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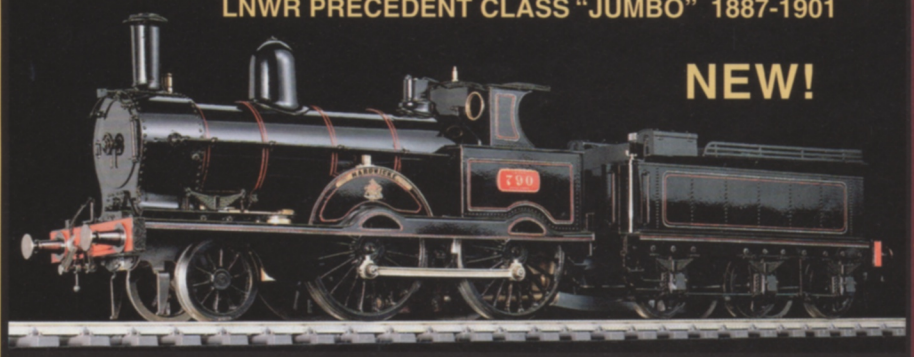

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STEAM IN THE GARDEN

with Steam on the Pond

Vol. 9, Nº 6
Issue Nº 48
November/December 1998

Articles

Departments

ON THE COVERS:

Front:

Fresh from the paint shop, a brand new lokie of unusual design moves the work train through some rugged terrain. The loco is a Berkeley Loco Works Cricket, and the cars are part of Sierra Valley Enterprises' Munger Mining Series. ***Photo by R. Brown***

Inside Back Cover (bottom):

Hammering through the fog and mist of coastal British Columbia's forests, the aging 0-4-0 struggles to move the Sooke Lumber Company's combine to the shops for an overhaul. Money is scarce on this line, so the overhaul will likely consist of some heavy grease on the bearings and maybe cleaning the windows. The loco is a Mamod, and the combine was scratchbuilt by Tony Owen. ***photo by Tony Owen***

Jolly Fat Guy
Ron Brown

Head Elf
Marie Brown

Graphics Director
Harry Wade

CAD (and other) drawings in this issue by:
Larry Bangham

Regular Contributors

Larry Bangham	California
Peter Barclay	Australia
Crankpin	The South
Rich Chiodo	New Hampshire
Tag Gorton	England
Peter Jones	Wales
Joe Leccese	Massachusetts
Jim McDavid	California
Kevin O'Connor	California
Eugene Rutkowski	Washington

Steam in the Garden (USPS 011-885, ISSN 1078-859x) is published bimonthly for $27.00 ($34.00 Canadian, $35.00 overseas) per year (6 issues) by Steam in the Garden Inc., PO Box 335, 6629 SR 38, Newark Valley NY 13811. New subscriptions please allow 6 - 8 weeks for delivery (overseas via surface mail may take longer). Direct correspondence to P0 Box 335, Newark Valley NY 13811. Periodicals postage paid at Newark Valley, NY and additional mailing offices.

POSTMASTER: send form 3579 to Steam in the Garden Inc., P0 Box 335, Newark Valley, NY 13811.

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Items for review may be mailed to P0 Box 335, Newark Valley, NY 13811—or sent via UPS or FEDEX to 6629 SR 38, Newark Valley, NY 13811.

Questions or comments? Call us Mon. - Thurs. at 607-642-8119 before 9:00 p.m. Eastern time, please...or FAX us any time at 607-642-8978. e-mail address: docsteam@spectra.net

Our web site, ***Steam in the Garden Online***, is located at: <http://www.steamup.com>.

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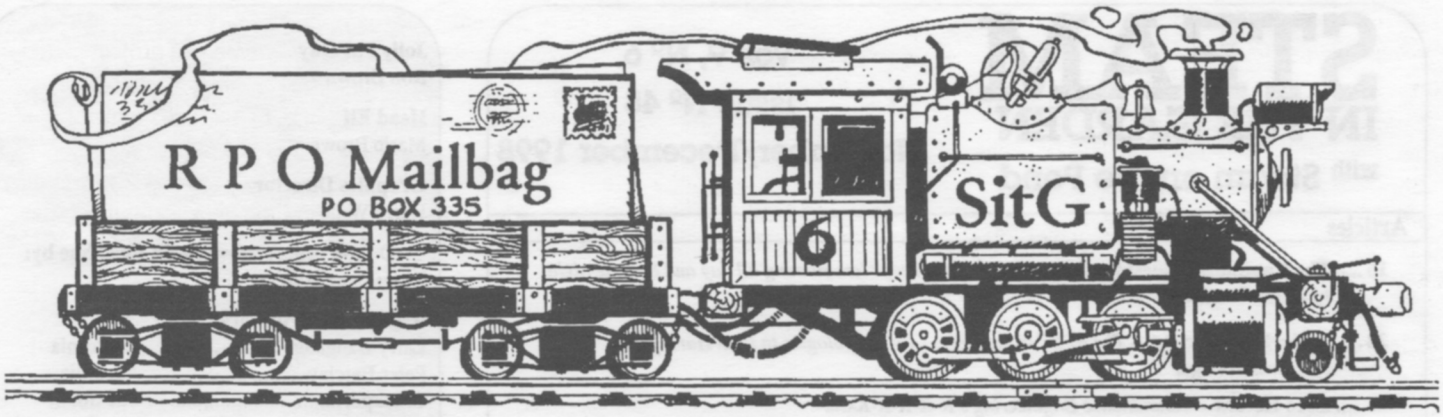

Letters from readers are welcomed and encouraged. Offer advice, encouragement, suggestions or constructive criticism. Tell us about your current project (and don't forget the photos!) or just share live steam experiences. But please keep your letters to a reasonable length so everyone has a chance to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

* * * * * *

Correction: In Ken Parkinson's letter in issue Nº 47, the author of *Model Boilers and Boilermaking* should have been identified as K. N. Harris. We apologize for the typo. We have been informed that this book has been out of print for a few years and could be hard to find.

* * * * * *

Massachussetts
via e-mail

Hi Ron,

The latest issue (Nº 47) is just super. The cover especially was excellent. The color combinations are very eye catching. Glad the steamboat feedback has been positive. The more people we can get boiling water the better off we'll all be. Thanks.

Best regards,
Mike McCormack
mocrown@aol.com

* * * * * *

Kansas, USA
via e-mail

Ron,

Unfair! Unfair! You have caused a step increase in my hobbying frustration level. I don't have time to build/run everything I want to and now you remind me that I have a R/C, electric powered Dumas Thompson Trawler sitting in the basement, operable but not done, and a kit that should transform into a model of a small diesel/electric tug sitting on the shelf. I like work boats. I think my only answer will be to find a way to make the world stop so I can catch up.

I vote to keep the *Steam on the Pond* section. I may not try my hand at putting a steamer in a boat, but it is enjoyable to read about them and see what people are doing. Then again, there are those tempting offerings on pages 32-33.

John D'Aloia

* * * * * *

Minneapolis, Minnesota

Editor;

Looking for information and pictures of the infamous "River Kwai" RR (Burma, WWII) as a live steam modeling project. Possible locos might include Japanese C-56, Chinese, Krupp, French, English.....also gas powered rail cars. Can anyone help?

Russell Enokson
1068 21st Ave. SE
Minneapolis, MN 55414
USA
phone: (612) 331-3092

* * * * * *

Valinda, California

Dear Ron,

I am still enjoying *Steam in the Garden.* My Slim Princess 4-6-0 has been rebuilt four times, and I'm still going.

I ordered and received an I.P. Engineering Jane 0-4-0 to satisfy my dreams. The review in the magazine was correct...it is great to run.

Thank you,
Leonard J. Hills

* * * * * *

New Jersey - via e-mail

To the Editor,

Hi folks! I've gotten a few petitions from your article posted about us on your web site. However, your article is not completely correct.

It is true that we are considering a 1:32 2-8-0 Harriman Steam Loco. We exhibited a mock-up of one at the Atlantic City Large Scale show in September to solicit consumer opinion.

However, we have not considered doing any 1:32 rolling stock. Any decision to go ahead with 1:32 rolling stock will depend on the sales of the 1:32 loco.

So, at this point, all we are looking into is this one engine as a single-run limited-edition production. If people support the product, of course, we will revise our plans and expand the line. But, as of right now, we are not looking beyond this one locomotive.

Thanks,
Jonathan Polk
Aristo-Craft Trains

* * * * * *

Louisville, Kentucky
via e-mail

Ron,

I came across this item in a *J. C. Whitney Motorcycle Accessories and Parts Catalog* (Fall 1998, Catalog № 83, Page 46) and thought it might be of some interest to you.

The item is sold as a "Mini Tire Inflator" for motorcycles, ATVs and bicycle tires. It uses a 12 gram CO_2 cartridge as its "air" source. With some slight modifications it can be used as a very small hand held fire extinguisher.

I am going to use the unit I ordered as a source of CO_2 to extinguish the wicks of my alcohol fired Aster Mogul at the END of a run. All that I need is a slight puff of CO_2 to do this.

A needle used to fill a basketball was modified with a very small hole to only allow a small amount of gas to escape when the lever is depressed. Without some form of restriction the volume of gas is too hard to control with just the thumb lever.

If you want to give it a try the Catalog № is 06AK3917W, Mini Tire Inflator, price $11.88.

Paul Wortham

* * * * * *

La Mirada, California

Dear Ron & Marie,

The magazine gets better and better. *Steam on the Pond* is a worthy augmentation and should provide the magazine with a broader interest base, much to the benefit of us all.

While I have your attention I would like to blow my whistle, so to speak, for my latest project. In his column (Notes from the Backyard), Rich Chiodo says that low speed controllability is one of his pet peeves. I am glad to hear that. Also Kevin Strong, in his excellent product review, states that radio control is a must for anyone operating at ground level or on a grade. I too shared these same axioms until recently, when I got involved in a project called the "Inertia Drag Car". Now running my engines at slow speeds and up and down hills without the benefit of radio control has become a real pleasure.

If one is willing to pull a dedicated car and spend a little time and money, low speed operation and climbing or descending grades without excessive speeds or changing throttle settings can become a reality without radio control or chasing your train.

I am presently running pull tests and characterizing the drag resistance on different configurations, and I will soon be submitting an article to SitG for publication. Hopefully this will allow anyone interested in more realistic steam locomotive operation to build one of these devices...or have one built for them.

Although there are no hills or ground level tracks at Diamondhead, I plant on taking one of these cars there in '99 for show and tell.

Respectfully,
Larry Bangham

* * * * * *

Bellevue, Washington

Dear Ron,

I'm responding to R. Inglish's letter in the July/August issue of SitG. It never occurred to me to publish the design drawings that I made for my SP Daylight GS-1. At present they exist in over a dozen floppy disks as CAD drawings, and in a notebook containing the only printouts of those drawings. Except for some assembly drawings, which need to be about a yard long, the drawings are all 8-1/2" x 11". If anyone is interested, they could contact me and we can make the necessary arrangements.

Your readers might also be interested in a couple of computer programs I wrote to aid in the design of model steam locomotives for 1/4" to 1-1/2" scales. These include overall sizing of major components and selection of operating pressures to boiler design parameters.

Keep your steam up,

Gene Rutkowski
1708 Bellevue Way NE
Bellevue WA 98004-2856
phone: (425) 453-7784

1999 CALENDAR OF EVENTS

New Year's Steamup in SW Florida: B.W. Lunkenheimer, Chairman & CEO, extends an invitation to all live steamers to attend the Y2K-1 Steamup at the SWAMP RR in Naples, FL. January 1, 1999 is the big day, but the track will be available from December 24, 1998 to Jan 3, 1999. Double main line elevated PETS track, 24 hour a day capability. Please RSVP to Walt Swartz, track maintenance worker, at 941-597-6445 (shop) or 941-455-6952 home. Also on SitG Online Chat on Thursday nights.

January 15-17, 1999 – National Small-Scale Steamup, Diamondhead, Mississippi, USA. Don't miss this one....it's the biggest miniature steam railroad convention in the world! Three elevated tracks to accomodate gauge 1, gauge 0 and HO steamers - Hornby Rocket Festival - Clinics - Round the clock steaming - Dealer room - Steamboats - Pop-Pop Boat Regatta - Attendees from around the globe! Make your reservations now so you don't miss out. Contact Jerry Reshew, 5411 Diamondhead Drive East, Diamondhead MS 39525. Phone (228) 255-1747, e-mail: JReshew@aol.com.

February 14, 1999 - Cabin Fever Breakout IV, Baird Community Center, 5 Mead St., South Orange, New Jersey. For Steamboat Captains, Crews, Builders, Friends and Wannabees. Swap & Sell, Socialize, enjoy a break from the harsh winter weather. For more information or to RSVP, contact Charles Roth, 212 Route 513, Glen Gardner, NJ 08826 - phone (908) 638-8341. Sponsored by the South Orange Department of Recreation and Cultural Affairs.

June 7, 1999 – South Orange Seaport 10th Annual "STEAMBOATS ONLY", a radio controlled model steam boat meet. Meadowland Park Pond, off South Orange Avenue, South Orange, New Jersey. For further informatio contact: Charles Roth: (908) 638-8341 or Ron Hermann: (201) 891-3020. Sponsored by the South Orange Department of Recreation and Cultural Affairs.

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

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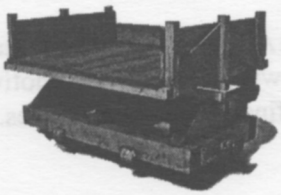

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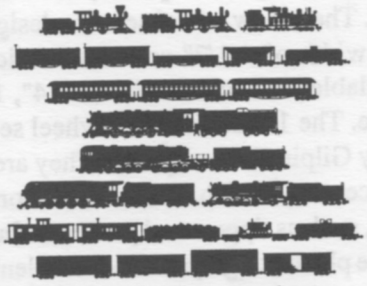

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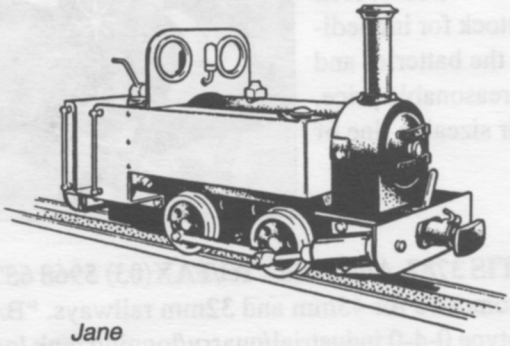

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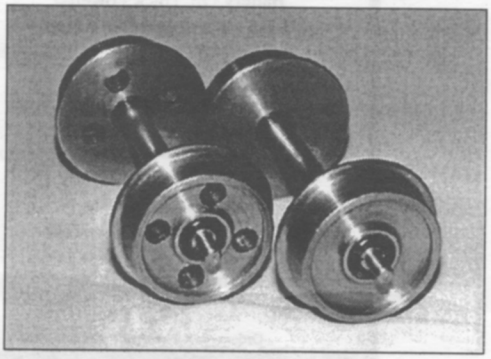
WHAT'S NEW?

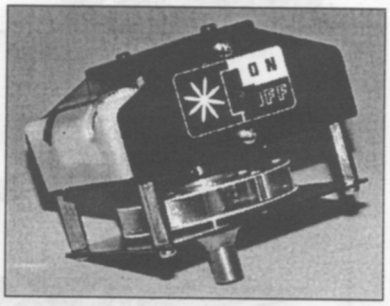
Rio-Pecos Garden Railroad Company, North American agent for Pearse Locomotives, announces that as of November 1, 1998, Pearse Locomotives of UK will be known as Pearse Locomotives, Ltd. The company has been purchased by the employees and will continue with their line of fine quality locomotives. Mr. Pearse will continue on with the company as a consultant.

Sierra Valley Enterprises, 2755 Saratoga Ave., Merced CA 95340 has some new additions to their line of metal wheel sets. These new wheel sets are designed for use on 7/8n2 rolling stock (2-foot gauge on gauge 1 track), and they have a scale tire width of 4-1/2" and about twice the mass of standard wheel sets currently available in G scale. SVE has 14", 18" and 20" diameter wheels available in this scale. The 14" solid center wheel sets are the correct size and profile for the very early Gilpin Tramway cars. They are also available with four holes bored through the centers, which makes them correct for use on small, lightweight industrial cars, such as tippers and peat cars. Our sample wheelsets (both 14" versions shown in the photo at right) showed excellent quality materials and craftsmanship throught. They are very sturdy, and more importantly they are trued with precision. No wobbly wheel sets here! Scratchbuilders, kitbashers and anyone modeling in 7/8" scale will welcome these wheel sets. Contact Sierra Valley for more information or to place your order

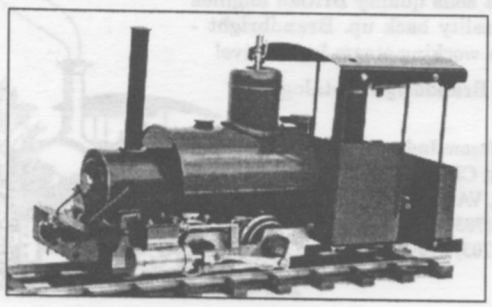


MVM Productions, 17 Wisteria Way, Churchdown, Gloucester GL3 1LQ, England has produced a wonderful movie on steamboating - ***We Were There, Cheddar Steam.*** The video shows a wide range of different steamboat models in operation at the Cheddar Models site (a very impressive purpose-built steamboating pond), along with interviews with the builders and views of the steam plant installation and other closeup views. The closing segment of the 90-minute video takes the viewer through step-by-step assembly and firing up of one of the Cheddar Models steam plant kits, the Puffin. This video is informative and entertaining, and we recommend it highly to anyone with even the slightest interest in model steamboating. **Available in North America in NTSC format from Sulphur Springs Steam Models, PO Box 6165, Dept. RB, Chesterfield MO 63006 - tel/fax 314-527-8326 - e-mail: SSSMODELS@aol.com.**

Potomac Steam Industries, 5595 St. Charles Drive, Dale City, VA 22193 - phone (703) 680-1955 - fax (703) 590-9399 - e-mail: diesel@erols.com, now has the **Wada Works** suction fan for internally fired live steam locos (alcohol or coal fired) in stock for immediate delivery. This is a very robust unit, and is entirely self-contained, as the batteries and switch are all incorporated into a single unit. Very high quality at a very reasonable price. Contact PSI for information on the Wada Works suction fan, and on their sizeable line of locomotives, rolling stock and accessories for the live steam hobby.



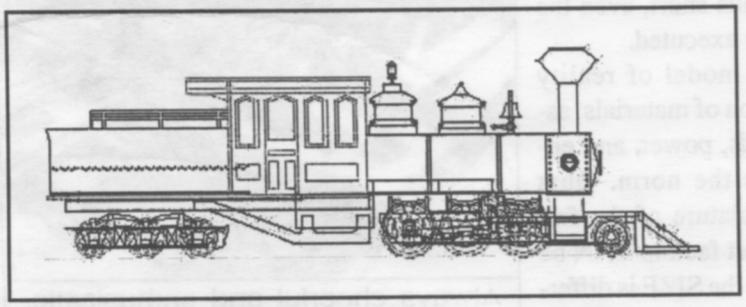
Argyle Locomotive Works, 241 Belgrave, Gembrook Road, CLEMATIS 3782, Australia - Tel/FAX(03) 5968 6573 - e-mail: argyleloco@fhills.hotkey.net.au announces a new live steam locomotive for 45mm and 32mm railways. "BANTAM" is based on an American prototype 0-4-0 industrial/quarry/logging tank loco, and features gas firing, slide valve cylinders and robust, high quality materials throughout. The wheels are regaugable, and insulated wheels are also available. BANTAM requires a 2-foot radius, which should make it compatible with just about any garden railway in the world. The price is expected to be in the vicinity of US$575.00. In North America contact Bob & Carol Paule at Sulphur Springs Steam Models to reserve yours...and please tell them you read about it in SitG.

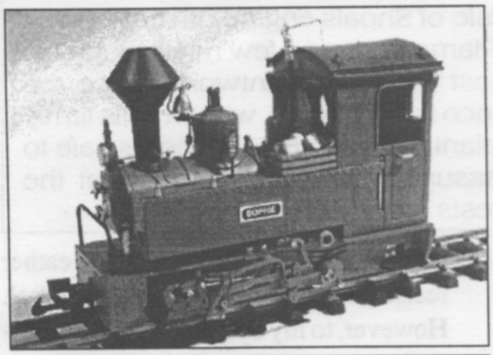


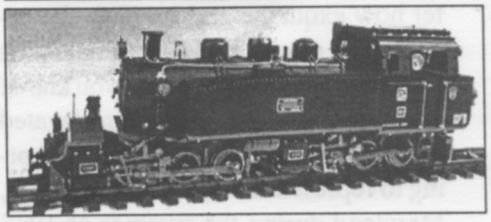
Decker's Trains, Rt. 1, Box 102-E, Hot Springs SD 57747, 605-745-5487, e-mail MikeyD9755@aol.com, is the U.S.A. outlet for Graham Whistler's British Narrow Gauge videos. The videos are in NTSC format for North American VCR's. Graham's latest video, "A Letter From Ffestiniog", uses a series of photos taken in 1887, contrasting them with videos of the same equipment and scenes to show the changes in the Ffestiniog Railway over the last 100 years. The program includes footage of the rebirth of the Welsh Highland Railway. The price is $29.95 plus $3.50 S&H.

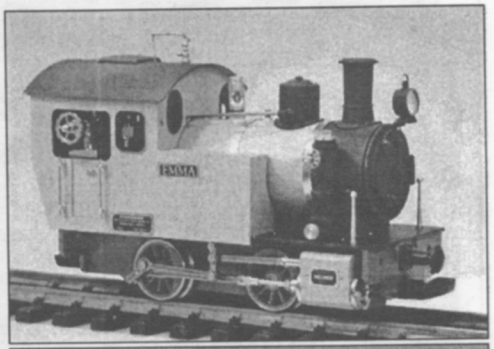
STONEWORKS, P.O. Box 186, Galesville WI 54630, (608) 582-2082 - e-mail: RRStones@aol.com offers kits using natural stone for use in garden railways. A unique layup method called Wall-byWall shortens layup time and is ideal for model construction. The manufacturer claims that the resulting product will last outdoors in hot, sub-zero, moist, dry or UV conditions. Kits include one-of-a-kind Cut Stone Portals, Custom Concrete Portals, Stone Foundation Kits for any building, a Logger's Cabin with stone chimney, and a Set-off Shed for handcars and motorcars. These are available as You-build, We-build or Custom-build. Scales from 1:20.3 to 1:29 are covered. Contact Stoneworks for more information, or to place your order.

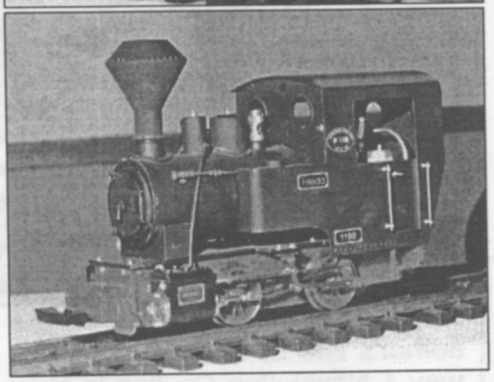
Rishon Locomotives, P.O. Clunes, NSW 2480, Australia - phone 011 61 266 291 115, announces plans for a limited production run of the Mason Bogie locomotive BRECKENRIDGE in live steam as originally supplied to the Denver, Southpark and Pacific Railroad. The model will be for gauge1 track and correctly scaled at 1:20.3. Specifications include: Gas fired boiler with electronic water gauge - Whistle - Walschaerts valve gear - Laser cut frames and cab - Brass water tank - Radio control as standard - Overall length 24" - Price expected around $3,000. Hopefully a protptype will be ready to run at Diamondhead in 1999. Rishon Locomotives is run by Paul Trevaskis, who has had a long interest in the hobby. He has been scratch building locomotives for fifteen years and has constructed five separate garden railways. He has served as an assistant editor for *Australian Model Engineering* for 8 years, with a special interest in gas firing of small gauge locos.











