototype we felt free to make any modifications that seemed appropriate. Some modelers might question our choices, but to us our "RUBY" looks great, and it's unique in the fact that there is no other like it in the world.

Keep your steam up, Alvin L. Sadler Naples, Florida via e-mail

Dear Ron,

Mr. B. W. Lunkenheimer, CFO (chief fertilizing officer) of the SWAMP RR, had ordered a test run of the SWAMP's Mikado for early Sunday morning. The hostler had the engine lubed, watered, and fueled shortly after sunrise. At 6:43 AM the fire was lit. By 6:50 AM both safety's lifted, and the Mike was eased out of the portable steamup bay (not an advertisement, just a statement of fact:)), and backed up to the day's consist.

The first car was the fire fighting car, a 2 bay hopper carrying a 1 pint spray bottle of water, the CO<sub>2</sub> for loco fire extinguishing, dental mirror, igniter, and alcohol valve extension. This was followed by four USA boxcars, then five visiting German beer vans advertising well known German Bier's. The SWAMP crummy # 1 ended the train.

The Mike eased out of the yard (without breaking traction!) and was soon up to normal speed. At 7:05 AM the Mike stopped at the water tower to refill the tender. At 7:13 AM the bypass valve was opened slightly. At 7:29 AM another water stop was made.

At 7:40 AM the bypass was closed again completely to try to gain on the glass. At 8:02 AM the Mike ran out of fuel, fortunately at the head of the yard area, and had enough steam in the boiler to make it back to the portable steaming bay after the consist was uncoupled.

The run amounted to 48 laps around the 273' (actual) doubly folded dogbone track. That represents 1.715 scale miles per lap. The Mike and consist thus ran a little over 79 scale miles in

1.2 hours, for an average speed of 66 scale mph.

A number of factors led to this much improved performance:

- a) All original hoses were replaced with 1/8" ID vacuum hose.
- b) The crisscrossed tubing arrangement was done away with. The copper tubes under the tender were crossed, thus each hose was much more nearly in line with the connecting location on the engine.
- c) A deglitcher was mounted inside the tender between the alcohol tank and the starboard tender wall. The receiver was mounted in the 'coal pile' and the antenna was affixed to the rear of the tender. It was glued on with no metal to metal contact.
- d) There was absolutely no wind blowing -- it was dead calm -- unlike previous runs when there were 5 to 20 MPH winds and gusts.

#### CONCLUSION:

BW said "If the Mike can repeat or better this morning's performance, it will be a keeper, even though a magnet does stick to the tender!" That does not happen with the Hudson or the K-4.

Keep your steam up! Walt & Mr. Lunkenheimer





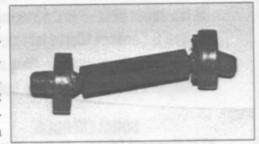
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Sidestreet Bannerworks, purveyor of small scale, live-steam and garden-railway-related books and videos has a new Web site (www.sidestreetbannerworks.com). In addition to being able to purchase books and videos online, visitors can also view steamup reports from the Denver Steam Group and partake of the Locomotive of the Month, wherein a small-scale steamer is examined in depth each month in words and pictures. Sign the guest book to be kept apprised of updates.

Sulphur Springs Steam Models, PO Box 6161, Dept. RB, Chesterfield, MO 63006 - tel/fax 636-527-8326 - e-mail:

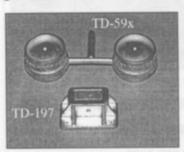
SSSMODELS@aol.com has Stuff for your RUBY - Water injection valve (Goodall valve) FVW-R \$15.00 - #3 Jet and jet holder FJG-R \$15.00. SSSM is the U.S agent for Argyle Loco Works, which now has u-joint assemblies available for you Shay scratchbuilders and kitbashers. Our sample consists of 2 u-joints, connected by the usual telescoping brass tubing and finished in a rich black color. Stub ends extend from the other end of each u-joint, providing an attachment point for pinion shaft or crankshaft. A close look shows that these are well designed, nicely crafted u-joints. Check with SSSM for prices...and please tell them that SitG sent you.



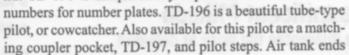
Ozark Miniatures has a web site. Check it out at www.ozarkminiatures.com

**Rio-Pecos Bob** announces that the new Pearse 2-8-0 Rio-Grande is fitted with a *Norm Saley burner* for a quieter and more efficient operation. Norm Saley can be reached at MRTRAIN@aol.com or 407-896-8610 to retro fit the new burner to Pearse Colorados and Switchers.

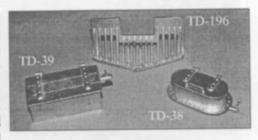
Pete Thorp at Trackside Details, the Big Kahuna of detail parts, has added some great new lost wax brass detail castings to the TD catalog. Pete tells us that these



new parts are the most asked for parts by live steamers, and he acknowledges the help of fellow steamer Norm Saley in producing these parts. TD-39 is a Tool Box with a working hinged lid. TD-38 is a water hatch, also with working hinged lid. TD-198 is unique in my experience...raised



with cast in detail, TD-59x, round out the new list of parts. As is always the case with parts from Trackside Details, our samples are clean castings, with only a casting sprue to be removed at most. The detail is sharp and crisp, and there are no disappointments. To order parts or a catalog (\$3.00 plus SASE), write to Pete at: **Trackside Details**, **1331 Avalon Street**, **San Luis Obispo**, **CA 93405**.







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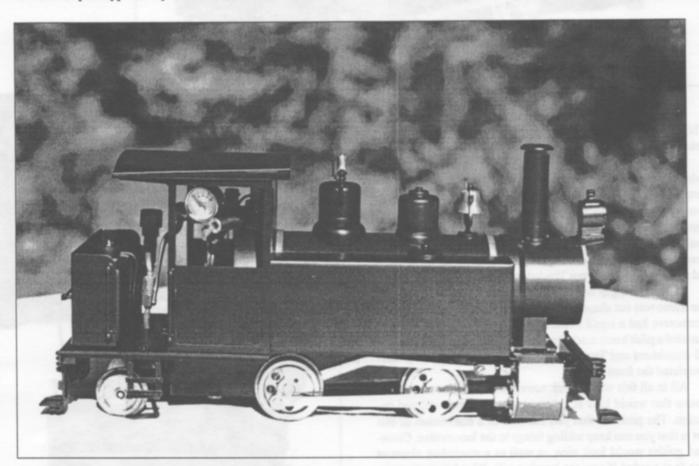
#### Thoroughly American Millie

article & photos by Mike McCormack

The new Roundhouse Engineering MILLIE is a well engineered, reasonably priced starter locomotive with only one drawback for those of us modeling North American prototypes - it is very definitely an example of English locomotive building practices. However, it can be fairly easily modified to represent a North American prototype. In my case I wanted to turn it into a

frame members are represented by rectangular brass shapes. Trackside Details steps and link and pin couplers completed that phase of the modification.

The side tanks were cut off the cab side sheets and fastened to the new deck with 2-56 machine screws, and the original front bracket was re-used. A new cab was formed out of .032 brass

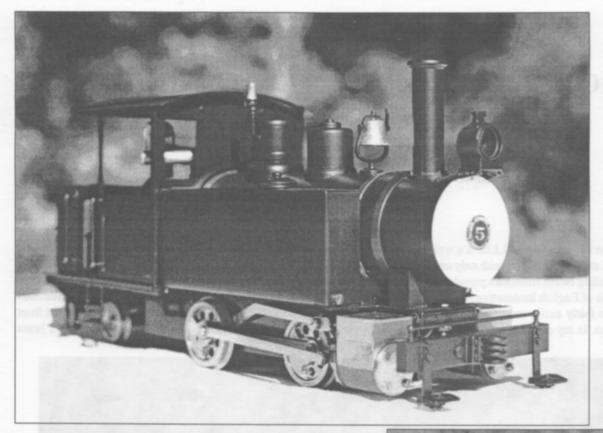


locomotive that would look at home on a sugar cane plantation in North or South America...or Cuba.

Since MILLIE is a pot boiler the side tanks had to remain no matter what locomotive I chose to model. A quick look through the reprints of the Porter and Vulcan catalogs that I have gave me many ideas for modifications. It was finally decided to turn the 0-4-0 wheel arrangement into an 0-4-2. This involved fabricating a cab deck out of 1/16" CRS (cold-rolled steel). Under

sheet while the roof is .028 brass sheet. The original coal/oil bunker is reused in this conversion. It does, however, sit farther back on the locomotive, requiring an extension of the gas supply line to the burner.

The trailing truck is pivoted off the rear frame spreader and is fabricated out of brass strip with a Roundhouse wheelset. The steam and sand domes were turned on a lathe out of brass rounds. You could also use Trackside Details castings. The steam dome



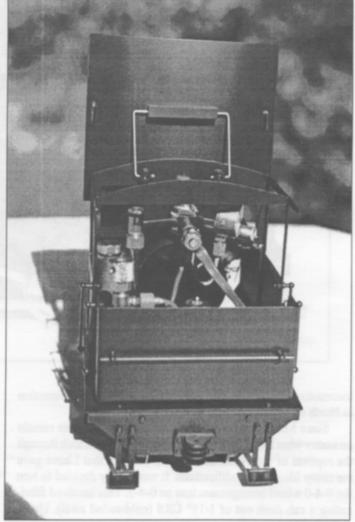
is hollow so as to hide the safety valve. The bell is a Trackside Details casting.

The biggest modification involved the smokebox/stack. I ended up turning a new smoke box and cylinder saddle out of bronze stock. The stack is a modified Trackside Details casting. You could also utilize the supplied smokebox fabrication with some modifications. In my case I wanted a smokebox that was smaller than the diameter of the boiler, which is usual North American locomotive building practice. The headlight, bracket, and number plate are from Trackside Details.

The last changes were done on the front of the locomotive. The frame was cut ahead of the cylinders so as to appear that the locomotive had a small frame extension in front, to which was mounted a pilot beam made from brass stock. Roundhouse handrail stanchions and Trackside Details steps and coupler pocket completed the front end.

All in all this was a quick conversion that gave me a locomotive that would look at home on any plantation railroad operation. The problem that you run into in a conversion of this sort is that you can keep adding things to the locomotive. Crosshead guides would look nice, as well as a smokebox cleanout plug (not needed if you are burning oil). Pilot beam supports, side tank steps, and the list goes on and on.





#### National Spring Steamup 2000

by Jim Crabb

#### Fun in the Sun on the Left Coast

Every year I go with great expectations and never have I been disappointed. The National Spring Steamup was just last weekend as this is being written, but I'm already making plans for next year.

Mostly it's about trains but it's also about friends, learn-

ing, and just having a good time. For me there isn't any place else to experience the adrenaline rush (except Diamondhead, and that's different) that comes with this event. The pace is laid back (probably a California thing) and people even go to bed at night -- albeit quite late.

The venue has changed several times and probably will again. This year the event took place in a big ballroom in the Hilton hotel in Pleasanton (San Francisco Bay area).

Although the tracks previously loaned to facilitate the activity were unavailable this year, loans of a personal

track (thank you Paul Brink) and a club track (thank you Puget Sound Live Steamers) insured that the community spirit so often demonstrated in this hobby was alive and well on the "left coast."

