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# STEAM IN THE GARDEN

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July/August 1997

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## ON THE COVER:

Close up and personal! A beautiful shot of one of Charlie Mynhier's locomotives. This particular loco was built for his construction series in *Steam in the Garden*. The final article in the series, covering the tender, appears in this issue. Charlie's locomotives are definitely built to last, and they haul the freight, too. Just ask anyone who has seen his locos haul him around the track at Diamondhead!

*Photo by Marc Horovitz*

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Ron Brown

## Overworked and Underpaid

Marie Brown

## Graphics Director

Harry Wade

## CAD (and other) drawings in this issue by:

Harry Wade, Charlie Mynhier,  
Larry Bingham & Joe Leccese

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Crankpin ..... The South  
Rich Chiodo ..... New Hampshire  
Tag Gorton ..... England  
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Peter Jones ..... Wales  
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Kevin O'Connor ..... California  
Mel Ridley ..... England

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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. Some 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.

\* \* \* \* \*

Rheingold, Wales, U.K.

Dear Sir,

You know me... a lovable human being, kind to dogs and his granny. In particular, someone loathe to criticize. But in the March/April SitG, there were a couple of things that caused my usually unfurrowed brow to furrow itself.

The first arises from Rich Chiodo's comprehensive guide to tools you need to take with you to steamups. Very worthy. Very comprehensive. So comprehensive that I am tempted to ask where was the big bag of grass (Just in case one encounters a herd of hungry wildebeests)?

I am a sad person who goes through life with an engine, a box of matches and an oily rag. My steamup stand consists of a couple of old bricks I found, and I may or may not have a couple of tools with me. I'm sure that Rich is splendidly equipped for his travels and a good example to us, but readers shouldn't fear the fires of Hell if they can't muster a full kit right now. And he mentions gloves. GLOVES???? Good grief: what is the world coming to?

And then we turn to the letter of Mr. A. Cohol, who reproved Kevin O'Connor for advising running at as low a pressure as possible. I'm sure that A.C. is correct in his figures. But it is not of the real world. Alcohol or gas aren't that expensive. Are we really that concerned with saving a few cents of fuel in an afternoon? Thinking like this is trivial compared to the much more important practicalities of running a whole variety of engines on different tracks. High pressure is great for hauling big loads around perfect ovals of waist-high track, but a real pain in the butt when it comes to switching a few cars on a spur.

People have been relearning this lesson for a hundred years here in the UK. What we are really interested in is that our little fiery critters do a job. A Mamod works despite being dreadfully inefficient. It can be made to work better by running at 15psi, but the best improvements come from getting some of its shortcomings right.

It was the Archangel locomotives which reinvigorated garden railways in the 1960's. Their one weakness was having too high a pressure for small backyards and light work. This was a lesson learned later

when Tom Cooper took the Beck engines and evolved them into the Merlin name. They were much more manageable. Too much pressure makes a loco skittish and less amenable to control, particularly for the novice. If a loco does the job asked of it at 25psi, what do you need 60psi for? Nope, it's horses for courses, and when I hear someone say that we should run engines at a high pressure because there is greater efficiency when it comes to cylinder condensation.....he may be right, but the sound I hear is of deck chairs being rearranged on the deck of the Titanic.

Yours, a heathen  
Peter Jones

— — — — —

Since the beginning of Mel Ridley's excellent *Vest Pocket Climax* series, we've received several inquiries about "silver steel", which is a term often used in British model engineering publications and can also be found in machining projects written by our British brothers. This seemed like a good time to set the record straight, so I asked Harry Wade, the talented draftsman who does such a fine job of translating pencil sketches into publication quality drawings for SitG, to research the question for us. Here are the results of his research, which we appreciate very much and which should put the question to rest for now. - ed.

Nashville, Tennessee

Ron,

For most practical purposes, the nearest U.S. equivalent to what is known as "silver steel" in the UK is "drill rod", specifically AISI W-1 water hardening tool steel. I have never seen a published head to head comparison of the two metals, but over the years I have seen a few articles in ME (UK) which mention it briefly and hold that there is indeed a difference in the two. While none of the articles have been specific, they do tend to feel that silver steel has better characteristics for home shop work than drill rod. That may be true, or it may be supposition, but the metallurgical contents of the two metals are not the same and that will make a difference. The alloys are as follows:

**Silver steel (British Standard Specification 1407):  
(Rockwell unknown.)**

	Min. %	Max %
Carbon	1.10	1.20
Manganese	0.30	0.40
Silicon	0.10	0.25



Chromium	0.40	0.50
Sulphur	-	0.035
Phosphorus	-	0.035

(From Messrs. Peter Stubs of Warrington, UK,  
manufacturer of silver steel.)

#### U.S. AISI-W1 (water hardening) drill rod: (Rockwell 66-68)

	Min. %	Max %
Carbon	0.95	1.05
Manganese	0.30	0.40
Silicon	0.10	0.25
Chromium	-	0.15
Sulphur	-	0.025
Phosphorus	-	0.025
Vanadium	-	0.10
Tungsten	-	0.15
Molybdenum	-	0.10

(from MSC Supply Co. material specifications)

What the difference in the alloy means in terms of performance, and whether it makes any detectable difference at all in what we do, I don't know. Silver steel has more carbon and chromium content, which suggests that it will be harder in its quenched state, but I don't know what the other elements do for it. The other U.S. standard tool steels in "drill rod" form, oil hardening (O-1) and air hardening (A-2), vary quite a bit in alloy from W1, and certainly from silver steel, so they are out of the picture.

I'll try to find out what the practical differences are, if any, but for the moment you can say that our (U.S.) equivalent to "silver steel" is essentially W-1 drill rod.

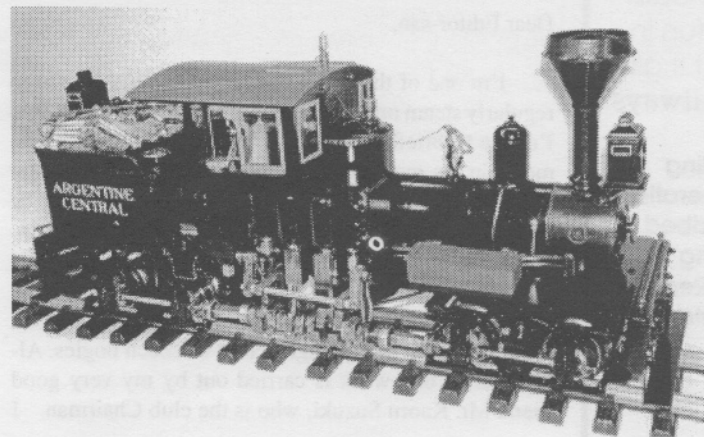
Regards,  
Harry Wade

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Chappaqua, New York

Dear Ron,

Enclosed are a few photos of my Catatonk Shay, which I've had a lot of fun with. I added brake detail and a 2-channel radio. The antenna runs through the wood pile and ends in a shovel. The fuel tank is now in the bunker and the filler valve is under a tool box. I don't like rechargeable batteries, so I made a battery hatch for battery removal and re-



placement.

Best Regards,  
Mort Schoenberg

*Nice job, Mort! Thanks for sharing it with us. - ed.*

-----

Brockport, New York

Dear Ron,

Thanks for making me famous. It is always neat to see one's name in print. Perhaps some will communicate with me.

I have had a couple of communications with Geoff Coldrick, and he has offered some suggestions for better Scorpion performance. I attended the National Garden Railway convention in Washington D.C. and had a ball. I spent quite a bit of time at the steamup tent and met many folks, not to mention touring the railroads. I was especially impressed with Strong's Woodland Railway and Jobusch's East Serendipity. I also visited Scott McDonald and he is a nice fellow. It's fun looking back through SitGs and seeing people I have met.

Tomorrow night is our local club meet to be held at Kevin Strong's new EBT layout. I will be taking Scorpion and a few cars along to run on his almost-level, non-electrified layout and also taking some plants I divided to help get him started with the flora.

I continue to enjoy reading SitG and suspect that the talons of live steam railroading will dig deeper still.

Best regards,  
Tom Bowdler

-----

Atascadero, California  
(via e-mail)

Dear Editor:

Just a short note to let your people know about our track construction. The sub or supporting structure is completed, painted and assembled in my chicken house. The track is big and impressive; 31' x 60' double track main line with a run of 300' on each line. Both tracks have their own sidings for firing up engines or making up a train. This was due to the generosity of Gary Broeder (*Llagas Creek*) who donated four N<sup>o</sup> 8 turnouts.

We have very few G gaugers in the county, counting both live steamers and electric people so who did the work? The local model railroad club that sponsors the train show. Many members gave freely of their time at the expense of their own projects.

We are thinking about locomotive trials. Voluntary, equitable, certainly not to humiliate anyone. Besides being fun, I'm sure that the tests, properly conducted, would give some valuable data.

Arnold Hoffman

*The track Arnold mentions is being built especially for the 2nd Annual West Coast Gauge 1 Steamup & Garden Railway Meet, San Luis Obispo County Fairgrounds (halfway between San Francisco and Los Angeles on U.S. 101), September 13 & 14, 1997. Sounds like those lucky California steam enthusiasts will have a fine track for the occasion! If you have any comments or suggestions for the "Locomotive Trials" men-*



tioned by Arnold in his letter - even if the steamup is ancient history by the time you read this, give him a call and let him know what you think about it. For more information on the steamup, check the Calendar of Events in this issue. - rb

— — — — —

Fredericksburg, Virginia  
(via e-mail)

Ron Brown,

I read with interest Rob Kuhlman's article on his mock deWinton. Rob's idea is reminiscent of the Butler County Locomotive Works Dottie Too, which is also Midwest powered. This locomotive was introduced at the Washington area Garden Railway Convention about ten years ago. I love reading about other people's experimentation. I guess it's the engineer in me.

I have also built a locomotive using a Midwest steam engine kit. It's not very powerful, but fun to watch. I found it strange that Rob made quill modifications to the boiler without explaining why. Rob also claims to need a drafting device on a pot boiler. One of my Midwest engines is in a boat and uses Sterno. The one in the locomotive uses a single wick alcohol burner I modified from a Mike Chaney Mamod device. Both of my engines steamup nicely in a few minutes without a forced draft, as do most pot boilers, and run for about 18 minutes each. Rob's idea of adding a safety valve is a good one and one which I should do on my boat and two locomotives.

I do not use an oiler on the boat engine, but I do on the locomotive where I have installed a Mike Chaney Mamod displacement oiler that is only a little over an inch tall. By the way, I found that by horizontally twisting the piston while held in emery cloth, scratches result and the steam oil is nicely retained and distributed. However, I have found no appreciable performance difference between the lubricated locomotive and the unlubricated boat engine, so the scratching may not have been necessary.

Carl Weaver

Author Rob Kuhlman replies:

I appreciate Carl's comments in response to my deWinton article. I remember fondly the Butler County DOTTIE TOO and regret not having purchased one back in the days it was in production. It represented an inspiration to me to try my hand at lokie construction.

Regarding the porcupine quills - I have no empirical evidence that they were necessary, but it seemed reasonable to me that they should increase the steaming efficiency without creating too much congestion in the firebox. With respect to the perceived need for the waste steam to be exhausted out the stack, again, no empirical evidence, but I did it for several reasons: 1) the stack was dramatically shortened from the original Midwest design and my experience with woodburning stoves tells me that shorter flues don't draw as well as taller ones; 2) the porcupine quills should theoretically extract that much more heat from the burning alcohol, so the exhaust gasses should be cooler and hence less likely to exhaust as efficiently; 3) my Saito-powered tram engine's burner (albeit with a vaporizing alcohol burner, not a wick burner) drafted far more effectively after I retrofitted a similar waste-steam exhaust nozzle in the stack, 4) the Midwest boiler isn't a typical traditional horizontal pot boiler but rather a vertical center flue boiler; and 5) steam coming from the stack looks far more appealing than coming from the oscillator up on the deck.

— — — — —

Morgan Hill, California

Hello Ron,

This is in response to Mr. Thomas Hentschel's comment on Mr. Barry French's letter regarding the gauge of the Frank S. locomotive. Frank S. was built in the 1941-45 period by Henschel & Son in Kassel as a 750 mm gauge loco (29.5" gauge). In 1974 she was converted to 600mm gauge (23.6") and in 1982 she was regauged again back to 750mm.

I think Frank S. would look closer to prototype running 32mm gauge track, although 750mm gauge would scale out to 33.75mm in 1:22.5 scale. The name "Frank S.", by the way, was from the son of author Walter Ess.

All for now,  
Gary Broeder

— — — — —

San Jose, California

Dear Editor-san,

I'm one of the lucky few who have the chance to regularly steam up with the Yokohama Live Steam Club. I'd like to briefly respond to Kevin O'Connor's comments in his recent and interesting article on the Aster Baldwin B1. At the YLSC, locomotives can in fact be seen screaming along at break neck speed at most steamups. I can see why Kevin wouldn't choose to operate that way himself; I don't either. On the other hand, it's an interesting and amazing display of excellent track work and high quality engineering of coach bogies. Almost all of this work is carried out by my very good friend Mr. Kaoru Suzuki, who is the club Chairman. I

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think Kevin would enjoy seeing those occasional meteorites at the YLSC because it's an operating challenge that's fun to experience. More commonly, on any given day at the YLSC you will see some of the finest engineering, modeling, and operating practice that could be expected to be seen anywhere in the live steam community. The array of skills and the depth of experience embodied in the YLSC membership is phenomenal. But most importantly, when the YLSC get together as they do twice a month, it's a group of people who are fun, relaxed, open, interested, interesting, and diverse. Their live steam interests and pursuits reflect that.

The club is open to visitors and the regular running days are the second and fourth Sundays of the month. Special running days are often set up for international visitors; it was at one such event that I first had the pleasure of meeting Dave Pinniger.

Feel free to contact me if you'd like information on how to contact Mr. Suzuki; Japanese language services offered gratis.

Best regards,  
Richard Finlayson

Bellevue, Washington

Dear Ron,

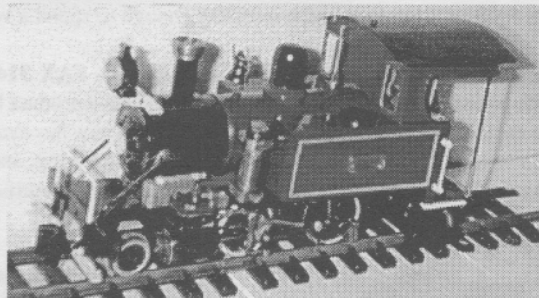
Had some fun at a steamup the other day. I have a Jensen steam powered electrical generator set. This was adapted to run the suction fan to induce draft on my Aster Mogul. Further explanation should not be necessary!

Jim Montgomery

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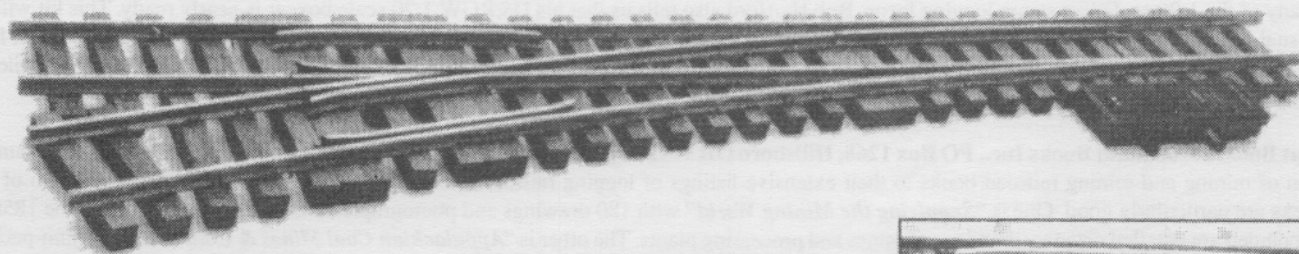


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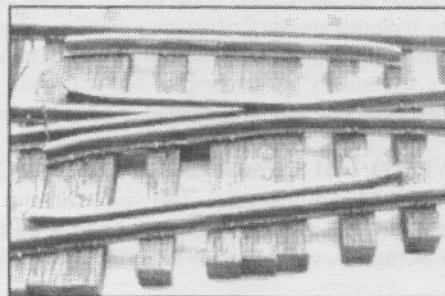
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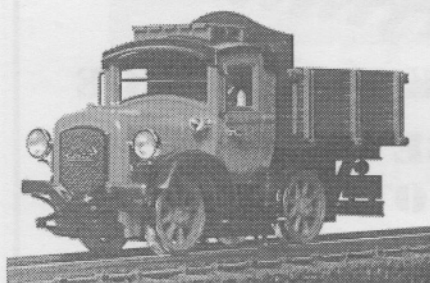




# WHAT'S NEW?

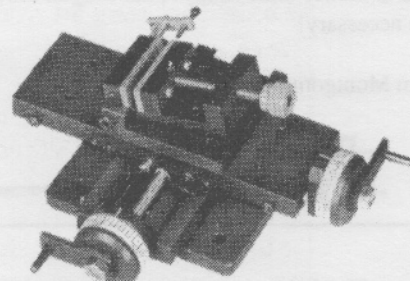
**S.T.E.A.M., PO Box 0123, Windsor CA 95492-0123, Tel/Fax (707) 838-8135, e-mail: STEAM4ME@aol.com** has a new web site at <<http://www.Steam4Me.com>>. It features high resolution graphics, which take a little longer to load but are so much nicer to fix your gaze upon. Give it a look...we found it well done and interesting enough to spend a very pleasant half hour or so browsing through it recently.

**Ozark Miniatures, PO Box 107, De Soto MO 63020 - FAX 314-586-2480**, has a newly revised, 17 page catalog of 1:22 and 1:20.3 scale parts available. The price of the catalog is \$2.00, or you can get a product list for a 32¢ SASE. We received a sample copy of the new catalog and product list, and we were amazed to see how many detail parts Ozark now has available. The catalog is nicely illustrated, which can be a great help in deciding which detail parts to order. Ozark's list of 1:20.3 scale parts is growing, and the quality, as it has always been with Ozark, is excellent. Their sprung pedestal journals (OM-5-2120 or OM-5-1120, flap lid or slide lid) are beautifully done, and a real treasure for those of us who like to scratchbuild our own rolling stock.



**LGB of America, 6444 Nancy Ridge Drive, San Diego CA 92121, phone: 800-669-0607**, has announced the arrival of the Aha® Rail Truck (20680). The Aha was inspired by the classic rail trucks from the golden days of short line railroading. These custom-built vehicles began their lives as road trucks and were converted to rail use by adding meal tires. This very appealing LGB model features the hood, cab and load bed of an antique truck. The load bed has three fold-down side panels. The cab includes a driver figure and dashboard. The hood is decorated with a grille, horn, air cleaner and nonworking headlights. The truck body is mounted on an LGB drive mechanism with wood spoke style wheels. This could make a great kitbashing project, and when converted to battery power would be an interesting addition to any garden railroad line. Check with your favorite dealer or mail-order house for price and availability.

**Treat Enterprises (Cameron Micro Drill Presses), 19401 Rawhide Road, Sonora CA 95370 - phone 1-800-369-7769** has the nifty Preac miniature X-Y table for your Micro-Precision drill press or any small drill press. This table will allow you to precisely locate holes in 2 planes at 90° to each other. And if you don't have a milling machine, it is also very useful for light milling on your drill press. The travel of the slides is 3.1/2" in the X axis and 2.1/2" in the Y axis. The dials for movement of the table are graduated in .001 of an inch. One revolution of the dial is .050". A sub plate is available to allow you to use this quality table on larger drill presses, and a small tilting vise is also available. Our review sample is very well made, and the whole unit weighs less than 2 pounds.



**Trackside Details** has a new, hollow tapered stack, designed especially as a drop-in installation for the new Bachmann Shay. It should work just as well for you guys out there who are building steam locos of your own from blocks of brass, steel and aluminum. Pete Thorp at Trackside Details has a great assortment of cast detail parts for the garden railroader and/or live steamer. No one who scratch builds, kitbashes or even just dreams about it should be without his catalog!

**Hartford Products, 18 Ranch Road, Cedar Crest NM 87008 - phone (505) 286-2200 or fax (505) 286-2141**, has announced that their Ely Thomas log cars will be available by the time you read this. These cars are 1:20 scale and are a perfect match for the new Bachmann Ely Thomas Logging Co. Shay....or any of the 1:20 scale live steam logging locos. Bob Hartford also tells us that his D&RGW 1:20 scale boxcar is nearly ready. This kit will be up to the usual Hartford Products standard of excellence and will come complete with couplers and Hartford Products D&RGW trucks. Contact Bob Hartford at the phone, fax or address above for more information about these and the other quality kits and detail parts in their product line. And please tell them you read about it in SitG.

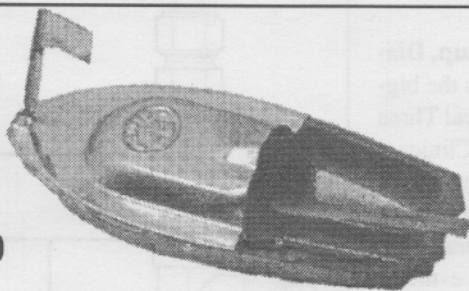
**More Great Books! Woodland Books Inc., PO Box 1268, Hillsboro OR 97123 - phone 800-979-9840 or e-mail <[wldndbks@aol.com](mailto:wldndbks@aol.com)>** - announces the addition of mining and mining railroad books to their extensive listings of logging railroad and steam technology books and videos. Two of the mining books are particularly good. One is "*Supplying the Mining World*" with 180 drawings and photographs of mining equipment from the 1850 to 1900 era. Included are detailed cutaway drawings of mines and processing plants. The other is "*Appalachian Coal Mines & Railroads*". It's jam-packed full of great photos showing all aspects of the coal mining industry. A few new logging books have been added, too. Hot off the press is "*Logging Trucks, Tractors & Crawlers*", describing the 200 year history of the machines and techniques used in logging in America. To request your free catalog, contact Woodland Books by phone, snail mail or e-mail at the numbers shown above...and please tell the nice folks there that *Steam in the Garden* sent you.

**REM VIDEO, 1461 Sierra Street, Redwood City CA 94601**, has just released The Official Video of the National Spring Steamup (held in Sunnyvale, California in May of this year). This video contains approximately 40 minutes of footage showing many of the steam engines and trains that were running at the NSS. A unique feature that will be particularly useful to newcomers to miniature live steam railroading is the use of still shots of a good number of engines, with a caption identifying the builder and other information. The videotape sells for \$29.50, which includes S&H in the Continental U.S.A.