Our own Artful Bodger, Tag Gorton, reports that the **Regner** line of steam locomotives, produced in Germany, will soon be available through Martin's Models in England. The engines will be available as kits or factory built, with EMMA and FRIEDA the first to be offered, and others following later. Kits will start at around £400 and factory built locos at around £700. Because we don't read German, we do not yet have any specifications on these locos, and very little else is known about them at this time. Tag is currently working on English language instructions for the FRIEDA kit, and he was able to obtain the four photos shown here. We look forward to more information, and hopefully some loco reviews will be forthcoming soon.

Gary Lantz of Lantz Woodcrafts, 1125 College Ave., Elmira NY 14901 - phone (607) 737-9687, has designed a unique line of loco carrying, storage and servicing boxes.The locomotive is held firmly in place inside the box, and it can be flipped upside down for servicing the underside without damage to paint or detail parts. The boxes also have transparent sides, so you can use them to display your locos, and you can see at a glance which loco is in which box. Very clever! Take a look at their ad in this issue for photos, price and availability.

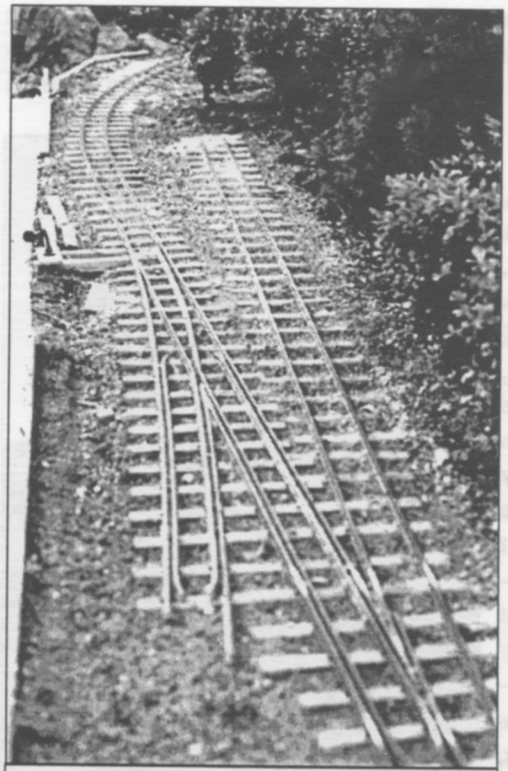
Notes From The Backyard

text & photos by Rich Chiodo

There is a difference...

The Isle of Shoals Light Railway is nearing the halfway point in relaying the track to 7/8n2 standards. This past summer has been quite enjoyable in that the transformation has been more exciting than I had imagined. In place, the new track looks for all the world like a miniature railway. Not a model of a railway, but a railway in its own right, only in miniature. Now some of you are probably wondering if I am parsing words in the fashion of our country's leader. Let me explain.

Model railroading in all its indoor glory is a hobby in which participants expend great amounts of money, time and energy attempting to replicate the full size world of 1:1 railroads. I speak as one having attempted the impossible for over 20 years. Several columns ago I admonished you to limit compromise in your garden railroading endeavors. The indoor crowd is overwhelmed in compromise and thus the goal becomes unattainable, and every attempt falls short, even the most exquisitely executed.



Trackwork continues on the author's Isle of Shoals Light Railway & Navigation Co. line in New Hampshire. Light rail, hand-spiked to wood ties, and the fine looking pointwork lend an air of credibility to the scene.

Theirs is a model of reality where substitution of materials, assembly methods, power, and environment are the norm. Ours CAN be a miniature of the full size, where most factors CAN be the same...only the SIZE is different. See? Model.....miniature.

Now, you may say, so what?

Well, the fact you are reading this probably means you have sensed the inherent difference and greater satisfaction offered by small scale LIVE STEAM locomotives as compared with steam outline ELECTRIC locomotives. You enjoy, appreciate, and are challenged by a miniature of the full size with its own unique personality. Ask any loco driver with full size steam experience and they will tell you that each beast has a distinct personality. You may be here because you may want more of the feel and experience of full size railroading; something indoor modeling can never offer.

This brings me to the seeming incongruity of practicing the hobby of garden railroading using many of the same materials and techniques of our indoor brethren. I understand the argument that claims ease of use, weather resistance, prototypical look and feel. However, to my eye and senses, no matter how exquisite and intricate the execution, a plastic building plunked on the ground looks like...well...you know!

Always cheerful and enthusiastic, Isle of Shoals engine driver G. Ennis Plammer does a few run-throughs to test the new pointwork. Since the loco is still upright, with wheels firmly planted on the rails, it seems safe to assume, albeit cautiously, that the tests went well.

Those of you how have an elevated line and make no pretense of attempting to represent the WM at Brunswick, Maryland during the summer of 1948 are excused from this discussion. Yours is a whole different genre of garden railroading, if it can even be called that. You have an outdoor track so designed and situated to best enjoy all that live steamers offer. Kudos for your purity of purpose.

I am appealing to those who claim some prototypical root - real or imaginary - and thus are attempting to replicate this in miniature.

And you, sir?

Well, the Isle of Shoals, as mentioned in the beginning, is in a bit of a morphing phase right now. I am making a serious attempt to practice what I preach. The photo shows track work around ALNA. It has rail spiked to every tie and the wooden ties cut and spaced per 2 foot railroading practice.

The rail is too big. This is a compromise and some of my friends remind me regularly. It is, however, only 70lb rail in 7/8" scale, so it is not terribly out of proportion for a well maintained 2-foot line.

Ballast is screened gravel, curves are eased, switches are #8 frogs or better, manually controlled by scale ground throws. On the workbench is a representation of the Alna freight house and a freight platform, all constructed from wood.

The plants are ground covers, evergreens and others indigenous to the local environs. They are small in scale with little in the way of fruit and flowers.

I am also attempting to tightly control what can be seen by creating vignettes, rather than vast expanses of a Prairie town or Swiss village, Matterhorn and rack railway. This composition technique allows you, the viewer, to compress the scene in your mind's eye and represent the key features of the scene.

All this gets to be a bit academic and smacks of elitism. You have heard me say, "Have fun!". That still should be your number one motivation. I am having fun in ways I never would have dreamed of if I stayed indoors with my N scale Catskill Mountain Lines.

Much of this new scale stuff and attention to proper look and feel may not appeal to many who just enjoy operating a live steamer and all that surrounds these little beasts. I too enjoy just watching the wheels go 'round on a test stand and trading shop talk on valve lead, cut off and proper placement of the of the blast pipe in the petticoat. To have all this AND watch a well heeled beast take up the slack and ease through a #11 handlaid switch past miniature trees and bushes....aahhh!!

The Fitter's Bench

by Crankpin

Another sort of grinder.....

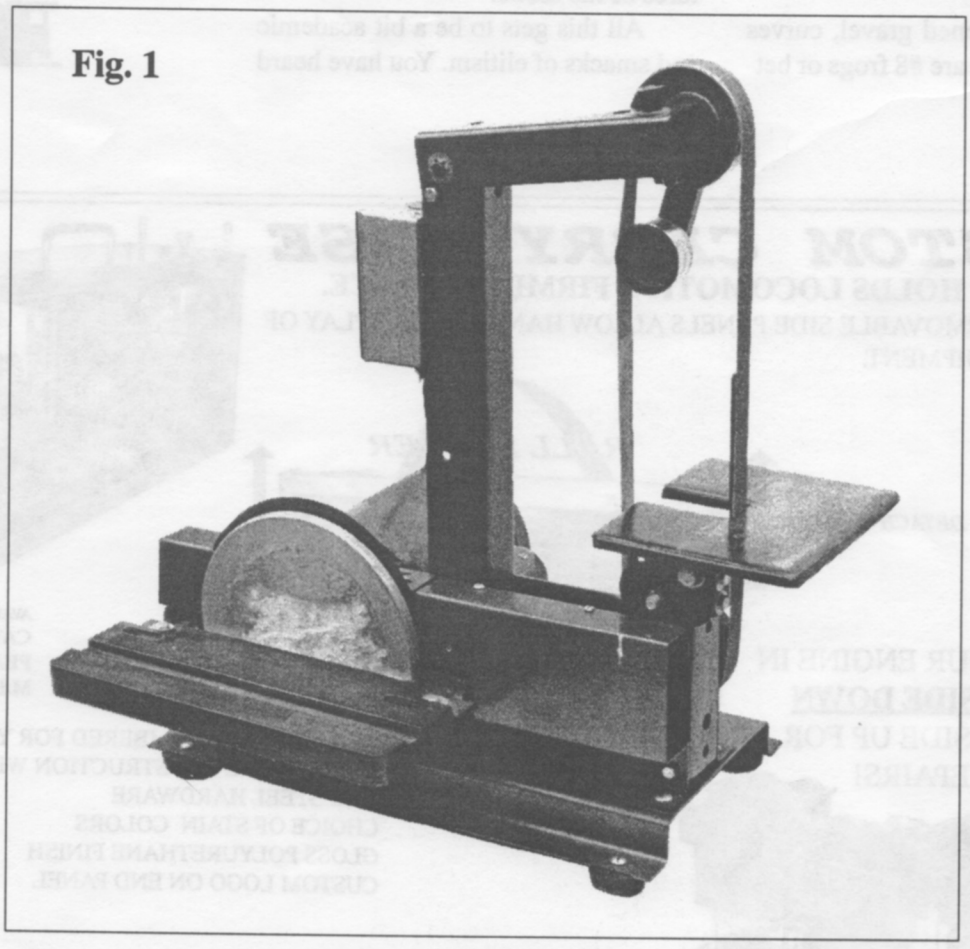
I mentioned once before that in writing these articles I attempt to convey as clearly as I can a balanced notion of what tools are most useful, and therefore most important, in the workshop and what tools are less so. This is made more difficult because all of us have different skill levels and tedium thresholds and for that reason will find some difference in usefulness of the same tool. For those of you who are building strictly in Ga 1 or the smaller scales, there are a number of tools you can survive without. A power hacksaw or bandsaw for instance would be one you could live without because the typical metal stock used in garden gauges is quickly sawn through by hand.

If, on the other hand, you are building in a larger scale, and you have staring you in the face a half dozen axleboxes to be sawn from 1" x 2" mild steel stock, the heretofore high price of a small power bandsaw becomes affordable and completely justifiable approximately midway through the second cut, or at most the third!

The price of a tool is of course always a part of the equation. However, there are a few tools which because of their relatively low cost and versatility are extremely useful to builders in all scales. The Belt Grinder (Fig.1, Fig. 2) is one of these. This is a tool which I find to be virtually indispensable and one which I recommend highly on your list of tools to add to your workshop.

The grinder shown in Fig. 1 is a 1" x 42" size, indicating that the endless abrasive belts are 1" wide and 42" in circumference.This is the most common size seen in both the home and commercial shop.

Fig. 1



The grinder shown in Fig. 2 is a slightly smaller 1" x 30" size and is commonly available in D.I.Y. and home stores. Although belt grinders are made in sizes which range from 1/8" x 24" to 48" x 100", the 1" x 30" or 42" sizes are the most useful size for our purposes. In the woodworker's shop, belt machines of this kind would be known as belt sanders, but in our shops they will be known as grinders. For all intents and purposes they are the same machine; only the abrasive material, and possibly the belt speed, will be different.

As we go along in the months to come you will find that I am an advocate of the hand file. They are important tools and many amazing things can be done with them, but contrary to what you might thinking at this moment the belt grinder most definitely does not eliminate the file. There are some jobs which lend themselves better to files and some which lend themselves better to the belt grinder. Generally speaking, the belt grinder is used when a relatively large quantity of material needs to be removed in the least amount of time, and where accuracy is of secondary importance.

The file will obviously remove much less material per unit of time, but with it one can produce work of extreme accuracy. I like and need both my files and my belt grinder - the two coexist peacefully in my shop.

I would say that 75% of the work done on my belt grinder is with sheet metal, the balance being cleaning up castings or putting rounded corners on things. One thing I find particularly useful is that in the absence of some way of shearing sheet metal to produce a dead straight edge (what, you don't have a sheet metal shears in your shop either??), I can achieve straight edges quickly by using the belt grinder. The process is as follows: I scribe a bright line along the piece of metal and cut as close to this line as possible with hand shears, hacksaw, bandsaw, or whatever means I have. The sheet is then taken to the belt grinder and with a fine grit belt installed I very carefully grind as closely to the scribed line as possible, taking just the edge of it away. If you have done this carefully, the resulting edge cannot be told from a sheared edge, and if you want to improve on that simply run over the edge with a few stokes of a file to smooth out the invisible bumps. The degree of straightness that can be achieved in this way is well beyond the needs of the average locomotive project.

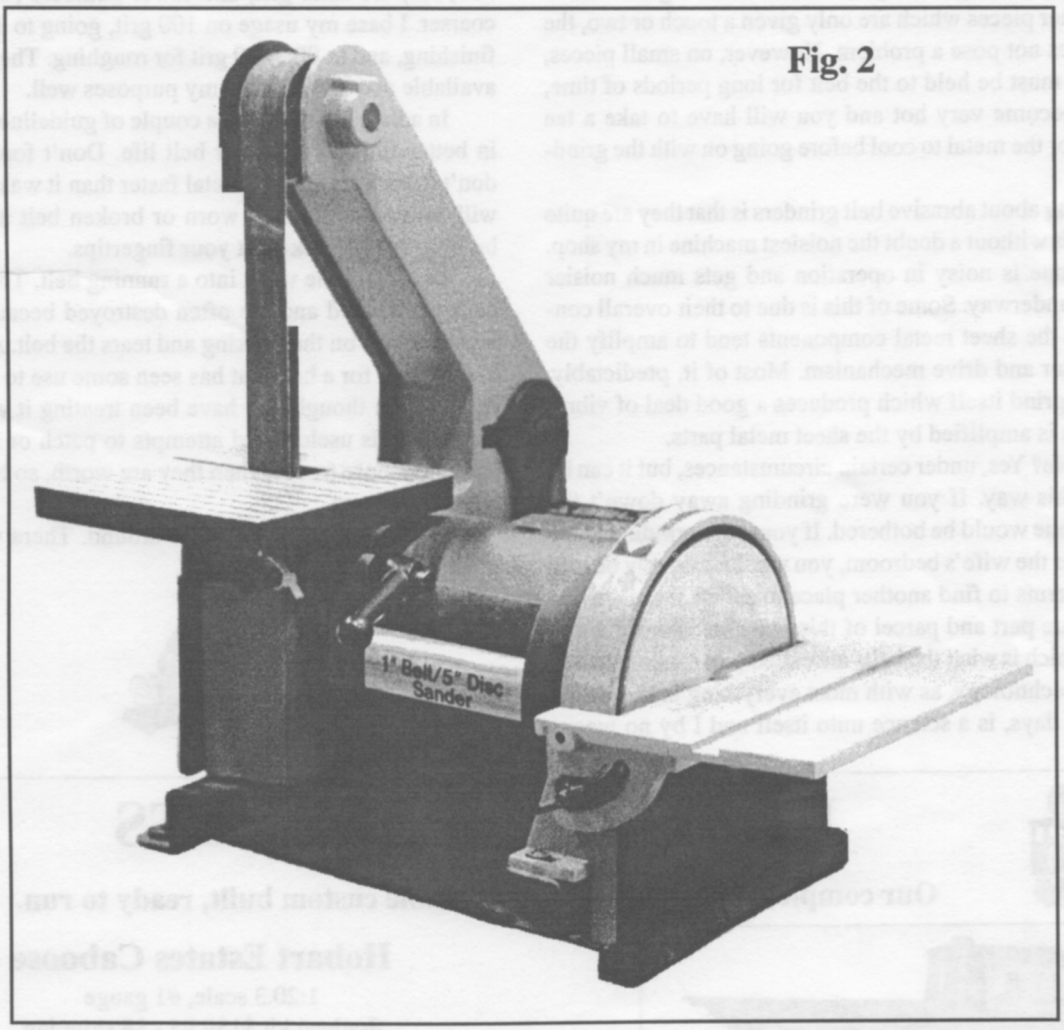


Fig. 2

You will notice that the grinder in Fig. 1 has a disc wheel and tilting table attached to the left hand side. When these were first introduced into the marketplace about twenty-five or so years ago they were simple belt machines. In later years many manufacturers added the tilting table and disc which extended the capability of their machines and widened their appeal. I have found that the disk feature is of limited use with metal because its rotational speed as you move outward on the disk is entirely too fast and generates too much heat in the work. It sheds abrasive disks very quickly. It is however very handy for shaping and dressing wood, such as patterns for metal casting.

As can be seen in the illustration, the basic grinder was and is little more than a formed sheet metal frame for the pulleys and wheels which carry an endless belt. The typical drive arrangement is via conventional V-belt from the motor to a belt drive pulley in the grinder base. The pulleys are sized so as to deliver a belt speed of between 3000 and 6000 feet per minute. With the exception of the dubious quality of the typical oriental motor, the simple and sturdy basic mechanism has changed very little since they were first introduced and will give you a very long life. My own grinder, which was one of the cheapest imported ones at the time, is now approaching 20 years old and is still virtually as good as new. Even the horrid oriental motor has survived nicely. Who would have thought it?

Many years ago, possibly the first manufacturer to offer belt grinders was the Rockwell Machine Tool Company (USA), and for a time they made one of the best. What the Rockwell machines had that you will rarely find on today's grinders was a stout, adjustable, cast iron table. Nowadays the tables are usually pressed sheet metal, sometimes die cast, and in many cases are not that substantial. Because I often rely on my grinder to produce a nearly spot-on 90 degree angle on the side of a workpiece, I found that a bit of beefing up and bracing was needed in the vicinity of the table and belt support to allow it to hold 90 degrees when work was being pressed against it. Other alterations I found to be helpful were to replace the flimsy toggle type electrical switch with one sized for 1/2 hp motor current and to replaced the original non-grounded electrical cord with a grounded cord and plug. Aside from these I found that little additional improvement was needed.

I don't know of any disadvantages to belt grinders but there are a few things one should know before taking the plunge. First, they produce a great deal of grinding dust, more so on average than wheel grinders. The dust will be a combination of the abrasive grit which has been separated from the belt during the grinding process and ground metal material. Because the belt usually

runs in the open, that is, not enclosed in sheaths or coverings of any sort, the dust is generously distributed to any horizontal or near horizontal surface with the room. This can pose a problem for any nearby precision tools, such as a lathe, because the airborne abrasive dust will find its way into the innards of the other machines and over a period of time do considerable damage. It is best then to use any abrasive grinder in a different place than where your lathe is located, preferably in a separate space. The grinder is not immune to its own dust so it is a good idea to clean the grinder and motor of accumulated grit on a regular basis.

Secondly, it should come as no surprise that, because of the high belt speeds, there is heat generated by the friction between belt and workpiece. Since while grinding you must hold the work with your fingers you will eventually feel the heat conducted back through the metal. On large workpieces which have a good deal of mass, and on other pieces which are only given a touch or two, the heat transfer does not pose a problem. However, on small pieces, or pieces which must be held to the belt for long periods of time, the metal will become very hot and you will have to take a tea break and wait for the metal to cool before going on with the grinding.

Another thing about abrasive belt grinders is that they are quite noisy, and mine is without a doubt the noisiest machine in my shop. The machine alone is noisy in operation and gets much noisier when a grind is underway. Some of this is due to their overall construction, where the sheet metal components tend to amplify the noise of the motor and drive mechanism. Most of it, predictably, comes from the grind itself which produces a good deal of vibration which again is amplified by the sheet metal parts.

Objectionable? Yes, under certain circumstances, but it can be best described this way. If you were grinding away down't the garden shed, no one would be bothered. If you were grinding away in the cellar under the wife's bedroom, you would probably be told in no uncertain terms to find another place to set up shop!

Since they are part and parcel of this machine, a word about abrasive belts, which is what the belts are called (not sanding belts), is in order. Belt technology, as with most everything in the industrial world these days, is a science unto itself and I by no means want to portray myself as an expert. However, I have worn out a lot of belts in my day and can pass along, in no particular order, a few of the basics I've learned.

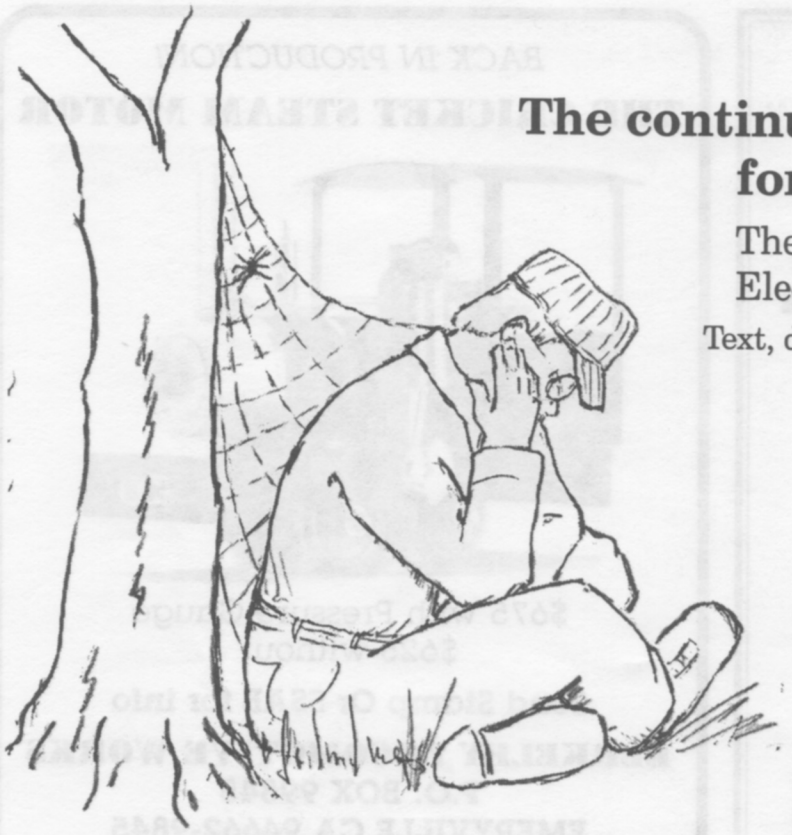
Belts are a consumable tool, meaning that they are intended to be used up, and are sometimes very short-lived. That is the nature of the beast. Even though they are relatively cheap there is no need wasting them unnecessarily, and a few things can be done to extend their lives. The first thing is to use a belt of the abrasive grit type and size suited for the job. Obviously a fine grit should not be used to rough out, and vice versa, a coarse grit should not be used to do finishing.

A good general purpose grit is 100, which is both coarse enough to remove metal in a reasonable amount of time and fine enough to serve as a finish belt for utility work. Higher numbers (150, 200, 300, etc) are finer grit, and lower numbers (80, 60, 40, etc) are coarser. I base my usage on 100 grit, going to 150 or 200 for fine finishing, and to 80 or 60 grit for roughing. These grits are readily available and have served my purposes well.

In actual use there are a couple of guidelines which will result in better finish and longer belt life. Don't force the belt, that is don't force it to remove metal faster than it was intended. Forcing will result in a quickly worn or broken belt and excessive heat buildup in the work or at your fingertips.

Don't jam the work into a running belt. These belts are cloth or paper backed and are often destroyed because an edge of the work catches on the backing and tears the belt. Although rare, it is not unusual for a belt that has seen some use to simply part for no reason even though you have been treating it well. In any case a parted belt is useless and attempts to patch or reconnect the belt are much more trouble than they are worth, so toss it out and start with a fresh one.

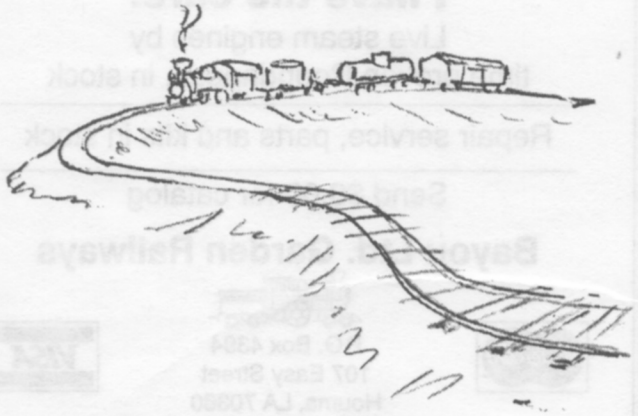
That's it then for this time around. There will be more next issue on tools and their uses.



