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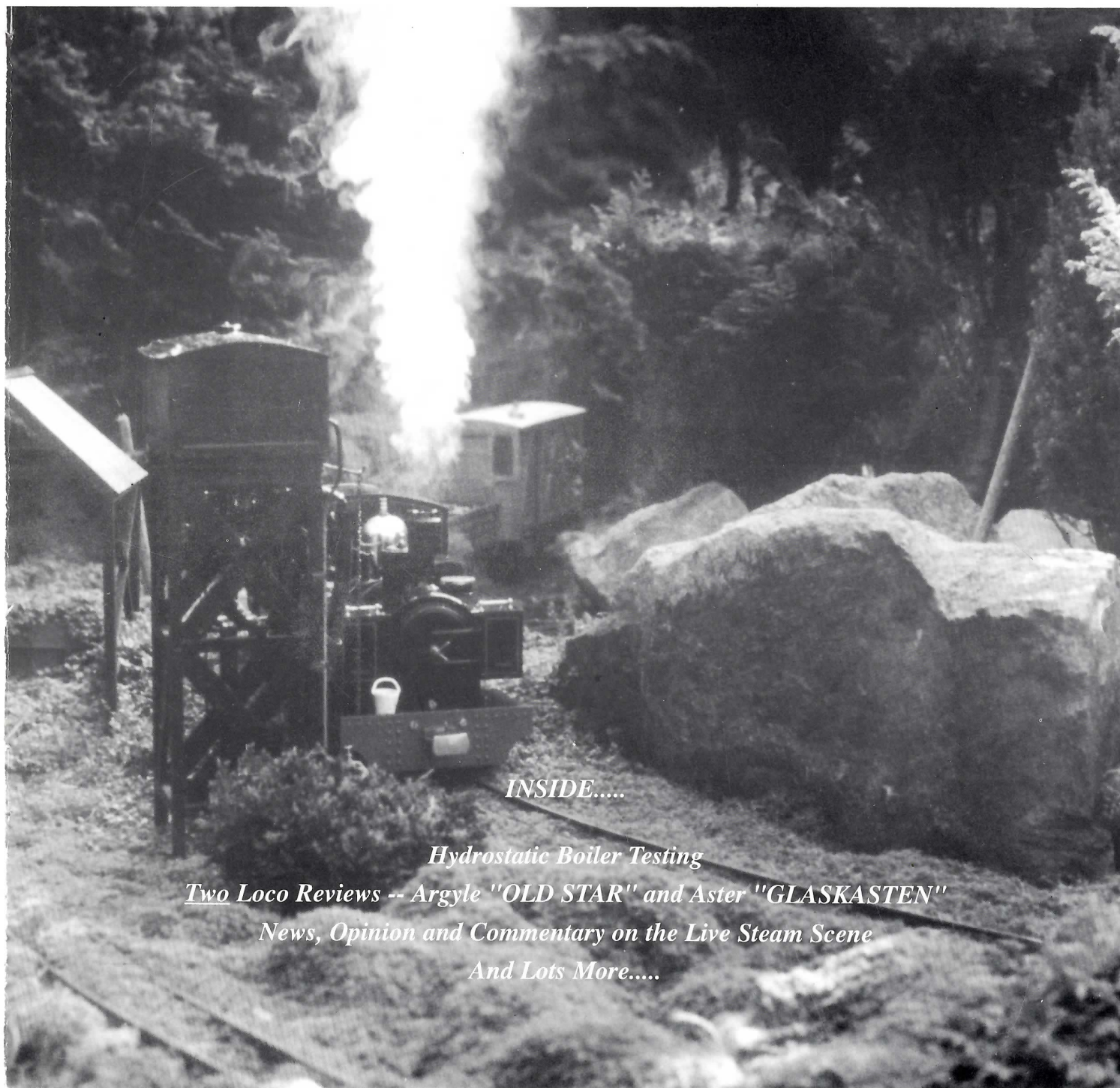
Steam in the Garden

Magazine

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

Volume Four Number Two

January/February 1994



INSIDE.....

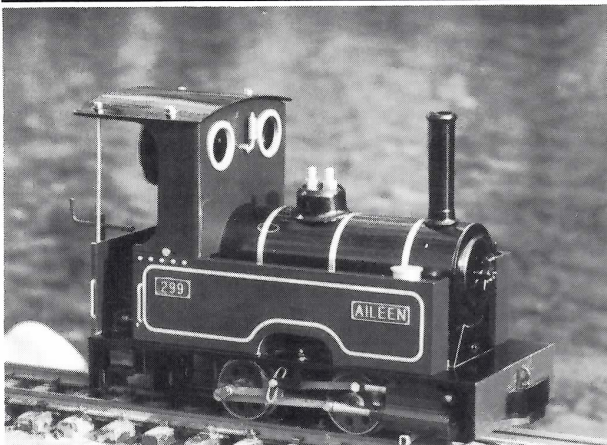
Hydrostatic Boiler Testing

Two Loco Reviews -- Argyle "OLD STAR" and Aster "GLASKASTEN"

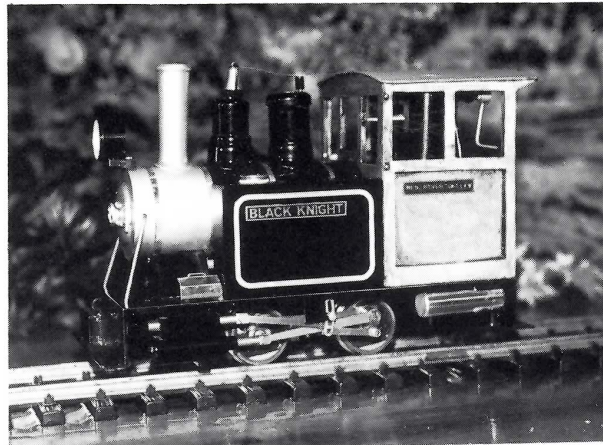
News, Opinion and Commentary on the Live Steam Scene

And Lots More.....

ANNOUNCING . . . GIANT LITTLE RAILWAYS LIVE STEAM LOCOS FOR CHRISTMAS GIVING



Little Giant



Dixie

Yesteryear Toys & Books Inc. has been appointed the exclusive North American distributor for 'Giant Little Railways.' 'Giant Little Railways' are manufactured by The American Steam Locomotive Co. Ltd. of the UK (formerly Steamlines Publications & Models).

A NEW GARDEN RAILWAY CONCEPT!

- AFFORDABLE EASY-TO-BUILD LIVE STEAMER KITS AND READY-TO-RUN MODELS (45mm—GAUGE 1) • 3/4" SCALE, A THIRD LARGER THAN LGB • TOUGH ENOUGH FOR THE WORST OUTDOOR CONDITIONS • TAME ENOUGH TO RUN INDOORS

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LITTLE GIANT and DIXIE SPECIFICATIONS

Kit supplied as an assembled chassis/boiler, track tested to pull 30 lbs. before despatch. You fit superstructure, detail parts (all components are unpainted). No problems for the first-time builder. Ready-to-run models are supplied with a two-year parts and labor warranty.

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Cylinders are 13mm bore (fitted "O" rings), 16mm stroke, double-acting cylinders w/piston valves. Monoblock chassis machined from HE30 aluminum, no frame stretchers. 1.25" dia. wheels, insulated steel tires, 1/4" steel axles run in brass bearing blocks.

A regulator you can get your hands on provides fine control in either direction. Radio operation optional.

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LITTLE GIANT Special Features: Steel cab 1.2mm thick high tensile steel. 1-5/8" dia. pressure gauge. Ready-to-run colors: buffer beams, red; chassis, black; cab roof, black; side tanks and cab, maroon, green, or dark blue.

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ON THE COVER:

It's early morning on Tag Gorton's Longlands & Western Railway in Cornwall, and the photographer, who has been sitting patiently on a hill overlooking the water tower, has his patience rewarded as the sun peeks over the treetops just in time to backlight the steam plume of the departing *Sir George Harvey*, a modified Merlin Meteor.

Photo by Tag Gorton

A Season of Change

SitG has always been a pretty informal publication and we've often been a bit loose with our publication schedule, which means that we haven't always gotten each issue mailed out right on time. The July/August issue was one of the worst in this regard, due partly to a delay on our part in order to include coverage of the National Garden Railway Convention -- and due in large part to a 6 week delay by the printer.

So with this issue we've changed printers yet again -- this time to the very same printer that does such a fine job on Marc & Barb Horovitz' *Garden Railways* magazine. We are confident that they will do the same fine job on SitG that they do on GR!

Labeling and mailing has also been taken over by the printer, as well as a move up from 3rd Class to 2nd Class mailing. We hope this will speed up delivery times across the country and around the world. Best of all, it will give your hard working editor and Faithful Assistant an extra 12 days each year.....at least some of which will be spent running trains on our own garden railway!

Some of you may be wondering what happened to the September/October and the November/December issues. A fair question. We're currently negotiating with a major hobby magazine publisher and distributor to take on SitG for distribution to hobby shops and newstands in North America. If this comes to pass, it will be a good thing for SitG and, we believe, for the small-scale live steam hobby as well.

But in order for SitG to make such a move, we've got to shape up and adopt some of the more traditional standards, such as getting the magazine out on time! There's no way we could catch up by putting out 3 issues all at once, so we've had to change our cover date to match our actual publication schedule. The Volume and Issue numbers will remain contiguous, and no one will miss a single issue that they've paid for. We hope that you will be patient and understanding during this season of change.

Happy Steaming,

Ron

Vol. 4 No. 2 Issue #20 Jan./Feb. 1994

◆ Articles ◆

- 14 ... The Next One
Mike Chaney
- 16 ... Loco Review
Argyle "OLD STAR"
Jerry Reshew
- 20 ... Product Review
BLW's PERFORAIL
Chris Hall
- 23 ... Hydrostatic Boiler Testing
Harry Wade
- 26 ... Loco Review
Aster "GLASKASTEN"
Richard Finlayson
- 28 ... Tapping Tool
E.V. Rutkowski

◆ Departments ◆

- 3 Editorial Comment
Ron Brown
- 4 RPO - Letters
- 6 What's New?
- 8 Gazing Into the Fire
Peter Jones
- 10 The Fitter's Bench
Crankpin
- 39 Calendar of Events
- 41 Adventures on the
Castle Pacific
Rick Drescher
- 41 Swap Shop
- 42 End of the Line
Ron Brown
- 42 Advertiser Index

Steam in the Garden magazine

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Items for review should be mailed to P.O. Box 335, Newark Valley, NY 13811 or sent via UPS to 6629 SR 38, Newark Valley, NY 13811.

Questions or comments? Phone us at 607-642-8119 - before 9:00 p.m. Eastern time, please - or send a FAX anytime at 607-642-8978.



R P O Mailbag

Letters from all over

Letters from readers are welcomed and encouraged. Offer advice, encouragement, suggestions or constructive criticism. Tell us about your current project (and don't forget the photos!) or just share live steam experiences. But please keep your letters to a reasonable length so everyone has a chance to use this forum. Send your contributions to: SitG, Dept. RPO, P.O. Box 335, Newark Valley, NY 13811, USA.

* * * * *

New Hampshire

Dear Ron,

I'm looking forward to the August 28th Steamup. This summer has been racing by without much steaming. It's really my fault.....well, maybe the job, the weather, bathroom repair and family commitments can take some of the blame.

Here is a tidbit you may want to pass along to your readers. Lionel knuckle couplers from their 1950's era tinplate are excellent for "G" scale use. They are well detailed, operate prototypically, are die cast (and thus rugged), and inexpensive.

I can pick up a Lionel gondola at a train swap meet for \$2.00. The couplers are removed in under 5 minutes and cleaned using WD-40, bringing them back to new operating condition. You can fabricate draft gear that makes sense for your own railroad operating conditions.

That's it -- see you in a couple of weeks.

Rich Chiodo

* * * * *

San Francisco, California

Dear Ron,

It was most delightful to meet you and Faithful Assistant at the Garden Railway Convention in Santa Clara. Of course the live steam part was the best, but even some of the large electric rodents were mildly attractive.

While waiting for everything to come together for the steam-in-the-parlor apartment line, I've been running "Bacchus", the bespoke Roundhouse BILLY on blocks atop the kitchen table. Also I read the voluminous instructions which accompanied the Futaba R/C unit supplied with Bacchus. Roundhouse suggests that the spring-loaded reverse gear control provides a deadman safety feature; the lever must be held over while run-

ning, or the gear will snap to neutral and halt the train. True, but the one time I ran Bacchus this way I found it to be a great big pain in the thumb. Futaba notes that ratchet levers are available, so I ordered a pair from Futaba of America.

Installation is easy if you look at the illustration in the instructions, though the ratchet support columns appear remarkably thin and easy to break through rough handling. Don't tighten the screws, just snug them down until each click of the ratchet is light but positive and the levers will stay in place after being adjusted.

Perhaps if Richard Rees and Don Mason every try Futaba R/C gear with ratchets they will abandon their Luddite aesthetic disdain of hi-tech controls. With Bacchus running on blocks each notch has its effect. I've been advised not to worry about adjusting valve cutoff on small-scale engines, but Bacchus smooths out remarkably when the reversing lever is brought back three clicks from full-forward. Since the steam's expansive energy is utilized, efficiency is enhanced. The reduced pounding means that the moving parts will last longer. A good engineer (or driver in Britspeak) adjusts cutoff as well as throttle (regulator) as conditions require on a large loco, so why shouldn't live steam miniaturists emulate prototype good practice -- particularly when Futaba R/C makes it so easy?

Cheers!

Reg Stocking

* * * * *

Thanks for writing, Reg. Marie and I enjoyed the convention for the most part, particularly the opportunity to meet you and many other SitG readers and live steam buffs.

I laughed while reading the second paragraph in your letter, where you talked about running Bacchus on blocks on the kitchen table. I've resorted to the same thing at times when our outdoor trackage has been under snow and ice and, to paraphrase a line in the movie Top Gun -- "I feel the need for STEAM!"

Like you, I detest the spring-loaded valve gear control lever (R/C version) used by Roundhouse. And I also waste no time in taking off the centering spring and adding a ratchet to that transmitter control lever. I do go one step further, loosening the whole stick assembly in its mounting and rotating it 90° so that it has a vertical orientation. It just seems more natural to move the stick "up" for forward and "down" for reverse.

Unlike you, my experiments with trying to adjust valve cutoff on Roundhouse locomotives has not met with success.

I've found them to run best with the valve gear control lever at its extreme forward or reverse position. When I attempt to notch back on the lever, the loco always starts to buck and jerk as a result of the valve timing having been changed. But my experiments have been conducted on Roundhouse locos that were several years old.....perhaps Roger Loxley has made some undocumented modifications or improvements to the valve gear on more recent production models?

The reason that notching back didn't work on those earlier locos was that the Walschaerts valve gear was really only a semi-Walschaerts, and didn't have all the bits and pieces that are found on full-sized locos. - ed.

* * * * *

Switzerland

Dear Ron,

Your magazine is superb. It is always hard to wait for the next issue! Thank you for the nice job you do!

Werner Kunz

Thanks, Werner! It's the "warm fuzzies" we get from nice people like you that keep us going. - ed.

* * * * *

Cambria, California

Ron!

Another good issue! I'm beginning to think my little ex-Peter Jones loco, "Princess", is the most photographed engine! I see her a lot in different magazines. Our Honorable Mr. Jones can rest easy knowing that she is happy and safe, with her own enginehouse, and under swaying palm trees instead of in the cold Welsh fog.....

A quick tip from customer Quentin Schleckser -- a remedy for the Accursed Creeping Gas Control Valve. Quentin recommends adding some high temperature ball bearing grease to the valve (remove it and apply). This stops the infernal slipping! He has also converted his Roundhouse Jack to an American profile. Would love to see a picture! Maybe if we all nag him he'll send one in for Steam Scene!

Best,
Samuel A. Muncy

* * * * *

Valinda, California

Dear Ron,

Received my May/June '93 Steam in the Garden. Very Good

Issue! I was especially pleased when reading R P O Mailbag and found a letter from someone else in the same town I'm in. Maybe we could get a listing of steam lovers who would be willing to trade addresses and phone numbers via a once-a-year listing in SitG.

On a routine note, my steam engine project, a 4-6-0, 1/2" scale, gauge 1 loco called "Slim Princess", is pretty far along. I am having trouble raising enough steam, so I added more wicks for a total of five.

The engine was looked at by my son's teacher, who is a ASME member. He gave me several suggestions which I will try. I'm using fiberglass for wicks, as I have not run across any asbestos wick material.

Anyway, thanks for putting up with my ramblings. Should the engine ever come together, I'll take pictures and explain a few things I've learned about what not to do.

Ever pushing ahead,
Leonard Hills

Congratulations, Leonard, on the progress you've made with your project loco. I'm sure that with a bit of fine tuning you'll have a loco you can be justly proud of. And don't forget to share it with us through photos and an article when that day comes!

Your suggestion for a listing of fellow steam enthusiasts has some merit, though many people shy away from such a list because, in the wrong hands, it could cause some problems. I would be happy to produce a list if we get enough support and participation from our readers.

What do you think, readers? Would you be interested in a listing of fellow enthusiasts for the purpose of sharing experiences and tapping into the collective wisdom and experience of your kindred spirits? If so, just drop me a note with your name, address and (if you wish) your phone number. A brief rundown of your interests and experience would be helpful. Rather than publish such a list in the magazine, I'll send a copy out to each of you that responds. This will afford at least some measure of privacy to those on the list - ed.

* * * * *

Chicago, Illinois

To whom it may concern,

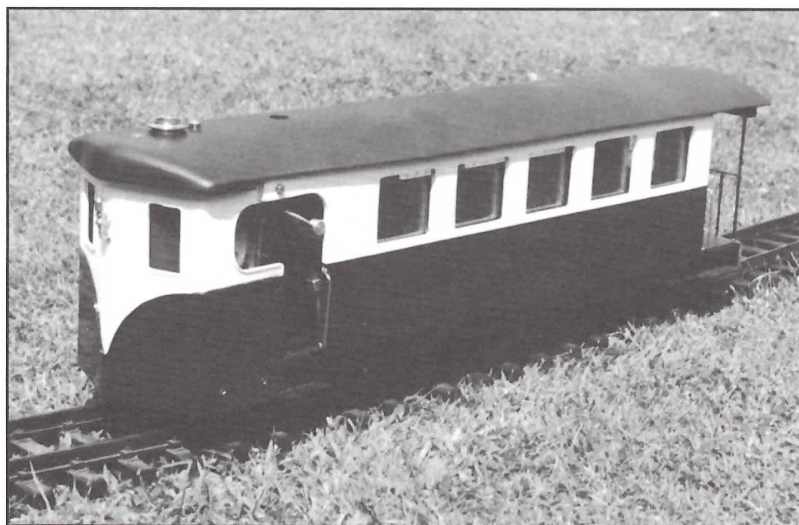
Your magazine is targeted right to me. I'm trying to summon the courage to build a backyard layout and use live steam to pull those trains. So, I'll take the plunge. \$18 is enclosed. I look forward to reading your magazine. Thanks.

Sincerely,
Jay Voss



What's New?

