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# Steam in the Garden

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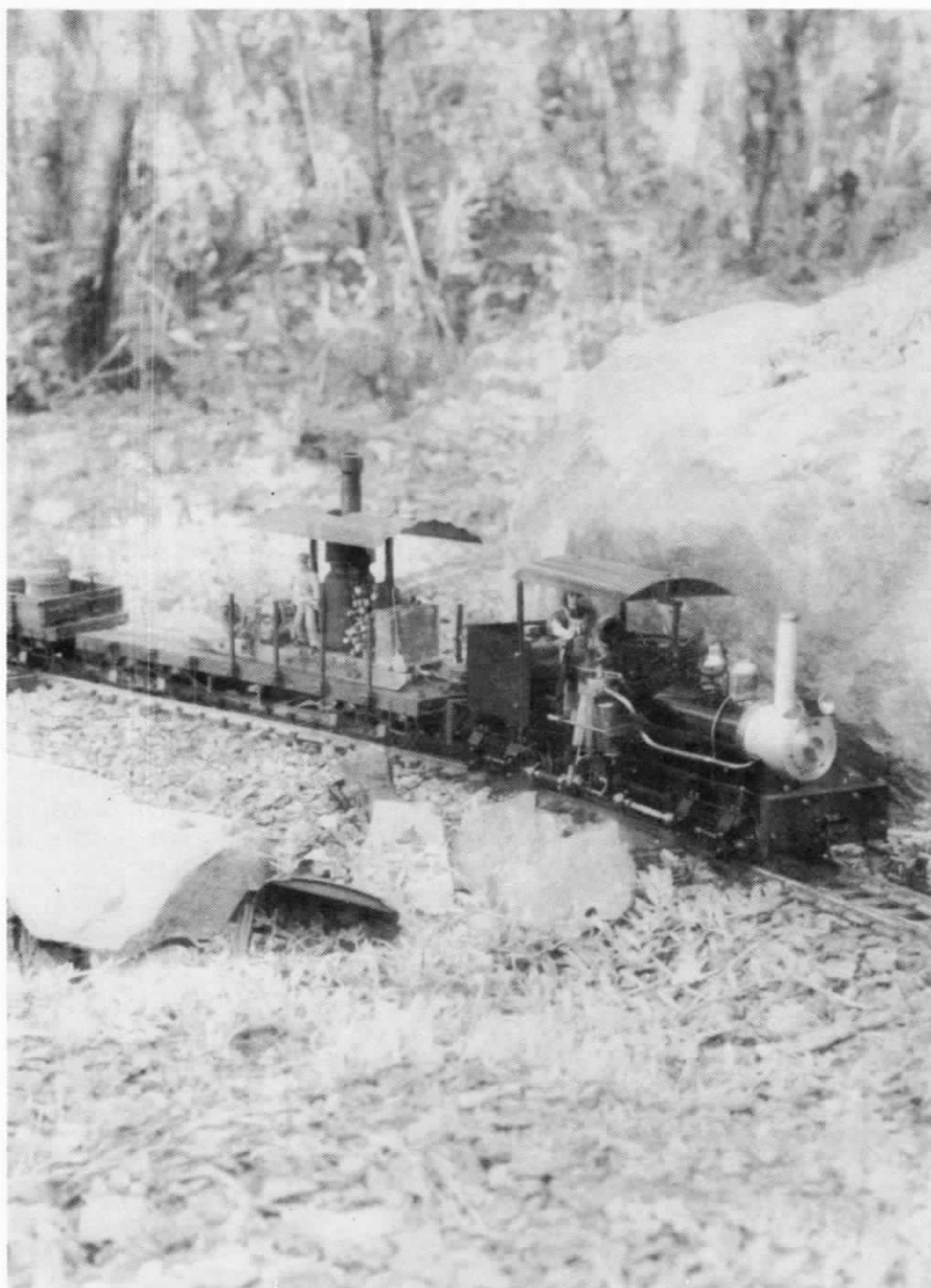
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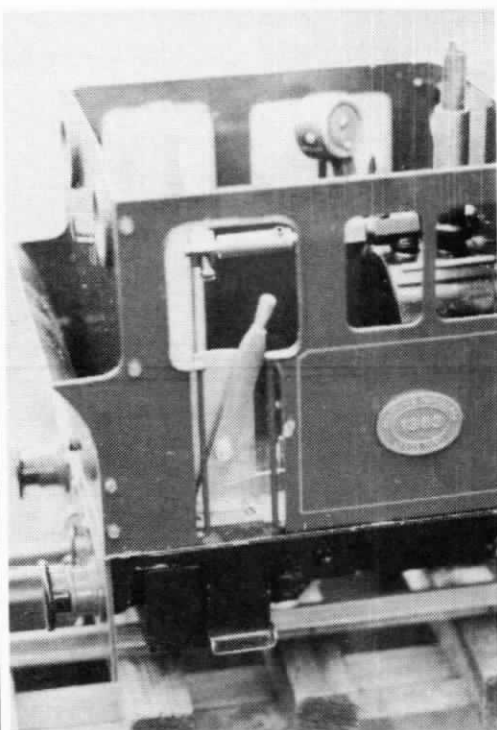
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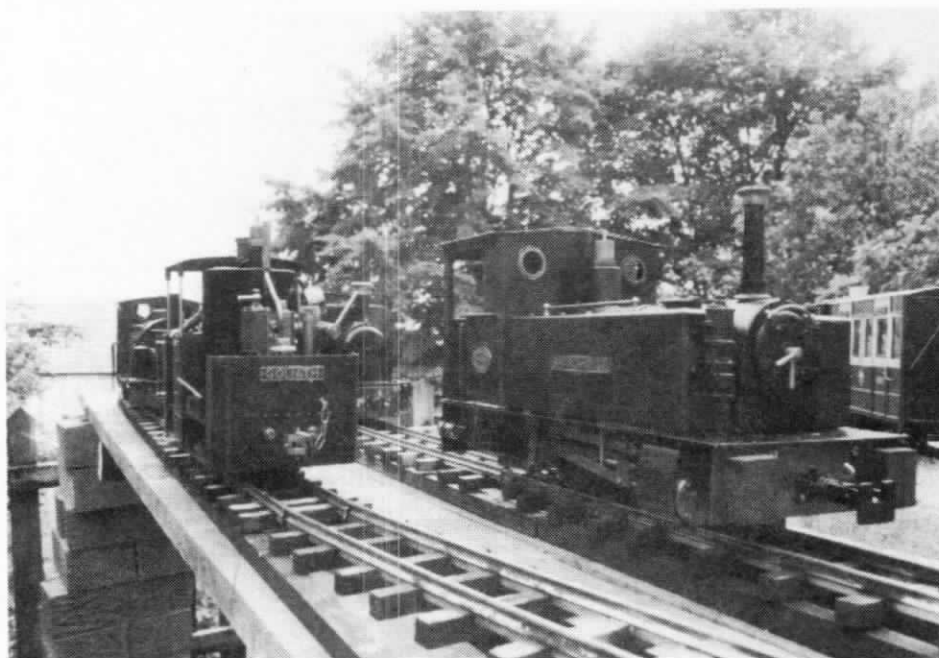




## PHOTO PAGE

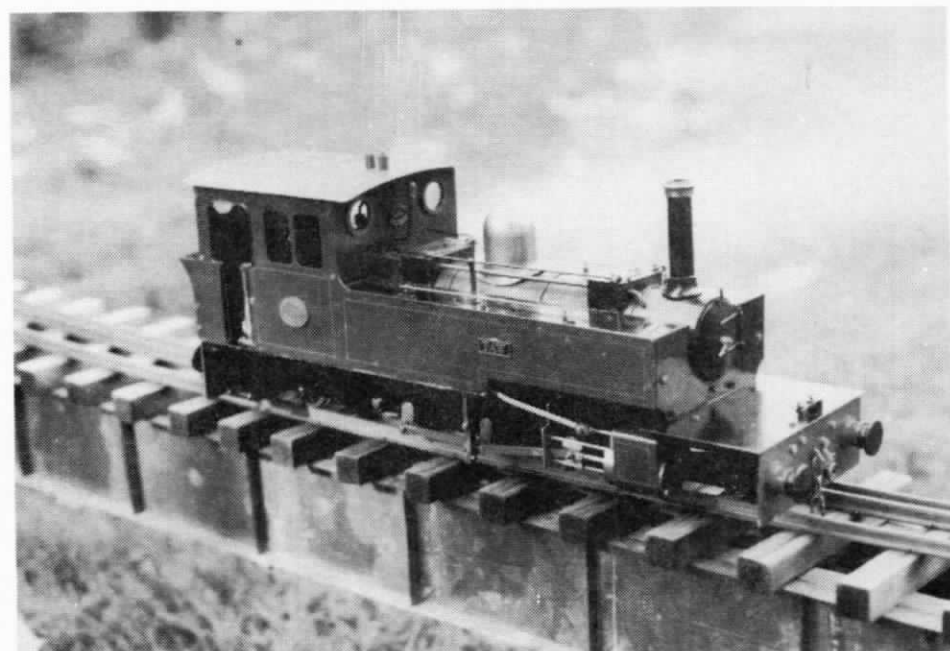
**On the cover:** The SFSR's Lindsay Shay hauls a log train by Bill Campbell around Bob Nowell's Coalport Railroad.

*Photo by Bob Nowell*



**Bottom left:** Archangel TAW, described in Marc Horovitz's column beginning on page 9.

*Photo by Marc Horovitz*



**Center left:** GOLIATH (Roundhouse/Angus) and SHANGHAI LIL (a Roundhouse CHARLES POOTER) await assignment on Richard Rees's Swansea Bay Railway.