The continuing quest for longevity

The story of an Electronic Feedwater System

Text, drawings and photos by Larry Bangham



This story begins back about June of 1996 after I had just finished modifying an R/C servo to drive my C&S Mogul water pump. I had recently met my good friend Kevin O'Connor over the phone, and when I mentioned my pump idea he told me that I had to meet a very clever fellow by the name of Allan Starry who was involved in developing an electronic circuit that could detect the water level in a boiler and would drive a pump to automatically keep the water at the right level.

The idea sounded intriguing and would present some design challenges, because the operation of the system hinged around the placement of an electronic probe into the boiler, which had to survive the temperature and pressure problems encountered there.

I met Allan at Diamondhead 1997, and we proceeded to have some wonderful discussions. I conveyed my interest in his project and he indicated that he would soon have a module that would fit in a train. At Jim Hadden's June 1997 steam up Allan presented his circuit. I left there with one of Allan's modules in my suitcase and a vague idea of how this challenge might be met.

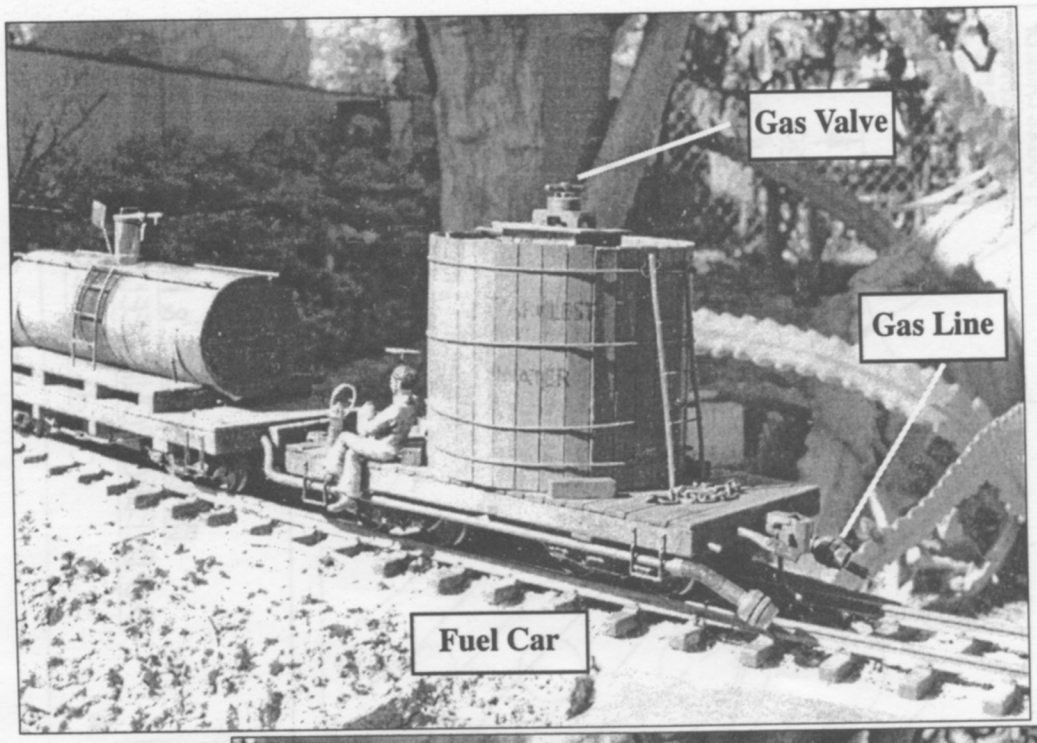
A few months later, after much experimentation, model building, and good fortune I had a working boiler water regulating system that would allow a steam locomotive to remain in steam indefinitely whether pulling a train or standing on a siding. The time limiting factor for this train is the butane canister, which is good for about 5 hours depending upon the heat load. The water car needs to be refilled every two hours or so, which can be done under steam along with the lubricator.

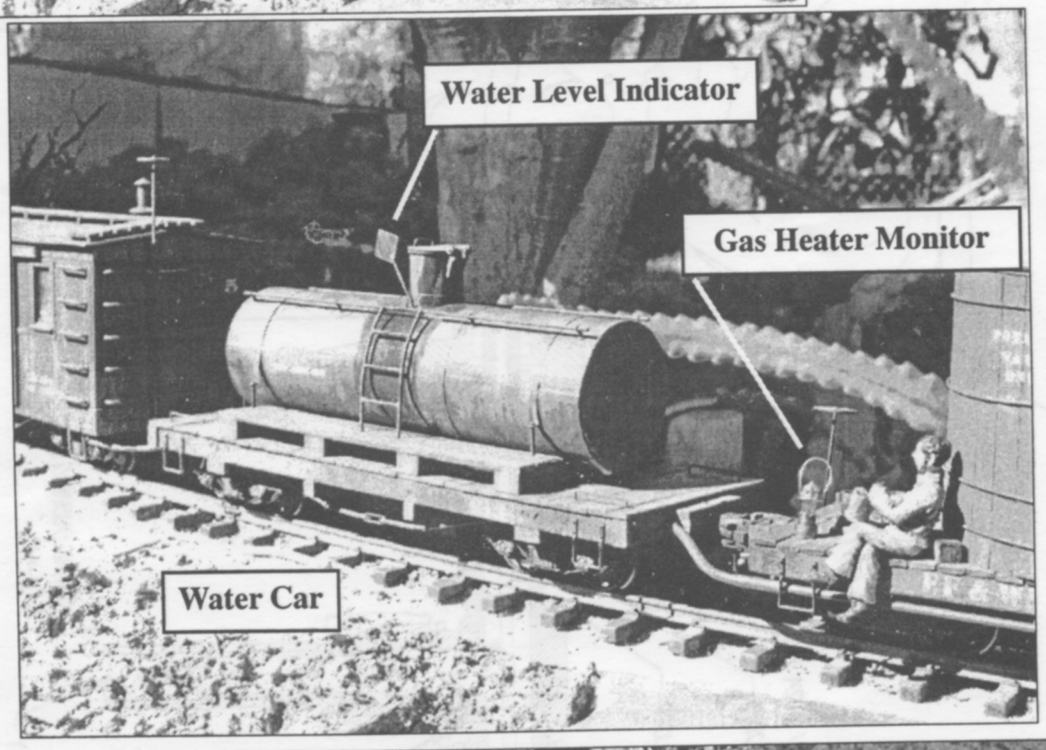
So who needs it? Probably no one. But I can think of several uses for such a setup...steam exhibitions at a fair or train show, for example. Keeping a loco in steam as a standby for retrieving stalled trains at a steamup, or maybe impressing your friends at home with your ability to run a steam train with the seeming convenience and longevity of an electric. Or how about just the satisfaction of knowing that your engine will continue running properly without requiring your full undivided attention.

Some of you saw this train run at Diamondhead '98...not to set a time record (heaven forbid - wrong place), but to demonstrate the system. I had two engines running, both set up with a boiler probe - a Catatonk Shay and a Hemmens Porter. I received some interesting comments, like "Where can I buy such a system?" or "What's that strange noise? I think you have a wheel bearing going out." The first comment will be addressed later in this article, the second was the reaction to the water pump cycling on. The pump I used was an overkill, one sent to me by an engineer friend, and was designed for use in an electric water pistol. It will shoot a stream of water twenty feet and would drown a little engine in a few seconds if left on. As a result when it cycles on it only turns over about one stroke and then shuts off until the next cycle, about every second or two. Like the chirp of a bad wheel bearing.

The Train

The fuel car utilizes the stock Hemmens gas valve (for the


Gas Valve
Gas Line
Fuel Car


Water Level Indicator
Gas Heater Monitor
Water Car

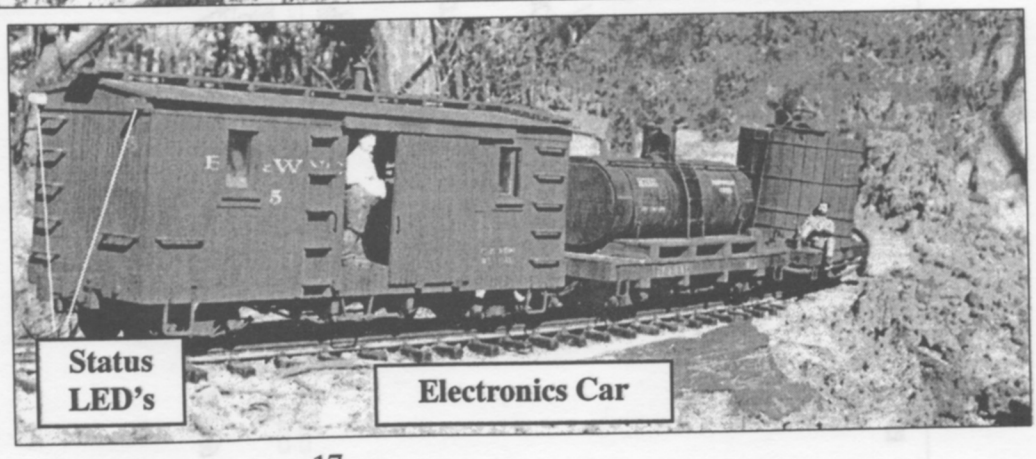

Status
LED's
Electronics Car

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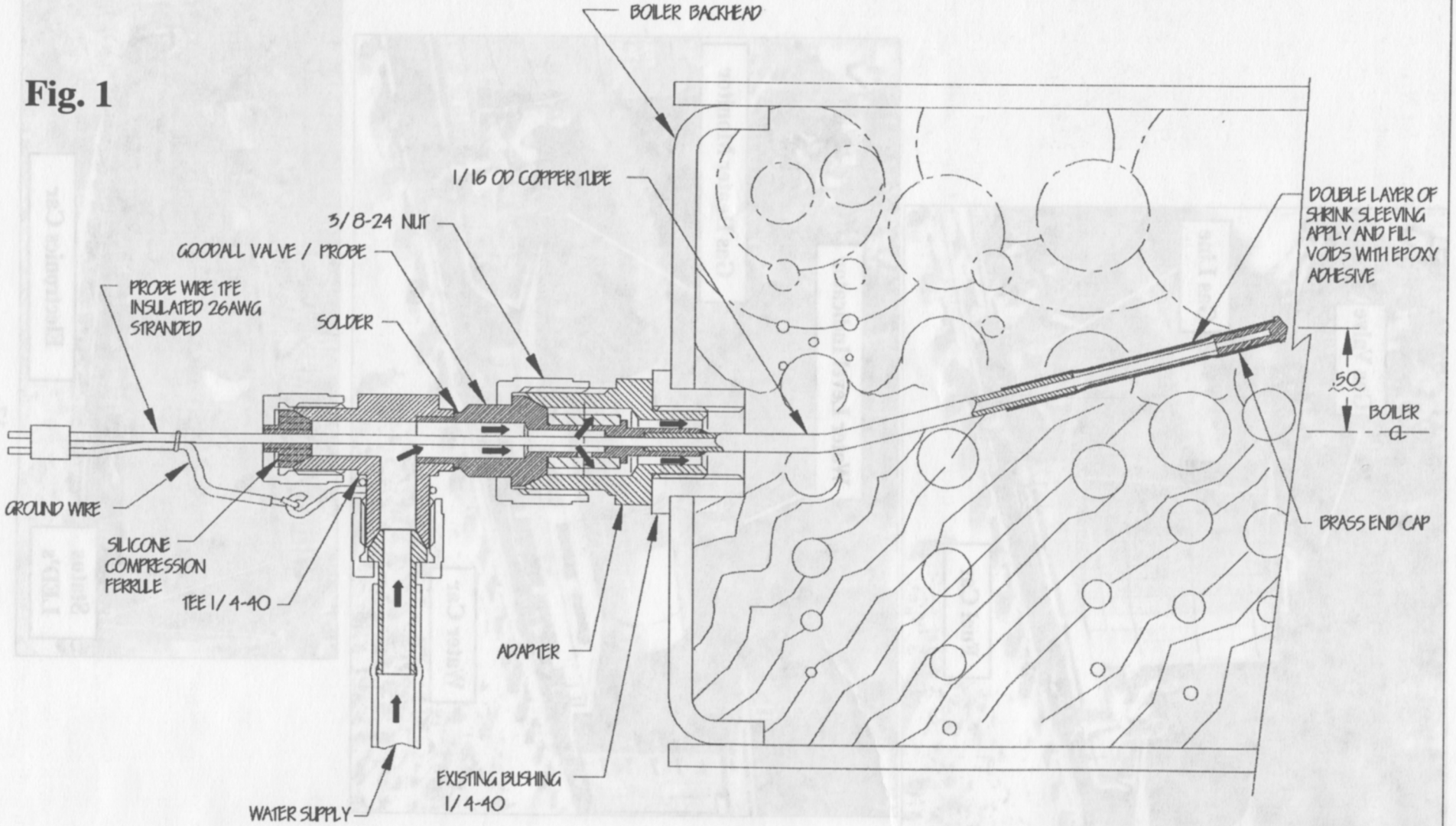
Fig. 1



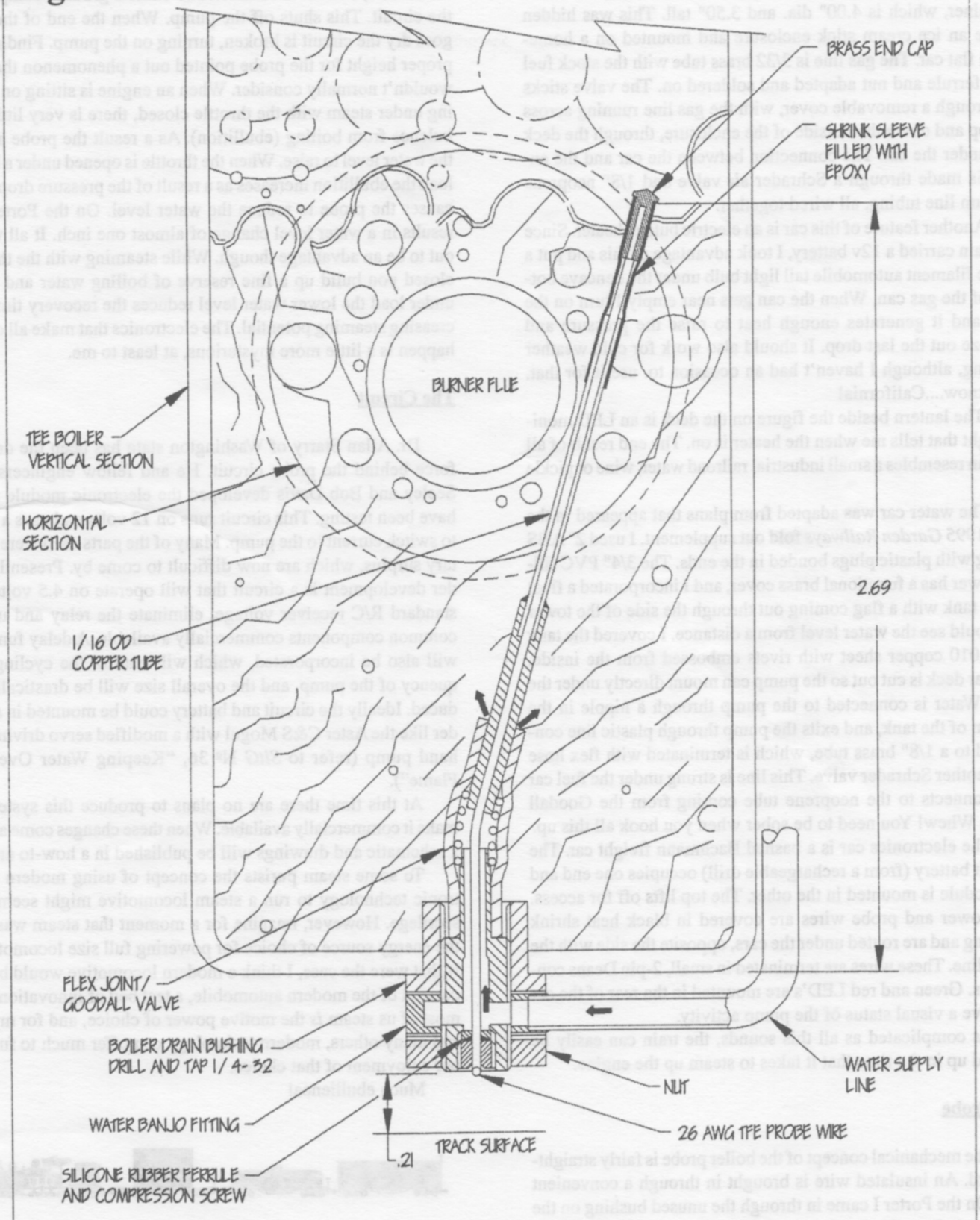
MOD 4

BOILER PROBE & FILL VALVE
S.O.B. ELECTRONIC FEEDWATER SYSTEM
- M. H. PORTER

L. BANGHAM 9-5-97

SCALE: 2/1

Fig. 2



BOILER PROBE & FILL VALVE
S.O.B. ELECTRONIC FEEDWATER SYSTEM
- CATATONK SHAY

PROBE7 L. BANGHAM 12-7-97 SCALE: 2/1

old throw away containers), which is interchangeable with several butane camping gas containers. I used the Primus 7.8 ounce container, which is 4.00" dia. and 3.50" tall. This was hidden inside an ice cream stick enclosure and mounted on a homemade flat car. The gas line is 3/32 brass tube with the stock fuel hose ferrule and nut adapted and soldered on. The valve sticks up through a removable cover, with the gas line running across the top and down the outside of the enclosure, through the deck and under the car. The connection between the car and the engine is made through a Schrader air valve and 1/8" neoprene vacuum line tubing, all wired together.

Another feature of this car is an electric butane heater. Since the train carried a 12v battery, I took advantage of this and put a single filament automobile tail light bulb under the concave bottom of the gas can. When the can gets near empty I turn on the bulb and it generates enough heat to raise the pressure and squeeze out the last drop. It should also work for cold weather running, although I haven't had an occasion to. use it for that. You know....California!

The lantern beside the figure on the deck is an LED monitor light that tells me when the heater is on. The end result of all this fun resembles a small industrial railroad water, wine or pickle car.

The water car was adapted from plans that appeared in the June 1995 *Garden Railways* fold out supplement. I used 2" ABS tubing with plastic plugs bonded in the ends. The 3/4" PVC filling tower has a functional brass cover, and I incorporated a float in the tank with a flag coming out through the side of the tower so I could see the water level from a distance. I covered the tank with .010 copper sheet with rivets embossed from the inside. The car deck is cut out so the pump can mount directly under the tank. Water is connected to the pump through a nipple in the bottom of the tank, and exits the pump through plastic line connected to a 1/8" brass tube, which is terminated with flex hose and another Schrader valve. This line is strung under the fuel car and connects to the neoprene tube coming from the Goodall valve. Whew! You need to be sober when you hook all this up.

The electronics car is a bashed Bachmann freight car. The 12 volt battery (from a rechargeable drill) occupies one end and the module is mounted in the other. The top lifts off for access. The power and probe wires are covered in black heat shrink sleeving and are routed under the cars, opposite the side with the water line. These wires are terminated in small, 2-pin Deans connectors. Green and red LED's are mounted in the rear of the car and give a visual status of the pump activity.

As complicated as all this sounds, the train can easily be hooked up in the time that it takes to steam up the engine.

The Probe

The mechanical concept of the boiler probe is fairly straightforward. An insulated wire is brought in through a convenient port. On the Porter I came in through the unused bushing on the backhead, through a special Goodall valve designed for this purpose (see Fig. 1). On the Shay the wire enters through a Goodall valve installed in the boiler drain (see Fig. 2). The insulated wire is 1/2 of a 2 wire system. The return being the conduit through which it travels, i.e. chassis ground. The end of the wire is exposed and sealed at the proper level in the boiler. When it contacts water, current is conducted to chassis ground, completing the circuit. This shuts off the pump. When the end of the wire goes dry the circuit is broken, turning on the pump. Finding the proper height for the probe pointed out a phenomenon that you wouldn't normally consider. When an engine is sitting on a siding under steam with the throttle closed, there is very little turbulence from boiling (ebullition). As a result the probe allows the water level to raise. When the throttle is opened under a heavy load the ebullition increases as a result of the pressure drop. This causes the probe to reduce the water level. On the Porter this results in a water level change of almost one inch. It all works out to be an advantage though. While steaming with the throttle closed you build up a fine reserve of boiling water and when under load the lower water level reduces the recovery time, increasing steaming potential. The electronics that make all of this happen is a little more mysterious, at least to me.

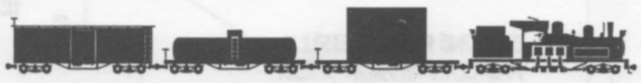
The Circuit

Dr. Allan Starry of Washington state has been the driving force behind the probe circuit. He and fellow engineers Don Seeley and Bob Davis developed the electronic module that I have been testing. This circuit runs on 12 volts and uses a relay to switch current to the pump. Many of the parts used were military surplus, which are now difficult to come by. Presently under development is a circuit that will operate on 4.5 volts, the standard R/C receiver voltage, eliminate the relay and utilize common components commercially available. A delay function will also be incorporated, which will control the cycling frequency of the pump, and the overall size will be drastically reduced. Ideally the circuit and battery could be mounted in a tender like the Aster C&S Mogul with a modified servo driving the hand pump (refer to *SitG* Nº 36, "Keeping Water Over the Flame").

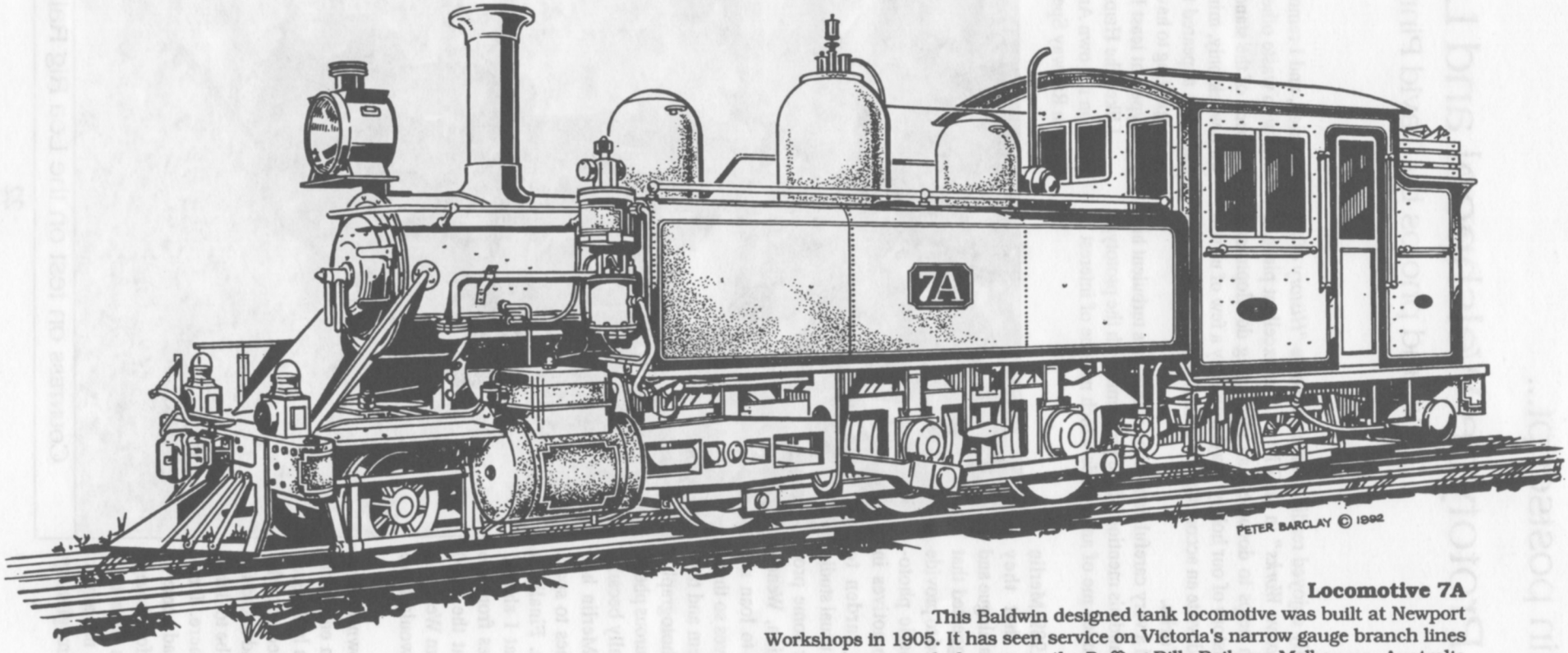
At this time there are no plans to produce this system or make it commercially available. When these changes come about, a schematic and drawings will be published in a how-to article.