Looking for some bolt-on charisma for your new Maxwell Hemmens Porter or Wrightscale Porter? **Railway Garden Ltd., 4210 Bridge St. #5, Cambria, CA 93428 - phone 805-927-1194**, has a deal for you! They will create a replacement wood cab, finished to your specs and based on your design or theirs, for just \$85.00 - \$95.00. Call or write for details.....and please mention that you saw it in SitG.



Railway Garden Ltd. also has, for a very limited time, a few Locomotion Steam Railcars in gauge 1 or gauge 0. This interesting rail vehicle is equipped with a gas-fired vertical boiler, a forward/reverse lever in the cab, pressure gauge and a Goodall valve. It can be painted to your specifications. This item will be available only from RGL, and for a short time only. Samuel says, "Sorry, no literature is available on this item - this photo and announcement is it!" Cost of the steam railcar is approximately \$485.00. Call RGL for more information and a firm price.

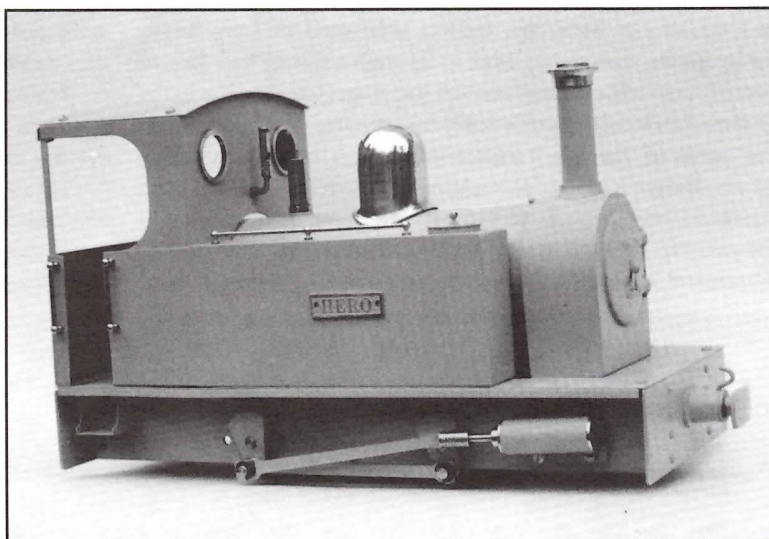
Garich Light Transport, 14582 Aspen Circle, Huntington Beach, CA 92647 -- phone/FAX 714-893-6540, has just released their new Quality Rail Bender for code 250 or code 332 rail (bending code 332 rail takes different rollers, which are available on request). The sample we received for review is impressive -- sturdy, simple to use, well designed and professionally crafted. We bent brass, aluminum and steel rail with this bender and encountered absolutely no rail distortion or kinking. It will easily bend rail down to much smaller radii than you would ever think of using on your railway, and it will give you smooth, consistent curves of whatever radius you wish. The rollers are mounted on heavy duty bearings for long life and the unit is designed so that it can be used hand-held, bolted to a bench (or fence, or picnic table, or sawhorse or whatever is handy), or clamped in a vise. It can also be used either horizontally or vertically, whichever best suits your available space and personal preference. I layed the trackage on our first garden railway by hand spiking aluminum rail to redwood ties, and I did it without benefit of a rail bender. Why spend money on a rail bender when aluminum rail is so soft and bends so easily by hand? Well, it didn't take long for me to see that bending rail without a bender results in kinks, and curves that are not smooth and true, leading to derailments and frustration. Now I'm replacing all the original trackage on the Silo Falls Scenic Railway and will use a rail bender to keep the curves as smooth and accurate as possible. All trains running over our trackage will be a lot happier for it! The GLT Quality Rail Bender is priced at \$72.95 retail. Pick one up from your dealer or order direct from GLT.

Whistles in the Woods Museum Services, Route #1, Box 265-A, Rossville, GA 30741 -- phone 706-375-4326, has a catalogue of new, out-of-print and rare books on railways, industrial and technological history, mining, manufacturing, etc., featuring European books, narrow gauge and industrial steam. Looks like a lot of interesting reading and some great research material. They tell me that they are now working on a new catalogue that will feature many items of particular interest to the garden railwayman. Catalogues are free, but it would be a nice gesture to send along a buck for postage.

Overland Models, Inc., 6120 W. Kilgore Ave., Muncie, IN 47304-4780 -- phone 317-289-4257 or FAX 317-289-6013, has been named as the U.S. distributor for the Ajin-Wada Union Pacific 8500 HP 3-Unit Gas Turbine Loco #18. Designed by Mr. Wada in Yokohama, Japan, this engine will be offered in both gauge 0 and gauge 1 versions, the gauge 0 version will be 1/4" (1:48) scale, and the scale of the gauge 1 version is unknown at the time of this writing. Construction is of brass with highly detailed parts accurately scaled. Speed and direction will be radio controlled. The turbine will be located in the A-Unit, while the two B-Units will contain the burner and the boiler. The turbine will drive two Phillips generators, which will in turn drive 8 axles by way of 8 Faulhaber 12V DC coreless traction motors. The model will also feature directional constant lighting and, in addition to steam power, can be run on 2-rail electric or battery power.

Trackside Details, 1331 Avalon Street, San Luis Obispo, CA 93405, has recently released some additional bits and pieces in their line of high quality detail castings and injection mouldings. TD-104...passenger car vents, 8 for \$5.00; TD-105...large tender water hatch for Bachmann, etc., \$8.00; TD-106...medium headlight bracket - \$8.00; TD-107...large (D&RGW and Tweetsy type) bracket for big headlights for Bachmann 10-wheeler, etc. - \$8.50. All but TD-104 are brass castings and both of the headlight brackets include four cast bolts for attachment. Check out the Trackside Details ad in this issue for a look at these new parts, and then send for their catalog of detail parts. Very nice stuff!

MIKE CHANEY, 116, Vicarage Road, Chelmsford, Essex CM2 9BT, England - phone 011-44-245-260-096, has announced a new locomotive, "HERO". Described as "a brave little engine", HERO is designed to operate in all weathers on gauge 0 or gauge 1 track, and is visually compatible with 16mm or "G" scale. Above the footplate, HERO is identical to the popular KITTEN, but there the similarity ends. HERO is fitted with conventional fixed outside cylinders driving the rear axle through normal connecting rods. Inside the frames are piston valves with either slip eccentric reversing or a novel arrangement based on the well



known Hackworth valve gear with a reversing lever in the cab. Cylinders are 10mm bore x 18mm stroke, and the valve events have been optimised for powerful and steady running under varying load conditions. The boiler is heated by a silent four tube spirit burner in a Wheldon-type firebox, producing abundant steam with good fuel economy, even in adverse weather conditions. Standard fittings include a 40 psi tamper-proof safety valve, regulator, water gauge glass, pressure gauge and boiler water feed system. An easily filled (!) displacement lubricator is located on the L.H. running plate, downstream of the steam drier to ensure an even supply of steam oil to the cylinders. The loco can be kept in steam continuously if desired, with refueling stops every 15-20 minutes. All locos are supplied with steam oil, syringe, lighting stick and water pump/container. Standard color is red, but green, blue and black are available to order. Nameplates are available to order at £3.50 per pair. HERO prices are as follows: w/slip eccentric valve gear, £485.00; w/Hackworth valve gear, £525.00. KITTEN has been repriced at £435.00. Postage and insurance additional, of course. Contact Mike Chaney at the address above for more information.



Gazing Into the Fire

by Peter Jones

all photos by the author

...and I am now going to gaze into one or two unusual fires. Regular readers will now be quite familiar with the bits and pieces that go to make up live steam in the garden. We have arrived at a convention of machinery that we know works well. The chances are that we will be using gas or spirit firing, perhaps with a smattering of coal, perhaps not. We accept that there are interesting little byways to ramble down, but that, in the main, we have got the basic metalsmithing sorted out.

There are still plenty of offshoots to explore, and I hope to do my bit of exploration in future pages. But let us assume that we are happy with our steam engines. We may have built them ourselves, but the chances are that we have sold the family into white slavery and flashed the bills. This doesn't mean that we have to stop thinking about pioneering. Every layout that gets put together, however modest, is a chance to add a touch of individuality to the hobby. A circle of Mamod track can just as easily go through a gold mine as through a flower bed. In past years it was achievement enough just to get trains to run in the garden. But imagination is fairly inexpensive. We can build on the needs of running a successful garden railway by steam power. We are looking for track that is as level as possible, with curves as large as possible and with some degree of comfort in the running. Enough has been written and enough commercial equipment is available for us to pretty well guarantee these

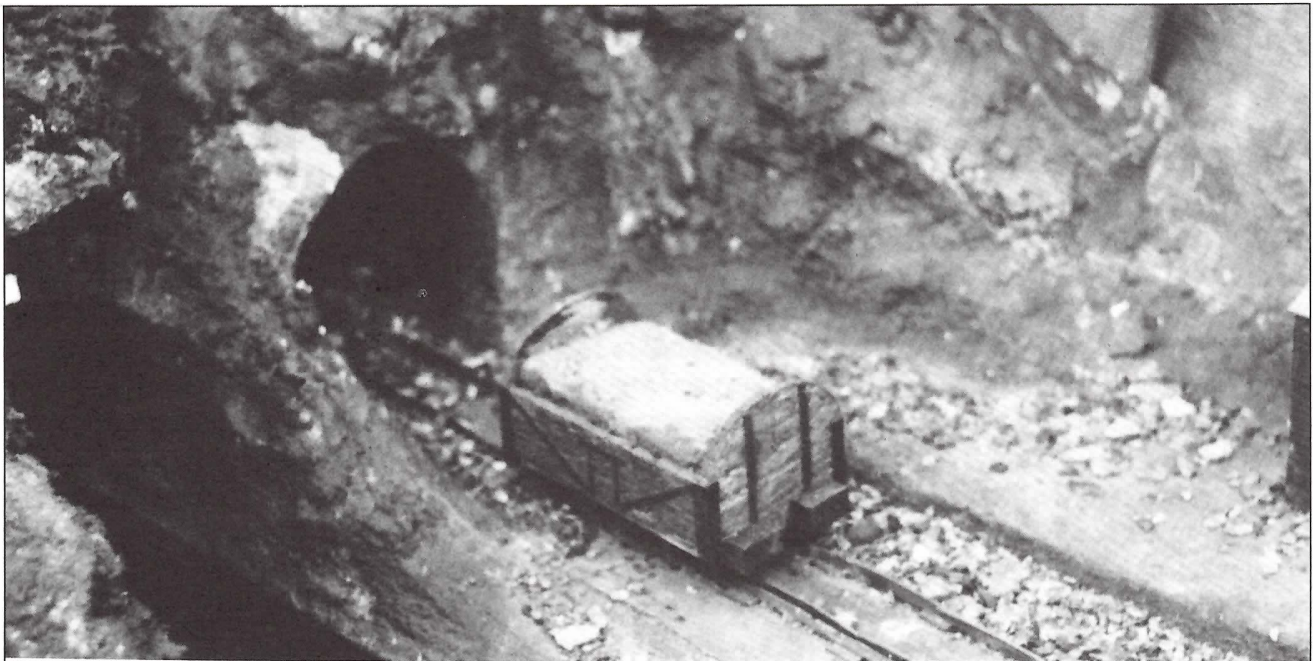
things, given a bit of care in the building. We may dispute the various ways of building a railway; I'm noted for championing durable construction as being easiest in the long run, but lots of successful railroads are up and running.

So where do we go? The answer is.....in unlimited directions. I can only offer some of the ideas that occur to me. There are dozens of different reasons for running a railroad. Think of all of the freight and mine variations that exist. Logging needs no reminders, but perhaps an industrial complex might. Docksides and levees, canneries and whaling stations, mines and quarries, urban and suburban.....the choices go on.

If you don't have the commitment to build an entirely original layout, there is still plenty of scope for incorporating some original features. If you build a mine for your G scale railroad to visit, there is no reason why you couldn't put in a small internal railway of SM32 (gauge 0) track. Here is a whole world of tiny cars and engines just waiting to be explored.

I think that I am heading towards saying -- don't be satisfied with just another plastic building kit, stuck down on lineside. Get the little grey cells and the old stripwood to work.

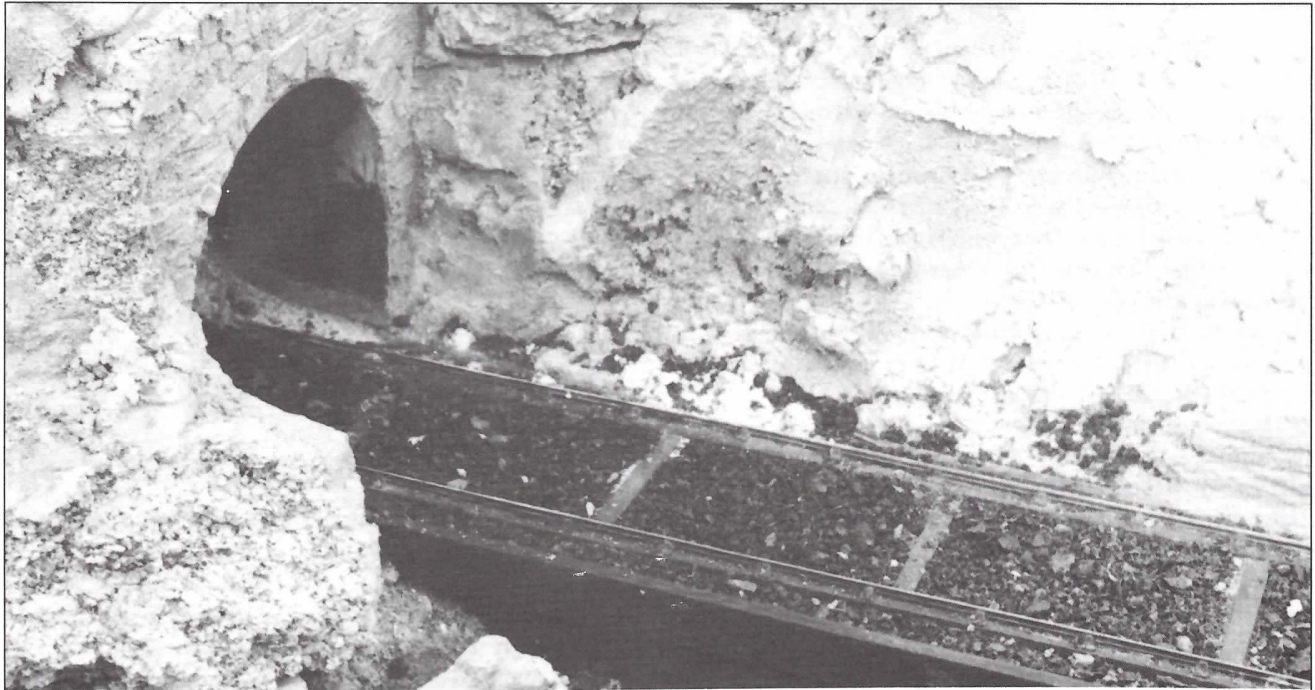
Already I can hear the scratching sound of pens being sharpened.....the angry scratching sound..... *Why should I listen to Jones when a rockery is all the happiness I seek?* And, in a way, you are quite right. But I unashamedly come back to a



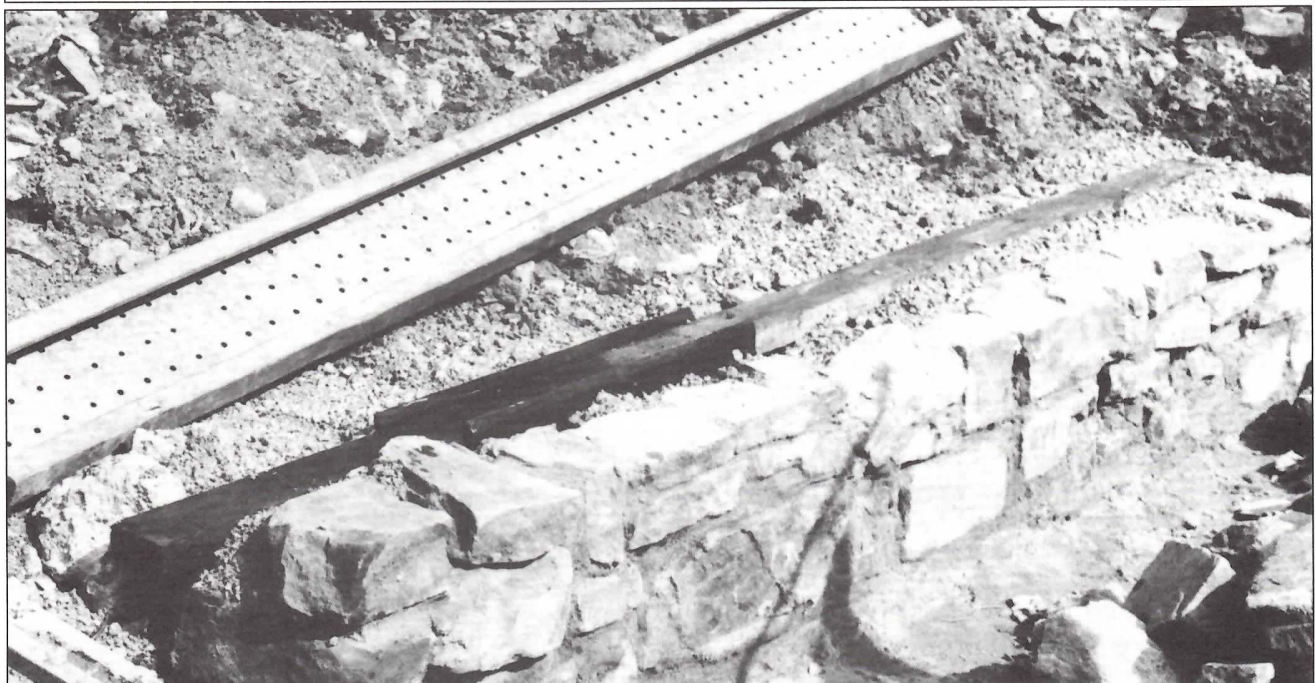
One of the longer term Jones experiments: ancient plateway track alongside a canal.

point I have made in the past. We are just the latest chapter in a book that is still being written. That reliable steam locomotion and good working railway came about because others weren't content with the status quo. A few people put their livelihoods on the line because they believed that there was progress to be made. But mostly, we have got where we are today because of all those little bits of original thinking by so many people over

the years. It has nothing to do with skill levels or fat wallets. It mostly just asks for an unsatisfied mind. We are painters, you and I. Our canvas is a live steam railroad in the garden. We may be good technical artists.....or perhaps not. Being bold and imaginative doesn't specify which.



A newer Compton Down folly: an anachronistic Brunel 7ft. gauge spur from a tunnel. This experiment-in-force can be described as SM112 (nearly 4-1/2" gauge!)



During construction of a stone retaining wall, several recessed areas are being built in to allow for modelling underground mine chambers. The track bed has gone in and now the wall will be built up further. The steel lintel is waiting to be installed at the appropriate time.

The Fitter's Bench

by Crankpin

After running my last column to the end of the line, I took my usual week or so of time away from the Smith-Corona to allow my beady eyeballs to regain focus before getting back to work on this month's episode. When I returned to start in again -- I will not mince words -- it became instantly obvious to me that I had proposed to do a very silly thing, that is, to begin my series on lathes and lathe work at some place other than at the beginning. I am afraid I cannot explain this momentary and uncharacteristic lapse of reason; all I will say is that it is clear that for the moment I should hold aside the 4-jaw chuck business until a few of the more elementary aspects of the lathe have been discussed.....and so I shall.