*Photo by Richard Rees*

**Top left:** EMILY ANN (Finescale Cranmore Peckett) rolls out of the engine-house on the Silo Falls Scenic Railway.

*Photo by Ron Brown*

**Top right:** Reversing quadrant in TAW, built by Marc Horovitz. See page 9.

*Photo by Marc Horovitz*

## Opinion & Comment

*Ordinarily this spot would contain editorial comments, but a letter received recently from a misguided (but relatively harmless) individual - and the ensuing exchange - seemed like just the thing to spark a little friendly discussion and debate.*

### BATTERIES VS. STEAM

Dear Editor,

In keeping this as short as possible because of limitations of newsletter space, and going under the thought of - If you have something to say, say it! - I will now endeavor to air my thoughts on the subject of Steam vs. Battery.

I was glancing through Dr. Steam's column in Volume 1 Number 1 of Steam in the Garden, and, being that he's the person he is (a nice guy for the most part, but always popping off at the valves about live steamers), I thought - why not?

After doing some research, asking a few questions and watching some videos, I have come to the following conclusions.

Steam can be expensive, time consuming, and a get-your-hands-dirty operation. It involves many different facets of maintenance & operations for what is for the most part a short running period of the loco. An additional expense would be the cost to radio control it. The cheapest steam loco I've seen so far is around \$230 in kit form and you put it together. Plus, fuel pellets, oils, alcohol, butane, distilled water & the list goes on!

Battery - charge it & run it. Expense: \$15 battery; \$10 charger; average loco costs \$50 for a whole train set, including track to run it on. Running time approximately 3 hours. Keep a charged spare battery,

double your fun. This is on the high side of battery expense. Build your own loco and power it with a 50¢ 9 volt battery. I can go on and on, but it's time to conclude.

Steam can be nice, but it'll cost you in price. A battery charge a day will keep those steam blues away.

These are only my own thoughts and feelings. Let's hear your views on this subject!

Battery Bill Campbell  
Kirkwood, NY

*Right on the heels of this first letter came the following:*

Dear Editor,

Yesterday, while at the Coalport Railroad in Jim Thorpe, PA, Dr. Steam approached me and handed me the controls of his live steam Fowler. I must admit that it was a challenge to drive this loco in a prototypical manner, and I do suppose that once one gets more experienced at the controls this can be a fun and satisfying adventure.

I also must say that maybe, just maybe, Dr. Steam let it slip his mind (but not mine!) that, although there was a live steam loco on the track, that locomotive was being controlled by a BATTERY powered radio control unit!

In summing up I have to say, it's all nice & the final decision is yours. Take a good long look at each (battery & steam power) & what you want to do on your railway. Sit back, relax & watch 'em run on battery power. Or, go thru the steps, motions & routines of prepping, maintenance, etc., while possibly even pretending you're getting your own full-sized loco ready for a trip around your railway - keeping in mind that it's being controlled by that little electrical device commonly known to all of us as.....a battery.

Battery Bill

### IN DEFENSE OF STEAM

*First, let me say that I do have video footage of Battery Bill at the controls of a live steam loco - and he's obviously having fun and grinning from ear to ear!*

*Sure, battery power has its place on the garden railway. I like to keep a battery powered loco or two on hand for those times when we have guests that are interested in seeing the garden railway and we want to have something going round and round to give it a little railroad atmosphere. Or for those times when we're spending a few hours weeding or planting, and we like to see a train passing by now and then. For these times, or for those warped individuals that are attracted to diesels or other internal combustion engine powered locomotives, batteries are probably the best choice (besides, the aforementioned warped individuals are not as likely to hurt themselves on batteries).*

*But for those of us that remember the days when steam locomotives ruled the rails - for those of us that love the sight of a simple, elegant mechanism at work - for those of us that can't help but break into a grin or wipe a tear from our eye at the sights and sounds and smells of a real, honest-to-gosh steam powered locomotive - there is just no substitute for the real thing. - ed.*

The foregoing was published in our local garden railway society newsletter, and I sent a copy to Peter Jones. Peter couldn't pass up a chance to add a few paragraphs

(Please turn to page 19)



## Letters to the Editor

Dear Ron,

Many thanks for your SitG No. 1 & 2. I wish you the best of luck with this venture. I shall give you a mention in our Association newssheet, **16mm Today**, and send you some material when I can think of something of use.

I've been building garden railways since I was 10 years old and my present line is my 5th or 6th (I'm not too sure). The present **Clywd and Dee Light Railway** is about 100 yds. of single line gauge 0, plus 20 further yards of branch trackage taking the line into a congested terminus in a garden shed.

The line is bonded, allowing 2 rail electric locomotives to run, although these seldom do so now. In fact, the last one ran over a year ago. Steam locos run exclusively now.

The line is graded to suit manual steam operation. That is, steep climbs are avoided. However, I have incorporated gradients to add operational interest, so climbs are long, rather than steep. Typically 40 yards at 1 in 144 and going the other way at 1 in 100. Curves are kept to as wide a radius as possible, 9' radius being the minimum. Although 16mm live steam locos will operate quite happily on sharper curves, I do find that the extra drag resulting from flange friction can make a lot of difference when running long and heavy trains - especially when long wheelbase stock is used.

Most recent addition to the C&D loco shed is a very early Roundhouse "Lady Anne" with open cab and 1/2" bore cylinders (later ones have 9/16" bore). Amazingly, this locomotive is much more powerful than the later "Lady" and will haul eight bogie cars as against five - or nine bogie cars with a struggle. She is also a lot faster. I suspect that the reason for this is the oil trap fitted to "Blanche". Where the exhaust steam is taken to the smokebox, a larger tube, closed at the upper end, receives the blast. Steam does go up the chimney, but no oil or condensate is ejected skywards. This device,

although very effective, creates back pressure, so throttling the exhaust and stopping the locomotive from running too fast with a light train.

Actually, John Turner (*and Tony Sant at Finescale - ed.*) incorporates just such a device on his locomotives (only he refers to it as an exhaust throttle) and it may be set by the "driver" to suit the speed and load of the train, being, in effect, a small steam valve similar to a needle valve as used for regulators.

Now, the later Lady Anne - "Blanche" - is showing signs of wear in her valve motion after two years of hard work. I had noted that she was running more slowly, and that, despite increasing the boiler pressure, she could no longer manage six bogie coaches.

Examining the valve events (by removing the valve chest covers) I noticed that the slide valve was not uncovering the valve ports. The reason was quickly found in that the rockers transmitting the movement from the eccentrics had worn, creating "lost motion". Inspection proved this wear to be the rocker pivots only, so hopefully this winter I shall be able to drill out the original rocker holes and make new pivot bolts to suit a larger diameter.....meanwhile, the early Lady Anne (which shows little sign of wear or lost motion) will have to run the winter service.

Reading Larry Lindsay's **From the Backshop** reminds me that I traveled behind Sir Nigel Gresley - **THE Gresley Pacific** - a few years ago. The sound of the "chuff" was very characteristic with the valve motion having a particular *ringing* sound. Thanks for a good read - will send something soon.

John Wenlock  
Wales, U.K.

*(Mr. Wenlock is the editor of 16mm Today, the outstanding magazine put out by the Association of 16mm Narrow Gauge Modelers - ed.)*

Editor,

Am enjoying your magazine. No, I don't have a live steamer, but hope to embark on one before too long. For the moment it's a matter of setting up home-made track and fussing with a battery powered Bachmann 4-6-0 and rolling stock to match.

Plea: Don't get too fancy with your magazine! The present format is great. If you go to slick paper and color, you'll be going to \$3.50 an issue, and skinflints like me will send you termination notices.

Your readers might be interested in using vaporizing burners for alcohol firing instead of wicks. They have the advantage that they can be regulated to match the required steaming rate. The enclosed sketch shows how this can be done.

This arrangement was used by a most wonderful old man I got to know when I was a kid - Vic Shattock. His basement was filled with a 1/2" scale, 2 1/2" gauge railroad, and he had made marvelous running models of Southern Pacific locomotives: A beautiful Pacific, a Consolidation, and an O-6-0 switcher....and later a magnificent Mikado.

Inspired, I started and half completed a Mike under his tutelage, got to where the chassis would run on compressed air and the boiler tested under pressure. Then I finished college and went to work on the opposite side of the continent, leaving it all behind. Now I wish I could pick up where I left off. Ah, nostalgia!

The burner should be made of copper so that its conductivity will bring heat to the bottom of the shallow box for vaporizing the liquid alcohol. My suggestions for sizing are guesswork, but I would think the air tubes might be of 3/8" tubing, and that there should be maybe 6 or 8 1/32" holes around each tube (in the top plate only, of course). I would think that each air tube would correspond to one wick, so a #1 gauge engine with 3 wicks should do with 3 air tubes. This may not be right, and some experimenting may be in order.

Vic Shattock's engines were wonderfully easy to control. The only drawback was the foul smell in the basement, which the garden railwayman needn't worry about.