Both were double loops -- one a wide radius Walt Swartz

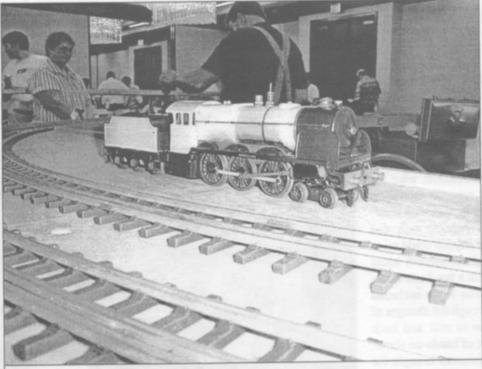
PETS original. Two "Big Boys" and a number of "Hudsons" and other large engines too numerous to mention ran on this track.

The smaller radius track had a plethora of 0-4-0 engines running constantly. Among the most often represented were

"Sammie," "Ruby," and "Millie." This last one was often double-headed in a faux-Fairlie rep-

resentation.

We were fortunate also to have Charley Lix bring and setup his 32 mm track. Now those people were having way too much fun. There was a variety of 7/ 8" engines (all obviously custom built) holding court with 32 mm "Sammie" and a "Billy." John Coughran always drew an audience when he ran his coal-fired "Jack." Next time you see any of these rabid 32 millers -- ask about the "pop-

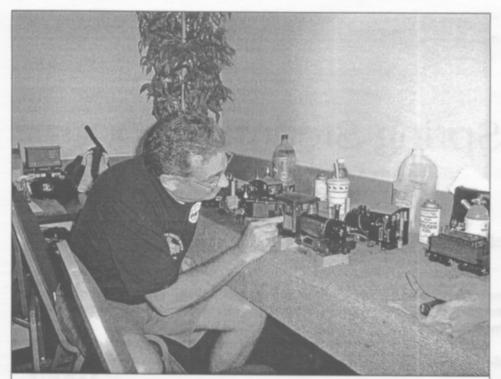


Richard Finlayson's (California) Bassett Lowke Super Enterprise, heavily modified by Larry Herget, on display at the National Spring Steamup in Pleasanton, California.

photo by Richard Finlayson

corn train special" which ran late Saturday night.

I didn't go to all of the clinics, but the ones I attended were outstanding. Paul Kenney's presentation on kitbashing locomotives went a long way to alleviate the usual concerns about mutilating expensive engines. In fact, he illustrated most



Jim Crabb (Texas) does a bit of tuning and tweaking on one of his locos at the National Spring Steamup.

photo by Richard Finlayson

of his talk with examples of taking the Roundhouse Engineering "Lady Anne" kits and building everything from a US "Prairie" to an Australian "Garrett." While the illustrations were

specific, the application was very general and could be used by almost anyone with very simple hand tools.

Any wannabe machinist who attended Clark Lord's seminar should be comfortable "jumping in with both feet." Clark used his own learning path and progress to show how anyone could muster a lot of skills and accomplish some remarkable results with a few basic desktop machine tools. His topic included walking the group through the changes of a Sherline from lathe to mill and back again. There was a lot of hands-on showand-tell and many resources brought for the newby.

Although he had to be forced out of his sickbed (thank you, Vicki Marie), Kevin O'Connor's presentation on alcohol burners was not to be missed. His lecture should be required for anybody wanting a license to drive alcohol fired engines. The "black art" of wicks -- coupled with the theory on flame, the best fuel (and why), the right flame configuration (and

how to get it) as well as some interesting trouble shooting made this seminar a great success.

Although all of this years seminars were advertised for rank amateurs, I noticed a lot of very experienced people in attendance who obviously thought there was still a lot to learn.

Those "old hands" made for lively discussion and provided additional resources from their years of experience. No participant should have left any seminar hungry -- there were lots of pearls.

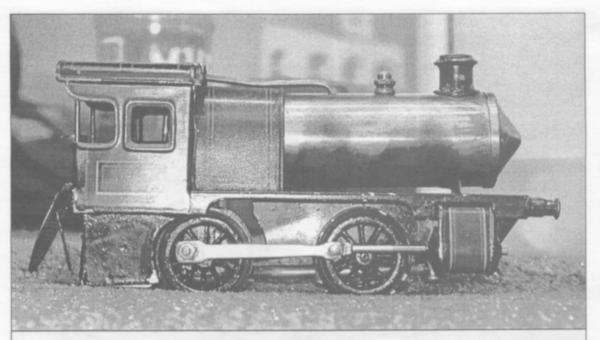
One big difference in the NSS is its location in the highly populated San Francisco Bay area, which then allows for the invitation of the general public to the open run day on Sunday. This is advertised in advance and always brings out more than a few lookers. Some are interested in trains of all sizes. Many are electric train hobbyists testing new waters, and a few just happened to be in the hotel. All are welcome and most are awestruck. This was especially true this year as there was a nice representation of live steam boats and their builder who had a crowd every time he fired up.

Richard Finlayson put on a great show and all of our hats are off to him. He was ably assisted in hosting duties by Mike Martin, and I'm sure many others were working behind the



Peter Comley (right - Washington) drives his Aster Pannier as Jim Overland (Washington) awaits his turn on the track to take his Catatonk Shay up to the woods.

photo by Richard Finlayson



Side view of Jim Montgomery's Bing 0-4-0 with dummy external cylinders.

\*\*photo by Mike Martin\*\*

illness and personal circumstances, but as always it was just grand to see the ones who were there. Some of these folks I only get to see once a year. If I'm lucky I stay in touch via e-mail or follow them on various internet bulletin boards and chat lines. Whatever the circumstances, this live steam hobby seems to bring out the best people as well as the best in people, and you are always glad to visit, run trains, discuss, share, and look forward to next year!

scenes. The door prize odds were better then 50% (I finally won) this year. There was a shameless promotion for funds for the new PCLS (Pacific Coast Live Steamers) track which will

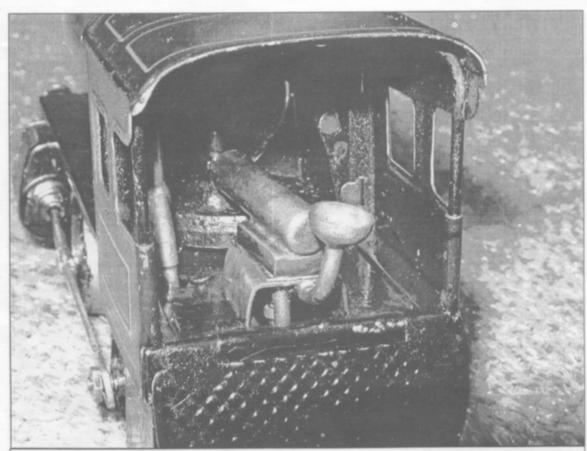
then be a permanent part of the NSS. This track (and carrier) has largely been financed to date by private donations and a raffle at the Steamup. Nobody minded the promotion since the raffle objects were awesome.

A lot of digital pictures were posted to the SitG website for several days. This was in lieu of the webcam, which became very complicated and ridiculously expensive. This was probably a better alternative anyway.

Engines were bought, sold, and traded. A brisk business went on in the dealer room -- it always does! And....

Last but not least are the friends. It was disappointing that some couldn't make it due to



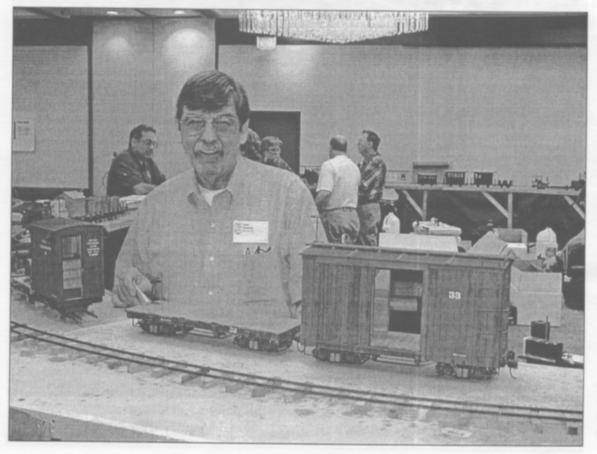


Closeup of the single oscillating cylinder that powers Jim Montgomery's antique Bing gauge 0 steam loco. *photo by Mike Martin* 

Right: Veteran steamers Karl Wallace (Texas), Clark Lord (Nevada) and Gary White (California). Looks like they're having a serious discussion!

photo by Mike Martin

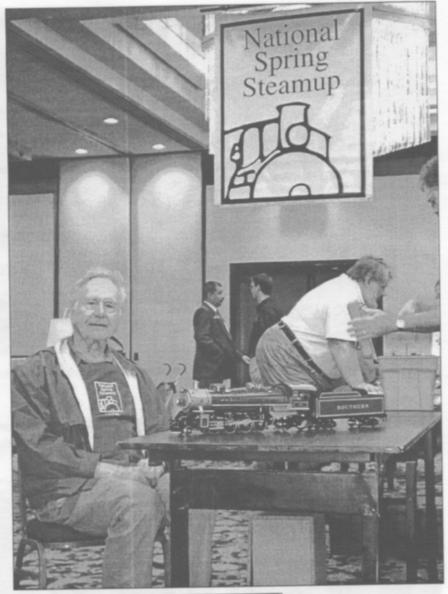


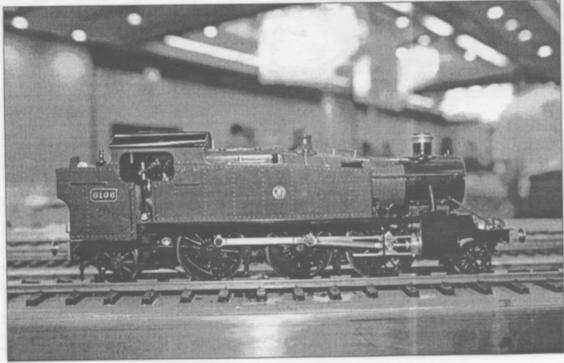


Left: Gary Watkins (California) of Sierra Valley Enterprises was there with his beautiful 7/8" scale rolling stock.

photo by Mike Martin

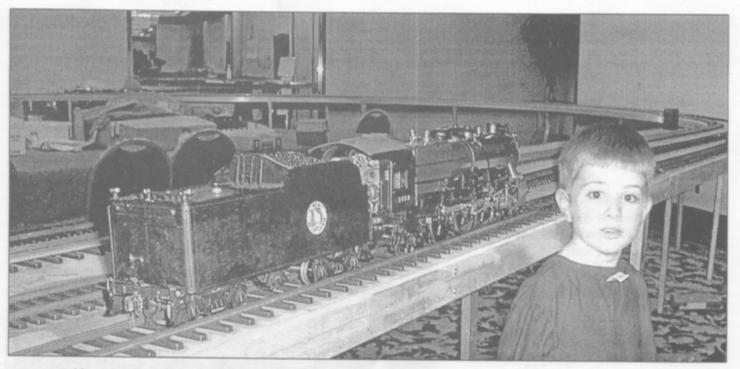
Right: Dan Liebowitz (California) was justifiably proud of his new Aster Mikado in Southern Green. The loco performed flawlessly un-der the supervision of Sam Dimaggio. photo by Mike Martin