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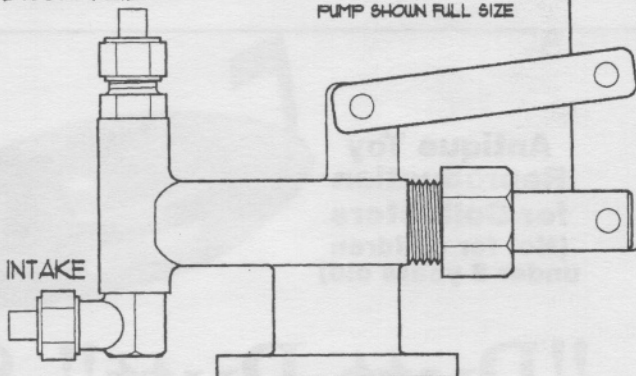
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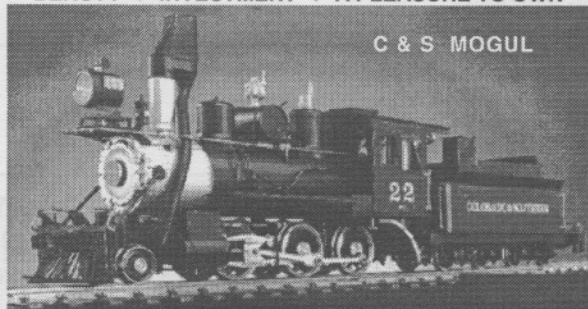
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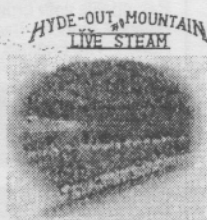


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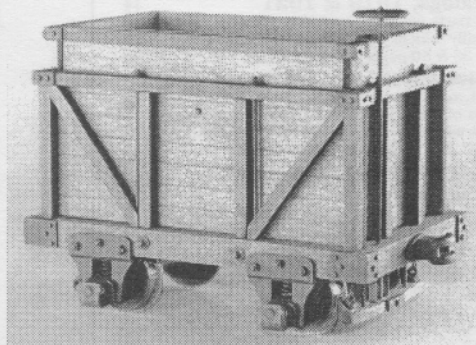


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# The Fitter's Bench

by Crankpin

CAD drawings by Harry Wade

## Milling About – Part 2

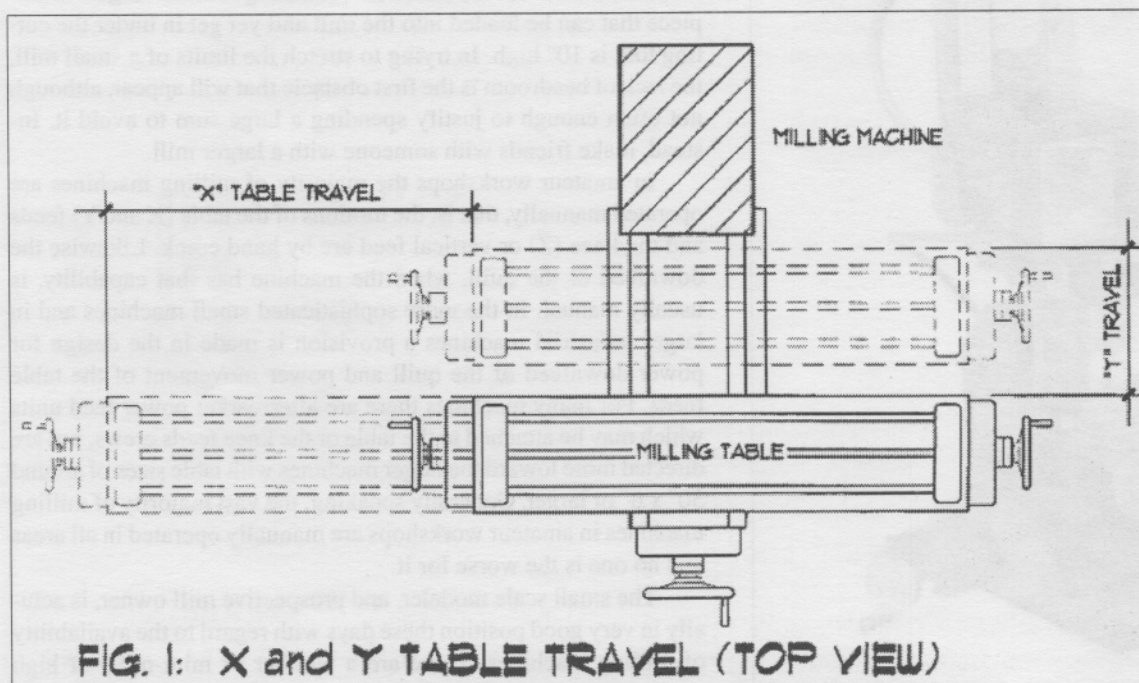
At the close of my last article I had begun to tell you the usual way of denoting the size of a mill which is by first stating its nominal workholding capacity, in terms of its overall table size, followed by an indication of the type of mill. Thus a mill might be typically described as a 7" x 32" (the nominal table size) Vertical, or a 4" x 16" Horizontal, for instance. Those two bits of basic information adequately convey the overall size and type, at least sufficiently for a first mention, but more detailed information is needed in order to fully describe its capabilities. Unlike the lathe, which as we know will not hold a cylinder equal to its nominal capacity, you can mount a workpiece in a mill that is actually larger than the nominal size of the machine.

Table size alone, however, is not enough to fully describe the capacity of the mill because holding a piece and working on it can be two different things. With that thought in mind, I will call your attention to the table travel, which is an important dimension to consider when you determine the size of the mill you should have. It is important because the length of the cut that can be made with a single pass of the cutter, that is, without shifting the workpiece on the table thereby disturbing or destroying the accuracy of a continuous machining operation, is limited by the table travel. Even though a given mill might have an X axis table length of say 16", it will most assuredly not have an overall travel distance of 16". (Fig. 1) The actual table travel will always be somewhat less than the table length, in this case more on the order of 12" or 13". There-

fore, although a 16" table will hold at least a 16" long piece, possibly more, the longest continuous cut that can be made on that piece will be limited to 12" or 13".

An example of this application would be milling the horn slots for sprung axle boxes in a locomotive frame. Let us say that we are milling the slots for an 0-6-0 locomotive in Gauge 1 and wish to do them at one setting, that is, without moving the frames once the machining has begun. An 0-6-0 in this scale might have a rigid wheelbase of 5", so the total length of table travel required to do this job would be the wheelbase (5") plus the width of one slot (5/8"), for a total travel of certainly not more than say 6". This would be a piece of cake for all but the smallest of mills. If, on the other hand, the locomotive was a 2-8-0 in 7.25" gauge, with a wheelbase more on the order of 20" or more, the required travel would be the wheelbase plus the width of one horn, say 1.5", giving a table travel of almost 22". To handle this work length in one pass would almost certainly require a mill with a table length of 36". This job could be done on a smaller mill, but after every horn, or surely every second one, the locomotive frame would have to be shifted along the mill table and then carefully realigned, a time-consuming process to be sure.

This is not to say that I recommend you go out and buy a mill that is sized to accommodate your largest anticipated job. I don't recommend this at all. This is a caution which should apply to all machine tools, because if you should take this approach, a large percentage of your initial investment will remain tied up in excess capacity over the lifetime of the machine and you will get very little in return for that portion of its cost. Like the lathe, a milling machine needs to be selected with consideration for the majority of tasks that it will be expected to do, and since the work to be done in Gauge 1 is smaller and lighter in nature the small scale builder can do very well with the smaller miller. It is better to buy a machine that is suited to the greatest majority of your work





and spend the savings in better ways, such as on greater accuracy, or versatility, or additional tooling.

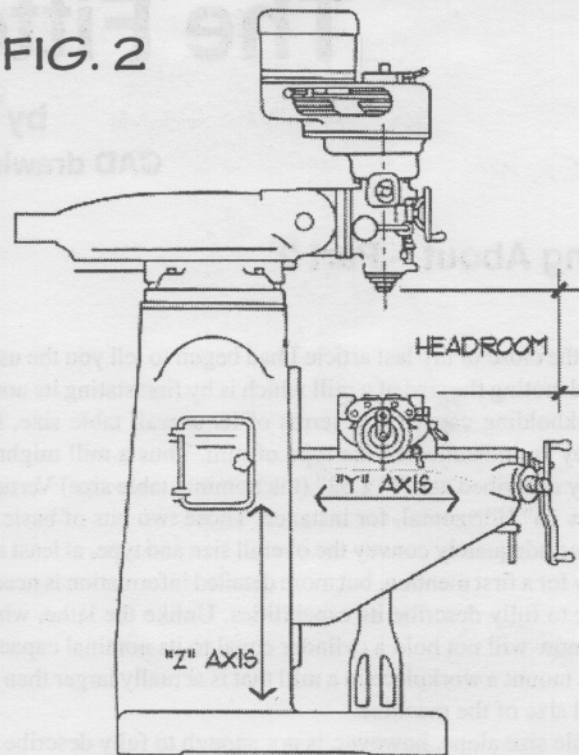
Yes, there will be times when you come across a job which requires you to exceed the limits of your machine, or to do the job in a Heath Robinson (Rube Goldberg) way, but as a hobbyist there is no penalty attached to that.

The second dimension to check is the table travel in the Y-axis, or crossfeed (Figs. 1 & 2), which is of course much less than the X travel. However, depending upon how your mill is designed, the Y axis travel is usually always greater than the nominal table width and therefore will accept a workpiece that is somewhat larger than the table width. Of course I am speaking in terms of maximum capacity, as in even though most of our autos are capable of traveling in excess of 100 mph, we don't run that fast do we now? So it is with our mill. Most of the work you do should fall easily within the confines of the table length and width with only a very small percentage being larger than X and Y tables travel distances.

Vertical table travel, the Z axis (Fig. 2), is not related to table size at all, but rather to the type and design of the mill, and is provided for in one of several ways. In some mills, especially the larger ones, movement in the Z axis is made by raising or lowering the knee, the basic structural casting to which the table is attached. In other mills, especially in the mini mills and the so-called mill-drills, the table is fixed in the Z axis and vertical movement is had by raising or lowering the milling head, or by movement of the quill. The latter makes for a less expensive machine, but the trade-off is rigidity, especially in those machines which use steel pipe for the main column or arm.

The workholding size limit which is related to Z axis movement is known as Headroom. (Fig. 2) Headroom is the vertical clearance between the bottom of the spindle nose and the top surface of the work table when the knee has been fully lowered, or the headstock and/or spindle ram fully raised, as the case may be. The

FIG. 2



available headroom will of course limit the height of work that can be held on the table and it must be remembered that the work capacity is further reduced by the amount that the cutting tool protrudes from the spindle and the amount the vice (or other holding device) stands above the table surface. For example, let's say that we have a mill which at its maximum capacity has a clear headroom of 14". To determine the tallest workpiece that can be accommodated we must deduct from the headroom the height of the inside of the mill vise and the distance that the cutter protrudes below the spindle. If both of the latter distances are say 2", we are left with a clear headroom of 10", meaning that the largest workpiece that can be loaded into the mill and yet get in under the cutting tool is 10" high. In trying to stretch the limits of a small mill, the lack of headroom is the first obstacle that will appear, although not often enough to justify spending a large sum to avoid it. Instead, make friends with someone with a larger mill.

In amateur workshops the majority of milling machines are operated manually, that is, the motions of the table (X and Y) feeds and the knee (Z) or vertical feed are by hand crank. Likewise the downfeed of the quill, when the machine has that capability, is usually manual. In the more sophisticated small machines and in larger industrial machines a provision is made in the design for power downfeed of the quill and power movement of the table feeds. For many machines there are aftermarket power feed units which may be attached to the table or the knee feeds crews, but are directed more toward the larger machines with table sizes of around 30" x 6" or larger. Generally speaking, the vast majority of milling machines in amateur workshops are manually operated in all areas and no one is the worse for it.

The small scale modeler, and prospective mill owner, is actually in very good position these days with regard to the availability of milling machines. There are a number of mini-mills of high

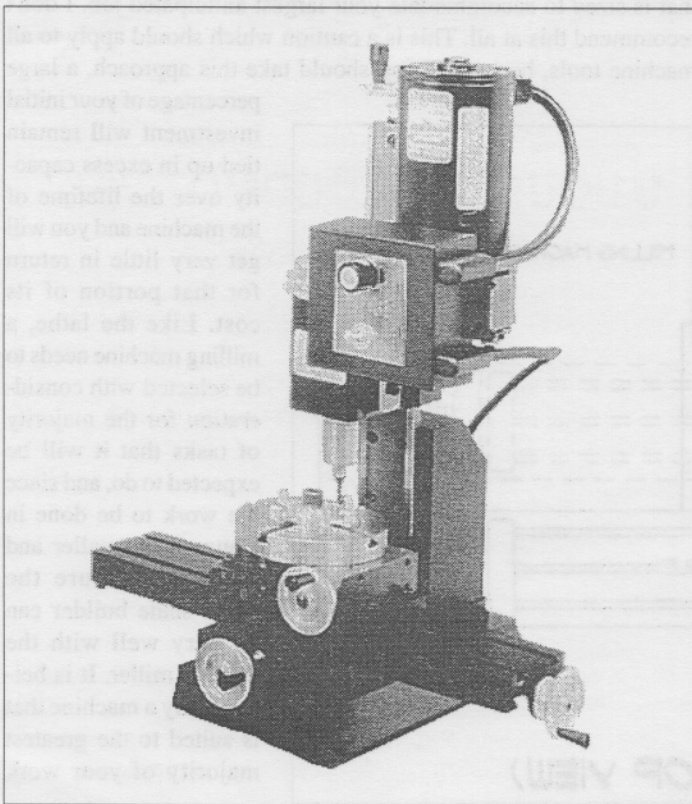
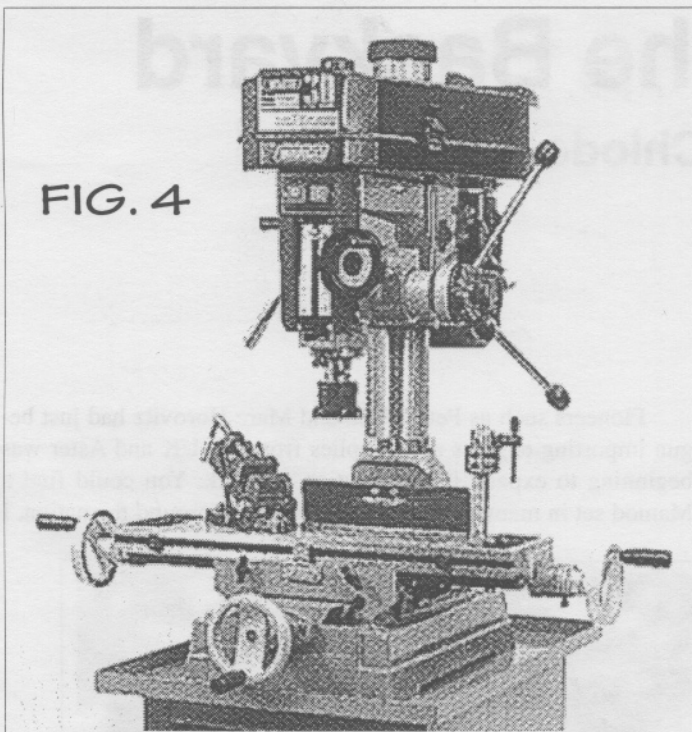




FIG. 4



quality presently on the market, such as Sherline (US) (Fig. 3), Emco-Maier, Rusnok (US), and Cowells (UK), and a veritable cornucopia of imported (Asian) models (Fig. 4) sized for bench top mounting, many of them quite adequate for our purposes, at least as regards size. The quality of some Asian machine tools is another matter however, and some information about selecting imported tools can be read in my notes in SitG issues N° 13 and N° 14 in 1992. (Has it really been five years I've been at this, now at 30 episodes?? Where has the time gone??!!)

However, if recent reports are to be believed, the range of quality to be found in the Asian machine tool market seems to have become even more unpredictable than in the past. Many of the machines are quite good, but many are not. Caution is the watchword.

I know of a number of instances where modelers have made superb mills for themselves by watching for one of the many older small horizontal millers which were made in large numbers in both the UK and the US by such companies as Burke, South Bend, Atlas and Clausing in the US, and Centec in the UK. These simple and robust machines, with table sizes of from 3" x 14" to 6" x 24", were made for light industrial use but have now been set aside in favor of a newer technology. Those that survive can often be found for very reasonable prices, and when given a good cleaning and refurbishing will serve for many more years.

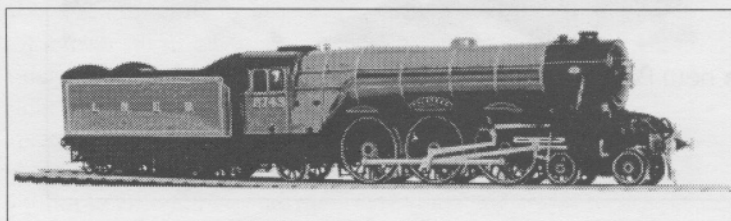
The milling machine is in some ways a simpler machine and tends to respond somewhat better to rebuilding than the lathe. What you find may not look pretty at first glance, but underneath all of the grunge there can be a little jewel awaiting a good polishing.

Another alternative which is unique to the UK, not presently with a counterpart in the US, is the "do it yourself" mill. The "Dore-Westbury" mill (*sorry...no photo available*) is a bench top vertical miller of 6" x 16" table size, designed many years ago by the late Edgar Westbury, a well-known British writer in the model engineering press whose individual specialty was internal combustion engines. This machine is offered as a set of partially machined castings and materials which can be finished on a 3.5" center lathe and a drill press. Over the years the design has proven to be exceedingly popular and, although it retains its original form, it has received a number of design modifications over the years which have greatly improved its performance. It is currently offered in several options such as castings only, in sets or individually, or part finished castings and materials. Although it is not a simple project, it is still within the reach and capabilities of the average modeler and would make a good mill candidate for the small scale live steamer.

In our next issue I will describe a few of the basic items of tooling and accessories for the milling machine. Until next time, Adieu!



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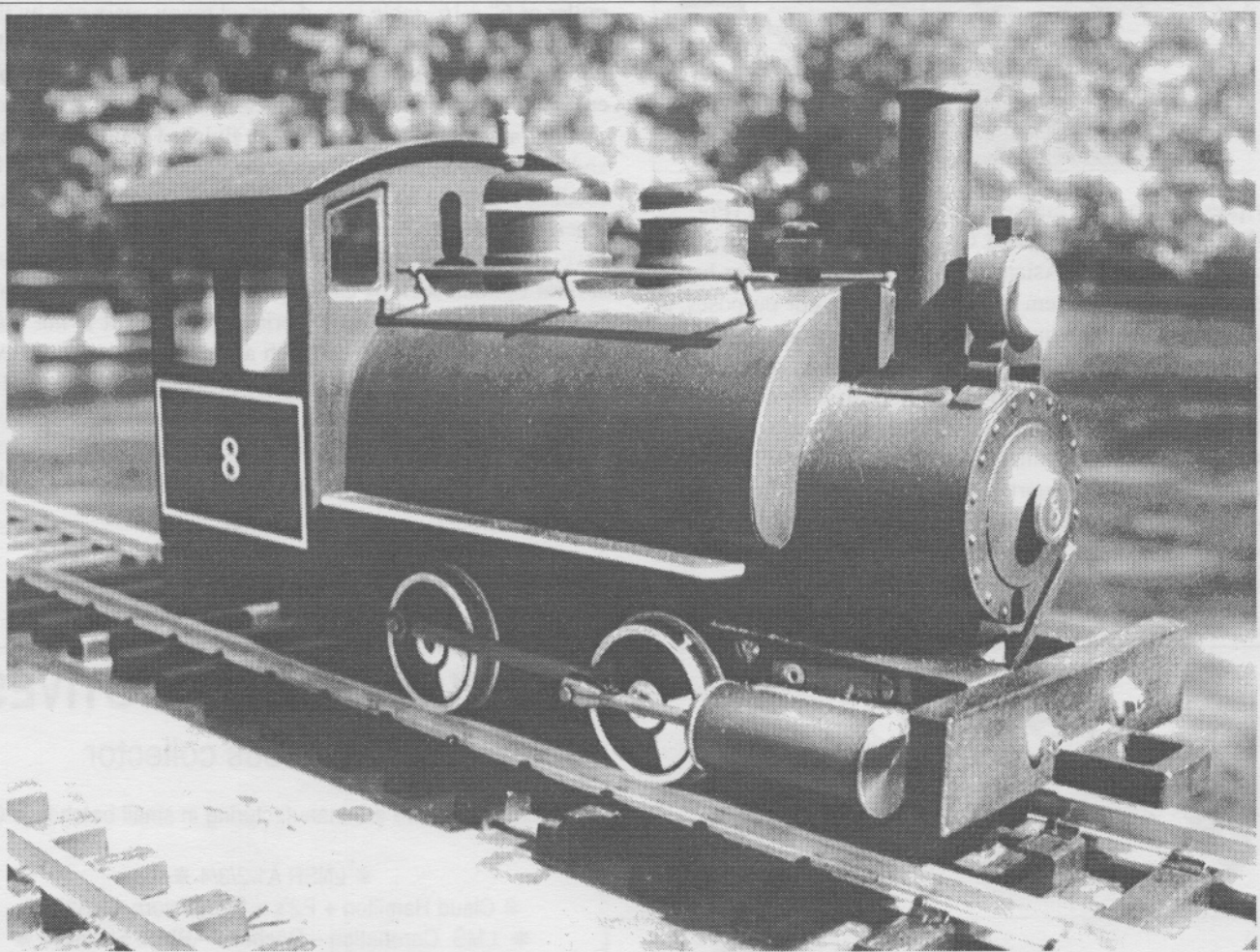
# Notes From The Backyard

by Rich Chiodo

## Vintage steam from the USA

Back in the early 1980's the small scale live steam scene here in the States had a tiny toe hold. Several folks who were members of the British Gauge 1 Model Railroad Association (G1MRA) quietly practiced in obscurity as did others in the larger scale clubs.

Pioneers such as Pete Olson and Marc Horovitz had just begun importing engines and supplies from the UK and Aster was beginning to expand its distribution network. You could find a Mamod set in many of the upscale toy stores around the nation. I



Creekside Forge & Foundry Baldwin poses on the new Pennsylvania Live Steamers gauge 1 club track just after the Golden Spike was driven.

Photo by Gary Lantz

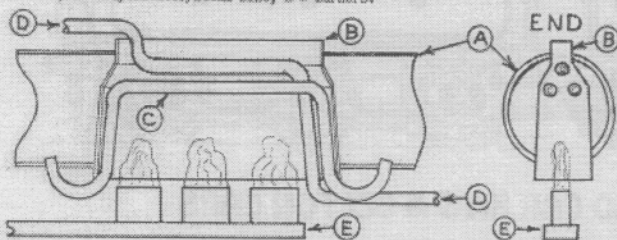
*Garden Railways* magazine at that time dedicated space to those brave few who eschewed the "Plastic Fantastic Spaghetti Bowl in the Backyard" for a broad radius, non-electrified loop which was home to a Beck Anna or vintage Merlin. SitG was just a daydream in your editor's mind.

doubt if any more than 5% of these actually made it around a circuit of track...unassisted. Likely more than that became model airplanes as they were tossed, smelly pellets and all, as far as their frustrated owners could heave them. You really-really had to love this hobby back then.

# CREEKSID Forge & Foundry

BALDWIN SADDLETANK LOCOMOTIVE

Old Baldwin represents a small industrial loco built about 1905 - 1920. The outline is fairly accurate 1/2" scale with simplified running gear. Although the appearance is that of an ordinary oscillating cylinder model, actually detail design improvements raise the performance beyond that normally expected of this type. An improved regulator design makes it possible to get a scale like slow speed, even without cars. The silver soldered boiler is unusual since we have a horizontal boiler with a vertical flue. In the sketch below: A - Boiler Shell, B - Flue, C - Water Tubes, D - Superheater/Steam Line, E - Burners.



This has several advantages; a fan is not required to raise steam; more heat spreads to the rest of the loco than with pot boilers. While the flue exhausts through the tank and out the dummy steam and sand doors, the exhaust steam from the cylinders goes up the smoke stack and gives a very good "smoke" appearance. The burners are also unusual in that they use a long life ceramic fiber wick which is flush with the top of the tube. This eliminates the wick burning down and much fuss and bother.

Burner time 18 - 20 minutes  
Time to raise steam from cold 5 - 6 minutes  
Running time 15 - 25 minutes

Length 9 3/16" (over buffers)  
Height 5 1/8" (over stack)  
Width 3 1/2"  
Weight 2 lb. 10 oz.

Available in either 0 or 1 Gauge  
Cylinders are oscillating, double acting  
Couplers: 0 Ga. - Hooks to match Mamod (see picture)  
1 Ga. - Loops for LGB / Kalanassos

Engine comes equipped with: Sight Glass; Alcohol Burner; Spare Wicks;  
Lighter; Funnel; Bottle of Oil; Bottle for Alcohol and Instructions

Creekside Forge & Foundry Baldwin specification sheet and advertising flyer, showing the unique design of the boiler and burner.

new design, with piston rings and gland packing improving the operating efficiency.

No other niceties were included. Fit and finish seems to be of high quality; at least on the two examples (Nº's 4 & 8) I have acquired.

The Isle of Shoals Light Railway and Navigation Company's Nº 4 and Nº 8 have seen considerable service at the hand of the Steam Kid (#1 son) at various steamups and garden railway meets around the country. You may remember seeing a photo in this very publication of Nº 4 Baldwin and #1 son attending to business in the wee hours at Diamondhead.

Capable of hauling 12-16 axles on level track under excellent speed control, this early example of entry level American-made small scale live steam provides good performance and a bit of history.

Creekside Forge and Foundry operated for about 3 years, as near as I can tell, and though several attempts and offers have been made to dust off the drawings and spool up the lathe, Mr. Grunدهoffer has steadfastly declined. Once done...enough!

With apologies to Paul Harvey, here is "the REST of the story". We recently spoke to fellow steamer Ken Parkinson of Florida, and Ken tells us that he has purchased the tooling and rights to the Creekside Forge & Foundry Baldwin. Ken has many years of experience in building and running live steam in many scales and gauges, and he plans to bring out an improved version of the Creekside Baldwin. We wish Ken success in his efforts and sincerely hope that an American-made live steamer will soon be available once again. We will keep you informed of his progress. - rb

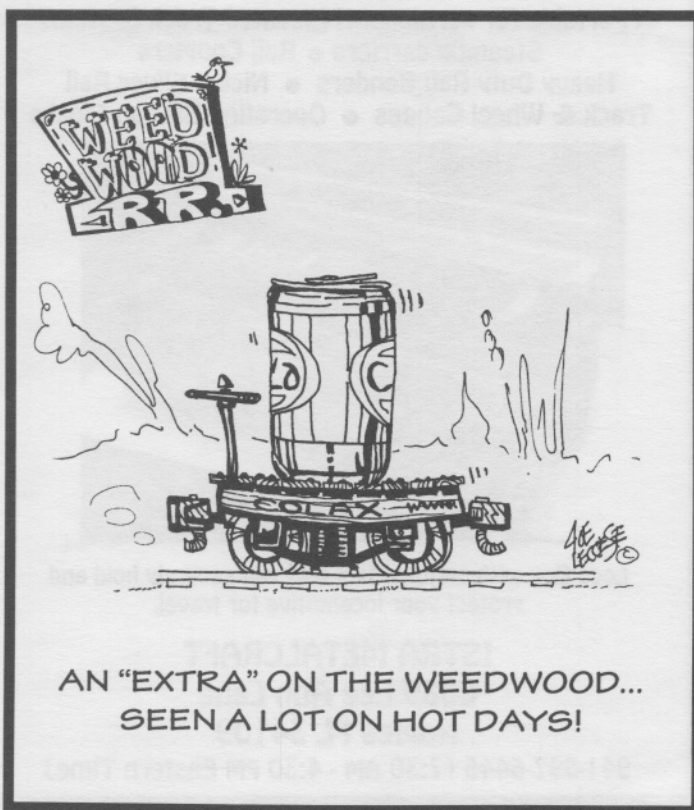


Well, did you know that, back in 1985, in a quiet village in upstate NY, Carlos Grunدهoffer had founded Creekside Forge and Foundry and was busily manufacturing a serviceable gauge 1, 0-4-0, meths fired, double-acting oscillating cylinder locomotive closely resembling the Mamod in the mechanical department...except that the Creekside Baldwin, as it came to be known, performed rather well, with none of the quality problems and spotty running habits of its more famous kin?