Charles R. Garbett  
Los Altos Hills, California

*I thought the sketches and description of the vaporizing burner (sketches shown at right) were interesting, but wondered how it would be heated to get it started. I wrote to Mr. Garbett about it and received the following letter. - ed.*

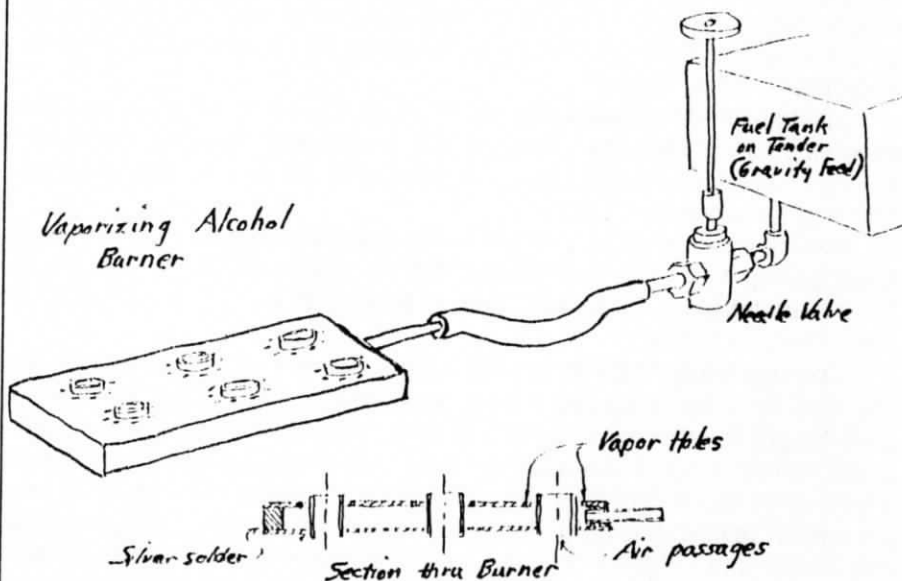
Dear Editor,

Indeed, you raise an important point about the vaporizing burner I sketched for you. Unfortunately, I can't recall how Vic Shattock started up his burners. Your suggestion for using a torch to preheat the burner sounds like the best idea. It doesn't take much - since the boiling points of both ethyl alcohol and methyl alcohol are well below that of water.

Another point of some concern would be that of finding the right number and sizing of air holes. Some cut-and-try would be necessary. Too little air and you'll smell it. Too much air and you're wasting heat. Fortunately, efficiency is not a prime consideration for the garden railway management; fulfilling scheduled operations takes precedence, and a little wasted fuel can easily be tolerated (ie. a little extra air won't hurt).

I hope some of your readers try it out and report their results. Railroad operations with locomotives that will run only at one steaming rate (as with pellets and wicks) must no doubt give the trainmaster a severe headache in trying to establish and maintain reasonable schedules.

Charles R. Garbett



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## WHAT'S NEW?

**Finescale Engineering Co.**, builders of the fine little Cranmore Peckett reviewed in SitG #3, announces that their next loco model will be an industrial Hunslet 0-4-0 quarry engine. The prototype for this engine is the half-cab gallery engine typical of the North Wales slate quarries. Available liveries will be black for the Penrhyn Quarry and crimson for the Dinorwic Quarries - with appropriate lining, of course.

Mechanics will be similar to the Peckett, but with a larger boiler giving 30 minutes running time per filling. It will incorporate external pipework, lamp brackets, injector and sand boxes. Dimensions will be 7.5" overall length, 4.5" high and just under 3.5" wide.

Availability - 1st quarter of 1991. For more information, write to: **Finescale Engineering Co., 117 Greenwood Court, Upper Holly Walk, Leamington Spa, Warwickshire CV32 4JY, United Kingdom.** Or call 011 44 926 335123. Tell them SitG sent you.

**Coming from Aster** in the 1st quarter of 1991 will be a treat for those of you that have been waiting for an American narrow gauge locomotive. The **C&S Mogul** is expected to be available in January, 1991 and is reported to be a real beauty, loaded with accurate detail. Only 600 will be built, but even with a hefty price tag of \$4,000 it will certainly be a popular loco. SitG had hoped to get one for review, but we understand that will not be likely because of the high cost and limited numbers. Watch Live Steam magazine for a multi-issue review of this loco by Nick Wantiez. Order yours from **Gary White at Aster Hobby USA, P.O. Box 90643, Pasadena, CA 91109** - or phone (818)577-9621. Be sure to say you saw it in SitG.

**Tom Cooper of Steamlines** reports a breakthrough in exhaust engineering that should be of great interest to all live steam enthusiasts. Tom says, "...it is an absolute reality, **it will produce a thick plume of smoke a yard high**, in fact so much that testing is no longer possible indoors! **It will far outsmoke any coal fired model** without any of the complexity that the latter involves. The apparatus takes up about the same space as R/C equipment and would work with any loco which does not use the exhaust to draw the fire." Sounds good to me, I can hardly wait to see it in action!

Additional news from Steamlines indicates that they are working on their Ospowered locos to develop the dummy outside cylinders to give a chuff synchronized to the wheel revolutions. And as if that weren't enough, they are also developing a new trackbed system that will greatly simplify building track. For more information or to place your order, write to **Steamlines Models & Publications, Unit 9, Radford Fields, Maesbury Road, Industrial Estate, Oswestry, Shropshire, SY10 8HA.** Call Tom at 011 44 691 657227 or FAX him at 011 44 691 670030. Don't forget to mention that you saw it in SitG.

**Lindsay Machine Works** has a very limited supply of **Shay builders plates** available. The familiar diamond-shaped plate is made of etched brass with black background and raised letters spelling out "Lindsay Locomotive Works" and the year. They sell for \$12.50 per set, postpaid. Years available are '88, '89, '90 and plain, no year (replaced by "Denver"). Look for some other unique items coming soon from Lindsay Machine Works (see their ad in this issue). For more information on these, or any of the quality items in the Lindsay Machine Works product line, write **Lindsay Machine Works, 1004 S. Washington St., Denver CO 80209.** Or give Larry a call at (303) 777-7972.



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# Gazing Into the Fire

by Peter Jones

## Design Considerations For Small Dragons

Now it may well be that, with a bit of steaming under your belt, you are thinking about designing and building your own steam loco. So perhaps we could look at some of the pros and cons of the design stage.

There is an existing technology belonging to the pure model engineer, but this doesn't work when simply shrunk down from 5" gauge to 32mm or 45mm. We have our own particular set of pitfalls. However, there is some general advice which is common to both. Perhaps the first thing is the traditional advice to build a "beginner's engine". This is usually small and 4 wheeled. My own feeling is that there is no reason why you can't make your first loco a New York Hudson; the argument being that there are no extra processes to be learnt, it's just that there are more bits to make.

But this overlooks psychology. You see, the only thing to REALLY stop you building a loco - as opposed to excuses - is not wanting it enough. You may be so passionately in love with Hudsons that you will overcome all the obstacles and build one. And the biggest obstacle is the difficulty in keeping the enthusiasm going over a long period of time. Therefore, for that reason alone, I'm going to confine my notes to the traditional little 0-4-0 tank engine.

Right at the start we split in two ways. We either go for gas or spirit firing. Gas firing gives you a clean area underneath the boiler - and this is important if you model something with bar frames; you can preserve the daylight. The downside is that the gas

burner, at least, projects into the cab and clutters it up. This is okay with something like a small Porter with a prominent cab - or if you can live with it in an open cabbed loco. If your loco has a small boiler, remember that you will be running a substantial firetube down the middle of it and this will cut into the length of run between boiler refills.

I have to admit to a prejudice for spirit firing. My own view is that Smithies boilers and internal firetubes a la Aster are a pain in the butt. They are leftovers from the days when an externally fired potboiler wouldn't steam in a wind. The advent of the Pooter firebox and modern draughting has cured all this. I like the rugged simplicity of a modern potboiler that will give up to 45 minutes of running on one boilerful of water. The only reason I can now see for some form of internal spirit firing is where you model a loco that has no sidetanks and you particularly want spirit firing.

Likewise, experience has left me with a dislike of the chicken hopper-type spirit tank. If anything goes wrong, you end up dumping burning fuel everywhere. With narrow gauge locomotives there is plenty of space to hide tanks between the frames. If you want especially large volumes, the tank can be in two sections - the other being up by the front buffer beam.

In theory, saddle tanks and spirit burning isn't compatible. To get a good burn you need plenty of oxygen in and plenty of room to get the burnt gas out. There have been infamous locos built which just wouldn't steam

unless a wedge of holes had been drilled in the tank. Thus the traditional advice was to avoid the conflict.

But then, out of the blue, there have been saddle tanks built which worked perfectly. The British Kenver-sion range was a case in point. They shouldn't have worked, but they did. The conclusion is that you may get away with it if you are building a large model. But to play safe, stick to gas firing in this case.

One important factor in giving a clean burn to a spirit fired engine is the height of the underneath of the boiler above the wick tubes. If this is too little, as with a low slung boiler, the combustion is incomplete. The flame burns yellow and cool, leaving a rapidly sooting up boiler. This is one of the bits of nature you can't scale. If you lower the wick tubes, you have to lower the fuel level and hence reduce capacity.

With gas firing, there are one or two interesting points. The main one is that the size of jet and distance in relation to airholes in the shroud is ultra-critical. Don't go designing your own burner if you are new to the game. Although a typical hole size might be a No. 70 drill, this can vary. So either buy the burner in or work to a published design. For very large locos, you can sometimes get away with buying a small gas blowlamp and mounting the tank in the tender. But, as found, you will probably suffer from liquid carryover, so to use it horizontally, you will need to put an upward swan-neck in the pipe you fit between tank and burner. Incidentally, if you make your own little gas tanks, you

can get a filler valve from a broken cigarette lighter.