Left: Rick Runyon's GWR 'Prairie' tank engine, built by David Baker.

photo by Andrew Macpherson

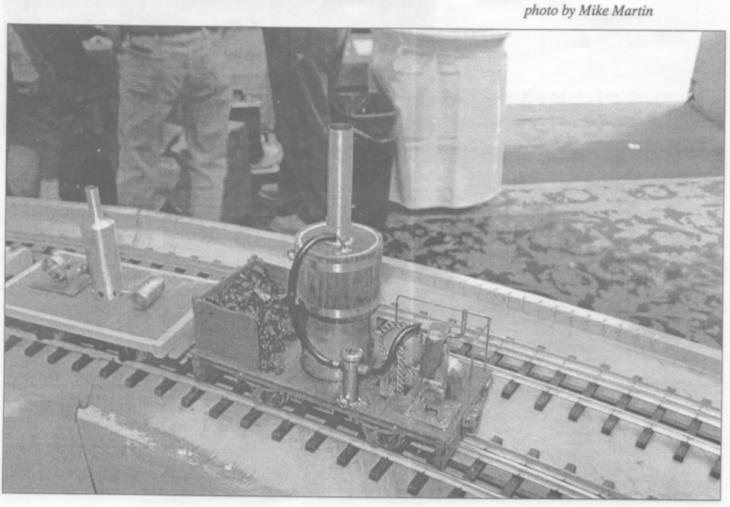


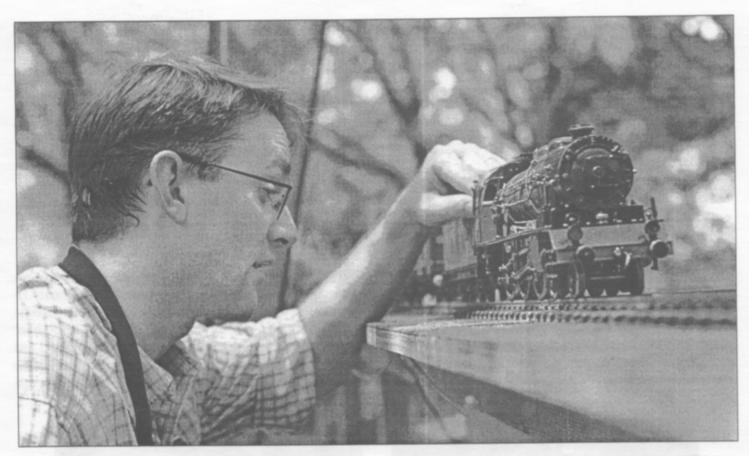
Above: John Porter Finlayson, possibly the youngest steamer to attend the National Spring Steamup.

photo by Richard Finlayson

Below: Mike Martin's BAGRS Project Loco hauling his new, smaller Project Loco around the track.

Let's hope that Mike will share the details on this new loco with us!





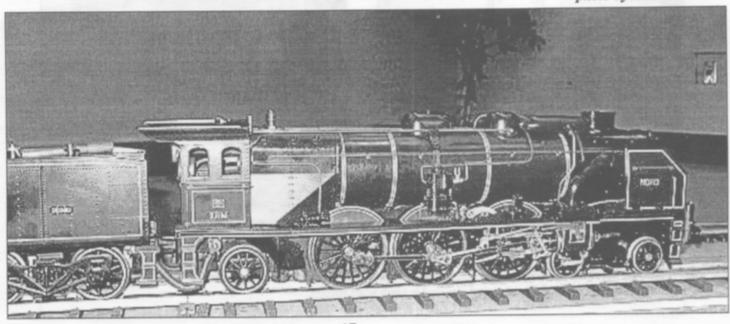
Above: NSS organizer Richard Finlayson adjusts the blower on his Aster SNCF 230, which started out as an SNCF 231 and was heavily modified by K. Suzuki of the Yokohama Live Steam Club. Richard can barely see through his meths fumes affected eyes...

photo by Andrew Macpherson

#### MORE NATIONAL SPRING STEAMUP PHOTOS - IN COLOR - ON THE BACK COVER!

Below: Aster Chapelon Nord. Sorry...no additional information is available for this fine looking loco.

photo by Mike Martin



#### Kondensator LOK 2001

article, photos and drawings by Werner Jeggli Part 2 (Conclusion)

A fascinating project loco...

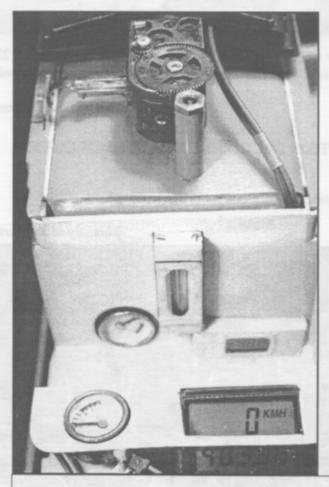
#### Subassemblies

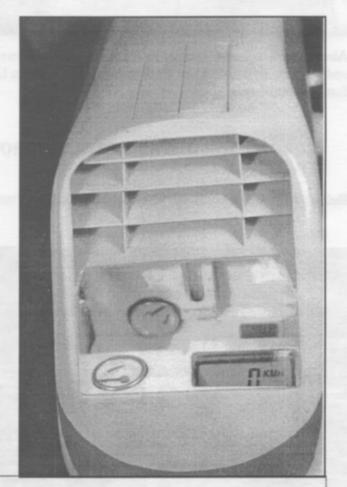
#### **Conventional Chassis**

This has two distinct parts. The first one is the conventional chassis with the leading 6-wheel truck and the motorised trailing truck, also with 6 wheels. It features two stands with pendulum bearings as high up as possible for mounting of the second part, the pendulum frame with all the other components.

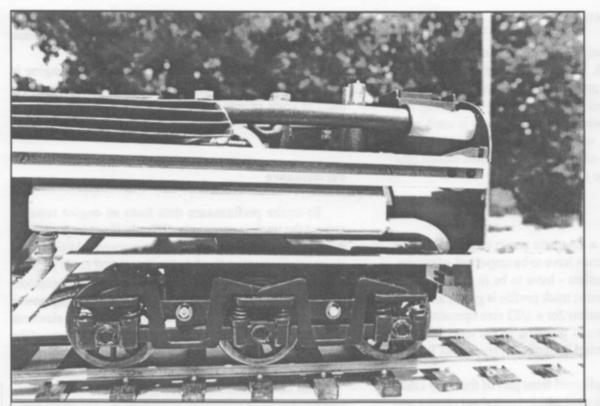
#### Motorized Truck

The cogwheel of the oscillating motor drives via a reduction gear with manually selectable ratio of 1:2 or 1:1.15 the middle axle of the truck. From there, 3mm wide cogbelts (called 'timing belt' by the manufacturer, Gates Rubber Company, Denver, CO; Distributor for Switzerland and Germany: George Rutz AG, Schlieren/Switz.) transfer the power to the two outlying axles. All axles are sprung and





Views of the instrumentation with the bodywork removed (left) and in place (right). Visible during operation, this display gives the operator information on gas pressure, liquid gas level, 1st stage condenser temperature, steam pressure, and the loco speed digital display (in km/h scale speed).



The 3-axle, 6-wheel truck can be seen in this photo, taken with bodywork removed for clarity.

tains all the other parts required to make the engine work, such as the steam generator (thermally insulated from the frame as best as possible), the liquid gas tank (protected from accidental burner blow back by a thin stainless steel firewall), 2nd stage condenser (located above gas tank and steam generator) and, last but not least, the operators cabin with its large front windows. A spring wire from the leading truck assists in the passive pendulum movement of the frame while passing curved track.

equipped with ball bearings. The spoked cast iron wheels have diameters of 40mm. With the 1:2 gear ratio, traction

power is quite adequate. Space is provided for adding a speed/direction servomotor at a later date.

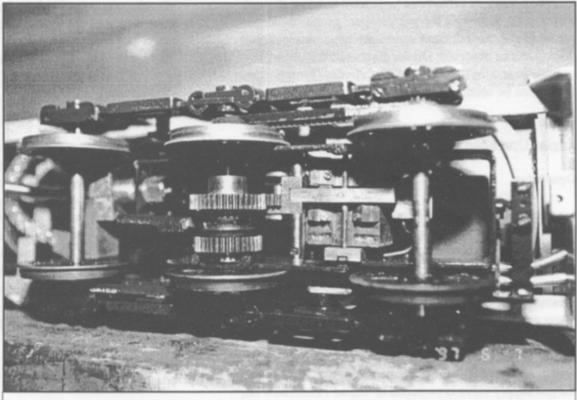
The feed pump is driven, via cogwheels, at the same speed as the oscillating motor.

#### **Leading Truck**

The leading truck also has 3 axles which are fully sprung and equipped with ball bearings. A reed contact sensor generates the pulses necessary for engine speed indication.

#### **Pendulum Frame**

This frame con-



Bottom view of truck, showing drive gears and speed sensor.

#### Flexible Hose Connections

It is obvious that any pipe connections between pendulum frame and truck has to be flexible - as flexible as possible! For the high pressure connection between steam generator and motor as well as between feed pump and steam generator, a relatively stiff Viton hose is used, reinforced on the outside with a homewound stainless steel wire spiral. For all the other connections, soft silicon rubber hoses are doing the job perfectly.

#### **Body Work**

How do you style a futuristic steam engine? Some of the technical requirements have to be respected, of course. Cooling air in - and outlets - have to be in certain places and demand certain forms; track profile is given; access to the cabin has to be possible for a 1/32 size operator, etc.; which roundings are most pleasing to the eye? In short, you are practically forced to make a clay model beforehand.

For the more complicated front part of the body I then made a hardwood form over which 1mm sheet copper was hammered, anealed, hammered, anealed, -----. For the straight body, 0.8mm aluminum was used. Both sections were joined with small countersunk rivets and epoxy.

#### **Operator Cabin**

The operator's cabin has a large front window, through which at the rear wall the gas pressure gauge, the liquid gas level and the 1st stage condenser temperature digital display can be observed. On the dashboard the steam pressure gauge and the loco speed digital display (in km/h scale speed) can be seen.

#### **Engine Operation and Performance**

#### Operation

For raising steam, the gas supply 3-way switch has to be set to 'gas', and the burner is lit through the exhaust stack. During the heating up period, evaporating gas cools down the liquid butane in the tank, thus reducing the gas pressure and the burner output. At civilised ambient temperatures (say 25°C/77°F) there is no problem, but in the lower ranges, an external Iso-Butane starter hookup is of advantage. This allows for an improved burner performance during the initial starting phase of the engine when the steam valve is opened, the condenser gets heated up and the gas supply valve is switched to 'liquid'. From now on, no evaporation heat is removed from the gas tank. On the

contrary, boiler and condenser conducted and radiated heat will push up its temperature with corresponding increase of burner and engine performance.

Once operating conditions are reached, the engine is capable of hauling a reasonable rake of coaches on level track at scale speeds of 200km (125mph) plus, track radius permitting.

#### Performance

To aquire performance data from an engine running around the track is extremely difficult, if not impossible. I therefore built a test station and procured additional instruments to monitor the data I'm interested in. At present, it is possible to measure time, weigh fuel consumption, read engine speed, apply, adjust and measure pulling power (engine load), measure temperatures with thermo elements at various points and determine condensate volumes of the 1st stage condenser as well as for the future 2nd stage (copper tube coil in a water filled can).

