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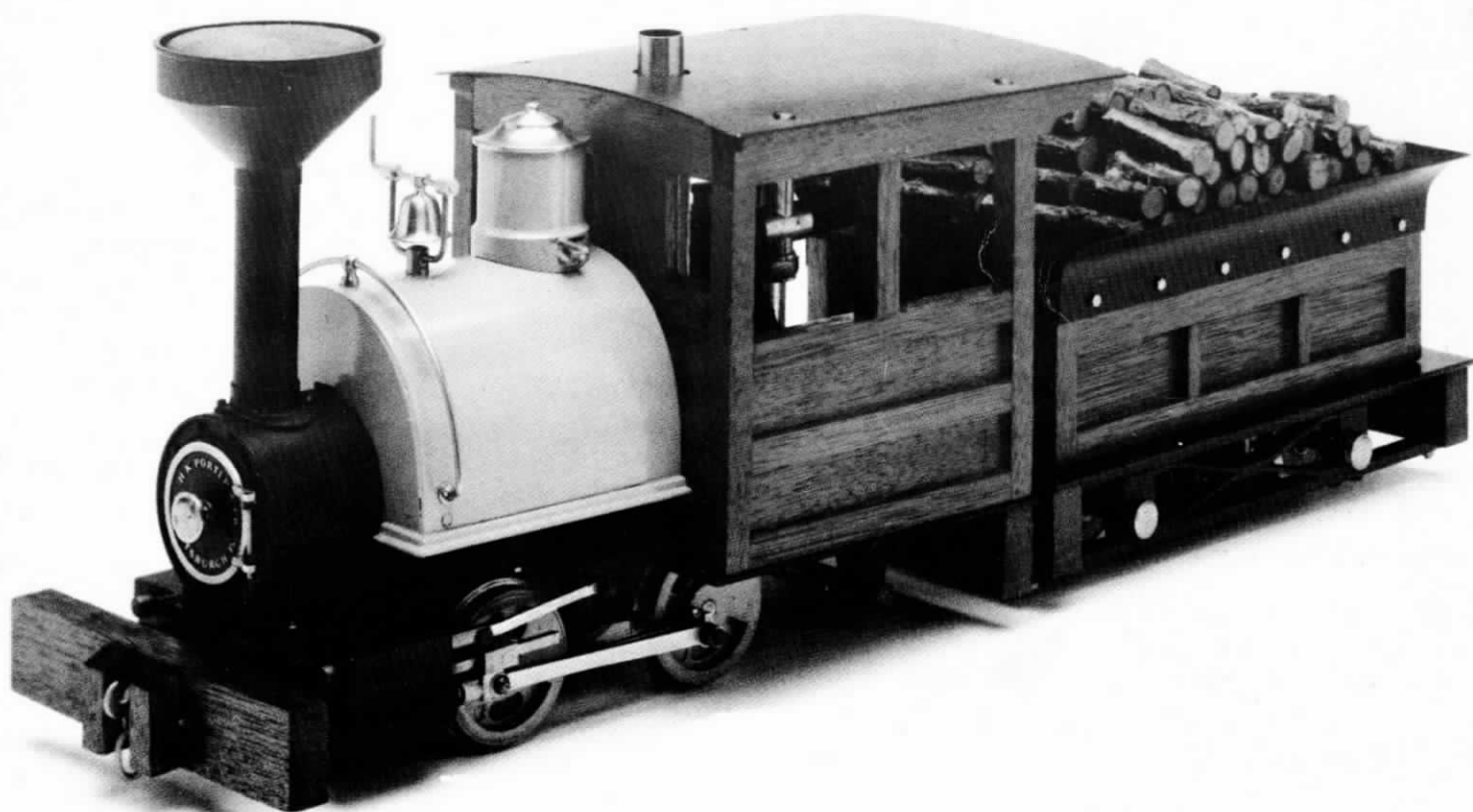
# *Steam in the Garden*

## *Magazine*

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

Volume Two Number Four

December 1991/January 1992



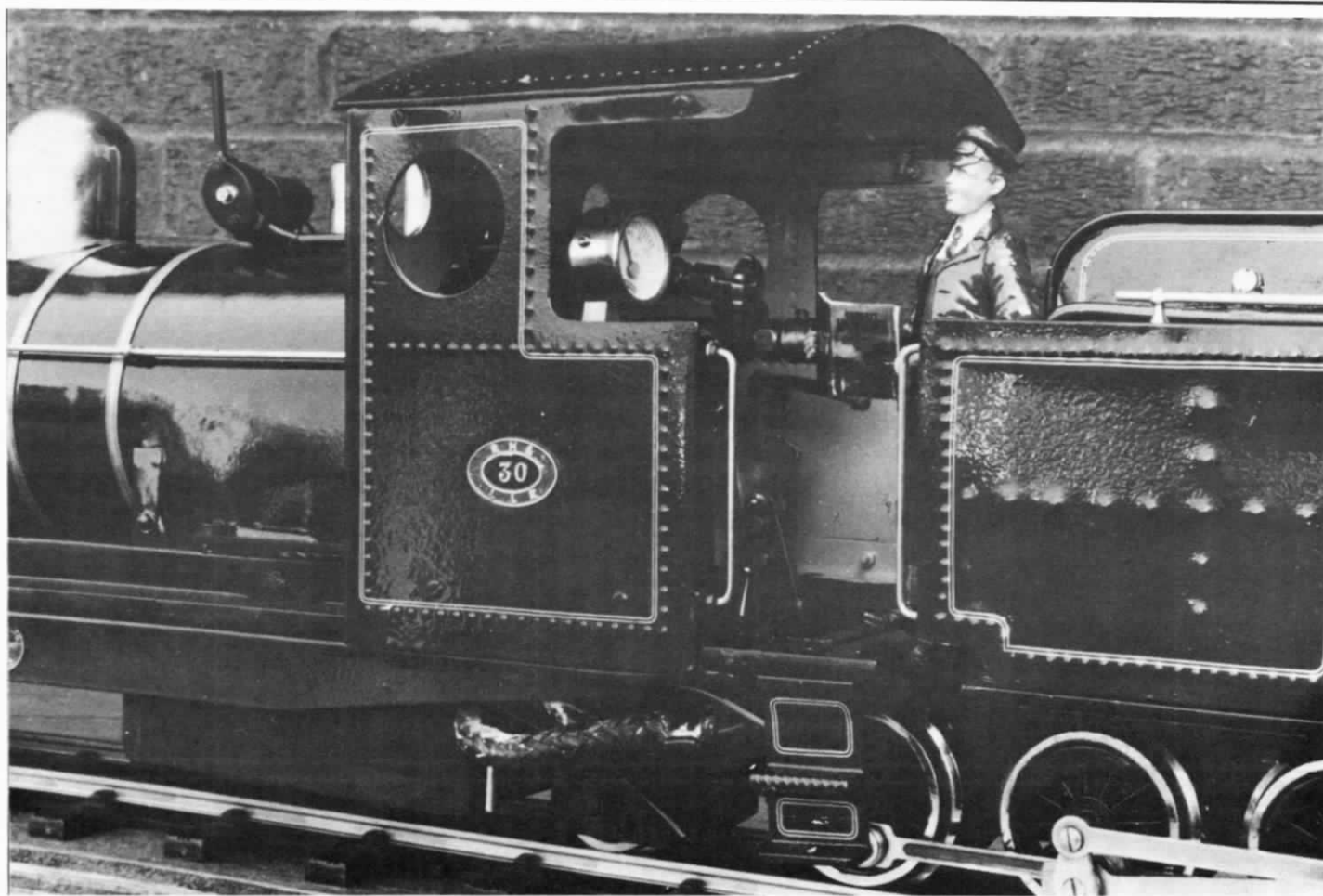
***INSIDE.....***

***Maxwell Hemmens PORTER Review***

***Americanizing the Roundhouse Fowler***

***News, Opinion and Commentary on the Live Steam Scene***

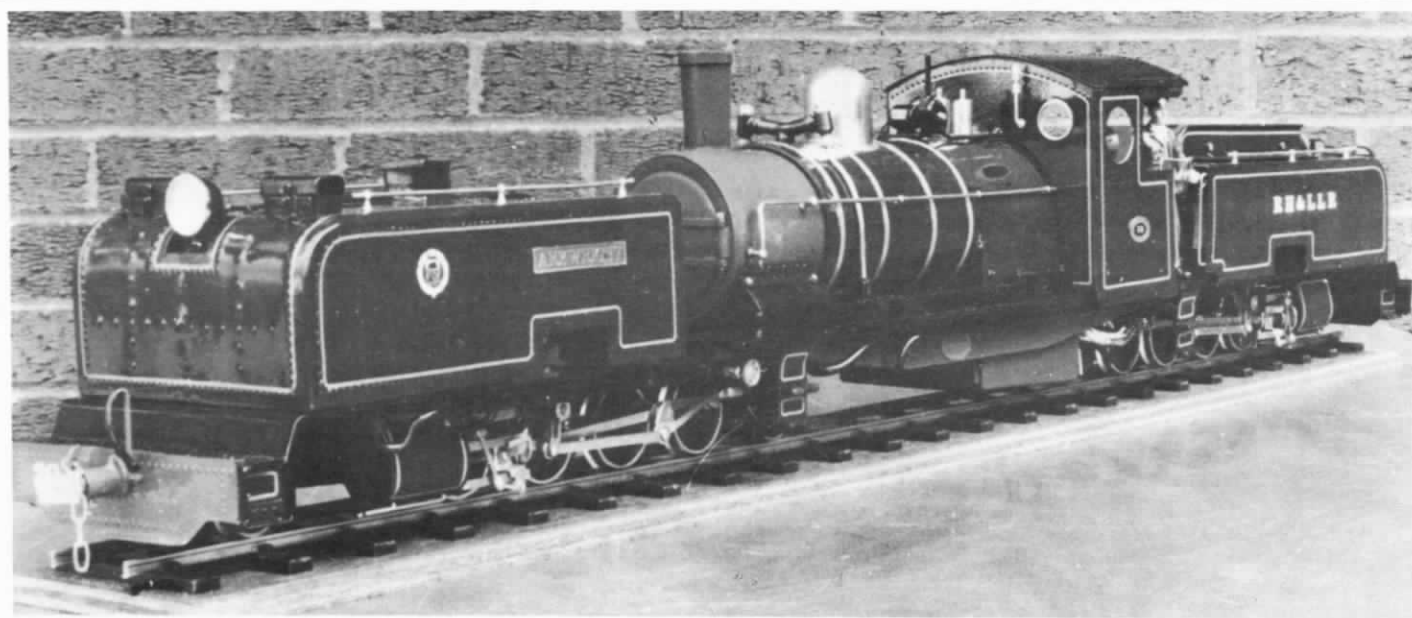
***And Lots More.....***



**Above:** 2-8-2 + 2-8-2 two foot gauge (32mm track) Garratt in 16mm scale. Here we have a view of the cab showing the driver reading a copy of "Garratt Locomotives of the World". This outstanding loco was built by Mike Dockery.

**Both photos by Peter Dobson, with thanks to the 16mm Narrow Gauge Association, their publication 16mm Today, and editor John Wenlock**

**Below:** Another view of the Garratt. This locomotive won the Modeller of the Year Competition for Mike Dockery in 1987. Roger Loxley, proprietor of Roundhouse Engineering, had donated a carrying case for the winner. The fact that the winning loco was over a yard long caused considerable consternation and much merriment!



## ON THE COVER:

**The Maxwell Hemmens  
Porter, subject of our loco  
review in this issue.**

*Photo courtesy  
Maxwell Hemmens  
Precision Steam Models*

**It's that time** of year again, folks! Time to break out the catalogs and all those magazine articles you've been marking and storing for future reference. Yep, it's time to think about building a railroad in your backyard, sideyard, or even your front yard.

There are those who get an enormous amount of pleasure out of collecting small scale live steam engines. For some, just having the boxed locos stacked in the closet is enough. Others might display their engines on shelves or in glass cases for the pleasure of looking at them. Nothing wrong with this, though it has never been my cup of tea.

For me, there's nothing to compare with the pleasure of handling a little engine, adding water, fuel and steam oil, touching it with fire and bringing it to life.

With the engine resting securely on a test stand, this can be done indoors on a table or kitchen counter - and there is pleasure to be found in this, too - but somehow a steam engine with a fire in its belly belongs outdoors on rails, pulling a train and acting like it has a job to do.

With all the materials available to us today - including rail in several sizes and your choice of metals, flextrack in several configurations and gauges, turnouts in kit form or ready to install - virtually anyone can find a combination of goodies that they can work with and can afford.

I don't want to be pushy about this - after all, it's your hobby and you can pursue it any way you want to. But for those that haven't had the pleasure of sampling that part of the hobby, I'd like to offer encouragement and some sound reasons why you might want to give it a try.

If cost is an obstacle, start by buying a few lengths of inexpensive aluminum rail, cutting some ties (you can pick up enough scrap wood at local construction sites, cabinet shops, etc. so that you won't even have to buy any wood - and if you don't have a bandsaw or a table saw to cut your own ties, you probably have a friend or neighbor that would be delighted to do it for you), spike the rails to the ties (using a simple track gauge to keep the rail spacing correct) and you'll soon have enough track to start your little railroad.

For those with a generous budget but a shortage of time, take advantage of the excellent flextrack and ready-built turnouts to get your railroad up and running very quickly.

I won't go into tracklaying techniques here, as that has been adequately covered in many articles published in Garden Railways magazine, Sixteen Mil Today and others. My point here is to convince you that you could be getting much more out of your small scale live steam hobby if you were running your engines.

"Ha!", you might be saying. "I live in an apartment and don't have a single square inch of dirt on which to lay any track!"

Okay, I agree that apartment dwellers are unfortunately not able to have their own outdoor railroad - but there are alternatives for everyone.

Attend steamups and open days and take your trains along. Most hosts of such events are pleased to have visitors running trains on their railroads.

We'll be having at least 2 SitG Steamups again this year - and you're all invited. So take those engines out of the boxes and off the shelves and give them a chance to do their stuff! See you next time, and until then.....

Happy Steaming!

*Ron*

## Steam in the Garden Magazine

Volume Two Number 4  
Issue #10

### Publisher/Editor

Ron Brown

### Lovely Assistant & Head of Complaint Dept.

Marie Brown

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Rick Drescher ..... Washington  
Peter Jones ..... Wales  
George Lyon ..... Pennsylvania  
Robert Nowell ..... Pennsylvania  
Stumpy Stone ..... Ohio

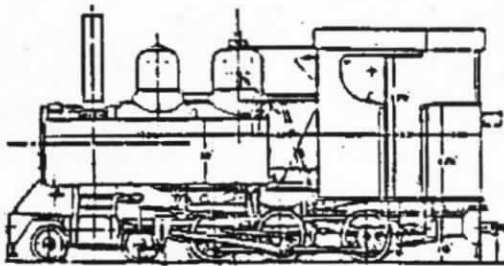
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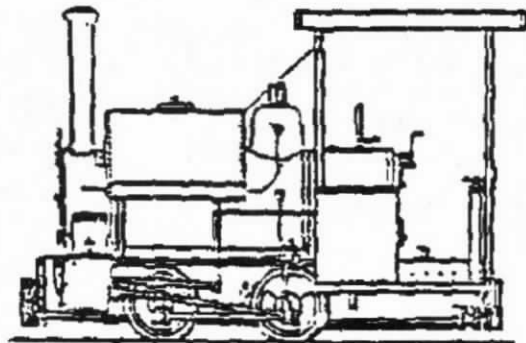
# WHAT'S NEW?

**Wrightscale of Aboyne - Burnside, Aboyne, Deeside and Kincardine, Scotland AB34 5ES,** is back on line. Following a move to Scotland and the ensuing reorganization, Malcolm Wright is once again going full speed ahead with his steam loco building business. Well known and highly regarded in the UK for his quality locomotives and near-silent gas burners, Mr. Wright is now offering an interesting variety of engines and rolling stock. Probably of greatest interest to American steam enthusiasts is Wrightscale's beautiful 8 ton Porter. (We have a promise of a review from an owner of one of these fine looking engines - watch for it!) For the gauge 0 quarry and industrial engine enthusiast, Wrightscale is also offering beautiful hand built models of the Alice Class and Port Class Hunslet saddle tank locos. Currently undergoing re-design is the well known Wrightscale Kerr Stuart Wren Class 0-4-0 saddle tanker. The new model will be finer scale and will be fabricated from lost wax castings and etchings. Available in the summer of 1992 will be the Baldwin W. D.

Baldwin W.D. 4-6-0 Tank Engine



Kerr Stuart WREN Class 0-4-0



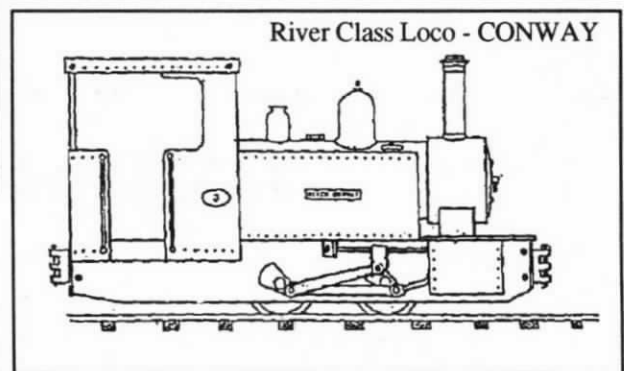
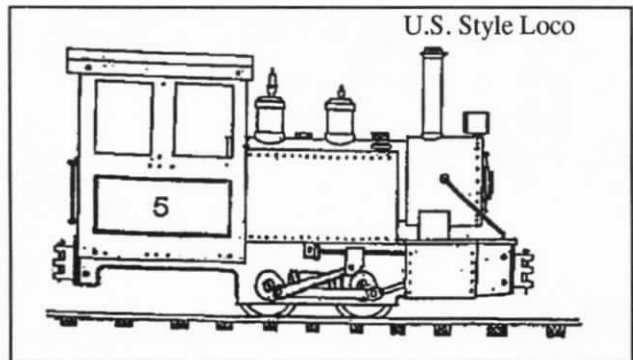
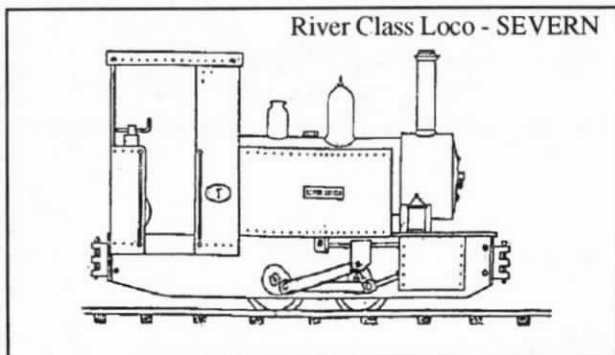
Class 4-6-0 tank engine, featuring laser cut frames and detailed with a wealth of lost wax castings. As well as the abovementioned steam engines, the Wrightscale brochure shows many other interesting items - a Baldwin 35 hp gas mechanical locomotive, for instance - and several pieces of rolling stock and unique pieces that are available from no other source. Drop the Wrights a line and ask about their line of very high quality live steam locos. Include a couple of International Reply Coupons (available from your post office) - and don't forget to tell them that SitG sent you.