To some steam purists the concept of using modern electronic technology to run a steam locomotive might seem like sacrilege. However, imagine for a moment that steam was still the energy source of choice for powering full size locomotives. If that were the case, I think a modern locomotive would be the parallel of the modern automobile, a test bed of innovation. For most of us steam ***is*** the motive power of choice, and for myself and many others, modern technology can offer much to further our enjoyment of that choice.

Much ebullience!



Peter's Page



Locomotive 7A

This Baldwin designed tank locomotive was built at Newport Workshops in 1905. It has seen service on Victoria's narrow gauge branch lines ever since and now regularly runs on the Puffing Billy Railway, Melbourne, Australia

Number 2 of a series

A Merlin postscript...

The Prototype Welshpool and Llanfair COUNTESS

text and photos by David Pinniger

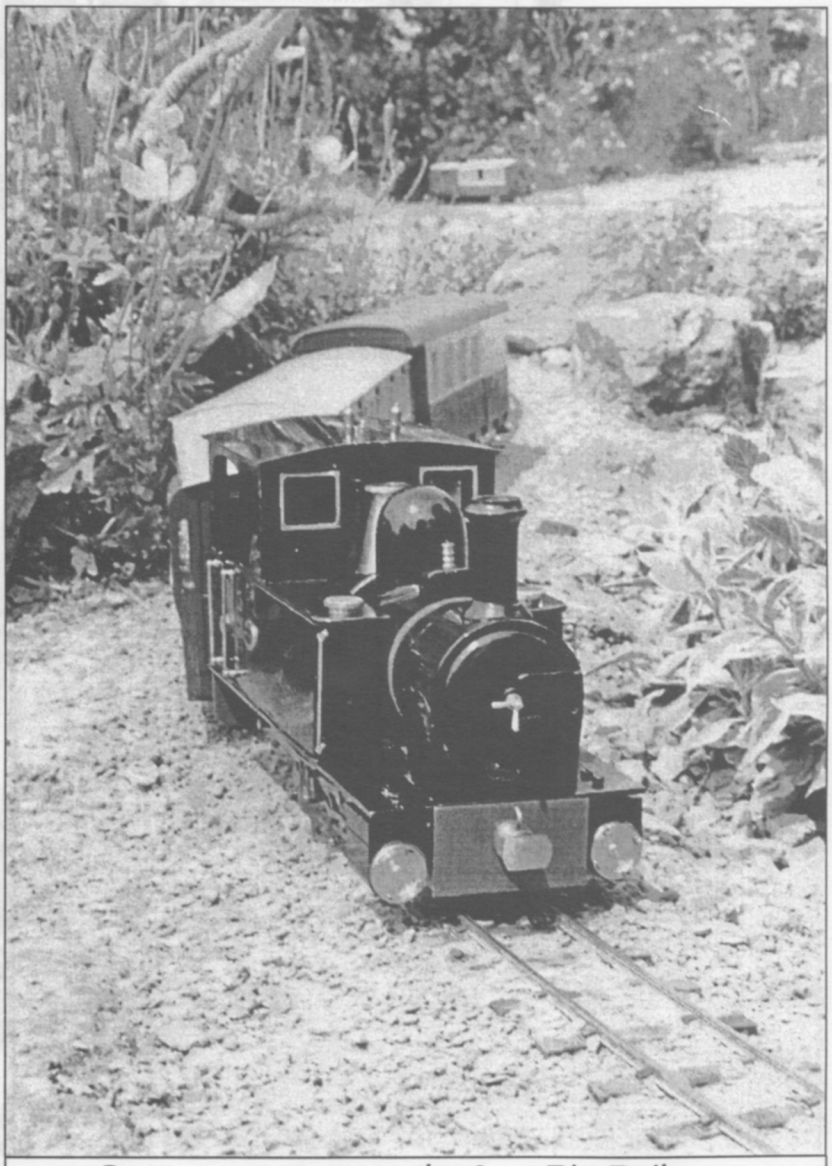
I thoroughly enjoyed reading James Ritson's *"History of the Merlin Locomotive Works"* in *SitG* № 41. An excellent piece of research which helps to document an interesting developmental period in the history of our hobby. Maybe one day a few of us will get together and write an account of the products of the **Archangel Locomotive Works.**

James trod a very careful path in the sometimes turbulent history of Merlin and his mention of the problems with the prototype COUNTESS reminded me of an episode which may be of interest to readers.

Back in 1989 Merlin had decided that they needed a new catalogue and Peter Jones suggested that I should be asked to provide some atmospheric photographs of locomotives in steam in the garden to supplement the usual studio portraits. After some protracted discussion, Wendy Davies agreed to loan me some locomotives so that I could steam them and take the required photographs. After many torturous phone calls, it eventually became apparent that Merlin had very few engines to spare for the project. Finally it was agreed that I should collect examples from the Merlin range at the 1990 Merstham Steam Weekend where Merlin would have a stand.

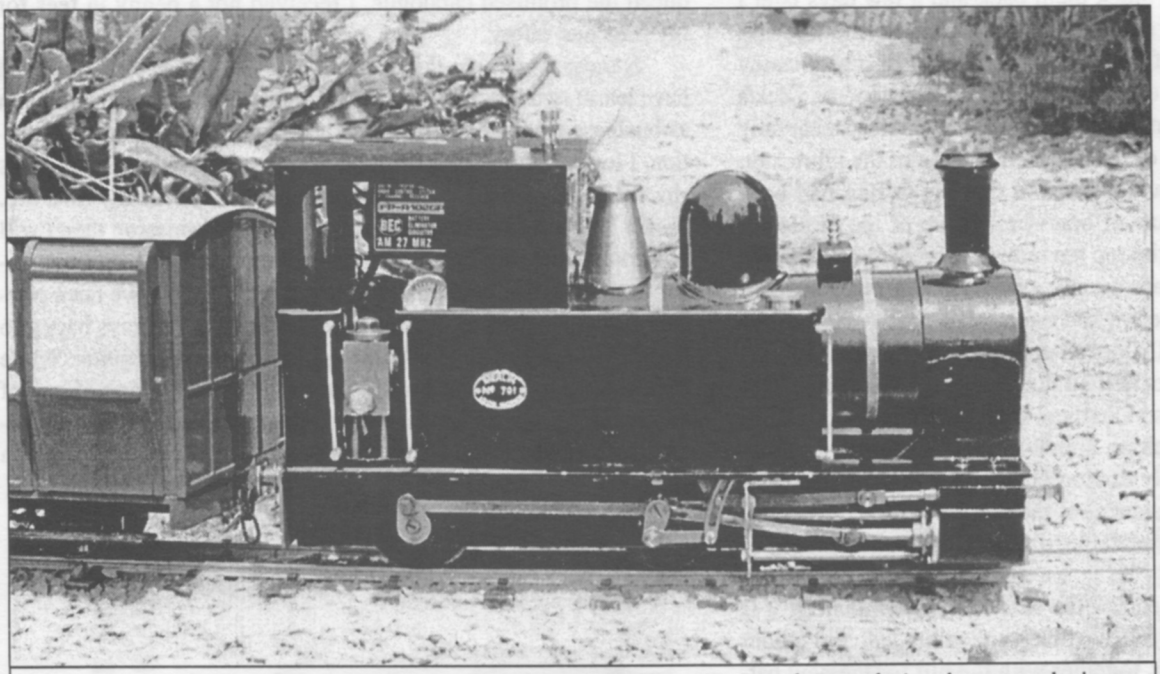
I drove down to Surrey and after an enjoyable couple of hours looking at the show I walked up to the Merlin stand and asked for Wendy, only to be told that she was not there. I explained that I had come to collect engines for photography and was then told that there were not any to spare. You can imagine my reaction, and I remonstrated for a while about inefficient companies who waste other people's time. There was some muttering at the back of the stand and I was told "You can take those two, but for a week only, mind". "Those two" were the rather pretty HEIDI and what appeared to be a sort of Welshpool engine. Although I was expecting to have a MONARCH or a MAYFLOWER rather than two prototypes, at least I had two engines to take away and play with.

I liked the HEIDI, but as it was fixed 45mm gauge I could not run it on my own Ambledown Valley Railway. Mike Adamson of Garden Railway Specialists kindly agreed to let me run the engine on his Michaelmas line and we had a pleasant afternoon, during which I took a lot of colour and black and white photos, one of which was used by James Ritson in his *SitG* article. The only problem was with the radio which turned out to have dead batteries in both the receiver and transmitter. I still have my notebook which says that I had to buy new ones which cost £3.93!



COUNTESS on test on the Lea Rig Railway

I then turned my attention to the COUNTESS, which was painted plain black with no lining or name and number plates, and next to the HEIDI could charitably be described as a "big black lump". I checked the engine over before trying to steam it and was not too surprised to find that all the batteries were dead, so another £3.93 went in the book! More worryingly, I found that the Walschaerts valve gear on the left hand side was loose as a screw had come out and was missing. I found a 10BA screw to fit, but when I reassembled the rods I could see that the left hand side was different from the right hand side and that on both sides the connecting



Prototype Merlin Countess. Note the bent connecting rod, crack in the smokebox and dreadful safety valve cover.

rod had been bent to clear the valve gear and motion bracket. I could also see that there was a crack in the side of the smokebox and that one cab spectacle plate was missing. This did not auger too well for the coming steam test but the next fine day I took the engine out into the garden.

I took a few posed photos before steaming the engine but had great problems getting an interesting picture as it was such an unattractive engine. When I came to put gas in the tank to raise steam I found that the gas valve did not work but I fortunately had a spare in the workshop which fitted. The engine raised steam rather slowly because there was an unpleasant howl from the gas burner when the valve was fully opened. At last steam came from the safety valve and I operated the regulator and reverser to clear the condensate from the cylinders and ran the loco once round the track light engine to warm up. All seemed OK, so I backed the engine onto a short train of Ambledown Valley stock, put the engine in forward gear and opened the regulator. NOTHING MOVED! I tried to back up on the train and the engine lurched backwards and then ground to a halt. Realising something was amiss I shut the regulator and checked the engine only to find the right hand side valve gear dangling on the track.

I turned off the gas and took the engine back to the workshop to find another screw, as the original was on the track somewhere between Bishops Amble and Higher Buxton. I checked all the others for tightness and then tried again. To cut a very long story short, I never did succeed in getting the engine to run more than a circuit before some part of the valve gear came adrift or fell off. Although I did get a few photos, I was so fed up with the engine I gave up running for the day and left it sulking in the workshop.

When I returned to the workshop I found that where there was a crack in the smokebox, the heat had caused a large lump of filler

Prototype Merlin Heidi on the Michaelmas line.

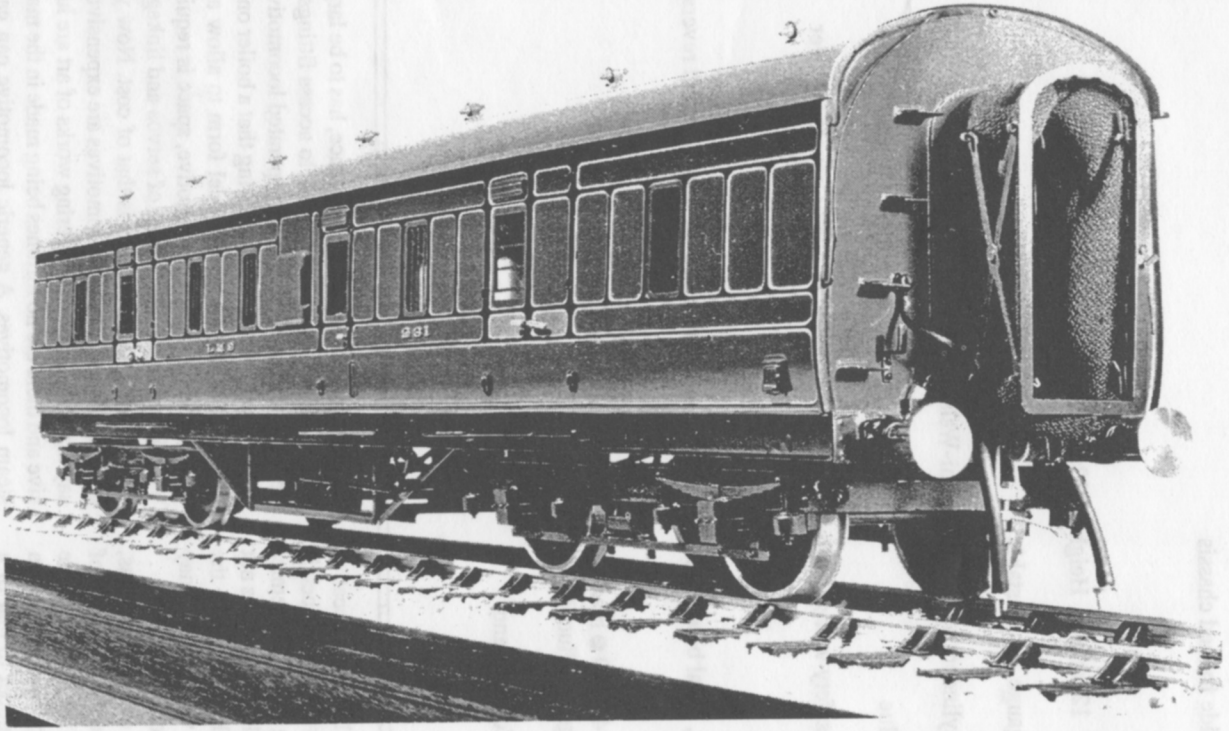
to fall off on each side. I stuck them back and a few days later I thought that I would try again, this time on the scenic Lea Rig Railway built by a good friend, Dick Nutt. It was a lovely sunny day and I thought that the engine would look really good on Dick's very impressive Chelfham viaduct. We started to raise steam only to find steam pouring out of the cab from the top of the lubricator. When I took of the screw cap I found that the O-ring had been chewed to shreds by a burr of brass on the top of the lubricator barrel. I managed to file the top smooth, fit a replacement O-ring from the tool box and steam was then raised OK. However, when we tried to run the engine we had even more problems with the valve gear which eventually locked up solid. I decided that enough was enough and when I got home I rang Merlin to tell them what I thought of the engine. I also told them what I thought about a company that would send such an appalling engine out for a photographic session specifically to promote the loco in their own catalogue. Despite the circumstances of the two "operating" sessions I did manage to get some acceptable, if not brilliant, photographs of both HEIDI and the LUMP.

I wish that were the end of the story, but unfortunately, it is not. I sent Merlin the bill for two black and white and two colour slide films and processing, together with the bill for the new batteries [which I stupidly returned with the engines]. Merlin never paid me the £55 owed for these expenses and, as they never produced the promised catalogue, I received not a penny in fees for my time and effort.

Is there a moral to this story? There are probably many, but I have learnt two lessons. This hobby should be for fun, and as soon as business rears its head you are heading for trouble and frustration. I love taking photos of steam trains and have taken hundreds since the Merlin debacle, but all have been taken for my own use. If ever I am asked again to take photos as a commission then I will make very sure that I have a signed contract before I ever put finger to shutter. The final point? Many of my photos have been published in magazines to illustrate articles and I am always happy to let other people use pictures if the appropriate credit is given. While Merlin were in business I never ever used a photograph of one of their engines, and so by cheating me out of a paltry £55 they denied themselves a lot of free publicity. As we all know, Merlin have now gone out of business. I rest my case.

L. M. S. Period Piece...

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



Built in the 1920's by the London Midland Scottish Ry (LMS) the Corridor Full Brake built to plan D. 1778 was almost a pure extension of Midland Railway coach design and construction practice down to the sumptuous livery of Black, Gold, and Crimson Lake. Some cars entered British Railways ownership in 1947. Our model is available in three paint schemes; LMS Period I (shown), LMS Period II (simplified lining), and B.R. maroon. If you need a parcels or luggage van of distinctive design this Full Brake is for you.

At a glance specification summary:

- **Length over buffers:** 510mm
- **Availability:** April 1997
- **Wheels:** steel insulated finescale
- **Finish:** hand painted and lined
- **Weight:** 1.6 Kg
- **Material:** 95% brass, including roof
- **Price:** £ 660 plus shipping

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Loco Review –

Roundhouse Engineering's K-K-K-K-Katie

by Tag Gorton

Technical Specifications

Description:	Generic 0-4-0 with an outside framed chassis
Scale:	1:19
Dimensions:	Length: 290mm ● Width: 124mm ● Height: 153mm ● Weight: 3Kg
Gauge:	32mm/45mm (gauge 0 or gauge 1) adjustable
Cylinders:	Double acting slide valve cylinders operated by semi-Walschaerts valve gear
Boiler:	Internally gas fired single flue
Fittings:	Regulator, pressure gauge, safety valve, displacement lubricator, gas regulator, reversing lever
Lubricator:	Displacement type
Options:	Available in green, maroon, royal blue or black ● manual or radio control of regulator and reverser ● insulated wheels available
Price:	R/C w/insulated wheels, $1444.00 ● manual, $1094.00 ● all prices plus shipping and subject to currency exchange rate fluctuations
Built by:	Roundhouse Engineering Co., England
Available from:	Any Roundhouse dealer

Well yes, I know it is a pretty obvious title, but this evocative name does rather hark back to a gentler Edwardian era, and as such is highly suitable for the latest four coupled offering from the premier Roundhouse stable. Katie, as the Roundhouse catalogue states, is not a model of any particular locomotive and, as such, may not be the first choice for the prospective engineer or driver, whose sights may be set on a highly detailed model of a favourite prototype.

While I am very fond of my detailed model of The Countess, whose prototype still stalks the pastoral farmland and rolling hills of the Welsh borders, I can tell you now that most of my engines come under the heading of 'generic' when it comes to prototype. Why then do I generally prefer and recommend a generic model to that of a particular prototype when considering a first locomotive purchase?

Runnability

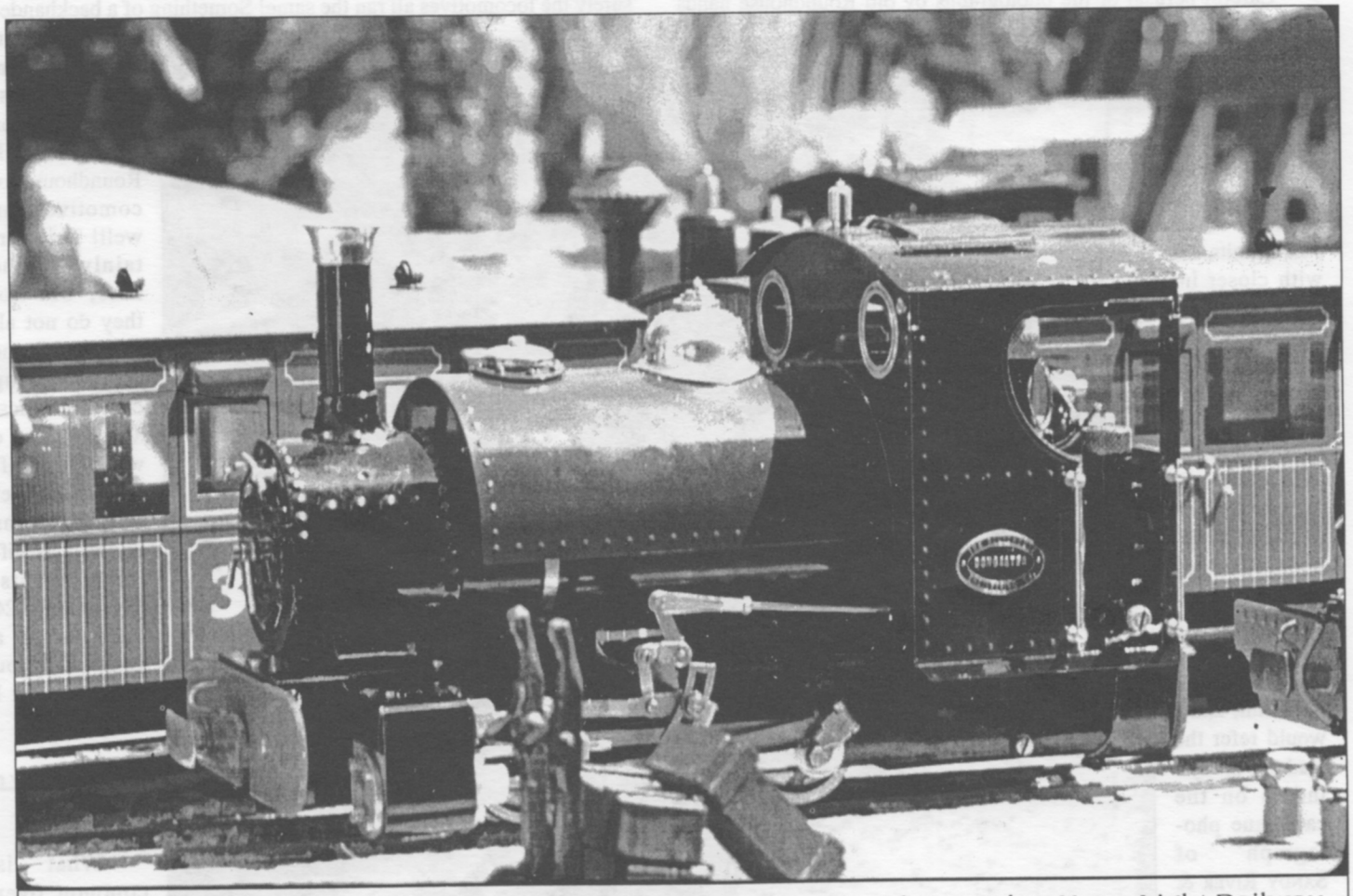
There are several reasons, and the first of these may be termed 'runnability' If one is modeling a particular prototype, then a compromise between ergonomic usability and fidelity to the prototype has to be made. Our cab, for instance, has to be large enough to allow twelve inches to the foot fingers to access fittings such as lubricator and, in the case of a manually operated locomotive, the regulator or the reverser. It's worth considering that a boiler on a particular prototype may be too small in model form to allow a decent reserve of water, while on an R/C locomotive, space is required for stowage of batteries together with fitting of servos and linkages.

Another cogent reason is that of cost. Now you may very well consider that these little locomotives are expensive anyway. I have to say that these small engineering works of art are highly labour intensive and there are no fortunes being made in the manufacture of small steam locomotives. A generic locomotive can easily use parts and designs that a builder already has in place for use with other models with a consequent saving both on costs for the manufacturer and eventual purchase price for the customer. This actually is a very prototypical way of manufacturing locomotives. I am no sort of expert on American builders of twelve inches to the foot steam motive power, but the Great Western Railway used exactly this practice.

Counting Rivets

Another advantage is that no rivet counting nerd can say that a particular engine did not have *quite* that design of smoke stack, or say perhaps that the livery is a touch wrong for a particular period. My Longlands & Western Railway I regard as the real thing and, like the real thing, I purchase or build my motive power as company finances or engineering resources allow.

No - while a scale model of a particular prototype is very nice, the most important thing for a model narrow gauge live steam locomotive to do is to run well while looking 'right'. KATIE captures the atmosphere of the Welsh narrow gauge very successfully by picking up on design features used by several famous builders, and I am delighted with her.



Katie poses in the busy station environs of Radford Dip on the Plymstock & Hooe Light Railway. Signs of close investigation by the serried ranks of garden railfairers attending this meeting mar the previously pristine paintwork on the saddle tank. An oily rag would have removed these finger marks had they been noted.

Photo by Tag Gorton

Ffestiniog Railway

So let's have a look at the latest Roundhouse model. KATIE is a four-coupled saddle tank that, with her nicely rounded buffer beams and polished brightwork, looks as if it really should be running on the Ffestiniog Railway. The smoke box and body shell have their fair share of rivets to count, together with a satisfactory level of brass castings and fittings, while the outside framed chassis includes representations of springing. As I understood it from the catalogue, KATIE originally had a plain stovepipe chimney, but no doubt Roundhouse know their market best, and the stack on the test model is topped now by the standard Roundhouse brass turning for proud new owners to polish.