This has led to some sobering results such as: condensate recuperation efficiency at present is only about 60%. The rest escapes as steam through safety valves, shaft seals and the like to the atmosphere.

Overall efficiency between butane generated heat per second and mechanical power dissipated at the track at 100km/h and 1 Newton pulling power (equals 0,8 Watt) is about 1:1000!

Condensate volume of the 2nd stage is about 4 times as much as that of the previous stage.

Do not despair - the main thing is: IT MOVES!

#### What Next?

Clearly, the time has come now to start serious design on the 2nd stage condenser tender. I had hoped to be able to pick up driving power for the required row of ventilating fans directly from the leading bogie. Looking at the test results I'm forced to renounce this romantic idea if the train wants to live up to its high speed image. Battery power is therefore required. The remote control equipment has to be accomodated too, and - wouldn't it be nice to have a digital display constantly monitoring the pulling force at the coupling?

I have to stop - the thing becomes unmanagable.

#### About the coaches?

I'll worry later.

## IT'S TIME!



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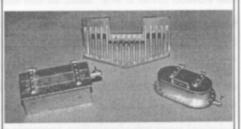
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## 21 Inexpensive Modifications to the BAGRS Project Loco

article drawings and photos by John Thomson Conclusion

Enhancements to a fun, inexpensive project loco...

19. Build a steam dome for the boiler (\$ .39). Because the vent pipe is installed directly into the top of the boiler, there is a lot of priming (water with the steam) when the loco is initially fired up. This is a particular problem when you fill the boiler to the maximum recommended (3.1/2 oz.) capacity to get a longer run. A simple fix for this is to install a steam dome made from a copper pipe cap. The dome looks authentic, and performs a practical function on the loco, by helping keep water out of the steam.

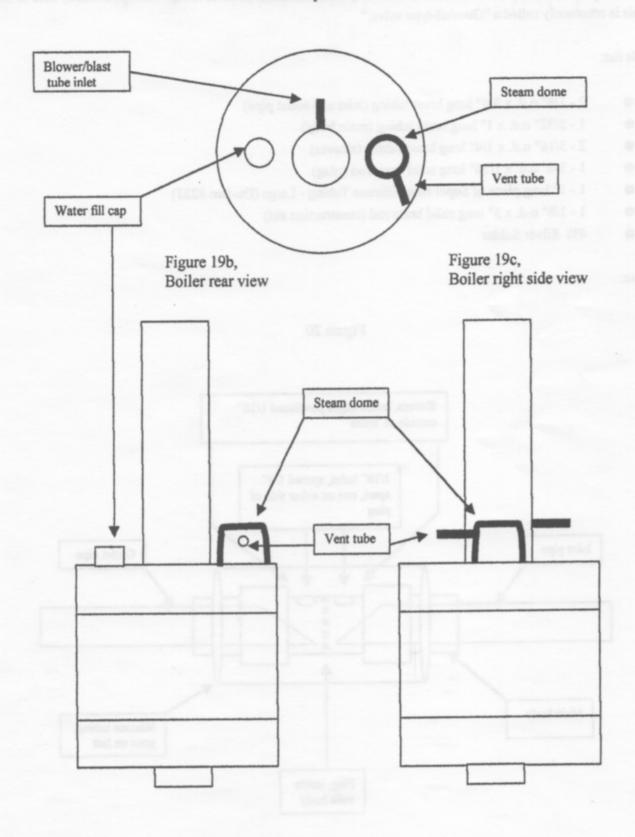
#### Materials list:

- 3/8" copper pipe cap (from plumbing supply store)
- 5/8" length of 1/8" o.d. brass tubing
- Stay-Bright (4%) silver solder

#### Procedure:

The copper pipe cap will probably not have a perfectly flat open end. It will be necessary to use a file or belt sander to grind the edge of the open end flat, so that a good solder seal can be made when attaching the cap to the top of the boiler. Drill a 1/8" hole in the side of the cap near the top, to accommodate the vent tube. If you have already attached the insulation and jacket to the boiler, it will be necessary to remove these items and unsolder the vent tube. Push one end of the new 1/8" o.d. tubing into the 1/8" hole in the cap until it is flush with the inside of the cap. This will be the new steam outlet or vent tube. Silver solder the vent tube to the cap. Then, referring to Figure 19a, center the open end of the cap over the existing vent hole in the top of the boiler. This hole will act as an internal baffle to help keep water out of the cap/dome. Turn the cap so the outlet tube has the same orientation as the original vent tube(pointing towards the rear and slightly out to the right). Being careful not to move the cap, solder it to the top of the boiler. Make sure the cap seals with solder all the way around, so there will be no steam leaks. When the solder cools, re-attach the insulation and jacket to the boiler.

Figure 19a Boiler top view

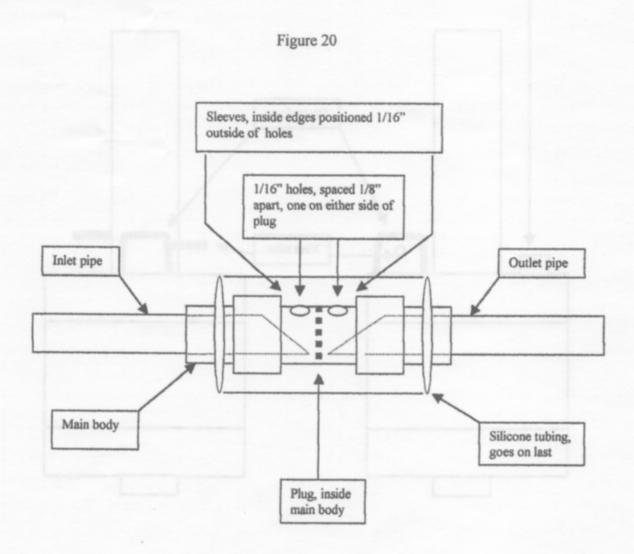


20. Build a safety valve (\$3.50). Although a commercial safety valve could be fitted, it is possible to easily build one for the project loco. The original sterno fired loco doesn't need a safety valve. However, if you have built the 3-wick alcohol burner, you should have a safety valve. This valve works on the principle that if silicone tubing is placed over a small hole in the side of a steam inlet pipe, the tubing will stretch at a certain pressure to allow steam to escape through a nearby hole to an outlet pipe. This is commonly called a "Goodall-type valve."

#### Materials list:

- 2 1/8" o.d. x 3/4" long brass tubing (inlet and outlet pipe)
- 1 5/32" o.d. x 1" long brass tubing (main body)
- 2 3/16" o.d. x 1/4" long brass tubing (sleeves)
- 1 1/8" o.d. x 1/16" long solid brass rod (plug)
- 1 1" long piece of Super Blue Silicone Tubing Large (Du-Bro #223)
- 1 1/8" o.d. x 3" long solid brass rod (construction aid)
- 4% Silver Solder

#### Procedure:



Using a miter box and jeweler's saw, cut off one end each of the inlet and outlet pipes at a 45 degree angle. Insert the construction aid brass rod inside the main body tubing. Mark the center of the main body and center punch two hole locations spaced 1/8" apart, one on each side of center. The construction aid will keep the tubing from crushing while you punch the hole locations. Remove the construction aid and drill these two hole locations to 1/16". Be careful not to drill through the other side of the main body tubing. Assemble the pieces of the safety valve in this order (refer to Figure 20):

- Using the construction aid, push the plug into the center of the main body tube, between the two 1/16" holes.
   Remove the construction aid.
- Place the inlet pipe into one end of the main body, and the outlet pipe into the other end of the main body. Make sure the ends with the angle cuts go into the main body and butt up against the plug in the center. The angle cuts should face up towards the holes in the main body.
- Slide a sleeve onto each end of the main body. The inside edge of each sleeve should be placed 1/16" outside of
  each main body hole.
- Place the valve assembly down horizontally on a firebrick.

Using a small propane torch, silver solder the inlet and outlet pipes and both sleeves to the main body. Use solder sparingly, but make sure some solder goes in the two holes so that the plug will be soldered in the center of the main body. Don't be concerned that the holes become plugged with solder.

After the valve cools, drill the solder out of the two holes with a 1/16" bit. This is easily done because the solder is soft. Also drill down the inlet and outlet pipes until you reach the holes. It is not necessary to drill out all of the solder - just enough so that there is a steam passage from the inlet pipe through one hole, and from the outlet pipe through the other hole. Plug the holes with your finger and blow into each pipe. No air should be able to pass through the center plug in the main body.

The completed valve assembly should be installed at this time. Simply drill a 1/8" hole in the center of the water fill cap. The valve could also be mounted on the top of the boiler behind the stack. However, it will take less heat, and, therefore less chance of melting the solder in the valve assembly, if you attach the valve to the fill cap. After placing one end of the valve in the hole in the cap (the inlet and outlet are interchangeable), use the torch to heat the cap only. Heat just enough to get the solder to flow, then remove the torch immediately.

Once the solder is cool, slide the 1" piece of silicone tubing down over the outlet end of the valve until the tubing is centered on the two sleeves. The tubing should overlap the outside edge of the sleeves slightly on either end. The valve is now ready to use. Fire up the boiler with the pressure gauge connected (Modification # 14) and fuel clips in place on the steam lines. The safety should begin to weep around 25-30 psi. Around 30-35 psi, it should open fully, keeping the maximum steam pressure from exceeding 30-35 psi.

NOTE: IT IS IMPORTANT TO USE THE *DU-BRO* #223 LARGE SUPER BLUE SILICONE TUBING. THE VALVE WORKS VERY RELIABLY IN THE 25 TO 35 PSI RANGE WITH THIS PARTICULAR TUBING. USE OF A DIFFERENT SIZE (ELASTICITY) TUBING WILL CAUSE THE VALVE TO OPEN AT A HIGHER OR LOWER PSI, WHICH COULD BE A SAFETY HAZARD!

21. Superheater (\$1.75). Due to heat loss as the steam passes from the boiler vent, through the throttle valve, lubricator, engine cylinder and out the blast tube in the stack, there is a certain amount of condensate (water and steam oil) falling down onto the alcohol burner from the blast tube outlet (modification #4). When this condensate falls into the burner, it vaporizes, causing a "snapping" or "popping" sound during operation of the loco. A superheater will re-heat the condensate, turning much of it back into steam before it arrives at the cylinder, thus minimizing vaporization noise. The superheater will also increase steam volume, which increases the power and efficiency of the engine. Fortunately it is easy to add a superheater to the project loco.

#### Materials list:

- 1/8" o.d. x 12" long copper tubing
- .025" x 1" x 2" brass sheet
- # 4 x 1/4" brass screw and nut
- # 4 x 3/8" brass screw and nut
- Biso Bender Model BND018 (same as used in modifications #4 and #16)
- Fuel line clips (Du-Bro # 677, same as those which came with loco kit)
- 4" medium silicone or black neoprene tubing

#### Procedure:

Start by bending the 1/8" tubing into a "hairpin" shape, using the Biso Bender. NOTE: It will be easier to bend and shape the hairpin loop if the copper tubing is softened by annealing. To do this, heat the center one inch of the tubing with a propane torch until it glows orange. Allow to cool slowly. Bend in the center of the tubing, so both legs are the same length. Once you have bent as far as possible with the bender, remove the bender and bend the tubing until both legs are parallel and close together. Be careful not to collapse the loop of tubing at the bend. It should look like figure 1.