Many generations of writers, each one equally or better qualified than I, have probed the depths of the sea of information that the amateur lathe owner finds himself adrift upon, and collectively we are yet to find its bottom. It is, as I believe I have mentioned in an earlier article, a vast subject and it is simply not possible for any one man to know it all. Although I must admit to possessing only a fraction of this body of knowledge, my friends, fortunately we will need to know very little more than that in order to get started and to come to a good understanding of the lathe for the amateur machinist.

Right, then I shall at long last crack open the regulator and begin the journey for which many of you have held tickets for some time, and will introduce to you the basics, bit by bit, as time and space allow. Hopefully I will describe these things in a manner that will appeal to both the rank tyro, with naught but a screwdriver to his name, and the old hand who may already have a project or two under his belt. Don't forget to pack some tea and cakes, it's going to be a long trip.

A History Lesson:

The existence of a device for turning had its origins in the misty fogs of prehistory, and the principle first appeared in the form of the potter's throwing wheel, which of course is nothing more than a lathe with a vertical axis for turning clay objects. By the time of the ancient Egyptian civilizations, a lathe-like tool had become common and popular in the tents of the artisan class. These primitive lathes were originally referred to as the "Turns", a term which amongst our traditional watch and clock making brethren endures to this day.

In the ancient Turns, the piece to be worked was placed between two supports, at first simply the forks of tree saplings as illustrated in Fig. 1. A crank or lever was affixed to the tail end and while an assistant (the figure to the right in the illustration) rotated the work, the turner, using a pole as a tool rest, brought a stone or axe to bear on the turning workpiece, thus



Fig. 1 -- Ancient Turns

producing the desired shape. This arrangement was refined to the point where the supports were eventually hewn from wood, and soon pointed rods were added to the end stocks so that turning between centers became a common way of working.

The ancient workman was no less interested in saving time and labor than are we today and he recognized that an increase in the speed of the work would not only save time but would significantly improve the final finish. To this end a length of cord was wrapped around the workpiece and at first strung into a bow, which could be sawed back and forth to produce rotation, and later was further refined by affixing the cord to a stationary spring as shown in Figure 2. The cord was then worked back and forth by hand or foot and the rotation required could be produced by one man.

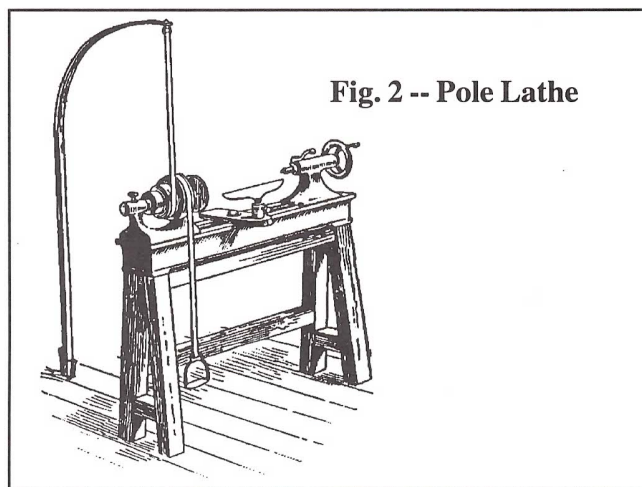


Fig. 2 -- Pole Lathe

These hand driven lathes exist today among the tradesmen and artisans of the more primitive nations and their descendent cousin, the foot-driven treadle lathe (Fig. 3), was the standard for amateur lathes in Europe and the US before mains electricity allowed the use of electric motors. The treadle lathe still has to this day a small but ardent following in England, as there are those who feel there is greater sense of achievement attached to a job produced entirely by hand (i.e. foot) power.

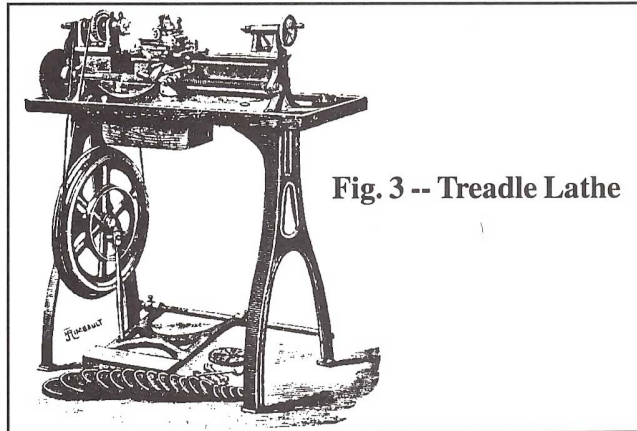


Fig. 3 -- Treadle Lathe

Up until the first decades of the 19th century, screw threads were rarely if ever used on industrial machines of any consequence. The most common method of assembly was by means of the shim, wedge, stake, and cotter; all devices which were installed and adjusted with the trusty hammer! Reasonably accurate one-off threads had been made for some years, but before this time there was no way to make a thread with repeatable accuracy and there were no accepted standards for threads. Each turner or fitter would work to whatever dimensions worked out on the job and what few threads might be used on a machine would be unique and unlikely to match anything else.

In 1800, an Englishman named Henry Maudslay developed a new type of lathe (by this time only watch and clock maker's called their lathes turns) which was significantly more accurate than those then currently being made. In addition to other refinements, this machine was fitted with a longitudinal screw, called the **leadscrew**, which was driven by a series of gears from the end of the spindle.

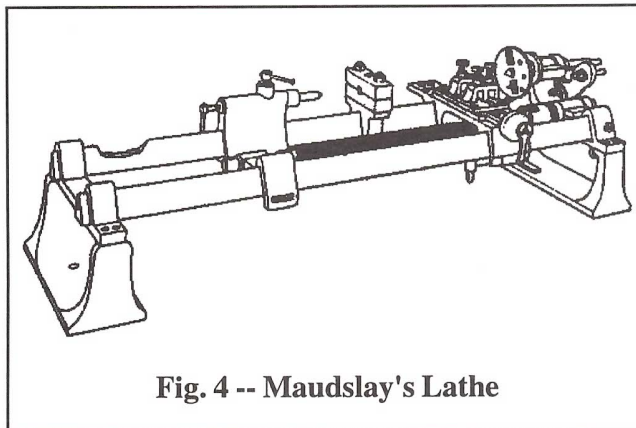


Fig. 4 -- Maudslay's Lathe

The leadscrew could be engaged to drive the lathe carriage along the bed, which allowed the turner to cut a thread to a pitch which could be precisely predicted and controlled as a multiple of the number of revolutions of the turning spindle. Maudslay's lathe made it possible to cut a thread exactly the same way time after time and was followed almost immediately by the formulation of standard threads, most prominently by Whitworth. The effect that these developments had upon the rise of the industrial age in England and subsequently in the United States should be too obvious to dwell upon here. All present day lathes are the direct descendants of Maudslay's screwcutting lathe and even though they would then have been viewed as fantastical marvels of finish and accuracy, our machines certainly would have been recognizable for what they were during his lifetime.

Traditionally (and theoretically) the lathe is considered to be the only machine tool that is able to regenerate itself. In other words, if you have a lathe and a few basic accessories, you can make another lathe. For that debatable patriarchal ability it was named "King of Tools", which I thought I would mention even though I have never cared much for adulatory titles such as this. This King business may be believable and provable in theory, but in actual practice it would be somewhat deceptive to say that with a 6" lathe, one could just up and build another 6" lathe. It is indeed possible, in fact a great many small lathes have been built using naught but hand tools, but there would be a great many intermediate steps required which would involve the hand working of major components.

There are many different types of lathes and they vary in size and capacity from under 2 inches to over 14 feet in diameter, and are to be found in many different structural configurations. Lathes are often classified by the product that they are designed to produce or where they are intended to be used.

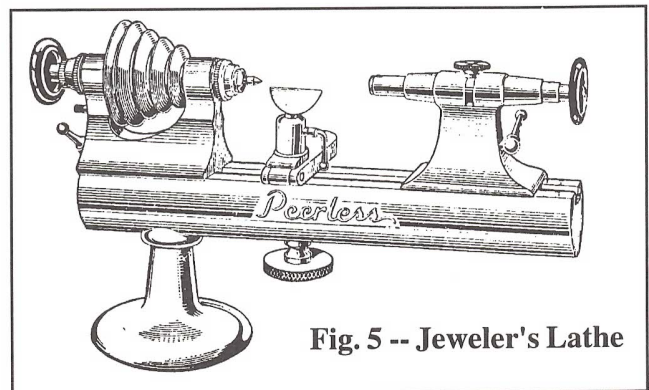
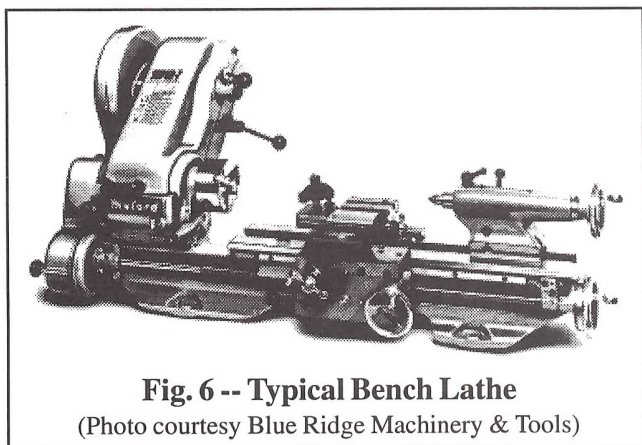


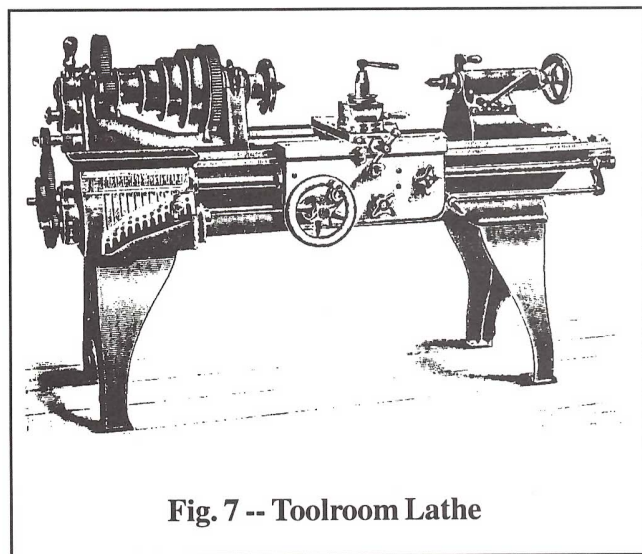
Fig. 5 -- Jeweler's Lathe

For instance a **jeweler's** or **horological** lathe (Fig. 5) will logically be used by the watch or clock maker and is capable of extremely fine (small) work at very high speeds. A cousin to the watchmaker's lathe is the rare **ornamental lathe** or **Rose Engine** and is used by artists and craftsmen for decorative work.

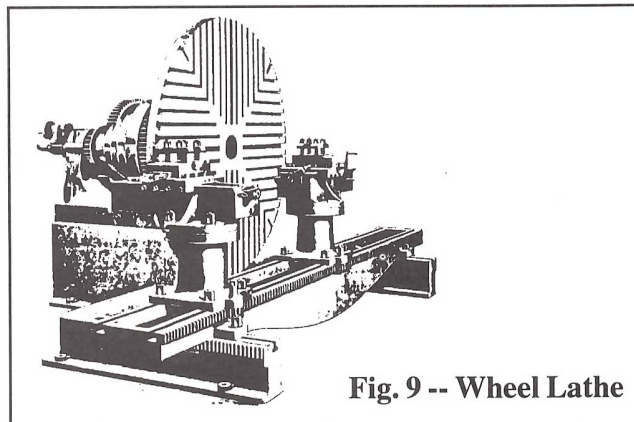
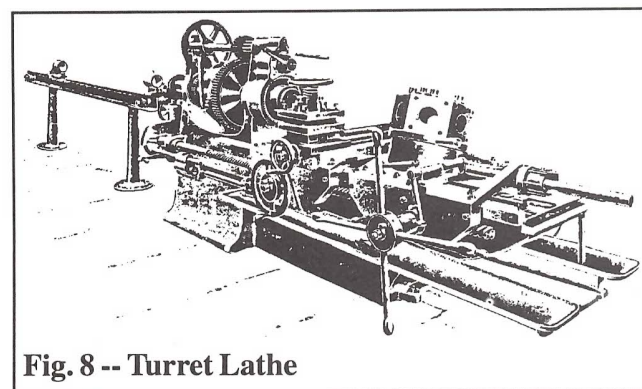
The **bench** lathe (Fig. 6) is just that and can be any machine that is intended for bench top mounting, which includes a very large percentage of amateur's lathes -- which reminds me that there is no class of lathes identified as "amateur's lathe".



The **toolroom** lathe (Fig. 7) and the **engine** lathe are alike in that they are usually equipped with a wide range of built-in controls and options (speeds, feeds, threads, tapers, etc.) and are used in general industrial machining.



The **turret**, **screw machine**, or **automatic lathe** (Fig. 8) is used for the commercial production of very large quantities of identical parts, such as nuts, bolts, screws and the like.



The **wheel lathe** (Fig. 9) is but one of a number of specialized lathes used by the railway shops which are often very large and can accept an entire wheel and axle set to be machined all at one go.

There are a number of specific types of lathes in addition to these, but at this point many of the uses and designations begin to overlap and categorization becomes somewhat confusing. For instance, a bench lathe may be a toolroom lathe, and a jeweler's lathe is usually a bench lathe, but a toolroom lathe could hardly be a jeweler's lathe.

The machine that we will focus most of our attention on for the next few months is called a **Back Geared Screw Cutting Lathe**, which is often seen abbreviated as B.G.S.C. As its name implies, these are machines (of any size) that are **A**) backed geared, which is a set of reduction gears that are built in to the headstock that enables the lathe to optionally run at slow speeds, and **B**) have a leadscrew driven through a changeable gear train from the spindle and is capable of cutting screw threads. This machine has been with us for well over a hundred years and even though there have been significant technological advances in materials and construction, such as the roller bearing, the basic components and principles of operation have remained unchanged since that time.

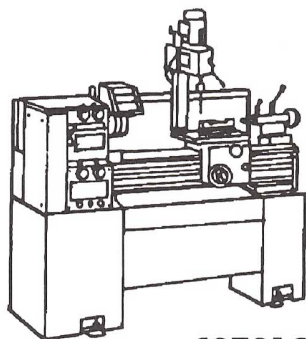
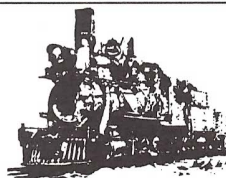
Next time out we shall continue this discussion with a description of the individual parts of the typical BGSC lathe and the role that each plays in the operation of the machine. Before I get back to the bench however, I would like to say that reader response to my writings continues to be very favourable for the most part and I am glad to be of some use.

Although generally satisfied with the educational stew that I've been serving up lately, some of you would apparently prefer a dish with a little less philosophical gab in it, and I can certainly appreciate that point of view. But the way I see it, composing one of these little dispatches is very much like selecting a cut of beef: if there's too much fat left on the cut, you won't be getting your shilling's worth. However, anyone who knows anything about cooking up the Sunday joint knows that just a wee marbling of fat adds a great deal to the juiciness and flavor when all is cooked up. So aside from my admitted tendency to go off on occasional rants and raves about this thing or that, I would be a less than dutiful scullery captain if I didn't insist upon providing you with a little marbling in your steak, just for flavor. I think you would soon see that it wouldn't be the same old Crankpin without it.



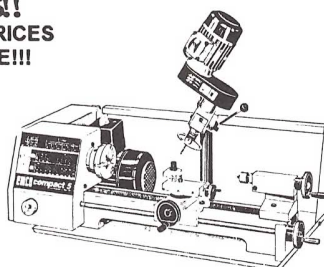
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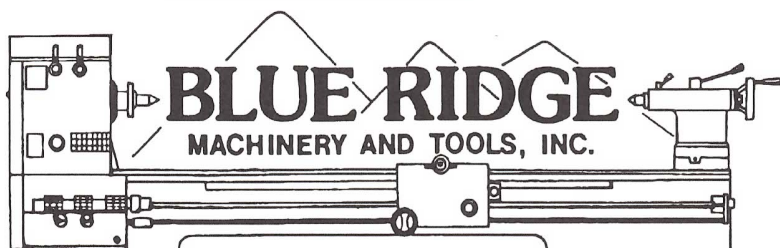
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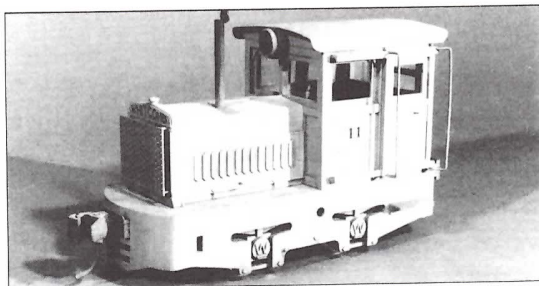


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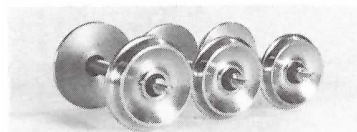
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The Next One

by Mike Chaney

To many people I have perhaps become mainly associated over the years with Mamods, oscillating cylinders and simple engines. It has recently been suggested to me from several quarters that I might produce an American outline live steam locomotive, and although this is something that I've been wanting to do for some time, one thing is sure -- it will not be a rehash of "KITTEN".

The photos on these pages show two engines which I have really enjoyed making. Although very different in appearance, they have several things in common. They are both scale models in gauge 1, are fully sprung, have large 9/16" x 7/8" cylinders, and water tanks and pumps to allow an extended running time. Both have radio control, although the 4-4-0 was designed for manual control and had throttle only R/C added at the request of its elderly owner who preferred watching his engine to chasing it.

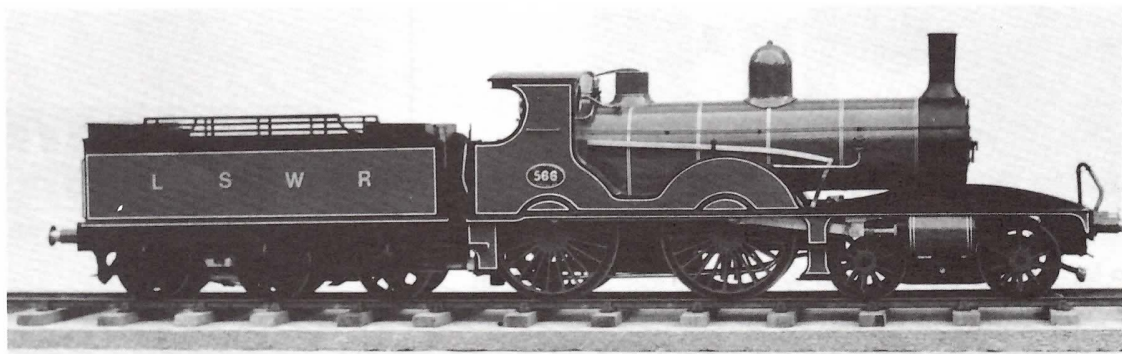
Where they differ, of course, is in scale. The 4-4-0 is standard gauge built to 10mm/ft. (1:30.4) whilst "Barbara" is narrow gauge at 16mm/ft. (1:19). The main difference is in the ease of operation. "Barbara" has a 2-1/4" diameter boiler with a centre flue butane burner - just fill up, light up, switch on the R/C and drive. From time to time check the water level and adjust the pump bypass. Every half hour refill the water and gas tanks and carry on playing.