The usual single firetube works reasonably well. If the dimensions are right, you shouldn't get too much heat coming up the chimney. But if the hot gases are whanging through the tube too quickly, there are several ways of slowing them down. You could simply crimp the tube slightly a couple of times in the middle. Alternatively, you could insert a helical coil of flat copper strip to induce the gas to swirl. Fitting a couple of cross watertubes will increase efficiency, but don't restrict the airway so much that you start to choke off the flame and cause incomplete combustion, often signalled by an excessively smelly flame.

An alternative form of gas firing is to make a traditional pot-boiler, but with a gas tank and burners instead of wick tubes. This is a lot less critical than an internal firetube to set up, but, of course, offers no advantages over spirit firing.

So much for the combustion. I've dealt with this at length because it is

usually the source of failure in a loco design. A poor set of cylinders can be replaced, but a bad basic design goes nowhere. My own suggestion is that, to start with, you buy in a pair of cylinders - say Roundhouse or Merlin. Examining a pair of readymade ones is worth books of instructions on how to get them right. I make my own cylinders in the larger scales, but in 16mm I simply buy them in.

Slip eccentric valve gear is to be recommended for a first time. Walschaerts gear calls for no witchcraft to make, but there are a lot more bits that can be made not quite right. Trouble shooting is also more difficult. In other words, like all aspects of building a steam loco, stick to simple, known technology at first. This means that you can concentrate on building your loco, safe in the knowledge that it virtually has to work, without too many imponderables. This isn't radical advice by any means, but it works as well today as it did in times past.

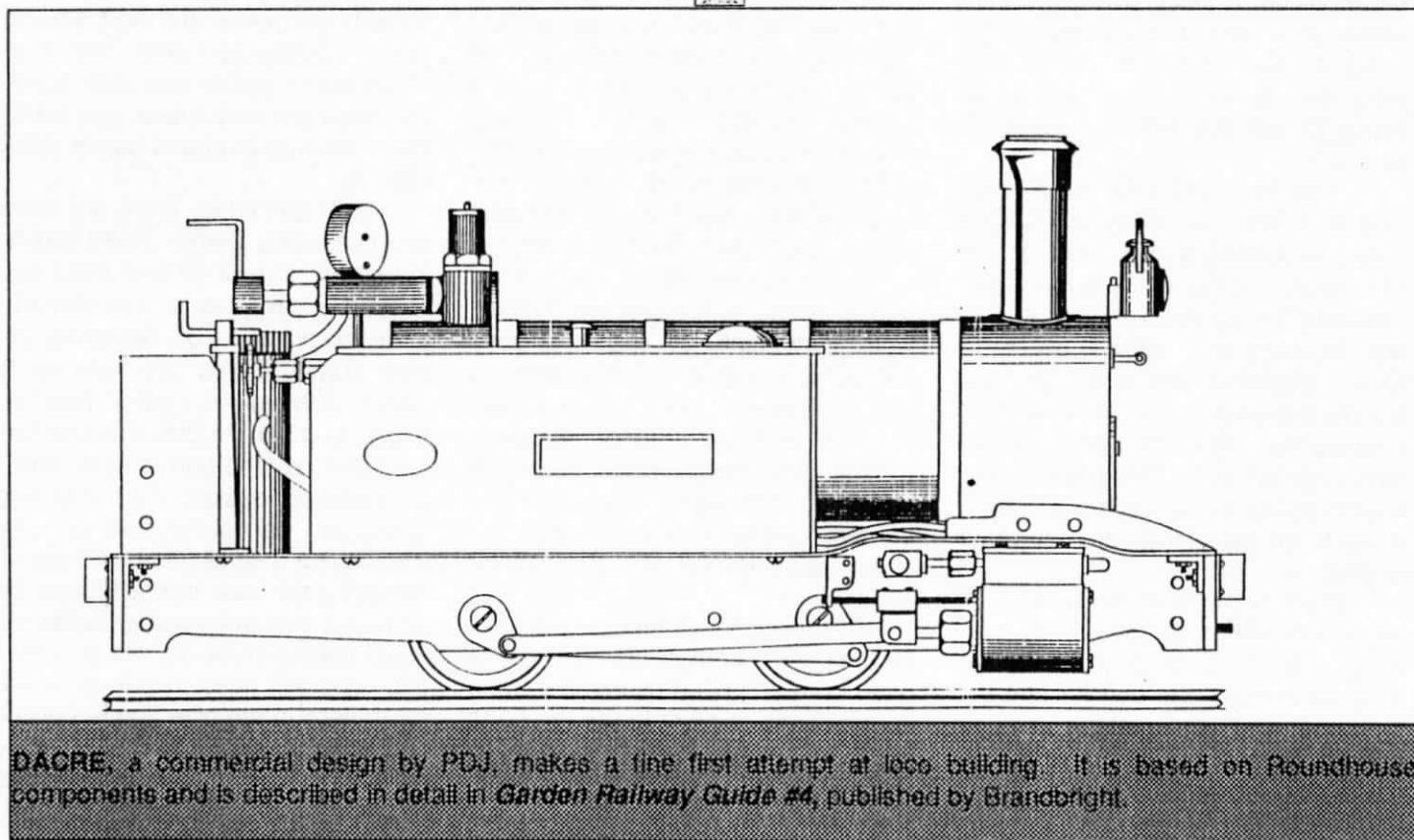
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**DACRE**, a commercial design by PDJ, makes a fine first attempt at loco building. It is based on Roundhouse components and is described in detail in *Garden Railway Guide #4*, published by Brandbright.



# The Steamchest

by Marc Horovitz

Sometime ago I acquired a secondhand Archangel TAW 2-6-2T. This was a lovely engine, with a meths-fired pot boiler, a pressure gauge, and Hackworth valve-gear. It was also radio-controlled. A quick peek into the cab revealed a space that appeared to be stuffed with electronic gear. I found this unsettling, mostly because I have an innate and irrational mistrust of mixing steam and electronics (though I know the lie has been put to this belief many times, and I even own one or two live steamers that have been radio controlled with great success).

TAW sat on the shelf for many months without its boiler ever rising above room temperature. Part of this was lack of time and part was a certain trepidation that I always experience when firing a strange locomotive for the first time. But, on a day when nothing much was pressing, TAW caught my eye and cried for a day out. That was it. No more procrastination.

Before steaming the engine, however, I felt that a good look at the R/C gear was in order. I lifted the lid and peered inside. Everything seemed to be wrapped in black plastic. The servos were poorly mounted by a single bracket and, when actuated, reacted as much as they acted. This was clearly an unsatisfactory state of affairs. Two alternatives presented themselves: 1) remount the radio so that it functioned properly or 2) remove it altogether. I chose the latter (see original premise).

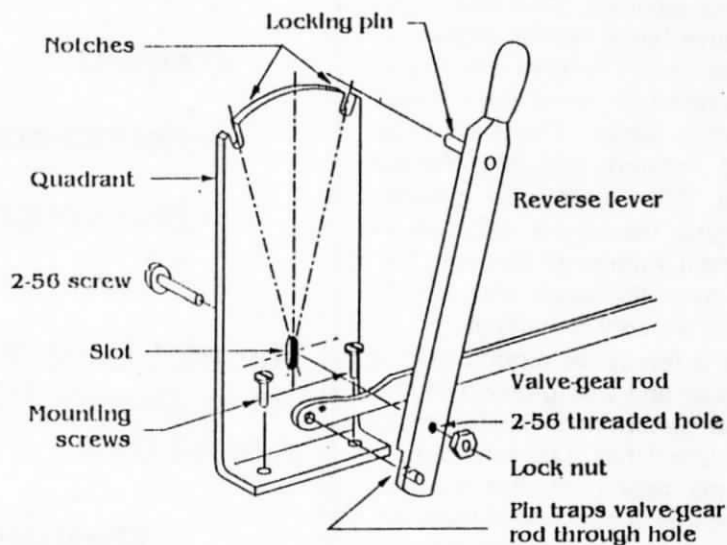
Removing the R/C equipment was no big deal. It all unscrewed pretty easily and came out without

difficulty. The further I got into the project, the more I felt I had made the right decision. With the radio gone, the engine had a fine, roomy cab. The throttle could be easily actuated by hand through the cab door. But one problem remained - with the removal of the servo, there was nothing to actuate the valve-gear linkage, which lay loose on the cab floor. I must build a reversing quadrant.

After puzzling over it for some time, I came up with the design illustrated. There were threaded holes in the floor through which the servo had been mounted, so I decided to use them. They were positioned so that the finished quadrant would be easily accessible through the cab door.

Since Hackworth gear isn't designed for notching up, all I needed was a quadrant that would give me full-forward and full-reverse. I like simple designs, and the idea of a lever that fitted into a notch at either end of its throw - locking the valve gear in position - appealed to me.

After rummaging through the scrapbox I came up with enough brass to do the job. Rough measurements were taken from the loose valve-gear rod, and I set to work. Since the job was simple, I didn't do any drawings. I had a pretty good picture in my head of what I wanted. In a couple of hours the quadrant was nearly finished. The upright had been cut, filed, drilled, and slotted and the



To reverse engine, reverse lever is lifted out of front notch, pulled back to new position, and dropped into rear notch

**Reversing Quadrant Diagram**

lever and link-rod had been made. All that remained was installation of the quadrant and the filing of the notches in the top of the upright for the lever to fit into. These were fairly critical. If they were badly placed, the engine wouldn't work properly.

The simplest way to find the optimum position was to install the quadrant and run the engine on air. While the engine was running, I moved the lever back-and-forth to determine the position in which the engine ran best. When this spot was determined - both in forward and reverse gear - the quadrant was marked. It was then removed, disassembled, and the notches were filed in the top. When it was all back together again it was time for a trial run.