**Ozark Miniatures - P.O. Box 22, Dept. R.B., Linn Creek, MO 65052** - sent us a sample of their nifty bronze switch stand. Made entirely of bronze, it can be epoxied, soft-soldered or silver-soldered together to make a very durable and attractive switch stand for indoor or outdoor use. The switch operating lever seats in a notch in the main switch stand casting to lock the points in place, ensuring derailment-free operation of trains through your turnouts. Write to Larry and Carol Herget at Ozark Miniatures, enclosing \$2.00 for their 14 page **LOGGING AND R.R. catalog** illustrating this switch stand and what is probably the best assortment of detail items available to 1/2" scale railroad modellers. Not only do they make and sell a lot of neat stuff - they're really nice people, too!



**Redlake Models - 84 Rookery Way, Whitchurch, BRISTOL BS14 ODY, United Kingdom** - has a catalogue of fittings for small scale live steamers. Water gauges, safety valves, bypass valves, check valves, unions, bushings, pumps, whistles and much more. Write for a catalog and price list, enclosing a couple of dollars and a couple of IRC's.

**Salem Steam Models - Brynglas - Salem, Llandeilo, Dyfed SA19 7HD, United Kingdom** - has begun making deliveries of the U.K. version of their new live steam loco. Offered in 3 different styles (one of them modelled after a generic U.S. style Porter), these 0-4-0 locos feature gas or spirit firing, twin double-acting oscillating cylinders with O-rings (10mm bore X 18mm stroke) (dummy connecting rods and slidebars give more "movement" on the sides and a more realistic appearance), displacement lubricator, cab mounted speed and direction controls, boiler



filler valve and full rivet detail. The boiler is silver soldered and externally fired with a 20-25 psi safety valve. An optional boiler is available with a 40 psi safety valve and a traditional glass tube-type water level gauge. The chassis consists of brass frames fitted with axle bushes and measures 10" X 4" X 1.25". Steel wheels are fitted inside the frames with outside flycranks, gauge is adjustable (gauge 1 or gauge 0). The U.S. style loco is designed to be compatible with G scale rolling stock. The bodywork has embossed rivet detail and will not look out of place with modern super-detailed plastic injection molded rolling stock. A choice of couplings is available. All locos have brass handrails and heavy cast brass domes. Standard finish is dull black. Several options are available, including extra detailing. An efficient heat shield allows outdoor operation. Oscillating cylinders are concealed behind shaped metal covers for added realism. Full instructions are included, along with an accessory pack containing syringes for water, oil and meths and a range of spare O-rings, seals, etc. Prices begin at less than £300. Send \$2.00 to Salem Steam Models at the above address for full details.

**Llagas Creek Railways - 2200 Llagas Road, Morgan Hill, CA 95037** - has code 250 steel rail and code 250 nickel silver rail available now. No more tedious painting of aluminum rail - you can enjoy real prototypical rust with their steel rail! And for us narrow gaugers, Llagas Creek has designed a new tie strip for their flextrack that has a realistic narrow gauge look. Write to the address above for more information, or call (408) 779-4391. **Attention all gauge 0 enthusiasts** - If you're interested in flextrack and turnouts for gauge 0 - write or call and tell Gary YES! We need gauge 0 flextrack and turnouts!!



# TURNOUTS

## CODE 332 BRASS RAIL

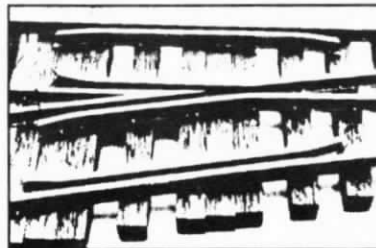
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*Rick Drescher's.....*



*Rick Drescher* © 1991

# R P O Mailbag

## Letters from all over

*Letters from readers are welcomed and encouraged. Offer advice and encouragement, suggestions, constructive criticism - or tell us about your current project (and don't forget the photos!). But please keep it to a reasonable length or I'll be forced to convert it to a full-length article! Send any contributions to this department to SitG, Dept. RPO, P.O. Box 335, Newark Valley, NY 13811*

Simpson Cross  
Wales, U.K.

Dear Ron,

In "End of the Line" (#8, August/September 1991) you mentioned that someone had proposed that you take up an editorial position on a number of topics affecting our hobby - and you asked for readers views. Mine is that you use your position to try and stop people from taking up positions! R/C shouldn't be "versus" manual - it should be "as well as". The great thing about this hobby is its freedom. People that have tried to pin it down or regulate it do it a disservice. Given a choice, I would urge that SitG should explain, entertain and communicate - but never pigeonhole!

Likewise, while I enjoy reading performance assessments of locos - how many laps of the track, with 5 cars behind, on 43 ml of spirit, etc. - even this misses the point. Of all sorts of modelling, the attraction of small-scale live steam in the garden is the interplay between loco, conditions and driver. I recently saw a superb commercial loco hauling a long train around an exhibition layout. The loco cost in excess of 5000. The driver was a beginner and performance was erratic. Straight afterwards, Deryck

Goodall stuck a converted Mamod on point and gave a superb display of running for one hour. At my open day, various visiting engines were hustling along my track. My own locos performed faultlessly, running slowly if I wanted them to. This was no big deal on my part. It was because I knew the intimate secrets of my track - and that a lower boiler pressure than usual worked best on a hot day.

So perhaps performance reports aren't a bad thing in themselves. Instead it might be that we put too much emphasis on the wrong things. My particular priorities are that *a)* a loco should stay on the track *b)* it runs slowly when needed *c)* it keeps going in a gale and driving rain *d)* it should look pleasing to the owners eye. Only then would I think about hauling big loads or economy of fuel.

Bestest,  
Peter Jones

Seattle, Washington  
USA

Dear Ron,

Thank you for the kind comments in the October/November issue! The photos came out well and it was quite a surprise to be on the cover. The Garden Railway Society meet went well with no rain till it was over. A double-head with ANNA STINA and Jim Montgomery's Hydeout Mountain Shay could pull just about everything with link & pin couplers. Missed getting photos, however. Ran engines yesterday with 40 degree air temperature. Lots of steam clouds with a winter garden!

I look forward to your visiting Seattle at some time and running trains. I enjoy your magazine as it

fits my two interests in the hobby. Regards and happy holidays.

Good Steaming!  
Jim Overland

Simpson Cross  
Wales, U.K.

Dear Ron,

Congratulations on October/November SitG - superb! Could I add a couple of words to points arising from it? I was very pleased that Marc Horovitz put pen to paper to detail his personal outlook on collecting. The fact that it is different to mine shows just what an interesting subject it is. But Marc has inadvertently done me a slight disservice. He naturally assumed that, just because I personally don't like collecting, that it follows that I have no experience. Just for the record, I have been responsible for putting together collections for other people or institutions professionally. This includes one museum's collection where I merrily spent over one million dollars. Up in this league, you rather need to know what you are talking about. But I think that Marc actually reinforces the point I made that you either collect as investment or for the pleasure of owning the object, and that it is a mistake to confuse these two objectives.

Thanks to Harry Quirk for his note that the Aster Baldwin will run on three burners. He quite rightly points this out. I found that the Baldwin would run on three, but not in bad weather conditions. If Harry could get good results in rain and gales I would be especially pleased to learn about it.

Geoff Spenceley can rest assured that my remarks about mistakes in KGV referred to errors in detail, not in mechanics. I live slap

bang in the middle of GWR territory, surrounded by locos and, worse, people that know them intimately. When making a scale model, particularly in larger gauges, around here it is a mortal sin to get the details wrong - probably a hanging offence.

Thus I was guilty of a sin that I preach against frequently; taking ourselves too seriously. Our hobby is varied and I hope that it will always be so. Thus I would extend John Wenlock's remarks if I may. He says "...let us see scale models of real prototypes etc....." Yes, let us seem them from those, including me, who want such things. But let us also always see the freelance 0-4-0 tank engine or vague Porter lookalike happily rumble around the flowers. John has been an excellent ambassador for this sort of garden railway. May the sun never set on his Clywd and Dee line.

Yours sincerely,  
Peter Jones

Angus  
Ontario, Canada

Dear Ron,

I've just finished reading Vol. 2 No. 2 and would like to congratulate you and your "Cheerful and Capable Assistant" for producing a balanced and very interesting magazine.

I've enclosed a few photos taken during a Gauge One Association get-together held in our garden this past August. The Nottawasaga Valley Railway as chartered is an elevated kidney shaped loop some 250' long, with a 30' passing siding, and a start has been made on a small yard and engine servicing facility. I have used two types of structure to support the track. One half of the right of way is the usual plywood and wood stringer assembly. The only difference from many such layouts is that I sunk the 4" X 4" posts down 4' minimum, due to the frosts received here (50 miles north of Toronto, Ontario, Canada). All wood is well soaked in a water repellent wood preserver. This portion of the right of way will remain

as an elevated for the foreseeable future.

The other half of the right of way is a welded steel structure, supported on old well pipe sunk a minimum of 3.5' into the ground and decked with a concrete-fiberglass mesh sheeting normally used by the building trades under showerstalls, etc. It is unaffected by moisture or frost and is ideal for garden railway construction. The reason I went to this type of construction is that I plan to backfill this area with soil to allow landscaping with miniature plants and buildings.

I hope the photos are of interest, and if you think there would be any interest in my construction methods I would be only too glad to write it up in more detail.

All the best in the coming year.

Yours truly,  
Frank D. Wear

Rowland  
Pennsylvania, USA

Hi Ron!

Boy, am I ever excited! My SR&RL No. 24 arrived yesterday,

at 2:20 pm to be exact. The locomotive is everything - and more - than I expected. It truly is Roundhouse Engineering's best effort and best model. Their usual high standards and quality have been carried over to this model, and then exceeded. The detail castings are just beautiful and they are cleanly and precisely mounted. The joinerwork on the cab, tender and locomotive superstructure is immaculately done and the paintwork is smooth, even and flawless. While my 32mm gauge Stoney River and Rowland Lake Railway is not yet built, I just had to bench test the locomotive under steam. Its performance was excellent. Completely free of any binds, the throttle could be set down to almost closed and the drivers turned at almost a crawl. And the loco isn't even broken in yet! This locomotive is superior value for the money and is worth every penny. I believe that when the sad day comes when production of this engine ends, this locomotive will become a prize among the small scale live steam fraternity. I offer compliments and praise to Roundhouse Engineering for this exceptionally well done model.



**Above:** Terry Tomkins with his Aster Mogul and scratch-built wood day coach. Behind Terry is where the loco servicing area and yards for Frank Wear's Nottawasaga Valley Railway in Ontario, Canada will be constructed.

*Photo by Frank D. Wear*



No one has experienced the ultimate in customer service and dedication to customer satisfaction until they have done business with Sam Muncy and Richard Longley of Brandbright/Garden Railway Ltd. in Cambria, California. I have dealt with many major businesses, hobby dealers and distributors in my lifetime. Some were good, others not so good. The very few that I had thought of as the best suddenly become second-rate once I had the chance to compare their service to that of Brandbright/Railway Garden Ltd. Their ultra-modern communications system makes it possible to place, maintain, up-date and ship customer orders with lightning speed. In minutes, customer questions and special requests can reach England and a return reply takes about the same amount of time. Sam and Richard followed up on my order reservation for this locomotive with once and sometimes twice weekly contact with me. I never had to wonder what was happening. I have yet to receive the courtesy and attention from a U.S. hobby dealer that I received from Sam Muncy and Richard Longley - and I can't thank them enough.

So what does this all mean? It means that both of these gentlemen have a hard, fast customer. When something real good comes along, I think everyone should know about it so that they have a chance to deal with the very best there is. I can't recommend enough the Roundhouse SR&RL No. 24, and Sam Muncy and Richard Longley at Brandbright/Railway Garden Ltd.

Regards,  
Fred Kuehl

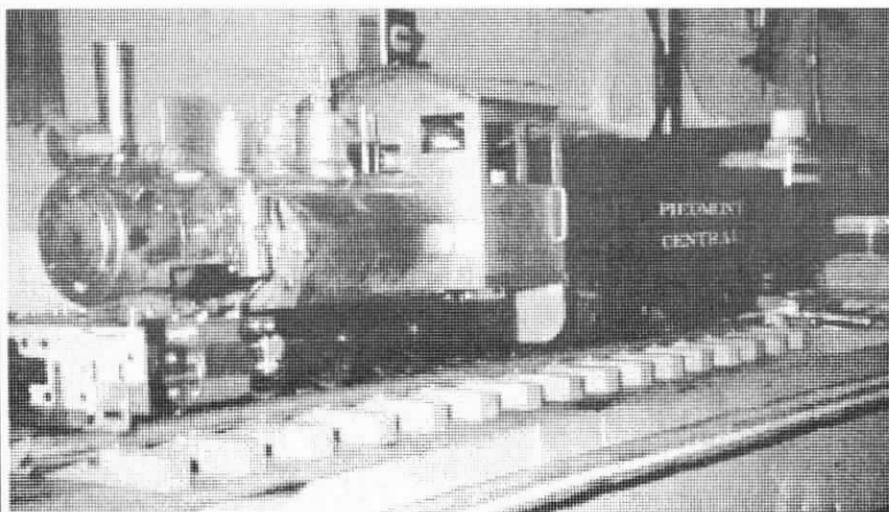
Charlotte  
North Carolina USA

Dear Mr. Brown,

Before I sat down to renew, I looked back through my previous six issues and the Special Edition #1. The improvement can be seen, although all of the issues have had extremely useful information.

Definitely renew my subscription and keep up the excellent work. I have enclosed several photos of Piedmont Central #5 before it was taken apart, cleaned up and painted. #5 was planned in 1989, before American prototype locos were generally available. It's based on the alcohol fired Roundhouse Dylan and Lady Anne chassis. The

engine I picked up relatively cheap. The first steamup on blocks indicated that this particular Mamod has just about everything wrong with it. Leaking water glass, leaking cylinders and regulator, wobbly wheels, etc. It is being rebuilt to a 2-4-2T. The frame extensions and new cab being built from brass, with detail parts added to the engine.



**Above:** Malcolm Schaeffer's Piedmont Central #5. Malcolm started with a Roundhouse Dylan/Lady Anne chassis and created his own unique locomotive.

*Photo by Malcolm Schaeffer*

superstructure was built from sheet, strip and structural brass, along with brass detail parts from Trackside Details and Precision Scale. The throttle is radio controlled. With the engine painted, the firebox is not as noticeable. It runs beautifully. The tender was scratchbuilt from styrene and wood with a large number of Simpson rivets installed. It also has parts from Trackside Details, Precision Scale and Shortline Foundry. The batteries and receiver are in the tender. #5 is my second live steamer. My first is a Creekside Baldwin 0-4-0T. It's a good locomotive, but after 3 years it needs some work as steam leaks have appeared around the cylinder ports and regulator. Also, I believe I will build a new burner for it as I am not happy with the performance of the old one. This project will have to wait until I finish working on my 3rd live steamer, a Mamod

More important are the mechanical changes I'm making. The drive wheels have been replaced with wheels from Miniature Steam Railways (excellent product), and the cylinders have been rebuilt using Mike Chaney O-ring pistons. The engine will be equipped with Chaney lubricator, regulator and alcohol burner, Shirley safety valve and Goodall filler valve (also all excellent products). I hope it will run better when I get it reassembled! In closing, thanks again for your fine magazine and keep up the excellent work.

Sincerely,  
Malcolm Schaeffer



# Gazing Into the Fire

*by Peter Jones*

## Disposal

Nominally it had been a steam test, but the warm November afternoon had not been troubled by the faintest of winds. The pale sun had moved slowly down the sky as the engine steamed merrily whilst propped up on blocks.

The loco in question is a little 3 1/2" gauge, coal fired tank engine, but that is not important. The steam hung high and the bark of the exhaust seemed pleasantly loud on this still afternoon.

Nothing lasts forever and the time came for the run to be concluded. Already the shadows were long and cool, and the air was becoming moist. Sometimes, disposing of a fire can be a chore, but now it is a real pleasure. The first step is to remove the blocks and lower the engine down onto the track, then let the fire burn down. As it does so, the bypass valve is closed and the boiler is filled up for next time. The blow-down valve on the water gauge is cracked open just to make sure that it is reading true. The regulator is shut off and the blower opened - but only slightly; we don't want a roaring fire at this stage. Instead we want just enough draught to pull the smoke out of the chimney. As the shallow bed darkens to a dull red, I like to rub a drop of oil into the paintwork whilst it is still warm. There is no patina on earth that can quite match that of hot oily metal.

I pull the dump pin and the back end of the grate drops down. Standing back slightly, I slowly

rake the fire out and the hot coals sizzle in the water splashes underneath. I roll the engine forwards slightly and then put the hand-brake on. The ash is quenched and shovelled to one side of the track, where it will add a little bit more to the atmosphere.