The eight wheeler is a different proposition. Being to a

smaller scale, the boiler diameter is only 1-3/4". The model is internally meths fired and a large heating area is needed for those big cylinders - which does not leave much room in the boiler for water. A very careful eye has to be kept on the water gauge and the pump bypass. Too high a level and the exhaust sounds all wet and spluttery, too low and half the tubes are out of the water so pressure drops. Get it right and with 16-20 axles behind, the stack talk sounds a real treat. Reduce the load and throttle, and with less force from the blast pipe the steam generation is less and the loco balances at a lower boiler pressure. Altogether, a delight to drive once you have mastered it.

The other difference, which you may have guessed by now, is that the eight wheeler, with slip eccentric reversing fixed at 75% cut-off, is best running at a steady speed on a large radius oval. "Barbara" is more at home pottering about with the daily "mixed" at a small wayside station. She has full Bagnall-Price valve gear, which can be adjusted between 0 and 80% by R/C.

What I would now like to do is build a batch of (say) 10 or 20 locos which combine the virtues of both models - i.e. Powerful, internally fired, and capable of negotiating the curves of the average garden railway. The scale would be 1/2" (1:24) or "G" (1:22.5) representing roughly 3 ft. narrow gauge running on gauge 1 track. Whilst presenting a challenge to the advanced driver, it would be reasonably forgiving to one not so far up the learning curve.



Built by the author in 1991, this model of the London & South Western Railway T3 Class 4-4-0 No. 566 is built to a scale of 10mm/ft. for running on gauge 1 track. It is fully sprung, internally spirit fired and is equipped with slip eccentric reversing. Minimum curve radius is 7'-0"

Photo by Mike Chaney



This 16mm/ft. model of Snailbeach District Railways W.G. Bagnall No. 1797 of 1906, "DENNIS", was re-named "BARBARA" to dissuade the owner's wife from asking the cost! The engine is fully sprung, gas-fired, and equipped with Bagnall-Price valve gear. It requires a minimum curve radius of 3'-6".

Photo by Mike Chaney

I rather fancy the 3 ft. gauge railways of Colorado around the turn of the century, and especially the big Consolidations which helped extract the mineral riches of the Rocky Mountains. Being designed for heavy haulage on steep grades and around frightening curves, they have the characteristics I require in a model, namely a large boiler, large cylinders and small wheels. A further advantage of the 2-8-0 is that it can handle sharper curves than the same wheelbase Mogul. If you don't believe, draw it out to scale.

My local Public Library has recently acquired a collection of American railroad books which I am avidly devouring in the search for a suitable prototype -- my knowledge of the history and geography of the western states increases daily! To date, the Boulder and Northwestern (later Denver, Boulder and Western) Nos. 30-32 built by Brooks of New York seem likely candidates. No. 30 later became the Rio Grande Southern No. 74 and was subsequently purchased by the citizens of Boulder, Colorado for public display. At the time it was believed to be the largest narrow gauge loco in the world. I have plenty of good photos, but only an outline drawing with basic dimensions. A smaller engine, but one which, with its outside frames, would be suitable for conversion to gauge 0, is the Silverton Northern No. 34 by Baldwin, for which I have a mediocre drawing and just a few murky photos.

There are, of course, many more possibilities (I've just found some more on the Uintah Railway, for instance) and what I'm looking for is your suggestions and any assistance that you can offer in the way of an accurate and detailed drawing.

And what of the model itself? Well, like all my "proper" engines, it will be internally fired, burning meths or butane, with a fire tube boiler fitted with throttle, blower valve, water gauge and pressure gauge. Both hand and axle driven pumps

(with bypass) will maintain the water level. The bronze cylinders will have slide valves controlled by Stephenson's valve gear. All loco axles, including the pilot, will be sprung, but it may not be necessary to spring the tender -- we shall see! 27mhz radio control of throttle and reversing will be standard -- after all, it's not easy notching up the valve gear when running after it bent double and dodging the flowers!

And what will all this cost, you ask? Probably about the same as an Aster -- it all depends on how much time and cash goes into lost wax castings. The fact is that the working parts are the easy bit (to me at least), it's the beautifying of the beast that puts up the price. In this respect, I'd be delighted to hear from any supplier of stock castings that I may be able to use.

Now, please don't expect to see this in production straight away -- it may not even happen unless enough people show a serious interest. Not that I'm asking you to part with money or anything, just a note to say that you may be in the market when the politicians make the present world recession go away and we can all get back to a normal life.

In searching for a title for this piece, I was reminded of the modelmaker who was asked which was the best model he had ever made. He replied, "The next one!"

This certainly sounds like a worthwhile project! How about it, readers? Let's give the author the benefit of your opinions, suggestions and support. You can contact him through this magazine, or direct: Mike Chaney, 116, Vicarage Road, Chelmsford, Essex CM2 9BT, ENGLAND -- Phone 011-44-245-260-096.



Loco Review -

Argyle Locomotive Works SR&RL OLD STAR

by Jerry Reshew

Technical Specifications

Description:	Scale model of the Baldwin Locomotive Works Sandy River & Rangely Lakes 2-6-0 OLD STAR, originally built for the LR&HS Railroad and named JAMES WYMAN.
Scale:	1:22.5
Gauge:	45/32mm
Length:	660mm
Width:	120mm
Height:	170mm
Weight:	4.1kg
Radius:	1.6mtr -- 5'6" minimum
Cylinders:	2 - 14mm x 20mm (Bronze)
Valve Gear:	Stephenson (inside)
Wheels:	Stainless steel castings
Boiler:	Silver soldered copper -- 40 psi working pressure
Firing:	Butane gas or alcohol
Lubricator:	Displacement type
Materials:	Frames 3mm steel - platework 0.6mm brass - timber underframe on tender - tender bogies, pilot, smokebox saddle, and air pump are brass investment castings
Couplings:	Kadee, link & pin or chopper type -- front & rear
Price:	\$2280 US -- customs duty, shipping and insurance additional

Available from: Argyle Locomotive Works, 72 Garland Road, Bundanoon, NSW 2578, Australia -- phone/FAX 048-836-787 -- or (in the USA) Railway Garden Ltd., 4210 Bridge St. #5, Cambria, CA 93428 -- phone/fax 805-927-1194.

Argyle Locomotive Works is really Gordon and Michelle Watson's dream come true. Located in the idyllic hills of Bundanoon, Australia, Argyle has already carved a niche for themselves in the narrow gauge segment of the live steam hobby by providing well engineered and true to prototype American outline locomotives. OLD STAR is the latest of their limited production creations.

OLD STAR was built in 1892 as a 2-6-0 mogul to service the narrow gauge logging lines of Maine. It was a 2 foot gauge engine, and the model is built to a scale of 1:22.5 to operate on gauge 1 (45mm) track. The boiler is butane fired on the standard version, but can be ordered with meths firing if that is your preference. My preferences seem to fluctuate, so I'm at the stage where I'll take any fuel option, as long as it runs.

The locomotive is gracefully proportioned and possesses a certain rustic elegance which I find particularly attractive. Overall length is 27 inches and height about 7 inches. These approximations are flexible, depending on coupler selection and whether you consider the topmost whistle casting as your reference point. Fueled and watered, OLD STAR weighs in at just over 9 pounds.

Operating fixtures are just about what you would expect from an engine of this quality: safety valve, regulator, sight

glass, pressure gauge, tender feed pump, feed clack valve, blow down, and operating valve gear controlled from the cab. Although there is room in the tender for a radio receiver and batteries, the cab is very small and only a mini-servo on the throttle would be possible. The engine is so docile under manual control that R/C really isn't necessary.

One of the interesting features is the Stephenson design valve gear. It is internal and therefore gives the engine a look of simplicity without the moving parts seen on other arrangements.

The engine you are reading about is number 1 of a production run of 25 units. Gordon brought it to the Garden Railway Convention in Santa Clara, California and I just couldn't let him take it back to Australia. It was a case of "have-to-have", a condition which has been described as almost incurable and highly contagious. I think that the wooden cab and graceful pilot did it for me, but you never know what triggers this malady.

This is a very powerful locomotive! Gordon introduced me to the proper operating procedure and we then hooked up all the rolling stock that we could find. The throttle was only opened halfway to obtain a nice scale speed.

One of the hidden benefits of Argyle engines is the simplicity of the design and the accessibility of components that might need tweaking during a day's run. I had the first example of this



SR&RL "OLD STAR" cools down after another exciting run on the author's railway in Mississippi.

when OLD STAR wouldn't fire. Some particles of fuzz had clogged the burner jet, the source of the obstruction probably some residue from the fuel line. The jet assembly is completely and easily replaceable*. I found that Gordon uses a Primus campstove screened nozzle insert, which is available at any outdoor sports shop. These are cheap, and you never have to worry about finding the microwire to clear the jet again.

The fuel and water line connections, which use captive O-rings, are designed and built by Argyle and require only finger tightening. All of Argyle's hardware is imperial, so you will not be able to use metric wrenches.

One of the nice features is the blowdown valve. Emptying the boiler after a running session is a matter of turning a valve and having residual steam exhaust under the engine. Most locomotives equipped with a blowdown valve exhaust out of the side of the engine, creating a jet of steam toward the hand of the engineer.

OLD STAR has a pressure setting of 45 lbs. for optimum operation, and there is absolutely no need to attempt to reset the safety valve.

My operating ritual is rather standard, but it might be helpful to spell it out for those of you who have just developed an urge to run your first steam locomotive.

Fill the displacement lubricator with steam oil. Do not use lubricating oil as it will create a varnish-like coating in the cylinders. After each run, use a small syringe and remove the water that has collected in the lubricator before filling it again with steam oil. OLD STAR's lubricator is in a somewhat awkward place, but you can use a long, thin screwdriver to unscrew the cap. The lubricator did not work properly on this engine when I received it, so I removed the lubricator, cleaned out the sealant that was gumming it up, and then added some fibre washers to create a gunk-free seal. Fibre washers are a nice thing to have in your steamup toolbox, and an assortment can be or-

dered from Sulphur Springs Steam Models for just a few cents.

Tighten all screws and nuts before each run. OLD STAR shed the leading truck and tender truck after the first few runs when I neglected this step. Later on, a valve control eccentric came loose and everything came to a halt until I partially disassembled the engine, tightened the offending setscrew and retimed the valves. Gordon should tighten the screws during final assembly of his production models, and then apply a dash of Loctite to keep them tight.

Pour distilled water into the tender water tank. The throttle arm should now be opened about a quarter turn and the handle slipped over the pump ram lever. This is another of Gordon's clever approaches to simplify the parts list -- the pump handle is a section of standard hobby shop rectangular brass tubing. Pump the handle until the water glass shows about 2/3 full. Close the throttle and refill the tender water tank.

Close the gas valve in the tender. Using a butane cartridge, fill the fuel tank. The fuel filler valve on this locomotive is in an awkward location in relation to the fuel regulator valve**. The only way I can fill the fuel tank is to use a long auxiliary filler snout. Pete Olsen and Sam Muncy are a couple of sources for this accessory.

Hold a barbecue lighter or other flame source over the stack and open the gas valve a small amount while you ignite the lighter. The resulting "POP" will indicate that you have succeeded in getting a fire going on your first try. If you hear a roar in the smokebox, you must turn the fuel valve off for a second and then try again to capture the flame in the proper location - on the burner at the rear center of the boiler. A healthy low hum from the middle of the locomotive indicates that you have a good fire going. All this may sound complicated, but it is really straightforward and not at all intimidating.

In about 5 minutes the pressure gauge will indicate a reading of about 25 lbs., and wisps of steam will be coming from the

safety valve. At this point the throttle should be opened slightly and the engine rolled forward a few inches to warm the cylinders. Steam and some water will escape from the stack, and you can now open the throttle a bit more until the engine tells you that it's ready to go. You can expect an initial run duration of about 35 minutes. Keep an eye on the water level and give the pump handle a few strokes to maintain this level.

No design is perfect, and it must be said that OLD STAR is no exception. While this engine is a delight to run and is powerful and smooth in all aspects of operation, it seems that an axle feed pump should be fitted as standard to eliminate the need for manual pumping, particularly on a ground level track***. Some of the cosmetic details are lacking in quality finish, and there are an awful lot of parts that seem to want to fall off if you jiggle the engine during the water pumping operation. The stack, bell, sand and steam domes, and the headlight are just sitting there.

The tender trucks have a tendency to come apart at awkward times****, and the fine brass screws used are not available through ordinary sources. I suggest that you put Loctite on every screw that you can see before running the engine*****.

My recommendation regarding OLD STAR is that you order one before they are all gone, and that you lay in a small supply of Loctite and fibre washers at the same time*****.

**THE FOLLOWING ARE NOTES AND COMMENTS
FROM
GORDON WATSON OF ARGYLE LOCOMOTIVE WORKS**

** For those home builders struggling with finding a suitable*

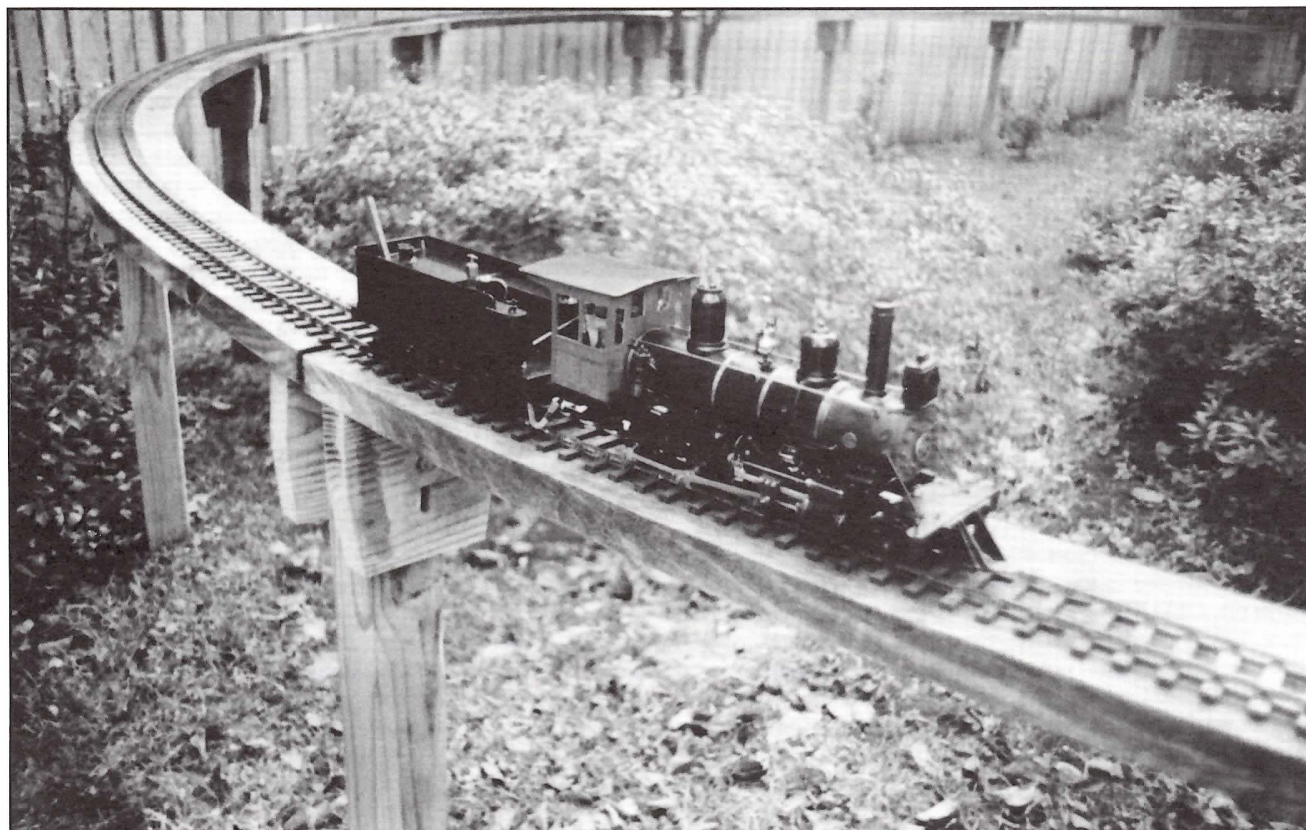
gas jet, Primus part no. 8925 will fire any engine with 1/2" or 9/16" bore cylinders. This jet has a hole diameter of 18 microns. We have found that 25 microns is too large and 12 micros is too small, giving an indication of why attempting to clean out a jet with wire is not always successful! Incidentally, the thread size of this jet is 5mm x 0.5mm pitch -- make sure you can find a tap first!

*** The fuel filler valve has been moved to make filling easier. This is a good illustration of how a designer can get caught out -- I assumed that everyone uses a long adapter to refuel, as we all do down under!*

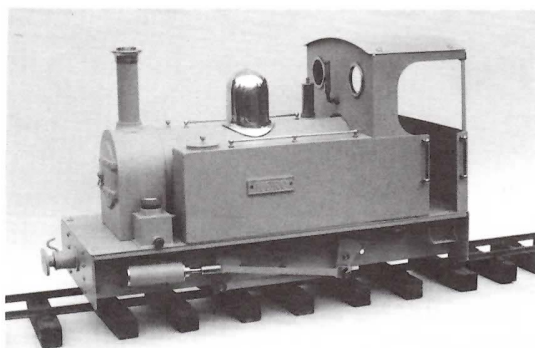
**** Axle pump desirability -- our Baldwin NA 2-6-2 has one, and the comment from owners was "Don't bother with the axle pump, give us a large hand pump instead." It would be difficult to hide one under this 2-6-0, as the cab precludes using the back axle, the front axle would mean water pipes to and from the cab area, and the drive axle is full of valve gear.*

***** The tender truck investment pattern has been changed to allow larger fixings.*

****** In defense of screws which work loose -- Mea Culpa! I have gentle hands from a lifetime of working on precision equipment and digging broken studding/bolts out of inaccessible locations, so Jerry's advice to tighten all round and use Loctite is good advice. However, the point is noted and a sign now hangs above our "clean" bench which says, "Screws tight? Loctite applied?"*



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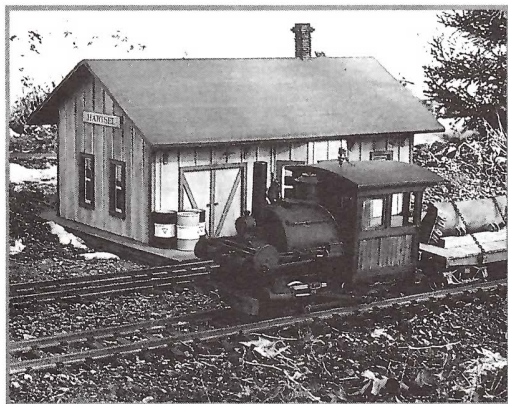
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Product Review --

Brisbane Locomotive Works' Perforail

by Chris Hall

A closer look at a unique new track product

"It's too weird," pronounced one man. Another asked, "Why do it differently?" And, at first glance, you too might wonder what good a rail underneath the ties and ballast will do.

