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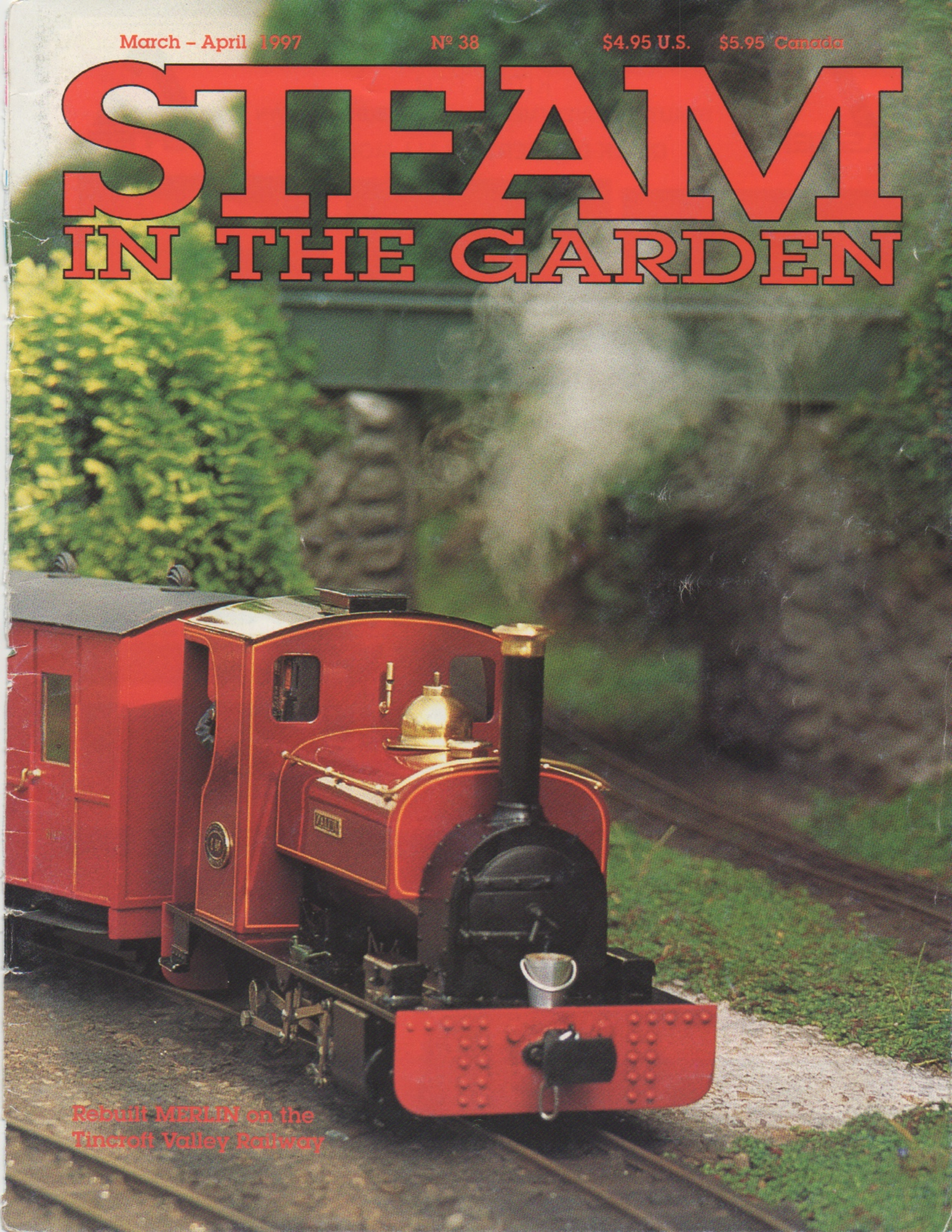

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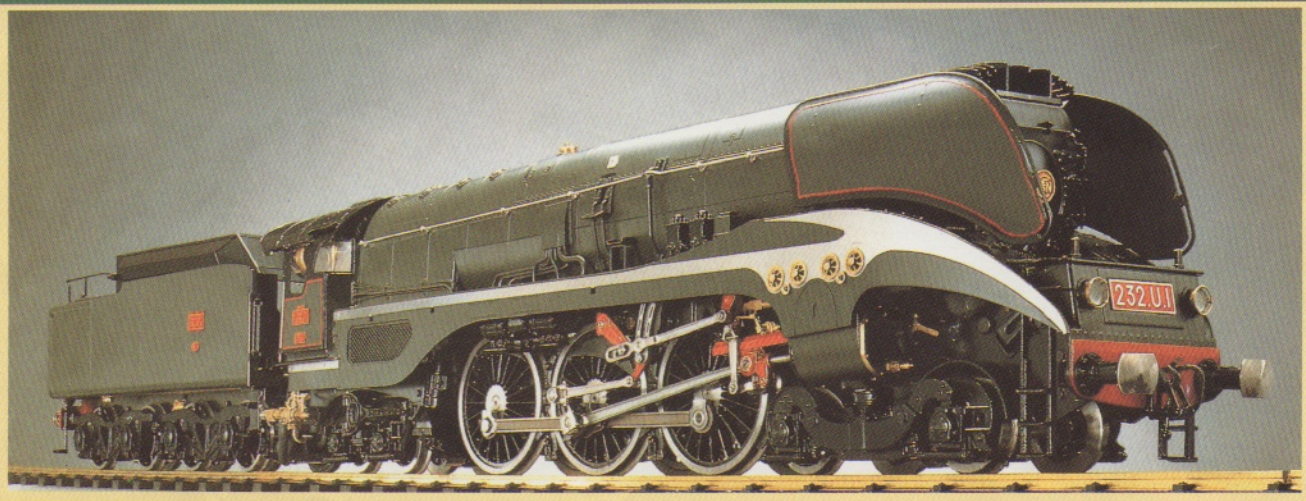