By this time the sun was going down, and the Ogden Botanical Railway was in shadow. I took the engine into the garage for servicing. It was oiled all round and the lubricator was drained and filled with steam-cylinder oil. The boiler was charged with distilled water, and the burner was removed and the wicks adjusted. (This mammoth locomotive has a burner containing only two wicks!) The fire was lit and in a surprisingly short time steam had been raised. The lever was pushed forward and the throttle opened. After some initial priming the engine moved off smoothly in the typical Archangel fashion. The steam from the stack was clearly visible in the cool evening air.

After a few times around I put it in reverse and was gratified to find that the performance in this direction matched that of forward gear.

So the radio-controlled locomotive became a successful manually controlled engine. The project was interesting and educational, and the results are pleasing.



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# *From the Backshop*

*by Larry Lindsay*

## **Steam and Syringes**

After my stock of equine syringes had become unusable, I looked around for a replacement. One day while browsing around the kitchenware department of the discount store (you never know what you may find), I found a turkey baster. This should be just the thing, I thought. Designed to transfer liquids, be chemical resistant, and in a pinch would be resistant to high temperatures. The nozzle end was modified by cutting and fitting a short length of brass tubing. So far it has performed very well, but after a year it's showing some signs of deterioration. Perhaps it is designed for once yearly use only.

The model aircraft people have mechanical and electric pumps which would seem ideal for our purposes, but for some reason are not widely used. In my quest for the perfect meths handling system, I modified an old Coleman lantern. This was the type that burned white gas and had a pressure pump built into the tank. Everything was removed except the pump and the valve which controlled the flow of fuel when the tank was pressurized. It worked well, but had a small capacity and had no reverse flow option. So I will stick with the turkey baster for now.

The ideal may be a hand cranked model aircraft pump that is attached directly to a gallon can, and with which the flow can be quickly reversed. The model aircraft and radio control magazines show some interesting fuel handling products in their advertising. Why not use a lineside tank for meths? It could even be the tank from an old tank car mounted on a stand and dis-

guised as a locomotive oil fueling facility with gravity feed to the engines.

Let's take a light hearted look at the devices we use to fuel, water and lubricate our locos. The many methods used by different individuals would almost provide a personality profile. The ubiquitous medical syringe is mainly used to handle meths, water and steam oil, although it is by no means the best tool for the job. The alcohol and oil seem to react to the detriment of the plunger material and this causes the plunger to stick just as you are trying to get the last ounce of fuel into the tank. Then it unsticks, squirting fuel everywhere, overflowing the tank and perhaps setting things on fire. I was advised to try dishwashing detergent as a lubricant on a syringe that had been used to handle steam oil. Apparently this is a procedure that is used in some chemical handling applications, but detergent is not helpful in a locomotive boiler. Anyway, the rubber material had deteriorated to the point where it was dissolving into a black goo which was very difficult to wash off the fingers. The syringe was thrown away in disgust.

Sometimes the same syringe is used for meths as well as water, which is no way to run a railroad. The very large syringes are used by veterinarians to inoculate horses - there may be larger sizes used on elephants. The principle advantage of syringes is that the boiler or fuel tank can be filled to the top, and a small amount withdrawn to give the correct level. I do remember some embarrassment while running a prototype of the Shay locomotive before

the chicken-feed tank was developed. It had a small tank under the frames which needed refuelling every few minutes, so I would find myself stumbling around after the locomotive with syringe in hand like the mad doctor in a "B" movie.

Boiler feed water is far kinder to syringes, and turkey basters are just as useful. I have also modified a garden sprayer for boiler-filling duty. It holds over a gallon of water and the nozzle has been modified with small plumbing fittings - something I had to do because the nozzle and shut-off valve were missing. It is convenient to handle and holds sufficient water for an afternoon of running. A small valve controls the flow after the tank has been pressurized. It's a well made unit of high impact plastic, with lots of O-rings for sealing. Definitely avoid the old galvanized type of sprayer; flakes of metal and corrosion will do your boiler no good. The drawback again is that if the boiler is over-filled a syringe is necessary to withdraw the excess. But it's well worth a try, anyway. If you have access to laboratory equipment, there is a source of interesting beakers, etc.

If a lubricator is not fitted with a drain cock or plug, a syringe is the best tool for the job. It is easier to suction the lubricator while the engine is still warm. For this I use not a medical syringe, but a glue syringe from the hardware store. These have no seal on the plunger to deteriorate and they have a useful nozzle.

For all around oiling we need a squirt gun. The small antique oil cans that were commonly used on small machinery would seem to be

ideal, but they are not suitable for the heavier oil we use. On a full sized locomotive, the shelf for the oil cans was mounted on the boiler backhead, close to the fire door. It was a frustrating experience trying to pour cold oil on a cold day!

As well, the small oil cans usually work by gravity, so getting oil into tight spots, such as between frames, can be difficult. I use a large pump-type oil can that has been fitted with a small nozzle on a flexible spout. Care is needed as it will pump a considerable volume at high pressure, using 10W-30W motor oil. A recent issue of the Gauge 1 Association Journal carried an interesting article on the problem of over oiling. When we pump a healthy squirt of oil over the valve gear, we are pouring the equivalent of a bucket of oil over the motion, most of which will end up on the track. This may not be welcome on some railways, but will add that oil soaked atmosphere to your locomotive servicing area. In these profligate days, it is well to remember that in the early days, lubricating oil, especially steam oil, was kept under lock and key and every pint was accounted for. Often it was hoarded and jealously guarded by the enginemen. None would be wasted.

There must be some uncommon ideas out there on handling fuel, oil and water. If you have a unique (or even not so unique) idea, why not share it with the rest of the readership?

### FOR SALE

Aster School's Class 4-4-0 with 6-wheel tender, "Winchester", green with gold lining. New in the box for \$1200. Contact Lou Racioppo, 1132 Harmony Road, Baden, PA 15005. Or call (412) 869-4841 around 10 p.m. Eastern time.



# Weedy Side Tracks

by Fred Kuehl

## Snow Plow Extra

It's good to be back on board with SitG! Unexpected family matters caused me to stow my pen temporarily, but fortunately, during the mid and late summer months, my garden railway came through for me with just enough rest and relaxation to make things tolerable.

As this is written, it's Fall here in northeastern Pennsylvania and the Lilliputian passengers that ride the Stoney River Railroad are able to enjoy the local countryside, which is ablaze with every color that could be found on an artists paint palette. This seasons mixed bag of temperatures that fluctuate between the 40's and 80's will soon stabilize, and before long, snow will cover the railway. This is a frequent occurrence during most of the winter, and the Stoney River RR will encounter the same wintry trials and tribulations as its full-sized cousins.

The Stoney River is not a seasonal line that shuts down when temperate and favorable weather ceases! Winter operation has proven to be rewarding, exciting, and, most of all, one heck of a lot of fun. The fun is enhanced even more when it's time to clear the line of snow. In the fall of 1989, the Stoney River armed itself with a kit-bashed snow plow and strategically placed it out on the line to wait for the first snowfall. The thought of snow plowing was pretty exciting in itself, but the challenge of doing it with live steam locomotives really made it something to look forward to.

The Stoney River RR owns quite a stable of live steam locomotives and it was fun to ponder which locomotive - or combination of locomotives, if double-heading was

required - would best handle the job. The management and train crew had not yet been tested in combat with snow, and the line's sturdy new plow had not seen a single snowflake. The Superintendent was nervous and quickly resolved that he would blame the car shop foreman if the plow didn't work as expected - and in the event of a derailment, it would be the fault of the locomotive engineer and conductor for not paying enough attention or for going too fast for conditions.

With these important issues now aside, the Stoney River dug in for a long winter and thoughts turned to the conviction that steam locos, plows and snow could work and play very well together, and no matter what happened, it would be fun.

What follows is an account of the operation of the first snow plow train on the Stoney River Railroad during the winter of 1989 - 1990.

Superintendent Higbie rang up the engine house foreman and gave instructions that the weather forecast should be obtained regularly from mid-October through mid-April and, in the event of a forecast of snow, a sufficient number of steam locomotives should be kept "hot" and on standby for plow service.

Ray Wallwrath, Engine House Foreman since the inception of the SRRR, knew just what to do and set plans for future winter snow operations. Because of the cold temperatures, locomotives scheduled for snow plow extras would be kept warm and boiler water would be pre-heated to shorten steam raising time and reduce the amount of fuel needed to raise steam. Gas fired locomotives would be fueled with



Isobutane, as it vaporizes best in cold temperatures. Three locomotives, all built by Roundhouse Engineering Ltd., were selected for snow duty. DYLAN, an 0-4-0T, LADY ANNE, an 0-6-0T and FOWLER, an 0-6-2 with tender, were serviced and placed in storage until called for duty. Regular freight and passenger service would be handled by the road's 5 remaining locomotives.

Fall 1989 passed uneventfully. Then, on the first Tuesday in December, snow was in the forecast for Wednesday morning. The weather man was right for a change, and early Wednesday morning we had a snow-fall. Ray Wallwrath was ready with 2 locomotive crews, DYLAN and LADY ANNE, extra isobutane fuel and a good supply of meths and pre-heated distilled water. Superintendent Higbie kept watch that morning for the first inch to accumulate. By 9 o'clock it was time to get things moving.