The open backed cab has an opening roof, and it is interesting to notice how Roundhouse subtly continue to improve and refine their locomotives. When I tested the 'new style' LADY ANNE a couple of years ago, the battery housing on the roof pressing was effective but not ideal, and sometimes a little jiggling was required to seat the roof effectively. The more modern design of housing on this and other locomotives in the range is neater, and the roof falls naturally into place while the weight of the batteries prevents 'bouncing' on rougher backwoods trackage. Only a little thing, I know, and there are no radical new directions, but these small refinements are all part of a continuing and careful drive for improvement on the part of the Doncaster-based company.

Steam to the Cylinders

I did notice a change in the arrangements for getting the steam from the regulator to the cylinders however. Since time immemorial (or at least the last few years) the steam pipe has been taken through

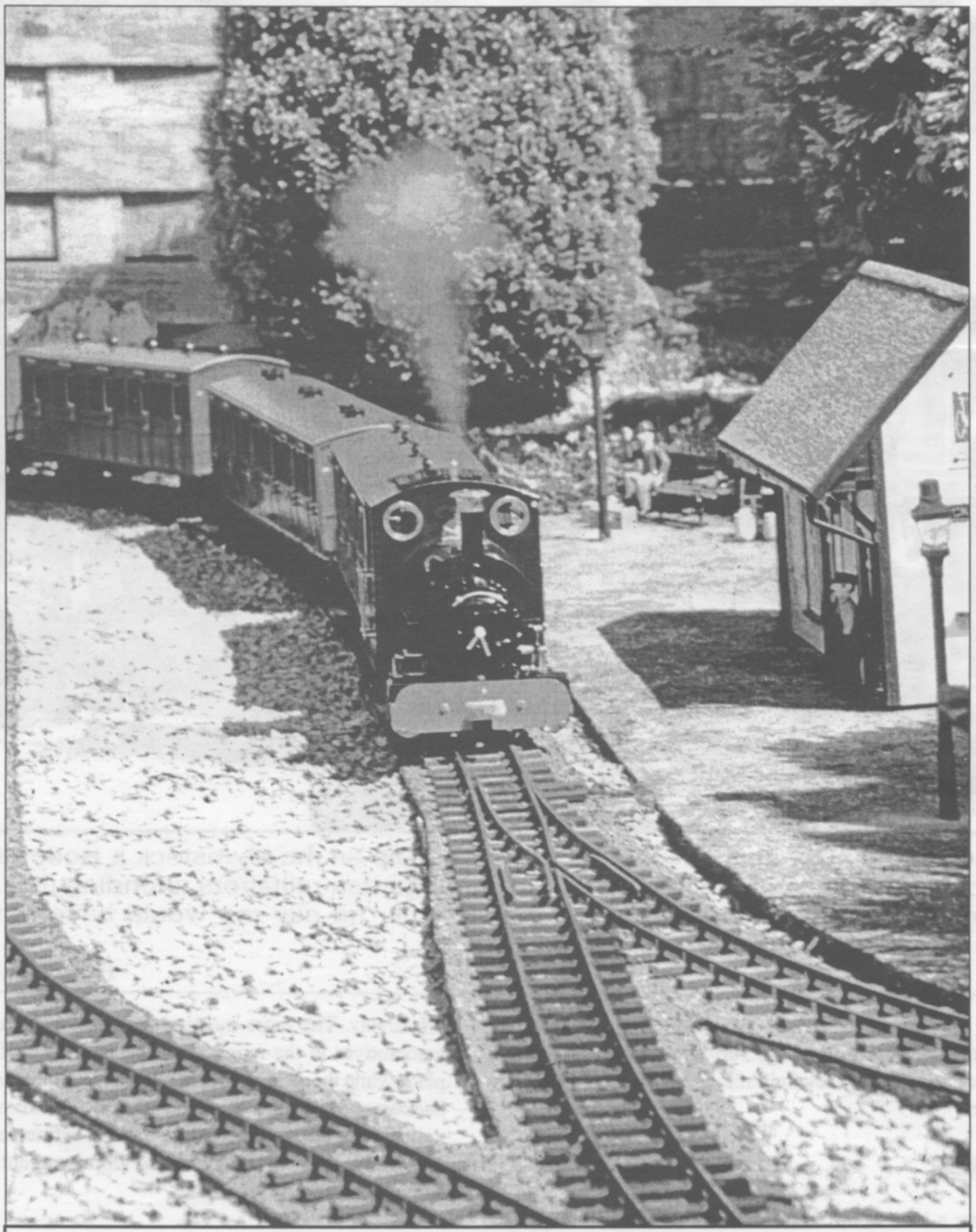
the fire tube on small gas fired engines, which method, like the prototype, provides a certain amount of superheating. On this locomotive, and I suspect others using the same boiler, the pipe is taken through the boiler. Now this may mean the steam is slightly wetter than in days of yore, and I suspect that this arrangement has been taken up because of ease of production, but I could see no discernible difference in steam production or power when compared to an earlier 0-4-0. Indeed the highly efficient Roundhouse burners mean that the gas has to be turned down until it can no longer be heard at all - at least not by my ears!

Careful perusal of the photographs by old Roundhouse hands will reflect an apparent alteration to the valve chest/cylinder assembly. A quick glance and they almost looked like Pearse units, but with closer investigation, they proved to be standard Roundhouse assemblies with sheet brass cladding. It is worth noting that the look of other Roundhouse locomotives can be altered by adding cladding or castings to the standard unit, and I would refer the reader to the cylinders on the catalogue photograph of SANDY RIVER & RANGELY LAKES #24.

Ease of Use

The cab on this model is fairly full, particularly if radio control is required, and there is little room on board for a locomotive driver, particularly as Roundhouse, with their emphasis on ease-of-use, put their lubricators in the cab doorway on smaller locomotives. To an extent this crowding cannot be helped, and it has to be said that the commoner Brit side tank model hides a multitude of sins. Nevertheless, many people consider a driver figure to be an essential item of equipment and I am sure that many owners will find a way to fit one! Certainly I have ideas of my own for alterations and additions to this attractive locomotive and will look at these below.

When, at my regular monthly meeting here in the West Country, I said I would be getting my hands on the latest Roundhouse 0-4-0, someone suggested that a review was not really necessary because surely the locomotives all ran the same! Something of a backhanded complement, but compliment it was, because the implication was that all Roundhouse locomotives run well! This certainly is the case, but no, they do not all have exactly the same running characteristics. Variable weights and different wheel configurations will produce different results. Try running #24 followed by a BILLY and you will see what I mean.



Long rakes of heavy wooden bogie stock on the lengthy Tamarside Railway make this line a must when testing locomotives, and here Katie steams into Latchley with steam to spare after the long haul from Luckett.
Photo by Tag Gorton

Responsive Regulation

What is common over the range is reliable running together with responsive speed regulation and KATIE is no exception in this department. Anyone who has driven a Roundhouse locomotive will feel comfortably at home with both servicing and control of KATIE, and I therefore do not here intend to go

through the running routine of this well known range of locomotives. The only thing that I did notice with this engine, together with a recent example of a BILLY that is owned locally, was that the running times are not as extended as those of earlier models. This is no doubt due to the different design of gas tank, but I suspect that running times will extend as the engine settles in to its new home. Certainly George Mckie's LADY ANNE variant has the same design of gas tank and runs for ten minutes longer.

So what can I say about this new saddle tank from the 'old firm' at Doncaster? Well, if you are in the market for a well engineered four coupled saddletank of attractive appearance with proven running qualities, then this little engine *has* to be the leading contender. Like its stablemates, this engine, properly serviced, will provide years of trouble-free and pleasurable running, and suitably polished, will also be a source of satisfaction on display between running sessions.

Alterations & Additions

Now this is my favourite part! I am lucky enough to get quite a few locomotives to test, and the only problem with this is that, often, I am itching to alter and otherwise personalise a borrowed locomotive. Should I be lucky enough to acquire one of these engines, then there would be several experiments that I would undertake. For a start I would like to have a go at re-siting the lubricator behind the sidesheet, draining below the cab floor, and moving one of the servos also below the cab floor to provide more room in the cab.

Please do not take these comments as an implied criticism of Roundhouse Engineering. My requirements as an individual modeler are rather different to the aims of a company whose perceived intention is to provide attractive and reliable steam power that can be used comfortably by someone who may well be more used to running an HO scale layout than driving a live steam locomotive. A very large percentage of Roundhouse locomotives get altered by experienced owners who wish to base their ideas around a proven product - and I know Roundhouse are happy with this. Indeed, the company actually provide a prize at the l6mm AGM, for the best locomotive based on Roundhouse technology.

A Few Suggestions

I should however like to make a couple of suggestions that the newcomer to live steam could do to their new KATIE without risk to his (or her) pride and joy. First of all, Brandbright Ltd. provide a nice little replacement drain plug for your lubricator. This is a banjo type arrangement which means you don't have to fully remove the plug to drain the lubricator after a run, and therefore stand little chance of dropping the thing - and having to order a replacement when you can't find it in the undergrowth!

Secondly, Roundhouse Engineering Co. can supply droplink, crosshead and combination lever sets that can replace the simple crosshead on the KATIE. No, they will not do it for you - you will have to fit your own if you want them. It is, however, a simple job involving the removal and replacement of two crankpins on each side to fit the cosmetic valve gear.

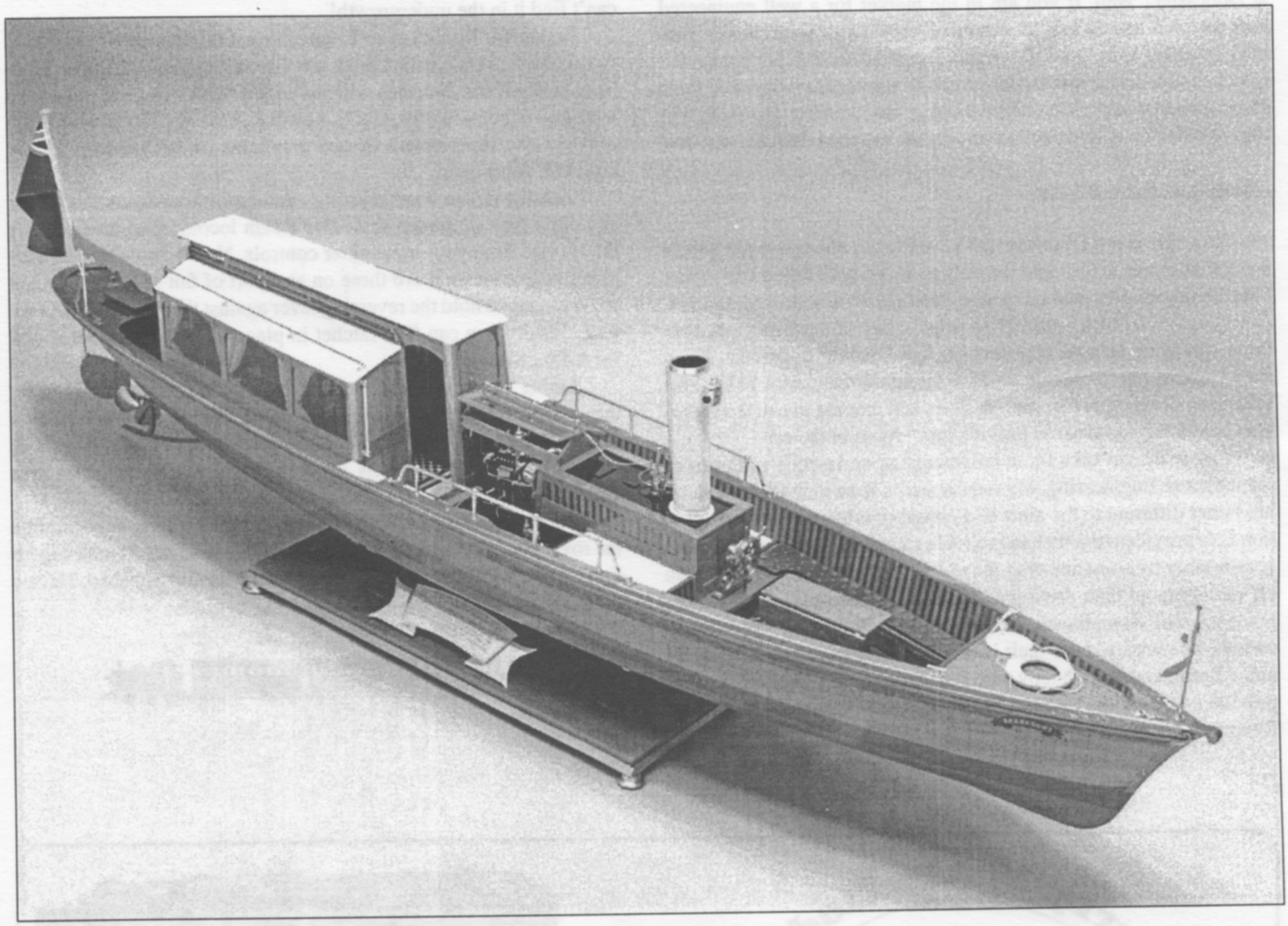
Thirdly, if you want relaxing running of your Roundhouse (or any other type of garden scale live steam locomotive) then remove the springs from your transmitter controls. Now I know that all suppliers of live steam leave these on as a sort of fail-safe but I cannot stand having to hold the reversing lever against the spring whilst running. Ideally you can fit a ratchet in place of the spring, but it will work fine without.

Lining of locomotives can either be done professionally or by using Trimline tape from your local model shop, and I would here refer to an earlier article *(The Artful Bodger No. 6, Alterations & Additions)* for further details about personalising your locomotive without damage.

Choice of colour scheme is a very personal thing, but I *did* like the royal blue of the test locomotive and I think it would look superb lined out in yellow with all the brightwork freshly polished. Have a think about that!

Steam on the Pond.....

We invite you to send your favorite photos for this feature. PLEASE label each photo with vital information like photographer, subject, where, when and why. Stick-on mailing labels work great for this. Don't try to write directly on the back of the photo...it embosses the front and ruins the photo. Send your photos to SitG, PO Box 335, Newark Valley NY 13811. Please include a SASE with sufficient postage if you'd like your photos returned.



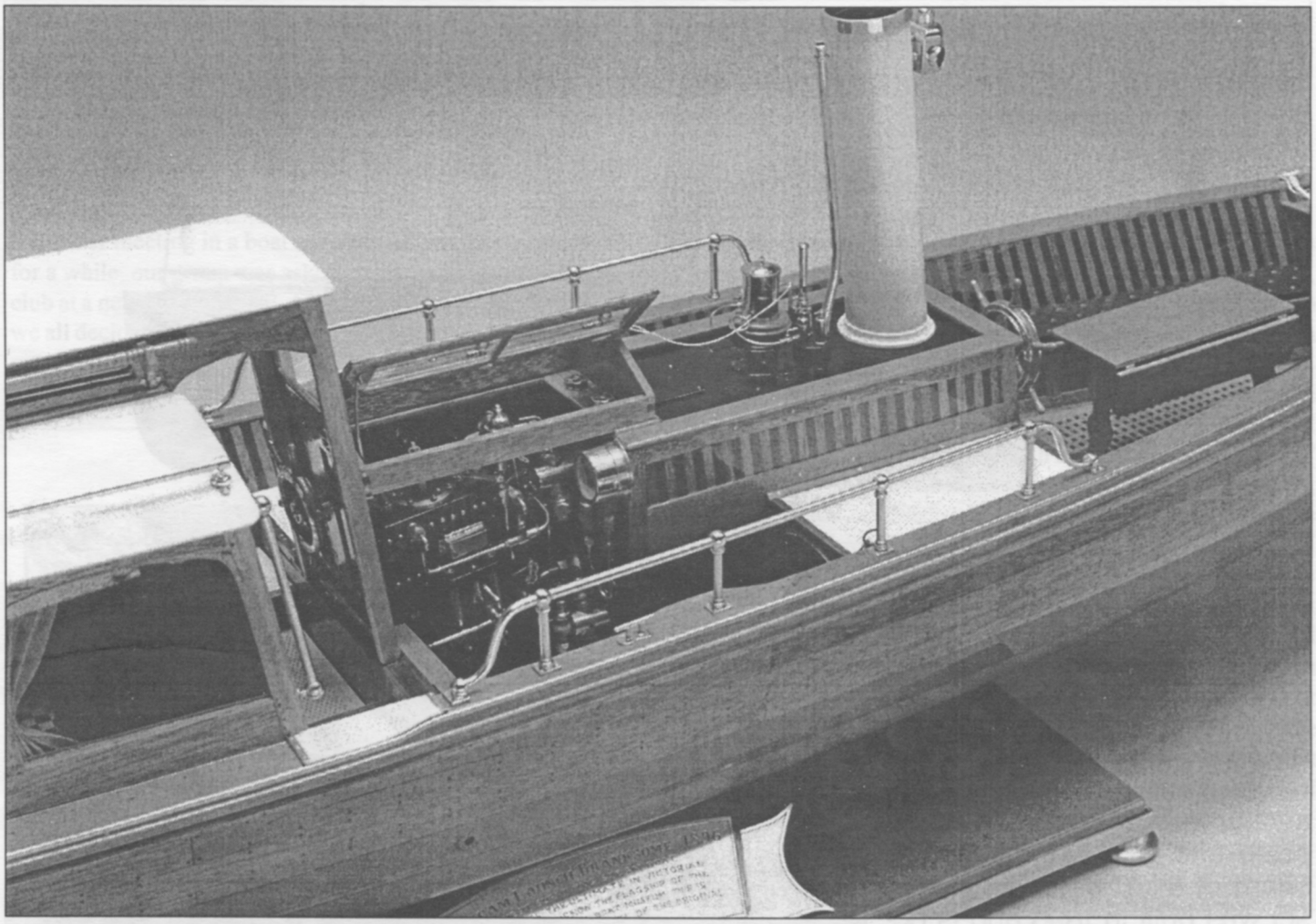
In this month's *Steam on the Pond* we are featuring some of the amazing models by K. N. Townsend of Cumbria, England. Mr. Townsend specializes in Victorian and Edwardian era precision working steam replicas, which are all hand built to museum quality in very small quantities. Even the fasteners are hand-built replicas of the original. The Windermere steam kettle, whistle, locker catches, door latches all work. Lucky is the man (or woman) who owns a steamboat model by K. N. Townsend!

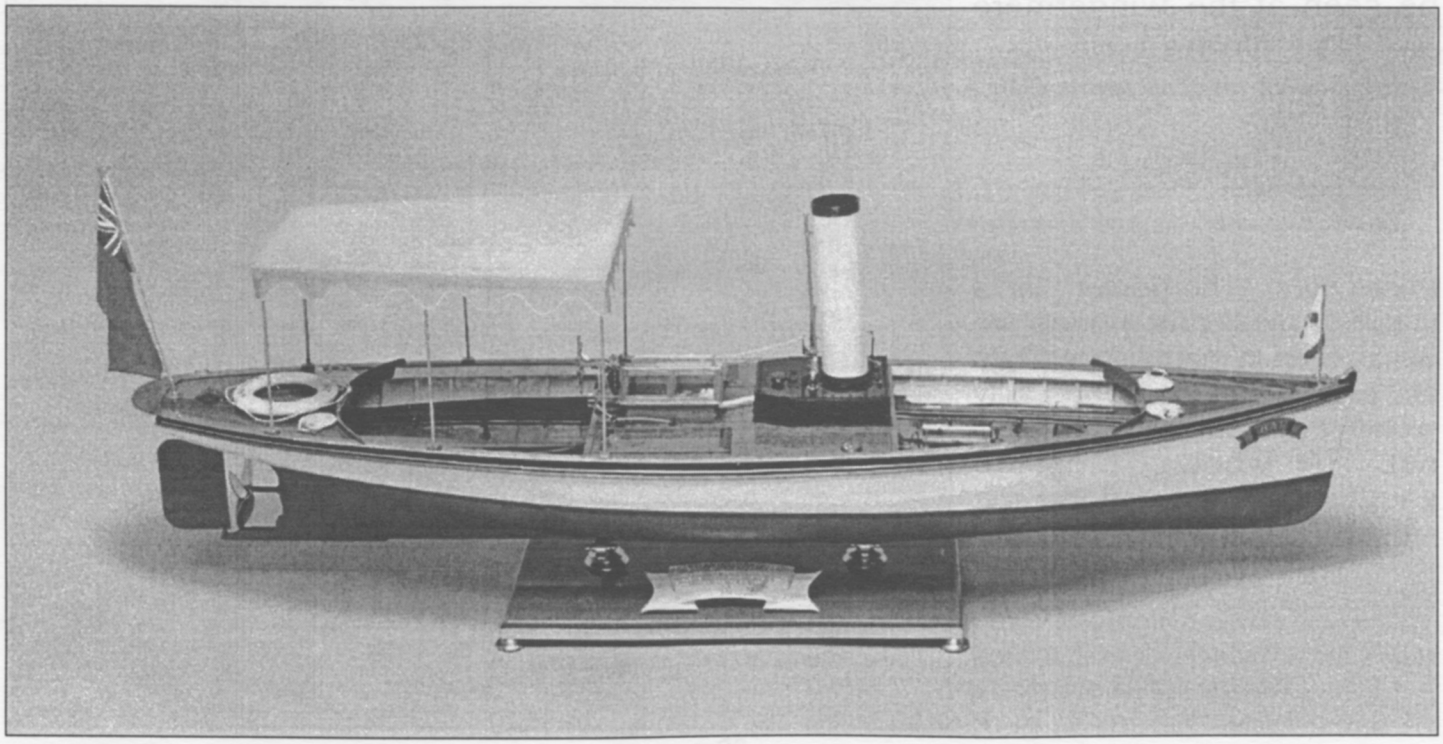
The boat shown above is a 50-1/4", 1:12 scale model of the S. L. Branksome.

Opposite page, top: A closeup view of the S. L. Osprey, 1:12 scale, 45" long.

Opposite page, bottom: Steam Launch Bat, 1/8 scale, 40-1/2" long. A closeup, color photo of Bat can be seen on the rear cover of this issue.

All photos on these 3 pages are by K. N. Townsend, and we are grateful to Allan Caperton for sharing them with us.





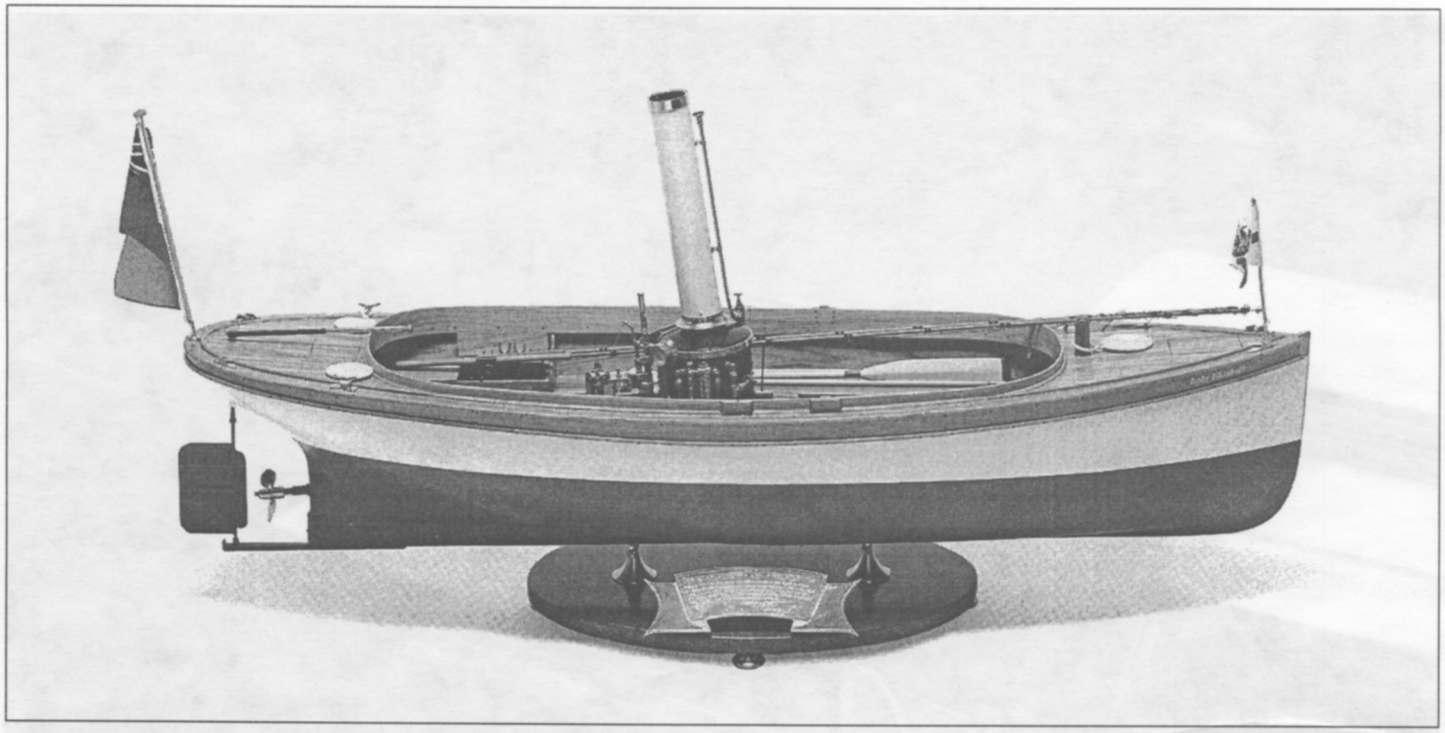


Photo top: Steam Launch Lady Elizabeth, the world's smallest working true marine replica available commercially at 1/8 scale and 27-1/2" long, with a beam of 8". The full sized vessel was built in 1895 and is believed to be of American origin, though she has spent her life on Lake Windermere and can now be seen at the Windermere Steamboat Museum.