Round at the front end of the loco, I undo the dart and swing the smokebox door open. There seems to be rather a lot of ash in here today. My routine is to shovel out the ash first and then to look at the tubes. Experience suggests that a sweep wouldn't hurt today. So out comes the long brush and I peer into the gloom, locating each tube in turn. I also have a piece of soft wire which I use to check that the superheater tube is clear in its flue. Satisfied that all is clear, I slam the door shut and make sure it is properly tight; a small airleak at the door can play havoc with steaming.

Whilst I have got a flue brush handy I brush along the axles and grate gear under the loco. Ash easily clogs up the little crevices. I then run the long spout of the oil can into these hidden moving parts. As I do so, I check things over for loose screws or seized parts. They never seem to occur, but it doesn't cost anything to be certain. The oil can is put down temporarily as I clean the engine down. That warm oil has left a nice sheen on the plating, but today we will give the brasswork a rub over. The copper piping has heated to some superb colours, but

it will soon dull down, so a whiff of metal polish will make it sparkle for next time. Working from top to bottom, I end up by wiping the wheels and valve gear down. The gauge glass is given an unnecessary rub and then it is time to complete the round of oiling. There are numerous little oil holes to fill with the thick green-gray steam oil. I fill the lubricator tank. This just leaves the water tanks to fill.

With disposal complete I admire the engine for a few moments. It smells right and it looks right. Much of the attraction of live steam is aesthetic; the technicalities of engineering take a back seat for a moment. The sun has now virtually disappeared below the horizon. Suddenly, overhead, there is a giant whispering. Thousands of flocking starlings give an indication of the approaching winter. But for these few glorious moments, life is good, very good indeed.



# A Mountain Grade for Lady Anne: The Feasibility Study - Part I

by George Lyon

*Being somewhat lazy and unfortunately not having been blessed at birth with a scientific turn of mind and a love of mathematics, I tend to approach the building of a garden railway a bit more casually than my friend and the author of this article, George Lyon.*

*"That spot looks pretty flat - throw down some track and let's run trains!" This is the approach I used when building our Silo Falls Scenic Railway, and it worked.....sort of.*

*But "sort of" just isn't good enough when you're building track-age for your precious (and expensive) steam locos.*

*When George submitted this article, my first impression was that it was much too complex for the average reader. But after reading it through a couple of times, I realized that, had I taken the time to study and use these methods in planning and building the SFSR, many hundreds of hours of headache, heartache and darned hard work could have been avoided - not to mention the new skills that could have been acquired and the new facets to this seemingly limitless hobby that could have been enjoyed.*

*So, speaking from experience, I encourage you to pay attention to the wisdom contained in this article. At the very least it could save you from having to rebuild all or part of your garden railway - and it might even keep you from throwing up your hands and taking up knitting.* -- ed.

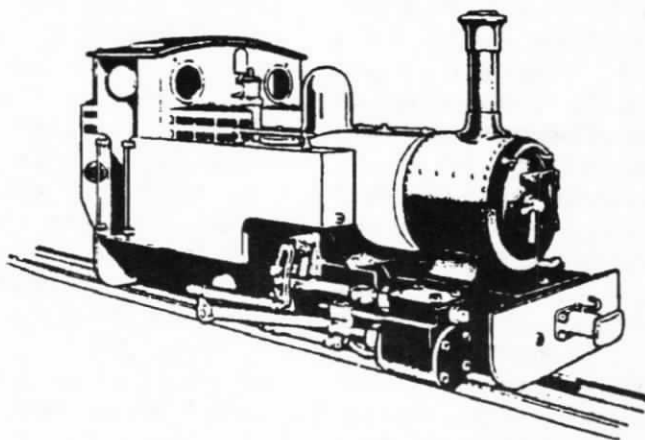
This magazine is about small scale steam, not track - right? I hope not, because (1) misconceptions about track kept me away

from small scale steam until '89, and (2) it was not until questions about track were decided that I ordered a Roundhouse Lady Anne last August and (3) I would never have phoned in the order if I were not confident that I could solve the problems with track that lay ahead. This story is about track.

It began one summer day in '89 when several visiting radio-controlled steamers, trailing convincing trains, marched up and down the 4.5% grades of the False Pass & Benthic. (The FP&B is a convoluted "circle" of LGB "wide-radius" sectional track, shoehorned into my small, steep back yard and

My misconception that "small scale steam requires level track" stemmed from the conventional wisdom that prevailed before radio control proved its case where rails began to climb. Tractive effort remains a function of steaming capacity and adhesive weight. Radio control added the vertical dimension to garden railways by placing an electronic hand on the throttle.

Having become a believer, I found my eyes focusing on the Roundhouse TAW and Lady Anne engines whenever and wherever they appeared on visits to other garden railways. Their outlines are



**Above:** George Lyon's beloved Lady Anne, by Roundhouse Engineering.

*Line drawing courtesy Brandbright Ltd.*

home to a roster of Swiss prototype boxcab electrics.) One visitor, running light, strutted up the 11% grade on the rack branch, stopping on the grade and starting up again without even slipping a wheel. It was an instructive afternoon.

reminiscent of the tank engines employed on the 60 cm. military railways of the First World War, that were themselves adapted from contemporary industrial and agricultural lines. When Roundhouse announced last spring



the coming of the Sandy River No. 24, the countdown ended. It was time to get back to basics and think about track.

The backyard was full of gauge one track, a classic example of the more-is-better approach to the garden, but all three Roundhouse engines were two-footers in 16mm scale (1:19). Gauge 0 was clearly in order to fully capture their charm. Even if dual-gauging the FP&B were feasible, the sectional curves would scale out to a 73 foot radius in 16mm. Fortunately, most of a 24 by 48 foot area was available in the side yard.

Prototype has been my code name for years, and the two-footer shelf in the library was consulted. At one end of the track spectrum, Lima had furnished Shays that could bend around 60 foot curves, and listed one model (MID) that allegedly pivoted on 30 footers (19 inches in gauge 0 at 1:19).

During the First World War, Baldwin, Davenport and Vulcan furnished 2-6-2 tank engines to the U.S. Army (and Alco a delightful outside-frame version to the British War Office) in 60cm (23-5/8 inch) gauge. They pulled four types of cars, all built by Magor and ACF on a standard 24 foot steel underframe (15 inches in 1:19). 3% was the design maximum grade. Although most military track was of conventional construction, Lakewood Engineering and U.S. Steel provided sectional track with metal ties in radii of 30, 60 and 100 meters. A sectional track switch was available with a 30 meter substitution radius. Thirty meters (98 feet) scales down to 62 inches at 1:19. (Richard Dunn's "Narrow Gauge to No Man's Land" is an inspirational source for 16mm enthusiasts.)

In South Africa, Double Prairie Garretts spiraled upward on 3% with 165 foot curves, more than 8 feet at 1:19. L&B's TAW climbed 2% grades on five chain (330 foot) radius curves, over 17 feet at 1:19. The SR&RL No. 24 enjoyed 16" curves (359 feet), even larger. Both TAW and No. 24 pulled 42 foot

coaches, which scale down to 26 inches.

Looking out at the side yard, I tried to visualize track with 17 foot radius curves, but could not: the yard is only 24 feet wide. Trying 8 feet, I saw only a Dullsville oval. Next came a horrid specter: a 26 inch coach on a 60 inch radius curve!

The final prevailing wisdom was one of Lady Anne, 12 inches long, pulling 15 inch cars on gauge 0 track with five foot radius curves. A basic black livery prevented any possibility of color clash with trailing cars (sound wardrobe practice). The radio control and Walschaerts valve gear made a happy marriage, timetested by the Fowlers, and the butane fire defied mountain storms. With that vision in mind, I phoned in the order.

Outside-framed, Lady Anne is by design a switch-gauge engine that could roam the FP&B until there was a gauge 0 test loop in the side yard.

There was no pressure to lay track, but the question of what might eventually be done in the side yard called for a feasibility study. I began with goal-setting, to establish what might or might not be feasible. The goals set were those I feel have resulted in garden railways that provide satisfying operation to the builder (and perhaps a few friends), and can host a small open house. There are (1) continuous-run single track, (2) at least two passing sidings to permit opposing train movements, (3) a steaming bay, (4) a small yard to host visiting equipment, (5) curves of believable radius in terms of equipment operated, (6) constant grades if they are necessary and of significant magnitude and length, and (7) ready access to all trackage (*steam friendly*).

In South Williamsport, Pennsylvania, the high school teams are called *The Mountaineers*, and any feasibility study here demands an understanding of mountain railroading. Railroads cross mountain ranges to get to the other side. More precisely, they build over the divide

between river drainages which offer easy grades in broad river valleys for most of a route between two points. Usually the lowest divide is selected for the crossing, and this fixed point is the determining factor in selecting a route. Mountain railroads are engineered down from (not up to) the selected pass!

When Zenith Pass is 2000 feet above the Nadir River, a railroad descending from Zenith on an uncompensated 3% grade must lay 12.62 miles of track somewhere on its way down to the helper station at Nadir. If this cannot be done by following the valley of a mountain stream, then the required trackage is usually strung back and forth across the slope below the Pass, zigzagging downward on what some have likened to a giant ladder with slanting rungs.

The calculation of the length of track required to descend a known vertical distance on a selected grade is the key to designing any railroad - garden or otherwise - where the terrain slopes more sharply than an acceptable grade. The Zenith-Nadir calculation went as follows:

$$\text{a: } 3\% = 0.03 = 3/100 = 1/33.33 = 1 \text{ in } 33$$

$$\text{b: } 2000 \times 33.3 = 66666.7 \text{ feet}$$

$$\text{c: } 66666.7/5280 = 12.62 \text{ miles}$$

The calculation on my False Pass & Benthic was slightly different, since the vertical distance involved was 24 inches.

$$\text{a: } 4\% = 0.04 = 4/100 = 1/25 = 1 \text{ in } 25$$

$$\text{b: } 24 \times 25 = 600 \text{ inches}$$

$$\text{c: } 600/12 = 50 \text{ feet}$$

The next step in my feasibility study for the Benthic & Lime Ridge Northern was to determine the vertical distance between the top and bottom of the available side yard. Lima, in their 1925 Shay catalogue, prescribed a simple technique for determining the grade of an existing



railroad. It is a variation of equation (a) in the preceding examples, and involves determining vertical distance.

*"For straight, well-laid track, a straight edge can be laid so that one end rests on the rail and then measuring the (vertical) distance from the other end to the rail when the straight edge is in a level position. This (vertical) distance divided by the length of rail below the straight edge and multiplied by 100 will give the percent of grade. For rough, uneven track, a tightly drawn line should be used instead of a straight edge, the length being at least 50 feet."*

Prototype techniques are usually simple, frugal and practical. Using a carpenter's level, borrowed line and a yardstick, I determined that the drop from the south to the north end of the side yard was 36 inches. Downcast, I played the numbers game, specifying a 4% grade.

(a)  $4\% = 0.04 = 4/100 = 1/25$

(b)  $36 \times 25 = 900$  inches

(c)  $90/12 = 75$  feet.

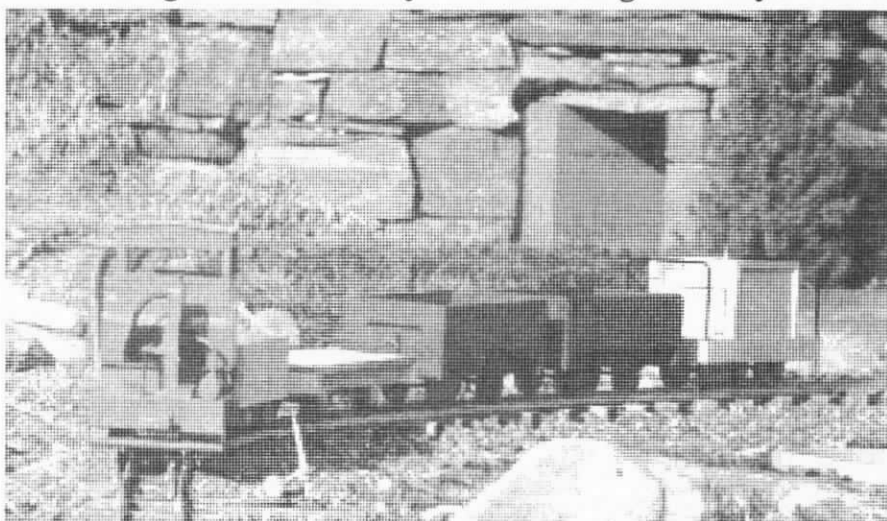
Even without allowing for passing sidings, a yard and a steaming bay, a continuous run up to and down from Zenith would require 150 feet of track in less than 1100 available square feet. The choice would be brass spaghetti or aluminum vermicelli. The first goal, a continuous run, was apparently out. The others were all attainable, however, if track were laid between yards at Zenith and Nadir. A longer, easier grade could be used. I returned to the drawing board.

*The conclusion of this article will appear in the next issue.*



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# Americanizing the Roundhouse Fowler

Part V in a series

by Stumpy Stone

## A New Tender

To my way of thinking there are two problems with the stock Fowler tender. Its looks, and the radio noise created by all that metal banging around. This new tender solves both of those items neatly. It is a more modern American style tender and is made of wood with plastic trucks and wheels. In style it's not too far from the type used behind the Rio Grande's K series outside frame locos built in the twenties. You don't have to follow this tender design exactly, of course, but can use it as a basis for your own version.

For those of you out there who have tank locos with little or no room for radio gear - or perhaps you are having radio problems - a similar tender would probably be of benefit to you.

We'll start with the floor/frame. It begins as a piece of 1/16" model aviation plywood 3-5/8" wide by 8" long. Cut two pieces of 1/4" square stripwood 8" long and glue them along each side. Now cut two pieces of 1/4" square strip long enough to go across the floor between those two side strips - 3-1/8" long. This makes a rectangular perimeter for the frame.

Now the center frame will be added within this perimeter. Cut two pieces of 3/8" stripwood 2-1/8" long and glue these longways at the center of the floor, one from each

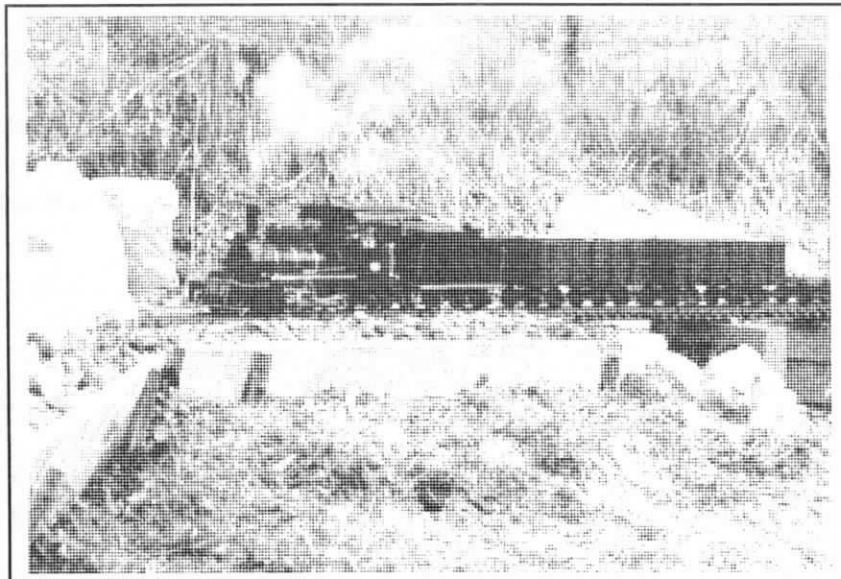
parts are glued in place and are good and dry, drill a hole in the center of each of the bolsters with a 1/16" drill for the truck mounting screws.

The final part of the frame is the side braces. There are six of these, made from 1/4" square stripwood 1-3/16" long. The end ones should be placed 1-3/8" from the perimeter at each end of the car, while the center ones go - in the center, of course. Please refer to the drawing of the tender floor/frame.

Now we're going to cut out the tender sides and ends. These will again be 1/16" plywood. All the dimensions are in the drawings. The 1/2" wide slot in the front bulkhead is for mounting the on/off switch for the radio, and for

the servo wires to pass through.