I first encountered the engine and the man at a tinplate train swap meet in upstate NY during the Summer of '85. I had not yet discovered this wonderful little corner of the hobby and was completely absorbed collecting Louis Marx 6" tinplate trains, focusing on prewar pieces. That cute little live steamer orbiting the circle of LGB track was.....cute; but who would pay \$135 for something like that, and what would you ever do with it...besides gutting the boiler and electrifying it to run under the Christmas tree? I passed.

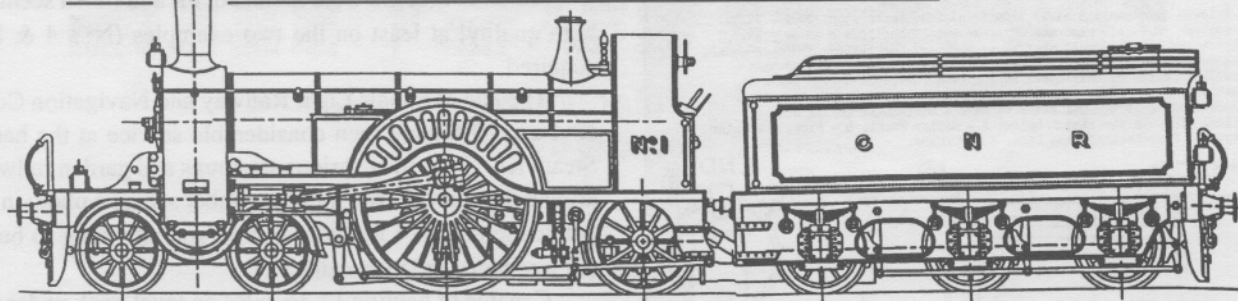
Five years later found me running ads in all the trade press searching for a Creekside, and being successful in locating several for a bit more than the original \$135.

Shown above is a copy of the advertising flyer and spec sheet. The boiler is an interesting affair in that it is saddle shape with steam lines running over the burner to achieve some superheating. The burner uses porous ceramic wick material which was (is) exotic in its application. The locomotive is very similar to a Mamod, and in fact uses the sight glass backhead from that engine and likely the reversing block and safety. The running gear appears to be of





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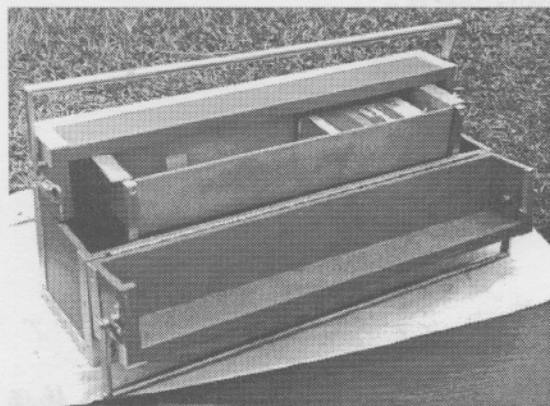
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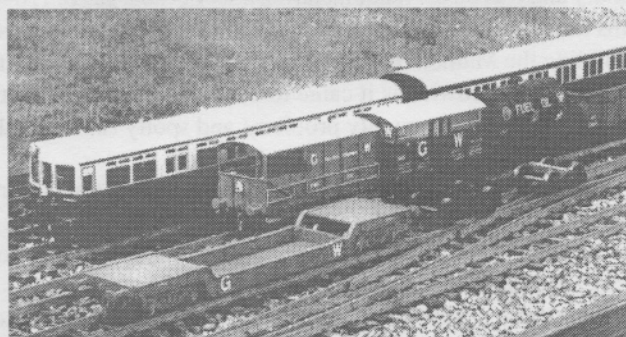
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# GAZING INTO THE FIRE

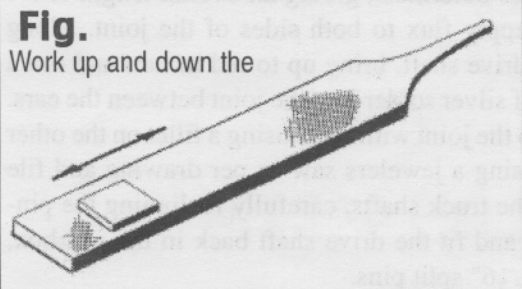
by Peter Jones  
photos & drawings by the Author

## Kissing Frogs (part 4)

We now turn our attention to the reversing block. As supplied it is usually very unflat! Hence it will spill steam alarmingly. To true this up a surface plate is the thing of choice, but a 10" smooth handfile (Fig. 17) will do the needful. Lay the file down and work the faces of the two components up and down with a steady pressure. This is a method beloved of

**Fig.**

Work up and down the

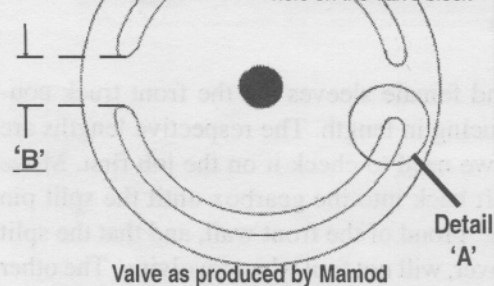


scratchmarks. When this is achieved, the face is true, but rough.

Glue or tape a piece of #800 wet and dry paper to a flat surface...like a drilling machine table or a piece of plate glass. To clean up the scratches, just work the job up and down (rather than the more usually suggested

**Fig. 18**

**Note:** Dimension 'B' should be 1/64" greater than the diameter of the hole on the valve block



Valve as produced by Mamod

figure-of-eight motion), without 'rocking'. Again, keep inspecting the job. Once all of those telltale scratches have disappeared, the job is done.

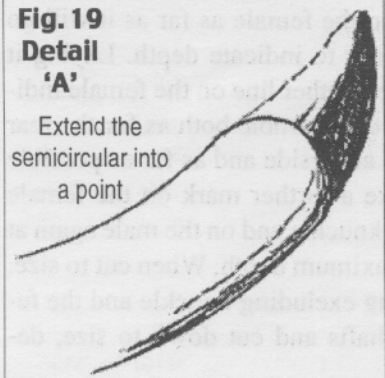
Look at the valve itself and you will see two semicircular canals. Note that the ends of these

canals are blunt. That means that when they are moved round to conduct steam, the effect is all or nothing. This is one of the reasons for the Mamod's

reputation for being difficult to run smoothly. If we slightly extend these rounded ends into points, we can get a more gradual admission of steam and hence slightly better slow speed running. Figs. 18 & 19 show the principle. A penknife carves a pointed end roughly to shape and we could finish off with a small oval file. Finish off the face on the wet and dry to remove any protrusions raised by the work.

**Fig. 19**  
**Detail**  
**'A'**

Extend the semicircular into a point



As made, the Mamod reversing valve spring lifts at 12-15psi. If we are going to uprate the boiler pressure, it makes sense to improve the valve springing. To do this we run a 5BA die down the valve bolt. Run it down a distance equal to

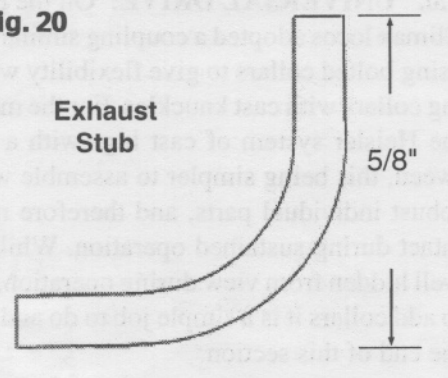
the thickness of the die itself. Assemble the valve dry in order to bed the two components together. Finally, peen over the end of the bolt and then screw backwards until it jams on the valve.

The exhaust system is modified by cutting the pipe back to a stub 5/8" long, as per Fig. 20. Slip a piece of silicone tube over this. The top should come to just below the top of the chimney. The effect of this is a better show of steam from the chimney and less condensate dribbling down onto the track.

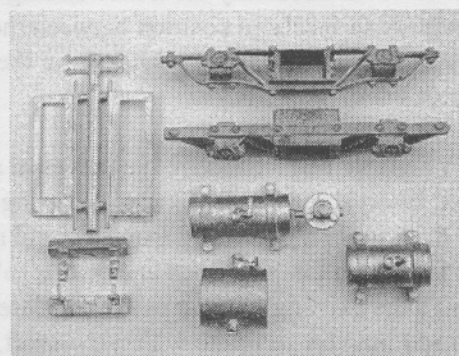
Next time we'll get into the heart of this project...the cylinders!

**Fig. 20**

Exhaust  
Stub



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# BUILDING THE VEST POCKET CLIMAX

text and photos by Mel Ridley

drawings from the author's sketches by Harry Wade

## Part 5 – Universal Drive

**5:0. UNIVERSAL DRIVE:** On the early prototypes, the Climax locos adopted a coupling similar to that of the Shays, using bolted collars to give flexibility with later variants using collars with cast knuckles. For the model, I have adopted the Heisler system of cast lugs with a coupling union between, this being simpler to assemble with fewer and more robust individual parts, and therefore more able to remain intact during sustained operation. Whilst the couplings are well hidden from view during operation, for anyone wishing to add collars it is a simple job to do and is explained toward the end of this section.

**MATERIALS REQUIRED:** These were listed in Section 4 but are repeated again as a reminder. Set of Universal Castings comprising male & female sleeves, driving lugs and unions. 8 – 1/2" 8BA steel bolts & nuts and 2" of 1/8" BMS rod left over from Section 2 - Trucks.

**5:1.** Referring to the Drawing, familiarise yourself with the component parts. Before removing from the sprue, clean out any residual ceramic material from the interior of the female sleeve. Separate all the parts from the sprue and fettle. Try the couplers and each lug in turn using the 8BA screws and open out to N° 44 if necessary for a nice sliding fit. Check that the couplers sit nicely in position between the lugs, filing off any excess. Drill out the pilot hole in the 4 lugs to 1/8" to accept the driveshafts.

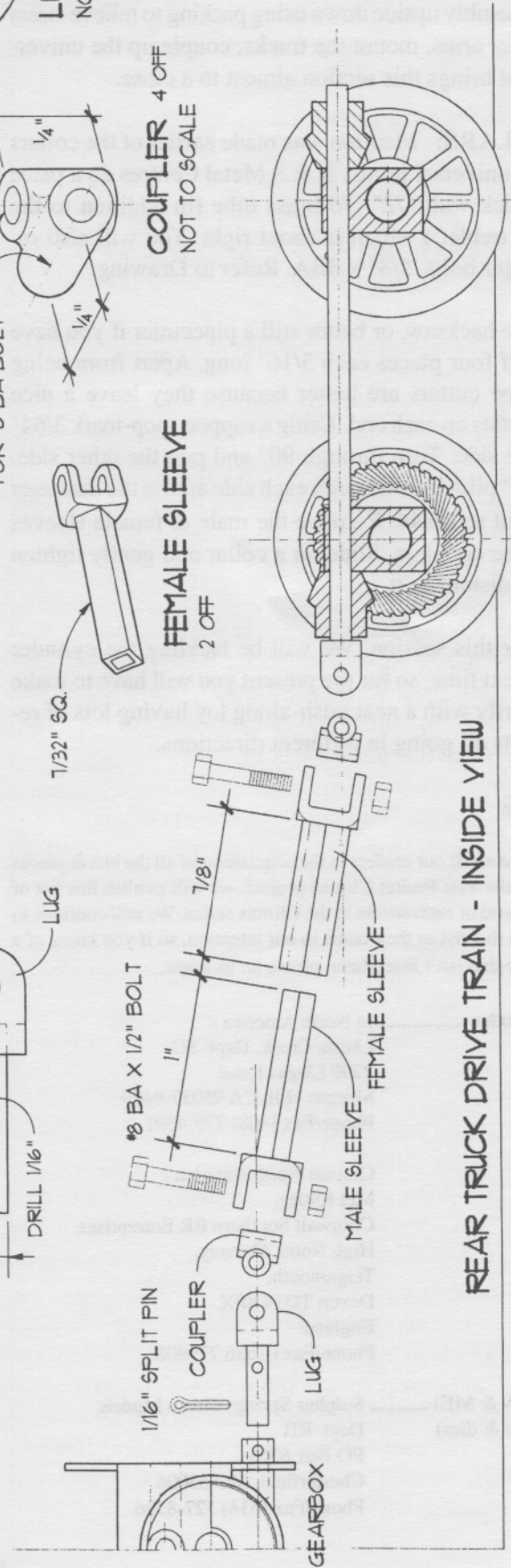
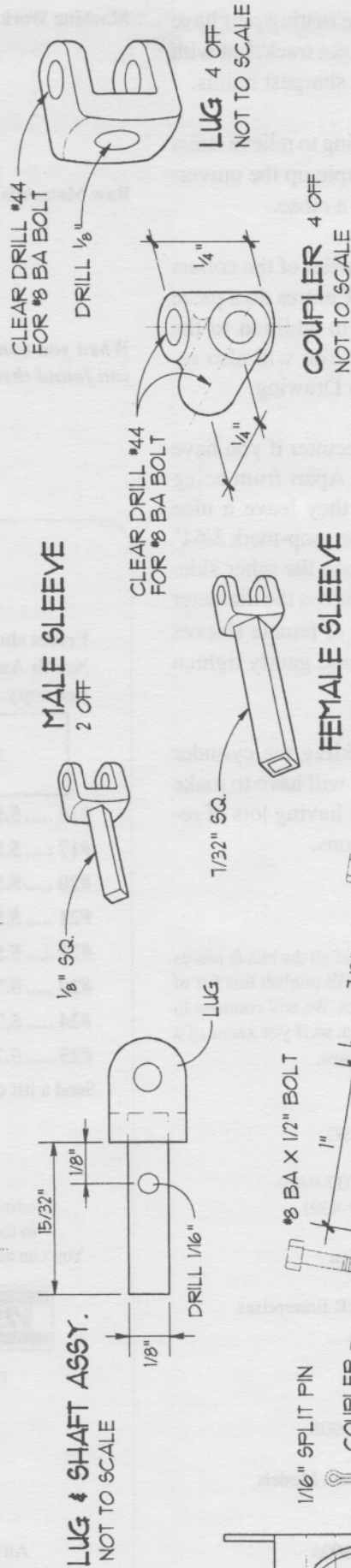
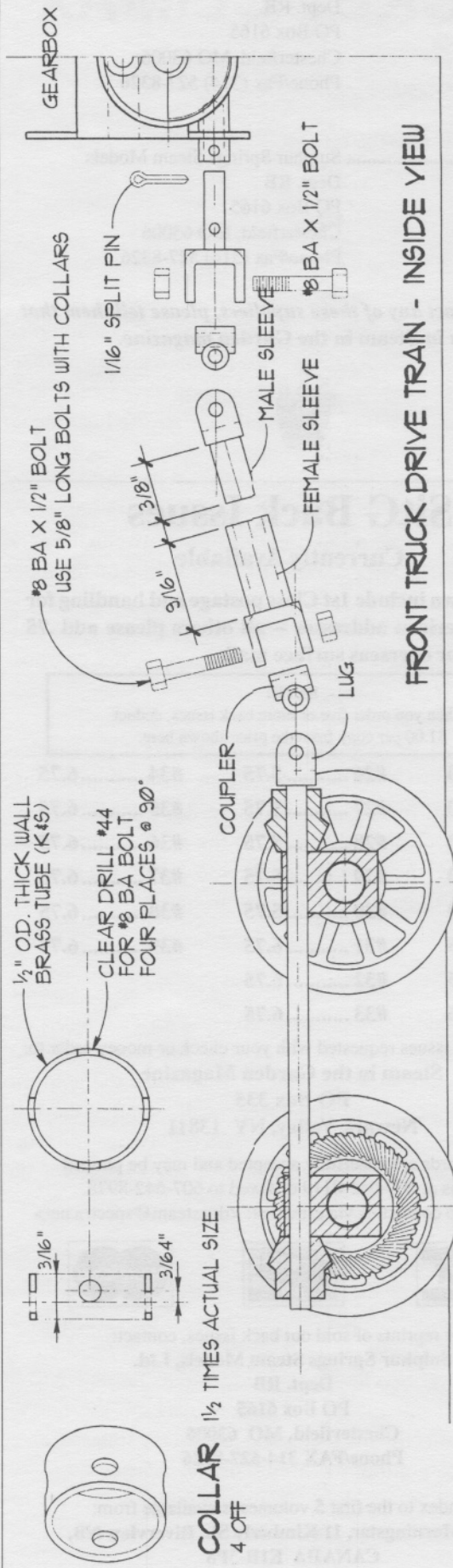
**5:2. DRIVESHAFTS:** Remove the universal shaft from the gearbox. Insert some 1/8" BMS rod and, using a pin vise with 1/16" drill, make a pop-mark. Being careful not to alter the position, place in the Vee block and drill 1/16" centrally down through the existing holes at each end. Care is needed here as the rod may try to rotate within the shaft, throwing the drill off-centre and redrilling or enlarging the exit hole. We need a nice clean alignment to insert split pins later on. Turn around and repeat for the other end. Slide on a lug at each end, the ears facing outward, until it is 1/8" away from the cross hole. The protruding shaft will be about 15/32". In the next operation, this will be cleaned up and silver soldered before parting off, along with the truck shafts.

**5:3.** Before removing the drive shafts previously assembled in the trucks, keep each pinion with its mating crown wheel together for reassembly afterwards as they have been run in as a matching pair. Remove the shafts and slide a lug onto an end with the ears outermost, giving an overall length of 3". Clean up and apply flux to both sides of the joint. Along with the other drive shaft, bring up to red in turn and run a small amount of silver solder into the joint between the ears. It will flash into the joint without causing a fillet on the other side. Part off using a jewelers saw as per drawing and file smooth. Refit the truck shafts, carefully realigning the pinions as before, and fit the drive shaft back in the gearbox, securing with 1/16" split pins.

**5:4. ASSEMBLY:** We'll fit the rear set first as the reach is longer and it won't require modification. Bolt a coupler into both the male & female sleeves using 8BA x 1/2" screws and nuts, and affix the other ends to the gearbox and truck. Unlike the Shay, the male is usually attached to the gearbox or driven end. Twist the truck shaft around until they mate and slide together.

Both the male and female sleeves for the front truck coupling require reducing in length. The respective lengths are given below but we need to check it on the job first. Move the universal shaft back into the gearbox until the split pin hole is about 3/32" proud of the front wall, and that the split pin, once folded over, will not foul when revolving. The other end doesn't matter as there is plenty of shaft space for the second truck.

Push the male coupling into the female as far as it will go and scribe a line on the shaft to indicate depth. Laying it alongside the female, scribe another line on the female indicating the depth it will go to. Assemble both as for the rear truck with the scribed lines alongside and as far as possible parallel to each other. Make a further mark on the female end where it abuts the male knuckle and on the male again at what will be the point of maximum depth. When cut to size, the male should be 3/8" long excluding knuckle and the female 9/16". Remove the shafts and cut down to size, de-



UNLESS SPECIFICALLY NOTED,  
ALL PARTS ARE DRAIN FULL SIZE.

THE YEST POCKET CLIMAX

Locomotive design by Mel Ridley  
Drawings Copyright © 1991 by Harry Wade



burring the ends for a good sliding fit. The mating pair have to be short enough not to interfere on straight track, but with sufficient length not to come apart on the sharpest radius.

Turn the assembly upside down using packing to relieve stress on the rocker arms, mount the trucks, couple up the universals and that brings this section almost to a close.

**5:5. COLLARS:** Mention was made earlier of the collars used in the universal joints. K & S Metal Centres do a piece of fairly thick wall 1/2" o/d brass tube (in addition to the usual thin 'treble') which is about right. You will also require 8 longer bolts, 5/8" x 8BA. Refer to Drawing:

Using a fine hacksaw, or better still a pipecutter if you have one, part off four pieces each 3/16" long. Apart from being quicker, pipe cutters are better because they leave a nice swage or radius on each end. Using a support, pop-mark 3/64" in from one side. Turn through 90° and pop the other side. Drill a 1/16" pilot hole through each side across the diameter and open out to N° 44. Remove the male & female sleeves including the couplers. Slide on a collar and gently tighten up without distorting it.

That's it for this session. We will be tackling the cylinder assembly next time, so for the present you will have to make do temporarily with a neat push-along toy having lots of revolving parts all going in different directions.

## SOURCING

In order to assist our readers in the acquisition of all the bits & pieces they need for the Vest Pocket Climax project, we will publish this list of sources at the end of each article in the Climax series. We will continue to add sources to this list as they come to our attention, so if you know of a reliable source that isn't listed here, please let us know.

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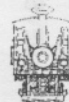
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# Product Review – Hartford Products’ New Mexico Lumber Company Log Car and D&RGW Freight Car Trucks

review and photos by Jim McDavid

**Scale/Gauge:** 1:20.3 scale, Gauge 1

**Features:** Laser cut wood parts  
High quality cast metal detail parts  
Sierra Valley unplated steel wheel sets  
Brief history of the New Mexico Lumber Company

**Price:** Log Car Kit with Trucks & Couplers ..... \$54.95  
D&RGW freight car trucks - without brakes ..... \$29.95  
Brake rigging detail pack ..... \$5.95

**Available from:** Your favorite local hobby shop or direct.

Hartford Products Inc.  
18 Ranch Road  
Cedar Crest, NM 87008  
Phone: (505) 286-2200 Fax: (505) 286-2141

Hartford Product’s latest release is a model of a New Mexico Lumber Company log car, in 1:20.3 scale for gauge 1 track. The finished car measures 5.3" wide over the log bunks and 11.25" long over the end beams. It includes link and pin couplers and Hartford Products’ newly released 1:20.3 scale 3'7" wheelbase D&RGW freight car trucks. These can be purchased separately, so we’ll review them separately.

Bob Hartford includes a brief history on the New Mexico Lumber Company as a part of the instructions. As a logging railroad history buff I particularly enjoyed this section. I think it piques your interest and makes the assembly of the model that much more enjoyable. This not only provides the modeler with a geographic picture of the operating area of the company, but also familiarizes him with the time period and the personnel involved with the company.

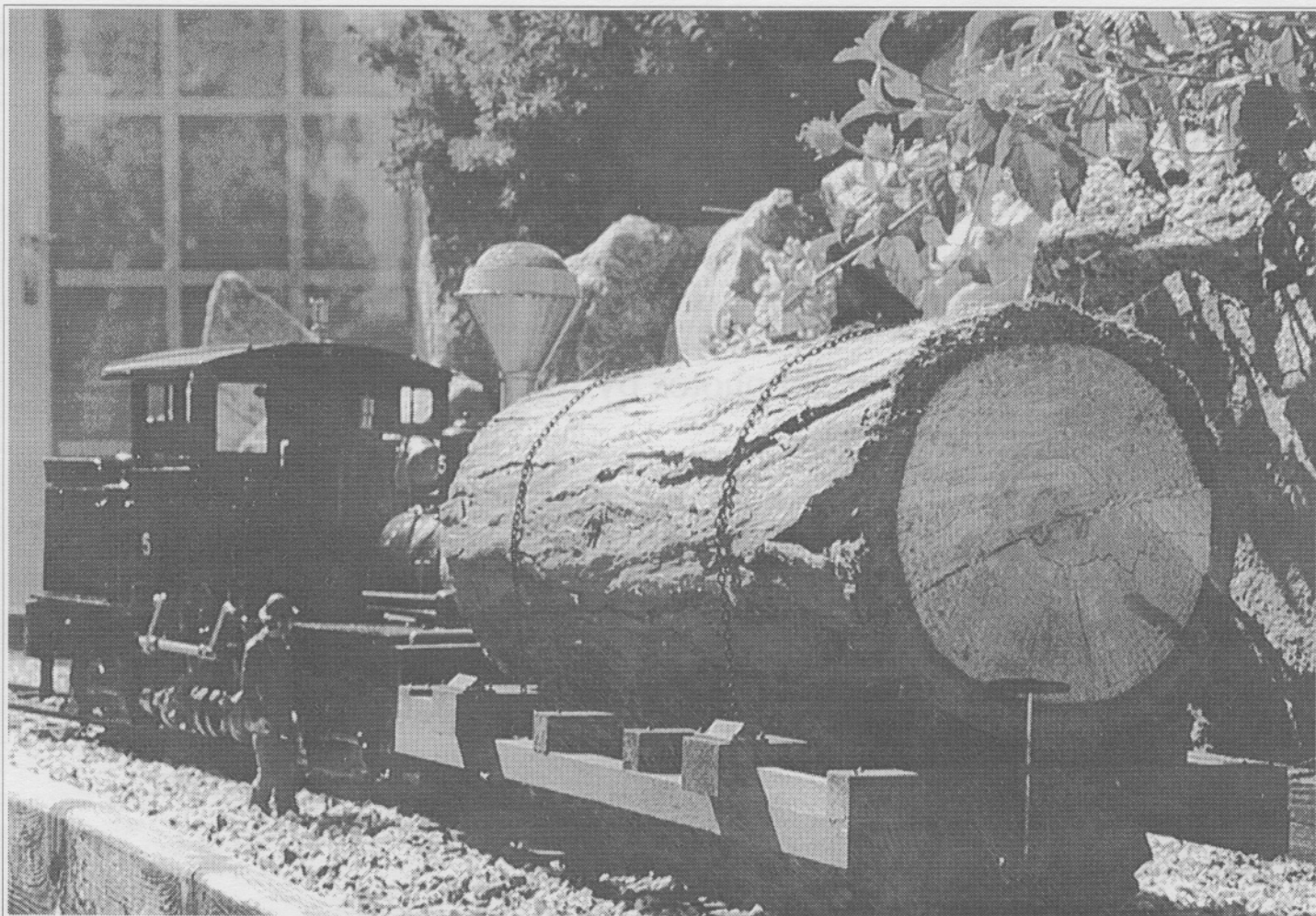
Hartford Products includes a tools and materials list, a parts list, full scale CAD drawings and step-by-step instructions with the kit. As with any kit, a thorough reading of the instructions prior to assembly of the kit is a must.