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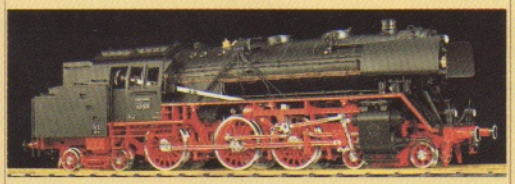

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ON THE COVER:

The Market Special! JILLIAN draws a train of compartment stock away from Dolcoath Tunnel on the way to market on a sunny summer morning. The Merlin Monarch saddle tank loco, stripped completely & rebuilt by Steve Morris, has various Pearse Loco parts, such as cylinder backplates. Steve's Tincroft Valley Railway is built in a traditional Cornish cottage garden in Camborne, and features all scale plantings.

Photo by Tag Gorton

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CAD (and other) drawings in this issue by:
Harry Wade, Peter Jones & Joe Leccese

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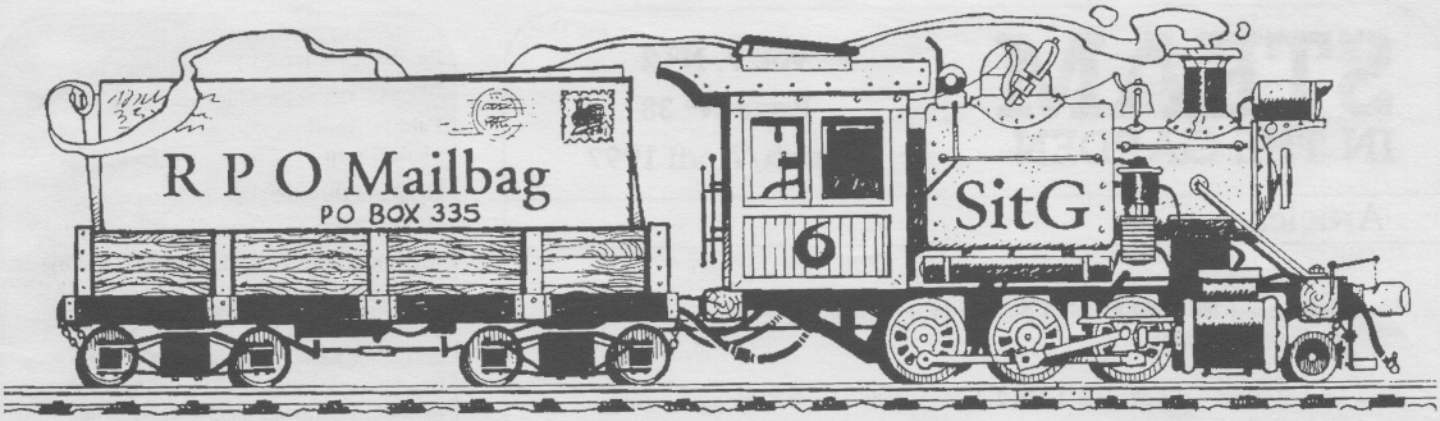


Letters from readers are welcomed and encouraged. Offer advice, encouragement, suggestions or constructive criticism. Tell us about your current project (and don't forget the photos!) or just share live steam experiences. But please keep your letters to a reasonable length so everyone has a chance to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

* * * * * *

Norfolk, England

Dear Ron,

Thank you for your e-mail. Yes, it would be a great idea to let the public know the situation with Jane locomotives. Due to the huge success of the Jane locomotive, demand is high and this has given a constant backlog of orders since its introduction. The production rate of the locomotive is limited by the capacity of I.P. Engineering. To increase the capacity would raise the overheads and considerably increase the cost of Jane - and we want to keep this reliable little engine as cheap as possible!

As with many small businesses, the workload falls to very few people, and in this case that would be the proprietor and Jane genius - Ivan Prior. Due to an unexpected operation during November, Ivan has been banned from his workshop by his doctor.