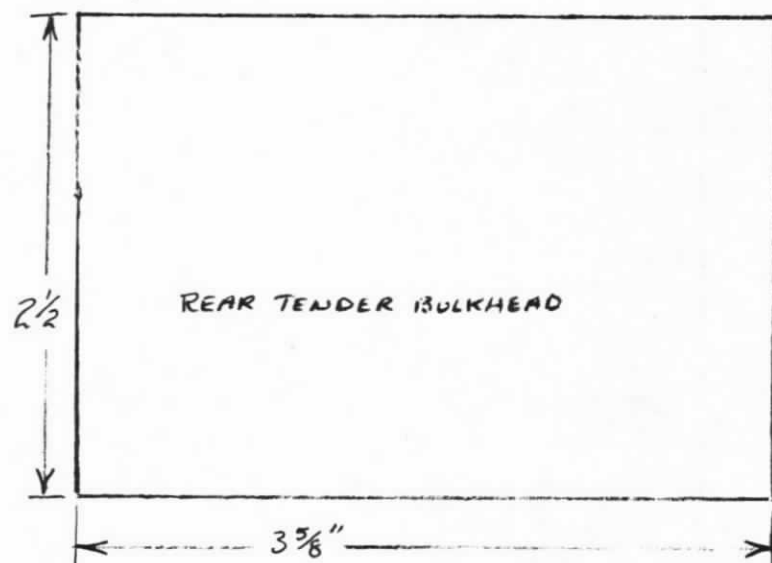
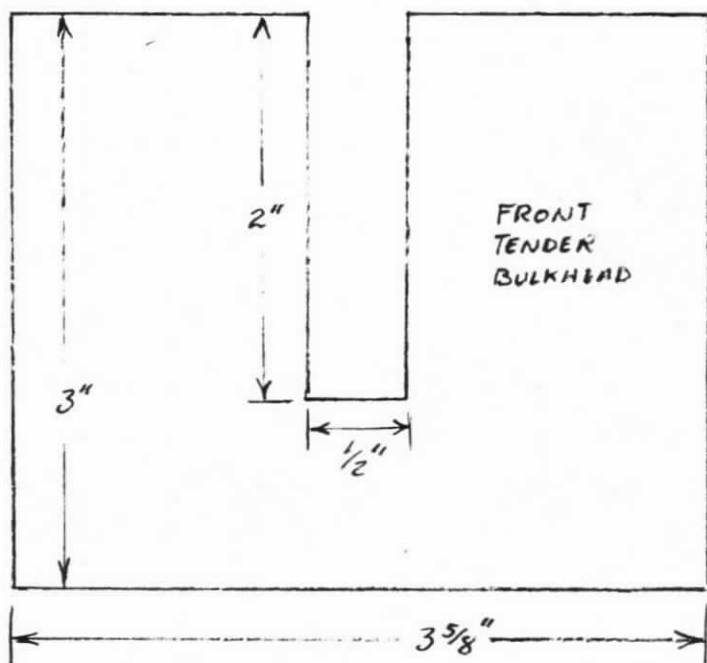
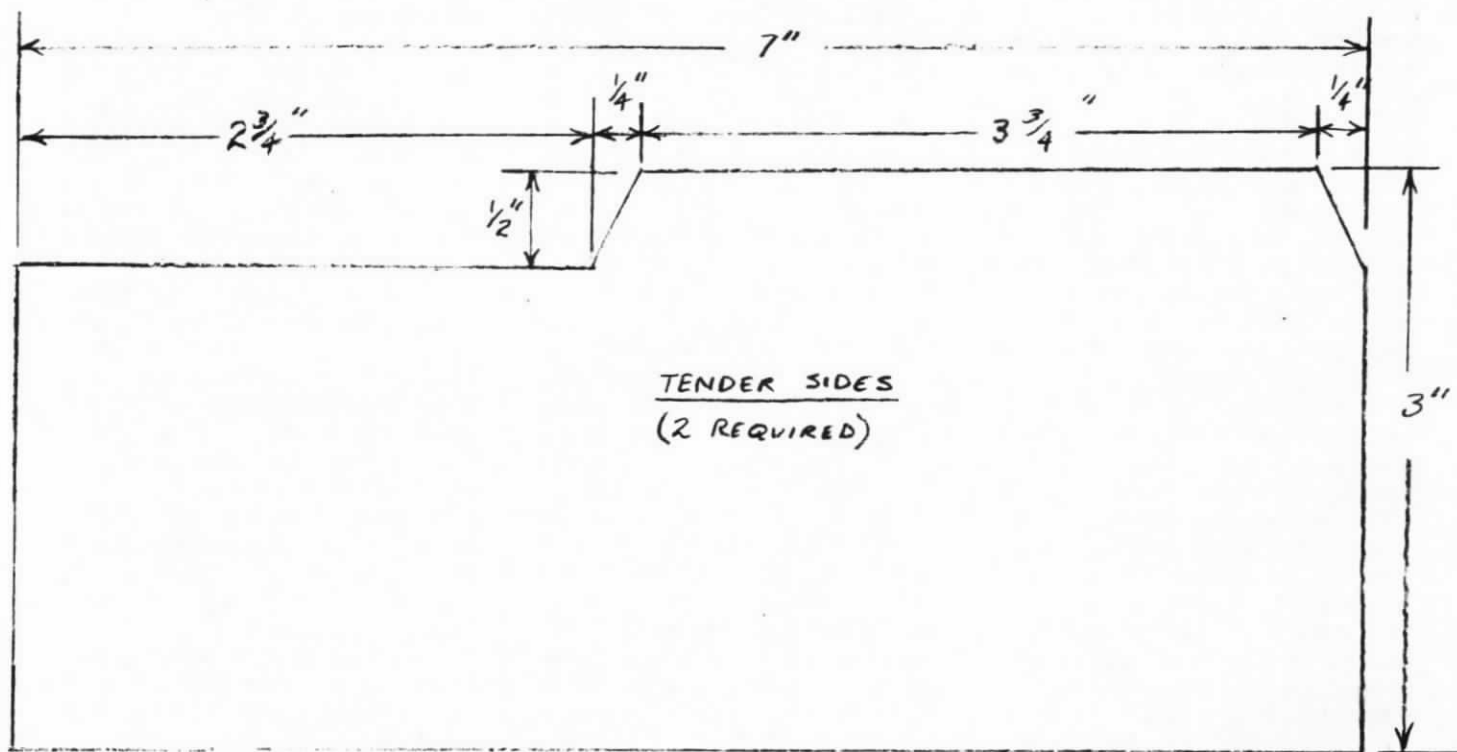
Cut four 1/4" square stripwood pieces 2-1/4" long and glue one to each side of the bulkheads to make corner braces for the inside edge of the tender body. They go from the bottom to 1/4" from the top of the rear bulkhead, and bottom to 3/4" from the top on the front bulkhead. While these are drying, cut four 1/4" square strips 6" long. Glue one along the bottom of each tender side, and one above it so that the top of the stripwood is 2-1/4" from the



**Above:** Stumpy's great looking Americanized Fowler - complete with new tender as described in this article - hauls the freight down the Rock Ridge mainline on a cool winter day.

*Photo by Stumpy Stone*

end. Next cut two pieces of 1/8" X 1/2" strip 5" long. These go on either side of the center parts in the middle of the car, leaving about 1-1/4" gap from the end of these to the 1/4" square perimeter. Cut two pieces of 1/8" X 1/2" strip 3/8" long and glue these between the parts you just made and on top of the pieces of 3/8" square strip center pieces so that they are centered 1-1/2" from the end of the car. These will be the bolsters for the trucks to be mounted on. When all these



bottom of the car side. In this way, when the body is assembled the corner braces and these upper 6" strips will line up and create an edge inside the tender body for the tender deck to rest on.

When these strips are dry, glue the sides to the floor and the ends between them. The sides will stick out a bit over the floor - this is the reason for the long strips along the bottom of the tender sides. Again, refer to the drawings for clarity. The front bulkhead should be set back about 1/4" into the body as shown in the drawing.

Cut a piece of plywood 1" square and a piece of 1/4" square stripwood 1" long. Glue the stripwood to the front of the floor at the center, then glue the plywood to the stripwood as shown in the drawing. This will be a bumper for the buffers on the back of the loco.

I used 1/16" brass tubing for handrails and steps and added them at this point. I bent the steps to shape 3/4" long and 1/2" wide. I then drilled into the perimeter frame and glued the steps into these holes. I did the handrails the same way.

You could use detail castings, of course, but I like the brass look.

The tender deck starts out as a piece of model aviation plywood 3-5/8" X 6-5/8". On the underside of this, glue two pieces of 1/4" square stripwood 6" long 3/4" in from each side, for strength. The coal bunker bulkhead is the same plywood, 3-5/8" X 5/8". To brace this bulkhead for gluing, cut two 1/4" square stripwood pieces 3/8" long and glue them at the bottom of opposite ends of the bunker bulkhead piece. When these are dry, glue the bunker bulkhead to the top of the tender deck so it lines up with the back of the coal bunker area of the tender sides, about 3-5/8" from the front bulkhead.

Cut two pieces of 1/4" square strip 1" long and glue them together to make a water tank neck. Cut a piece of plywood 1-1/16" X 9/16" and file the edges to round them off. Glue this plywood tank hatch to the tank neck and then glue the whole assembly to the tender deck behind the bunker bulkhead. I drilled a hole at the back of the tank hatch assembly for the radio antenna wire to come through the deck. I also

made a small U-shaped piece of 1/16" brass tubing and mounted it to the hatch for a handle.

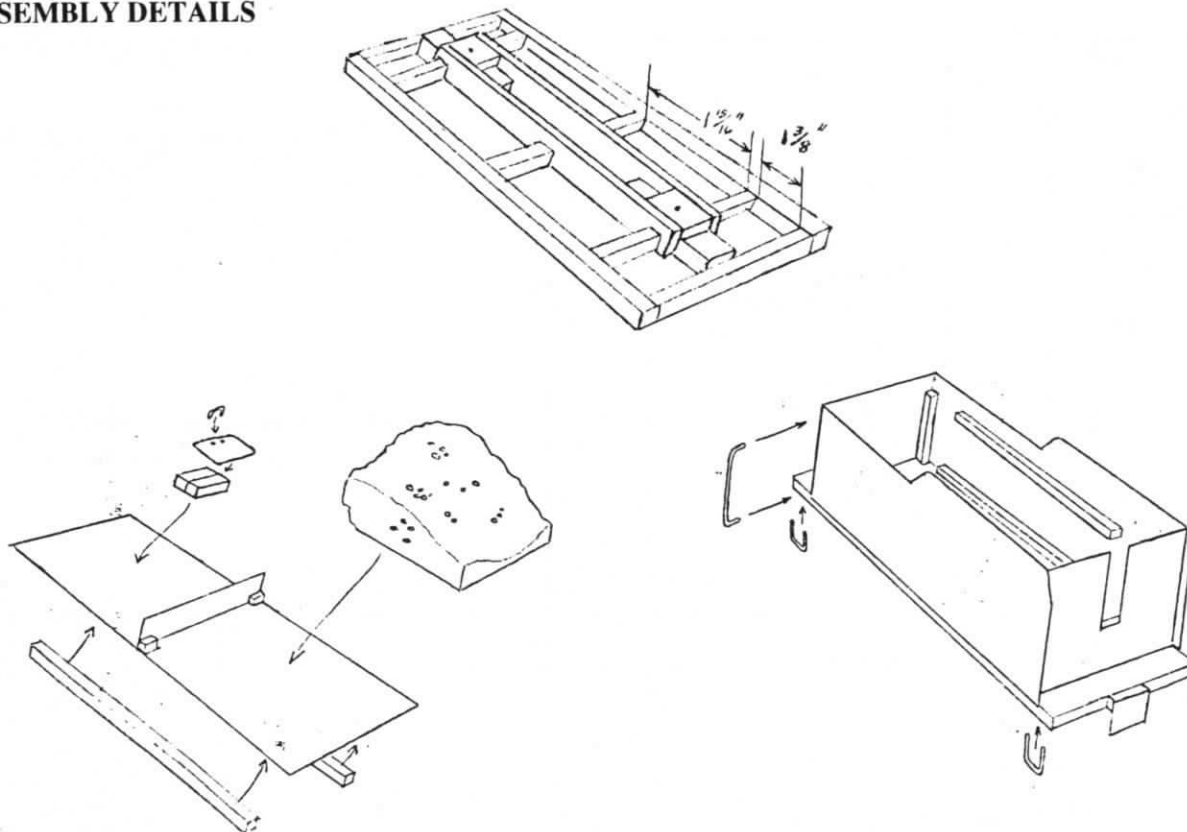
For the coal load, I used a chunk of styrofoam carved to shape to fit into the coal bunker area. If you coat the styrofoam with white glue as a barrier, it can be painted without the paint's thinner dissolving the styrofoam. As an alternative you can use latex paint, but it's hard to find in black.

On my tender I used dabs of glue to represent rivets. After sanding the body smooth and painting it black, I dabbed white glue onto a small screwdriver, then touched the bit of glue to the body to form a rivet. I only used enough rivets to show that there are some, but didn't try to place every rivet that would be on the real thing. I also coated the whole finished tender with polyurethane to match that shiny look of the locomotive.

Detail and finish is up to you, but I would try to get close to the same level of detail as on the loco so that they look like they belong together.



## ASSEMBLY DETAILS





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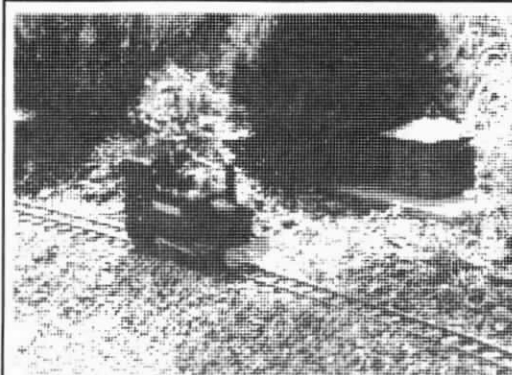
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Geoff watches over SCORPION as it rolls out onto the steaming bay for a trial run during the SitG steamup last August.

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# PRODUCT REVIEW:

## Llagas Creek Railways Custom-Built Turnouts

by Ron Brown

When you spend a lot of money on a live steam locomotive that quickly becomes the apple of your eye, you don't want to risk damaging it by running it on track or turnouts that may cause derailments and serious damage.

Having made the decision to use code 250 rail and hand lay the track for our Silo Falls Scenic Railway a few years back, we were then faced with the problem of what to do about turnouts. We built some stub turnouts that worked so-so, but we had numerous derailments and feared for the safety of our precious live steamers. We were constantly on the lookout for high quality replacement turnouts that would be quick and easy to install - and easy on the budget. Expansion plans were put on the back burner while we waited for something to appear.

Gary Broeder of Llagas Creek Railways finally came to our rescue with his custom built turnouts. Gary starts with his own beautiful nickel silver frog and point castings, featuring detail that will satisfy the most demanding finescaler (these castings are also available separately for those that want to build their own turnouts). The frog angle is a #6, which gives a smooth, graceful angle of departure without taking up an unreasonable amount of space. Overall length of the complete turnout is only 27", a reasonably compact package that makes shipping a simple and inexpensive affair.

Aluminum code 250 rail is spiked to redwood ties using 4 spikes per tie, and the rail is mated to the nickel silver frog and point castings by Llagas Creek stainless steel rail joiners. All rail bends are smooth and even, with no kinking or twisting.

The redwood ties are available in standard gauge or narrow gauge

size and spacing to suit any style railway or trackage. Since the SFSR is a narrow gauge railroad and its trackage uses redwood ties 1/2" square and spaced 1" between ties, the narrow gauge version of the Llagas Creek turnouts drop right in and match up perfectly.

The points are bolted to a flat throw bar running between two closely spaced, 5-3/4" long ties, and attached to a Caboose Industries ground throw. All mounting bolts and screws are brass. The ground throw is simple and troublefree, and it works just fine. For those that would like a classier mechanism to "bend the iron", it would be a simple matter to replace the ground throw with a switch stand, such as the bronze beauty offered by Ozark Miniatures, for example. In fact, that's just what we intend to do on the SFSR when spring rolls around in a few months.

So how do the Llagas Creek turnouts perform? We installed our first turnout on the SFSR in the fall of 1990 and were so pleased with it that we ordered more for a replacement and expansion project in 1991. We took delivery of the turnouts from Gary at the Cincinnati Convention and went to work as soon as we got home, replacing the old stub turnouts and adding some additional tracks in our yard area.

Installation was a cinch. The first thing we did was to paint the shiny aluminum rail with Floquil Rail Brown, being careful not to get any paint on the pivot points or throw bar attachment bolts. While the paint was drying, we removed the old turnouts, then used a flush-cutter to cut the rails to the right length to accept the new turnouts. The old turnouts were mounted on plywood plates, but we decided not to do that with the new ones, opting instead to "float" them on the bal-

last. More ballast was added to the gap where the turnouts were to go, then the turnouts were placed on top of the ballast and gently worked down into the ballast until the rail ends lined up. Rail joiners that had been slid back onto the rails were moved into position over the joint, then crimped slightly to hold the rails in alignment. More ballast was poured over the turnout and the excess brushed away, taking particular care in the area of the points, frog and check rails to keep the ballast below the top of the tie and using tweezers to remove any small pieces of ballast that were trapped in these tight areas.

Everything was in place for our annual open house and steamup in August. With nearly 100 people on hand, there were lots of trains running over the new trackage and through the Llagas Creek turnouts. We didn't have a single derailment on any of the turnouts - not even when backing trains through them. Trains could fly through the turnouts on the mainline without any worries about splitting a switch or hitting the ground. They performed flawlessly!

We are completely satisfied with our Llagas Creek turnouts and consider them a bargain at \$60.00 each. Gary Broeder has taken much time and trouble to research the dimensions and clearances that make a great performing turnout. He takes just as much care in building each turnout he sells so that it will work perfectly when installed and keep working year in and year out. Highly recommended! Check the Llagas Creek Railways ad on the back cover of this magazine for ordering information.



# Building an Inexpensive Blower

by Rich Chiodo

Those of us who operate the smaller scale live steamers know all the pleasures of the real thing in miniature in a garden setting. One thing that gets miniaturized that can detract from the fun is the draft necessary for a good fire, and the resultant sustained steam pressure. I own a little beast that exhibits a perverse reluctance to raise sufficient steam in my lifetime - without artificial respiration! What follows is a completely non-technical discussion on how I constructed a stack blower (sucker?), which aids the fire draft much like the real thing. Remember, you pot boilers out there (Mamod, etc.) don't exhaust the fire through the stack. But you may want to follow along anyway. This blower would impress your friends and add to the science and mystery of operating these little ones.