I started by laying out all of the parts on my work surface to check for flash or casting sprues, and also to make sure that all the parts were there. Hartford’s metal castings were clean, so no filing or scraping was required.

Finishing of the parts before assembly is easier and makes for a more professional final product. Only the weathering and sealing coat should wait until after assembly. I’ve always painted the wood parts on my models, but I decided to try Weather All on the wood parts in this kit for an unpainted aged look. The Weather All produced a medium dark blue-gray finish which seems a little too dark for a sun bleached wood effect, but is still quite striking. I soaked all the metal parts in Blacken-it, including the steel wheels. There are some very small plastic nbw’s which I spray painted prior to snipping from their sprue.

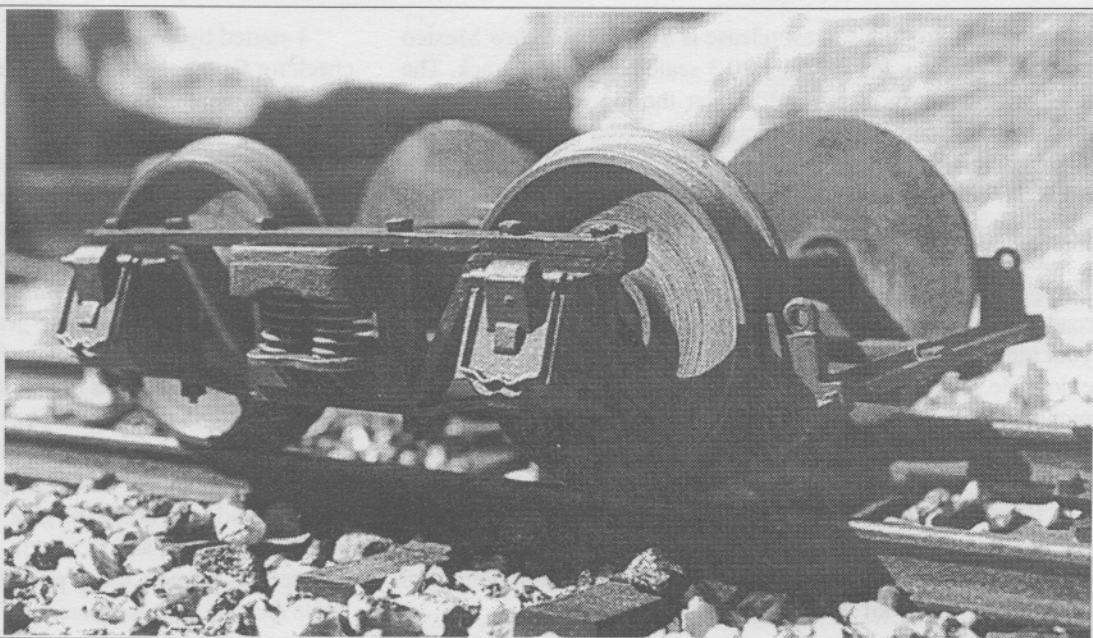
Assembly of the wood parts is easy using the drawing as a template and your choice of glue. I used Super Jet (cyanoacrylate) on all glued joints and to attach the metal parts to the frame. The instructions suggest using push pins to hold the frame members while the glue sets. A square is still a must to keep the frame mem-

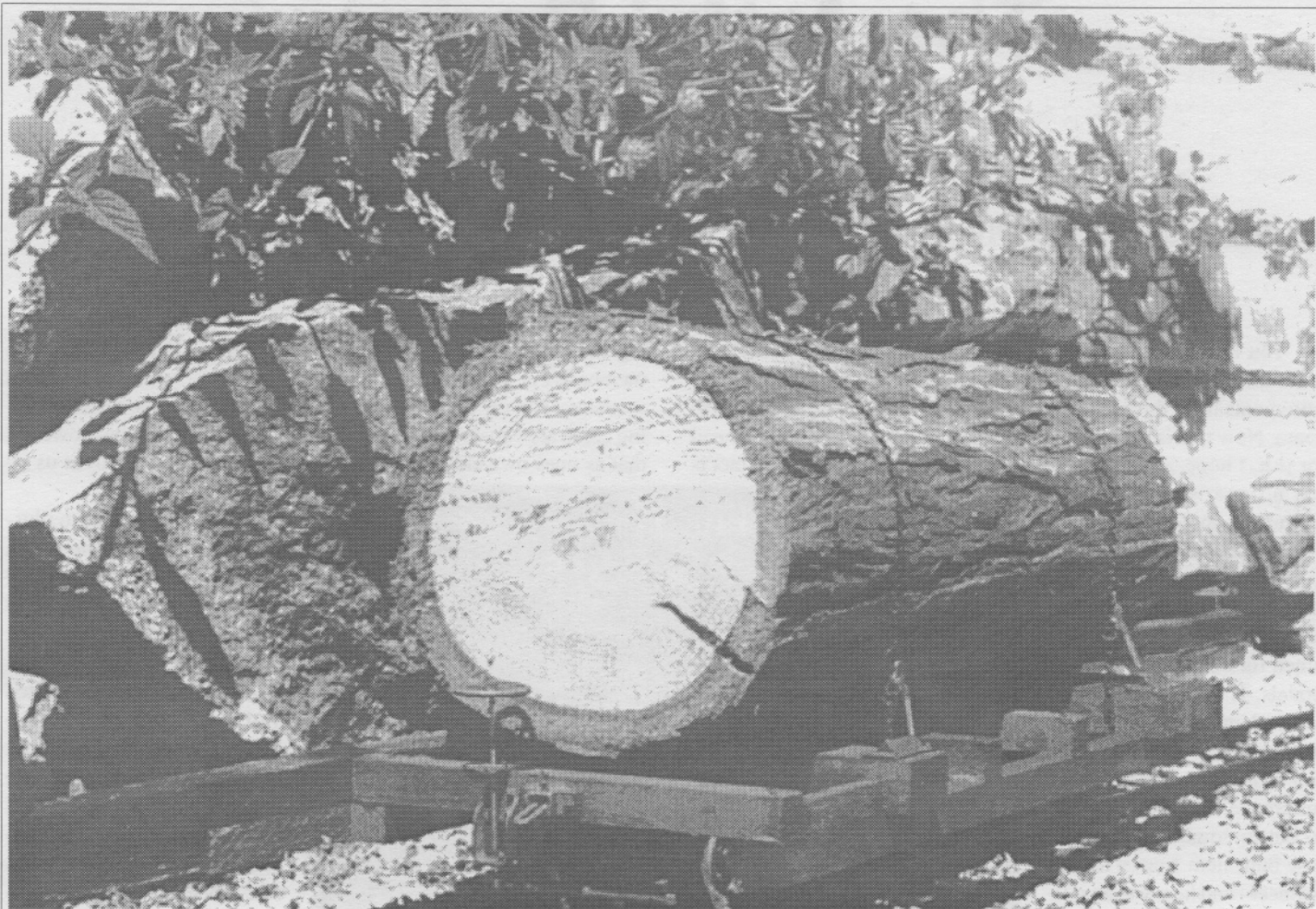




A Catatunk Shay sits waiting in the afternoon sun while Lefty, a member of the Loma Prieta Logging Co. crew, checks the link and pin couplers. The "Pacific Coast Pumpkin" (see article) is chained down to a Hartford Products New Mexico Lumber Company log car.

**Photo right:** 1:20.3 scale D&RGW 3'-7" wheelbase freight car trucks by Hartford Products. The wheelsets are Sierra Valley's unplated steel wheelsets. The author was impressed with the quality of these trucks and wheelsets.





Another view of the Hartford Products New Mexico Lumber Company Log Car. Bob Hartford has a well deserved reputation for accuracy and quality in his kits and this log car continues the tradition.

bers at right angles before gluing.

The trucks supplied with this kit are also a new release from Hartford Products, and are modeled after Denver and Rio Grande Western 3'-7" freight car trucks. The New Mexico Lumber Company often bought or borrowed old D&RG equipment, so these trucks are appropriate for this log car.

The trucks are modeled in 1:20.3 scale and are cast in a white metal alloy called "Duracast". They come assembled except for the attachment of journal box lids, side bearings and brakes. The castings are superb, showing no visible flash. They are fitted with Sierra Valley 26" unplated steel wheelsets which are insulated on both sides. These trucks are massive and will help keep you on the tracks if you're running empty with the log car; and they will lower the center of gravity when installed on any other piece of rolling stock. The trucks scale out perfectly to a 3'-7" wheelbase and would be impressive just sitting around your railroad yard by themselves after finishing and weathering.

After the trucks are ready, all metal castings can be attached with CA cement. The only tedious part is the installation of the 40 tiny nbw's. The trucks go on with 2 screws and then you're ready for any weathering and sealing. The only weathering I chose to do

was a wash of Rustall on all of the metal parts, including the trucks, and then a coat of Testor's Dulcoat to seal everything.

The finished car is wide and low slung and calls out for a huge load of 16 foot logs (actually 16'-6" rough). I think a Pacific Coast pumpkin would be appropriate — a large clear old growth log worth big bucks.

This was essentially a very easy kit to put together. I spent a couple of hours one evening finishing both the wood and metal parts. The next evening about the same amount of time was spent in assembly. Even the novice first time modelers would have little trouble with the assembly of this kit.

This log car is the latest in the line of kits that Bob Hartford is producing for the 1:20 scale (3' narrow gauge) modeler. The finished car is absolutely superb and, along with the new trucks, would make a realistic and stunning addition to your logging railroad.





# The Artful Bodger

by Tag Gorton  
photos by the author

## So You Want To Be Different

You may remember that in the first of this series of articles, I mentioned that it seemed not to be possible to get *exactly* one's requirements from the commercial manufacturers of garden scale live steam. Now this is certainly not the fault of locomotive builders and nor is it, I hope, a case of 'yours truly' being over picky. The fact is that no one is able provide batch-built locomotives with a vast range of labour intensive options and still make some sort of living within the general range of prices obtained for commercially built models. If the non-engineer/railroad modeler wishes to purchase a locomotive that *precisely* suits his personal preference, then nothing will do but to commission a purpose built item from a model engineer - and here we are into serious folding stuff!

The alternative - and there *is* always an alternative - is to pick the commercial model locomotive that most exactly answers one's requirements, before investigating the possibility of modification. Now this is perfectly practicable and many refinements are within the range of us workshop tyros with little more than a selection of hand tools. Almost certainly however, there will be a requirement for silver soldering of pipework and, while the equipment required for this operation is fairly minimal (I use a butane blowtorch and a lump of Cornish granite!) it may be that at this stage in ones modeling career, it just seems too difficult. Please don't feel too bad about this because certainly I never did. As an article of faith I have no compunction at all about pick-

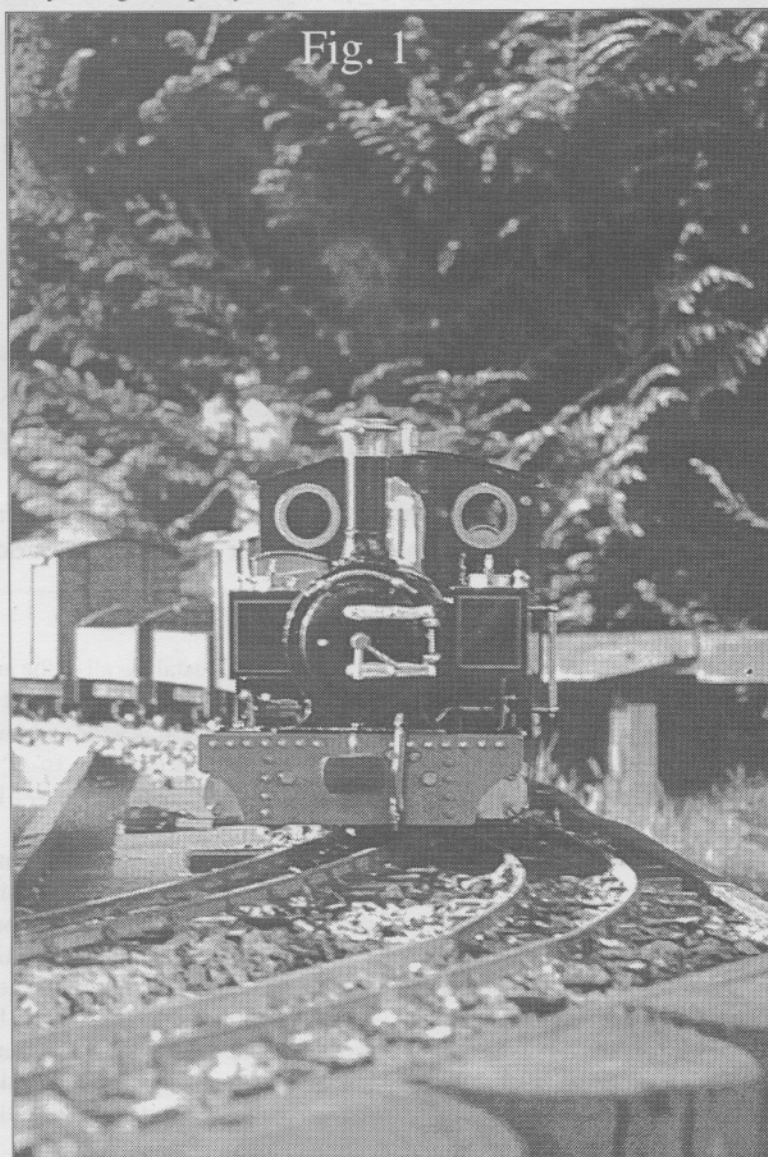
ing the brains or using the skills of my fellow 16mm Association members. For those who are some way from other garden scale steam modelers, it is my experience that members of local model engineering clubs are equally as helpful. It is worth bearing in mind however, that as ones own skills improve with experience, it behooves us all to 'pass it on'.

I would here like to illustrate what can be done with a bog standard commercial model by introducing you to Sir Arthur - ostensibly a kit built Roundhouse *Lady Anne* class locomotive constructed and modified by George Mckie, builder, engineer and general factotum of the Plymstock and Hooe Light Railway in Plymouth, England. I should say right away, that this article is not a step-by-step guide, with all dimensions to the nearest thou, but rather a 'show-and-tell' to disseminate ideas and stimulate creativity.

### Ideas on a lazy Afternoon

George has always been an admirer of the running qualities of Roundhouse locomotives and had in fact built an early meths fired slip-eccentric version of the excellent *Lady Anne*. This, his first locomotive, incorporated various cosmetic alterations including the addition of a very nice set of joggled running plates to provide a touch of PHLR individuality. Meths fired and manually controlled, this engine was perfect for lazy summer days in the garden just watching the trains go by.

It was during one of our 'lazy afternoon' running sessions on this delightful line



A rather pretty kit built Roundhouse *Lady Anne* class locomotive on trials on the metals of the Cockington Valley Railway in Torquay, England. It looks little different than the hundreds of others in its class, but it has hidden depths!

that George and I tossed around a few ideas to perhaps improve a kit built version of the latest gas-fired variant of this eclectic model. Cosmetic alterations were largely discarded because the new design *Lady Anne* was considered to be an attractive model in her own right - although it was agreed that the addition of dummy drop link and combination lever, as used on the marque's more expensive offerings, would add interest to the motion when running and would cost very little.

George wanted to do something more radical and, moreover, something that would make the locomotive stand out in any gathering of small scale live steam. Bearing in mind that the LADY

ANNE class is perhaps the most familiar locomotive on 16mm and G-scale tracks in Great Britain, this was perhaps something of a tall order, but in any event it was decided that additional radio control would be the way forward. Both George and myself are fond of radio control, largely because it gives one the choice of either driving from afar, or just switching the transmitter off whilst running and watching the trains go by.

All R/C Roundhouse locomotives come with remote control of just reverser and regulator and, after experience with both Merlin and Pearse steam whistle-equipped locomotives, George wished to provide *Lady Anne* with a whistle that could be used *while the locomotive was in motion*.

We quickly realised that this would require a three channel radio control outfit, and it was but a short hop from this point to realising that an additional servo could manage two extra functions.

### Steamy Wish List

Some years ago I remembered seeing a Merlin HUNSLET which boasted drain cock steam effects rather than a whistle and certainly this added a certain *je ne sais quoi* to the driving experience. Would it not be impressive to be able to both whistle on approaching a grade crossing, and also to provide dramatic drain cock effects whilst pulling away from the depot? We thought it would, but extra steam functions would certainly use more water and so a method of replenishing the boiler whilst 'in steam' would be necessary. A 'wish list' was therefore drawn up as follows:

*Boiler fill system*

*Draincocks and steam whistle*

*A 'clutter free' cab with plenty of room for a 16mm engineer*

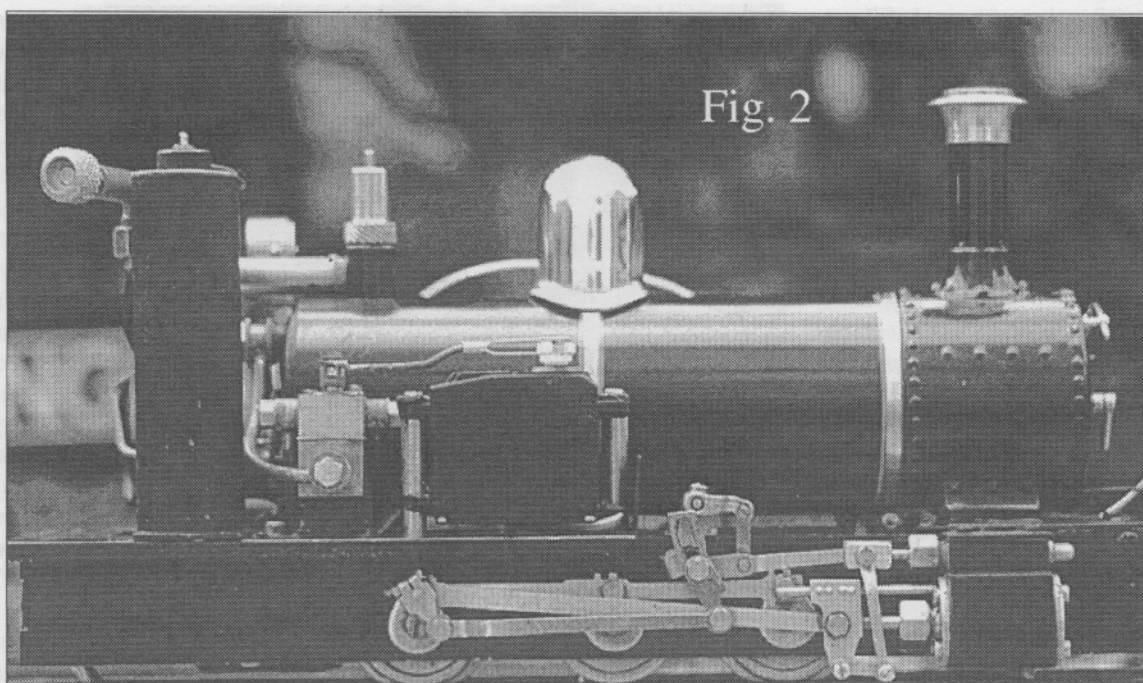


Fig. 2

The heart of George's whistle and draincock system. The Pearse regulator fitting and its associated servo fit neatly within the starboard sidetank. Note also the addition of the crosshead/droplink/combination lever. This is a standard Roundhouse fitting not generally supplied with *Lady Anne*, but well worth acquiring.

*Lubricator to drain beneath the footplate*

*Loud exhaust chuff*

*In situ battery charging*

*Drop link & combination lever to represent full Walschaerts valve gear*

### Sourcing Parts

The above may well be considered a tall order for a garden railway without a fully fitted workshop, but it was felt to be within the bounds of possibility, if commercial parts were used, and the first thing we looked at was the provision of draincocks and whistle. There were certainly a couple of whistle valves on the market, but neither were suitable for either radio control or operating two separate functions. Pearse Locomotives however, used a very neat cab-mounted pressure plate regulator on their *Countess*, which also doubled as a whistle valve when the locomotive was stationary. This compact item then, was effectively a steam 'switch' with an off position and two outlets, which we thought would fit easily within the confines of the starboard side tank, mounted on the bracket originally provided for the radio receiver.

Perhaps the biggest fly in the ointment was the probability of having to use costly miniature servos if the loco was to have an uncluttered cab. George found that care in design and a bit of lateral thinking meant he could use standard servos, while a comparatively inexpensive FM three channel radio system (The Hitec Ranger, hailing from Korea) was sourced locally.

There is but one steam outlet on the backhead of a Roundhouse boiler which could feed our whistle/draincocks valve, but here was a problem. If this outlet was used for these functions we would have no way of replenishing the boiler whilst in steam - and you will ap-



precipitate that with single fill running and enthusiastic use of both draincocks and whistle, the boiler water could very easily run out before the gas for the burner!!

There were two ways of dealing with this difficulty. The first idea was to use a double banjo in the one steam outlet supplied. This method was commonly used on Merlin locomotives, but had the disadvantage of being very much a weak link. A standard banjo has a hole through the centre of the bolt and a hole across the thread which combine to make it very much weaker than it looks. On a double banjo this problem is compounded, and it really is very easy to just turn off the bolt head when attempting to make the arrangement steam tight.

Bearing in mind that this item would have to be specially commissioned and would also intrude into the cab space, it was decided instead to commission the construction of a standard Roundhouse boiler with an extra steam outlet. This was not the expensive option that it might appear. The boiler was manufactured for George by Finescale Engineering (the source of those delightful little 'quarry' Hunslets) and the original sold to defray expenses.

The locomotive was 'proved' using the original boiler, and the accompanying photographs show *Sir Arthur* before the addition of the ENOTS valve boiler fill system.

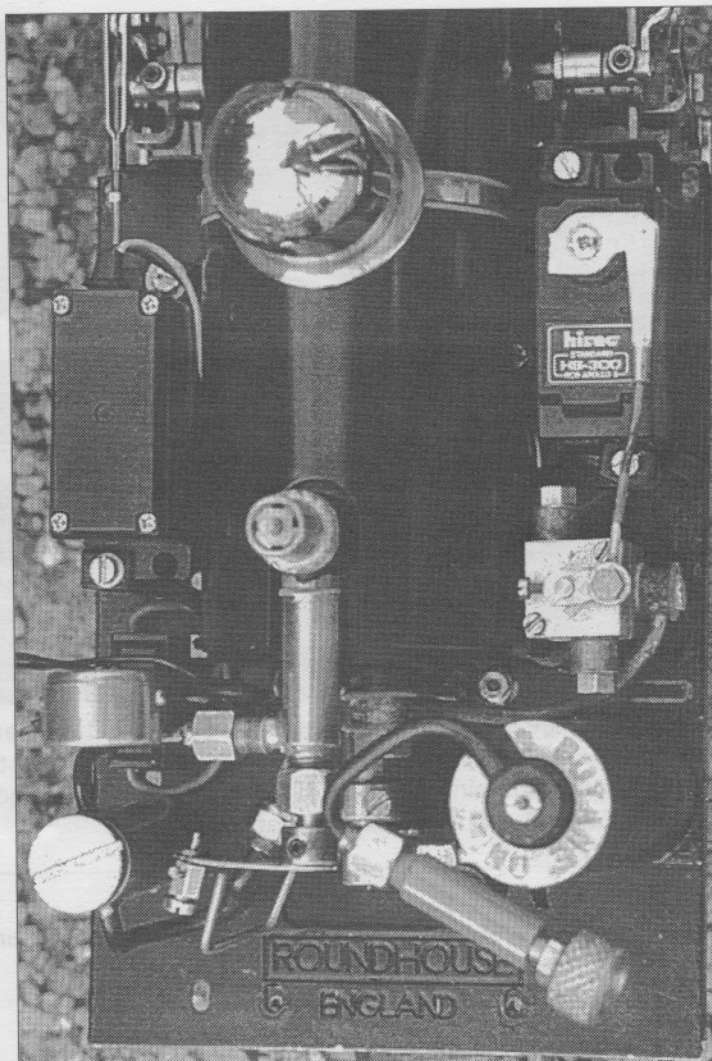
### Clearing the Cab

After offering up our 'steam switch' together with the operating servo to its proposed siting in the starboard side tank, George measured the space required for the regulator operating servo and radio receiver between the frames.