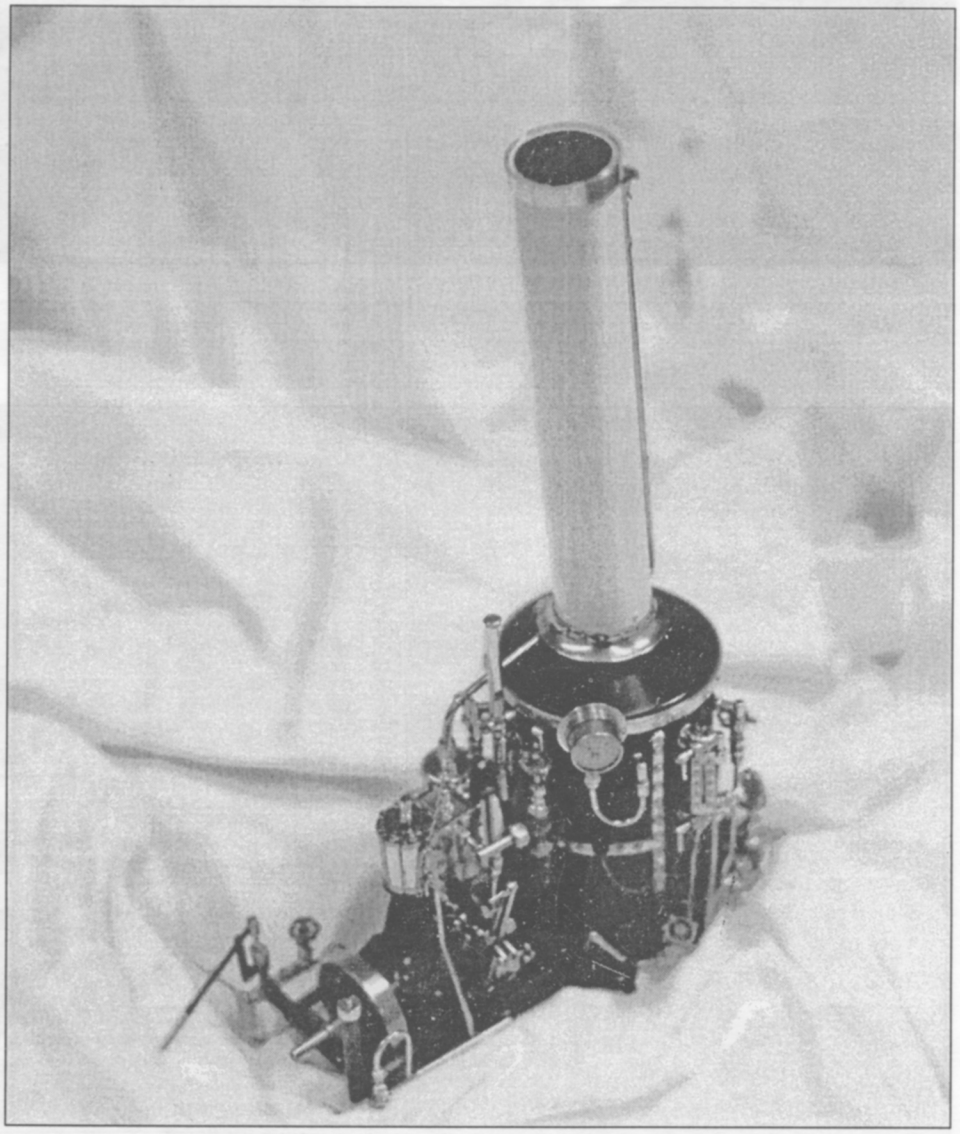


Photo right: The power plants in K. N. Townsend's models are works of art in themselves. They are entirely handbuilt and fully working miniatures of the original. The working pressure gauges must be among the smallest in the world!

South Orange Seaport Society

by Charlie Roth

On clubs and boiler building

After meeting in a boat and railroad modeler's basement for a while, our group was asked about forming a model boat club at a nearby town pond. After a short meeting one evening we all decided it would be a good thing for us to do. We would get full use of the pond, a meeting room, a work space if we needed it, and too many other fringe benefits to mention. The **South Orange Seaport Society** came into being. That was just over ten years ago, and things just keep getting better.

As their first commodore and steamboat modeler, when we started to plan club events for the first year I insisted on a "steamboats only" event. I was aware of the inherent problems of holding an event for steam powered boats. (Electrics are just hit the switch and go.) In 1999 we will be having our 10th annual "steamboats only" meet and we invite all to attend. Spectators, unfinished boats, and static engine displays are welcome.

Since we have no "track" problems we have exhibited in town ponds, swimming pools, and portable water tanks in NJ, NY, and PA. Many of the exhibits are in conjunction with maritime events, 4-H type gatherings, or town celebrations. All of these events expose the public to model boating and help attract new members. At this time more than half of our 33 members are steamboaters.

With the introduction of the Graham Industries TVR 1A engine kit, one of the major hurdles for boating ("Where can I get a reasonably priced steam engine?") was overcome. The next part was a little tougher....."Where can I get a reasonably priced boiler?"

I have built many marine boilers, so I made the newcomers an offer they couldn't refuse. They could build a vertical or horizontal boiler for minimal cost under the following conditions:

A. I would help them get salvaged new materials for the main drum and ends...all copper.

B. They would do all the cutting, drilling, and fitting of all parts.

C. They would provide commercially available bushings for all their needs.

D. All boilers must have a safety valve.

E. All boilers will be silver soldered with 45% silver solder.

F. I would do all the silver soldering and test the boilers in their presence.

G. These boilers were to be for their own use and were not to show up on a swap table just after completion.

The last condition was because I didn't want to be in the business of building boilers for someone else to make a profit.

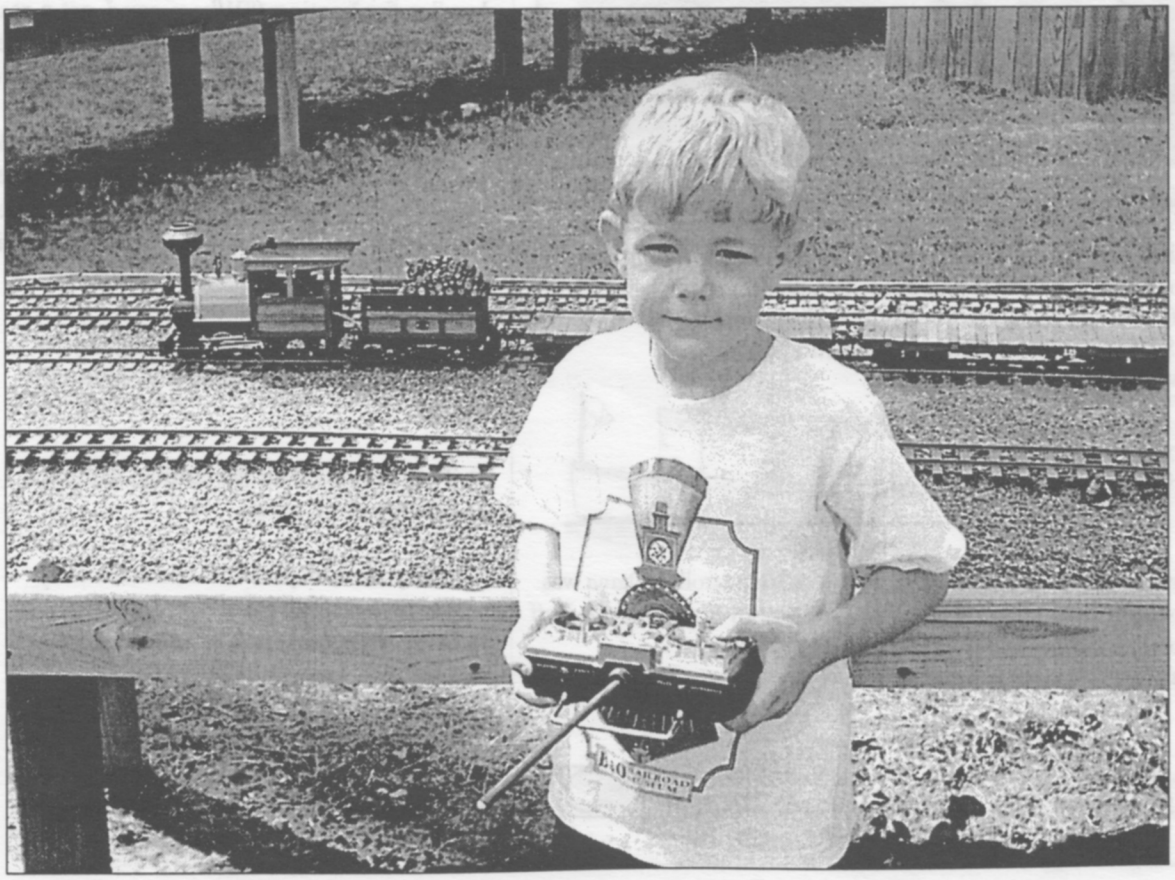
The first classes, held after our regular business meetings, were to discuss the calculations of boiler drum strength and safety factors. How big the boiler has to be for the desired running time. How much heating surface is required. How much fuel has to be burned to generate the required steam.

Since these are all similar custom designed boilers (mainly vertical fire), the students moved up to tube sheet layout and they supplied the fire tube material. At this time one student has machined his tube sheet and is very proud to show others how it is done. It must be mentioned that none of these boilermakers have a machine shop or any tools more sophisticated than a hand-held electric drill.

Due to the difficulty of making round holes in thin copper I advised the students to pool their resources and buy a "unibit" type drill - well worth the investment in time, effort, and safety. Their current assignment is to do a layout for all the fittings on their boiler.

These grown men are like a bunch of kids bringing something for Show & Tell - it makes it all worthwhile for me.

An update will follow.....



It was a beautiful autumn day, just perfect for the Sam Murphy Memorial Steamup, and Merrell Amos-Watts, an aspiring young engineer from Virginia, took the controls of GWENDOLYN, our Maxwell Hemmens Porter. He did a fine job, a bit surprising to me because it was his first attempt at operating a live steamer. Merrel is welcome to take the controls of our locomotives any time!

photo by Ron Brown

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Peggy

The Peggy is of a typical Herring Drifter built at the turn of the century. Over 450 metal fittings, detailed GRP hull and superstructure. Deck and cabin are pre-printed ply, main deck and other structures are die cut ply. Full size drawings and instruction manual complete this fine kit. Superstructure in fully removable to make steam plant installation a pleasant experience.
Scale 1:24, L 48", B91/2"
PEGGY KIT $365.00

Ship & Steam Engine Combo $930.00

Alte Liebe

The German tug boat "Alte Liebe" can now be launched again in 1:25 scale using the Puffin steam plant. Over 450 metal fittings, laser cut superstructure and deck, detailed GRP hull, full size plans and instruction manual included. L 40", B 10¼" Price $385.00

Milford Star

This small attractive side trawler, typical of the thirties and forties offers hours of enjoyment as a highly detailed static display or a functional steam powered marval. Fiberglass hull construction. Scale: 1:48, L 36¾", B 6½"
MILFORD STAR KIT $285.00

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Compact and powerful! A must for the engine room of the "Milford Star", "Isis" or "Joffre".
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This Pelican boiler as well as all other Cheddar model boilers are contructed totally of copper and silver soldered. They have been pressure tested and come with certificate. The Pelican features Vee Twin oscillating cylinders. A touch of elegance from a by-gone age.
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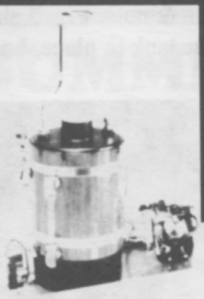
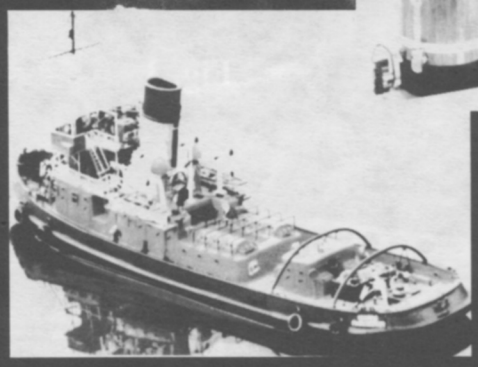
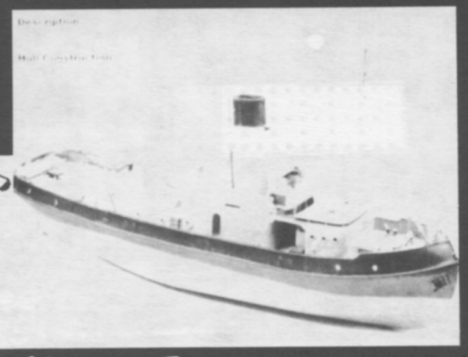


PUFFIN HORIZONTAL /VERTICAL

A comparable plant to the Pelican but in an in-line twin format. Great for open launches as well as enclosed environments.
Puffin Deluxe Vertical OR Horizontal Machined Kit Only $642.00





IMARA

A twin screw harbour berthing tug. It is impossible to describe in every feature detail in a model featuring over 1,400 parts. All there is to say is that this kit is the modeling enthusiasts most detailed scale model ship ever offered.
Scale: 1:32, L 43¾", B 11½"
IMARA KIT $515.00

PEGASUS VEE 4 DELUXE

A superbly balanced powerful Vee 4 with a 3 drum water tube boiler and piezo ignition. This engine is capable of handling the most demanding of situations.
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Marie Felling

This superbly detailed crown colony harbour tug is sure to be an eye-catcher at the pond. Single or twin screw available. Fiberglass hull construction is idealy suited for a number of Cheddar steam plants. Scale: 1:32, L 43½", B 11½".
MARIE FELLING KIT $515.00

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Imara or Marie Felling Single Screw - $515	Pelican $642	$1,041	Alte Liebe - $385	Puffin #2 - $650	$930
	Puffin $642	$1,041	Joffre - $269	Pintail Horizontal - $486	$679
	Pegasus Vee-4 $1,299	$1,632	Peggy - $365	Puffin #2 - $650	$915

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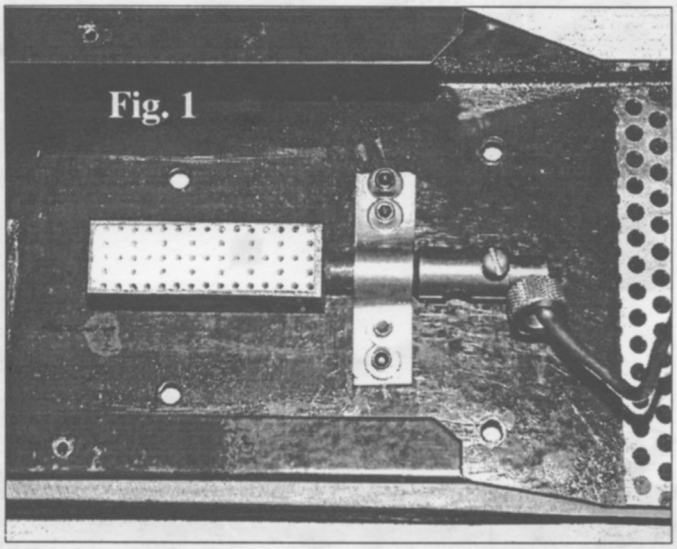
Modifying the Steamco Linda-Marie

photos and article by Ron Brown

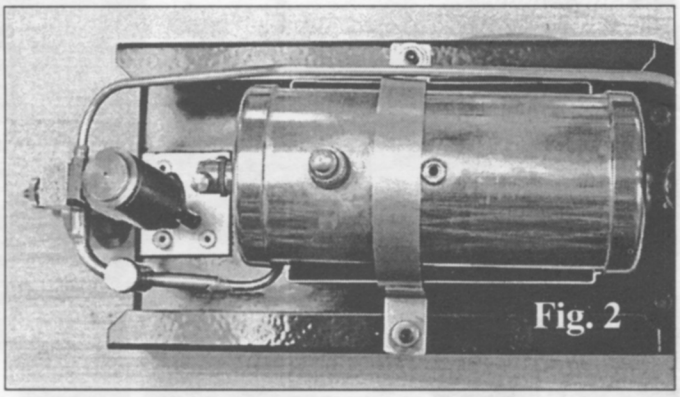
Making a good steamboat even better

In the last issue *(SitG Nº 47 - Sept/Oct 1998)* we reviewed the Steamco LINDA-MARIE, a nice little steamboat from Australia. LINDA-MARIE showed great potential, but was hampered somewhat by a necessity to conform to strict rules and regulations required for entry into the toy market. The features that make it acceptable to the toy market make it too toylike for most steamboat hobbyists, and we set out to find what it would take to bring the L-M from toy to model steamboat. In this article I will point out what I found lacking or unacceptable, and what was done to correct those shortcomings. Remember that there's more than one way to skin a cat, and what you read here reflects my personal preferences and my approach to problem solving.

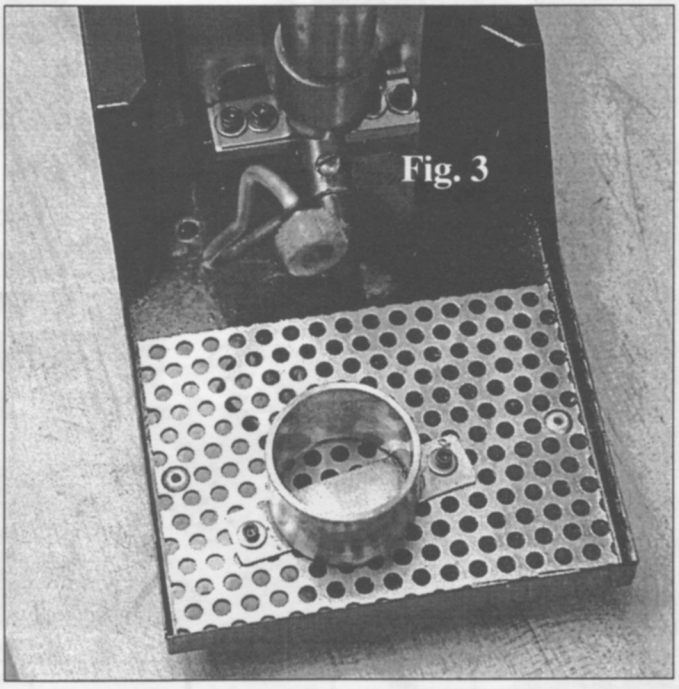
1. The pellet burner had to go! As luck would have it, the Cheddar Models Mamod burner required very little modification to serve as an excellent replacement for the pellet burner tray. **Fig. 1** shows the clamp I made to hold the burner in place under the boiler. If I was going to modify a second L-M, I would forget the clamp, silver solder a flat piece of brass to the bottom of the burner and hold the burner to the base with 2 screws.



2. The holddown system used for the boiler & firebox was a real pain in the neck. I scrapped the original and made my own strap, which fastens to the side of the mounting tray with 4-40 screws. The mounting tray is heavy enough so that it could be drilled and tapped, eliminating the need for standing on my head to install nuts under the lip. See **Fig.2.**



3. Having installed the burner and remounted the boiler, all that remained to do was provide a mounting for the fuel tank. First I tried holding it in place with a nylon cable tie, but that wasn't satisfactory. So I cut a piece of brass tubing with a slightly larger i.d. than the fuel tank o.d. and soldered a brass strap to the base of it. The strap was bolted to the platform with 2-56 screws, washers & nuts. **Fig. 3** shows the mount, and **Fig. 4** shows the tank in place, hooked up and ready to go.



4. It wasn't much fun just letting the boat run free...not to mention the problems involved in getting it back to shore at the end of a run. The hull designers were kind enough to provide a built-in servo mount, so fitting R/C

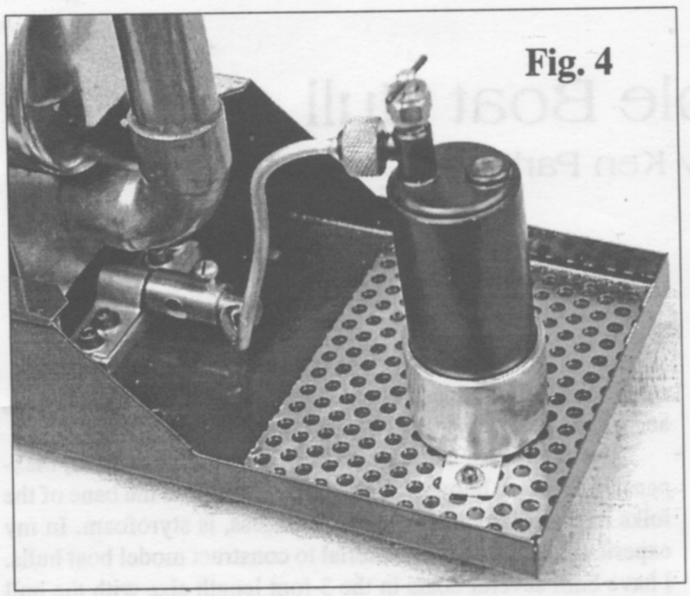


Fig. 4

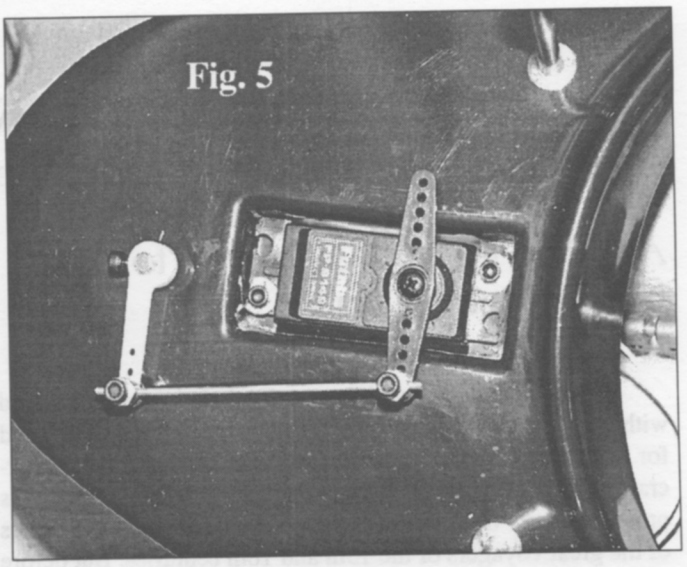


Fig. 5

was a snap. **Fig. 5** shows the simple installation and linkage, all of which was obtained from the R/C aircraft hardware rack at the local hobby shop.

Our LINDA-MARIE is now a joy to take to the local pond or swimming pool, and run times are in the 15-20 minute range.

How I did it.....