As I said, this will be a non-technical discussion. Specific sizes, dimensions and construction techniques are not critical. Those shown

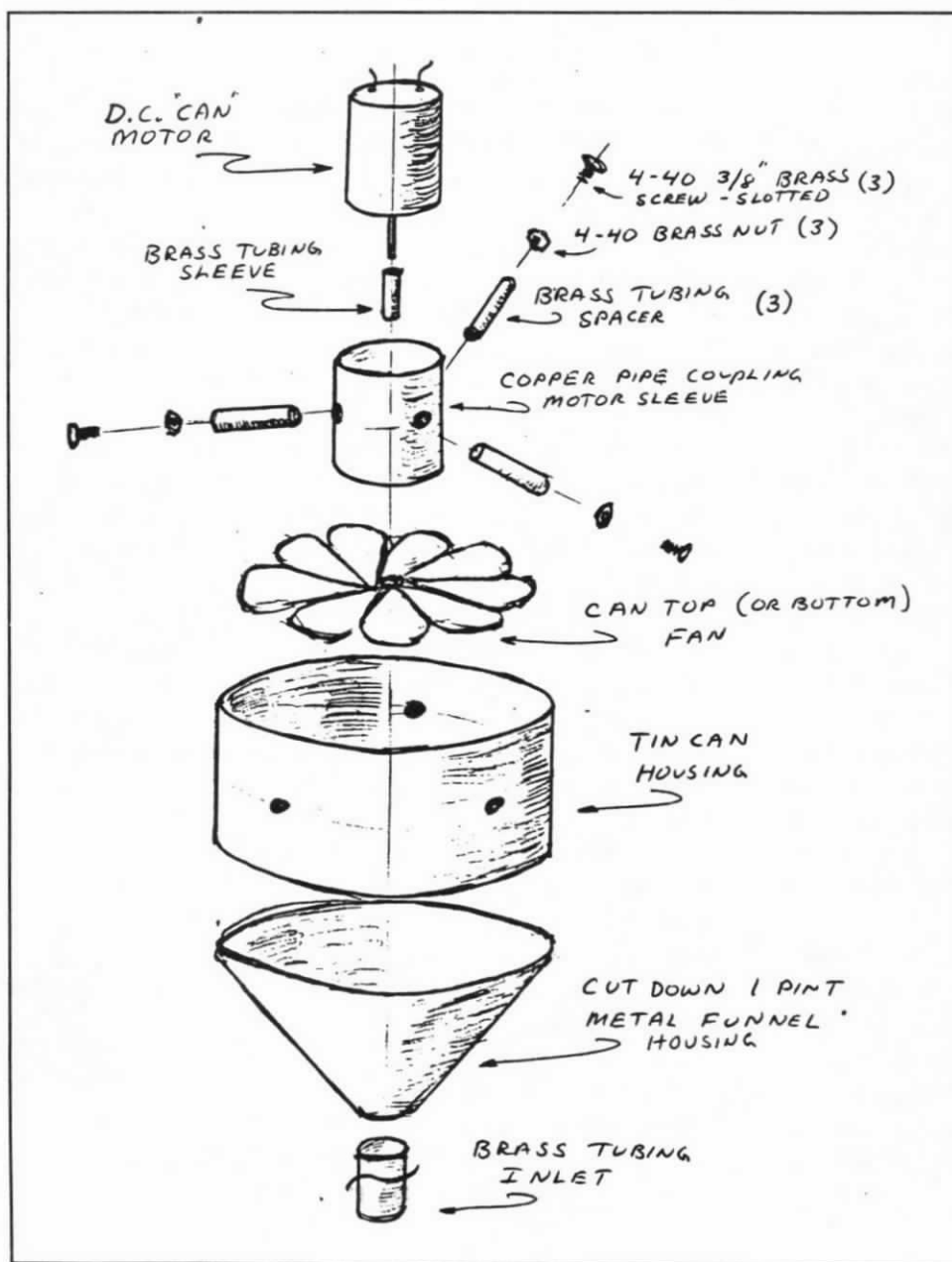
are what worked for me and, frankly, what I had at hand. This is a metal working project and all the material used is tin or brass. It would be unwise to substitute plastic, considering the operating environment around a small-scale live steamer!

Tools I used include a small (or Jr.) hacksaw, electric drill and suitable bits, propane torch, electrical solder, small files, small screwdriver, heavy duty scissors or straight-cut tin snips, pliers, fine emery or sandpaper, small vise, a cup or two of coffee and a bit of geometry. Oh yes.....and two band-

aids, if you wish to exactly duplicate my construction techniques!

The drawing is reasonably self-explanatory. Again, based on the type of live steamer(s) you have, the only critical piece is the brass tubing inlet, which must fit down the stack. The remaining funnels, tuna cans, plumbing parts and brass bits can vary to fit your circumstances. Starting from the top of the drawing, I'll describe each part.

The motor can be any dc "can" type (round case). The voltage rating is non-critical, though something that runs well on a couple of 1.5 volt D-cells will keep the whole thing portable and give reasonable battery life. Keep the





motor diameter around one inch.

The brass tubing sleeve fits over the motor shaft and serves as the fan axle. Pick a tubing size that gives you a snug slip fit over the shaft and make this sleeve as long as your motor shaft.

Brass tubing spacers and hardware attach to and center the fan motor assembly in the housing. I used brass tubing that allowed me to press-fit rounded off 4-40 brass nuts in one end. These nuts were carefully soldered in place flush with one end of the tube. The length of the spacers is determined as follows. Find the inside diameter of the tin can housing you will be using. Subtract the sleeve diameter from the inside can diameter. This will be the length of each of the three sleeves.

The copper pipe coupling motor sleeve is a bit of copper plumbing - called a coupler, I believe. I used this instead of brass tubing because I wanted a bit more thickness, which would allow better attachment of the tubing spacers in the previous paragraph. The inside diameter must be very close to your motor diameter. I lucked out and found that a 1" coupling fit my motor perfectly. Filing the inside of the coupling or wrapping your motor with tape will make up for small differences. It may be best to have your coupling in hand as you search through your kid's toys for the proper size motor (*or you could avoid an ugly scene by picking up an inexpensive can motor at Radio Shack - ed*). This is perhaps the most critical part of the whole assembly, and a little more time spent getting a combination that fits perfectly will give you a solid assembly that stays centered in the housing. Cut the coupling to the length of your motor.

The can top fan is.....well, the top (or bottom) of the tin can used for the housing. You will need to trim 1/16 of an inch uniformly from the circumference. The reduced diameter will give you ample play as you center the fan motor assembly in the housing. Lightly file or sand the edge to remove

any burrs. You can use one of the band-aids here.

After trimming the disk, trace its outline on a sheet of paper. Carefully cut this pattern out. Fold the pattern carefully in half, more carefully in quarters and most carefully in eighths. The resulting creases give you the fan blade pattern and the dead center of your fan. Lay the pattern on the disk and center it so it aligns perfectly. Tape it in place with small bits of tape, center a penny on the pattern and trace around it. This is the depth of your cut for the fan blades. Center punch the center of the fan (use a nail or drill if you don't have a real center punch) and drill a hole just slightly undersize for the motor shaft sleeve. Cut along the creases to the penny outline and remove the pattern. Now twist each blade approximately 45 degrees. The fan won't be perfect, but buried in the housing no one will know or care.

The tin can housing I used was a small tuna can. The diameter is around 2 1/4" and the depth 1 1/4", but these dimensions are not critical. The can you use should be tin, not aluminum, and should be smooth sided. Remove the can bottom and save it for your fan. The can I used had a pull tab top which, when removed, left a convenient lip on which to mount the funnel.

Most cans containing food have a thin coating on the inside to protect the contents from the bare metal. This coating needs to be removed before you attempt any soldering. I used the brute force method and torched the stuff off. Do this in a well ventilated area (outdoors), since the fumes released can't be good for you. Lightly sand the inside when you are done to bring back the shiny metal lustre.

The metal funnel housing is a one pint metal funnel. The one I used was manufactured by Diston, and I found it in the paint department of a local hardware store. Subsequent searches failed to turn up any more of these funnels. I find it hard to believe, but

who knows....in this plastic fantastic world.

The funnel's wide end was much larger than the tin can. The trick here is to trim this end so the resultant diameter snugly fits the inside lip of the tin can. This can be done by sliding the can over the funnel and tracing around the funnel where the can touches. Keep the can square and the funnel spout pointing straight out as you do this. Carefully cut around this line with the hacksaw (this is where you use the second band-aid) and the resulting mini-funnel should snugly fit the inside rim of the can. The last funnel surgery is to cut the spout off 1/2" from the base and slit the stub with equally spaced cuts.

The brass tubing inlet on my fan is a piece of 3/8" brass tubing. Choose a size appropriate for the engine stack(s) you have. I think the maximum size that can be adapted to the funnel chosen is 1/2", but 3/8" should comfortably fit most small-scale stacks. I cut this tubing to 1-1/2" length.

Assembling this little beast is rather straight forward. There are two major sub-assemblies: the fan motor and the housing. The only critical assembly procedure is the alignment of the fan in the housing. My fix was to make the fan diameter slightly smaller.....and all you machinists out there can stop wincing!

Well, that's it. This little blower breathed new life into my reluctant steam dragon - I hope your project is as successful.





# Garden Railways - A Video Album

*reviewed by Robert Nowell*

**Available from:** Sidestreet Bannernetworks, P.O. Box 61461, Denver, CO 80206

**Price:** \$24.95 plus \$3.00 S&H

If you like sitting back and watching model trains run through a garden as much as you do operating them - or if you would like to see what some of the most beautiful garden railways in the USA look like - then this videotape is for you. This is a professionally edited and produced tape, without the shaking camera syndrome or the blurred zoom shots. If you have been looking for the perfect videotape for your own enjoyment or something to show family and friends, this one belongs in your library.

This videotape (or Video Album, as it is called) has scenes from 16 fine garden railways. There is a well balanced mix of live steam, battery, and track powered equipment. In fact, I was surprised at how much live steam operation was shown, as our little segment of the hobby makes up a very small percentage of the total garden railway picture. The different scenes are all very well done, with some of the shots looking like the real thing.

The quality of the video picture in most cases is excellent. A couple of scenes look like they are second generation, but in no way does it take away from the overall quality of this videotape.

The Video Album has a format similar to a book or magazine. There are seven chapters or sections, the first being a history of garden railways with some good b&w clips from the 1930's. Following sections are *Bridges and Trestles*, *Ponds and Streams*, *Tunnels*, *Landscaping*, *Miniatures and Structures* and, at the end, *All Aboard*, a track-level view from the train itself.

The narration for this production was done by Marc Horovitz, editor

and publisher of Garden Railways Magazine. Marc is an excellent speaker and is very knowledgeable about the subject at hand. Which brings me to the only negative thing I can find to say about this tape - the background music. I wish there was more narration by Marc and less music.....or that the volume of the music was a little lower. I would have enjoyed hearing just the sounds of the trains running through the garden. Oh well, maybe it's just me. My wife, Judy, thought the music gave the video a nice touch.

At 36 minutes the tape is too short! I wish it had been longer, even if it had been necessary to include a few paid commercials at the end to help cover the cost of the longer tape. You will not get bored watching this tape! I've watched it six times and have enjoyed every minute of it. It's a good buy at only \$24.95, and one that I'm sure you will enjoy, too.

## *The Joys of Film-making*

*When I read Bob's comment, "I would have enjoyed hearing just the sounds of the trains running through the garden.", my thoughts drifted back to the day Roger Caiazza, John & Boots Gordon, Marie Brown and I filmed the segments from our Silo Falls Scenic Railway that are included in Garden Railways - A Video Album.*

*Marc's instructions were explicit. No background noise could be on the tape except for the sounds of trains running, birds singing, bees buzzing, etc. No panning or zooming allowed - just trains running through a scene.*

*Unfortunately, we live on a rather busy road and it's hard to find a 30 second period without car and truck noises. We decided to film on Memorial Day weekend, reasoning that most commercial and private vehicles would have the good sense to stay home on a*

*holiday. Nope.....they were out in force!*

*We set up the camera with Roger manning the controls and I prepared the steam engines that would appear in our scenes. Marie and Boots stood up on the road, watching for traffic and signalling when it appeared to be clear.*

*Scene after scene was shot, only to be ruined at the last moment by a large, noisy truck rumbling past or a car racing by.*

*And there were other distractions, too. Neighbors slammed doors and fired up lawnmowers and chain saws. They gunned the engines on their cars and practiced high-speed runs on their motorcycles with the mufflers removed. They chose this morning to run decibel tests on their outboard motors. Their resourcefulness was most amazing!*

*Airplanes, seldom seen or heard in our normally quiet little valley, suddenly appeared and began experimenting to find the combination of throttle and propeller pitch settings that would lay waste to whole forests and mountain ranges.*

*Even the animal and insect kingdoms were determined to ruin our shoot! We had thought that our little neighborhood was devoid of a canine population, but on this particular morning there were dogs barking, wolves howling, foxes yipping and coyotes lamenting. On one particularly fine run by with our Lindsay Shay, a curious wasp flew right up to the camera lens for a look, and then buzzed the microphone for a couple of seconds as if giving us the insect version of a raspberry (this scene was included in the video, much to our delight).*

*So there you have it.....an insight into why it was necessary to use background music and narration over the "natural" sounds on at least some of the footage used in **Garden Railways - A Video Album.***

*-- ed.*

# Loco Review - Maxwell Hemmens Porter

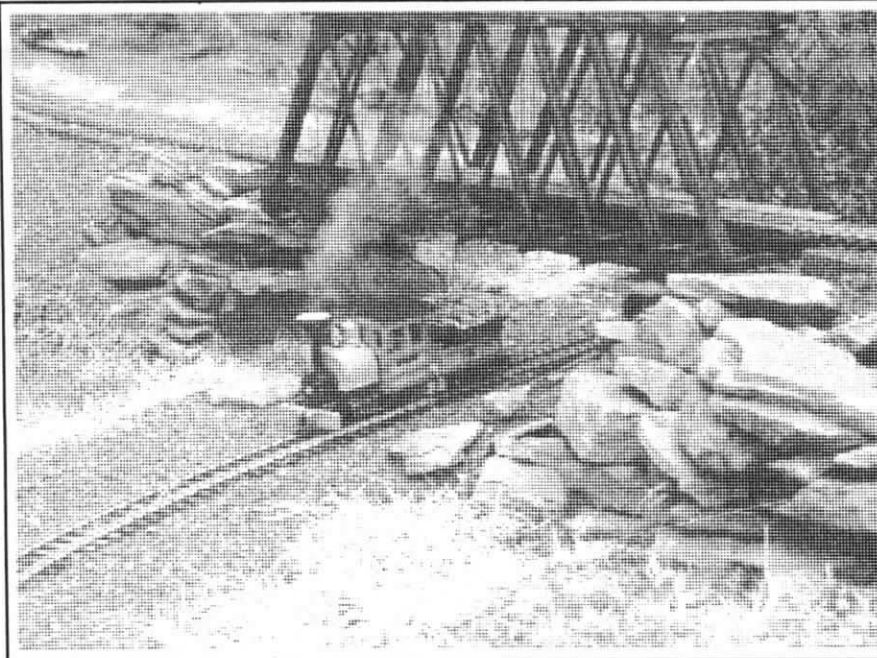
*by Ron Brown*

- Description:** Semi-scale model of a logging, mining or industrial 0-4-0 locomotive and tender as built by the H.K. Porter Co. around the turn of the century.
- Price:** Varies depending on current exchange rate and other factors. Check with your dealer.
- Available from:** Railway Garden Ltd., 4210 Bridge St., Cambria, CA 93428 - phone 805-927-1194.
- Technical Specifications:**
- Scale = 16mm (1:19)
  - Gauge = 45mm (gauge 1)
  - Length = 18" (engine & tender)
  - Width = 5"
  - Height = 6-1/2" over stack
  - Weight = 3 kilos
  - Boiler = copper, silver soldered, pressure tested to 120 psi, working pressure 80 psi
  - Cylinders = two double-acting with piston valves
  - Bore & Stroke = 12mm x 12mm
  - Firing = internally gas-fired (butane)
  - Duration = 25-30 minutes, depending on weather conditions, load and speed
  - Control = manual - R/C easily fitted
  - Couplers = cast metal hook
  - Standard features = blowdown valve, water gauge glass, pressure gauge

Not long after being bitten by the live steam bug, I was casually leaf- ing through the September/October 1988 issue of Garden Railways magazine and there it was, in Petria MacDonnell's Railway Gardens column on page 41 - a fine looking little Porter loco with a wood cab and tender. Though neither photo caption nor article gave any clues about the loco (this was a gardening column, after all), careful scrutiny confirmed what I thought at first glance, it was definitely powered by steam! I was

captivated by the enchanting look of this chunky little loco and imme-

diately began digging to find out more about it.



**Above:** A Maxwell Hemmens Porter, running light, drifts downgrade under a timber bridge in the heart of anthracite country on George Brown's C&S RR in Pittston, Pennsylvania.

*Photo by Bill Campbell*

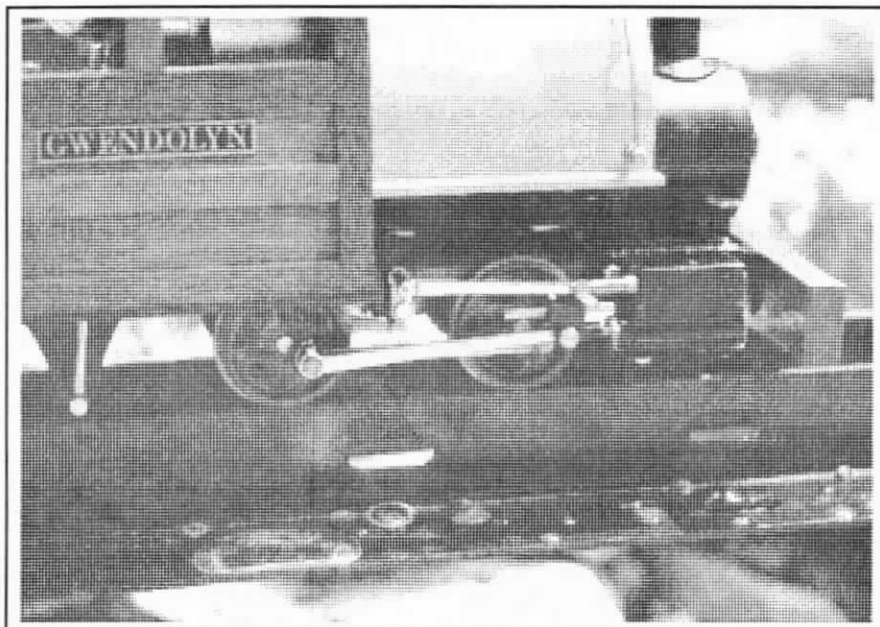
Manufactured by Maxwell Hemmens Precision Steam Models in England and sold through several dealers in this country, the little Porter was offered in both built-up and kit versions. Alas, it was also priced out of my budget at that particular time.