The Dispatcher at Garden City rang up the Springfield Engine House and issued orders for a snow plow extra. While DYLAN was steaming up, an LGB combination caboose-coach-combine for the work crew, a box car for supplies and rerailling equipment, Conductor Adam Bealick and gallons of hot coffee were being assembled in the yard. The plow was then coupled to the front end of the locomotive. A check of the steam gauge indicated DYLAN had reached working pressure, and when her safety valve lifted, a magnificent cloud of steam shot high in the cold, crisp mountain air. We were ready to get under way!

I topped off DYLAN with more meths and cracked the throttle. She eased off the track in the steaming bay with the plow neatly parting the newly fallen snow. I knew at that moment that the plow would be a success!

Stopping just past the switch for the engine house and yard, the switch was thrown and we backed down to pick up the rest of the train. Conductor Bealick and the rest of the crew climbed aboard, lockered their gear and waited for the engine crew so

that the train order could be read. Because the train was running "extra", the head-end brakeman set out white flags on the locomotive while copies of the train order were passed to the train and engine crew.

The train order having been read, the highball was given to proceed. I opened the throttle, slowly advancing it to attain a safe speed for plowing. As DYLAN chuffed off with her safety valve lifting, she was a brave sight indeed!

The train moved deliberately out of Springfield Yard and onto the main line. I threw the switch back to the main and opened the throttle a bit more, as DYLAN was meeting more resistance from the snow. The block signal at Garden City read "CLEAR", so we didn't slow down. The snow was a fine, dry powder and the plow was making short work of it. We passed Garden City depot and entered the tunnel to Grass Valley. The train bucked as it left the tunnel and hit snow again - just like the prototype does.

We were now on grade and approaching Grass Valley. The stack talk and steam display were magnificent in the crisp winter air! It was neat watching the snow being plowed off the track and having it slide down the embankment. The temporary whistle board appeared and we sounded warning as per the train order, only we didn't slow the train because we were in a drift and may have bogged down and stalled.

Crossing Grass Valley Bridge, we gained speed as we were now on the long, gentle down grade to Woodside. DYLAN's safety valve had settled down to the point of just lifting, which is the ideal for maximum fuel and water efficiency. The block signal at Woodside was also set at "CLEAR", so we opened the throttle a bit more to make the grade up to Hamlin. Making headway up Hamlin Grade can be a chore in summer, let alone winter and plowing snow to boot! But DYLAN took it all in stride and chuffed upgrade with her safety valve roaring an angry retort to a snow laden sky.

The train approached Hamlin at a brisk pace, and, as we passed the depot, the plow cleared the track but deposited half the snow on the station platform - just like the prototype does. DYLAN was now moving along at a good clip with snow flying left and right off the track as we crossed the bridge over the frozen Stoney River and passed the flag stop at Nowell.

Just outside Springfield, the plow entered a rock cut that was filled with drifting snow and blasted through without incident. Snow flew in all directions, even up and over the top of the hard-working locomotive. On breaking through the rock cut, the train was slowed for Altimont Avenue grade crossing and a stop at the Springfield water tank, which would be just long enough to clear snow that had accumulated under the plow and remove some weight that had been needed on the initial run.

DYLAN had enough fuel and water for several more trips over the line, which would clear things down to a nice "rail-heads only" look. The next trip or two would be on the main line and they would have to be made fast, as snow began to fall harder and faster. The reduced weight in the plow conserved boiler water, as less steam was needed to move the train. DYLAN whistled off for her second and third trips over the main line. This time, only one throttle adjustment was needed, and I could spend the rest of the time watching the snow train do its job.

On trips four and five, the main line switches were thrown so the passing sidings at Garden City and Hamlin could be plowed out and the return loop at Woodside cleared as well. On trip six, DYLAN started to run low on water near Hamlin, so the train was brought in at Springfield for servicing and the crew broke for lunch, hand warming and a good thawing out! About an hour later, the crew returned to find the train almost snowed in. It was about 12:30 p.m., freezing cold and snowing heavily on the mountain. Double heading the train was a necessity, so LADY ANNE was fired

up with DYLAN and both were coupled to the train and the plow, weighted heavier again, was placed on the point. After much hissing, blowing off of steam and some frantic throttle adjustments, the whole mess of thrashing valve gear went charging out of Springfield Yard to do battle against the snow.

As the red marker lamps of the caboose-coach-combine faded into the blizzard, I chased over to Woodside to catch up with the little pots. Everything was going just fine until the train reached Woodside, where the plow derailed on heavy snow and a wee stray pinecone that had dropped from the tree over the depot during the lunch break. The plow had also pulled DYLAN off the track and both engines were still determined to proceed, no matter that there wasn't any track beneath them! Rerailing was frantic but successful, and off the train went for another eight laps around the railroad, after which time the crew decided it had had enough. The train was brought in, wiped down, and the locos serviced and put on the shelf until the next snowfall.

Now I suppose many a garden railway snow train has been run using electric locomotives of steam outline. I'm also sure that these trains operated with the same success I enjoyed. But let me say that nothing on God's earth can duplicate the hands-on fun and excitement of a live steam train plowing snow in the crisp winter air! It is truly an invigorating experience that I urge all of you to try.

I chose manually controlled locomotives, just to see if it could be done without the luxury of R/C on the throttles, and the Snow Plow Extra on the Stoney River Railroad is proof positive that live steam locomotives, plows and snow do work and play very well together on the garden railway.

I hope you have enjoyed reading this account of how the SRRR deals with snow. But even more, I hope you have been motivated to build a snow plow and have some fun this winter with live steam in the snow!

# Kitbashing a Snow Plow for Winter MOW Service

by Fred Kuehl

Now that we've piqued your interest with a story about winter operations on the Stoney River, let's sit down at the workbench and build a snowplow for track maintenance on your railway this winter.

I have always been interested in maintenance-of-way equipment. I like the creative way that railroads assemble some kind of machine or special car to do a specific job, often using bits and pieces from whatever could be found rusting peacefully on some weedy side track. These special home grown cars were common on small short line railroads, and, because my live steam powered Stoney River R.R. is fashioned after a short line, just such a car was in order. With this in mind, I set out to find a maintenance-of-way project that, when finished, would actually do something when running on the railroad. It was late fall with winter's snows not too far off, so I decided to build a snow plow to keep the line clear and provide a little more fun and purpose to winter garden railway operations.

Because I was in a hurry to get the car finished in time for the first snow, I decided to kitbash the plow rather than scratchbuild it. To keep the cost of the project low, I selected a Bachmann gondola car as the basis for the model. The advantage of using a gondola car is that you can quickly add or remove weights according to the kind of snow you are plowing. Another advantage is that once the initial line clearing is complete, weight can be easily removed, thus conserving fuel and water and increasing the running time of

the locomotive.

I was lucky to have a steam locomotive pilot plow (made by a company called By Grant) in my spare parts bin. It comes fully assembled with a Kadее coupler mounted into the knife blade of the plow - just like on the prototype. Grant designed this styrene plow to mount on the pilot decks of the Delton steam outline C-16 and the LGB steam outline Mogul. The plow is also available without a Kadее coupler. Both types come painted flat black and are supplied with three small screws which are not used in the construction of this model.

Other parts needed to build the plow are 3 brass #2-56 bolts 1/2" long, 3 brass #2-56 hex head nuts, 5 brass #2 washers, 1 scratchbuilt styrene washer, a #42 drill bit (clearance drill for the #2-56 bolts), a pin vise or small electric drill, 1 sheet of Plastruct #SHSC-6 6/32" styrene sheet stock, 1 length of Plastruct #H-6 "H" column, 1 length of Plastruct #T-6 "T" girder, 1 length of Plastruct #ST-6 square stock, liquid cement for styrene, 3 cans of Floquil spray paint - Grimy Black, Rail Brown and Instant Weathering, and an oval shaped swiss file. Styrene shapes and sizes similar to those mentioned in this paragraph are also made by Evergreen, and the hardware is all from Walthers or Hobbits by Woodland Scenics. All of the necessary items can be found at a well-stocked hobby dealer or train shop. While I chose to use the Grant plow for my model, building your own plow wouldn't be difficult.

Now - let's get down to building the plow. Trucks excepted, the Bachmann gondola has two main parts; a one-piece car body, consisting of the ends and sides, decking and an undetailed underfloor - and a one-piece underframe. The end of the car without the brake wheel was chosen to be the "front" of the new plow. I removed the front truck and the loop coupler that was on it because it would foul the plow blades. The rear truck was also removed, together with the underframe. All casting flash was cut or sanded off the car body underfloor and the face part of the underframe that mated with the underfloor. The truss rod ends were then re-set into their sockets and cemented in place. About 1 1/4 inch of the front end of the underframe was cut off to make room for the plow deck. The underframe and trucks were then spray painted with a light coat of rail brown followed by grimy black and then put aside to dry.