Once we were sure that the additional equipment could be neatly stowed, it was time to consider George's secondary requirement for a clutter free cab. Earlier *Lady Anne* class locomotives, whilst excellent runners, rather fell down in this department, with servos, on/off switch and lubricator conspiring to provide little or no room for a 16mm or G-scale driver. This latest version, despite having a cylindrical gas tank in the cab, was rather better, but George felt it could still be considerably improved.

A standard Roundhouse lubricator is certainly the most obtrusive item, sited as it is in the port cab doorway, and the large knurled gas regulator similarly obstructs the starboard side.

Now I have no quarrel with those excellent people at Round-



The general layout of fittings above the footplate. Note that these photographs were taken before the addition of the ENOTS water fill system. This, in fact, takes up very little more space, and the filler valve is situated neatly behind the cab steps on the starboard side. The gas regulator valve has also been later repositioned to be less obtrusive.

the footplate. George sited this item behind the sidesheet on the port side, leaving the cab doorway free. The original cab roof mounted battery holder was discarded and replaced by a smaller version suitable for AAA batteries. These are a far neater fit, are unobtrusive from all normal viewing positions, but have a limited operating time. Rechargeable batteries are used, which are drained and recharged after every operating session, and this has been found to be very satisfactory. The Roundhouse cylindrical gas tank is excellent and very carefully sited to take up the minimal amount of space and was therefore left alone. *Sir Arthur* was left with a remarkably uncluttered cab having plenty of room for both engineer and fireman.

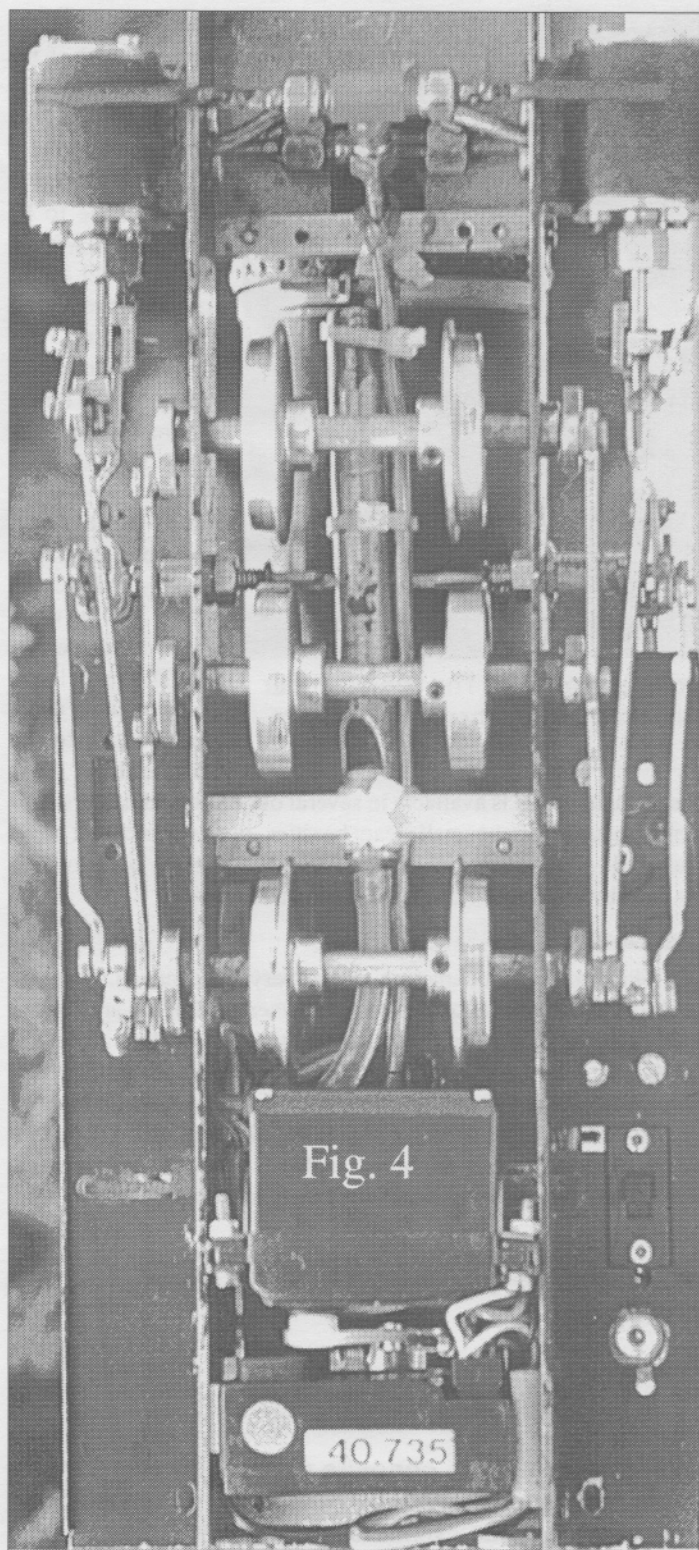
### Glitches and Shortcuts

By this stage George knew that all the major parts would actually fit, but as in all operations of this kind there were glitches along the way. The whistle/draincock 'steam switch' was happily bolted into position on the Rx bracket and copper pipework made up to provide steam from the boiler to the Pearse fitting (see Fig. 2), the heart of George's whistle. This is not the place to cover the skills of

house, whose first priority has to be usability for the embryo steam engineer. A delicate balance has to be struck between the ergonomics of inexperienced twelve inches to the foot fingers and the aesthetic appeal of their model. However, George is now very experienced with steam locomotion and has his own agenda. The new sideways lifting cab roof we considered to be a big improvement over the original design, where the backsheet of the cab was removable, but the four penlight batteries in their holder do take up rather a lot of space under the roof.

Moving the gas regulator is easy. It can be positioned almost anywhere in the cab by carefully bending the pipework, and I think, bearing in mind there is a lifting roof, that it's a good idea to have the knob pointing straight up. In this case we moved the regulator knob to an unobtrusive position right inside the cab. It is here marginally more difficult to operate but, bearing in mind that it needs to be altered rarely during a run and this operation could be conducted during a depot or watering stop, it was considered a worthwhile payoff.

The lubricator, on the other hand, was completely discarded in favour of the more sophisticated Pearse version, which is designed to drain neatly below



The on/off switch and lubricator drain can be seen in the bottom left hand corner. Note George's efficient use of the available space between the frames. The regulator servo seen here actuates the regulator via brass rodding through the footplate, and just fits between the radio receiver and the rear wheel set. Note also the silicone tube for steam supply to the whistle.

silver soldering, but fitting banjo rings to copper pipe is perhaps the simplest operation for the budding engine bodger to undertake! Fitting the operating servo was a fairly simple matter of copying the standard procedure laid down in the kit instructions, but George did have to provide fixing holes in the chassis for the servo securing pillars. The first problems came when routing both sets of pipework down to whistle and draincocks.

First of all, everything had to be removed before shaping the bracket to allow access for pipework. Bearing in mind the rather more onerous duties placed on this bracket, whose original job was to just support the plastic radio receiver, it was considered necessary to beef it up with a bit of angle. After replacement of the fittings, the draincock effect was provided below the cylinders by routing the copper pipework over the frame spacers and down to a 'Tee' junction between the frames, with outlet pipes just in front of the cylinders. It is your choice whether draincock steam is routed forward, parallel to the track or, in this case, to blast out dramatically sideways.

Unfortunately, getting both pipework and whistle into this confined space between the frames, together with fitting appropriate brass support brackets, would have meant a major dismantling job and it is at this point that 'proper' model engineers should avert their eyes. Us bodgers, you see, sometimes find a simpler method by default - and in this case both the Tee junction and whistle were secured in place with nylon cable-ties (see Fig. 4). Instead of using copper pipe to the whistle, we reasoned that this was reasonably low pressure steam and we could use silicon tube from a stub on the whistle valve to the stub on the whistle itself. Much easier to fit, and I have to say that it works very well indeed. A tip here is to angle the blind end of the whistle upwards slightly to allow any condensate to run out of the whistle slot, thereby precluding any tendency to warble. The Finescale whistle used on this engine is excellent and produces a realistic narrow gauge note!

#### Shoehorning In

Having pinched the radio receiver bracket for the whistle valve, the radio receiver had to be re-sited, and George tucked it neatly behind the rear buffer beam, very simply secured with external quality double-sided sticky pads. The under-footplate regulator control servo had to be shifted forward to accommodate this, and a simple bracket was made up to site it exactly (see Fig. 4). The whole arrangement fitted with about an eighth of an inch to spare and wiring was tidily tucked alongside both radio and servo, then secured into place by tucking left over silicone tube over the wiring between electronic components and frame.

After replacement of the boiler, with the modified version having an extra steam bush on the boiler backhead, an ENOTS boiler fill system from Tolhurst Engineering was fitted. This was a simple matter of routing copper piping from a clack valve screwed into the second steam outlet, across the cab floor to the filler valve sited under the cab steps on the port side. The ENOTS clack valve system is rather more sophisticated than the more common bicycle tire type filler and is particularly easy to use because there is no necessity to hold the filler in place while replenishing. Perhaps I will provide fuller information on this useful accessory at a later date.

#### Steaming into Action

I have altered or converted many different engines and one thing I certainly don't expect is that a modified model will work properly straight away. In the case of *Sir Arthur* things actually went rather well. It was not perfect, of course - but minor adjustments to the



radio transmitter and the throw of the servos soon proved that everything functioned as envisaged. The wail of the whistle as the locomotive approached Plymstock tunnel was very effective, but the *piece de resistance* was the dummy draincock function. The visual and aural display of steam as *Sir Arthur* pulled away from a station stop was wholly excellent, while careful use of the transmitter draincock control ensured a range of very realistic effects.

A minor, but still important modification, was the addition of a 'chuff pipe'. This is something that I have discussed in these pages before and there are various methods of achieving a satisfying chuff, but perhaps the simplest is the overblown whistle effect. I call it an 'organ pipe' and after seeing the basic idea it is perhaps best to experiment with different shaped pipes on each individual engine.

#### Aesthetic Considerations

One of George's parameters was that the locomotive should remain recognisably a standard *Lady Anne* class locomotive for the very good reason that he liked it as it was. The casual observer may

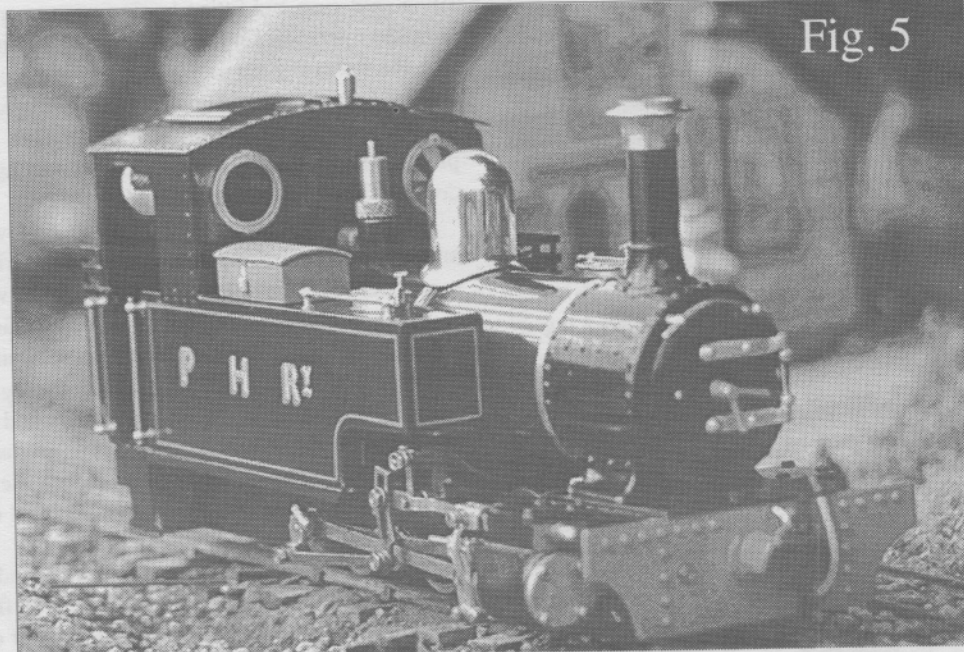


Fig. 5

The completed *Sir Arthur* posing proudly for a photograph. The riveted buffer beams, complete with vacuum pipes, put the finishing touches to this project.

well note that the cab is bereft of the clutter of working steam, and that the engine looks somehow different, but would have to be compared with a stock model to appreciate the visual improvements.

The standard Roundhouse buffer beams were discarded and replaced with scalloped heavy gauge riveted examples produced locally, and vacuum pipe stands were also added (see Fig. 5). The model was spray painted using the very tough 'Smoothrite' glass

based paint, which is available in several old fashioned colours eminently suitable for our small steam beasts. In this case a dark green was used before lining with orange Trimline. Lettering was provided by Tawney Graphics and is gold shadowed orange.

#### And Finally

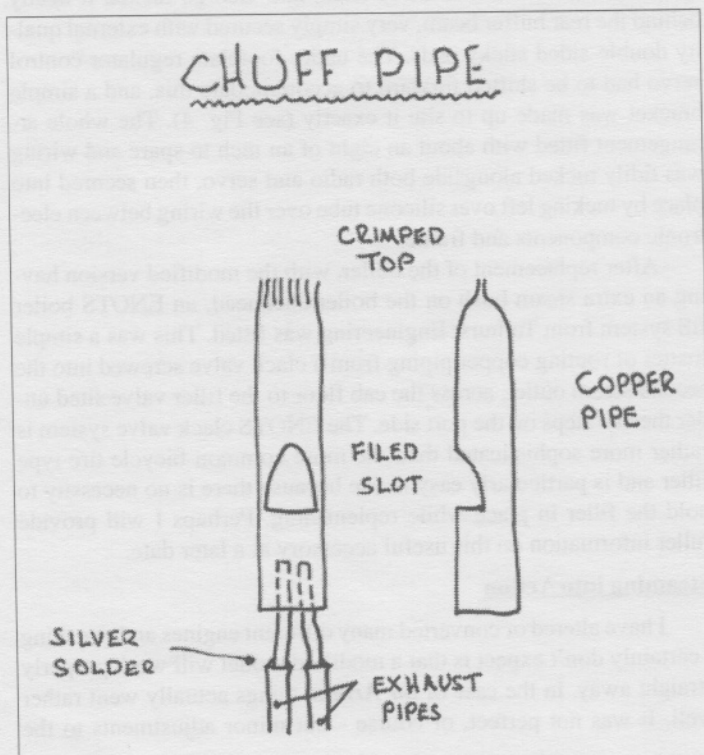
This modified locomotive works very well indeed. Running qualities are standard Roundhouse and therefore of an anticipated high standard. The extra dimension provided by both whistle and draincocks afford considerable operating pleasure and, as expected, turned many heads at garden meetings. I hope that George Mckie's successful efforts to produce a highly individual model will inspire others to also improve the breed, and encourage further development in this fast growing branch of model railroading.



**Photo upper right, opposite page:** Baby Hunslet by TME, featuring a single cylinder between the frames w/dummy outside cylinders and internal meths firing, crosses a bridge on Don Arthur's Tamar Side Rwy. in Cornwall.

**Photo lower right, opposite page:** *Sir Arthur* in action...in living color! With a blast of the whistle and draincocks hissing, *Sir Arthur* backs onto a heavy freight train. Isn't it glorious?

*Both photos opposite page by Tag Gorton*





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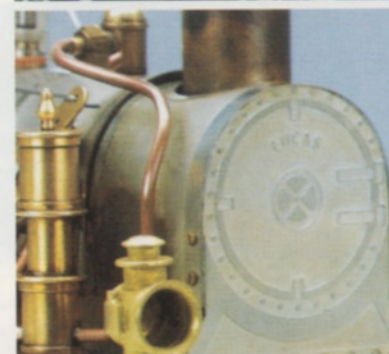
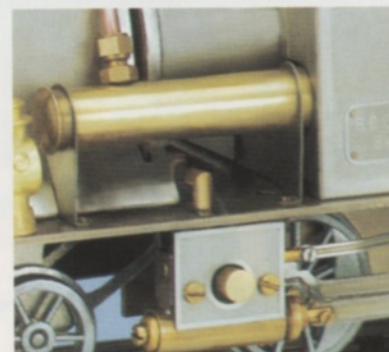
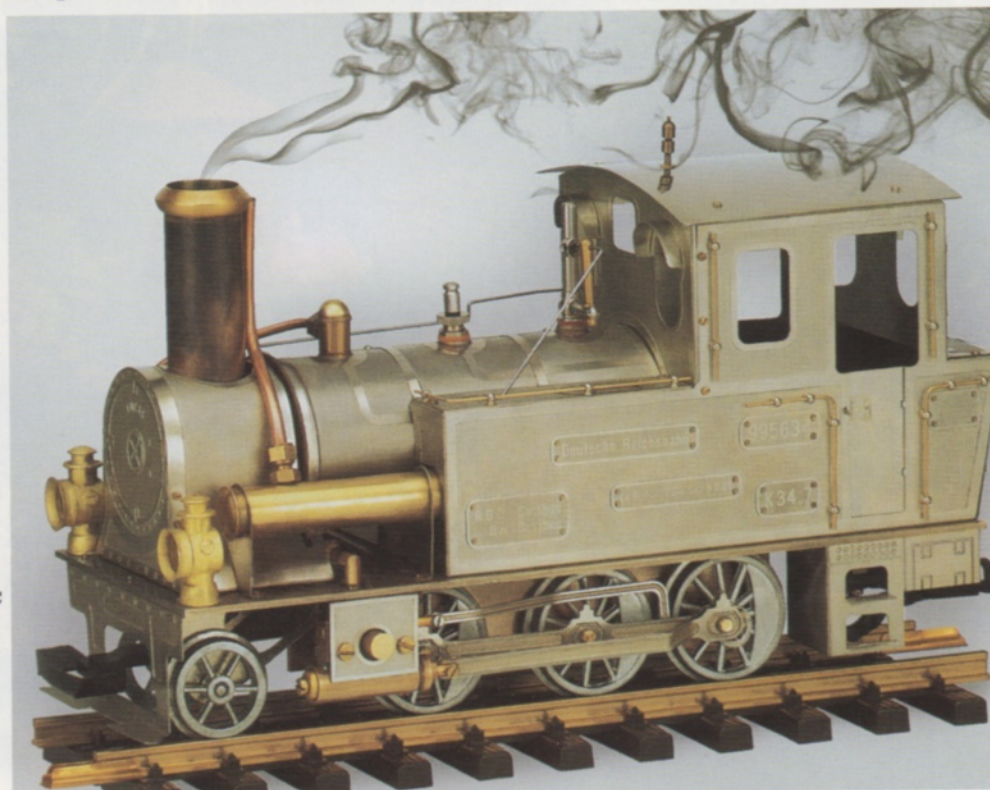
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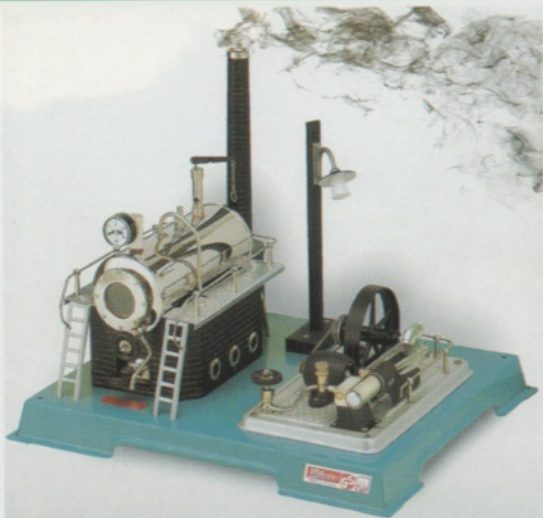












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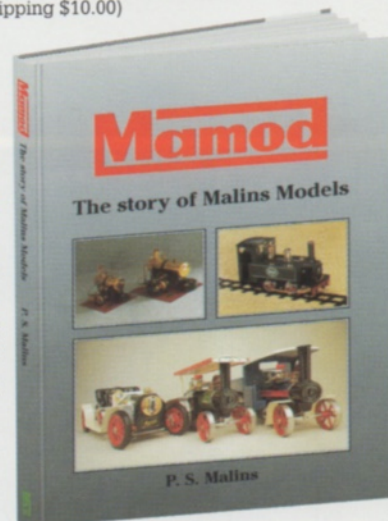
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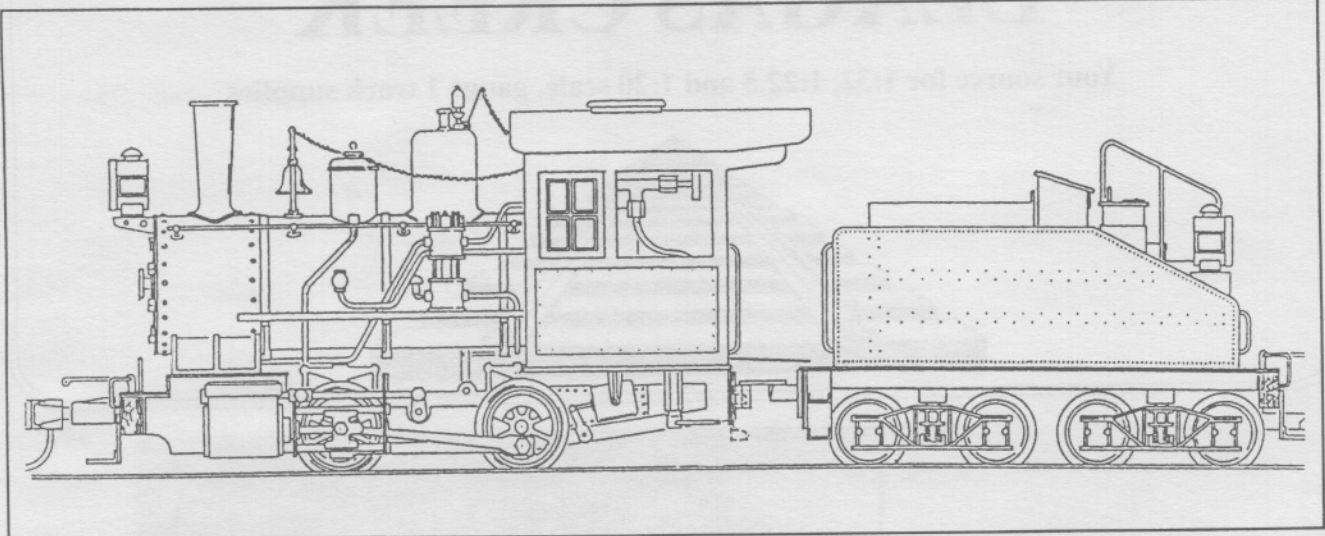
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**Photo top, opposite page:** Brigham, a one-of-a-kind overtype built by Peter Angus, waddles through Great Bend curve on the Silo Falls Scenic Railway on the way to deliver Emily Ann, a brand new Finescale Cranmore Peckett. This photo was taken in the glory days of the SFSR, which fell on hard times and is now bankrupt.