Perforail, from BLW (Brisbane Locomotive Works,) may well be weird and is undeniably different, but that may not be a bad thing. No one else is offering what is, for most of us, realistically scaled rail in codes 217, 177, 157 and 138 that will stand up to the rigors of outdoor use.

But for others like myself, who have no pretensions regarding accuracy of scale, Perforail also offers tremendous stability, which is of great importance if your track floats in ballast, rather than being attached to a fixed base. By nature of its design, it forms a beam that is very rigid vertically, horizontally and in torsion.

In a very scientific experiment, the engineering staff of the Ridiculous & Sublime (me), working in the closely controlled environment of the R & S shops (there's not too much mold in the basement), found that statement to be true. Specifically, I stretched a length of Perforail and a length of LBG code 332 rail side by side between a two-by-four and a cherry log (planed on both sides) then placed a scientific-looking weight (a brass billet, perhaps 4 inches in diameter and two inches thick - fairly hefty) on top. The Perforail sagged 5.5 mm; the LBG rail sagged 40 mm. On the R & S, we call these findings good for Perforail.

But, before you get to do very scientific experiments in your basement, you have to put this stuff together. Creating straight lengths of track is simple: slide a tie, notched side up, into the webbing between the top and bottom rail, press the rail into the notch, then slide a clip between the bottom of the tie and the bottom rail. Repeat. One of the nice things about Perforail is that this construction allows you to decide on the spacing of the ties without having to hand spike each one, a fine point appreciated by both the Engineering Staff and the Aesthetic Dept.

Rail joiners consist of two flat plates bolted together with plastic bolts. The rail's center web is sandwiched between them so they don't form a trough to hold water. Dissimilar metal contact has been kept to a minimum - a great thing if you want to run track power (a shocking thought!).

When it's time to put the track in the garden, Perforail includes instructions on joining it to other types of track for the benefit of those adding to an existing system.

But building turnouts (switches) is not such a simple task.

A turnout/crossing kit includes enough material for two #8 and two #6 turnouts, but can be used for building turnouts sized from #5 to #10. The same kit is used to make crossings, but no separate information is included. In addition to the parts in the kit, you need only simple hand tools.

Finally, it's time for the turnout instructions, which start by saying that they are the "*Condensed Instructions*". Take heed! I had a great deal of trouble following them. One friend helpfully suggested that I throw them out. Another suggested that I take them to the Australian Embassy for a translation. Word of my frustration spread quickly, and before long I received a call from Ian McFarlane, designer of Perforail and the author of the instructions I was cursing. There's something to be said for a company that offers that kind of support!

As I built the turnout, I found myself thinking that I understood what I was being told to do, but realizing, perhaps three steps later, that I had misunderstood and had to retrace my steps. Had I had a completed turnout in hand, most of my problems would have been solved. And having successfully built one turnout, I wouldn't expect any problems in building others.

BLW plans a multi-part manual with more information on Zen and the Art of Building Perforail Turnouts. In their defense, they had the task of giving instructions for two gauges, two sizes of rail, any frog number a builder might want to use, and fine or coarse scale wheels. Ian mentioned that in future printings of instructions they will be very specific for a #1 gauge LBG wheel and a #6 turnout (that seems to be what everybody wants), with notes for building others.

BLW is currently setting up a network of dealers and certified turnout assemblers (*see BLW's ad in the last issue of SitG*), so you will soon be able to buy turnouts pre-assembled to your needs and specifications and ready to install.

For those who run track power, be warned that the turnouts are not insulated, nor are there instructions for doing so. If you are already familiar with building insulated switches, Perforail should hold no surprises.

BLW is planning to offer an all-metal truss system of up to 9 foot span to use with Perforail. Good news. Trying to integrate this track with an existing bridge or trestle is likely to be unsatisfactory, at least visually.

Like anything else, deciding which track to use on your railway has to be done by balancing wishes, needs and cost.

Perforail can easily cost more than other types of rail, if both are laid in ballast, but it will also be more stable. Or it may be less expensive than smaller, more prototypical rail laid on a complex base, and will still give you the stability you need. Personally, I'm planning to use it for the O gauge section of the R & S, even though we don't have deer walking on our track. (*This comment refers to an experience we had here on the Silo Falls Scenic Railway, where wintering deer danced and pranced on our trackage and put some severe kinks in our aluminum code 250 rail - ed.*)

A description of Perforail

Perforail is aluminum rail on wooden ties. The rail comes in two sizes, Standard and Mini, each with two rail codes, 217 and 177 or 157 and 138. On either, the two codes run foot to foot separated by a 12.5 mm web, all formed as a one-piece extrusion. The web is then perforated with 8 mm x 20 mm "windows" which are 5 mm apart; the ties slide through these windows.

The ties are 7.5 mm square, and available in various lengths

to suit different gauges and scales. Those now being supplied are made of jarrah, an Australian hardwood which is naturally rot-resistant and very hard. A small pamphlet about jarrah accompanied the ties - a must read if you can get your hands on a copy. Neat stuff.

Rails and ties are sold separately. The builder decides how many ties to use to create the track "look" he desires, from 140 to 360 ties per 45 feet of track (the amount in one bundle.) The price per foot thus varies according to the number of ties used.

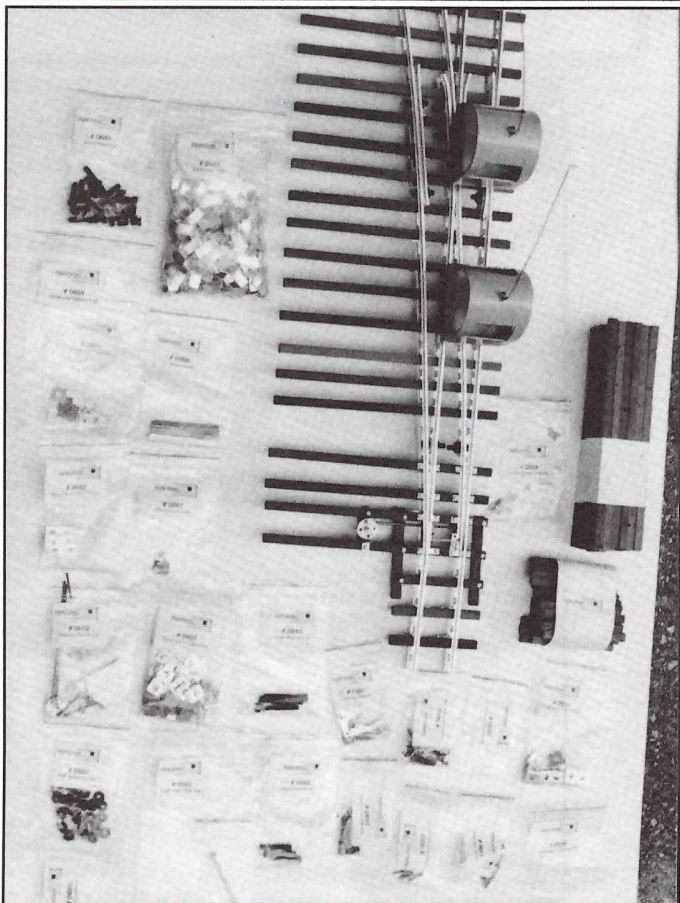
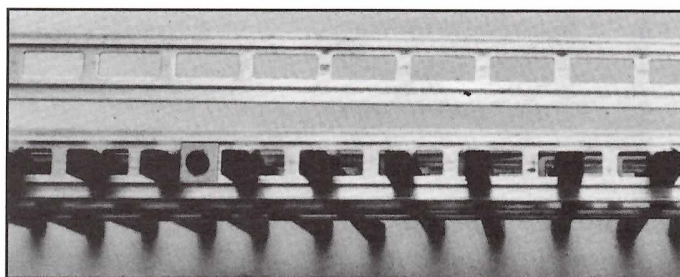
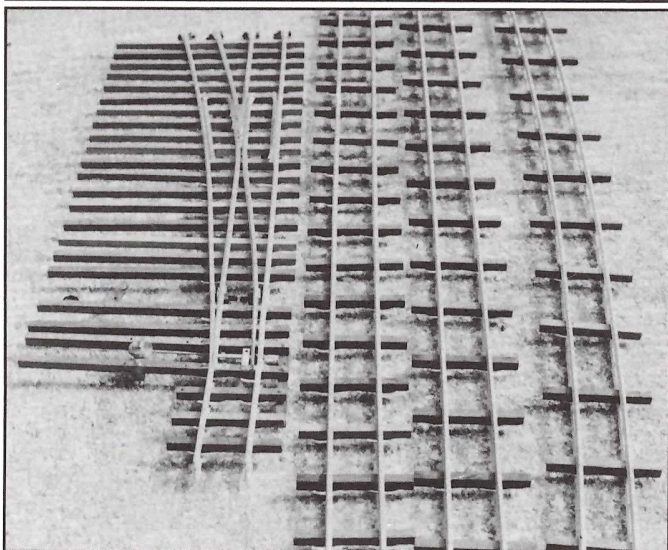
Photos: (Clockwise from upper left)

A pair of Sam Muncy Road & Track inspired cyclopes test the Perforail on the author's Ridiculous & Subliminal Railway.

Perforail naked and in fairly formal attire (brown tie?)

The whole kit, plus completed turnout (cyclopes not included!) Missing tie is due to misunderstood instruction.

Tie spacing -- the turnout was built with a tie in each window, while the track sections show wider tie spacing.



We just got word from several schools that are buying our CNC equipment and are trading in some of their manual equipment and downsizing their shops -- I suddenly find myself in the used equipment business and have 24 lathes, 6 surface grinders, 12 milling machines, 4 band saws, 5 shapers and a bunch of other stuff that I would like to move out.

Lathes are South Bend, Logan, Atlas, Clausing, Tree and Hardinge -- **Mills** are South Bend, Clausing, Bridgeport, Browne & Sharpe, and others -- **Surface grinders** are Browne & Sharpe, Abrasive, Delta, Gallmeyer & Livingston and Boyar-Schultz.

Might even be willing to do some swapping and trading around for old magazines, books, engines, kits or what have you. Hey! I'm easy!

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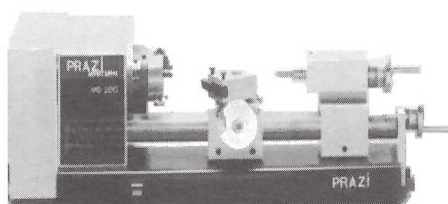
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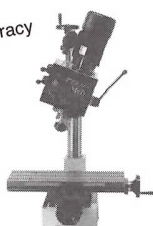
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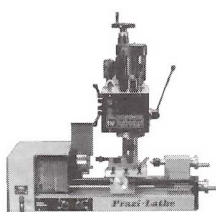
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Swing	5"	Sleeve Diameter	7/8"
Cross Slide Travel	3"	Sleeve Travel	1 1/2"
Tool Rest Travel	2"	Motor	110V 1/3 HP
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Hydrostatic Boiler Testing

by Harry Wade

One of the important aspects of any steamup, such as was held in Noblesville, Indiana this past September, is the opportunity for like-minded individuals to get together and freely exchange information. Naturally much of this conversation is going to center around boilers, since they are a critical part of our equipment and the source of great deal of joy and sometimes aggravation to those who own and operate live steam models. As a result of one of these conversations I was asked by Ron Brown to write a few words on the subject of hydrostatic boiler testing, since for some reason he believes that I know something about the subject, and to share my experiences with the general readership, which I am glad to do.

In addition to an explanation of hydrostatic testing, I thought that a few words on the history of boiler regulation, both large and small, would be of interest to those of you who have only recently joined the ranks of the live steam brother and sisterhood. Before I begin I would like to say that I do not consider myself a person who tends to add complications to situations where none are called for, nor would I want to prevent anyone from pursuing the full enjoyment of their own personal interests. On the contrary, I am a firm believer in simplicity and defender of personal freedoms. However, some of the legal aspects of miniature boiler operation may come as a surprise to you and may appear to restrict your individual right to pursue the hobby as you see fit. This is not actually the case, but whether you realize it or not, we are being regulated in that the public operation of miniature boilers in the U.S., and other countries as well, has for some time been under the control of various agencies of State and local government. Big Brother, unfortunately, has been watching us with interest for some time now.

Historically, the injuries which usually accompanied the structural failure (explosion) of full size locomotive, steamboat, or mill boiler were more from burns and scalding rather than from concussion, and these explosions were accepted as a part of life, not unlike our present day reaction to the latest holiday highway death tolls. It's a terrible statistic, but people will continue to travel and a certain number of deaths are to be expected and tolerated. By about 1900, the carnage had reached intolerable levels, even for a society which had become conditioned to accept such, and public outcry prompted the ASME (American Society of Mechanical Engineers) and insurance un-

derwriters to develop a code (set of regulations) which set out in detail the rules for construction, testing, and operation of fired pressure vessels. This was and is known as the ASME Code or "The Code", and took effect in 1914. After the adoption of the Code, boiler failures and their related injuries were reduced dramatically; still a firemen would occasionally let the water get too low on a mountain grade and have to pay the ultimate price . . . ka-BOOM!

Most boiler laws are enacted and enforced on the State and municipal level and most all have adopted the ASME Code as the basis of their boiler law. Sometimes The Code IS the law; but more often the State writes its own law using the language of the ASME Code along with other local stipulations. Also, every State interprets and applies The Code a little differently, but every closed pressure vessel, including miniature boilers, is subject to The Code. The situation, however, is not as ominous as it might sound.

In the mid-1960's, the live steam hobby began to grow tremendously and as new and sometimes large track facilities sprang up all around the country it was not very long before the local authorities could no longer ignore what was going on. At that point, regular run-ins with local boiler officials began. Some of these encounters were pretty nasty, as the older boiler inspectors tended to be a self-righteous, inflexible, and humorless lot, convinced that live steamers were all outlaw idiots who represented a clear and present danger to the general population. We have all found ourselves in the frustrating position of attempting to describe our hobby, which is an irrational pursuit, to someone who knows nothing about steam engines or models; there is no logical frame of reference. Imagine then trying to justify your hobby to a government official who is certain that, **a)** you have a lack of knowledge of boilers that borders on the criminal, and **b)** you are about to blow yourself up. Impossible.

About this same time, the political and social climate of the U.S. entered into a period of radical change and one thing that emerged from this was a new focus on the need to insure the public health, safety, and welfare or, as some people might say, to protect us from ourselves! In addition to new safety laws, such as OSHA, governments became more vigilant in enforcing the old ones. There were club operations in a few states which had to shut down for extended periods until local code

conflicts could be resolved. Other clubs around the U.S. realized that if they did not take some immediate, aggressive action to insure that we had the right to pursue this hobby, local government, in the name of the public safety and welfare, would reach in and turn off our little steam valves one by one.

Clubs and associations, led by the Brotherhood of Live Steamers and co-ordinated through the pages of Live Steam Magazine, began to work with lawmakers, boiler inspectors, and state legislatures and assemblies to hammer out compromise agreements which could become law and specifically provide for the private construction and public operation of miniature steam or hobby boilers. We have been successful in most states, and these agreements usually take the form of an **exclusion clause** which excepts boilers of smaller than a certain size (by volume, heating area, or grate area) from having to be built to the material requirements of the Big Code. However, attached to this is an implied responsibility that must be recognized and preserved.

Even though in most States live steamers enjoy a workable legal basis for operating, this only gives us permission to fire up; it does not protect us from legal action in case of accidental injury, and it does not mean that the laws cannot be changed again take away these provisions. The way that we protect these privileges is to see that no injuries occur. One way that this has been done is to establish a set of design criteria, a miniature code so to speak, and to implement the practice of periodic hydrostatic testing and certification of the boilers we run. Compliance is voluntary in the U.S., but mandatory in the UK and in Australia, which has the most stringent miniature code.

As a matter of policy, all major live steam clubs in the U.S. require a current boiler test certificate or on-site testing before you can light up at their track. What you do alone in private, in your own back yard or basement, they consider to be nobody's business but your own. However, when you come to an open track site with an unknown locomotive, you represent a potential liability. For some years now the official policy has been generally "No TEST - No RUN", but enforcement seems to vary widely from club to club.

Structural failures of a minor nature such as blown flues, broken stays, and split seams or joints, occur occasionally, but there is no documented occurrence of a miniature locomotive boiler explosion, in any scale, anywhere in the world despite the rumors you may hear passed around in bull sessions. To me, this statistic is rather amazing, considering that there are a number of very badly designed and poorly built boilers out there. Once you have could have said that this was nothing more than pure dumb luck, but not any more. This safety record has been preserved by the publication and implementation of the various miniature boiler codes, and more importantly, that live steamers around the world have accepted that self-regulation has become a necessary component of self-preservation.

The hydrostatic test is really a very simple process which

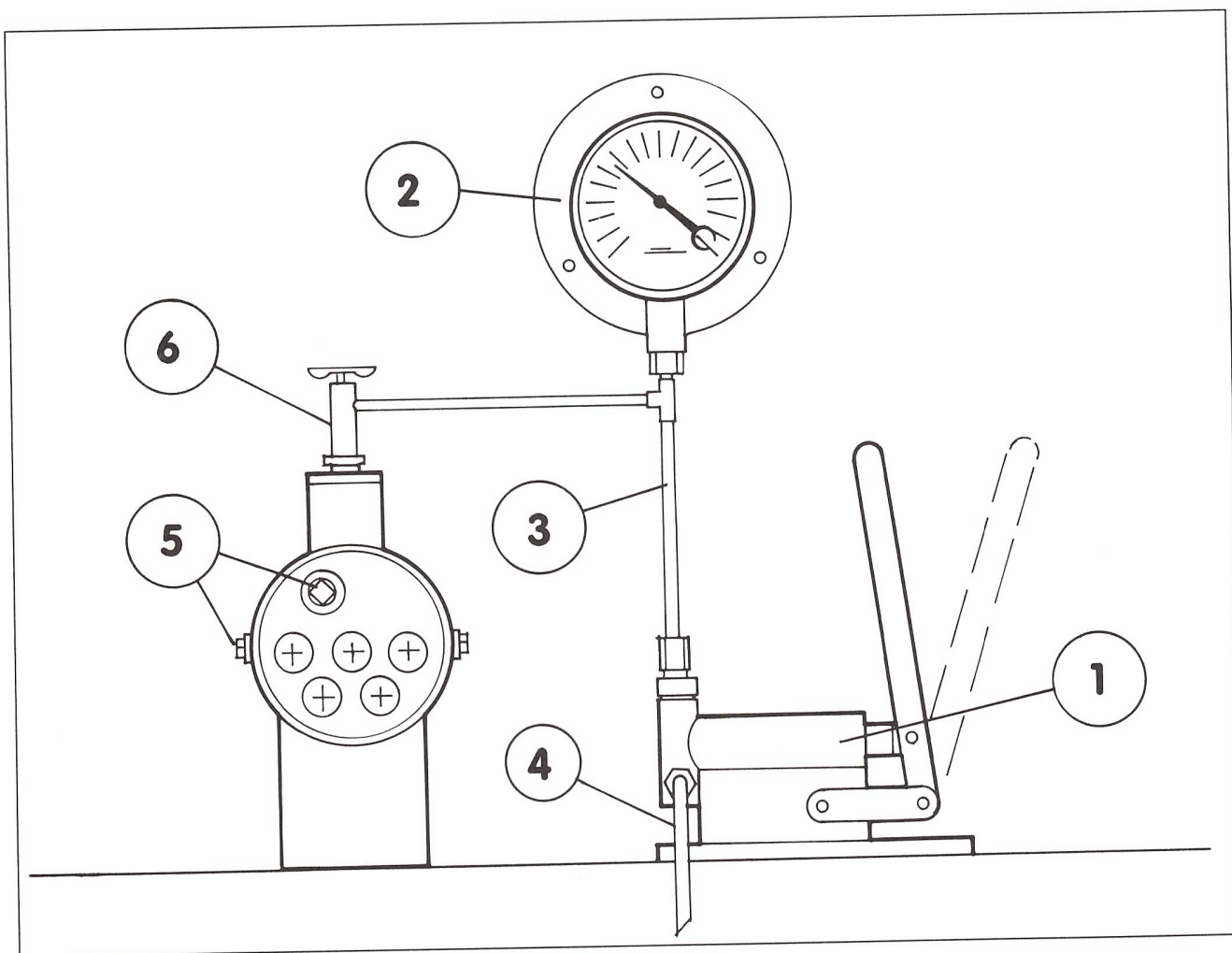
does not take long and will not damage a sound boiler if properly done. The theory behind the test is that plain water, placed under pressure, does not compress and consequently will not de-compress or "explode" when pressure is released. Thus it provides a medium for testing the bursting strength of a closed vessel that is safe for the tester and the immediate surroundings.