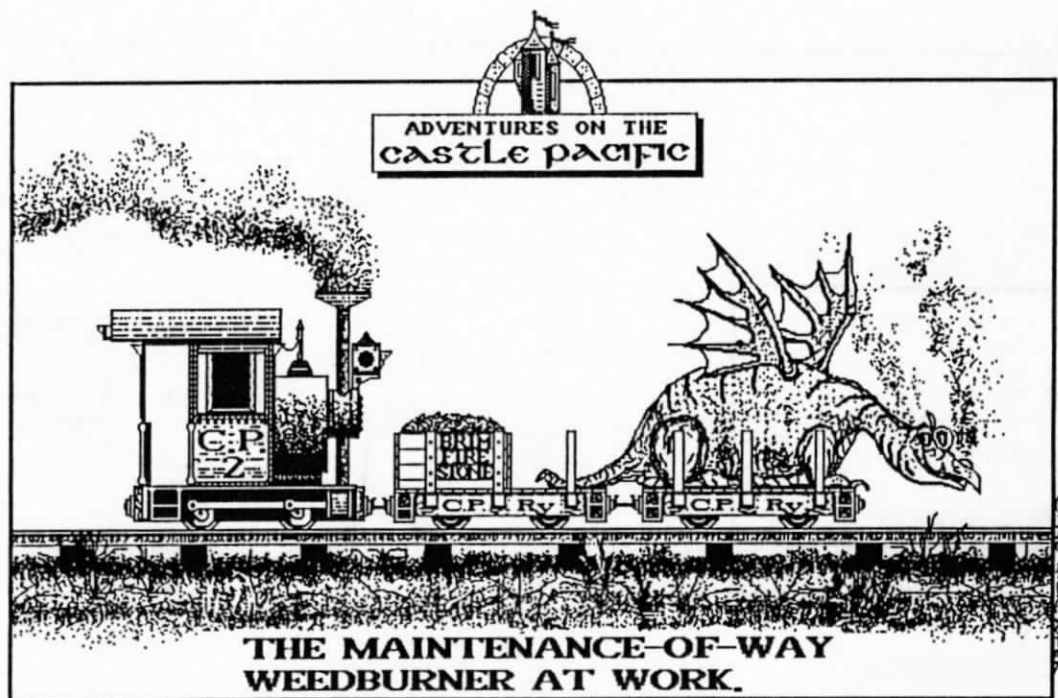
To install the plow on the gondola

body, the soft plastic cut lever bar and its mounting brackets on the front end beam were removed. The car body was then turned upside down and the front end beam was cut and filed out an equal distance from both sides, so that the plow pilot deck would slide in and fit flush with the underside of the car body floor. See Figure 1. I then test fit the plow for mounting to the body, making sure that the plow was centered and square to the car body sides, so that in heavy snow the car would not tend to plow off center and possibly derail. After making sure the plow deck was pushed back under the car floor as far as it would go, the plow was clamped to the car body.

The plow deck comes with three pre-drilled holes in a triangular pattern and one large hole near the smaller one at the point of the triangle. The small hole at the point of the triangle and the large hole are not used in this step. See Figure 2. The other two small holes in the plow deck were then clear drilled with a #42 drill bit, all the way through the car floor so that the #2-56 brass bolts would pass through.

Using the same clearance drill, another hole was drilled through the center of the end beam, from the top down. The nuts, bolts and washers were then run up in the holes (washers on both sides of the assembly - nuts run up from underneath) and tightened. Because the new mounting hole in the center of the end beam ran through the larger unused hole in the plow pilot deck, the #2-56 washer and nut were too small to "grab" the plow deck from underneath. A larger washer was made from the Plastruct #SHSC-6 6/32" sheet stock, clear drilled with the #42 drill bit and used to complete the mounting of the plow to the car body. Once this was done, the clamps were removed.

On the prototype, a pilot plow is effective against light to moderate snow and is designed to clear a path just about wide enough to allow the train to pass. This type of plow was mounted on the gondola, but I wanted my trains to have more room than this so I added "spreaders" to wing back the snow even further on each side of the track. After the pilot plow does the initial parting, the spreaders also help





to prevent loose snow from caving back in on the track and train. Making the spreader blades is simple. See Figure 3. Start by cutting out two spreader blades from the HSC-6 sheet stock. Use the full size drawing as a template. Cut two lengths of "T" girder stock as per the drawing. The angle at which the spreaders protrude from the car sides depends on the clearances your railway has. Check station platforms, bridges and tunnels and the spacing between passing tracks. My spreader blades protrude about 3cm. See Figure 4.

Cement the "T" girders to the car body sides and, after determining the best clearance angle for the blades, the spreaders are then cemented to the "T" girders as shown. The blade edge with rounded tops and lower corners face away from the car body. The blade edge with square corners is glued to the "T" girders evenly, making sure that the blade edge is flush with the top end of the "T" girder.

Two braces were needed behind each of the blades. These were made from #ST-6 square stock, leaving one end square and the other cut to match the angle of the blades relative to the car sides. On each side of the car body, one brace is cemented to

the second board down from the top and the other brace is cemented to the first bottom board. To add strength to the car body where the blades are, cut one length of #H-6 "H" girder long enough to span the gondola bin from side to side - plus cover the "T" girder ends. To add strength to the bottom edge of the blades, I cut two lengths of the SHSC-6 sheet stock as shown in figure 4 and cemented them in place.

Construction of the plow is now finished and it's time to paint and letter the car body. If you want to keep the factory graphics, just add weathering and a clear flat finish to the car body, paint the spreader parts flat black and finish them with clear gloss to help the snow slide off. If you plan to re-letter the car, it is best to remove the factory graphics and letter the car body before you add the spreader blade assemblies. Now all that's left to do is screw the underframe back under the car body, put the trucks back on and wait for the first snowfall!

This article is not intended to be a step by step account of how the plow was built - but rather a general idea as to what can be done with a few parts and a little imagination. The locomotive pilot plow I used can be purchased from Norm Grant. There are

no catalog numbers, just ask for the plow with Kadee coupler for \$26.95 or without coupler for \$17.95. Prices include shipping. Call or write: By Grant, 1709 Geneva St., Aurora, CO 80010. Phone (303) 343-3055.

I hope you enjoy the combination of steam, plows and snow this winter! See you in the February issue on some frosty, weedy side track.

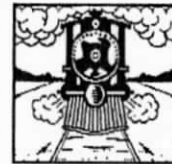


Figure 1

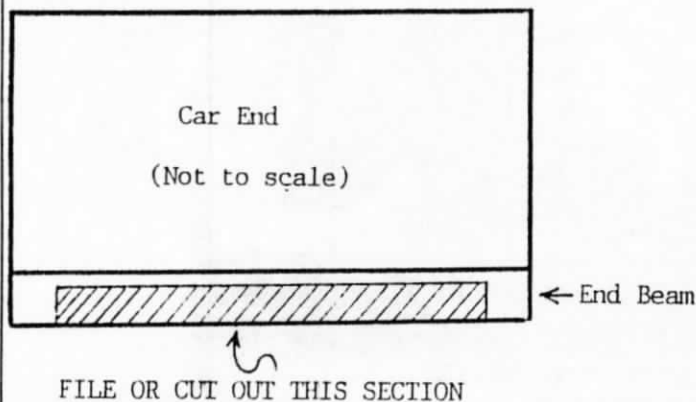
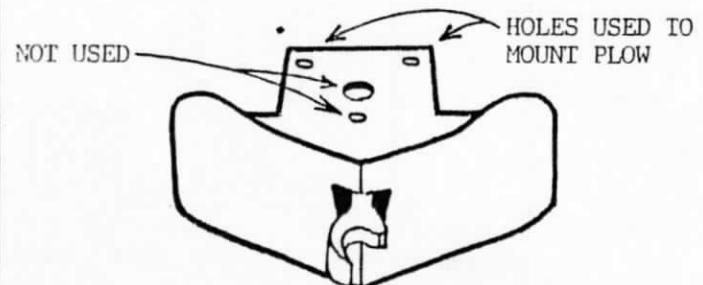


Figure 2

Locomotive Pilot Plow  
(Not to scale)



© By Grant. Used with permission.



**T** ← End View

SHAPE WITH OVAL  
FILE

## Figure 3

(Drawn full size, G scale)

2/32 SHEET STOCK  
CUT & FIT AFTER  
MOUNTING BLADE TO  
"T" GIRDER

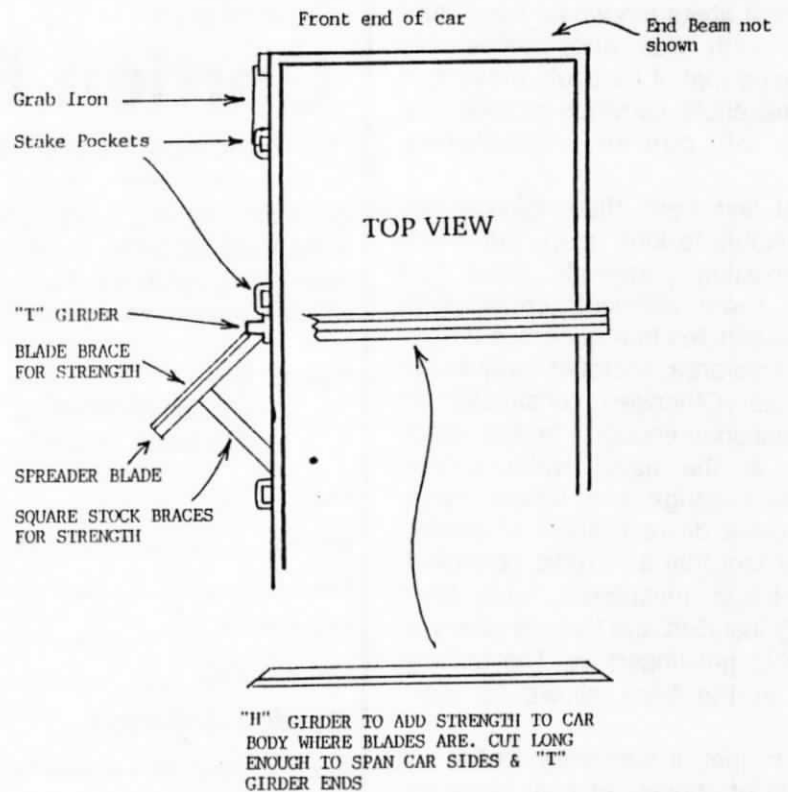
ROUND CORNER  
AFTER SHEET  
STOCK BRACE  
IS MOUNTED



Left side of car only, is shown

## Figure 4

(Not to scale)



# Black Diamond

## A Coal Fired Loco

reviewed by Peter Jones

I have always thought that coal firing was for the experienced few. Indeed, I had gone into print on the subject. Going public means that, if you are wrong, you have to admit it to everyone. Well, I was wrong. It can be for the beginner. John Shawe, of Shawe Engineering, Ltd., has got stuck into the problem and tackled it with some excellent design work.