Figure 1

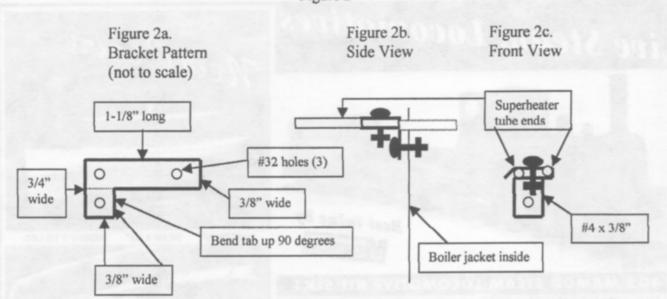


Next, trace the bracket pattern in Figure 2a onto the sheet brass. Center punch and drill the three holes, using a # 32 drill bit.

Bend the short part of the bracket upward at the dotted line until it is at a 90 degree angle to the long part of the bracket (Figure 2a & 2b). Bend the long part of the bracket back over itself to form a U-shaped clamp for the two superheater tube ends (Figure 2c). The two holes in the long part of the bracket should line up with each other to accommodate the clamp bolt (Figure 2c).

Drill a 3/16" hole in the boiler jacket just below the bottom of the boiler and at the 1:00 o'clock position of the jacket, as viewed from the top of the boiler (front of the boiler is 12:00 o'clock). Using the Dremel tool with #194 high speed cutter, enlarge the hole to 3/8" wide. This is the entrance/exit hole for the superheater tubes, and should be located between the idler bracket and the lubricator. Using the # 32 bit, drill a hole 1/4" below the 3/16" x 3/8" jacket hole for the mounting bracket bolt.

Figure 2



The superheater "hairpin" will be installed into the stack from the top. Push the superheater (open end first) into the stack from the top, until the top of the loop is 1.1/2" below the top of the stack. Note: If you have installed the blower/blast tube (modification #4), push the superheater legs down along either side of the blast tube until the loop hangs around the blast tube. It will be necessary to remove the boiler jacket for the next step:

Make a 90 degree bend in the double superheater tube where it exits the bottom of the stack so that the two ends will be at the 1:00 o'clock position of the boiler. Re-install the jacket, routing the superheater tube ends through the elongated hole in the jacket. Note: When re-installing the jacket, make sure the bottom of the boiler is 2 inches above the bottom of the jacket, to allow room for burner flame height (modification #6). Place the clamp bracket over the tubing ends and attach to the outside of the jacket with the # 4 x 1/4"screw and nut. Install the # 4 x 3/8" clamp bolt so that it passes between the superheater tube ends (Figure 2c). Attach the nut. Tighten bracket mounting bolt and clamp bolt.

Spread the superheater tube ends apart slightly, to make it easier to attach silicone or neoprene tubing. Attach a 2" piece of tubing between the output of the lubricator and one of the superheater ends. Attach a 2" piece of tubing between the other superheater end and the steam engine inlet. Be sure to use fuel line clips, to keep the tubing from blowing off under steam pressure.

Fire up the boiler, and enjoy the increased power and efficiency of your project loco.

I hope you have enjoyed this series of modifications to the project loco. If you have comments or suggestions, please direct them to me through the editor.



## Live Steam Locomotives



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#### Kitless Boat Building

by Murray Wilson

#### Simple, economical construction...

I have been building model steam boats even longer than I've been running steam locos, but I've never used a kit or even a published plan. Kits seem expensive for what they offer and these days are usually so far preformed that there is little choice but to build a boat similar to everyone else's. So I make my own kit

My "kit" is a sheet of cardboard, a bottle of contact cement and a can of shellac. Just plain cardboard, the grade used to back writing pads, but in a big sheet. Cardboard with a paper drawing surface on one or both sides is not suitable as the paper will almost certainly detach.

The plan I draw up myself. I have little knowledge of Naval Architecture, but do know what a ship or boat looks like in and out of the water. As long as the proportions look right she'll float right way up and, with a bit of ballast, with the waterline in the right place.

As my boats don't carry a scale load I do not make them with scale draught, this way they don't need to have as much ballast to get the hull down to the mark once afloat.

You can build the hull of a small boat out of one piece of cardboard if you wish. Or you can follow the methods used for dinghies built from plywood sheet. I prefer to build the vessel up just like a full sized ship, constructing the keel and frames and "plating" the hull. I have steam boats built this way that are over 25 years old.

Bulkheads are of course solid, but frames too are best left with their centres in until the hull is finished. The centre cutout can either be scored to make later removal easy, or it can be cut out and then taped back into place if the frame will be awkward to get at later.

Contact cement is used to join the pieces. Bordens™ used to sell a water based contact cement that was ideal, but it disappeared from the market some years ago and I have not found anything similar to replace it. I use solvent based adhesive now, which is less convenient and more expensive.

Where the edge of one piece of card is attached to the face of another, an angle bracket is used. Where pieces butt together, a doubler is used on the inside. Typically the only wood used is for the masts, for even a paddler's wheels may be made from card.

The propeller shaft sterntube, or the paddle bearings, are epoxied in. It may be desirable to try various positions for the engine and boiler in the hull with it afloat before their final positions are decided. Thus it can be ensured a good trim is obtained without having to use much ballast. The hull must first be water-proofed of course.

Waterproofing requires all the card used in the construction be given two coats of shellac, taking special care to coat the edges well. Once the shellac is dry the various surfaces may be given their desired finish colours.

Due consideration must be given to conveying the flue gases to the funnel, and/or engineroom skylight. Similarly, provision must be made for air to get to the burner. The traditional engine room ventilators are likely to be purely decorative on a model.

Light gauge aluminum sheet mounted on standoffs can be used to protect the card from radiation and from a certain amount of flame. I have had a fire or two, but never a total loss.

My intention in writing this is not to give a full description of how I build a boat, but to plant the idea of using card. The finished hull is strong, light and durable, and truly scratch built. Maybe you don't feel capable of building the engine and boiler (though you almost certainly are), but you can build the hull. So give cardboard a try before buying another kit.

Note: Two helpful books published in England some years ago but which may still be in print are:

Cardboard Ship Models, G H Deason. MAP Technical Publications, 1972

Cardboard Engineering, G H Deason. Model Aeronautical Press, 1958



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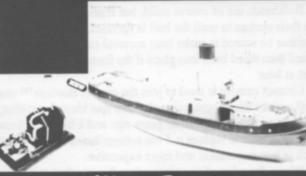


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## Steamboats Only

by Walter Pommnitz



On June 7, 2000 the South Orange Seaport Society held their 11th annual steamboats-only event at the Duck Pond in South Orange New Jersey.

There were 15 boats registered with 13 participants from New York State, Pennsylvania, and naturally New Jersey.

The precision steering course was a straight line of 11 islands. Captains zig-zagged between each one, and at the end had to go between two islands set off to port and then return back to the dock. The captain with the least amount of "hits" to the islands and the time of arrival closest to their estimated time was the winner. Each boat ran the course twice and the best of both runs was used for scoring.

There was one mishap on the course, when Priscilla Rittershofer was piloting her husband's Midwest Tourister and was caught by a gust of wind and capsized. All was salvaged, even the marriage.

An oval endurance race was also run around all the islands four complete times. It seems that the guys with the larger capacity boilers, not the least displacement, fared the best in this race. The day was capped with a drag race.

Co-Chairman Charles Roth was pleased with the turnout and weather cooperation.

Plaques, hand crafted by Co-Chairman Ron Hermann, were presented in the following categories; Engineering 1-3, Precision Steering 1-3, Oval Endurance 1-3 and Drag Race 1-3. There was one plaque presented to the best looking and engineered boat voted on by the registered participants. This plaque is called the Modelers Choice Award.

Ron Hermann takes great pleasure in producing different plaques each year. Each one is a work of art. This year he molded steam whistles out of resin and routed in a year 2000 dime and penny in each. Winners in the various categories were;

#### **Precision Steering**

1st .... Ron Hermann 2nd ... Sam Karpel 3rd .... Elliot Kaplan

#### Oval

1st .... Walt Watkins 2nd ... Ron Hermann 3rd .... Elliot Kaplan

#### Drag

1st .... Bill Schappert 2nd ... Ron Hermann 3rd .... Elliot Kaplan

#### Engineering

1st .... Steve Siegel 2nd ... Walt Watkins 3rd .... Bill Schappert

#### **Modelers Choice**

Steve Siegel (1860 cargo steam/sail FUNG SHUEY) ed. note - Steve's beautiful ship was featured in SitG Nº 55





Above: Steve & Donna Siegel were kept busy talking to spectators about their boat. *photo by Ron Brown*Below: FUNG SHUEY, built by Steve Siegel and winner of the Modeler's Choice award, steams across the pond with sails furled. *photo by Walter Pommnitz* 

















Clockwise from above: Elliot Kaplan guides his boat out to the course (D. Nworb photo) - Ron Hermann & Charlie Roth retrieve a dead steamboat from the course (R. Brown photo) - Bill Schappert's Shark II (Walter Pommnitz photo) - Ready, set, GO! (W. Pommnitz photo) - Trophy table, loaded with Ron Hermann's custom plaques (W. Pommnitz photo) - Bill Schappert with his steam drag boat, the winner of the drag racing event (D. Nworb photo) - Fred Schappert's beautiful tug, MARIE S. (W. Pommnitz photo).



Above: William Oetke (NY) is the proud owner of this really nice steamer with a strip planked hull. Lots of work!

photo by Marie Brown

**Below:** Fred & Pat Schappert relax in the shade. The boat on the right is Fred's steam drag boat. The one on the left belongs to their son, Bill. **photo by Ron Brown** 

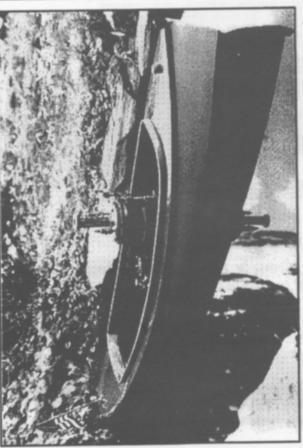


Above: Steve and Donna Siegel with Steve's FUNG SHUEY, a cargo ship from the sail/steam transition era.

photo by Marie Brown

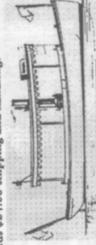


# Diana Steam Launch



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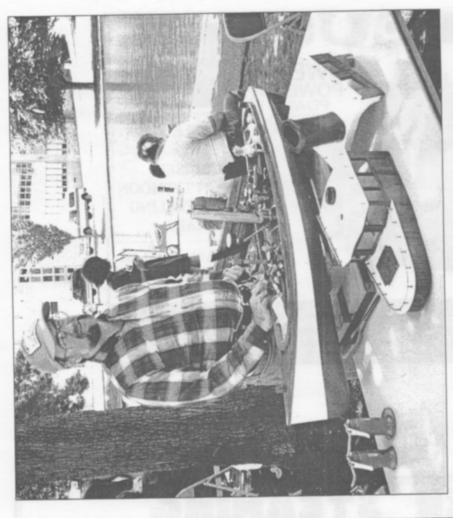
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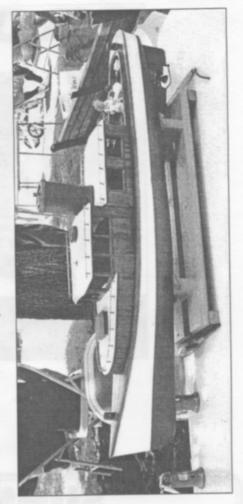
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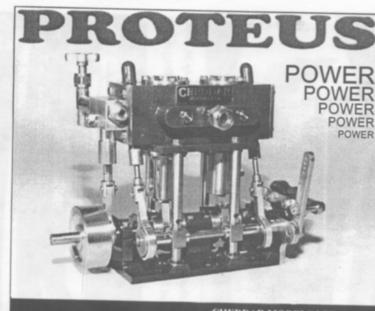
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Above: Elliot Kaplan takes the lid off to show us the steam plant. both photos this page by M. Brown Below: Elliot's boat is a winner. He placed 3rd in Precision Steering, Oval Racing and Drag racing.