Although opinions vary as to what the maximum hydrostatic test pressure for silver soldered copper boilers should be, the consensus among knowledgeable authorities is that a boiler should be tested to **two times** its design working pressure (WP), or of the safety valve setting, whichever is the greater; but **no more** than 2 x WP and not less than 1.5 x WP. For a boiler designed for a WP of 40 psi, with safety valves at 30 psi, the test pressure should be 80 psi and no more, but at least 60 psi. My own opinion is that the average Garden Gauge boiler should be able to take 80 to 100 psi on test with no difficulties.

The equipment needed, except for one or two special considerations, is fairly common stuff and likely to be found in the average workshop or at your local hardware store. You will need a hand water pump (1) of the piston type which will pump against 200 psi or more, a comparatively low pressure if you have decent O-rings or packing in your pump, and also even a tiny pump will do the job. The tender water pumps found in many model locomotives can be easily converted temporarily to hydrostatic service and work very well. You will need an accurate industrial quality pressure gauge (2) that registers at least **two to three times** the maximum pressure that you expect to attain. DO NOT rely on a 100 psi gauge to serve for a 100 psi test, the gauge will be ruined. DO NOT rely on any model gauge for boiler test purposes as it too will be ruined by the test pressure, and besides, miniature gauges are notoriously inaccurate.

The pressure manifold (3) is made up from 1/8" or 3/16" copper tube and fittings, but the suction line (4) may be of rubber or vinyl. Remove all the boiler fittings and plug all but one opening with threaded brass plugs (5) -- Teflon tape makes a very good sealant for these. DO NOT rely upon the boiler fittings (safety valve, check valve, throttle, etc.) to plug their own holes; we are attempting to test the boiler, not the fittings, which are not made for higher pressures anyway. Use the highest tapped bushing, such as a dome, for the pressure line entry point and make the connection there. The boiler can be tested in any position so angling or setting it on its end may give you a better connection location.

To test successfully you need to achieve a closed system with as much air as possible excluded from the boiler, the pump, and the feed lines, and of course the pump suction tube needs to be immersed in water at all times. We want to compress mostly water, not air. I have fitted a bleeder valve (6) to my setup to aid in pump priming and to allow any last bubbles of air trapped in the system to make their way out; this is very convenient, but not absolutely necessary.



To make the test, begin pumping and continue until the pressure reaches 10 psi, which may take only a few strokes. If there are any leaks in your manifold system, tighten them up and look for leaks at the boiler bushings and seams. Another stroke or two should bring you up to 20 psi where the same process is repeated, as joints that are tight at 10 psi may leak at 20 or 30. If no leaks at fittings are found, yet the gauge shows that the system will not hold pressure or is "squishy", the culprit is either the ball valves in your pump which are leaking and need cleaning and re-seating (very common), or you may have a plug of air in the system. If all is well at this point, continue pumping in 10 psi increments, checking all around for trouble, until test pressure is reached. Hold this pressure for 15 to 20 minutes and then let it down by simply loosening any fitting on the manifold. Repeat this entire process a second time and the test is done. That's all there is to it.

I mentioned in an earlier paragraph that a hydrostatic test will not hurt a sound boiler if properly done. This is true, but by the same token it is going to damage or destroy a weak or defective boiler, which unfortunately must be the point of this whole exercise. We will all, of course, be very sorry for the

owner of a boiler that fails the test, since he will probably be difficult to live with for a while, and this will require that little MINERVA be sent back to the shops for extensive classified repairs. However, if the boiler on little MINERVA is going to burst a seam at 20 psi cold, it will most certainly do so hot, and it is probably in the owner's own best interest that this condition be discovered before an accident occurs which could ruin his steamup weekend.

Long time subscribers will know that the author, Harry W. Wade, is a licensed architect by profession and is a long time live steam hobbyist. He is also the owner of The Willow Works in Nashville, Tennessee, a firm which specializes in custom boilers and machine work for the small-scale live steam hobbyist.



Loco Review - Aster GLASKASTEN

by Richard Finlayson

Technical Specifications

Description:	0-4-0T with jackshaft (see text)
Scale:	1:30
Gauge:	45 mm
Length:	241 mm
Width:	101 mm
Height:	142 mm
Weight:	1.92 kg
Radius:	1 meter (see text)
Cylinders:	2 - 10 mm x 13 mm
Valve Gear:	Walschaerts
Boiler:	Saddle type with crosstubes -- 110 cc of water at 80% full
Firing:	Methylated alcohol -- 40 cc
Lubricator:	Roscoe displacement type
Price:	Mfg. suggested list -- Bay (green), RTR \$3130.00 - kit \$2570.00 --- DB (black), RTR \$3080.00 - kit \$2520.00
Available from:	Your local Aster dealer -- or contact Aster Hobby USA, Inc., P.O. Box 90643, Pasadena, CA 91109-0643

Wouldn't it be great if Aster re-released the Baldwin B1 -- with Roundhouse cylinders? While we wait patiently together for that to happen, you should take a look at Aster's latest, the German prototype 0-4-0 "Glaskasten". It's a chunky little thing with some very appealing features. First, a little background.....

Shortly after the turn of the century, the Bavarian State Railways were in need of a new lightweight tank locomotive to handle local passenger traffic. A specification was generated calling for the development of a small two-axle tank locomotive with semiautomatic firing, which could be safely operated by a one-person crew. Both Krauss and Maffei produced this novel locomotive, but in 1908 Krauss introduced an altered version that would become extremely successful. Nicknamed the "Glaskasten" (glass case), the new locomotive had outside cylinders with a blind center axle between the drive wheels. The cab completely surrounded the boiler and had three windows on each side. The coal bunker was located at the upper rear of the cab so that fuel would be gravity fed into the firebox. A total of 42 Glaskastens were built by Krauss and Maffei between 1908 and 1914, 13 of them without the blind center axle. The Aster Glaskasten is supplied in two liveries; Bayern (Bay) and Bundesbahn Reichsbahn (BR).

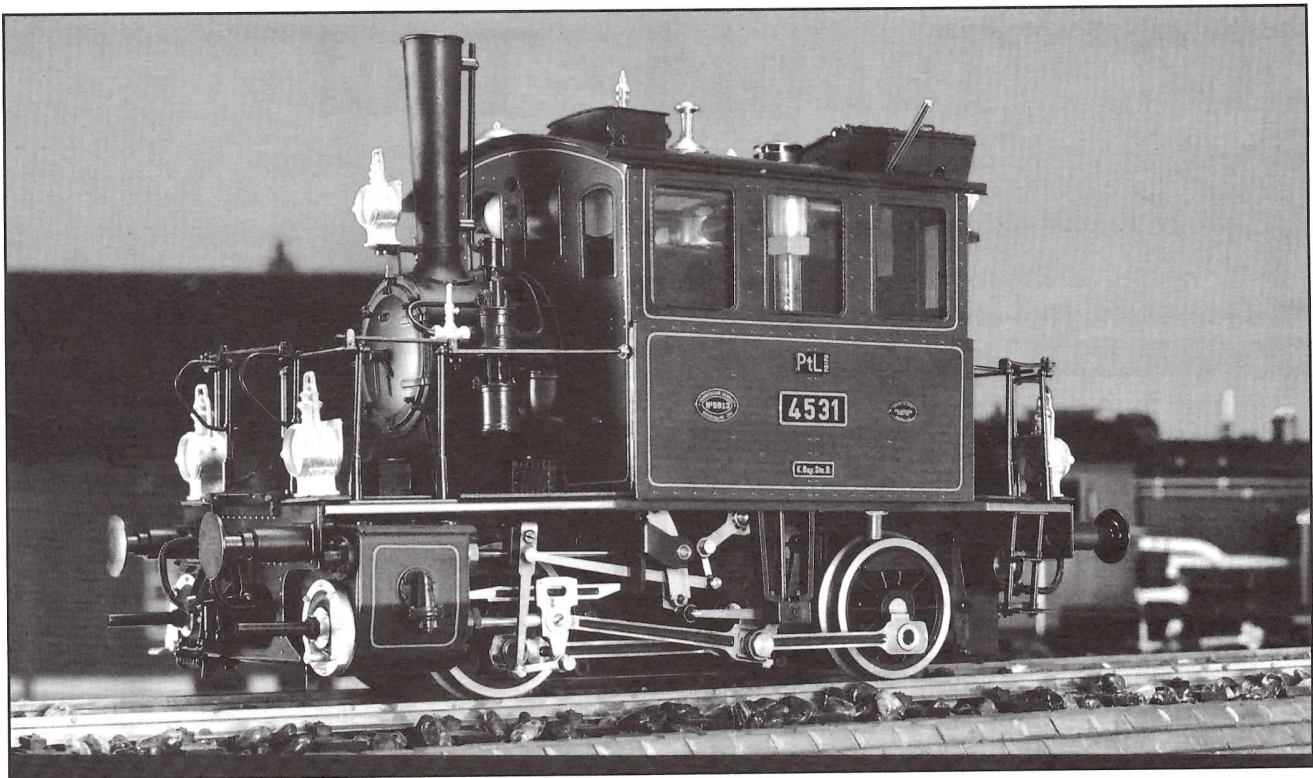
Here's why you might be interested in one. If you've been waiting to try your hand at an Aster kit, then this one's for you. The construction, although not completely trouble free, is very straight forward. The running gear and plumbing are all easily accessible and the kit goes together quickly. One weekend will do it. (One weekend....the entire 48 hours. You'll probably be late for work on Monday.)

Glaskasten is also one of the easiest to operate locomotives

that Aster has ever produced. EVERYTHING is accessible from the top. No need to assume compromising positions in order to get all the wicks to light; fire can be applied through the back-head. Water, oil and fuel can all be easily serviced top-side with the loco on the track. (A check valve is also supplied for filling the boiler from trackside.) More importantly, the regulator and blower levers protrude inconspicuously from the roof of the cab for easy control while underway. Those levers may be esthetically offensive to some, but it sure makes it easy to maintain a nice even pace. The reverser is tucked inside the cab, but is easily accessible. Add to that the short 0-4-0 wheelbase and you have the only Aster locomotive that will negotiate the ubiquitous LGB 2 ft. radius track. (The manual says one meter minimum; Aster sources confirm that she'll carve her way through an LGB 1100 curve.) With the small diameter drivers you can also expect slower and more easily controllable speed than Aster locomotives have a propensity for.

If you believe the manual, you can fill the meths tank while the burner is lit. I'll let someone else try this before I add it to my standard operating procedure, but with a 10 minute boiler/fuel duration I'll be tempted to try it sooner, rather than later.

Realize that, with a 10 minute run, one of Samuel Muncy's turbo-Mamods will blow past this puppy! Actually, this locomotive only has two down sides (if you'll give me the protruding control levers as a positive thing). The first is the 10 minute run. Kind of wimpy, but physics is such a stubborn thing, and it's an action packed ten minutes if you're in the mood to extract every last inch of performance. (I can see this evolving into a pinewood derby sort of thing...contests to see how long you can get a stock Glaskasten to roll on a single filling.)



The second potential problem is with the burner. The tank is going to get hot while the burner is lit. The alcohol is going to have a tendency to vaporize, with some propensity to hang fire all over your right-of-way as she trundles down the track. The manual says to avoid really hot days, and to try methyl vs. ethyl alcohol. It hasn't happened to me yet, but it's a hazard to be aware of. For a full discussion of what this vaporizing thing is all about, consult your oft-referenced *"An Introduction to Small Scale Live Steam"* video by Marc Horovitz. That video is required viewing, if for no other reason than to see Marc in a tie.

If you've stuck with me this far, you won't mind me doing a little running off at the mouth about why I acquired this locomotive. This is how I look at it: she has an extremely chunky, narrow-gauge feel to her. If you hurry (according to Aster sources you should take that fairly literally) and pick up the Bay version, then you can leave the marking plates off and have a nice green locomotive instead of that telltale black and red German DB standard. From there you take off the stock buffers and add nice oily blocks of wood with pocket or link & pin couplers. This can be done without damage or modification to the structure, and the original buffers and plates can easily be restored to maintain the value of the locomotive. You could go further and leave off the lanterns, but I like them. Add an LGB or higher quality cast figure to the deck and you have a believable 1:22.5 backwoods "contraption" (Not a chance for 1:20 or 16mm!). She'll look great hauling four-axle logging disconnects or wagons up and down your backwoods road. The short 0-4-0 configuration, accessible controls, on-the-fly servicing and slow speed potential make her a perfect choice for those of us who are dinking around with less than ideal radius constraints and who like controllable, narrow-gauge locos.

Absolutely none of this bears any resemblance to any prototype I've ever seen, but I'll bet that if I live long enough

somebody will show me a photo of a funky, chunky little logging machine that this contraption could claim kinship with. On the other hand, you can toss all this ranting and stick with a showcase quality locomotive that's fun to run.

I don't need to tell you much about the construction of this locomotive, except that you should be prepared to monkey around with the assembled cylinder-slide bar-expansion link-exhaust line relationship for several hours. More than a few of you will get lucky the first time, but I had to fiddle with it for quite some time to get everything lined up so that it was running nice and even. The time spent paid off, because she's a good runner. As with all kits, you really need to read through each section and visualize what is going on before you apply tools and elbow grease. There are several places where the assembly order is out of whack, and you'll avoid these minor problems if you're thinking a few steps ahead. None of the problems are serious, they'll just cost you time.

The only problem that I ran into that required extracurricular problem solving was that I had to add a washer to one side rod to get it to clear the expansion link. The washer I used is a little large and ungainly, so I'm hunting for a 4mm diameter x 1mm brass bushing. I hope Aster comes through on that one. Other than that I encountered far fewer problems on this kit than with other Aster kits I've built.

Take a look at Aster's latest. As is, she's a cute little locomotive with a quirky and unique personality. If you're a free thinking type she might strike you as a highly detailed and accurate German prototype waiting to be liberated for a life as a backwoods contraption. In either case, she's the latest locomotive in a line of extremely well engineered products that will meet or exceed your expectations for display quality, performance and reliability.



Tapping Tool

by E. V. Rutkowski

Text, Photo and Drawings by the Author

Another useful tool for your workshop

Faced with the prospect of tapping more than seventy-five 4-40 holes in the steel frame of a 1/2" scale locomotive I'm building (see photo), I designed a tapping tool to reduce tap breakage. It was not just the cost of the many broken taps that I anticipated, it was the %@!! chore of removing the broken taps which inspired me. With this tool I tapped all of the seventy-five holes without breaking a single tap!

The tool was designed to be used in a drill press or a mill/drill machine. It consists of a tool holder which can be held in the chuck of the drill press or in a 3/8" end mill holder in a milling machine. This tool holder can be fitted, interchangeably, with either a selected centering pin or a tap holder.

Using the tool is a simple three-step process after mounting the tool holder on the drill press or mill -

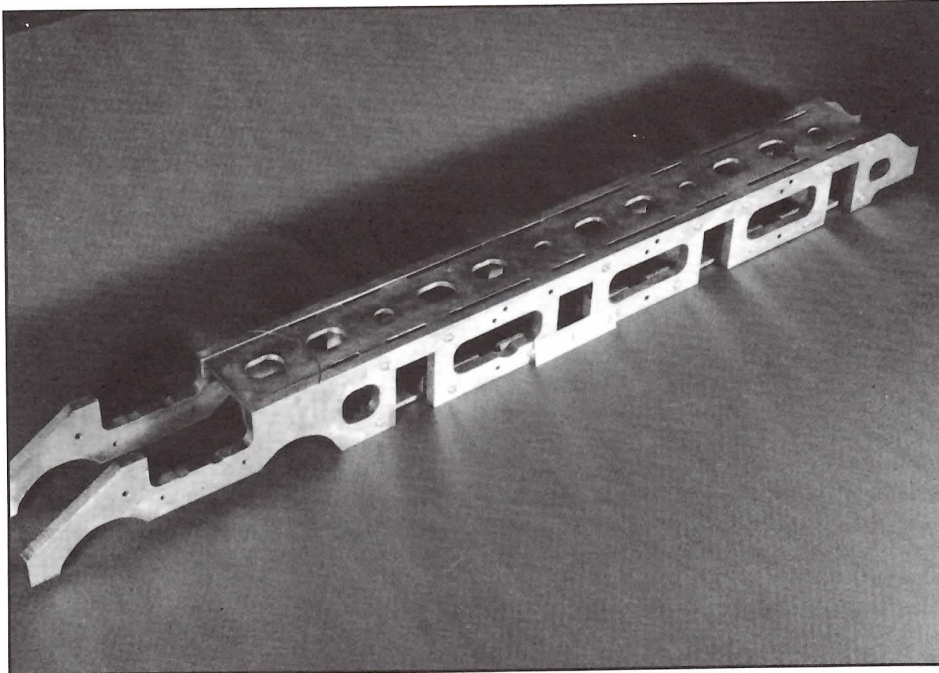
- (1) *An appropriate centering pin, selected to match the tap size, is inserted into the holder and the machine quill is lowered until the pin enters the hold to be tapped. With the centering pin holding the work in alignment, the work is clamped to the table.*

- (2) *The quill is raised and the centering pin is replaced by the tap holder carrying the selected tap, then the quill is lowered to the work until the tap just enters the hole.*

- (3) *Using just your fingers (no power, please!), rotate the tap in the conventional back-and-forth tapping mode. The sliding fit of the tap holder in the tool holder can accommodate holes of at least 1/2 inch in depth; usually more than enough for small taps.*

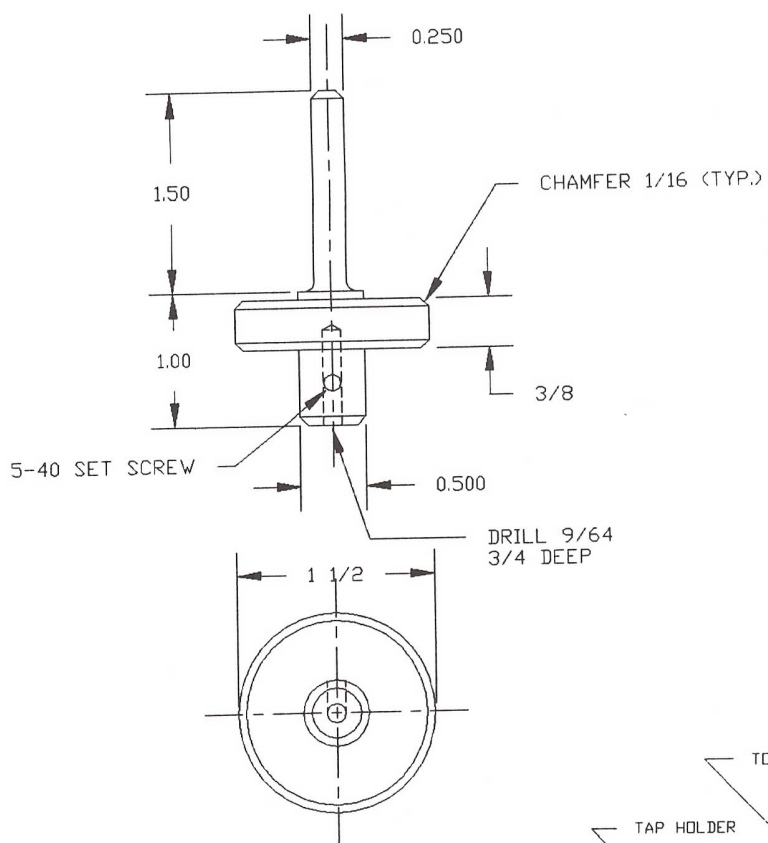
I made the tool holder and tap holder from some steel bar stock I had available. The centering pins were turned from 1/4 inch drill rod but weren't hardened after machining, though they can be hardened if desired. The tool is most needed for small, easily broken taps which all have a body diameter of 9/64 inches, so a single holder will fit all small taps up to 6-40. A larger holder would have to be made for larger taps, but the design would remain the same.