The vision of this little charmer wouldn't leave me alone, and I asked about it every time I spoke to a hobby dealer. Finally I got lucky and a dealer in Ohio offered me a deal I couldn't resist on one of

the Porters in kit form.

When it arrived I quickly opened the box and was amazed by the little bags of well organized parts, which sent me looking for the assembly instructions. An excel-

run out of steam much too quickly. I called the dealer and was referred to the factory in England. Maxwell Hemmens suggested that I contact their representative in this country, but he was unable to help me be-



**Above:** GWENDOLYN, the SFSR's Maxwell Hemmens Porter, rests on the Coalport RR steaming bay at Jim Thorpe, PA. This closeup shows the cylinders with piston valves, spoked drivers and motion. The rod extending down below the bottom of the cab and just barely visible through the cab window is the throttle/direction control lever.

*Photo by Ron Brown*

lent owners manual with exploded drawings was the closest I could come to anything resembling assembly instructions, so I called the dealer. They weren't sure, but they thought it should have come with directions and promised to look into it.

That was the last I heard about it from them, so it was fortunate that the assembly of the bolt-together kit was very straightforward. All machining had been done and the chassis was already partially assembled, so it was a simple matter to put all the pieces together by looking at the exploded views in the owners manual. The kit arrived in the afternoon, and before I went to bed that night the completed Porter was running on a test stand in our kitchen.

This Porter ran very well, but the cylinder/piston assembly leaked quite badly, causing the boiler to

cause the factory would not support him with replacement parts or engines. Finally, after badgering the dealer for months, they agreed to replace my Porter with another brand new model from stock, and this model has run flawlessly for 3 years.

The engine is beautifully made, with highest quality workmanship and materials evident throughout. The mahogany cab and tender pieces are fitted as neatly and tightly as the finest cabinetry. Machined parts are all done to close tolerances from castings or raw materials and are free from flaws. Paint is applied smoothly and is still in perfect condition on my engine after many hours of running.

A clever trick of engineering is concealed under the dummy saddle tank, which conceals a larger boiler than appearances would have you believe. This makes for longer

duration than would otherwise be possible, with runs in the 25-30 minute range being standard fare. Care must be taken here, however, as the fuel tank capacity exceeds the boiler capacity by a factor of at least 2. Checking the water gauge on the locomotive backhead during operation will enable the driver to shut down the burner when the water level drops to minimum, thereby avoiding embarrassing (and expensive!) damage to the boiler.

Let's talk about the burner and fuel system for a moment. As delivered, this was the only problem area on the locomotive. The fuel tank is located in the tender, hidden by a dummy wood load, and a gas feed valve and a safety valve are mounted to the top of the tank. The gas feed/burner control valve sticks up through a hole in the wood load, but is barely noticeable and does not detract from the splendid appearance of the loco and tender. The burner control valve is connected to the burner inlet pipe by a piece of flexible silicone tubing.

The burner, by the way, produces plenty of heat to maintain a good head of steam under any conditions. It is a bit noisy when opened wide for raising steam, but once steam is up the control valve can be closed down so that the burner is barely audible. It will easily maintain steam pressure at this setting unless you are pulling a very long train up a very steep grade. Once broken in, the Porter will run just fine with the indicator on the pressure gauge anywhere from just barely off the zero mark up to 80 psi, which is where the safety valve lifts.

The burner is easy to light - just open the smokebox door, crack the gas feed valve and apply fire to the opening in the front of the smokebox. The flame will leap back to the burner and settle down almost immediately. The only time I've had any problem getting the burner lit was when the burner orifice was plugged with a speck of dirt. This was easily cleaned out by directing a blast of air through the burner orifice.

The tank filler valve is located under the gas control valve, which must be unscrewed each time the



tank is filled. The filler valve was apparently not of the bleeder variety - when adding liquid fuel (butane) to the tank, the gas and air in the tank was not bled off through the valve to make room for the liquid fuel. I was able to get by this problem by placing the whole tender (containing the fuel tank) in the freezer compartment of our refrigerator for half an hour or so before filling. Annoying? You bet! And you should have seen the looks I got from our Highly Indignant and Lovely Assistant when she saw me sticking trains in her freezer!

At first it seemed that this problem could be easily solved by simply unscrewing the filler valve and replacing it with a bleeder type. But this meant that the gas feed valve would still have to be removed and replaced each time the tank was filled. How about soldering a new bush in the tank, midway between the gas feed valve and the safety valve, and screwing a Ronson bleeder type valve into this bush to be used for filling the tank? Yep, this worked out just great and only cost a few dollars. I got both the bush and the Ronson valve from Loco-Steam Supply in England.

There was so much room in the tender that I decided to install radio control, placing the receiver and battery pack in the tender where it would be hidden by the wood load. Since the Porter uses piston valves, permitting control of both speed and direction from a single lever attached to a rotary valve, one mini-servo mounted unobtrusively in the cab was all that was necessary. Rather than drill mounting holes in the wood cab sides or metal deck, I opted to use servo mounting tape and keep my loco pristine. This system has proved to be totally satisfactory in over 3 years of use, requiring only that the servo tape be replaced occasionally when it gets

soaked with steam oil and hot water.

The Porter is very smooth in operation, exhibiting no bad habits at all. Slow, realistic starts are a breeze, requiring nothing more

drivers are sprung, which is a neat feature for a display model but a nuisance on an operating model. The spring rate is much too soft, allowing the front end of the loco to bounce up and down a bit under

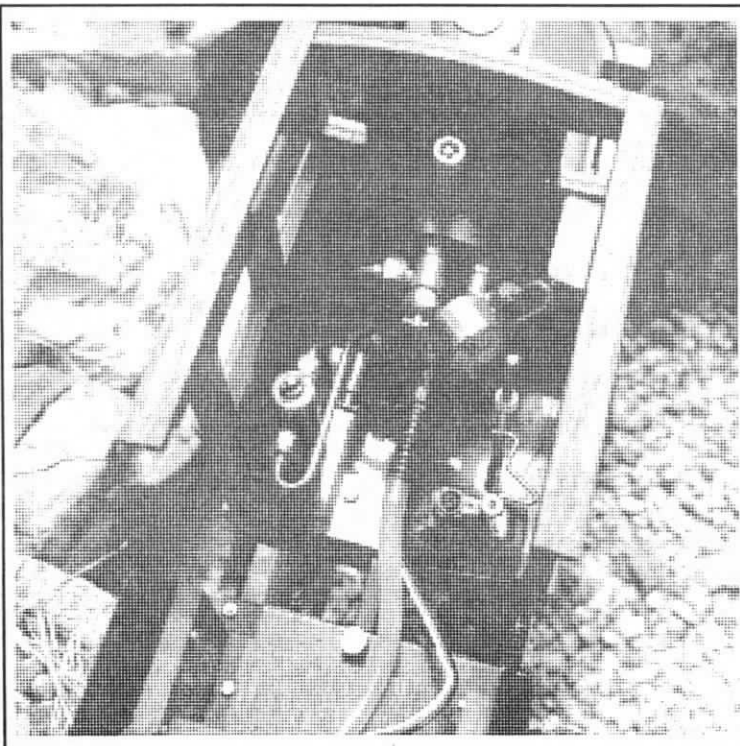
certain conditions. I plan to remove the springs and replace them with solid spacer blocks.

Cylinders are fitted with piston-type valves, which are in turn actuated by eccentrics located between the frames on the rear driving axle - just like the prototype.

Detailing is sparse on this little workhorse - again, just as it was on the prototype. It sports a brass bell, brass handrail on the saddle tank, and a brass cover on the sand dome. The cast smokebox door has the legend, H. K. Porter & Co., Pittsburgh, Pa., cast into it just like the prototype. There is an oval builders plate bolted to the sides of the tender, and that is all the detail there is.

It's also all that's needed, as the Porter is

so charming and so appealing that it draws crowds and compliments wherever it goes. A large part of its appeal (for me, at least) can be attributed to the fact that it always turns in a flawless performance. Of all the locos owned and operated by the SFSR, this one gets the most compliments and the most requests to be run again and again. I've had calls from people hosting open days, specifically requesting that the Porter be brought along and run at their event. Ladies that don't give a hoot about trains at all, let alone those messy, expensive live steamers, seem to be enchanted by the Porter and always gather around to watch it run. I'd like to think that it's my charming personality and boyish good looks that draws them in while the Porter is strutting her stuff, but since they are conspicuous by their absence while I'm



**Above:** With the cab roof removed, the displacement lubricator, safety valve, pressure gauge, burner inlet, mini-servo and tender drawbar are clearly visible and easily accessed.

*Photo by Ron Brown*

from the driver than a slow advance of the throttle lever in the direction of travel desired. Plenty of power is on tap, enough to spin the wheels if you aren't careful, and the Porter will pull a load much larger than the prototype locomotive would have ever been asked to handle - and will deal with astonishing grades as well. This is the very same loco that easily dealt with the 11% grade mentioned in George Lyon's article elsewhere in this issue.

Most gas-fired locos are a bit stingy about producing a showy plume of steam, but the Maxwell Hemmens Porter is an exception to this rule, producing large, realistic clouds of steam in most any weather.

The frame of this little 0-4-0 is of laser-cut steel, with cast machined spoke wheels lending a very realistic appearance. The front



running any of our other locos it must be because of the beautiful wood cab and tender - but that's only a guess.

Access to the cab and backhead is simple on this loco - just remove the brass safety valve extension tube that extends through the cab roof, then slide the roof back slightly and lift it away. The Porter has a nice, roomy cab, filled with those things that kindle a fire in the soul of any true live steam enthusiast.

A displacement lubricator sits on the fireman's side of the cab. It is filled by using a special tool (thoughtfully furnished by Maxwell Hemmens and also used to open or close the steam valve and blowdown valve) to unscrew the top. The lubricator is easily drained at the end of each run by opening the drain valve under the footplate at the bottom of the lubricator, then opening the steam valve briefly to allow remaining steam to blow out the contents of the lubricator. A unique feature of this displacement lubricator is an adjustable grub screw that controls the flow of steam oil to the cylinders. On most small scale live steamers there is no such adjustment.

Other items of interest in the cab include a pressure gauge, steam valve, blowdown valve, safety valve, water gauge glass and throttle/direction control lever. Everything appears to be made of high quality material and the fit and finish is superb. In addition to the mahogany cab and tender, the front and rear pilot beams are also made of mahogany and are fitted with a cast hook coupling, intended to be used with a length of chain. Our Porter has kept the factory coupling so far, though it would be a simple matter to fit LGB loops or knuckle couplers. We plan to install Ozark Miniatures coupler pockets on our Porter, which will allow us to couple up to rolling stock equipped with hook and chain, link and pin, or Kadee Gauge One (#830) couplers.

The loco and tender are attached by a flat steel drawbar, bolted to the locomotive and attached to the tender by a drop-in pin.

As mentioned previously, there is a threaded brass extension that

extends from the safety valve through the cab roof. This is installed after the roof is slid into position and must obviously be removed before the roof can be removed. A word of warning is in order for anyone operating a loco with this type of safety valve extension.

After running the Porter for the cameras at a garden railway exhibition, I wanted to quickly service the loco and get it ready for the next run. Not waiting for it to cool down, I unscrewed the safety valve extension so I could remove the cab roof and get at the lubricator. Unbeknownst to me, the extension stuck fast in the safety valve, and the safety valve unscrewed from the boiler. Imagine my surprise when the safety valve and attached extension blew high in the air, followed closely by an impressive geyser of steam and hot water! Fortunately for me, none of those in attendance knew anything about steam powered locomotives and they thought this was just part of the demonstration. Also fortunately for me, lightning fast reflexes (trained by the sound of escaping steam) got my hand out of the way in time to avoid a bad burn.

As originally advertised, the Maxwell Hemmens Porter was to be equipped with an axle-driven water pump and a water supply tank in the tender. At first I was disappointed that it wasn't there, but if it had been there would have been no convenient place to put the radio receiver and batteries. Also, a 25 - 30 minute run is nearly always enough. By then I'm usually ready to watch someone else make a run or to fire up one of our other locos. If I ever decide that longer runs are necessary, it wouldn't be much of a trick to fit the Porter with a Goodall valve, enabling it to be refilled with water while still under steam.

Am I happy with this little steam locomotive? You bet! Just to give you some idea of what a delight it is, bear with me while I relate the following story. Stumpy Stone, infamous character, manufacturer of rolling stock kits and author of many articles in *SitG* and *Garden Railways* magazine, drove up from Ohio to attend an SFSR Steamup a

couple of years back. At this time Stumpy had no interest in live steam, but came up to meet our group and run some of his battery powered locos and scratchbuilt rolling stock.

Stumpy and his sweet wife, Cindy, stayed overnight after the steamup and we ran trains and made videotapes the next day. After running the Porter for one of Stumpy's taping sessions, I casually handed him the transmitter and told him to go ahead and run it for awhile. I suppose I should have felt a little guilty, because it was as easy as the old cliches about falling off a log. After 15 or 20 minutes I could tell that he was hooked. Later, after we went back in the house to look at videotapes and socialize, he asked a lot of questions about live steam and even asked me to get out my Roundhouse Fowler for a closer look.

A couple of days later, after Stumpy and Cindy had returned home, he called to tell me that they had talked of little else on the trip home but live steam. Shortly after that he placed an order for his first live steam engine, and the disease has progressed nearly out of control from there. And all from a 15 minute "ride" on the Maxwell Hemmens Porter!

Okay, let's get to the bottom line. Is the Maxwell Hemmens Porter a good loco for you and your railway? That depends. If your idea of a good time is cranking around the mainline at 100+ mph, then the Porter is probably not for you. If you like American narrow gauge, branch line or short line railroading, or if your garden railway has a logging or mining theme, then you'll love the Porter. The minor annoyance with the gas filler valve was just that - a minor annoyance. The difficulty in getting the first faulty engine replaced was more than a minor annoyance, so if you go shopping for one of these little gems, be sure that you're dealing with a reputable firm that will back your purchase with a solid guarantee. Having said that, I recommend the Maxwell Hemmens Porter without reservation.

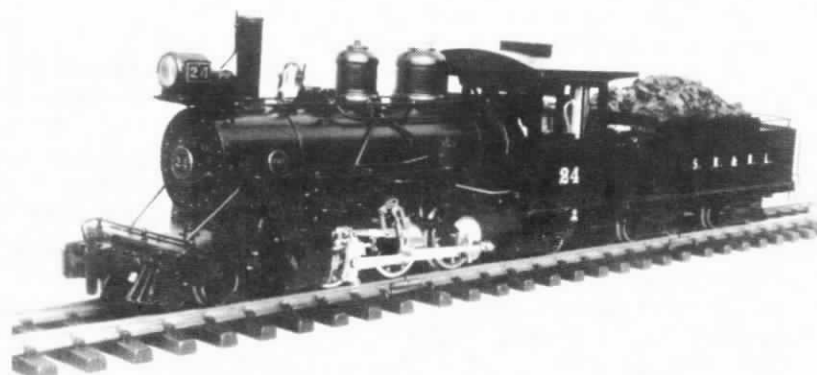


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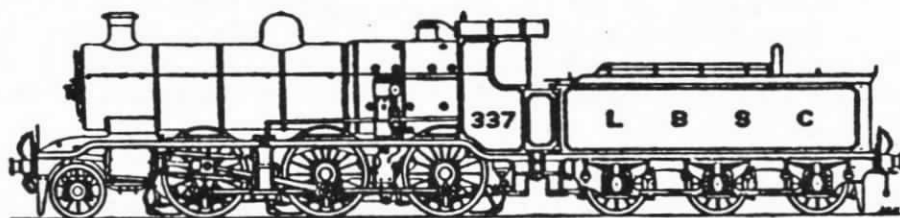
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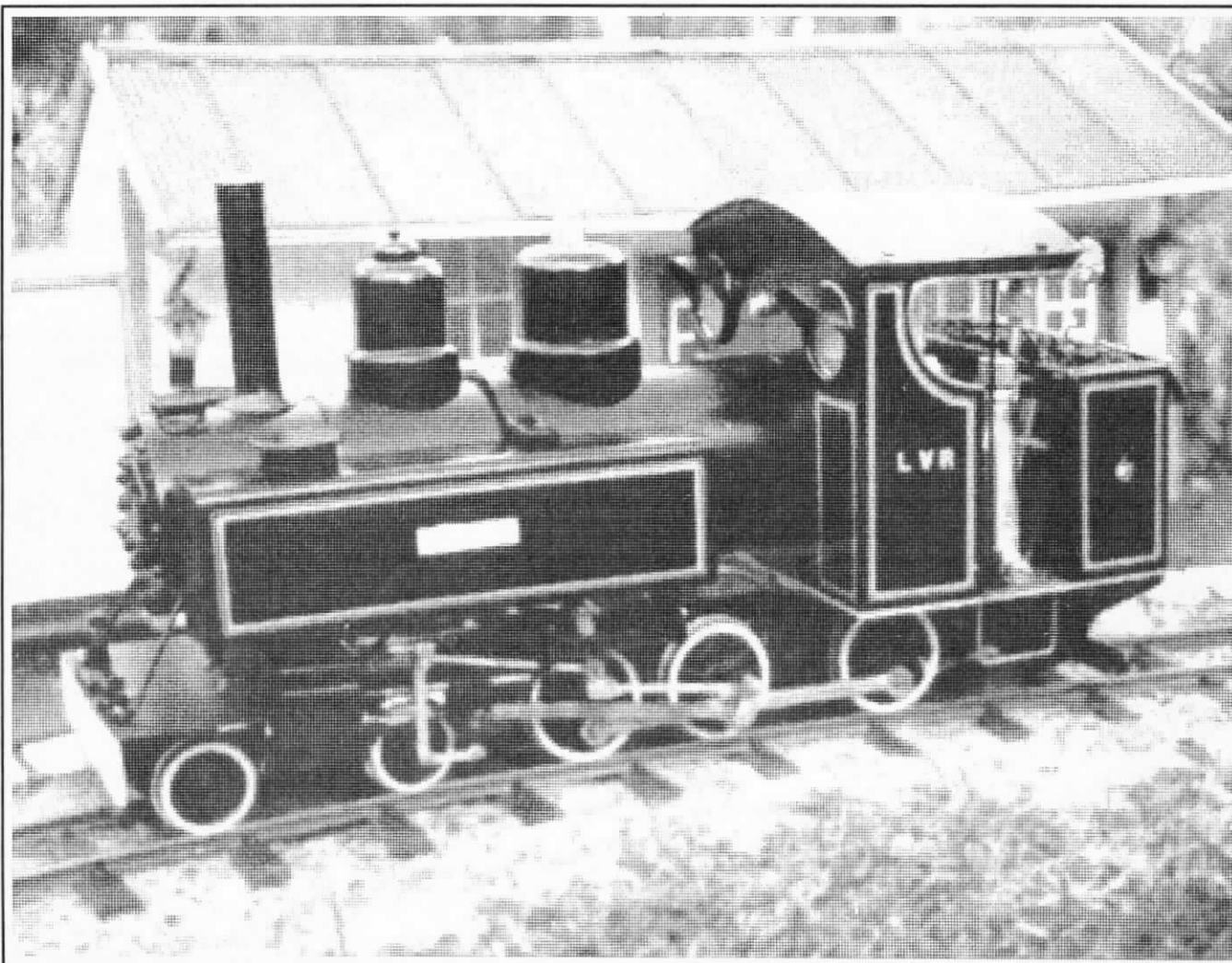
# Steam Scene.....along the rails

We've received a bunch of photos during the past couple of months, some of them definitely contest quality. Unfortunately, many of the photos came with no identification affixed to them. Yes, most of them arrived accompanied by a letter complete with captions and other information, but my memory is far from perfect and the photos do tend to get separated from their letters while residing in the photo box in our spacious, luxurious, hi-tech SitG editorial offices. So please, keep sending in the

photos, but PLEASE affix a label to each photo with the vital information necessary to ensure that we get the caption right and are able to give credit to the photographer. And thanks for your support!