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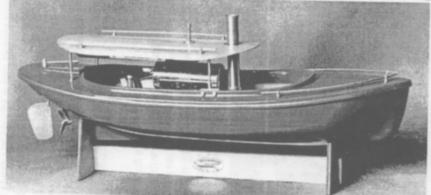
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# Caddo Lake Steamboat Meet

report & photos by David A. Young

Texas hosts steamboaters...

I attended my first steamboat meet during the weekend of May 19, 20, and 21, 2000. What a great experience! The meet was held at Uncertain, Texas on Caddo Lake. Caddo Lake is probably the most beautiful lake in the state of Texas. The cypress trees, Spanish moss, pond lilies and beaver houses provide for interesting views while steaming on the lake.

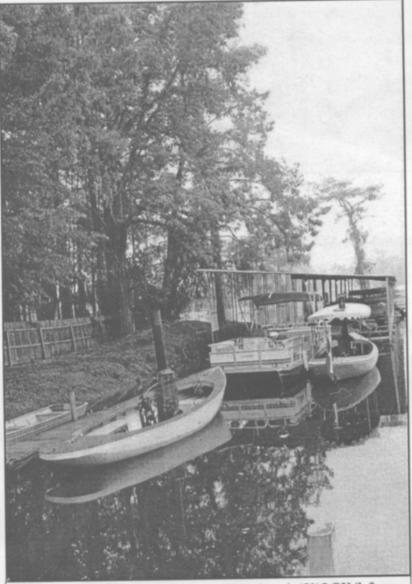
I learned about this steamboat meet from the web page for Steamboating, which can be found at:

<a href="http://www.steamboating.com">http://www.steamboating.com</a>

The schedule on the web page contains information on steamboat meets around the world, for full size launches, model launches, and meets for both.

I was able to spend three days riding on steamboats owned by Dave Carpenter, Mike Davis, and David Goza. During the steamboat meet, all the attendees were able to take a tour of Caddo

Lake on the Graceful Ghost, a fifty-foot sternwheeler steamboat in commercial service, and talk with her Cap-



As the fog slowly lifts on Caddo Lake, steam launch AVALON (left, no canopy) and TH POAG (right, with canopy) wait patiently for a fire in the belly to bring them to life.

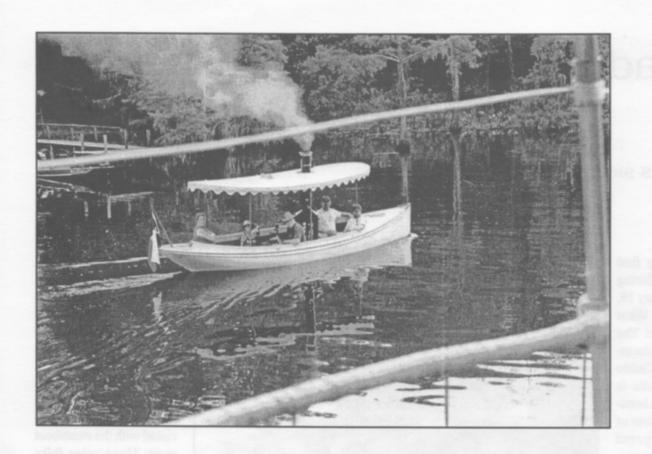
tains, Jim and Lexie.

I operated my model launch Alexandra, built and powered by Cheddar Models of England. She steamed around the Shady Glade Marina and was enjoyed by everyone, including many folks who were not associated with the steamboat meet. Those other folks had a hard time believing that Alexandra really is steam-powered.

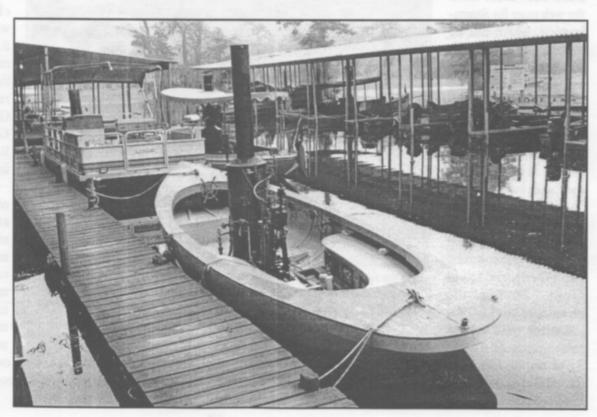
All of the 'full size' steamboaters enjoyed seeing my Cheddar Models Gemini Engine, which I took to the meet for show and tell. Several of them were particularly interested in the reversing gears on the Gemini. I also displayed Gunga Din, one of my Roundhouse Engineering steam locomotives.

Perhaps unlike any other aspect of the live steam hobby, full size steam launches are unique. While steam cars, traction engines, and steam trains have the original manufactured item to use as a model, steam launches are al-

most always the product of their owner's ideas rather than the result of a manufacturer's process. The launches at the



TH POAG (above) and AVALON (below) at the Shady Glade Marina, Caddo Lake, Texas.





An eye-pleasing TH POAG moves gracefully away from the dock.

Caddo Lake meet are no exception. Mike Davis's Avalon is a converted sailboat. Dave Carpenter's Hiawatha is a wooden boat built by a craftsman in the northeast. David Goza's TH Poag is a fiberglass hull designed to be a replica of the launches of the Victorian era.

The engines driving these launches are all simple D-valve engines manufactured during the age of steam in the late 1800's and early 1900's. The boilers providing steam for the engines are all wood-fired vertical fire tube type boilers. The piping, pumps, valves and accessories are unique from launch to launch.

The Caddo Lake Steamboat Meet was an excellent place to learn about full size steamboats and other types of steam power, such as stationary engines and traction engines. For the entire duration of the meet, attendees were discussing the many aspects of the live steam hobby. All of the folks attending the steamboat meet spent hours an-

swering my many questions and offering information about launches

I have decided I want a full size steam launch of my own. The discussions at Caddo Lake were valuable sources of information for use in determining specifications for a launch. I now have a steam launch on order from Beckmann Boatshop, Limited.

If you have the opportunity to go to a steamboat meet, go. And -- do whatever you can to make the opportunity. I am anxiously awaiting my next opportunity to attend a steamboat meet.





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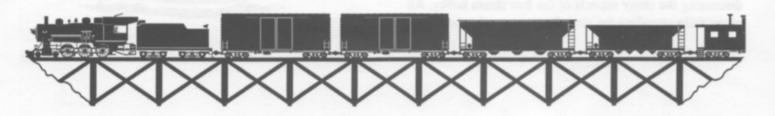


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# A Beginner's Railroad

article & photos by Gene Maurer

First steps to a working steam line...

Just a few months ago the live steam bug bit, so I ordered a Pearse 0-4-0 Switcher and got started. At present my entire railroad measures roughly 8' x 14' and is enclosed within a 16' x 16' fence, so there is a little room for growth.

I opted for a stone roadbed, which did not turn out as level as I had hoped for. Looks like I have some more work and more learning to do! First the two foot curves will be replaced by four foot curves, and then ....???

Scratch building some HO rolling stock in the past was enjoyable, so I decided to do the same for gauge 1 live steam, using thin plywood for the floors for a base car and any materials on hand for the rest. Trucks and couplers are the only purchased items for the rolling stock.

The gondolas are made of Popsicle sticks with weight added to the bottom of the car in the form of sheet tin. The





boxcar is made entirely of plywood scraps. The caboose is built with a balsa stick frame, planked over with basswood and balsa. The handrails are formed from #12 solid copper house wire. All ladders for rolling stock are cut from hardware cloth. My rolling stock is not built to scale..I just enjoy building it.

Now that I've started in live steam railroading, I know that my railroad and my interest will continue to grow.







## 1st Annual Powder Puff Steamup

article & photos by Tom Eaton

Ladies Day at the track...

Sometimes an offhand remark can lead to a great idea. One such remark, made by Carol Paule, did turn into something great. There is a small group of us here in the Midwest that get together several times a year to steam. At one of these little gatherings Carol was teasing the guys about having a steamup where the girls would run trains while the guys waited on them (in skimpy outfits, naturally). The idea of a women's steamup was quickly picked up by Carol Herget, Cindy Noa, and Diana Eaton, and the Powder Puff Steamup was born.

The 1st Annual Powder Puff Steamup was held May 12th through 14th at Larry and Carol Herget's house in Desoto, Missouri. The steamup was kicked off Friday afternoon by Diana Eaton, who ran her Roundhouse Lady Anne. Diana built this

engine from a kit (see SitG  $N^2$  48, pg. 43), and it is always fun to watch her run it. Carol Paule was right behind Diana and quickly got one of her engines running. It wasn't long before the guys jumped in and the steamup was in full swing.

At every steamup, there is always one engine whose performance is outstanding, even if only once, and gives "bragging rights" to the owner for the rest of the steamup. Friday night fate struck a cruel blow to the men and gave the women bragging rights. Diana Eaton had her Aster JNR C11 with her and Bob Paule came to the steamup with a new inertia drag car. It was only natural to put these two together. As the throttle on the C11 was opened, we got an honest CHUFF, and then another, and another, until the C11 was storming around the track actually



The Powder Puffs Back row, L to R: Elizabeth Henderson, Mary Gathman and Cindy Noa.

Middle Row: Vi Carson, Carol Heret and Carol Paule.

Front Row: Pat Mueller, Sue Garrett and Diana Eaton. (Sue looks a little suspicious to me. Reminds me of a Johnny Cash song.)

Missing is Carol Jennings.



John Garrett and Diana Eaton show Elizabeth Henderson how to fire up a live steamer. Elizabeth had so much fun that she has decided to buy a live steamer for herself.

sounding like a full size engine. So for the rest of the steamup the guys got told, "Well, it sounds good, but not as good as Diana's engine!"

Friday evening, the guys all got together in the Herget's kitchen for the great "breakfast casserole make". Erv Mueller read the recipe while the rest of us prepared the ingredients. The ladies retired to the living room to chat and watch movies. The casserole making went smoothly, except for the frequent calls from the living room for soda or ice tea.