If you have a knurling tool, resist the temptation to knurl the outside diameter of the tap holder! The smooth surface will help to keep you from applying too much torque to small taps, and will encourage the small back-and-forth moves which can help to prevent a broken tap.

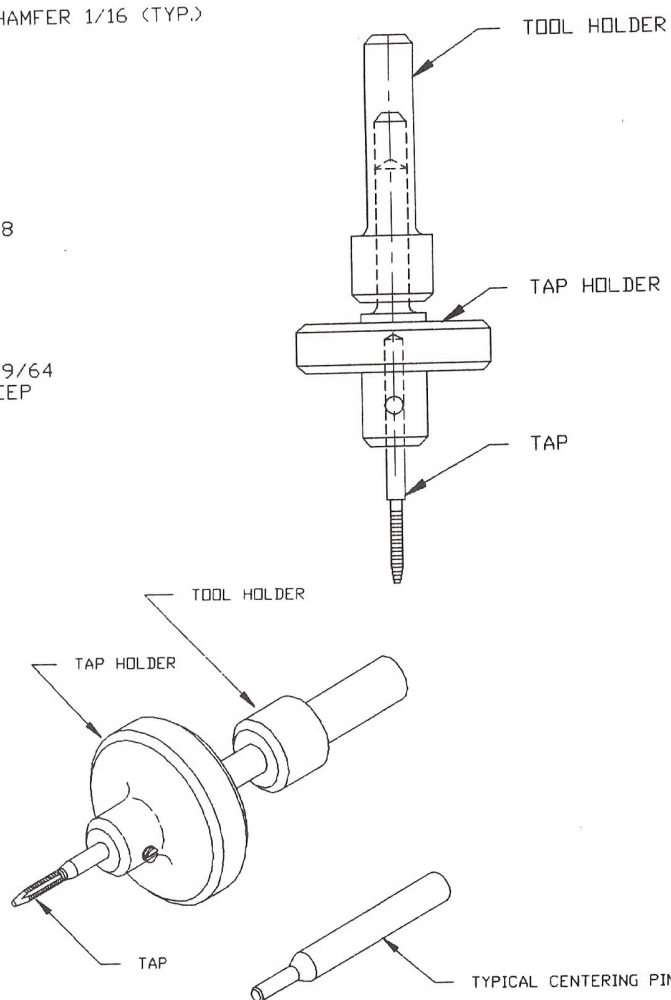


This is the 1/2" scale locomotive frame mentioned in the first paragraph. All those holes (75 of them!) helped motivate the author to design the tapping tool described and shown on these pages.

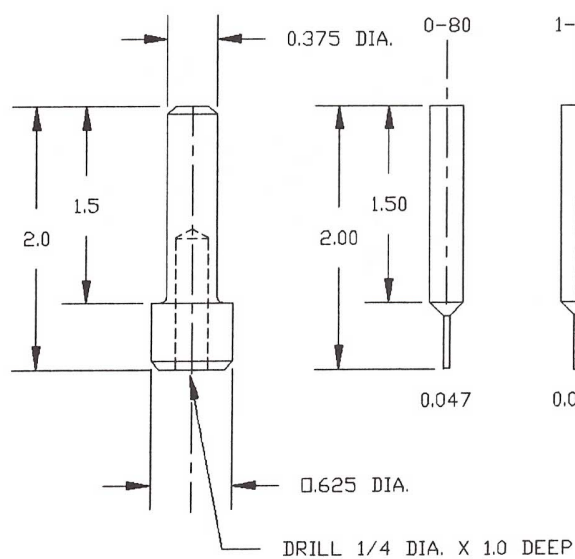
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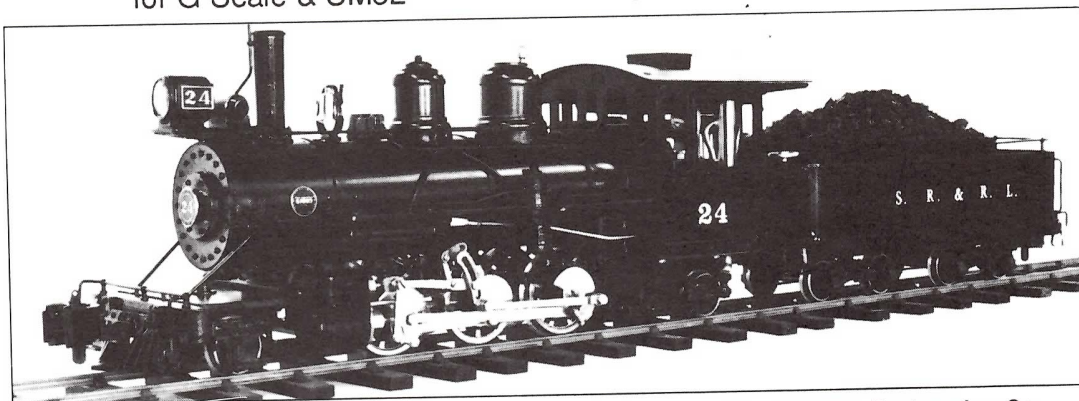
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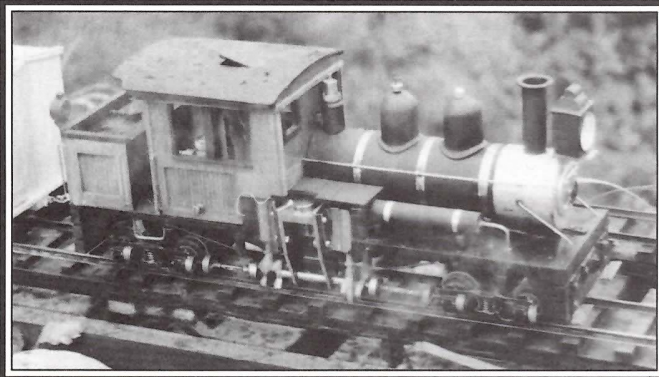
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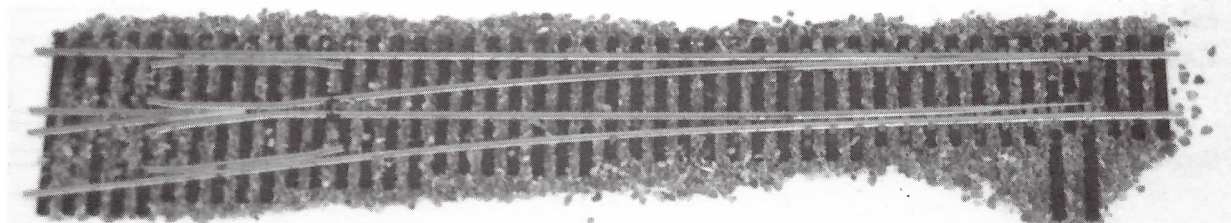
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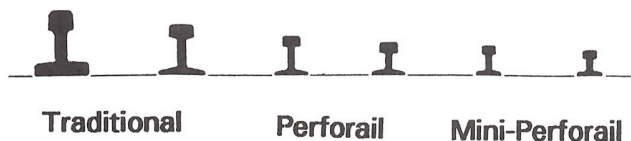
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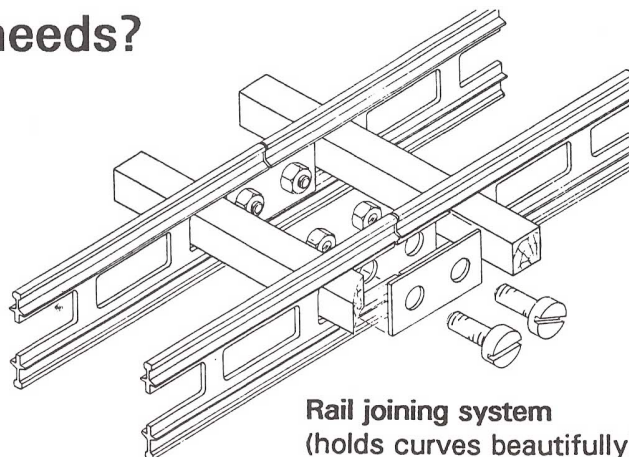
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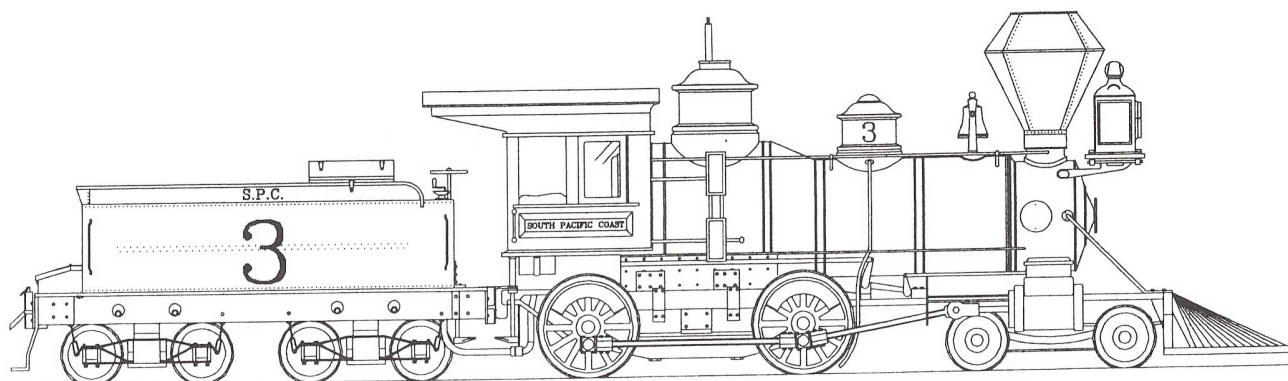
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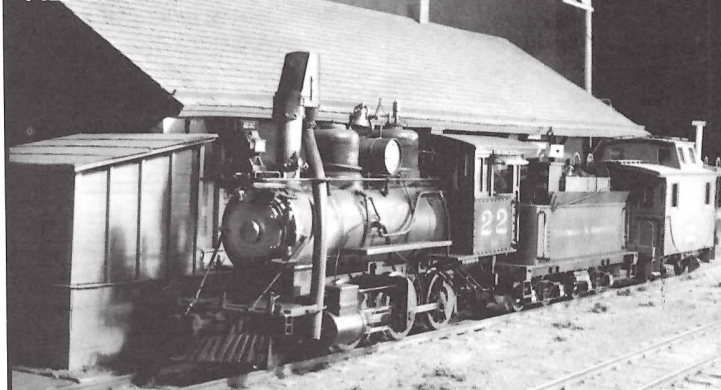
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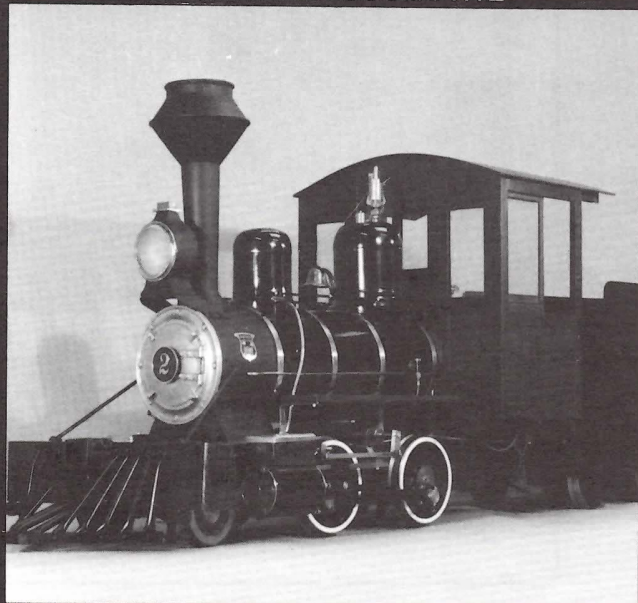
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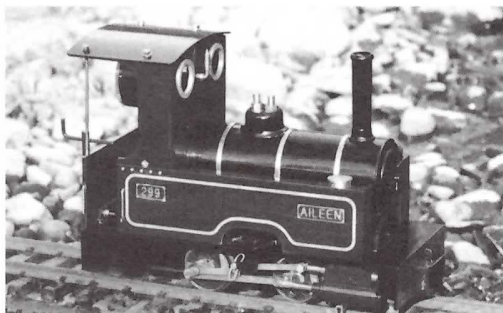
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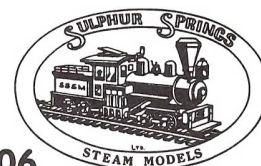
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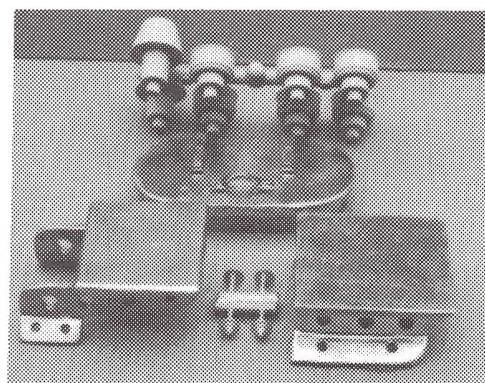
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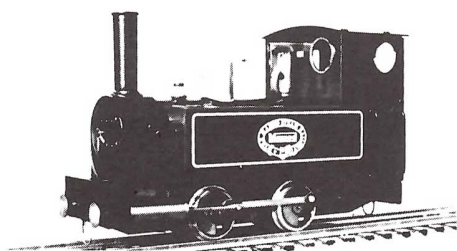
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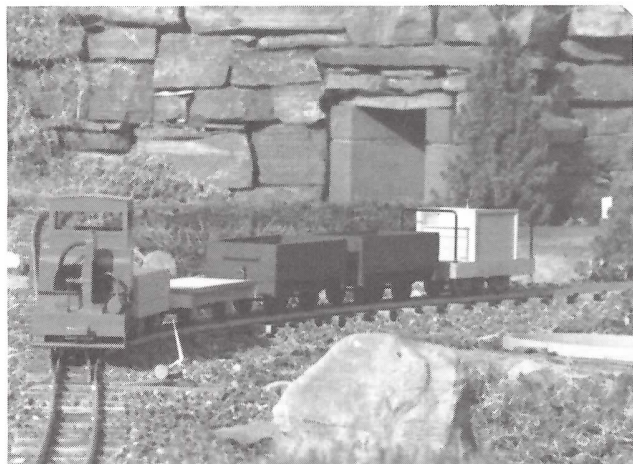
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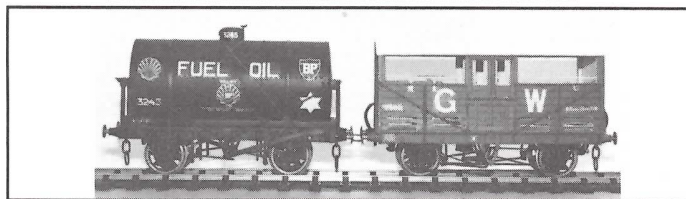
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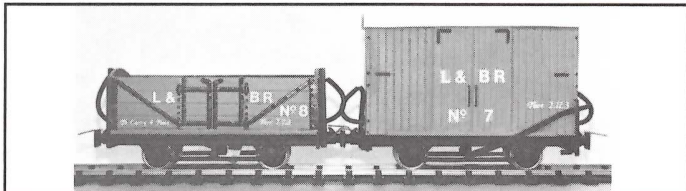
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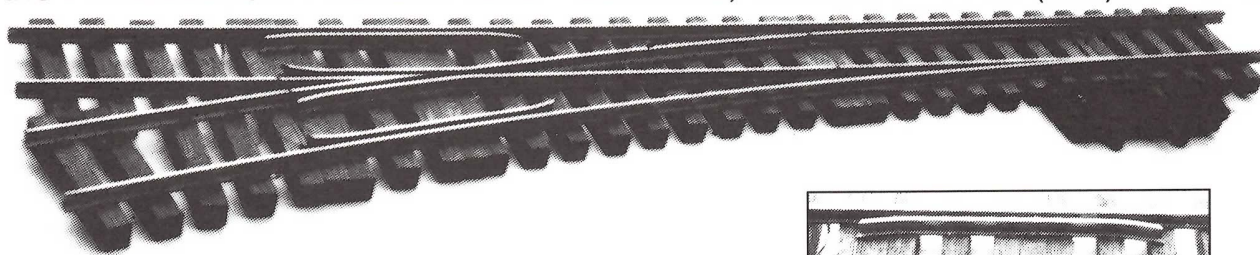
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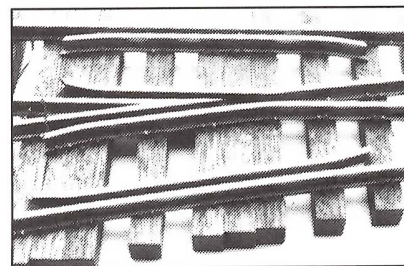
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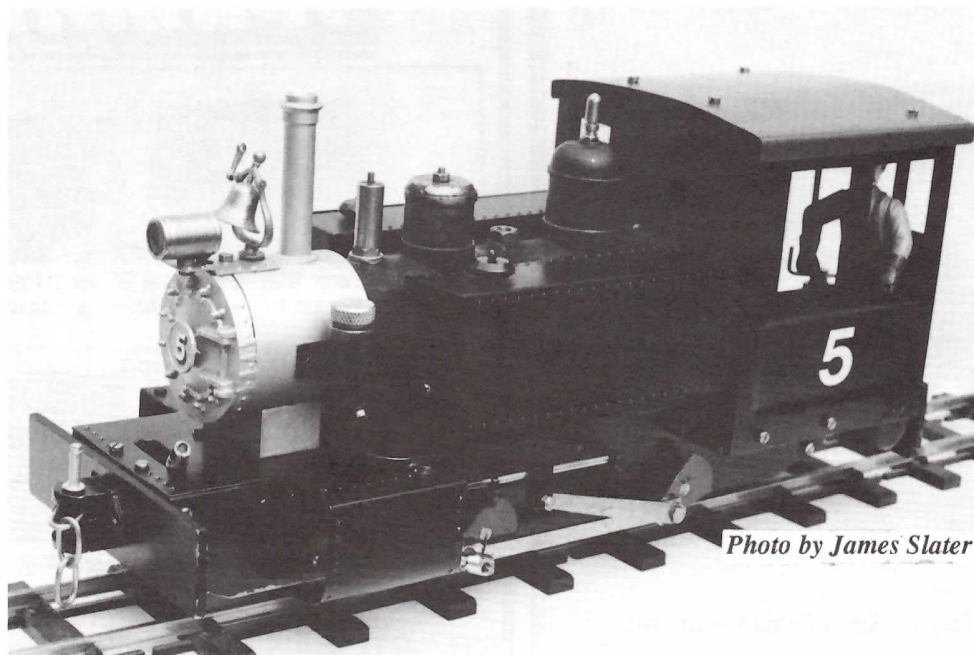


Photo by James Slater

The SALEM "PORTER" Locomotive, Live Steam in G Scale

This loco has an externally fired copper boiler with a 40psi safety valve, steam regulator and Goodall water filling valve. It is powered by twin double-acting oscillating cylinders fitted with piston O-rings. It is a powerful engine, capable of pulling a good load at an attractively slow speed.