In collaboration with Merlin Models, who supply the tried and tested mechanical components and platework, he has engineered an easy to fire, coal driven machine. Moreover, it has not been achieved by a massively distorted outline. Everything fits inside a conventional 0-4-0 side tank loco.

I have to admit that I was skeptical about the whole thing. And here, John was quite subtle. He reckoned that, if he could prove it to me, he could convince anyone. He was, of course, absolutely right.....

At first sight, the engine is unremarkable to look upon. But within the existing platework, there has been some delicious engineering. The secret lies in a generous firebox and grate area, secreted away inside the cab. Otherwise construction is conventional enough. In the office there is the usual water gauge, pressure gauge and blower valve. The piece de resistance, of course, is the fact that it is radio controlled. All of the mechanics have been neatly installed and there is plenty of room to get fingers in. The existing hole in the back allows for easy firing.

On trial, it was easy to fire - a couple of shovels of coal every ten

minutes, and water put into the side tank with an Enots valve every twenty minutes. There was plenty of time to stand and stare. The engine was in steam for three hours and spent a lot of time blowing off. Using conventional Merlin controls, the loco was perfectly docile and would slowly switch cars onto spurs without fuss.

At the end of the run, the grate was dropped and a hot, well burnt fire was there as witness to excellent combustion.

I have to say that the engine is just about the best presented that I have ever seen. It comes in a large fitted wooden case, which includes absolutely EVERYTHING that is

needed; radio Tx, electric blower, firing tools - everything right down to a supply of steam coal (it has been designed to burn commonly available Anthracite grains).

Price is £1685 for the complete package. Further details can be had from: Shawe Steam Services Ltd., Howgate, Kimpton Road, Welwyn, Herts, AL6 9NN, United Kingdom. Credit cards can be used in conjunction with Merlin for payment.



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### Garden Railways

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of his own on this subject, to which he is certainly no stranger!

Dear Editor,

Would readers think it impertinent of me to contribute something to the battery versus steam debate? I have the temerity to do so because it is a subject rather dear to me.

I believe that advocates of battery power make the mistake of defending their cause on the grounds of logic and common sense. The love of steam is ignorant of such things. We with steam in the blood can do little about it. There is something primeval in the forces of fire and water that make talk of economics and simplicity irrelevant. We can argue only with the heart and not the head.

To say that something is better because it is easier and cheaper suggests that the perfect railway would be an HO train set indoors; no need for any worrying whatsoever then. I've been kicking around with steam and battery power for rather a long time now. I enjoy both. But then, I am so hopelessly addicted that I can sit down by a rusty spur somewhere and just enjoy the atmosphere of a quiet summer afternoon without the need of locomotion at all.....

So, Battery Bill, your pocket calculator may be in good working order, but your soul is in need of an overhaul. You stick to your easy life, but don't let's get that confused with the word "better".

Floreat Vapore,  
Peter Jones  
Wales



## Last Minute Arrivals

Just received some samples of Larry Lindsay's new rolling stock kits. These are great! Simple, basic, 4-wheel cars with insulated brass wheels. They leave plenty of room for imagination and creativity, go together very quickly and should track and roll just fine. I say "should" because I just received mine as this goes to press, so I haven't had an opportunity to take them for a test run.

The brass wheels should provide enough weight and mass to help overcome the biggest problem with small 4-wheel rolling stock - a desire to become airborne at the least provocation.

The combination frame and buffer is of solid oak, which also adds heft and durability to the finished car.

Couplers are included, consisting of copper links and brass pins.

The chassis assembly is made of brass, with both axles housings soldered in position for perfect alignment.

These inexpensive kits will be the source of a lot of fun and photo opportunities when they start to appear in many imaginative configurations. (Larry sent one of mine with a sardine can coal gon!) See the Lindsay Machine Works ad in this issue for more info.

## Steam in the Garden Volume One, Number 4

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Peter Jones	Wales
Fred Kuehl	Pennsylvania
Larry Lindsay	Colorado

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## WANTED - DEAD OR ALIVE!

### Creekside Baldwin 0-4-0

(see Dr. Steam column, this issue)

### Contact:

Rich Chiodo  
9 Janvrin Road  
Hampton, New Hampshire 03842

# Ask Dr. Steam

In each issue Dr. Steam will answer your questions on topics relating to live steam locomotives - their history, care, feeding and operation. Send your inquiries to Dr. Steam, %SitG, P.O. Box 335, Newark Valley NY 13811. If you'd like a faster response, include a SASE with your inquiry.

Dear Dr. Steam,

About 5 years ago I attended the annual meeting of the Toy Train Collecting Society of Upstate New York. At this meet a gentleman was demonstrating a live steam G-scale Baldwin saddle tank loco. He was apparently the manufacturer and he called his company Creekside Forge and Foundry. As I recall, the asking price was around \$130. Not being interested in live steam at the time, I passed up this unbelievable bargain as a novelty! The loco seemed to be of excellent quality and an excellent runner. Is this loco still available? What more can you tell me about it?

Rich Chiodo  
New Hampshire

***Rich didn't let his boiler cool down after writing to me, but pursued the investigation and followed up his first letter with another, containing the results of his efforts.***

Dear Dr. Steam,

As a follow up to the note I sent you a couple of weeks ago on the Creekside loco, I wrote Mr. Carlos Grundhoeffer a letter of inquiry about his company and their live steam locomotive. His reply was interesting. It seems he lost his shop space and has not found suitable quarters to again produce the loco. He ended his brief note by

stating that it was indeed "....a shame."

I wonder what it would take to bring this locomotive back into production?

Rich

***No doubt about it, Rich.....a real shame. I haven't seen one of these locos, but from what I've heard and read they were fine little steamers. And at the price you mentioned (\$130) it was certainly a bargain. If any of our readers have any further info on this little loco, how about sharing it with the rest of us? Just drop a note to Dr. Steam and I'll see that it gets into print.***

Dear Dr. Steam,

I would be very grateful for any information that you could give me on the construction of a single flue boiler.

My boiler is 6" long, 2" dia., wall thickness 1/16". The flue tube is 7/8" outside diameter and is referred to as 3/4" copper tubing, 1/32" wall. The flue tube is set as low as possible to the bottom of the boiler with a little water space below the tube. My concern is not having any water over the flue tube at the end of a run. I suspect that the same thing occurs in commercial locomotives, but I'm not sure.

Any help on designing a burner would also be appreciated.

Walter Routh  
Kansas

***Walter, I presented your question to small scale live steam expert***

***Pete Olson of West Lawn Loco Works. Pete agreed that commercially available locos do indeed end their run with the flue tube at least partially uncovered. This should present no problem unless the boiler runs completely dry and the burner continues to burn. The good news is that it becomes quite obvious from the behavior of the loco when it has run low on water, and an alert driver will then shut down the burner without any damage to the loco.***

***Some commercial loco builders will design safety features in, such as the gas tank on Roundhouse locos being sized so as to run out of fuel before the boiler runs out of water.***

***As to your question about burner design, on this point I refer you to several articles on this subject in 16mm Today, the magazine of The Association of 16mm Narrow Gauge Modelers. There have been many excellent articles by such experts as Malcolm Wright, designer of the Wrightscale line of locomotives. Mr. Wright prides himself on building nearly silent burners. If you have an interest in building your own boilers and burners, I strongly recommend that you join the 16mm Association and avail yourself of the many discussions and articles contained in SMT.***



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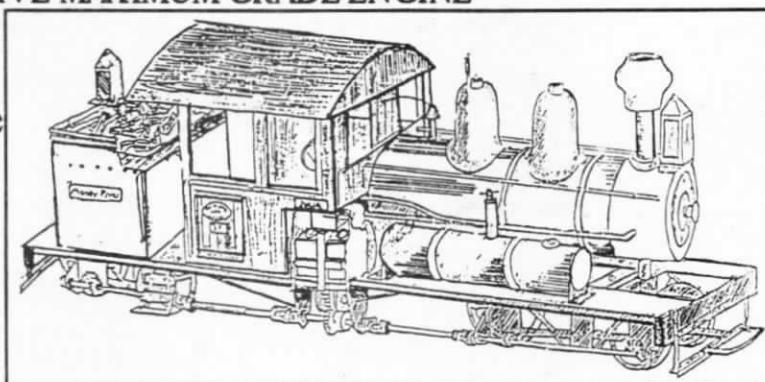
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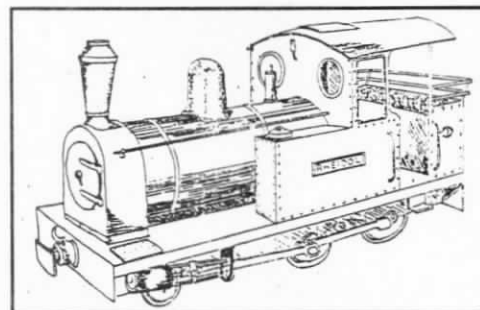
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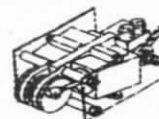
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