As always, we are in need of more photos for this feature. Send in those photos of your pride and joy to share with the rest of us. Photos with a steam theme are preferred. Steam engines at rest, at work or at play. Pulling trains or parked.

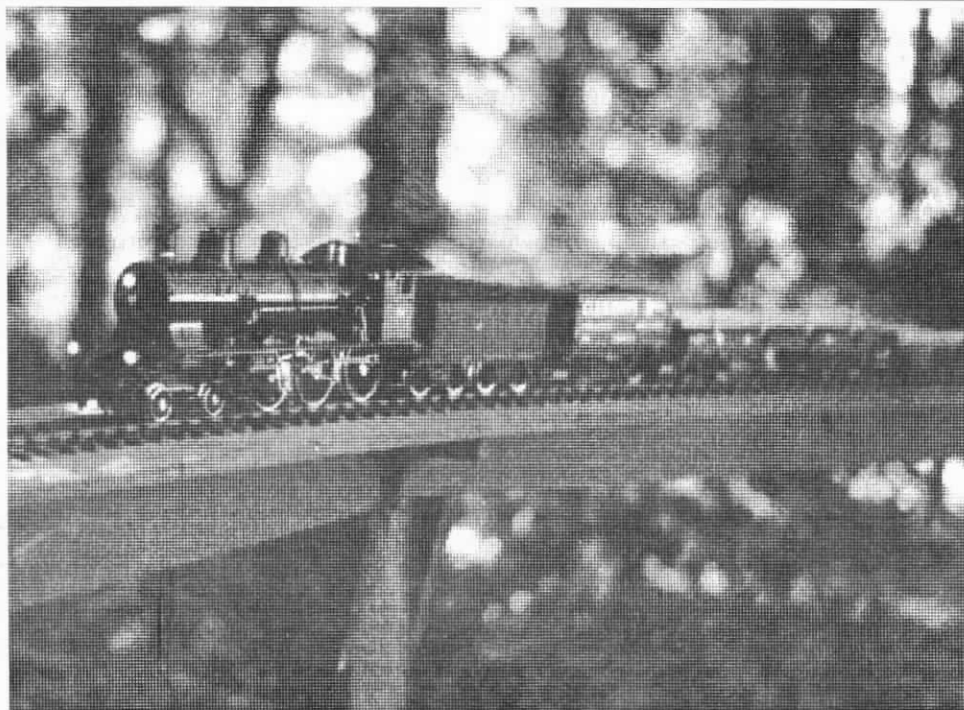
Sharp color or black & white photos with good contrast are best, but they don't need to be professional quality to be useable. We'll be glad to return your photos if you include a SASE with sufficient postage.



**Above: METEOR**, a scratchbuilt WWI Baldwin built by Pat Foreman. Mamod cylinders are located in bunker!

*Photo source unknown*

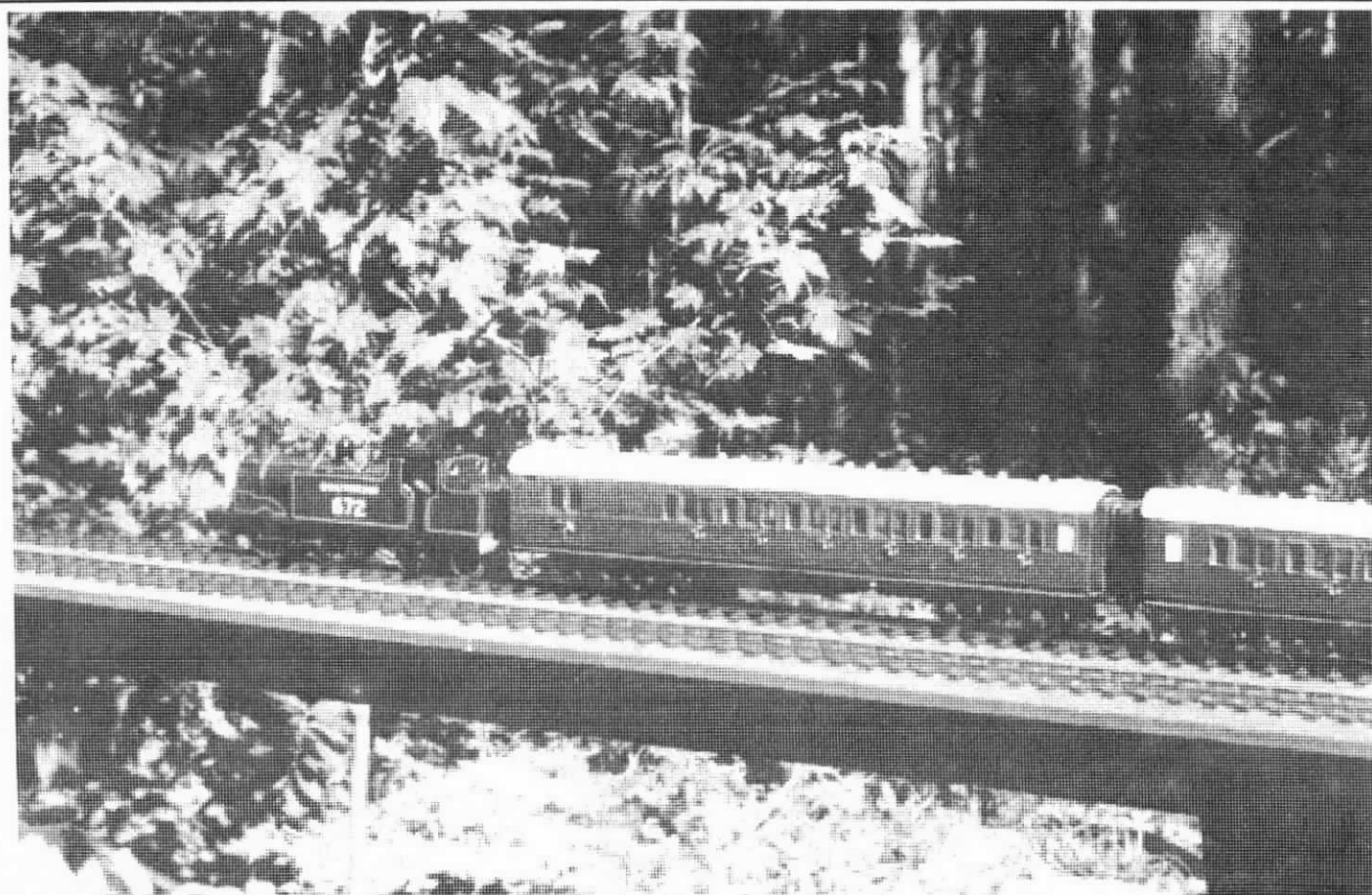




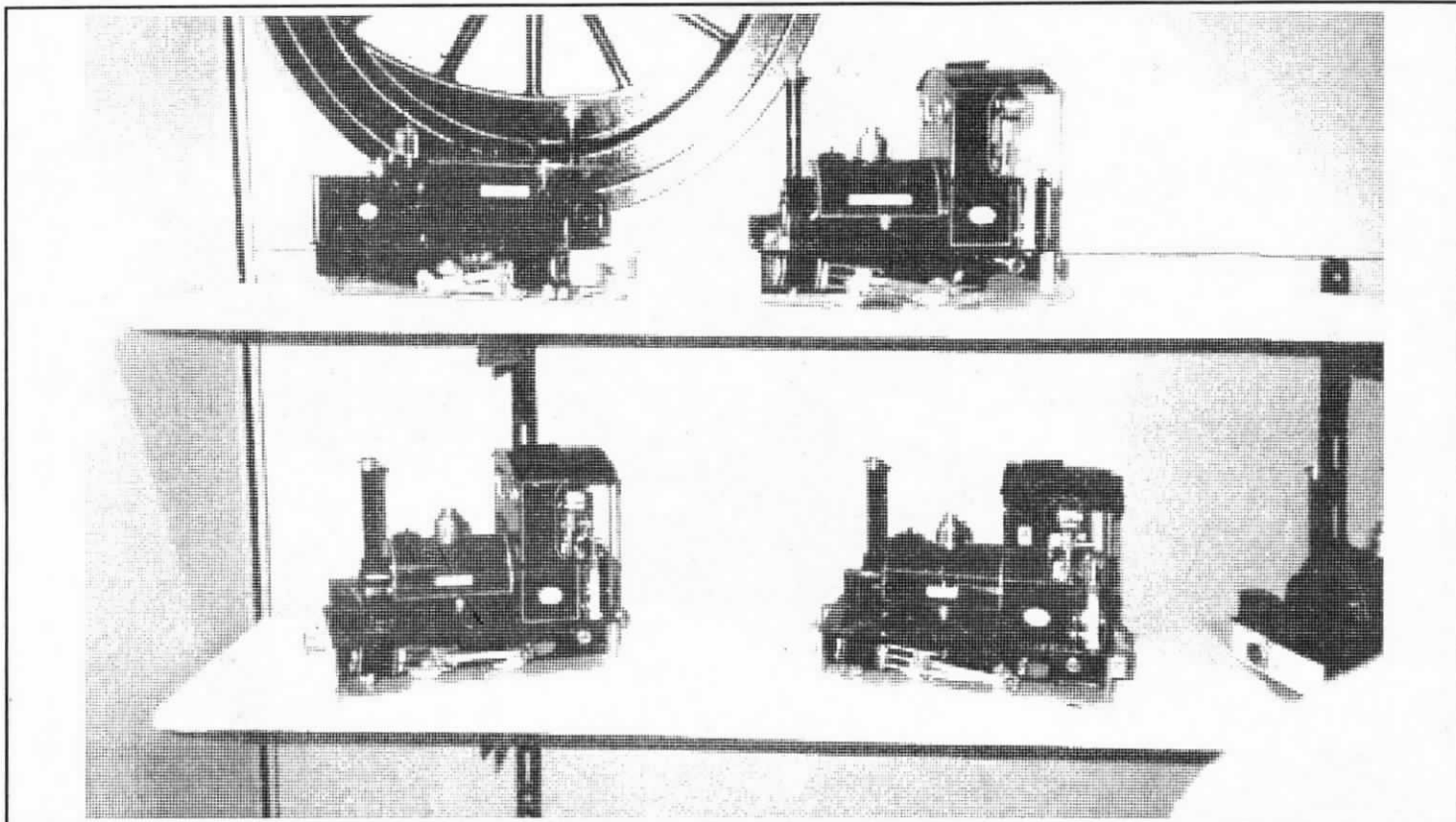
**Above:** Bill Bryant's Aster Swiss Compound on the wooden elevated section at Frank Wear's Nottawasaga Valley Railway, north of Toronto, Ontario Canada.

*Both photos by Frank Wear*

**Below:** David Morgan-Kirby's Southern tank engine with Peter Davis's coaches on the passing siding on Frank Wear's Nottawasaga Valley Railway. According to Frank, this engine is a real sweetheart, with 2 cylinders, slip eccentric valve gear and a meths burner. Frank adds that she has a lovely sharp exhaust beat.

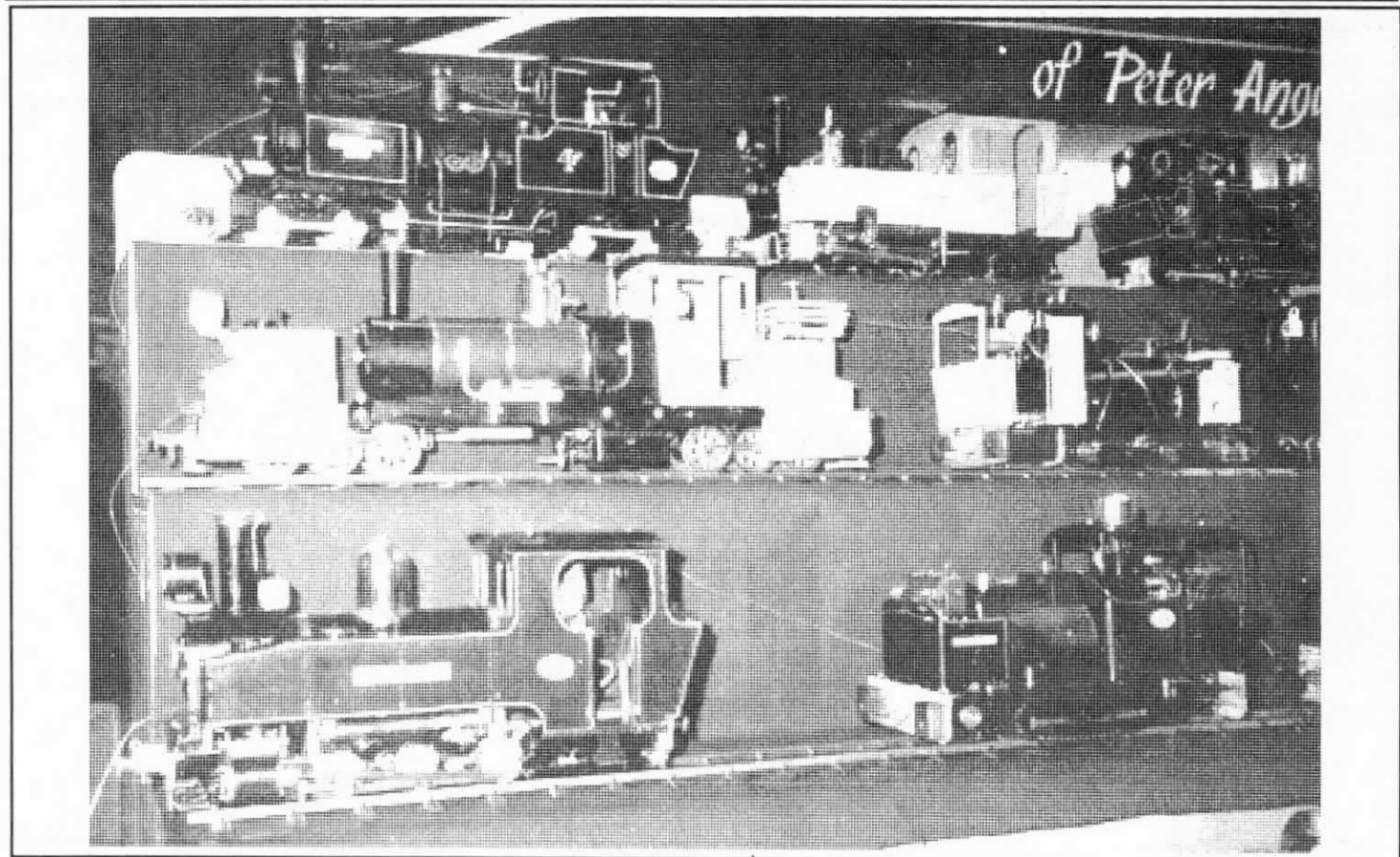


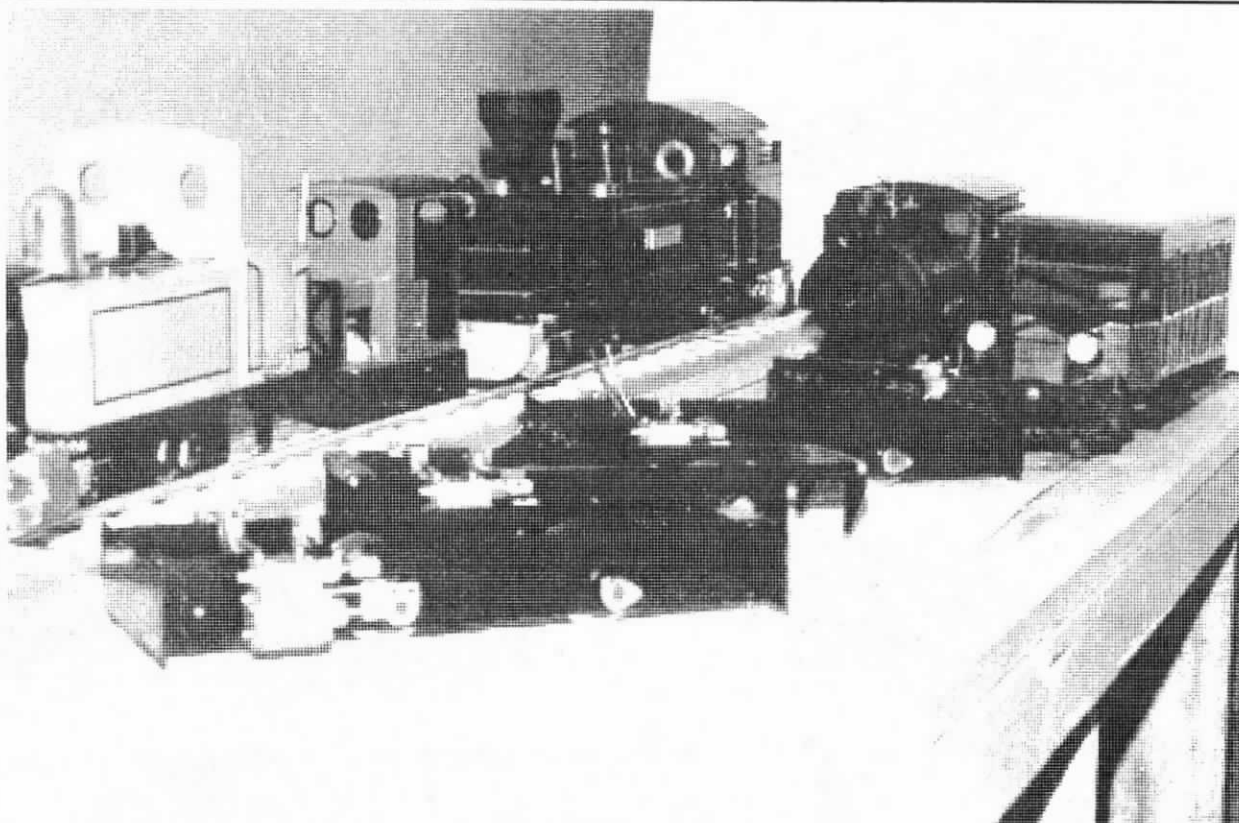




Frank Curtis had the good fortune to be able to attend the 16mm Association AGM in Coventry last year, where he took these photos. The top photo shows the Finescale Engineering booth, with a gaggle of Cranmore Peckett's and one of the new Quarry Hunslet's. The lower photo shows a portion of Peter Angus' display, with just a small sample of his prolific output. Great craftsmanship on display in both photos!