*photo by Dana Brown*

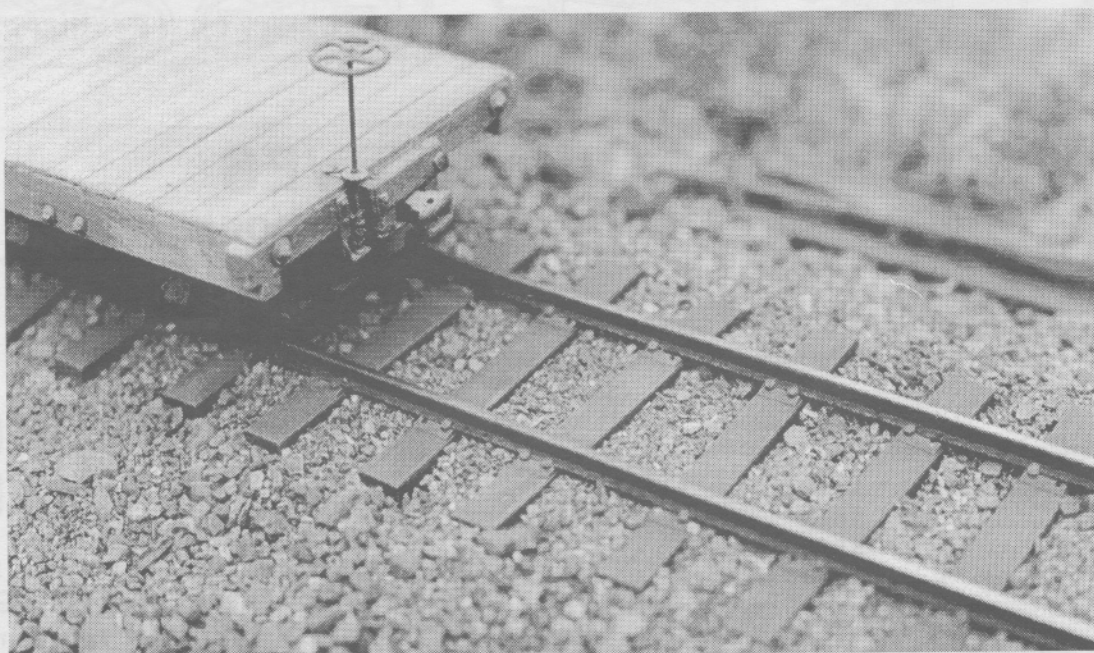
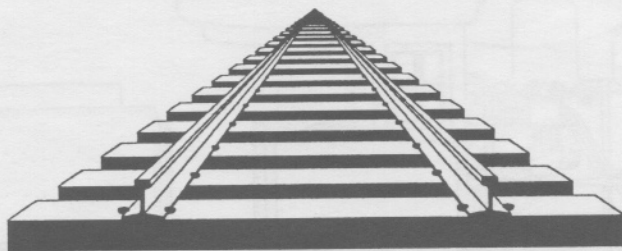
**Photo bottom, opposite page:** Bill Chamberlain's LGS N° 18, a neatly modified Pearse Colorado, rounds a curve amid the cactus and rocky outcroppings on Bob & Fran Osterhoudt's spectacular southwestern theme garden railway, built by son Rob and Fran, in southern Florida.

*photo by Bill Chamberlain*



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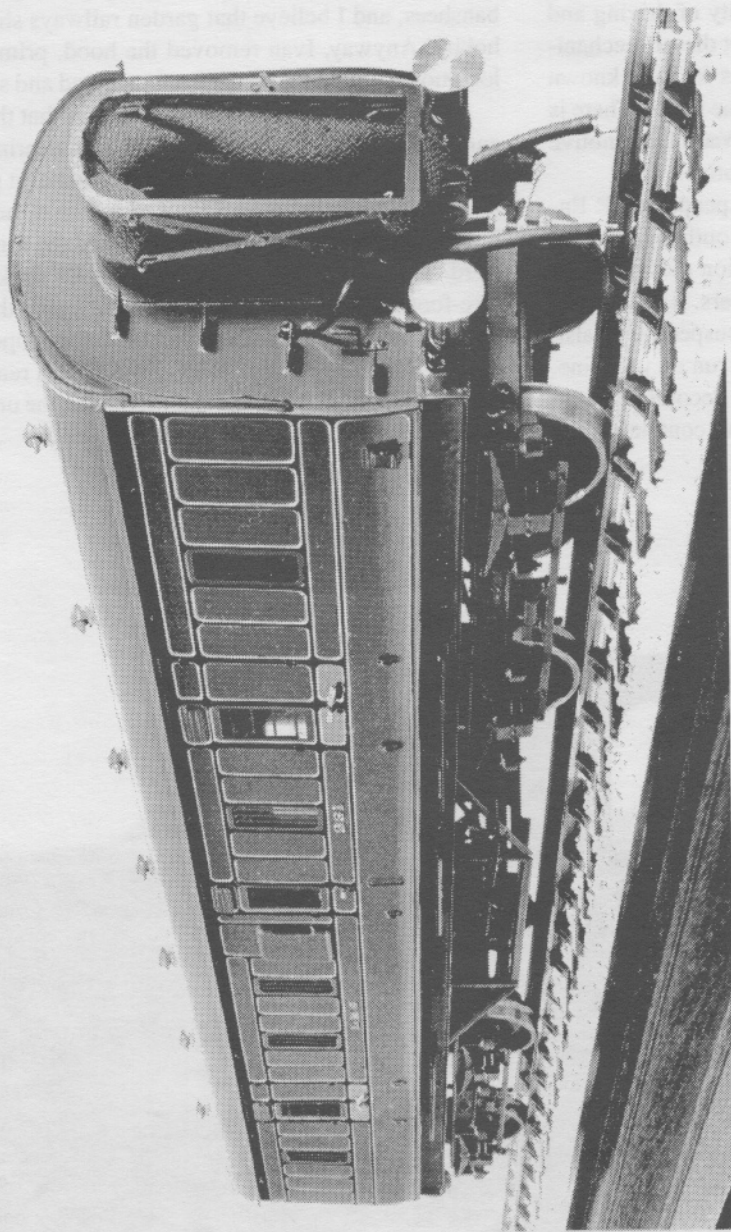
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# Loco Preview – I. P. Engineering's *FURY*

article & photos by Tag Gorton

## Is there a diesel in your future?

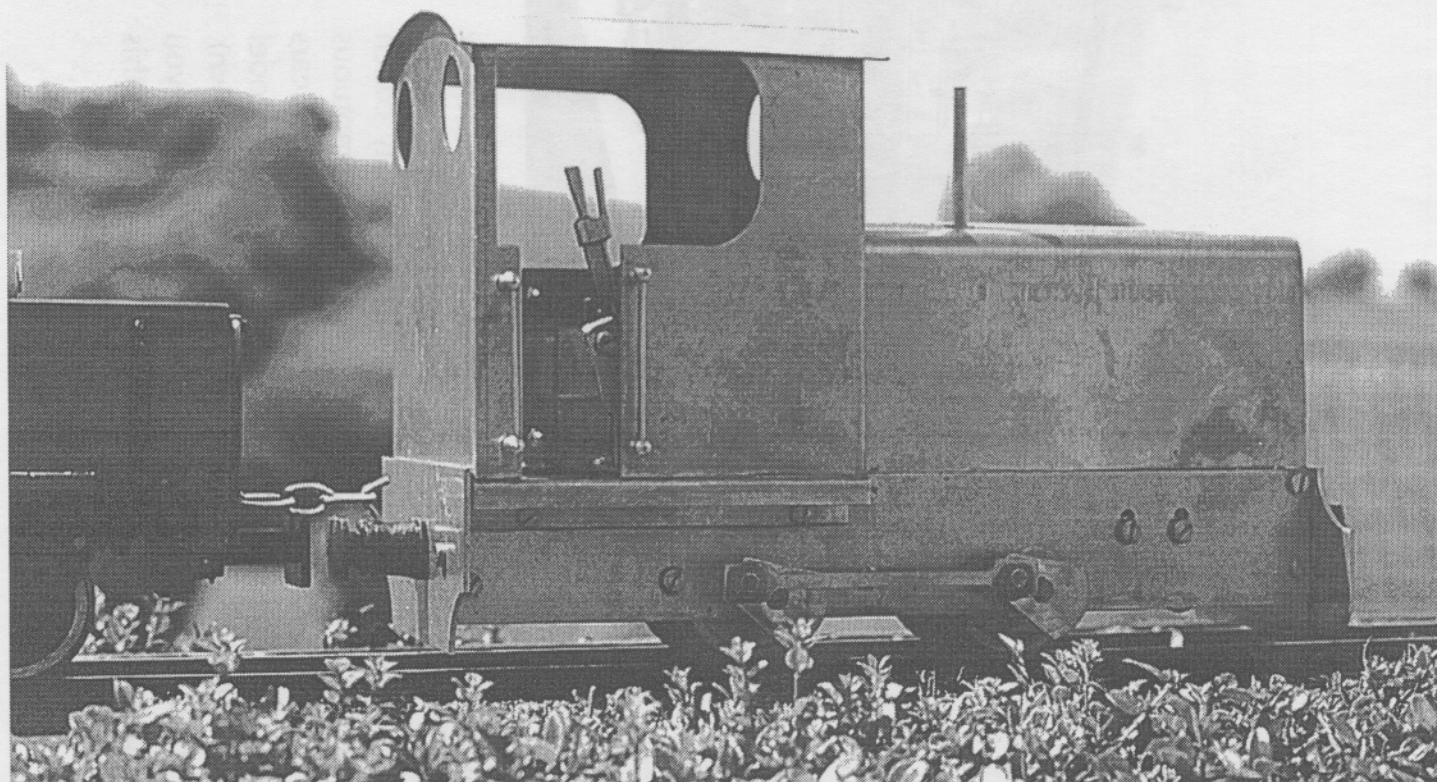
Diesels in SitG? Look, I know it's called *STEAM* in the Garden, but I just had to give you the "heads up" report on this little beauty. Just a few days ago I had the opportunity of driving and road testing the pre-production model of the first diesel-mechanical locomotive to run on garden scale tracks. As far as is known this is the first commercial model of it's type in the world. There is of course the Gauge One EMD2 produced by Wada Locomotive Works in Japan, but it is a diesel-electric locomotive.

Built by those innovative and price busting people at I.P. Engineering, *Fury* is an 0-4-0 of typically British outline, powered by a slow running 1.1/2 c.c. compression ignition diesel engine driving the wheels through 20:1 worm wheel gears. It has a three stage clutch and uses an oil/petrol mix that, I suspect, will also make it far and away the cheapest locomotive to run on your line.

When proprietor Ivan Prior turned up at the Pecorama Steam and Model exhibition with a heavy wooden box containing the

prototype *FURY*, I have to say that I had my reservations. After all, we have all heard those glow plug aero engines screaming like banshees, and I believe that garden railways should be a *relaxing* hobby! Anyway, Ivan removed the hood, primed and started his locomotive, placed it on the track, grinned and said, "give it a go!"

The first and most obvious point was that this was not an aero engine. Designed and built by I. P. Engineering, the power unit growled and pattered, while a thin blue exhaust plume issued from the bonnet mounted pipe. I hooked a rake of heavy four wheeled freight stock to the draw bar and pushed the regulator handle forward. The engine note changed as *FURY* took up the slack and sure-footedly piloted its train up the gradient on the Pecorama 16mm line at little more than scale walking pace. I opened the regulator and *FURY* settled to the collar, running at a realistic scale speed, coping happily with its load and producing the unmistakable sound of a diesel locomotive under load.



*FURY* running at scale speed with a heavy freight. These photographs were taken under exhibition constraints and a proper photographic record will be provided with the full review of the production model.

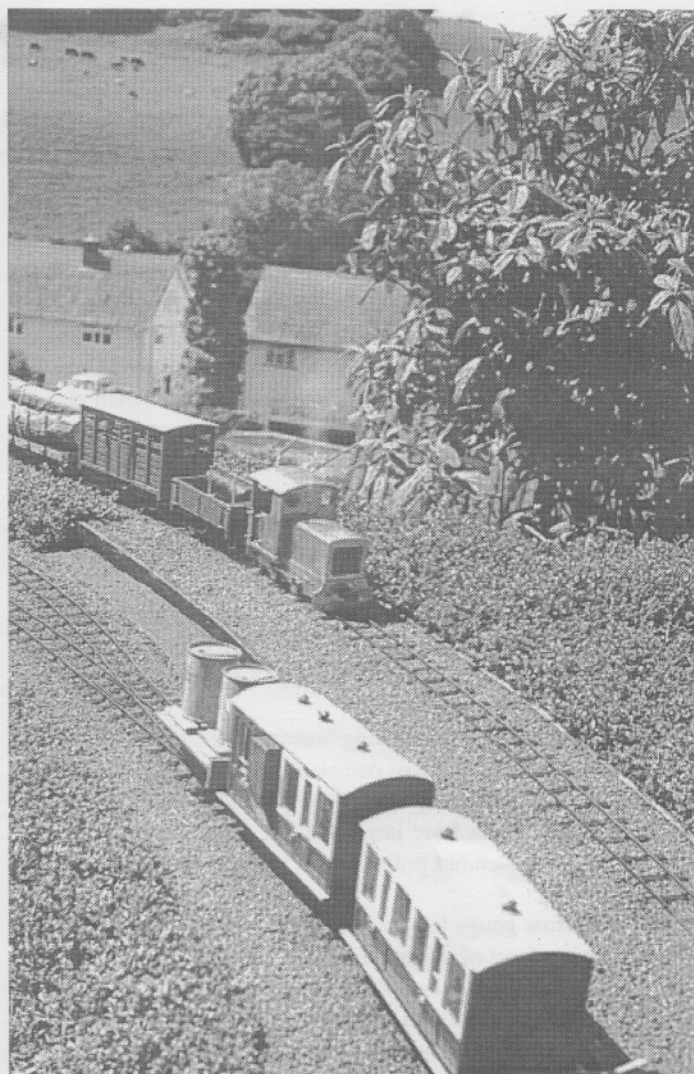
I was enchanted - and I also realised that here was the missing ingredient! You see, I moved into the garden to run real steam trains rather than a steam outline copy - and now it is possible to do the same using diesel locomotion.

The first limited batch of this real diesel locomotive will be available from September, and can be ordered from IMP Models of Gainsborough Gardens, LINCOLN, Lincolnshire, United Kingdom - Telephone 01522 689360.

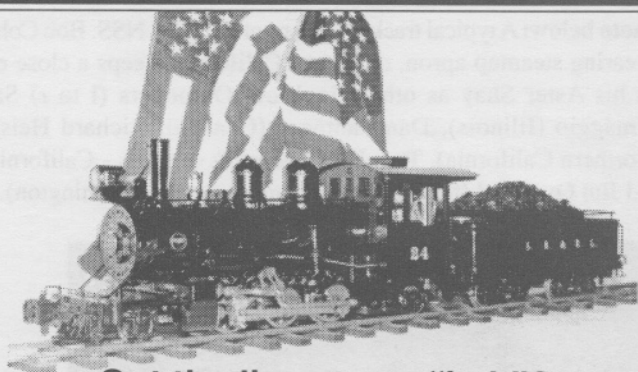
Available in blue or black livery, the production model will obviously have a higher level of detail than this pre-production example. Guide price is around £650 and radio control is available at around £35 extra.

A production example of this ground-breaking "live diesel" locomotive will soon be winging its way westward for a full review in a future issue of SitG.

*Do we dare hope that the U.K. version of this little gem will be followed by another based on a North American prototype? Perhaps a Whitcomb, or a Plymouth, or the D&RGW #50? - rb*



**FURY** in the brass. Note the diesel exhaust as the engine pilots a heavy load up the grade. Detail work is limited on this pre-production model.



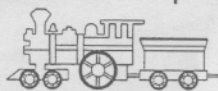
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# National Spring Steamup

steamup report by Ron Brown  
photos by Clark Lord & Richard Finlayson

What kind of mental images does California bring to mind for you? Surfing? Beaches? Bikinis? Yosemite? Earthquakes? San Francisco? Los Angeles? Hollywood? Freeways?

As a "prune-picker", the nickname us native Californians are known by, I think of all those things and more. And now I can add STEAMUP to my list of favorite California things...which also includes such delights (virtually unknown in the northeast!) as oranges, avocados, palm trees, sunny days, and the world's only *really good* hot dogs and pizza!

Steam and more steam was definitely the order of the day one weekend last May in Sunnyvale, a bustling Silicon Valley community on the south end of the San Francisco Bay.

Richard Finlayson and the Bay Area Garden Railway Society Live Steamers put on a National-Class steamup that brought attendees from all around North America.....and a few from as far as the Pacific Rim as well.

The 1st Annual National Spring Steamup attracted 90 registrants, most of whom brought at least one steam engine to run. There's no way of knowing how many came just to watch and learn, but the indoor steaming tracks (one large and one small) were kept busy with some type of steamer polishing the rails practically around the clock.

From narrow gauge loggers to big mainline passenger haulers, just about every facet of steam railroading from the beginning to the end of steam was represented at the NSS.

Several clinics were held on a variety of topics, from building a boiler (Harry Wade) to producing a commercial steam locomotive (Michael O'Rourke) to Scratchbuilding a Steam loco (Vance Bass) to Coal Firing (Marc Horovitz) to the BAGRS Project Loco (Jim McDavid) and Live Steam Trackwork (Gary Broeder) lured steamers out of the huge ballroom up the stairs to the clinic rooms and the

dealer room.

Fifteen dealers and manufacturers generously donated a big pile of items for door prizes, and many happy attendees took some neat stuff home with them.

The San Francisco Bay Area is a great place for a steamup or a vacation. There are plenty of things to see and do, though I suspect that most of the steam enthusiasts (including myself) didn't wander far from the steamup site!

I know that at least one group ventured over to see what is billed as The World's Largest Flea Market in nearby San Jose, and another group traveled a few miles to the Santa Cruz Mountains for a look at (and a ride on) the geared steam locomotives of the Roaring Camp & Big Trees Railroad.

Richard Finlayson, the steamup organizer, tells us that next year there will be organized tours to Roaring Camp, the old Carter Brothers museum in Newark, and other places of interest, plus 3 week-days of steaming with local live steamers.

Next year? Yes! There will be a 2nd Annual National Spring Steamup, and I suggest that you block out May 29 - 31, 1998 on your calendar now. This event is just too good to miss! Check out the photos on the following pages and see for yourself.



**Photo below:** A typical trackside scene at the 1997 NSS. Bob Cohen (wearing steamup apron, on right - California) keeps a close eye on his Aster Shay as others look on. Onlookers (l to r) Sam Dimaggio (Illinois), Dan Pantages (Canada), Richard Heisler (Northern California), Tom King (beard & overalls - California), and Jim Overland (far right, with engineers cap - Washington).

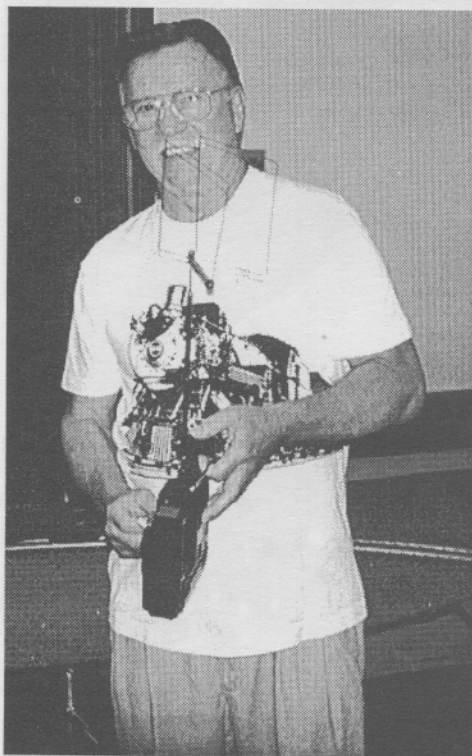




**Top:** Wada-san puts his new loco through its paces. Checking it out are (l to r) Norihiro Shiomi, Ms. Nagaya and Yasuyuki Tomida from Maxcess in Japan, builders of a nifty large-scale steamer in 5"/4.3/4" gauge.

**Bottom left:** Whistle King Larry Bangham shows off his new glitch-proof transmitter antenna. Strange looking, but very effective. Larry demonstrated some of his latest whistle technology throughout the steamup, to the delight and amazement of everyone within earshot.

**Bottom right:** Bob Brown, editor of *Narrow Gauge & Shortline Gazette* (what SitG wants to be like when it grows up!) visits with Jim Hadden at the steamup. Bob had originally planned to just drop by for a few minutes, but he had such a good time that he stayed and even came back the next day. We hope that next year he will bring a steamer and join in the fun!



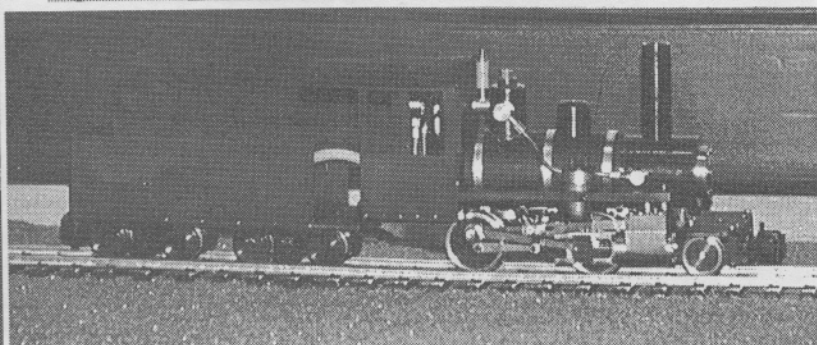
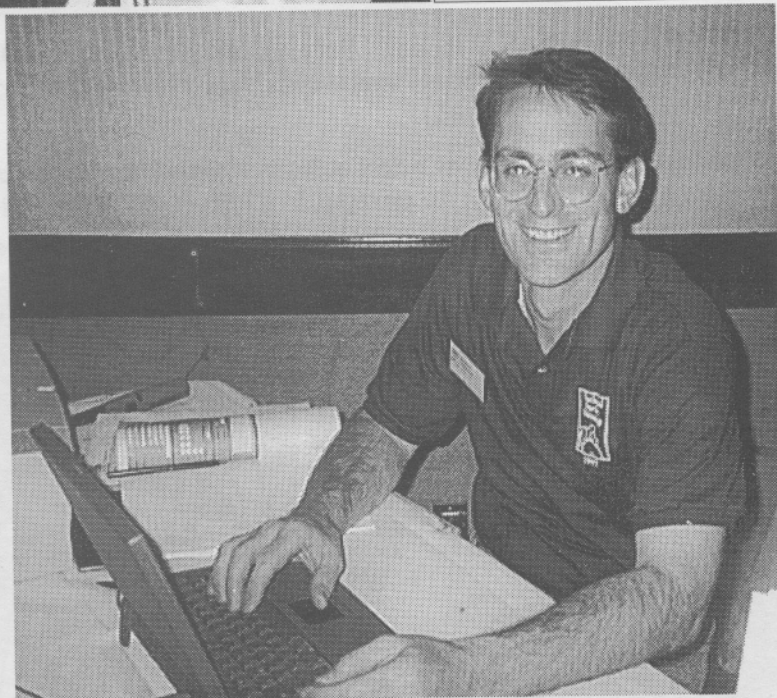




Left: Late-night session at the track. (l to r) Jim Crabb (Texas), Jim O'Hearn (California) and the boiler man himself, Harry Wade (Tennessee). Sorry...I can't see who that is behind Harry, but I suspect it might be Vance Bass (New Mexico).

**Below:** Richard Finlayson must have cloned himself, because he seemed to be everywhere at once. The photographer caught him at the registration desk in this shot. No kidding...Richard packs more living into 24 hours than anyone else I know!

**Bottom left:** Mike Krivohlavek (California) brought a really nice scratchbuilt steam loco he built with help from Charlie Mynhier's construction series that ran in SitG (it concludes with the tender in this issue). Mike couldn't wait for the tender, so he designed and built his own. That's his engine in the photo at lower right, which unfortunately doesn't do it justice.





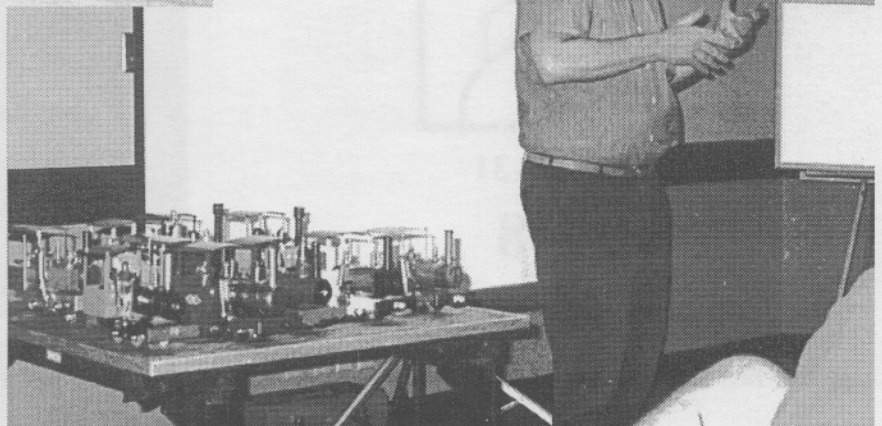
**Top left:** Gary White (California), one of the real veteran live steamers in North America, with his Aster New York Central Hudson. Gary has made many significant contributions to the growth of live steam in the USA.