Saturday morning started with breakfast, ladies first of course. In spite of the fact that so many cooks were involved, the casseroles were delicious. The steaming started with Diana

Eaton showing Elizabeth Henderson how to fire up the Lady Anne. Cindy Noa, using a battery powered, remote controlled steeple cab locomotive set out the cars on the two sidings. Within minutes, Elizabeth was running the Lady Anne and became the first "First Time Steamer". Elizabeth really enjoyed running the Lady Anne and before the weekend was over had decided to buy a live steamer this summer. Meanwhile, Pat Mueller polished the 32mm rails with a Lindsay Shay. John Garrett showed up and, while his wife Sue could not come, she did sent instructions, in a sealed envelope, along with John. John was promptly put to work helping Diana teach Vi Carson how to run the Lady Anne.

Bruce Gathman got busy and soon had his wife Mary out on the

main line with a Mamod and train. The highlight of the morning came when Larry Herget taught his wife Carol how to run his Mamod. In the thirty plus years that Larry has been into live steam, Carol has never once run an engine. It wasn't long before Carol had the Mamod running, amid cheers from all present. Temporally relieved from her teaching duties, Diana Eaton amused herself and us with her Catatonk 24 ton Shay and a train of 18 cars. Carol Paule put her big Aster Greenbrier Shay to the test with the inertia drag car and a string of logging disconnects.

By the end of Saturday morning, we had 4 women on the "First Time Steamer" list and the ladies figured that the men had earned some track time. Lunch brought a short break in the action but the teachers still had work to do. Harold Jennings and wife

Carol had arrived and Carol had never run a steamer. Then there was Bob Henderson and Ken Carson, neither of whom had run a steamer. Diana brought out her Argyle Bantam and began showing Bob Henderson how to run it. Ernie Noa began teaching wife Cindy how to run his Aster Mikado. In a short time, Bob Henderson was running the Bantam and Cindy Noa had the Mikado out for a few laps.

Ken Carson was Diana's next victim, and in a short time, Ken had Diana's Lady Anne up and running. Ken must have really liked the Lady Anne because the next weekend after the Powder Puff, he bought a Lady Anne kit. Cindy and Ernie did a little switching and put together a 25 car train for the Mikado to



Carol Jennings, coached by John Garrett. This was Carol's first steamup!

pull (sounds good Ernie, but not as good as Diana's). John Garrett, having earned his track time, began readying his Aster Mikado. It didn't take long for Ernie and John to team up and we were all treated to double headed Mikados (sounds good guys, but not as good as Diana's). Carol Jennings was the next woman who needed to steam up and since hubby Harold was new to live steam himself, Diana had Carol run the ever faithful Lady Anne.

With all the "First Time Steamer" people taken care of, the ladies decided that the track would now be open to the guys. A variety of engines appeared and the track was soon quite busy. Bob Paule hauled out his Aster Garratt and we soon had a train lined up for the Garratt. The train consisted

of the inertia drag car (equal to 25 cars), 34 regular cars and a small caboose built on a regular 2 axle truck, which was quickly dubbed the 1/2 car.

With a train equal to 59 1/2 cars, the Garratt proved how powerful it was and handled the train easily (sounds good Bob, but not as good as Diana's). Bob also delighted us by running his coal fired Darjeeling RR loco, which was built by Hugh Saunders.

Saturday evening came all too quickly and it was time for some of the guests to leave. The eighteen of us left went into



Vi Carson waits for steam pressure to build, while Elizabeth Henderson looks on.

Desoto for dinner at an old hotel that has been turned into a small restaurant and bed & breakfast. We had made reservations for twenty people, a large number for the small restaurant, so in true small town fashion, they simply closed the restaurant to the public.

Sunday morning didn't see much running as the out of town guests needed to leave and we wanted to get a idea of what everybody thought about the Powder Puff Steamup. The conclusion was that the Powder Puff steamup was a great idea.

There were eight first time steamers, a number that will be

hard to beat. The first time steamers were: Bob & Elizabeth Henderson, Ken & Vi Carson, Mary Gathman, Carol Herget, Cindy Noa, and Carol Jennings.

Our list of trainers included, Bruce Gathman, Ernie Noa, Pat & Erv Mueller, Larry Herget, Carol & Bob Paule, John Garrett, Harold Jennings, and Tom & Diana Eaton.

The week following the steamup brought another pleasant surprise as all the men received thank you cards from all the women. Well, it was pleasant for all the men except for John Garrett. His wife Sue wanted to know just what kind of service he provided that all these women were sending thank you cards for.



It was smiles like this that made the Powder Puff Steamup worthwhile. Mary Gathman runs a Mamod for the first time.





Caught on film for posterity! Carol Herget prepares Larry's Mamod for her first-ever live steam run.

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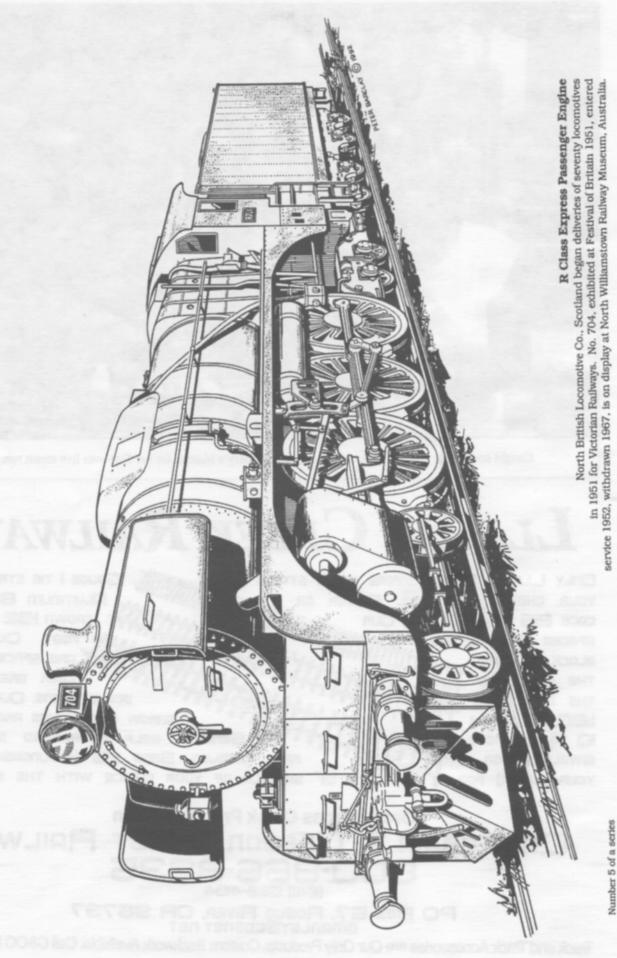
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# Deter's Page...



Number 5 of a series

# Taig/Peatol MicroLathe

by Keith Bucklitch

#### A useful, affordable addition to your workshop...

The Microlathe, produced and marketed by Taig in the United States and by Peatol in England, provides an excellent, low-cost introduction to the joys of machining metal and producing your own steam locomotive. It is a solidly built small 'table top' lathe with a centre height of 2" above the lathe bed, or a swing of 4" in U.S. parlance. I have built eight 16mm scale steam locomotives in the past ten years, and the majority of the machining was performed on my Microlathe.

#### Description

The standard Microlathe has a centre height of 2" and a distance of slightly over 8.1/2" between centres. The lathe bed is a composite of extruded aluminium, with a solid filled core for increased rigidity. Overlying this is a steel bed with machined sliding surfaces for the saddle and tailstock. In fact, considerable use of aluminium is made in the construction of this lathe and its components, but despite this the lathe appears strong enough for the work that the construction of small locomotives will impose upon it.

The headstock (also an aluminium extrusion) carries a hollow steel mandrel, mounted in roller bearing races. The bore through the mandrel is sufficient to pass a bar of 5/16" or 8 mm diameter. The nose of the mandrel carries a thread of 3/4" dia, 16 tpi, which equates with a 3/4" UNF dimension. A pulley block is available to fit directly on to the mandrel, to transfer the power by means of a fine V-belt. A matching pulley is also available to fit the shaft of a standard 1/4 HP motor.

The saddle is an aluminium casting which straddles the lathe bed, and is adjusted to fit closely by means of a brass 'gib' strip at the rear. Movement of the saddle may be locked by a thumbscrew also mounted at the rear. Longitudinal movement of the saddle is controlled by a rack and pinion system, an adjustable pinion in an eccentric mount engaging with a rack screwed to the side of the lathe bed. This rack, although made of hardened steel, faces upwards and is prone to catch swarf between the teeth, subsequently suffering damage when the pinion is rolled over the swarf. This potential problem has been reduced by the fitting of a plastic chipshield which deflects the majority of the swarf away from the rack. There is no means of accurately measuring the movement of the saddle along the bed, but a groove in the headstock permits the mounting of an adjustable saddle stop to limit the end-travel. The saddle carries the cross-slide. This is an aluminium extrusion, carrying two machined T-grooves for mounting of toolposts, etc. The transverse movement is accurately controlled by a lead screw, with a dial index calibrated in thousandths of an inch. The fit of the cross-slide is adjusted by brass gib strips. A simple toolpost is supplied mounted on the cross-slide. This can hold a 1/4" size toolsteel cutting tool.

The tailstock is an optional extra available on the basic lathe. This is once again an aluminium extrusion, mounted in such a way that it can be traversed along the lathe bed, and also offset for taper turning. The solid tailstock centre is advanced by a simple lever action for drilling etc. This provides rapid withdrawal of the tailstop, but can be tiring on the hands when drilling large/deep holes in a work piece. The hardened tailstock centre carries a 3/8 x 24 thread machined to hold a standard Jacobs chuck. It is not possible to use morse-type tapers on this machine in either the tailstock or the headstock.

The basic lathe is supplied with a choice of chuck - either a scroll lever action 'self-centred' 3-jaw chuck or an independent 4-jaw chuck. These have a body machined to fit directly on to the headstock mandrel. If the budget is tight, and only one chuck can be afforded, then I would recommend that you purchase the 4-jaw chuck. This can be used to hold work of any shape and with practice, (and especially the use of a 'wobbler') work can be set to run true very quickly.

The 4-jaw chuck is the more solidly built of the two chucks, with a steel body and jaws, which are reversible independently. An Allen type key (Hex wrench) is provided for adjustment of these jaws.

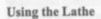
The three-jaw chuck also has a steel body, but the jaws consist of aluminum blocks fixed on steel carriers by socket screws. This does have the advantage of allowing the jaws to be machined as required to maintain truth of running, and can be replaced with homemade jaws when required for special holding problems. However, the scroll of the chuck is tightened by inserting a lever bar in a hole in the chuck body and rotating the body. There is no corresponding hole in the moveable portion of the chuck and it is therefore difficult to obtain a satisfactory grip on many workpiece materials unless you use a spanner on the chuck jaws themselves. One of my early actions after acquiring my lathe was to replace the 3-jaw chuck with a central lever-scroll chuck of heavier construction.

A number of other attachments are available from the manufacturers, and the range is steadily growing. These consist of a top slide for short taper turning, a vertical slide with vise-type jaws useful for milling, tailstock drilling chucks up to 1/2" diameter holding capacity, and a solid steel, 3.1/4" diameter faceplate. A set of collets with a range of diameters from 1/8" to 5/16" is available, together with a collet closer to fit the mandrel nose. Similarly, a milling cutter and slitting saw holder can be fitted to the mandrel nose. A lathe steady for supporting long bars, and a set of riser blocks for increasing the centre height can be obtained. Addition-

ally, a headstock attachment is available which can carry a Jacobs chuck for drilling from the headstock.