*Photo by Frank Curtis*



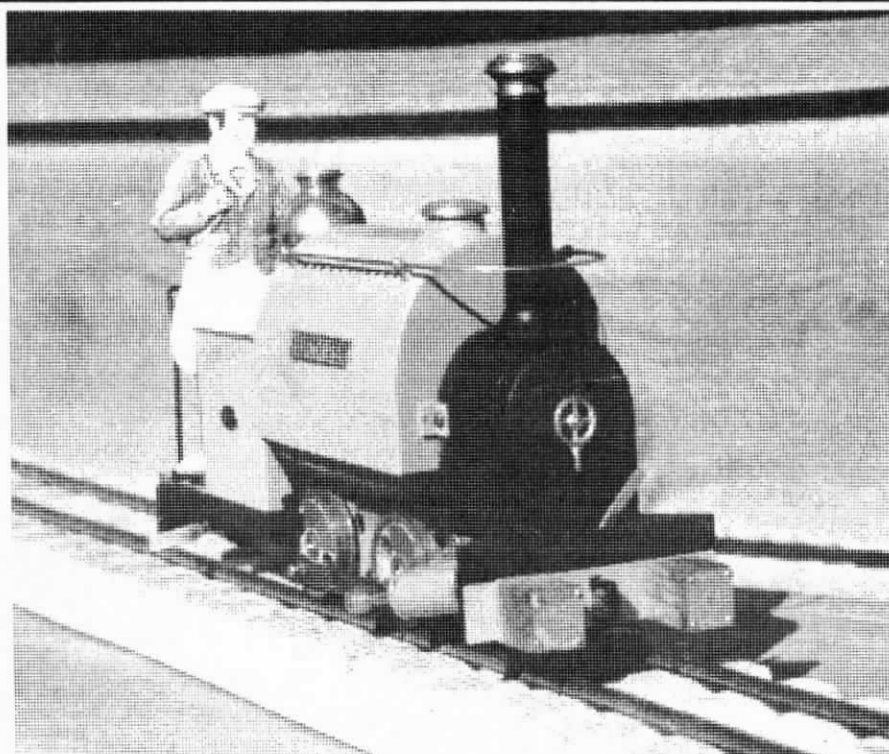


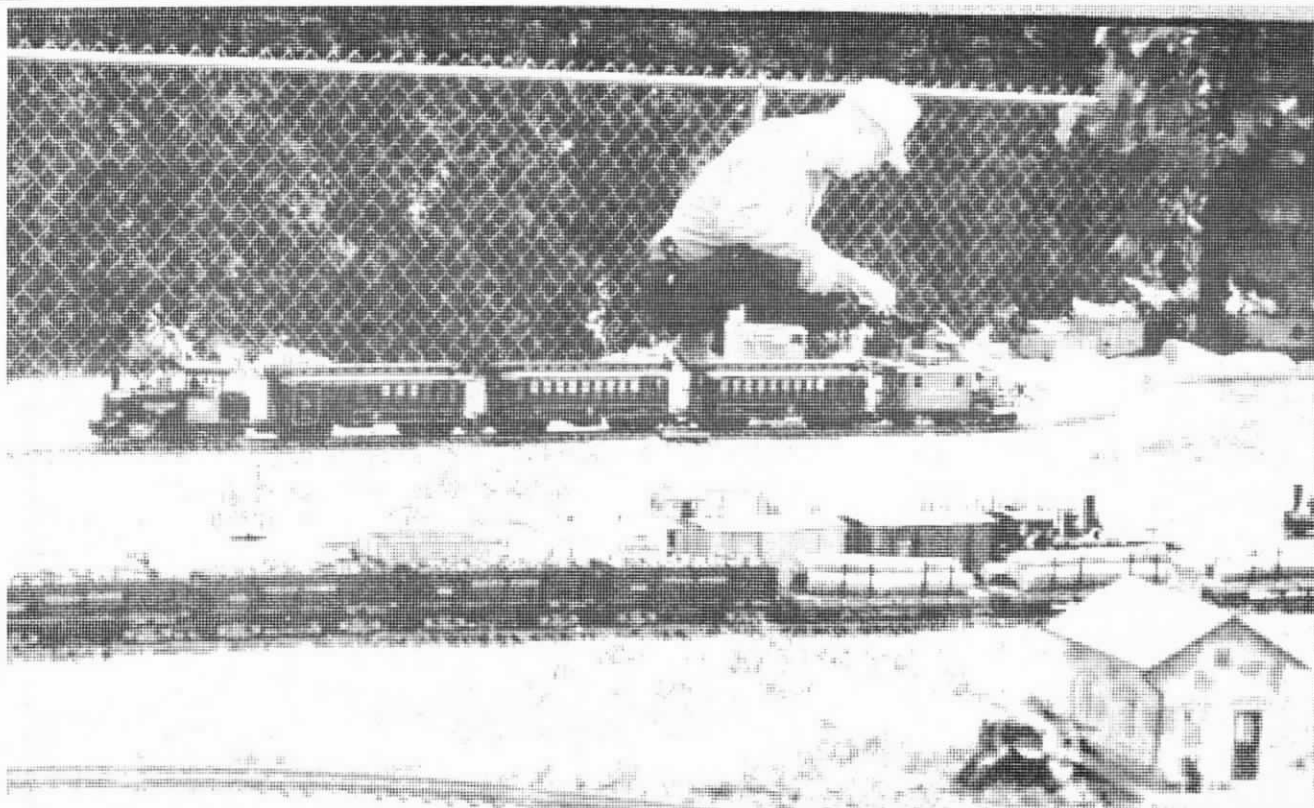
**Top:** A peek at Geoff Coldrick's workbench in the frozen north, filled with such exotic creations as 3 Scorpion chassis', a quarry loco, a tiny battery-powered Emmett, Geoff's latest - a huge Beyer-Garratt, an unidentified saddle tanker and a classy looking battery-powered railbus.

*Photo by Geoff Coldrick*

**Bottom:** Another modified Mamod. This one was done with great skill by the exceedingly popular and rightly famous Graham Stowell of England. Now owned and operated by the equally popular Samuel Muncy of Railway Garden Ltd. fame.

*Photo by Samuel A. Muncy*



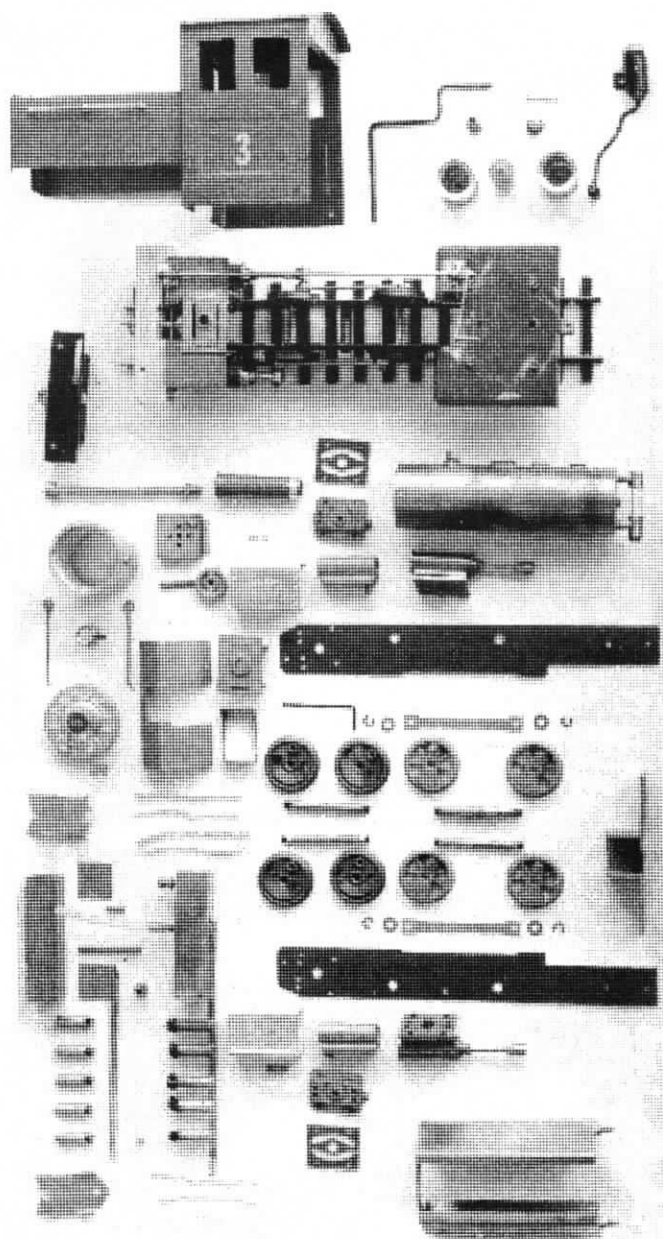


Frank & Phyllis Ulman hosted a steamup on their newly built garden railway last summer, and well-known railroad author and photographer Ed Kaseman was on hand with his camera to capture some of the action. That's Frank at the steaming bay in the top photo, getting his LGB FRANK S. ready for a run as Bob Nowell's scratchbuilt Coalport RR #10 rolls past with a mixed train. In the bottom photo your editor reaches for the throttle on his Peter Angus-built overtype, BRIGHAM, to drive it off of the steaming bay and back it into the adjacent holding track to pick up a train.

*Photos by Ed Kaseman*







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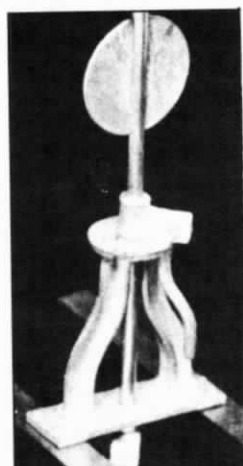
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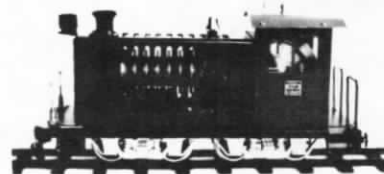
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Before



After



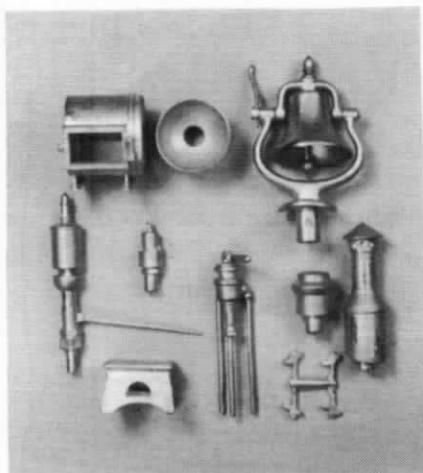
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## End of the Line

Here are a couple of hot items that came in too late for inclusion in our What's New feature.

Railway Garden Ltd. has arranged to handle the H.B. Models line of live steam locos in this country. The brochure we received (how come we always receive brochures instead of steam engines?) is a poor copy, so we can't share the photos with you, sorry to say. For the 10mm gauge 1 enthusiasts, H.B. offers several choices. A L.S.W.R. 0-4-0 tank loco, lettered and lined in L.S.W.R. colors (of course!), an intriguing Taff Vale 4-4-0 tank engine, a Webb 2-4-2 tank engine finished in early L.M.S. livery, and a Robinson Glenalmond B8 4-6-0 tender loco. This last will have twin inside slide valve cylinders, slip eccentric reverse, regulator, blower valve, pressure gauge and tender water pump. The others are similarly equipped.

For 16mm gauge 1 fans, H.B. has only a single offering - a handsome Manning Wardle 0-6-0 tank loco finished in prototype olive green.

Sorry we can't give you more on these new engines now, but we will bring you photos and additional information as soon as it's available to us. Naturally, we hope to get a chance to review one or more of the locos from this builder for our readers, so we'll be putting some heat on Sam Muncy to arrange for us to have one for a few weeks.

The next item is an announcement from Suzie and Ken Shattock that they now have available a new railroad video, **"HE WANTED TO PLAY WITH STEAM TRAINS"**, that will appeal to both model railroaders and prototype railroaders alike. It will certainly appeal to small scale live steam fans, as it tells the story of Victor Shattock, one of the early pioneers of small scale live steam in this country. Included is "The complete story of the Miniature Southern Pacific -- a 1/2" scale Live Steam railroad empire in all it's glory!" There's more, but this part alone should make it worth the price of \$29.95. To order, or for more information, write to Suzie and Ken Shattock, 4320 Solano Way, Union City, CA 94587. Tell them you read about it in Steam in the Garden Magazine!

We've got some great stuff lined up for our next issue already. Malcolm Wright of Wrightscale fame and his wife Sarah have submitted a very interesting article about the wartime railroads in France. Malcolm has also sent us an article that gives some fascinating insights into Wrightscale, so stay tuned for good news from Scotland.

John Wenlock, editor of 16mm Today, the publication of the 16mm Narrow Gauge Modellers Association, has taken the time to write up a great article on steam power on his beautiful Clywd and Dee Railway in Wales.

Peter Jones, the most prolific writer known to mankind, has submitted reams of great stuff from the Compton Down Railway.

We've received some interesting items to review for you, including two different replacement burners for the Mamod. West Coast live steamer Don Noon is making a fine looking spirit burner that is now available from Railway Garden Ltd., and we've also received a gas burner for the Mamod that looks interesting. We'll be running trials on both of these items and will report our findings to you soon.

But wait! Just because we have all this great material from all these famous people, don't get the idea that we don't need something from YOU! SitG depends on your input, so take a little time to tell us about your project loco or anything else related to small scale live steam. And don't forget those photos!

We've had several requests for a regular "Calendar of Events" feature to keep everyone notified of steamups in their part of the country. So if you're hosting a steamup and would like to make it an open event, send us the details as early as possible and we'll print it. Include such necessary basic information as track gauge, minimum radius, ruling grade, ground level or elevated, etc.

Thanks to all those that contributed articles, photos, letters and everything else that helped fill the pages of #10 with good reading. That's it for now - see you in #11!



We were very sorry to hear of the accidental death of Saul Moskowitz, fellow live steam enthusiast. Saul was well-known on the New England live steam scene and had written numerous articles on the subject for several hobby magazines. We offer our sincere condolences to his family.

## More New Steam!

Railway Garden Ltd. has a temporary arrangement with Roy Scott at Sussex Model Centre to offer the superb H.B. line of live steam locos. Made in very limited numbers in 10mm (1:32) and 16mm (1:19) scales, these excellent models are spirit fired and equipped with slip eccentric reversing. Priced from \$980 to \$1700 - send for spec sheet.

## New Salem Mamod Mods!

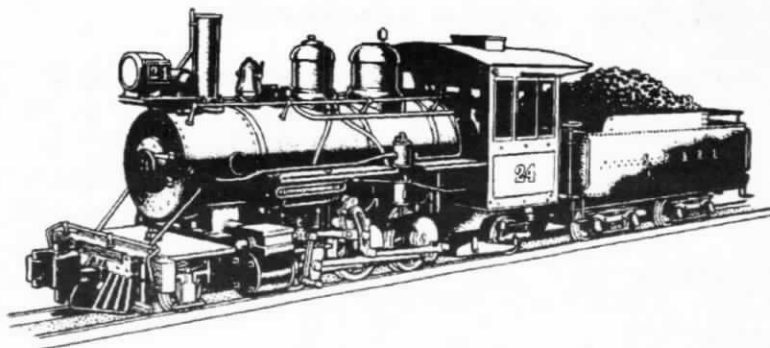
Brass-spoked driving wheels, clevis couplings, headlamps, British or American smokebox fronts, U.S. style boiler mounted sand dome - also Mike Chaney replacement cylinders! **Note!** These items are not mentioned in our catalogue, so send for an update sheet. **Our phone/FAX # is 805-927-1194**

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