The latest version of this loco has many more features fitted as standard equipment, including a sprung rear axle, operating headlight, dummy connecting rods and slidebars, improved displacement lubricator, safety valve fitted in the steam dome, larger boiler for longer runs and a water level valve fitted in the cab. The butane gas burner is mounted below the cab floor, leaving space for the owner to install radio control equipment if desired. A brass bell is fitted as standard equipment, and wheels are adjustable for gauge 0 and gauge 1 track.

Our Porter loco has been specifically designed for U.S. customers and is not just a simple conversion from a Welsh narrow gauge engine! It has full rivet detail, sharply embossed in the correct U.S. pattern, steam and sand domes, Porter-style smokebox door, side tanks and cab. It is finished in a semi-matte black with red oxide cab roof and gray smokebox.

Dimensions (approx.): 12" long, 5 1/4" high and 4 1/8" wide. Weight is 6 lbs. plus.

Illustrations are for guidance only, actual models may vary in detail.

Salem Steam Models also supply a large range of accessories for the Mamod loco, including burners, lubricator, regulator, safety valves, spare parts, bodywork conversions with rivet detail, stacks, a tender (for gauge 0 only) and much more. Send two \$1.00 bills (or a \$2.00 bill) for details and prices.

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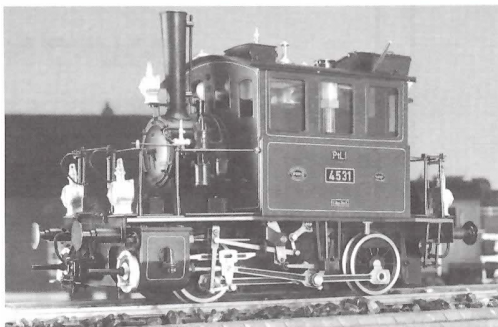
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Calendar of Events

January 14-16, 1994 -- National Gauge One Steamup, Diamondhead, Mississippi. In 1993 this event was attended by over seventy live steam enthusiasts, and over one hundred locomotives were seen on display and in operation. For 1994 Jerry Reshew is promising all of the features that made it such a success the first time around, plus some new ones! An elevated 8' x 24' dual track configured for both gauge 1 and gauge 0 will be provided. This is in addition to the 14' radius elevated dual track mainline and the 10' radius floor-level track that were in operation this year. Steam seminars will be expanded for 1994, and will include two workshops dedicated to helping registrants get over their fear of machine tools. You will have the opportunity to work on a lathe and milling machine over the 3 day event, and will actually make something! The venue will be the same - the indoor Atrium at the Days Inn in Diamondhead, Mississippi, just a one hour drive from New Orleans. For more information or to register, contact Jerry Reshew, National Gauge One Steamup, 5411 Diamondhead Drive East, Diamondhead, Mississippi 39525. Phone 601-255-1461 (days) or 601-255-1747 (evenings).

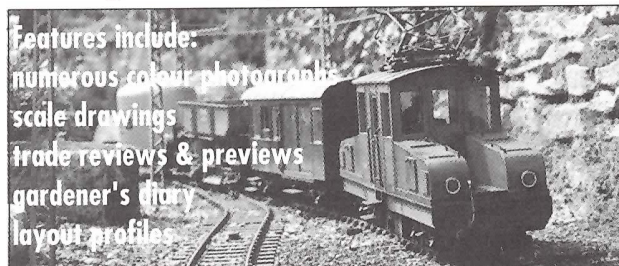
February 19, 1994 -- Hobbyfest 1994, Mason-Dixon Auto Auction, Rt. 11 exit off I-81 (Exit 2), Greencastle, PA. Tables - \$13.00. Admission - Adults \$3.00, under 13 free. Open 9 - 3. For more info: Robert Morningstar, 13225 Gruber Rd., Clear Spring, MD 21722 -- 301-842-0081.

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 (ie. ground level or elevated, minimum curve radius, ruling grade, etc.).

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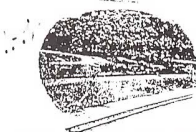
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SWAP SHOP

For Sale: Roundhouse live steam! Dylan, blue, walschaerts, \$1000. Billy, R/C, Maroon, \$1250. Both steam tested, will give new loco warranty. Bob, 813-495-0491.

For Sale: KENVERSIONS Mamod in excellent condition, with new MSR spoked wheelsets and bearings. The best looking Mamod appearance and performance upgrade, now unfortunately out of production. \$350.00 + shipping. Ron Brown, 607-642-8119 between 9 a.m. and 9 p.m. eastern.

For Sale: Steam powered "Birmingham Dribbler" by Maxwell Hemmens in England. All polished brass, beautifully crafted replica of a steam toy from the 1800's. Runs on the floor, not on track. Brand new, never steamed, displayed only. No box. \$250.00. Ron Brown, 607-642-8119 between 9 a.m. and 9 p.m. eastern.

Wanted: Hornby 3-1/2" gauge L&M coaches. Mike O'Rourke, 2821 Hillegass Ave. No. 22, Berkeley, CA 94705 -- 510-849-9284.

Wanted: H.J. Coventry 1/2" scale B&O Class P7 Locomotive & tender - drawings, castings or patterns -- to sell, loan or make copies. Write to: Mike Buster, 9300 SW 155 Street, Dunnellon, FL 34432-7027.

For Sale: Roundhouse Fowler w/custom installed Airtronics R/C and custom carrying case -- a beautiful running engine. Ken Matticks 214-247-1208.

Trade: Aster Schools Class "WINCHESTER" in kit form, original box, for factory built Aster model or other type of live steamer. What have you to trade? Don Dubuc, 955 S. Lafayette, Dearborn, MI 48124 (313-563-2065 evenings).

For Sale: Two Roundhouse Engineering Co. 16mm scale, alcohol fired 45mm gauge (gauge 1) live steam locomotives with slip-eccentric reversing gear, throttle, pressure gauge and hydrostatic lubricators. Both are in immaculate condition and have been lovingly cared for and maintained. No dents or damage, paintwork is in excellent condition and all brasswork is bright and shiny.

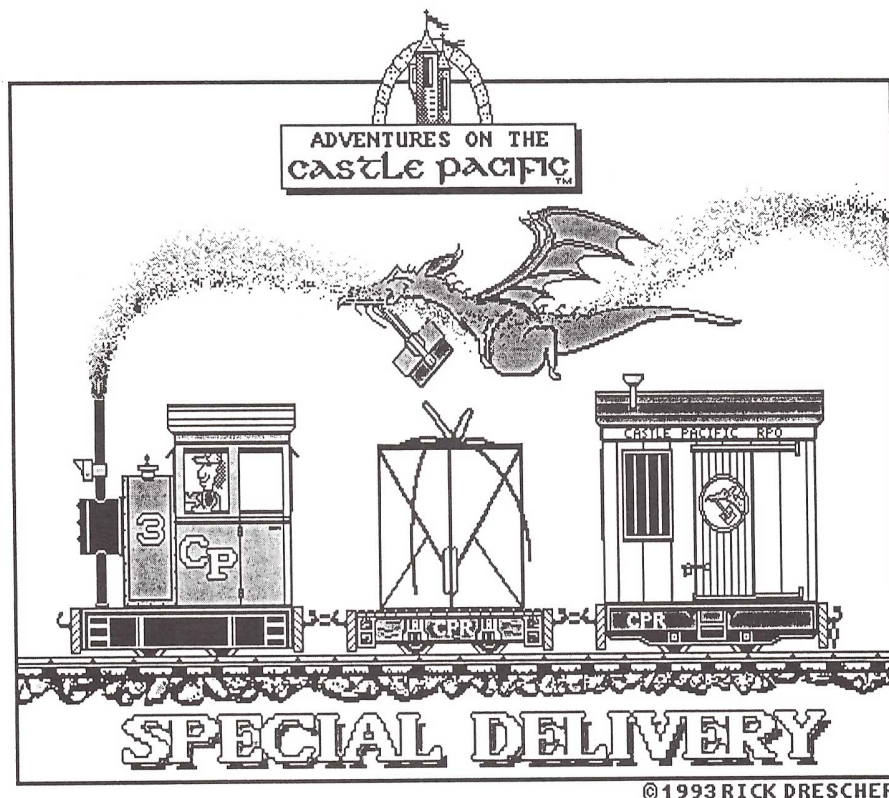
DYLAN: 0-4-0T, medium green w/black frame and smokebox, red lining and red buffers. Near mint condition, complete w/owners manual - \$500.00

LADY ANNE: 0-6-0T, Oxford Red w/black frame and smokebox, bright red buffers. Near mint condition - \$530.00.

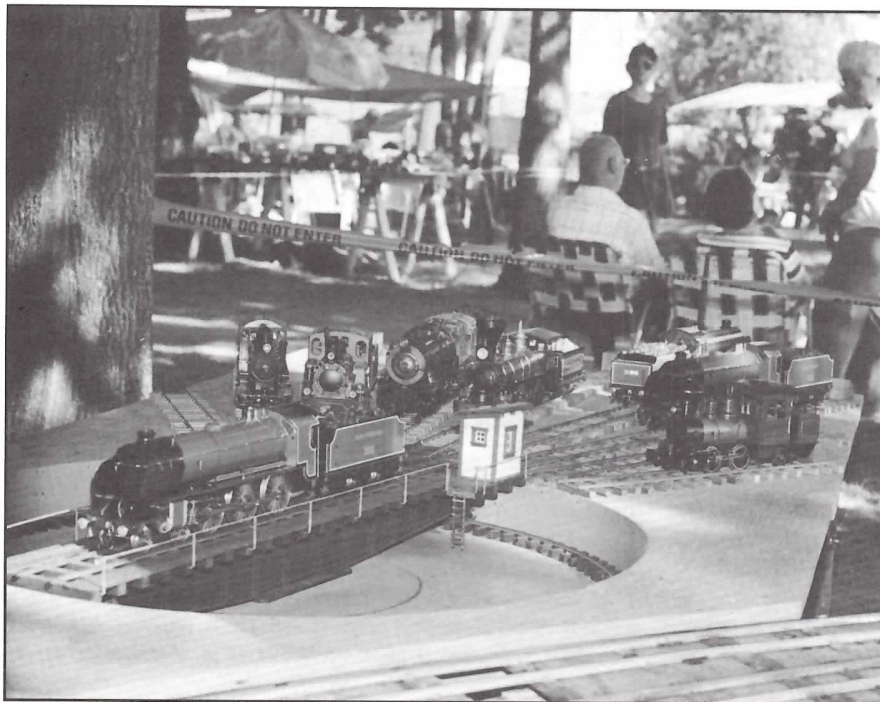
Both locomotives together - \$1000.00. Please add \$7.00 per locomotive for UPS insured shipping. Contact Fred Kuehl, Route 590, Box 93, Rowland, PA 18457 - phone 717-685-2239.

For Sale: Beck German-manufactured live steam "ANNA" 0-4-0, \$1300. Price includes Futaba R/C system & LGB #4011 covered gondola w/ receiver installed, throttle servo in cab. Frank Rushton, 128 Woodcreek Dr., Dothan, AL 36301-6206. (205) 794-4728. Please leave message.

Listings in Swap Shop are offered at no charge to SitG subscribers as space permits. Send a letter, card or FAX containing your ad, clearly printed or typewritten (no phone-in ads, please!), to SitG, P.O. Box 335, Newark Valley NY 13811. Ads must contain sellers name and address - phone number recommended. Please keep your listings to a reasonable length. Non-commercial ads only, please.



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An Aster KING ARTHUR, owned by Bob Mosier of Park Ridge, New Jersey, rolls onto the turntable and heads for the main line. The turntable is a new addition to the excellent portable gauge one track owned and built by Paul & Harry Quirk. Walt Mensch did the mechanical work on the turntable -- Paul & Harry did the rest. It's a modified 30" gauge 0 turntable, extended to 36". An antenna rotor motor is used to turn the table, which is indexed every 9°. Nine tracks radiate from the center, plus a lead for the main. It all fits on a 4' x 8' sheet of plywood, which can be divided in half for transport. This photo was taken at the Pennsylvania Live Steamers Memorial Day weekend meet in 1992.

Photo by Harry Quirk

END OF THE LINE

It isn't even Thanksgiving Day yet as this is written, but it may well be beyond New Year's Day as some of you read this. We hope that your holiday season was (or will be) a glorious one, and that you've made a New Year's resolution to attend the National Gauge One Steamup in Diamondhead, Mississippi in 1994. Check the Calendar of Events in this issue for more details, then call Jerry Reshew and tell him you'll be there.

This is a "Don't-Miss-It" event for small-scale live steamers in North America (it looks like there will also be some avid enthusiasts attending from faraway and exotic places this year).

I'm delighted to see that some manufacturers and dealers are offering their support for this event as well. Gary Broeder of Llagas Creek Railways has donated all the trackage for the dual-gauge loop; Ian Pearse of Pearse Locomotives has donated (through Ken Matticks at Doubleheader Productions) a RTR coach for the participant traveling the furthest; Bob Osterhoudt of Rio Pecos Garden Railroad Co. has donated a beautiful water tower to be given to the youngest participant; and John & Jeanette Weiland of J.J. Enterprises have donated a number of items to be used as door

prizes or raffle prizes. Be sure to thank these good people for their support of our steamups and other live steam events!

1994 is shaping up to be a great year for SitG readers. Charlie Mynhier has designed a fine looking little 2-4-0 live steam loco just for you, and we'll begin the series of construction articles on it in the next issue. Each article is designed as a "stand alone" piece, so you can take from the series just what you need. Need help with a boiler, burner or fuel tank? Want to build your own cylinders? Want to build a complete live steam loco? Whatever you're looking for, we'll be bringing it to you in an upcoming issue.

Your response to our articles on tools for the home workshop has been very positive, so we'll continue in '94 with more of the same, including Crankpin's *The Fitter's Bench* and lots more.

Please continue to give us plenty of feedback on what you want from your magazine. A phone call, a card, a note or a long letter -- we love 'em all! Finally, we appreciate your loyal, enthusiastic support and your friendship -- it's what makes our efforts all worthwhile. Happy holidays to all of you from all of us here at Paradise East!



INDEX TO ADVERTISERS

Argyle Loco Works	33
Aster	39
Blue Ridge Machinery & Tools	13
BLW Perforail	32
Brandbright	43
C & S Models	40
Cardinal Engineering, Inc.	22
Decker's Trains	37
Diamond Enterprises	2
Doubleheader Productions	35 & 39
GardenRail Magazine	39
Garden Railways Magazine	19
Garich Light Transport	31
Gary Raymond Wheels	13
Geoffbuilt	31
Harper Model Railways	37
Hyde-Out Mountain	40
International Sales & Mktg.	22
J.J. Enterprises	30
J.M.G. Hobbies	13
Llagas Creek Railways	44
Lone Star Bridge & Abutment	19
Maxitrak	35
Micro Fasteners	35
Mike Chaney	19
Miniature Steam Railways	36
Outdoor Railroader	33
Ozark Miniatures	36
the Parker Co	37
Railway Garden Ltd.	43
Rick Drescher	31
Rio Pecos	33
Roundhouse Engineering	30
Salem Steam Models	38
Sherline Products	34
Steamchest Publications	36 & 40
Sulphur Springs Steam Models	35
3 C's	19
Trackside Details	36
Willow Works	13

Brandbright Ltd., Britains largest small scale live steam supplier, is now 10 years old! To celebrate this, our 10th catalogue is now available, and it's filled to the brim with lots of new locos, including Finescale's Fairlie, Steamlines' "Little Giant" (now with Wileseo cylinders), Wrightscale's Porter (now available in kit form?) and Wrightscale's superb "WREN", now in kit form or factory built. The new Maxwell Hemmens "OGWEN" and Porter will be available soon, plus many others! If you are a previous Brandbright customer, the new catalog is on the way to you now. If not, send just \$3.50 for this treasure trove of live steam.

Richard, Shirley and the entire Brandbright staff - including U.S. agent Samuel - thank you for your support.

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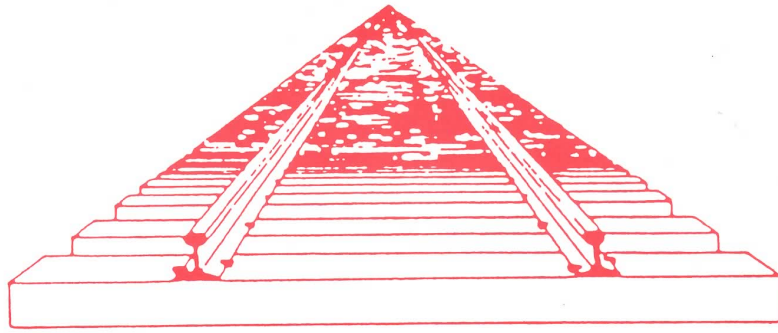
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A WINNER!

Bruce Bates of Santa Clara, California placed order #500 with Brandbright and RGL and won the prize. With all of the new locos available (including Finescale, Pearse, Wrightscale, and of course Roundhouse, to mention only a few), we're moving quickly toward order #1000 - will you be #1000 and winner of the next prize?

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The new Maxwell Hemmens Porter is in stock and available! Excellent value - our pick of the year! RGL also has locos from Argyle, Butler County and Berkely Loco Works, making our large selection even larger. RGL believes in supporting Steam in the Garden (both the magazine and the hobby!), and we invite you to compare our selection and prices.



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