The Unsinkable Boat Hull

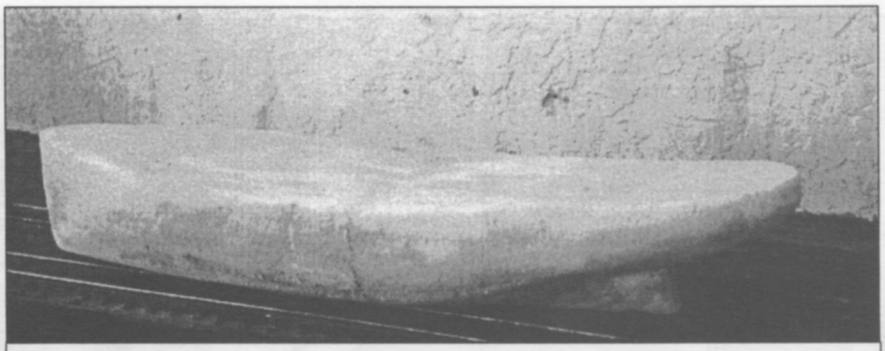
article & photos by Ken Parkinson

A quick, inexpensive way to build that new hull.....

A wag once described a boat as "A hole in the water lined with wood, into which you throw your money." This was good for a few laughs but does not identify the importance of watercraft in the development of society. Travel by watercraft was preceeded only by foot travel. Most of us can recite the names of the great voyagers of the 15th and 16th centuries. But before those times there were hundreds, or perhaps thousands of watereraft of many shapes and oonstructed of many materials. Depending on the time and the location, a boat could be constructed from a wide variety of available items. Boats have been made using animal skins for covering. Others from bundled reeds, and of course many types of wood framing and planking.

Today we have a material which is very easy to form, inexpensive and very buoyant.This product, which is the bane of the folks in the solid waste disposal business, is styrofoam. In my experience, it is the ideal material to construct model boat hulls. I have built several boats in the 3 foot length size with the hull made of solid styrofoam, and with only enough material removed to fit in the machinery and control systems. To me it is the ideal material. It is virtually unsinkable. The horrible thought will occur

Clyde Puffer, 1/2" scale steamer built on a styrofoam hull by the Author, using the methods described in this article.



Styrofoam hull.....this one is made from dock floats.

to any boater that his pride and joy may sink to the bottom of the pond or lake. All unoccupied areas of the hull is made of this buoyant material. Water cannot enter these voids as in a conventional hull form.

The material I have used can be purchased at any building supply store. There are two types. By color, one is a light blue and appears to be more dense than the white product. I have found blue styrofoam to be easier to work with. The white has a crumbly nature and has numerous small voids. They are both used as an insulation material. I have found the blue in 4' x 8' sheets, which most suppliers will gladly cut into 4' long slabs as wide as you will need, usually 2'.

The white material comes in a bundle of 5 pieces, 15" wide and 4' long. It is all very inexpensive. For about $8.00 you can get enought to build two hulls, each 36" long. Both types of foam are 5/8" thick.

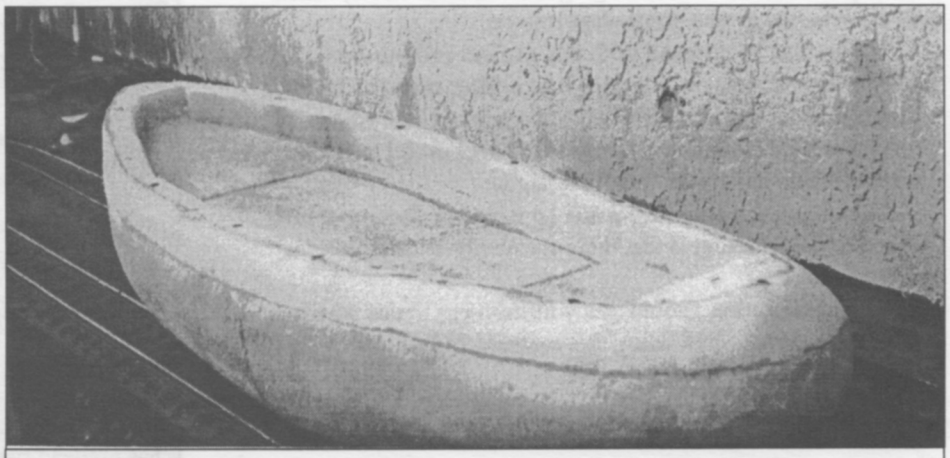
The tools required are of the simple tools of the woodworker. A pointed saw, such as that used by drywall installers, is very useful. It has a blade about 7 inches long. Wood rasps and a very useful tool made by Stanley called a SURFORM are also quite useful. There are several blade forms available. And of course we can't forget the ubiquitous sandpaper.

The method of construction is by the old and useful method called the breadboard. Glue the styrofoam sandwich fashion to the height required for the hull. Any waterproof woodworkers glue will work for the bonding. I have found that the white takes several days to dry. Avoid this one. Also, avoid a glue that sets up as a hard glue line, as this will make the shaping of the foam difficult. Epoxy glue, though very strong, should be avoided for this reason.

After the hull is formed to the lines you have chosen for the hull, sanded smooth and, as the old boat builder says, faired, meaning no bumps or low spots, just smooth lines.

At this point, when we are satisfied as to the correctness of the shape, we now cover this form with a fiberglass cloth. There is one point I want to make here. Never use the polyester resins on styrofoam. It will melt it to a glob and, just like as the wicked witch in *The Wizard of Oz*...it will just disappear.

The glass cloth is applied with an epoxy resin. This is often confused with polyester resins since they are both two part systems.

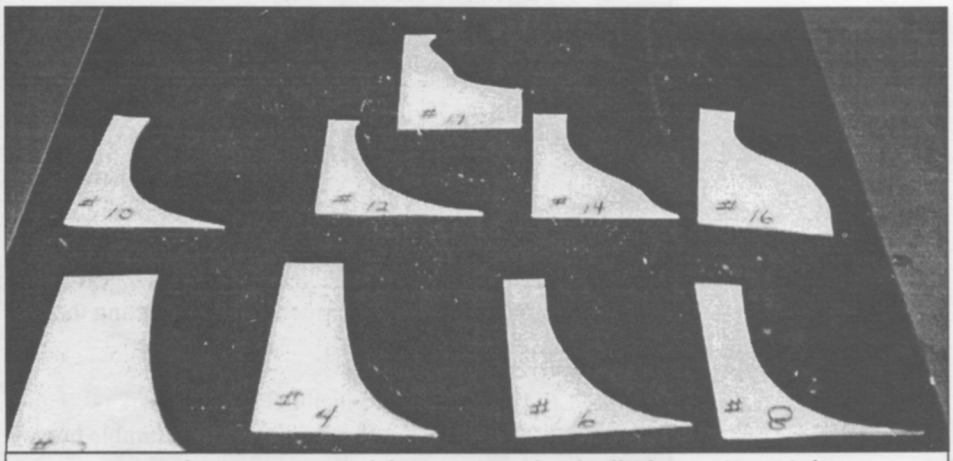


The same hull as in the preceding photo, but with bulwarks attached. Nails, rather than glue, was used to attach the bulwarks.

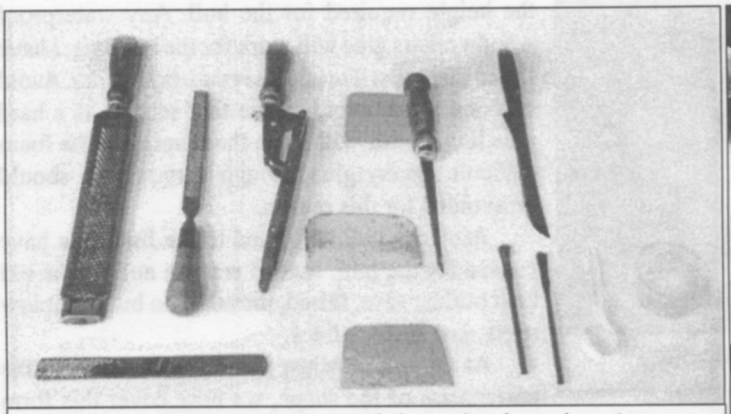
The fiberglass material used is in two or three inch strips called tape. If this is a first time experience, I strongly suggest you obtain one of the fine instruction manuals from **System Three** or the **Gougeon Brothers** *(see source listing at the end of this article for more information).* They are both suppliers of epoxy resins. I believe the instruction manuals are essential since there are some health hazards involved, and once applied it is on for good. The tapes cannot be removed to correct mistakes.

The glass tape is applied in this manner. One strip around the hull at bulwark height, then the others laid at 45° angles over the bottom, butt-edged. This will make two layers at 90° to each other. In this manner they take to the changes in the hull shape from stem to stern. I hope the photographs show this better than words.

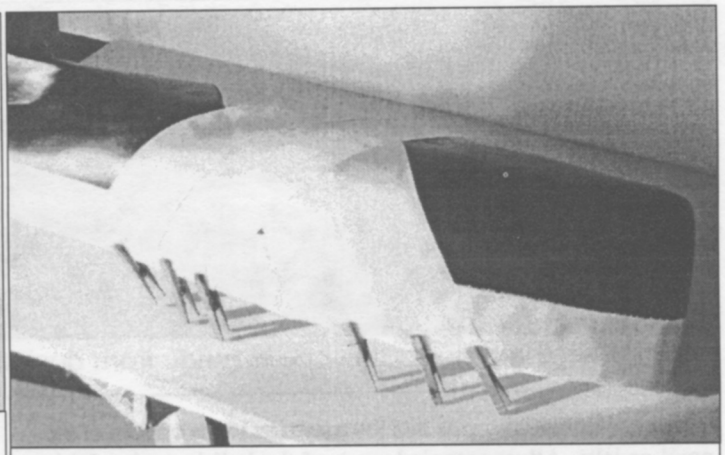
The temptation is to use the fiberglass cloth. It is just fine for large jobs on full size



Templates are used for getting the hull shape just right.



Some of the most useful tools for shaping a styrofoam hull include rasps, Stanley Surform, knives, trowel and spatulas.



Applying glass cloth tape to the hull.

boats. In these smaller jobs the loose weave of the cloth unravels and you will have a discouraging mess of loose fibers, which will stick to places you don't want it to be.

If you plan to proceed with this project and purchase the resins and tape, be sure you also buy a filler material for the resins. The filler is necessary when you come to filling the weave of the tape to obtain a smooth finish. It's also useful to thicken the resin when using it as an adhesive glue.

In addition to being unsinkable, a welcome feature of this method of construction is that there are no ribs or other internal structures to build.

This dissertation should get you thinking about whether you want to build a hull using this method. In future articles I will go into greater detail.

Sources

Styrofoam - most DIY stores or lumber yards.

Fiberglass tape, resins and application tools -

Jamestown Distributors
28 Narragansett Ave.
PO Box 348
Jamestown, RI 02835
Tel: 401-423-2520

Gougeon Brothers, Inc.
PO Box 908
Bay City, MI 48707
Tel: 517-684-7286

System Three Resins
PO Box 70436
Seattle, WA 98107
Tel: 206-782-7976

GLOSSARY OF MARINE TERMS
From International Maritime Dictionary, Second edition

BEAM...width of boat - also sometimes called the breadth

BULWARK...raised railing around the main deck

CAMBER...crown of weather deck to allow water to exit by way of scuppers in bulwarks

CEILING...any inside planking of a vessel

DEAD RISE...angle from keel to chine - a flat bottom boat has no dead rise - a 'W" bottom boat has

DEAD WOOD...the structure between the keel and the stern post, usually protecting the propeller shaft

FAIR...eveness or smoothness of the hull surface

FLARE...spreading outward of hull above waterline

LIMBER HOLES...openings in ribs for water to move toward pumps or scuppers

MACHINERY DECK...location of engine room or other power

SCUPPER...drains set in the decks or bulwarks to drain off rain or sea water

SHEER...long logitudinal line of rail from stem to stern - a graceful curve from a side view of boat

SKEG...an arm extending abaft of the keel with a bearing at the after end for support of the rudder and protecting the propeller

TUMBLE HOME...inward inclination of bulwarks - opposite of flare - tugboats have considerable tumble home at stern

One Lady's Lady Anne

article & photos by Tom Eaton

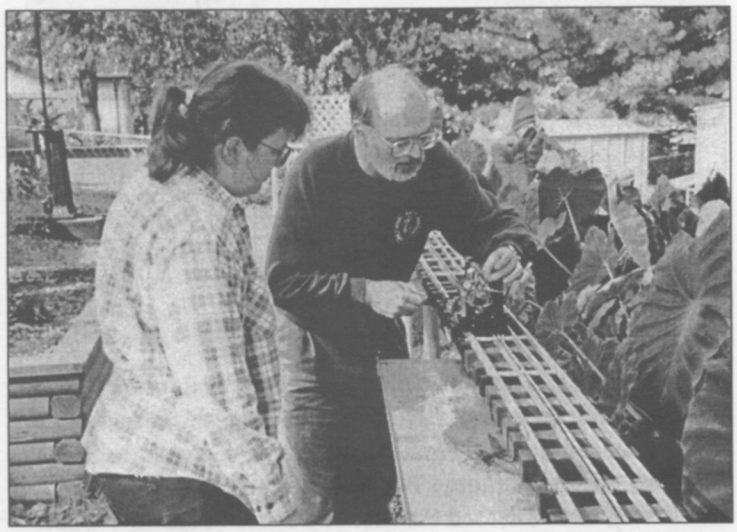
A first time builder finds success and satisfaction in the workshop

In September my wife Diana and I were at the Gateway Garden Railroad Club picnic, held at Larry and Carol Herget's home. Larry was showing Diana pictures of his old layout when they came across a picture of Carol Paule and the Aster Shay she built. As soon as Diana found out that Carol had built a live steam engine, she decided that she would build one too.

I did some research on the SitG web site and found out that Roundhouse makes the Lady Anne in kit form. I called Sulphur Springs Steam Models and told Bob Paule what Diana wanted to do. Bob and Carol were thrilled and delighted that another woman wanted to build a steam loco kit. Diana and I were invited over to Bob and Carol's house for some first hand experience with small scale live steam.

I can't tell you which was more fun, watching the trains or watching Diana watch the trains. Bob, Carol, and some of the Paule's friends spent several hours answering all her questions and showing Diana how the engines were fired. Diana and I want you all to know how special we think small scale live steam people are. No one ever questioned or criticized Diana when she said that she wanted to build a live steam kit. Everyone Diana talked to encouraged her to go ahead with her plan. Even more remarkable to Diana was the fact that she was treated seriously, and the people talked to her, and not around her to me. Needless to say, when we left the Paule's Diana was carrying her Lady Anne kit.

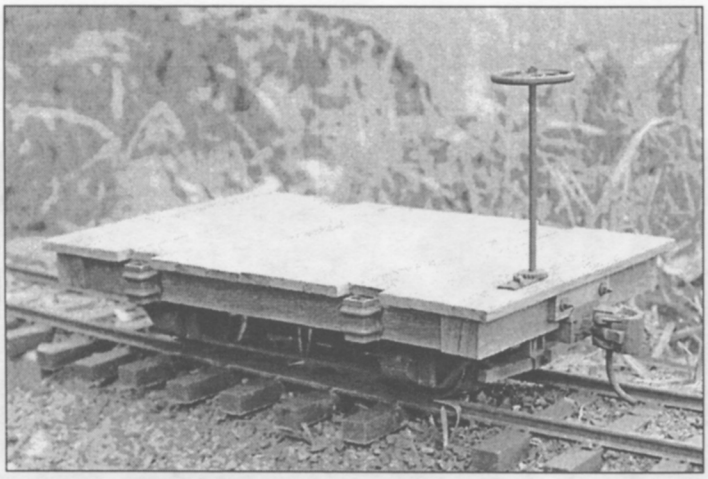
Diana got the chassis built in one week. With a little coaching from me, she got the valve timing set. A trip to the Paule's house confirmed that the valves were set pretty close, but that one side was 180° out of time. Back to work, and the next day the chassis ran on shop air for the first time. The next Saturday, two weeks from the day she started, Diana's engine ran under steam for the first time.

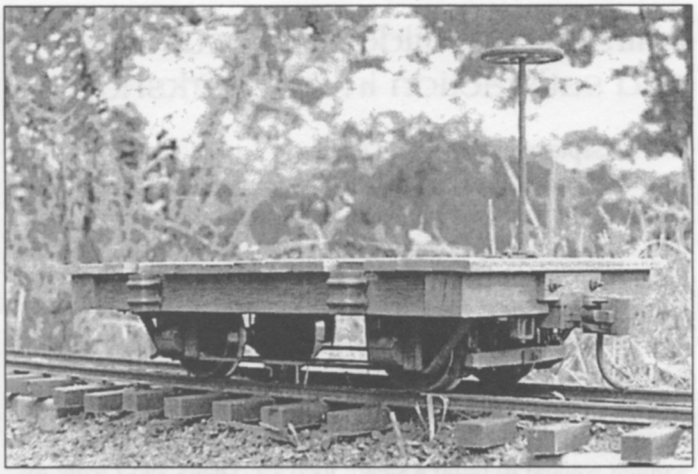


Two of the photos show Bob Paule explaining to Diana how to prepare the chassis for the first run under steam, and that unforgettable first run with the new engine. Diana was a delight to watch, as she would not let the engine get more than a few feet from her.

The photo below shows the completed Lady Anne, with the proud builder/owner holding her pride and joy.

Seven Eighths Consortium 9' Wooden Flat





7/8n2 is a relative newcomer to the large scale scene, but it has definitely provoked a great deal of interest. Sierra Valley Enterprises and Hartford Products, combining forces as the Seven Eighths Consortium (Large Two Foot Industrial Equipment with Character), have released the first of a series of small, 4-wheel industrial railway equipment in 7/8n2. Sierra Valley and Hartford have taken an interesting approach to their joint venture. Those wanting these cars in kit form will purchase them from Hartford Products, Inc., 18 Ranch Rd., Cedar Crest NM 87008 - (505) 286-2200, while those looking for museum quality, RTR cars may place their orders with Sierra Valley Enterprises, 2755 Saratoga Ave., Merced CA 95340 - (209) 722-8278.

The Seven Eighths Consortium has chosen Sierra Valley's popular 1:20.3 Munger Mining Series for their entry into 7/8n2. These cars do not represent any particular prototype, but they accurately follow the construction techniques and railroad practices of the 1880's. They are based on industrial cars used all over the world well into the twentieth century.

We were impressed with the MMS cars in 1:20.3, and our 7/8n2review sample, SEC #1 - 9' Wooden Flat, is even more impressive. This is model railroading on steroids! It's big and sturdy and so well detailed that it looks as much like the real thing as any model we've seen. The detail castings, cast by Hartford Products in a hard white metal alloy, are beautifully done, the special wheelsets (by Sierra Valley) are appropriately massive and excellent, and have finescale flanges. All wood used is a hardwood from the mahogany family, and on our RTR sample the fit and finish is first rate.

Complete brake rigging and outside brake beams are included, and all cars come with link & pin couplers as standard equipment. Kadee knuckle couplers are available as an extra-cost option.

As with all the products we've seen from Hartford Products and Sierra Valley Enterprises, this flat car is a model that anyone would be proud to own and operate. Our flat is displayed on a shelf in our living room, and has attracted attention and positive comments from all who have seen it. Top quality, highly recommended!

B.A. (British Association) Threads

	Outside diameter		*Pitch*			
No.	*mm.*	*inches*	*mm.*	*T.P.I.*	*Tapping drill*	*Clearing drill*
0	6·0	·236	1·00	25·4	7	D
1	5·3	·209	0·90	28·2	16	2
2	4·7	·185	0·81	31·4	22	10
3	4·1	·161	0·73	34·8	29	18
4	3·6	·142	0·66	38·5	31	24
5	3·2	·126	0·59	43·0	37	29
6	2·8	·110	0·53	47·9	43	32
7	2·5	·098	0·48	52·9	46 or 45	36
8	2·2	·087	0·43	59·1	50	41
9	1·9	·075	0·39	65·1	53	45
10	1·7	·067	0·35	72·6	54	49
11	1·5	·059	0·31	81·9	56	52
12	1·3	·051	0·28	90·9	59	54
13	1·2	·047	0·25	102·0	62	55
14	1·0	·039	0·23	109·9	68	57
15	0·9	·035	0·21	120·5	70	60
16	0·79	·031	0·19	133·3	73	65

Steam...Alive and Well in Cuba

article & photos by Andy Probyn

A British visitor finds steam and sugar cane in abundance just ninety miles south of the U.S.A.

At the Obdulio Morales Mill, Nº 1334, a 1920 Baldwin 2-8-0, belches clouds of thick, black smoke as it hauls loads of sugar cane on 2' 3-3/4" gauge rails.

Due to political circumstances, readers in North America may be unaware of the existence of several hundred American built steam locomotives just ninety miles south of Florida, working on the sugar cane lines of Cuba.

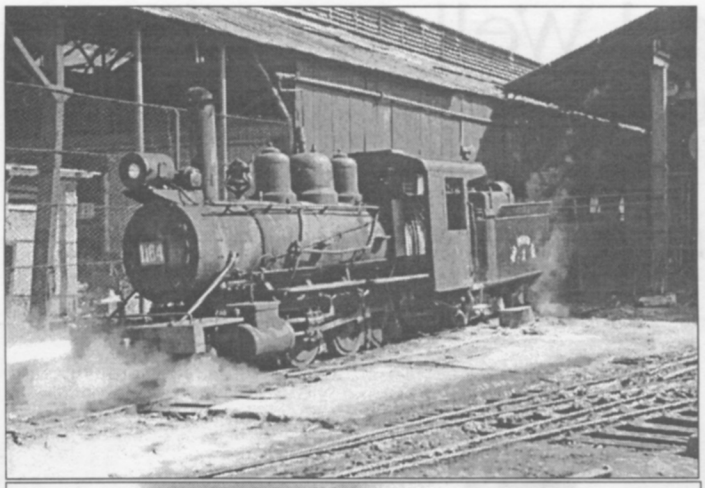
Being a poor country and suffering from US trade sanctions, Cubans keep all manner of mechanical contrivances at work long after their usual life expectancy.

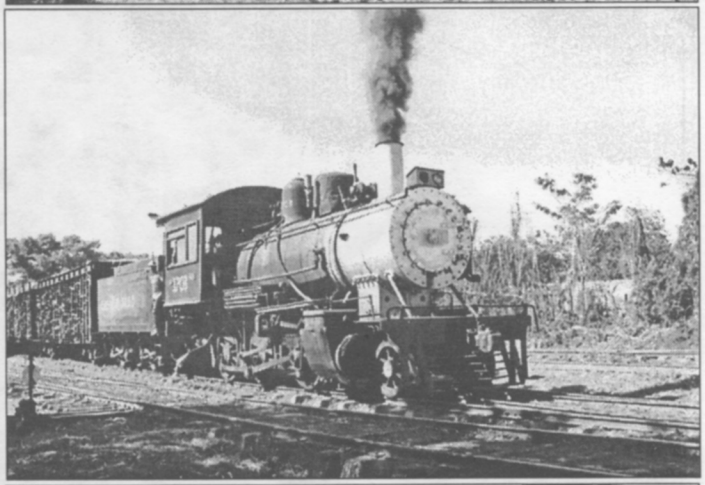
On the roads, many ancient and venerable vehicles from the 1940's and 1950's are still at work in various states of disrepair. A shortage of passenger rolling stock on the railroads is met by converting box cars and de-motored railcars.

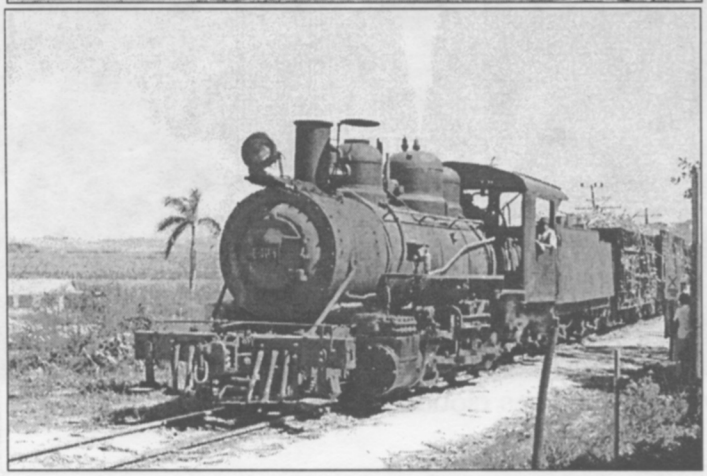
In the sugar industry, slow modernisation by the Russians is now at a halt, diesel fuel and spare parts are in short supply and steam locomotives are being restored and pressed back into service. These locomotives burn Cuban crude oil, a thick black gunge which gets all over the tender, loco and fueling point, running down into streams in a most un-eco friendly way. As a European it was quite a revelation to see and hear oil burning locos at work with the deep roar from the burner and flames licking round the firebox.