**Center left:** Jim McDavid (California), BAGRS member and all around nice guy, applies a little juice to his Vest Pocket Climax. Jim was a major contributor to the success of the NSS,



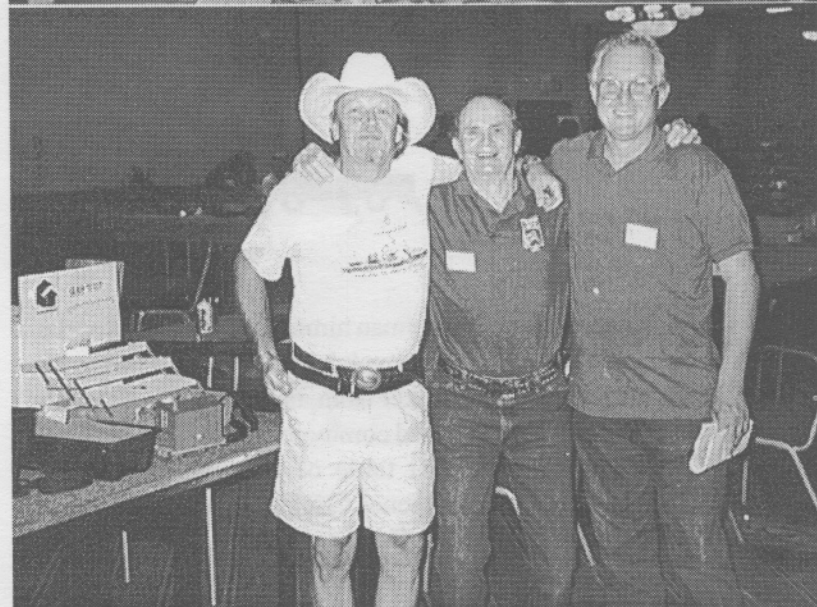
**Lower right:** Cricketman himself, Michael O'Rourke, caught in the act of explaining how he brought the very successful Cricket from an idea to an affordable and beautifully crafted commercial steam locomotive. Somewhere on that table of Crickets is Faithful Assistant's own personal Cricket. A real work of art by Mike O'Rourke. Thanks, Mike...it was worth the wait!





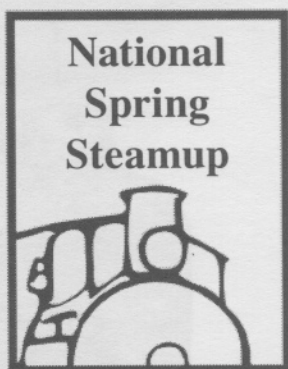


**Top left:** David Passard (California) and Clark Lord (Nevada) on the big running track with David's Aster SP Daylight and Clark's Aster 3-truck Shay. These big engines put on quite a show, and were real crowd pleasers.



**Center left:** The three steamers from the Greater Humboldt Bay Garden Railway Society (Northern California) - (l to r) Richard Heisler, Geoff Spenceley, and Larry Buerer. Nobody has more fun than these guys!

**Below:** Jim Overland (Washington) makes an adjustment on one of his Eidskogen Lumber Co. locomotives. Jim is a serious steamer with a real talent for scratchbuilding and kitbashing, and he put a lot of miles on his equipment during the 3 days of the steamup.



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Spring  
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**May 29-31  
1998**

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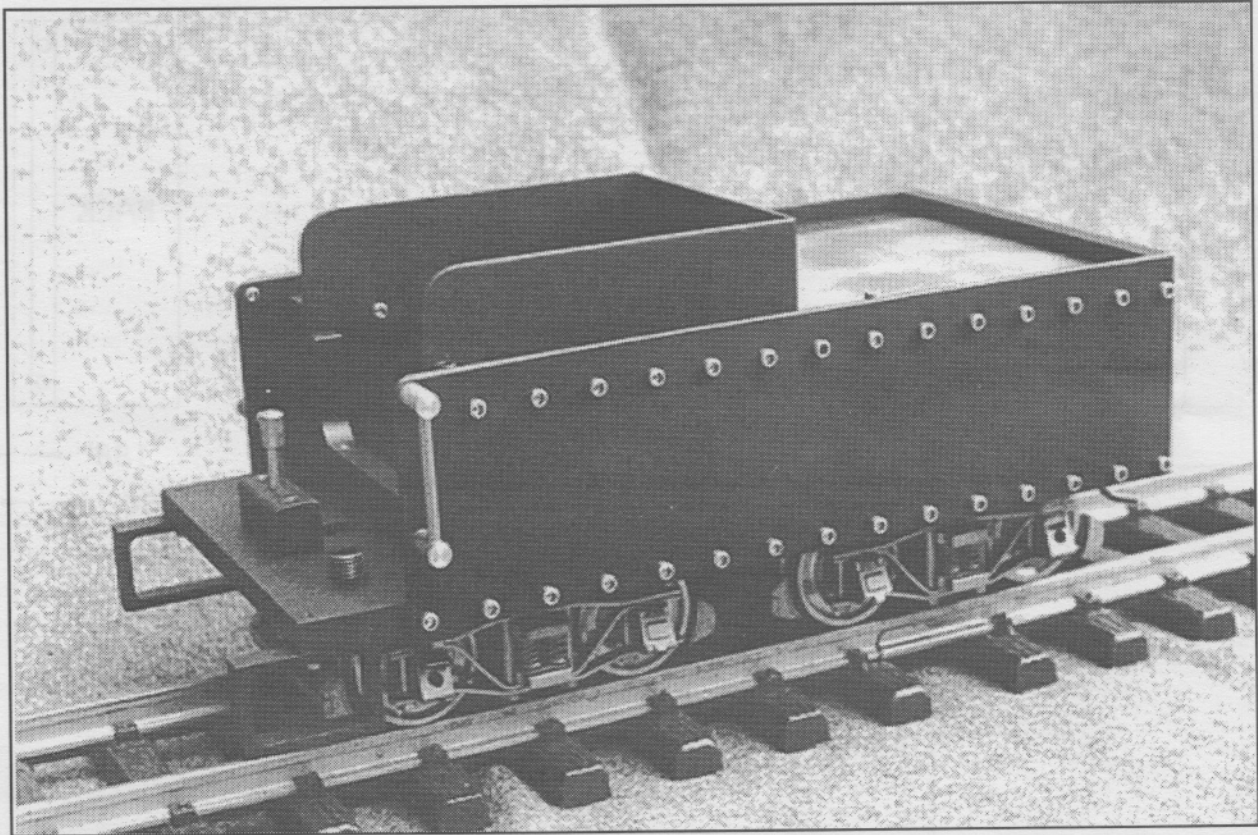
# Build Your Own Locomotive

## Last in a series

text and CAD drawing by Charlie Mynhier

Photos by Marc Horovitz

Charlie brings his construction series to a close with a fine looking tender



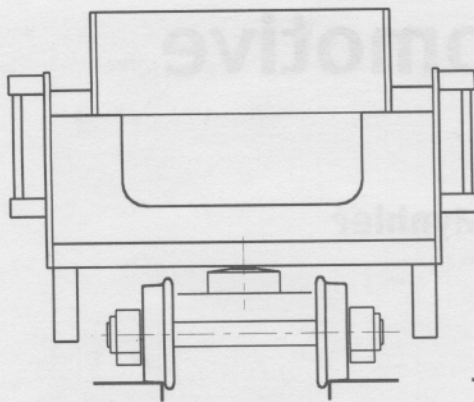
Here she is, all finished up. The last thing we will have to build is the tender. I made this tender from mild steel, bead blasted it and blackened it with chemicals as is my standard practice. The FLOOR, FRONT, TOP RAILS, and BACK are made from 1/4" thick plate. The SIDES, BACK DECK, and COAL BUNKER were made from 1/16" thick material. The drawing is half size, so if there is a dimension that is not on the drawing, or in the text, you can measure it on the drawing and multiply it by two (2) and there you have it.

I used commercially available trucks and couplers. If you really want to build your own trucks, just let me know and I will draw it up, and we will publish it in a future issue of *Steam in the Garden*.

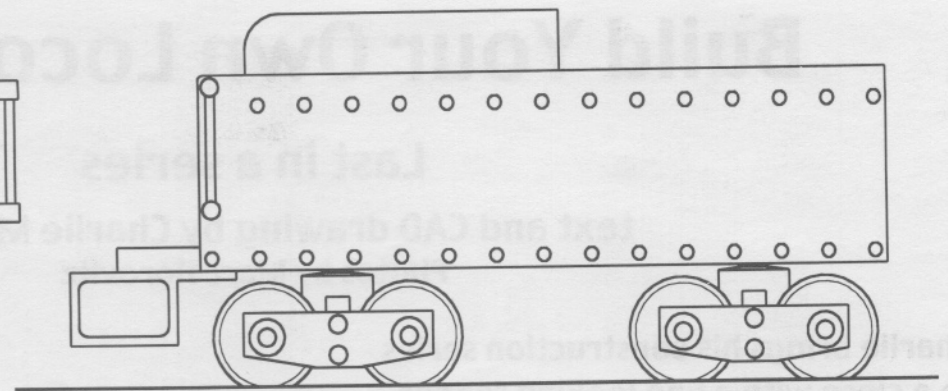
As you might guess, this tender is quite heavy, so if you can use trucks with ball bearings that would be just wonderful.

The FLOOR, FRONT, BACK, and TOP RAILS were fastened together with #4-40 UNC socket head cap screws. The SIDES, BACK DECK, and COAL BUNKER, were fastened with #2-56 UNC x 1/4" long stainless steel socket head cap screws. Drilling and tapping # 2-56 blind holes into the edge of cold rolled steel creates a risk of breaking the tap off in the hole, and it is almost impossible to get it out without expensive and exotic equipment. So let me suggest that you drill and tap the first hole into the edge of the floor, and then drill clearance holes for the next four holes, drill and tap the next hole, drill clearance



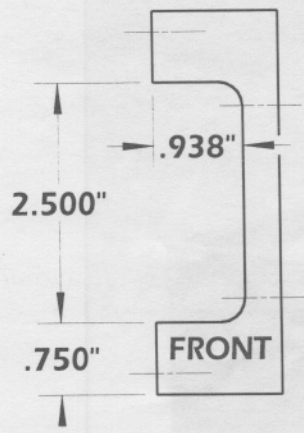


FRONT VIEW

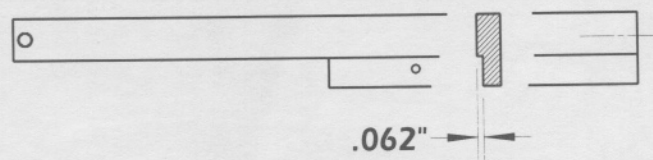


SIDE VIEW

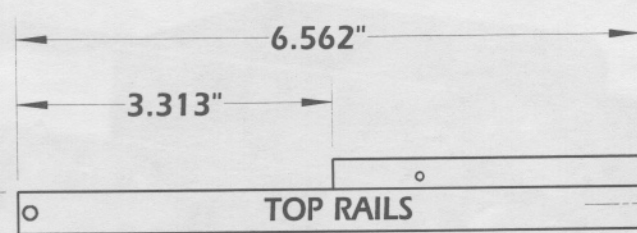
1.750"



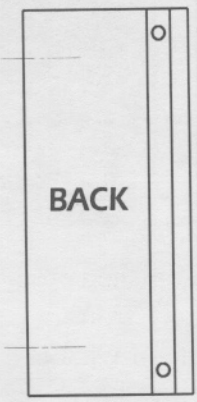
FRONT



.062"



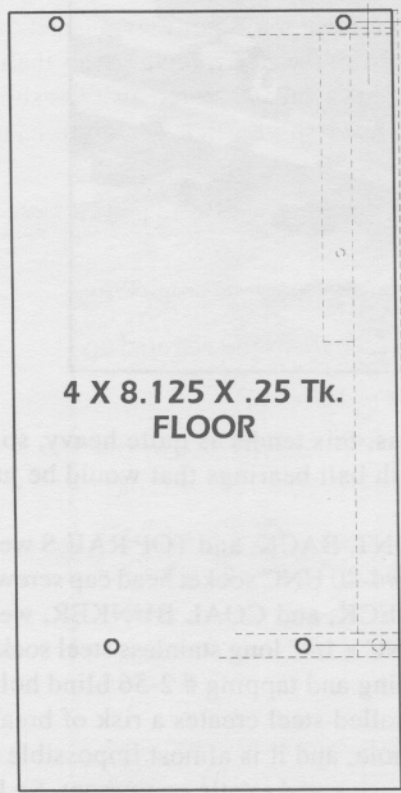
TOP RAILS



BACK

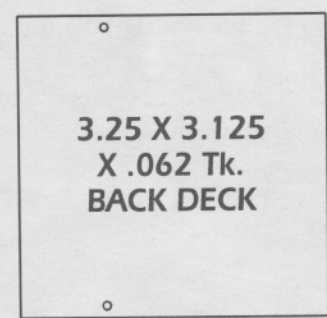
.188"

.250"

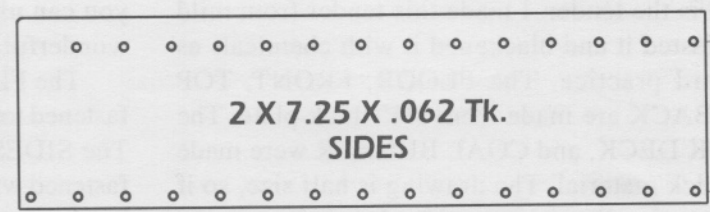


4 X 8.125 X .25 Tk.  
FLOOR

6.500"

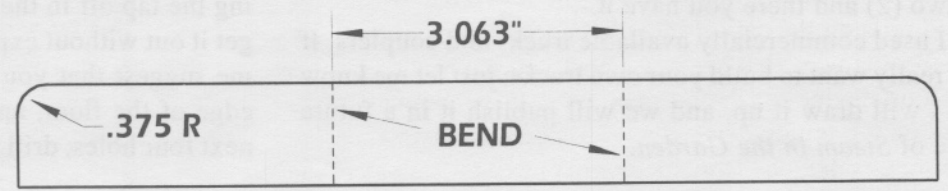


3.25 X 3.125  
X .062 Tk.  
BACK DECK



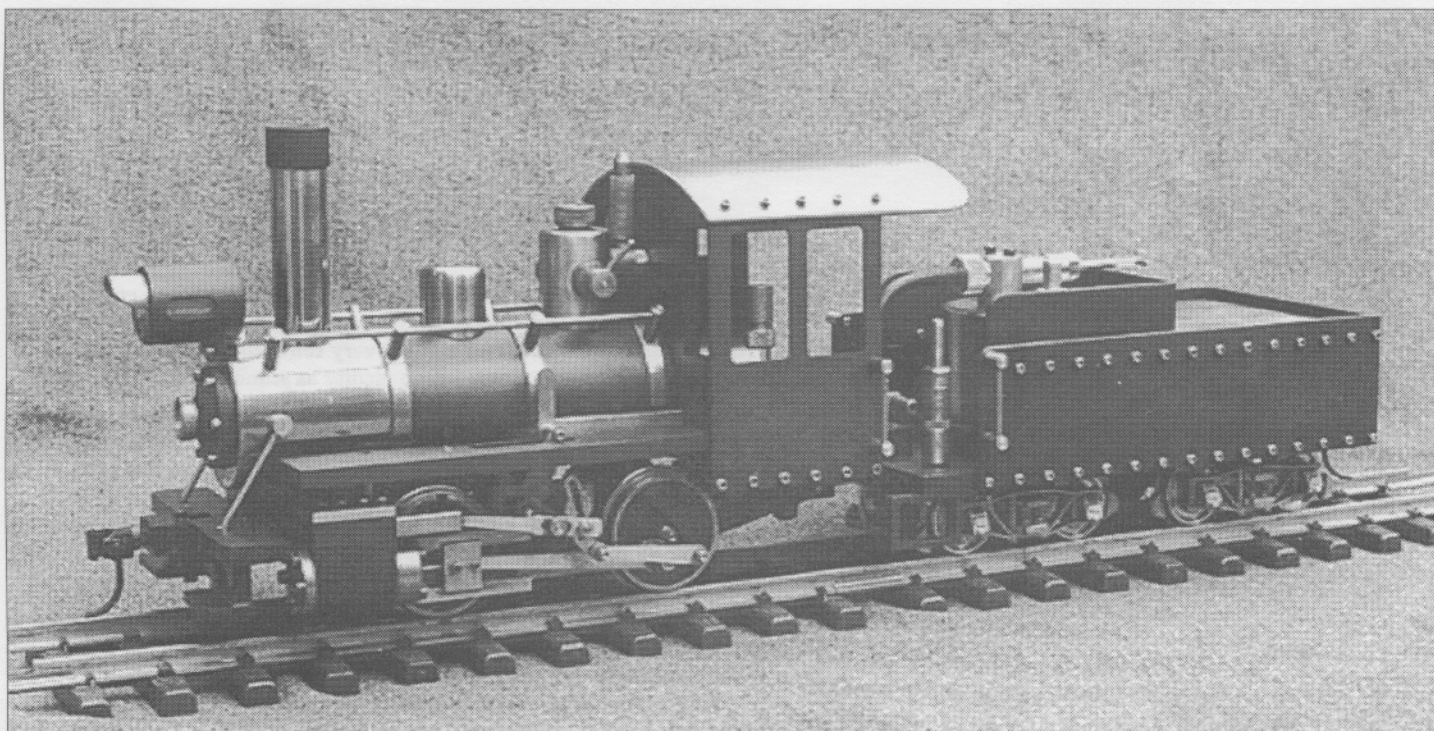
2 X 7.25 X .062 Tk.  
SIDES

1.562"



BEND

1.062 X 9.688 X .062 Tk.



The finished product! This fine looking and superb running locomotive was designed and built by the author entirely from raw materials (except for fasteners, tender trucks and couplers). It serves as an excellent example of what can be done by a dedicated model engineer in a home workshop. The construction series for this loco began with the fuel tank in issue N° 21 and concludes in this issue.

holes for the next three, drill and tap the next, drill four clearance holes, and drill and tap the last. Do the top row of holes in like manner.

For the SIDES, drill the first hole with a clearance drill, drill and tap the next four, clearance drill, drill and tap, clearance drill, drill and tap, and clearance drill, so that the SIDES are drilled and tapped opposite of the FLOOR.

I made the three sides for the COAL BUNKER by bending one piece of steel in two places. After making it as shown in the drawing, I milled two (2) "V" grooves x .03 deep, 3.063 center to center, then bent it as shown in the picture. After I made the COAL BUNKER I measured it so that I would know how much metal to mill away from the TOP RAILS for a perfect fit.

The steps were milled from 3/4" x 1.3/4" x 1/4" thick steel plate. If you don't have a heavy and strong milling machine this will be a tough job. I suggest you fold up a pair of steps from 1/16" x 1/4" flat bar.

The hand rail anchors were made from 3/16" Ø x 3/8" long brass bar. The hand rails were made from 3/32" Ø stainless steel welding rod. I think it looks good if the hand rails are the same length and height above the rails as the hand rails on the cab of the engine (See photo above).

By the way, that big brass post you see in the photo is a filling device for the propane tank. It is threaded onto a boss on the tender floor where it is kept for safe keeping. In use, this device is threaded onto one of the valves of the

tank, and a standard propane torch bottle is pushed down over it while venting from the other valve. After the tank is filled, the device is removed and stored away as shown. I will draw it up and write a short article for a future issue.

Good luck, and happy steaming.



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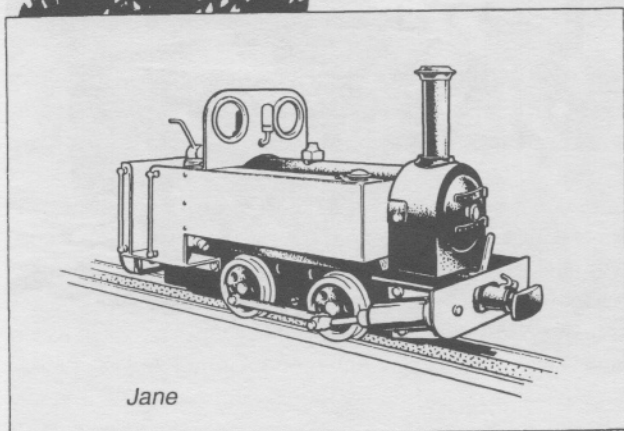
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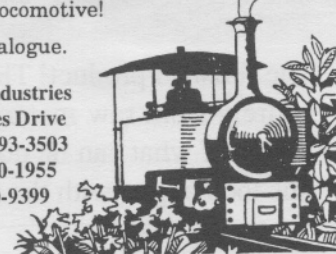
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# Steam in the Tops of the Mountains!

by Vickie-Marie Parker

## Super Steamup on Jim Hadden's Poison Creek RR

The warm June sun had nestled below the ridges of Utah's Wasatch Mountains, and the steam from the smokestack of the passing Porter formed an ephemeral white plume in the chilly evening air. A group of people sat, warming themselves at a campfire and watching the train's flickering headlight as the locomotive's whistle blew a warning at a crossing near the picturesque silver mining town of Park City.

No, these were not Utah's early settlers nor an iron horse replacement for the historic Pony Express. Better than that, these were the happy participants and guests at Jim and Margery Hadden's 1997 Invitational Steamup enjoying Larry Bangham's exquisite Hemmens Porter (complete with fully-functional harmonic steam whistle!) after a fun day of backyard steaming and too much tasty food!

The Haddens live in a high valley surrounded by rugged alpine peaks that will host the Winter Olympic Games in 2002. The elevation (just under 7000 feet, guests were told) is an often heard excuse for steamup failures! The Hadden's son, Jeremy, and mel-low mountain dog, Charlie, did an outstanding job of making ev-

eryone feel right at home. Even the neighbors pitched in to supplement seating, shading and refrigerator space!

Jeremy and Larry Bangham treated everyone to several "jam sessions" on trombone and piano, respectively. While Jeremy is a burgeoning young musician, Larry's professional big band expertise is impressive and smooth. With his ear for music it's no wonder he was able to develop that fabulous harmonic whistle!

One highlight of this year's event was the appearance of a trio of Aster Big Boys, brought by our host, Jim, Allan Starry and Kevin O'Connor. (They were surprisingly good natured and tolerant as the photographer arranged compositions and ordered the heavy locos to be moved about.)

A final-day treat provided by former Aussie turned Salt Lake City resident, Alan King, was a stunning Aster Nord Compound pulling an impressive collection of elegant J & M Rheingold cars.

The Hadden's guests traveled from near and far for the three day event. Among the guests from faraway and exotic places were Joel Neshkin from Birmingham, Alabama; Bob and Carol Paule from Chesterfield, Missouri; Allan and Cherie Starry from the Puget



Here's a sight that isn't often seen, even at the National-Class steamups! A trio of Aster Big Boys, all of which were in steam and running at Jim Hadden's steamup in Park City, Utah. Their happy owners/engineers, left to right, Kevin O'Connor, Jim Hadden and Allan Starry. Are these guys having fun, or what? In the background, relaxing in the shade of the tent are Bob and Carol Paule, who came all the way from the St. Louis, Missouri area for this steamup.

*Photo by Vickie-Marie Parker*



Sound area (they are in the process of moving, so it's hard to pin them to one town); Dave Johnson, Edmonds, Washington; Clark Lord from Las Vegas, Nevada; Morgan Jennings and Jim Reyer from Thornton, Colorado; Keith and Cindy Hawthorne from Pueblo West, Colorado; James and Lorna Stelter of Littleton, Colorado and Dee and Bobbi Dostaler from Morgan, Utah. Travelers from California included: Lee and Patti Barrett from Hermosa Beach; Larry Bangham from La Mirada; John Wieland of Cypress; Rich-

ard and Kristen Finlayson of San Jose (who just "happened" to be in Utah following one of his frequent trips to Asia); and Kevin O'Connor and Vickie-Marie Parker from Sacramento.

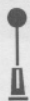
The camaraderie and enjoyment level was wonderful. Although the Haddens are not planning a sequel, their guests have all threatened to show up next year anyway!