I have made a number of adaptations and attachments of my own for the lathe, adding to the ease and pleasure of its use. The lathe is available assembled or as a kit of parts together with assembly instructions. The latter saves a little on the cost and does

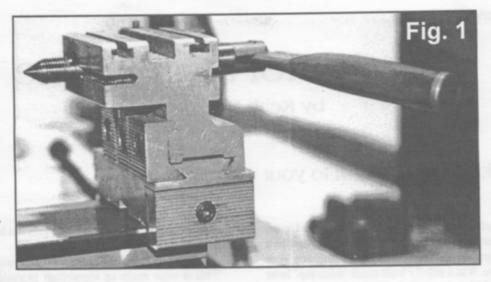
allow you to familiarise oneself with the components and how to adjust them.



My lathe is mounted on a wooden board, 5/8" thick, 2 feet long and 12" deep. A plastic sheet is curved over the motor to shield it from swarf and chippings. This sits on a shelf, on two rubber strips (pieces of conveyor belting) which absorbs most of the resultant noise and vibration. My workshop is also my study (in an upstairs bedroom) and the lathe is situated within 3 feet of my computer. As I write this, I can check my comments very easily. There are two carrying handles on the board which make it easier to move the lathe when I take it to exhibitions and demonstrations. The power supply leads to a switched socket assembly mounted on the board and a small light is mounted above the lathe on an adjustable arm. The accompanying illustration shows the general arrangement. The motor is mounted on a short piece of board. This is hinged to the main board so that the weight of the motor maintains tension on the drive belt, but by swinging the motor mount upwards, the drive belt may be adjusted on the stepped pulleys.

When fitted with a standard 1/4 HP electric motor, driving the lathe via the supplied pulleys and drive belts, the Microlathe is a powerful, compact machine, capable of handling most materials. However, the V-belt system provides some safety in the event of excessive cut being attempted in that the belt will slip on the pulley if overloaded, thus giving the machinist time to stop the motor and withdraw the tool before major damage or injury results.

It is essential to have the gib strips on both the saddle and cross-slide adjusted to the optimum, so as to allow movement with slight effort but not allow 'chatter' or excessive vibration to develop. This is more likely to occur when turning hard materials, such as steel, at large diameters and too high a turning speed. One of my criticisms of the lathe is that with the standard drive pullies supplied, the lowest speed of the lathe is in the region of 450 rpm. I feel this is far too fast for turning any material (particularly steel) above 3/4" diameter. I did intend to make a countershaft to reduce the speeds overall by by 2/3, but must confess that although I have had my lathe for almost 20 years, I have not yet completed the job. The turning speeds you may utilise can be increased by using the



disposable carbide tooltips, and I have found these completely satisfactory in my Microlathe. Problems with swarf binding in the rack strip have been considerably reduced with the installation of a plastic shield which just slides in a convenient groove along the side of the lathe bed.

Modifications and Adaptations

I have made a number of modifications and accessories for my Microlathe, and with the agreement of the Editor, I shall give you more details of these over future issues of this magazine. However, it is worth describing some of them at this point.

One of the first tasks I performed was to reverse the tailstock block and reposition the pivot for the lever feed mechanism. I found that the saddle is much wider than the cross-slide and the amount of movement was impeded by coming into contact with the tailstock, especially if work was being supported by the tailstock centre. The initial tailstock mounting position has an overhang at the rear and is set back at the front. By reversing this, I obtained one inch of further travel of the saddle before coming into contact with the tailstock. I also fashioned a sleeve for the lever arm, from a piece of copper tube. This gives much greater comfort when operating the lever feed. (See Fig. 1).

I have no complaints at all about the four-jaw chuck, but found the self-centering chuck very unsatisfactory. I therefore obtained a scroll mechanism, 3-jaw chuck of 3" diameter and a cast iron backplate. The backplate was bored and tapped to fit the mandrel nose and then mounted on the lathe. I confess to using a larger lathe to initially turn off the hard skin on the casting before finishing the turning on the Microlathe. When turned and running true, a lip was machined to fit the recess on the rear of the chuck body. This was secured in place with socket-head screws and provides an accurately running chuck with two sets of jaws, inside and outside.

I shall describe other attachments and adaptations in future issues.

#### Conclusion

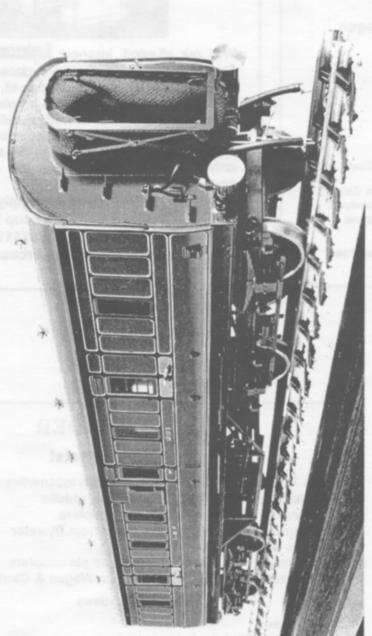
The Microlathe is a solidly built compact lathe, well suited for constructing small-scale locomotives, and can be recommended to anyone contemplating beginning loco construction. It can be powered by easily obtained second-hand motors and fitted into a small workspace. It is small enough to be easily moved around, but stable enough for some very hard work.



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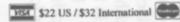


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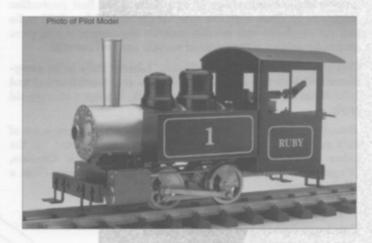
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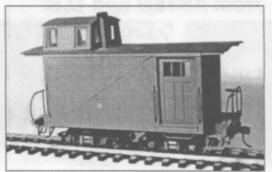
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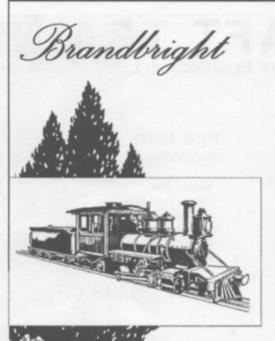
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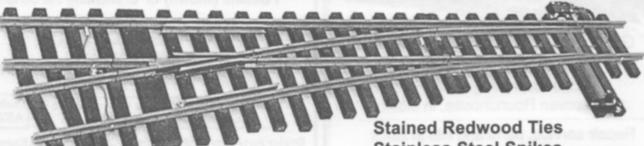
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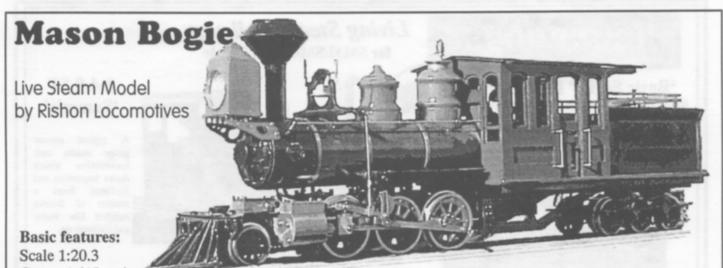
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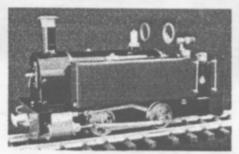
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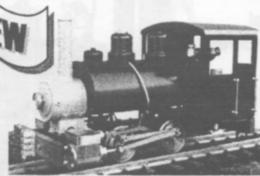
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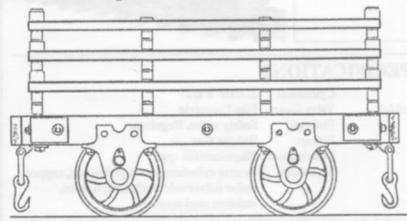


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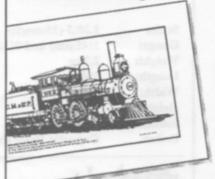
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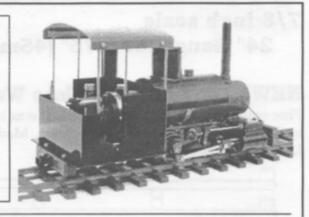
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Width: Height:

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Radius needed: 600mm (2ft)

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#### **End of the Line**

Critique...

We were taken to task by a reader recently about the direction SitG is going, the content of the last few issues in general, and the content of the last issue specifically. He felt that the International Small Scale Steamup at Diamondhead, Missippi, because it is an indoor steamup, and because everyone attends it anyway, does not deserve extensivecoverage in Steam in the Garden, which rather should be devoted to outdoor steaming coverage. We feel that Diamondhead is an important event in the hobby and deserves extensive coverage. The vast majority of our readers do not or cannot attend this steamup, and even those who do attend can't possibly see everything that's going on because of the scope of the event.

The writer was also unhappy that I wasted space in my End of the Line comments in that issue, telling readers what Faithful Assistant and I had been doing during the past few months.

There were other criticisms as well, but there's no need to get into the whole thing here. My reason for mentioning it at all is to solicit your input on the direction we've been moving with *SitG* in the past year or two.

Of course we can't please everyone with every article, photo or editorial comment, but we'd like to know if we're really as far off the mark as the letter mentioned above seems to indicate.

In the past we have been criticized for lack of gauge 1 (mainline modeling) content. We'd like to do more, but we can only print what we receive. If you'd like to see more of anything specific...write it up, photograph it, and send it in.

Our subscriber base is now at the highest point in our 11 year history, which sends us a message that what we're doing is what you want. If that's not the case, for goodness sake tell us about it.

Our mission from the beginning has been to provide honest, accurate coverage of the steam scene, and to provide a forum for the exchange of ideas and information between live steamers around the world. If we're missing the mark, then please help us to get back on target. Send a letter, e-mail, fax...or pick up the phone and call us. We look forward to hearing from you.

Happy Steaming!



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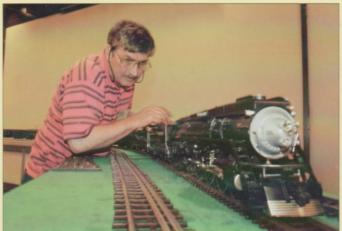
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Photos, clockwise from below: Start of the oval race at South Orange Seaport Steamboats Only meet - Bill Schappert's steam drag boat in action at the SOS meet - The wheel on Charlie Roth's sternwheeler, as seen at the SOS meet. The construction of the wheel and the driving mechanism were beautiful to behold and fascinating to see in motion. - Jim Stapleton's Aster BR86 "Dr. Zhivago" loco with a colorful train, seen at the Tuckahoe Steam & Gas Assn. meeting in Easton, Maryland photos by Ron Brown - Richard Finlayson's French Aster at Dr. Dan's layout on the day after the National Spring Steamup - David Baker checks Rick Runyon's heavily modified Aster GS4 with a train of J&M Pullman cars on the mainline circuit at the NSS - Cab detail of Richard Runyon's Aster GS4 photos by Andrew Macpherson