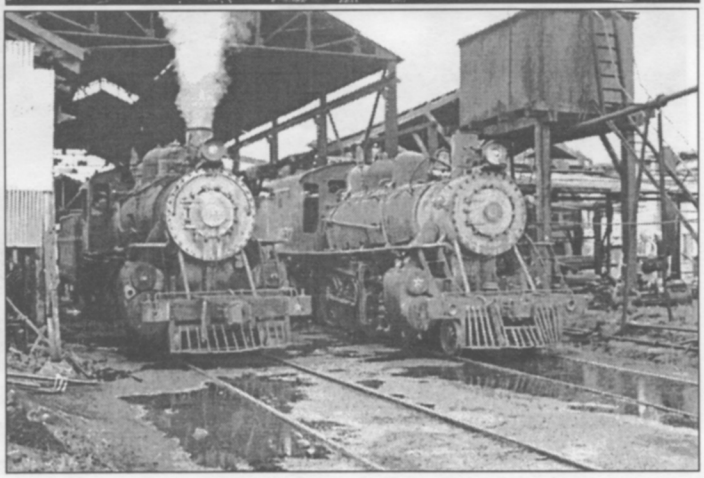
The majority of engines are of the 2-8-0 wheel arrangement, with 2-6-0's a close second. A smattering of 4-6-0 and 2-6-2's can be added to these with two large 2-8-2's being the most powerful on the island.

These engines run the main line, bringing cut cane to the mills for processing. At the mill, individual cars are moved onto









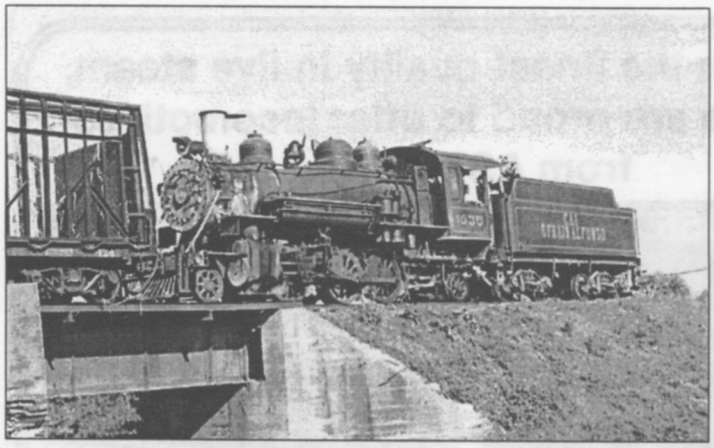
the tipper by various methods. This includes steam winch, electric winch, tractor, diesel switcher and steam switcher. If you happen to find one of the latter you are in for a delight; 0-4-0, 2-4-0 and 0-4-2 tank engines are at work, the earliest being a Baldwin of 1878! Whilst most lines are standard gauge, there are several extensive narrow gauge systems of 3', 2'6" and 2' 3-3/4" gauges, each of which sports a fine array of steam locos of various ages.

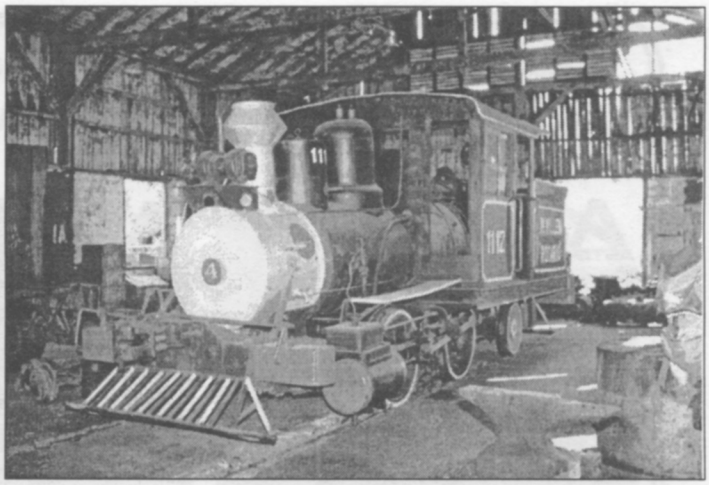
There are examples of locos displayed from mainline duties in the US and Cuba, but most were built new for the sugar companies. Some have been working at the same mill for up to 90 years.

The railroads are free for anyone to visit and photograph. They work in the cane cutting season, from late January to April. The mills are more closely protected and a permit is needed to visit any shed within the mill compound. The Cubans are friendly, keen to chat (in Spanish) and are always happy to welcome visitors onto the footplate.

I was lucky enough to take the throttle for a short while on one of the Rafael Freire 2-8-0 Baldwins, number 1390 of 1912, the one with a swordfish painted on the tender side.

Andy Probyn is the owner of Maxitrak, a British builder of miniature live steam and electric locos and rolling stock for the ride-on scales & gauges. - ed.





Photos opposite page, clockwise from top left:

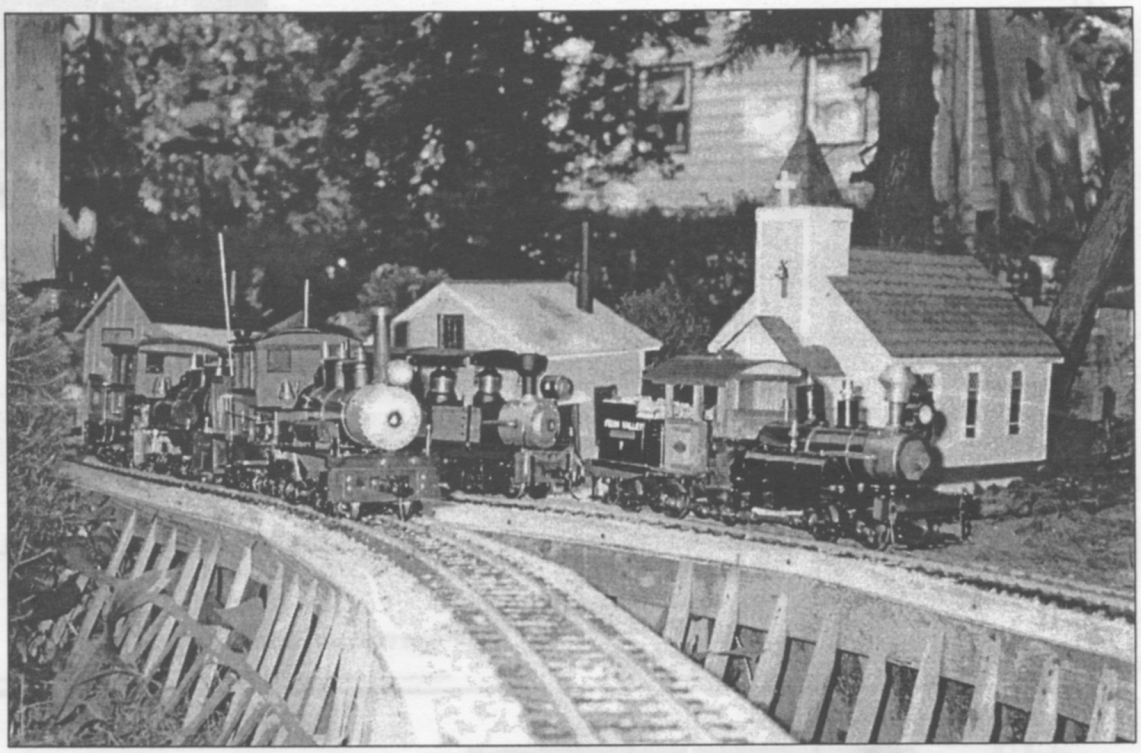
Pepito Sugar Mill Nº 1164, 1919 2-8-0 Baldwin, 2'6" gauge ● Marcelo Salado Mill Nº 1147, 1919 0-4-0ST Davenport ● Pablo De La Torreinte Brau Mill Nº 1703, 1920 2-6-0 Henschel ● Orlando Gonzalez Ramirez Sugar Mill, left loco is Nº 1732, 1916 4-6-0 ALCO, right loco is Nº 1837, 1920 2-8-0 ALCO ● Auguste Cesar Sanding Mill *(too dirty to see number)*, 1919 2-8-0 ALCO ● Comp Agro Jose Smith Mill Nº 1122 1909 Porter 0-4-0T, standard gauge.

Photos this page, clockwise from top left:

Ifrain Alfonso Mill Nº 1635, 1925 2-6-2 Baldwin ● Ruben M. Villena Mill Nº 1112, 1878 0-4-2T Baldwin ● Rafael Freire Sugar Mill No 1390, 1912 2-8-0 Baldwin, 2' 6" gauge *(the Author took a turn in the engineer's seat on this loco!)*

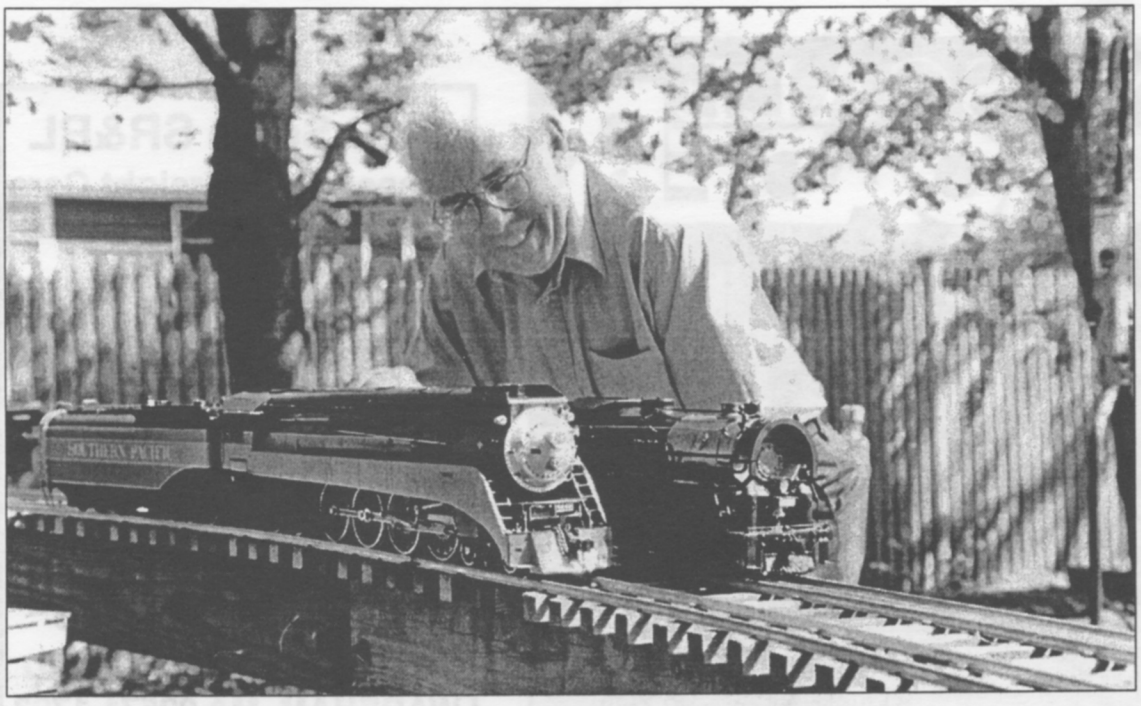
Steam Scene.....

We invite you to send your favorite photos for this feature. PLEASE label each photo with vital information like photographer, subject, where, when and why. Stick-on mailing labels work great for this. Don't try to write directly on the back of the photo...it embosses the front and ruins it. Mail them to SitG, PO Box 335, Newark Valley NY 13811. Please include a SASE with sufficient postage if you'd like your photos returned.



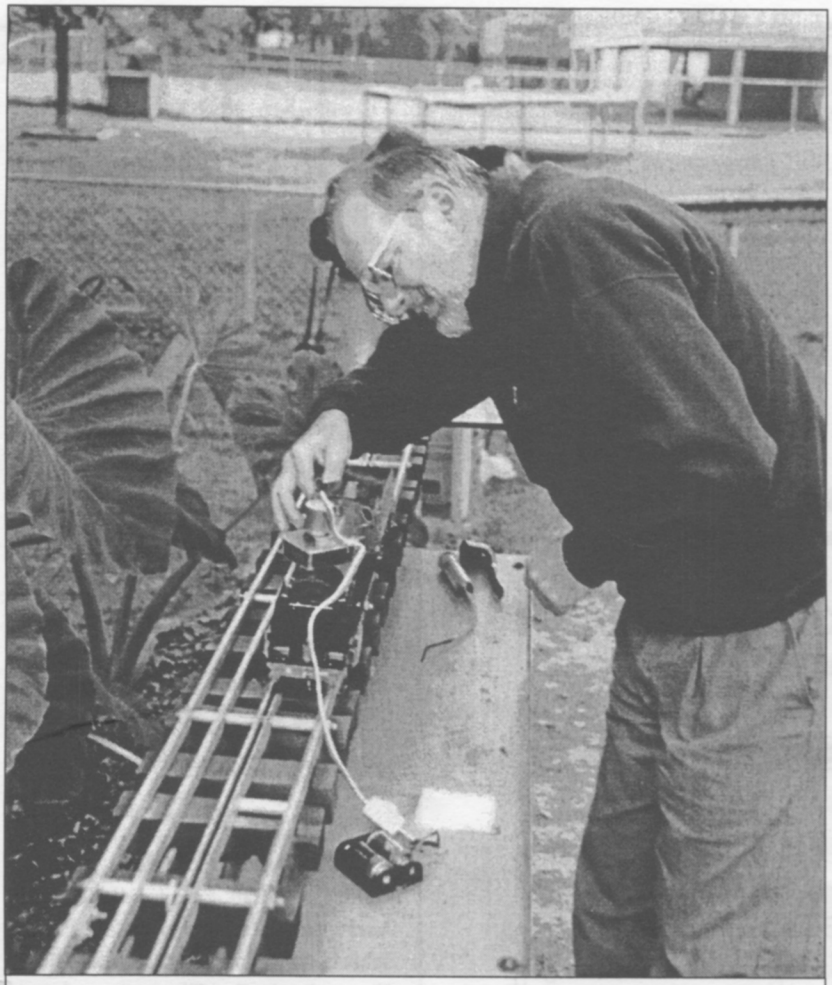
The Fern Valley Railway (Ontario, Canada) has four Shays in logging service. This photo was taken as all four locos grudgingly awaken to another day in the woods. The three locos on the right are by Geoffbuilt, and the one on the left is by Steamlines. All are gas-fired and equipped with Kadee knuckle couplers, and the three Geoffbuilt locos are fitted with R/C. All structures in the photo were scratchbuilt.

photo - Carol Homuth



Paul Huntington steams up his scratchbuilt Boston & Maine 4000 class loco. The Aster Daylight on the adjacent track belongs to Jim Curry.

photo - Jim Curry



Host Bob Paule sets up the suction fan to get the fire going in his meths-burning loco. Note the interesting track construction, which allows the Paule's to operate all of the popular gauges.

Leroy McCormack seems to be enjoying himself as much as the law allows at Bob & Carol Paule's Steamfest '98.

On October 2 to October 4, 1998, Bob and Carol Paule hosted a steamup for a group of live steamers. Their house is located approximately in the middle of the U.S.A., but is still a long drive for most of us. Friends drove as far 2000 miles. Collectively we all drove over 5000 miles one way to the Paule's home, which happened to be under construction for a new addition. The extra space came in handy at meal time, as we all had a place to sit. There was much drink and camaraderie as 13 of us ran locos, and a great deal of discussion took place about the operation and construction of the little beasties.

The weather was perfect for steaming. Daytime temperatures were in the 60's with cool mornings. Steamup attendees started rolling in on Thursday evening. Cindy and I arrived late in the evening on Friday, just in time for some late conversation and refreshment.

Saturday was a great day for running. Almost everyone was able to get a run in on Bob's Sierra Northern Railway, April Fool's Branch. The Paule's RR is a multi-gauge layout, 135' long. At the point where it comes closest to the house, it's about 1' off the ground. Since the back yard slopes down, the track at its furthest point from the house is about waist height, making it ideal to steam up an engine. The track can accommodate gauges 1, 0, 2.1/8", 2.1/2", 3.1/2" and 4.3/4", covering all the popular gauges in the U.S.A.

The only incident occurred when my engine, an Aster Glaskasten, caught fire. There was no damage except to the wicks, which were thoroughly saturated with water as the fire was extinguished.

Dinner Saturday night was ga real treat as Kevin O'Connor brought steaks from the west coast. These were grilled with other delights for a fitting end to a day of steaming. We continued to run engines into the night and on into Sunday morning.

Attendees included Frank Dunn, Diana & Tom Eaton, Bob and Louise Eggleston, Amos and Delores Harting, Larry Herget, Leroy McCormack, Erwin and Pat Mueller, Joel Neshkin, Cindy and Ernie Noa, Kevin O'Connor, Vickie Marie Parker, Richard O'Donnell and Bob Pennock.

steamup report and photos by Ernie Noa

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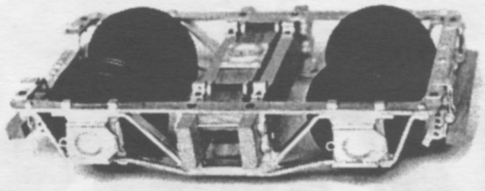

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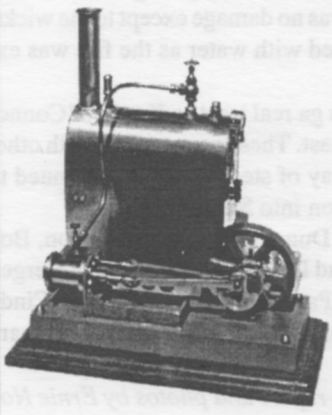

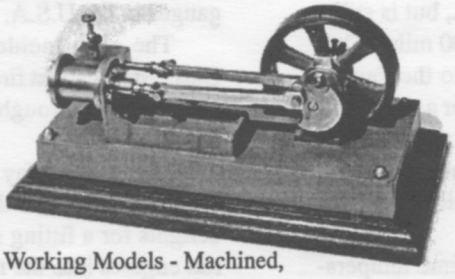

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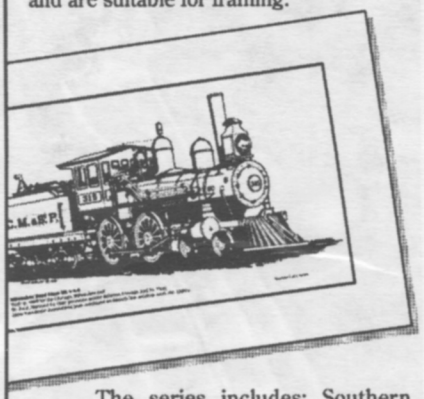

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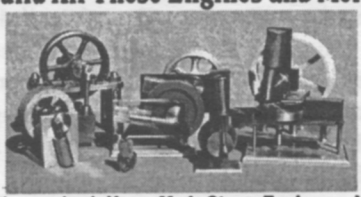

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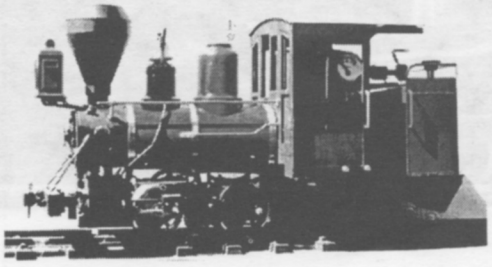

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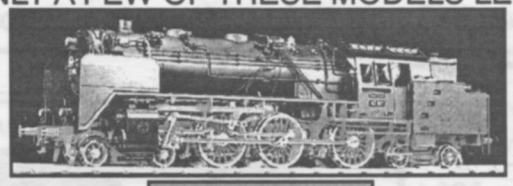

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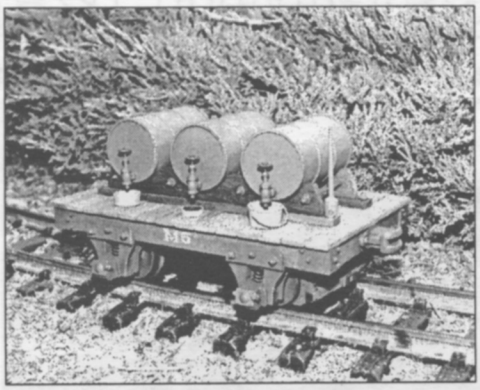

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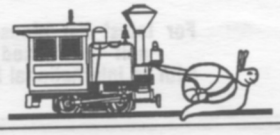

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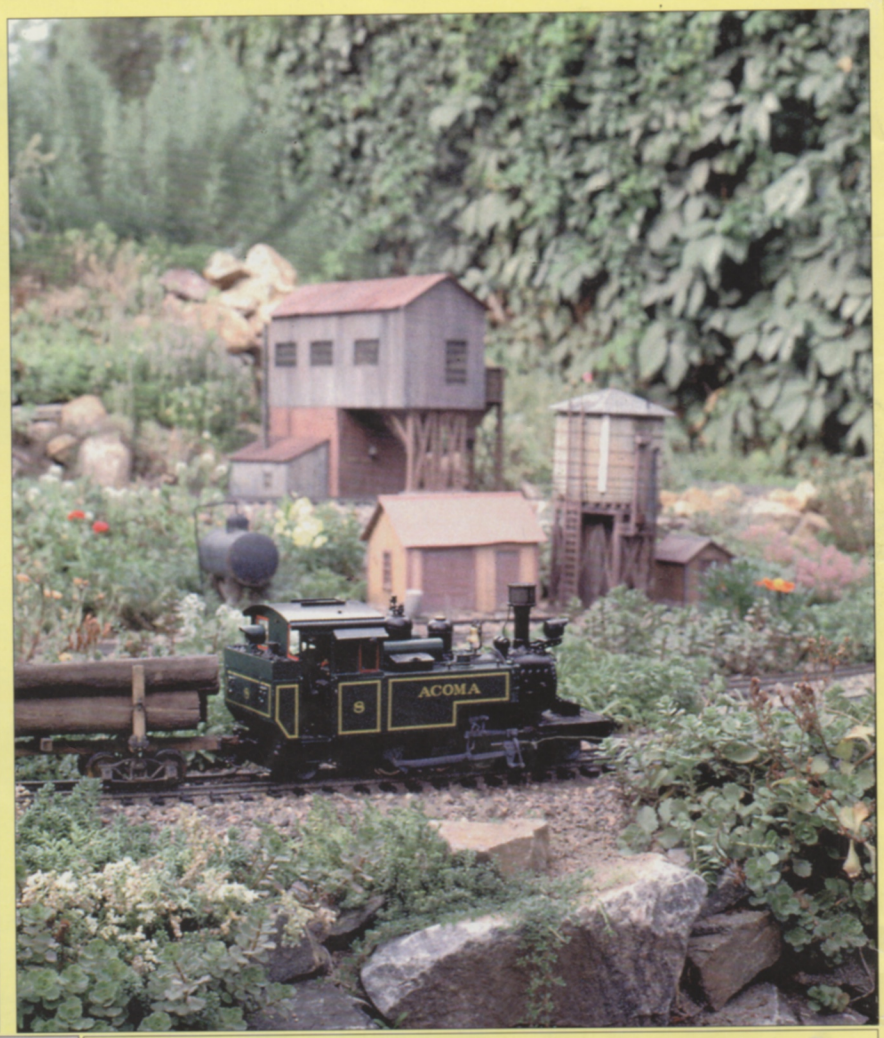

Clockwise, from below: IMARA, built by Ray Bell from a Caldercraft JoTiKa kit and powered by two MAX II twin cylinder steam engines. *(photo by Ray Bell)* Steam Launch BAT, built by Keith Townsend and owned by Allan Caperton. *(Keith Townsend photo)* ARCHANGEL gas fired Single Fairlie, hauling a single Corris Railway coach, provides a satisfying cameo as it pauses at Polk Halt on the Hartor Granite Tramway. *(photo by Tag Gorton)* Alan Olson's ACOMA Nº 8 in revenue service in Colorado. *(photo by Alan Olson)*