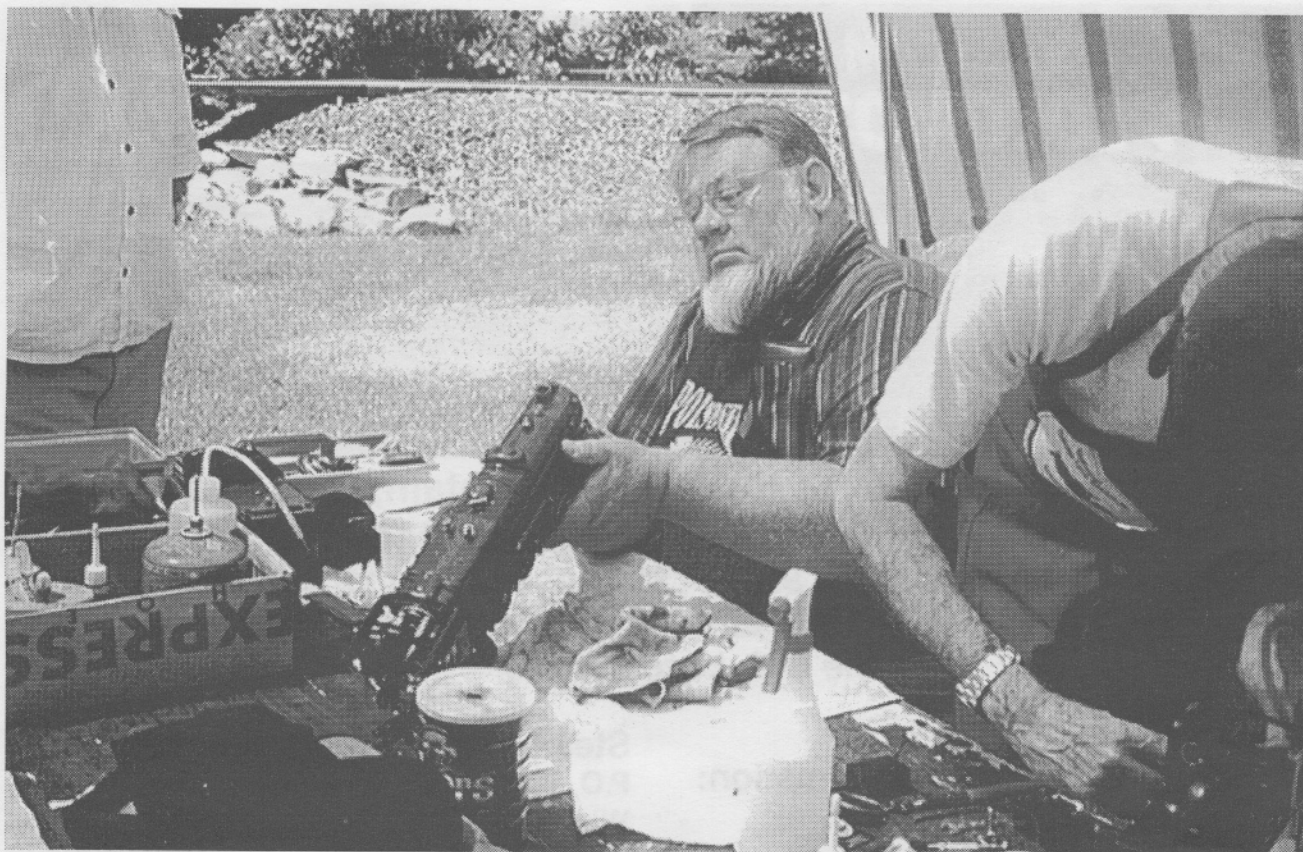


**Photo left:** Father & son. Jeremy Hadden (left) and his dad, Jim Hadden, check out some of the engines and rolling stock brought to the steamup by their guests.

**Photo below:** Gentlemen, start your engines! With draft fans in stacks, Lee Barrett (left) and Kevin O'Connor (right) fire their locomotives in the rarified, high altitude Park City atmosphere while John Weiland (center) looks on.

*Photos this page by Vickie-Marie Parker*

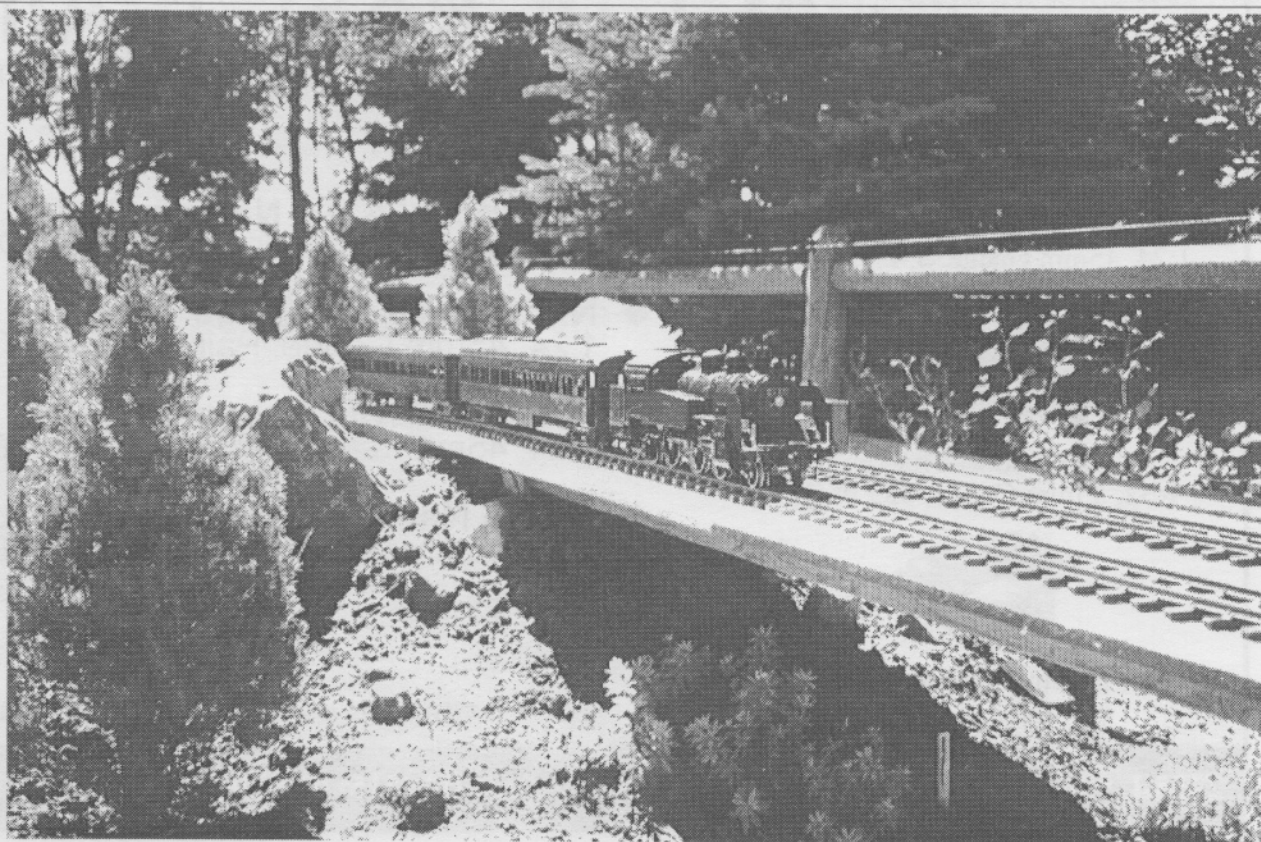




**Photo top:** Clark Lord caught in a pensive moment while re-boiling his Aster K-4. He finished this project in one day! If someone were keeping track, Clark probably set a record for major repairs done at a steamup.

**Photo bottom:** Morgan Jennings' and Jim Reyer's Aster C-11 with a rake of vintage coaches moving down the mainline on Jim Hadden's Poison Creek RR.

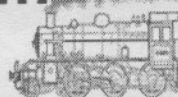
*Photos this page by Jim Hadden*



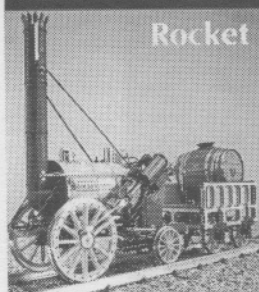


# O.S. LIVE STEAM LOCOMOTIVE

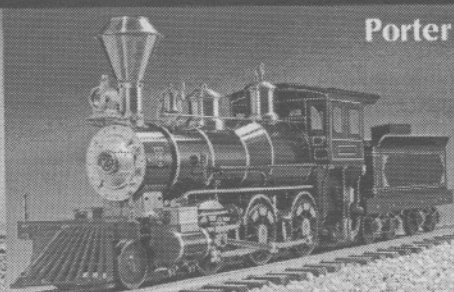
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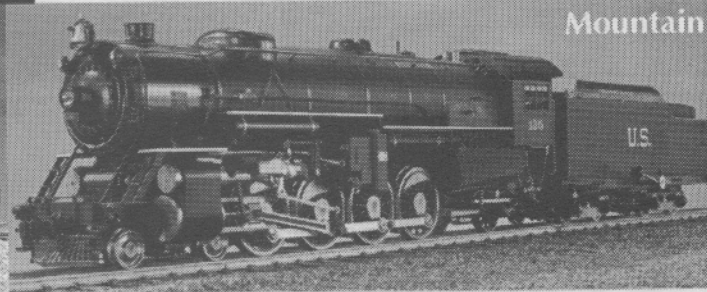
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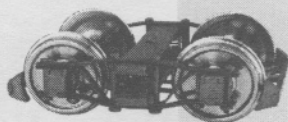
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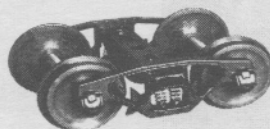


## ACCUCRAFT TRAINS

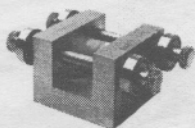
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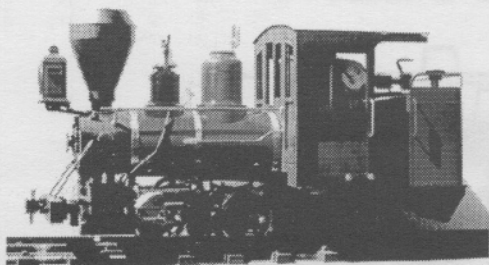


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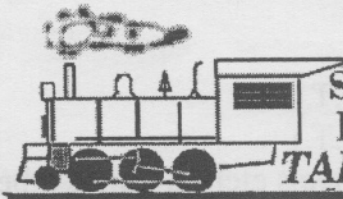
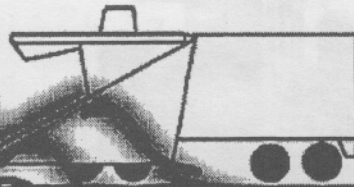
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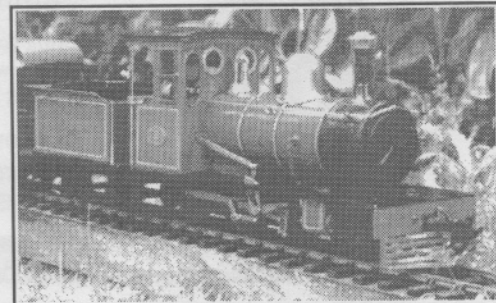
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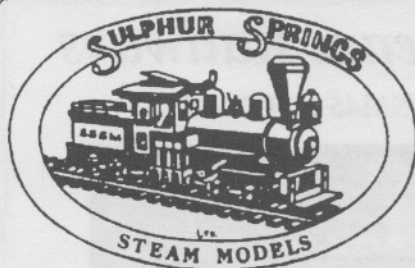
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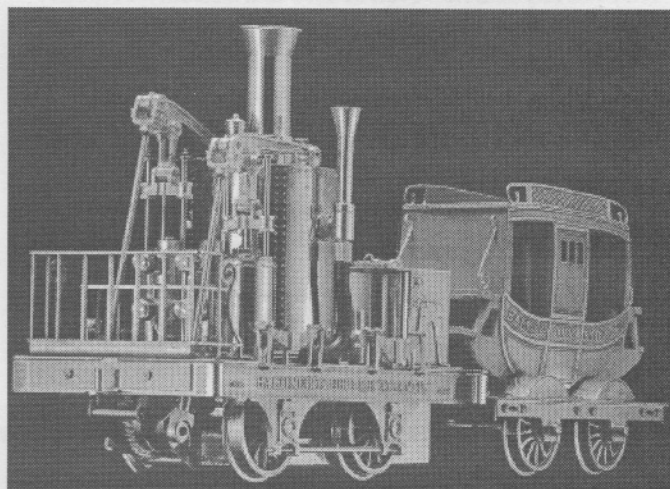
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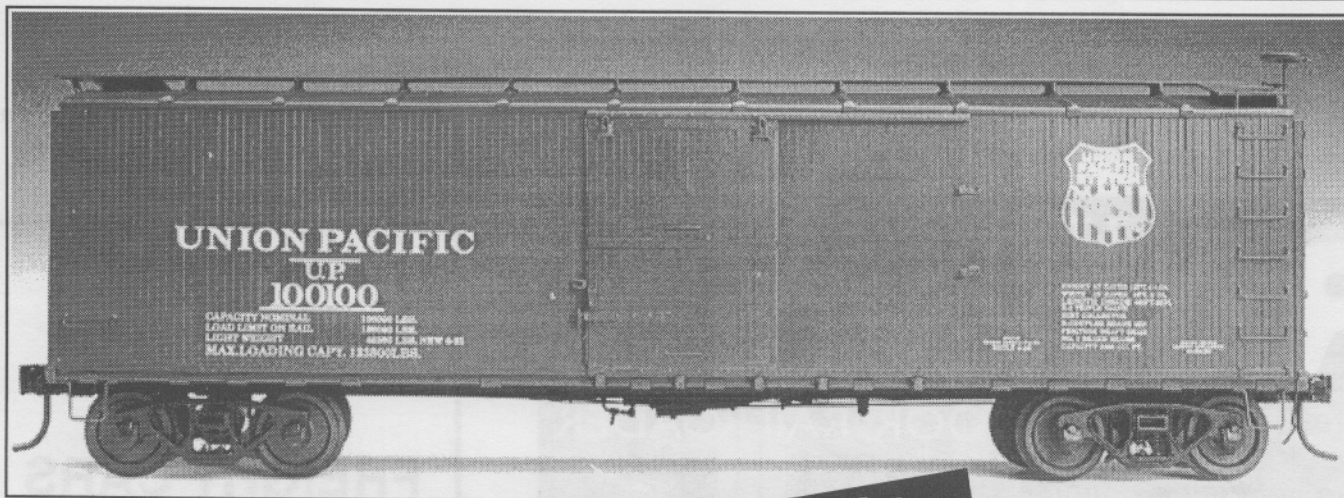
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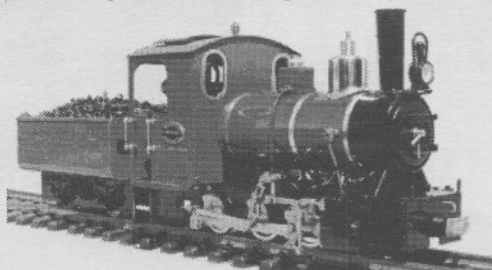




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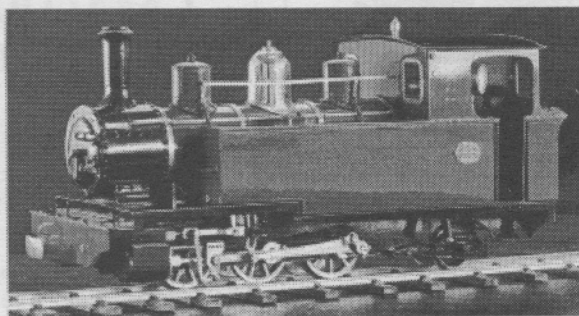
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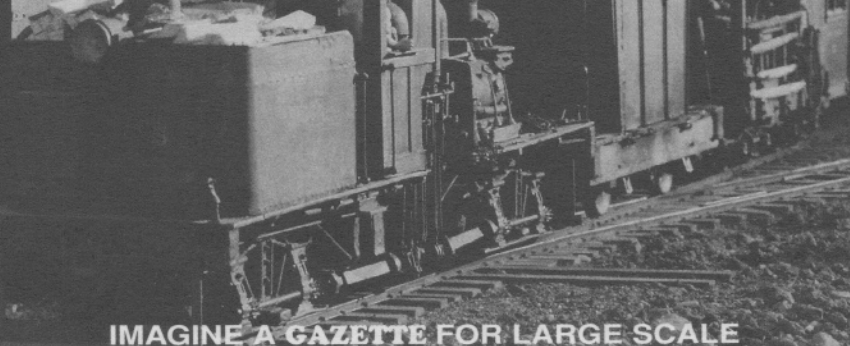
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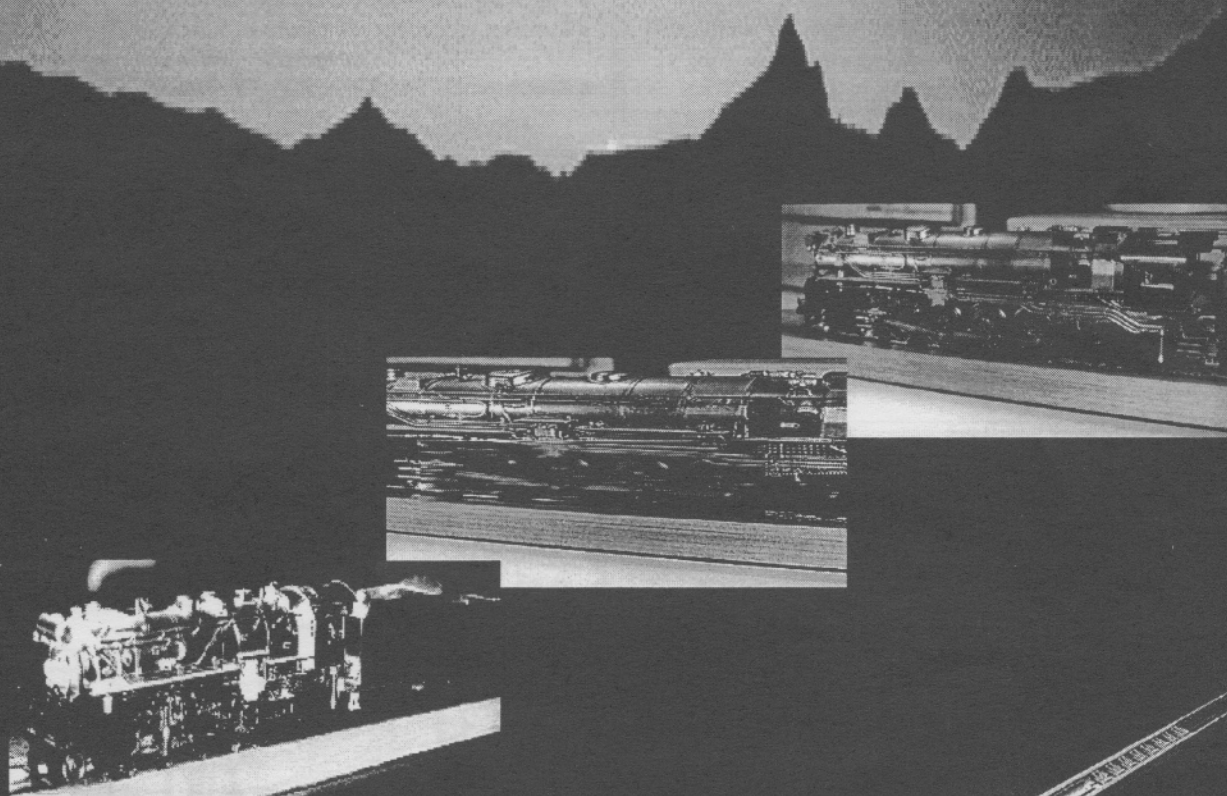
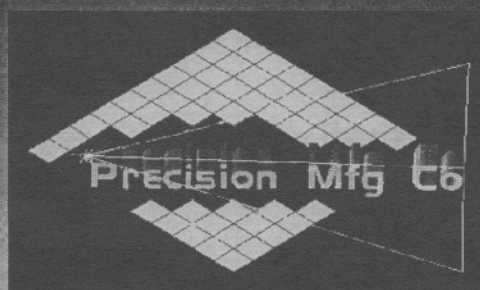
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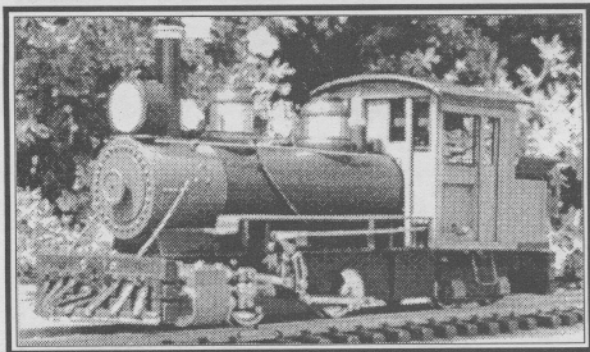
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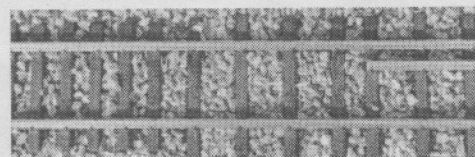
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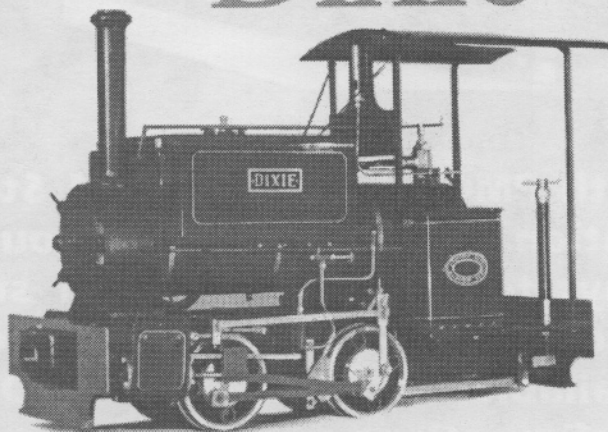
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## Coming in the next issue of Steam in the Garden...

Improving the Aster Mogul  
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Reviewing the Roundhouse chassis kit  
by Bob Nowell

Roadbed Design  
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Harmonic Whistle, the Next Generation  
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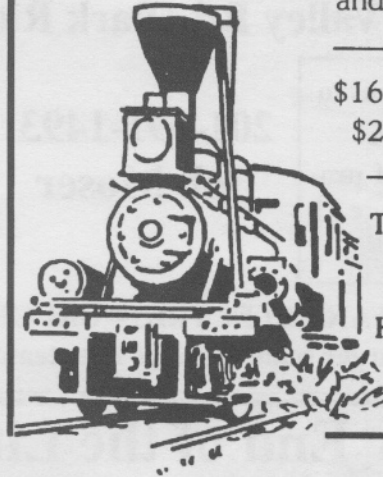
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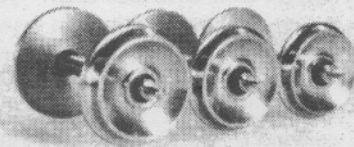
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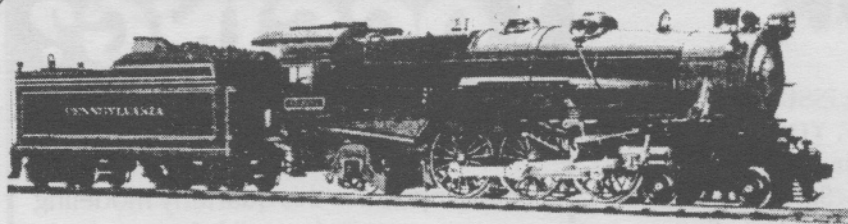
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You can find web sites for nearly every subject under the sun, including a bunch of them that are of interest to us as we pursue the Holy Grail of miniature live steam.

Rio Pecos, Brandbright, Aster distributor Hyde-Out Mountain Live Steam, Sulphur Springs Steam Models, O.S. Engines, Roundhouse and a whole lot more have their catalogs available on line, and many sites make it easy for you to break out the ol' plastic and order what you need without leaving the comfort of your own easy chair.

Still not convinced? Okay...here's the clincher. *Steam in the Garden Online* has just started a live, on line chat session for live steamers. It's "open" 24 hours a day, but every Thursday night between 6:00 p.m. and 8:00 p.m. (Pacific Coast time), live steamers from all over the world get together through the marvel of modern technology to discuss – and even share photos and drawings of – what else? Anything and everything about our favorite hobby, of course!

SitG Online guru Richard Finlayson has twisted a few arms and lined up a schedule of hosted sessions on specific topics, too. Last Thursday night, for example, Vance Bass hosted a session on CAD (computer aided design) and laser cutting, as they apply to the making of miniature steam locomotives.

Vance showed photos and drawings of his project locomotive (a C-25) and gave the attendees ample opportunity to ask questions and offer advice from their own experience.

Check <<http://www.steamup.com/chatannounce.html>> for a calendar of hosted sessions. Register as a visitor to SitG Online at <<http://www.steamup.com/sitgonline/register.html>> and receive announcements of future hosted live steam chat sessions.

Before you rush to the phone and cancel your subscription to SitG, however, let me point out that each medium has advantages and disadvantages. Why get only 50% when you could be getting it all? If you have a computer of your own and an internet connection, join us on Thursday nights at [www.steamup.com](http://www.steamup.com). If you don't have a computer of your own yet, talk a friend into letting you browse the web and check out what's available out there – free for the asking.

If you don't have a clue what I'm talking about, drop me a note or give me a call and I'll point you in the right direction.

Hope to see you on Thursday nights at Live Steam Chat, and until next time....

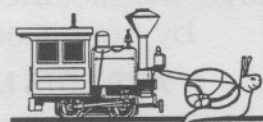
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*Rn*

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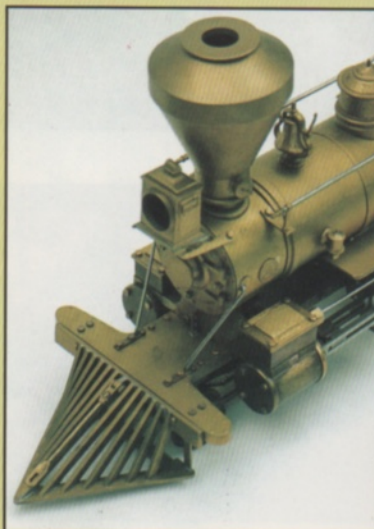
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