Hopefully, Ivan will be back cracking the product out within the next few weeks and the back orders will be fulfilled at the earliest possible time. We expect that we will then be able to supply the Jane locomotives in weeks rather than months.

Hope the above clarifies the situation, if you need any further information, please give us a shout.

Regards,

Richard Longley
Brandbright Ltd.

Oak Harbor, Washington

Dear Ron,

I have really been enjoying your magazine. The last issue came at the perfect time. I was a bit under the weather with the flu, and the mailman dropped off that wonderful white envelope that brought some joy in my time of misery.

Here are a few slides to consider for use in the magazine. On a wonderful (but rare) snowy day on the Rhone & Black Diamond RR, we captured the line's M. H. Porter on the mainline, with Hanover Mountain in the background.

Thank you,

Stan Kopiczak

Wick, USA

Dear Ron,

Kevin O'Connor was not correct to advise operating a model locomotive at the lowest possible boiler pressure. Doing so aggravates cylinder condensation, already a particular problem for small locomotives and a major source of heat loss. Heat loss by radiation is small in comparison. Even if the boiler is not lagged, the decrease in radiant heat loss due to running at 1.5kg/cm^2 instead of 2.5kg/cm^2 will only be 10% of an already quite small number and

will be outweighed by the increase in cylinder condensation.

Two factors that influence cylinder condensation are initial boiler pressure and the amount of superheat. The designer should have done what he could on the drawing board to minimise cylinder condensation, but the operator can do his bit by keeping the boiler pressure up. That will then permit running with the smallest possible throttle opening. The consequent "wiredrawing" across the throttle makes the steam drier. That reduces condensation in the cylinders, and the resulting increase in efficiency outweighs any increased radiation loss from the boiler. The loco also runs better with less condensation in the cylinders.

This isn't just my theory – as one of Damon Runyon's characters would say, "You could look it up".

Sincerely,

Al Cohol

Galena, Illinois

Hello Ron:

Steve King's "Ride the Sandy River" in the January/February issue of ***Steam in the Garden*** is a winner. For the growing numbers of two-footers out there Steve's 7/8" scale approach is the ultimate in realism. It "looks right" in nearly every respect. These days all the garden railway manufacturers and suppliers want to cash in on tremendous interest in Maine two-footers. They all use 45mm track, but it seems that any scale will do. The results run from awful to worse. The visual impression delivered by these hasty commercial efforts makes it impossible for the viewer to get a sense of what two-foot gauge railroading was all about. More articles from Steve King are a must for ***Steam in the Garden***.

Brian Alley

Carrollton, Texas

Dear Ron,

I have a question for you. I am working on a trackside water pump and need to use a D-bit to make the seat for the check valve ball. I thought that you wrote a short article about them in SitG, but I could not find the article. Therefore, my questions are:

(we referred Dan's technical questions to the Lord of Crankpin Hall. Crankpin's responses are shown in bold italics following Dan's questions - ed.)

a: To what angle should the end of the D-bit be ground to get the best seat for the check ball?

A maximum of 5 degrees angle and 5 degrees back relief.

b: Does the D-bit diameter need to be the same size as the inside diameter of the valve cavity, or does the D-bit diameter just need to be larger than the opening of the hole that the check ball will seat on?

It needs to be a very close fit to the diameter of the valve cavity, otherwise there will be no way for it to center itself on the valve seat axis and will likely wallow the hole resulting in an oval or chopped up seat.

I have made a D-bit, but I am not sure if I am doing any good with it. I really don't want to get everything soldered up and find that my check valves don't "check." Any advice you can give me would be greatly appreciated!!!!!

Thanks a lot,

Dan Fuller

The most important part of this process, after you are sure that you have done a good job of making a perfectly round and sharp seat edge, is the seating or lapping of the ball to the valve seat. The valve will leak unless the seat is properly finished. There are a number of methods for doing this and everyone seems to have their favorite. The old method of seating the ball used to be to put the ball on the seat and give it a smart whack with a brass mallet. That is no longer the recommended way, but here are three methods that are:

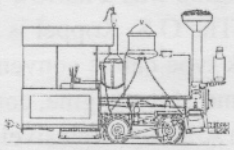
Using a new ball of the same size needed for the valve, glue or solder it to the end of a length of metal rod smaller than the ball diameter. Then:

1. With the rod in the drill press set on low speed, liberally coat the ball and seat with Brasso and run the ball on the seat for a few seconds.

2. With the rod in the drill press set on very low speed, place a single layer or two of common newspaper wadding on the seat and run the ball on the seat for a few revolutions of the drill press.

3. Using a mild abrasive such as toothpaste or Bon Ami cleanser, run the ball on the seat for a few revolutions of the drill press, followed by a spin with some Brasso.

Afterwards, discard the lapping ball, wash away all abrasive or solutions thoroughly, and then install a brand new ball in the valve. An attempt to reuse the lapping ball will usually result in leaks.



WHAT'S NEW?

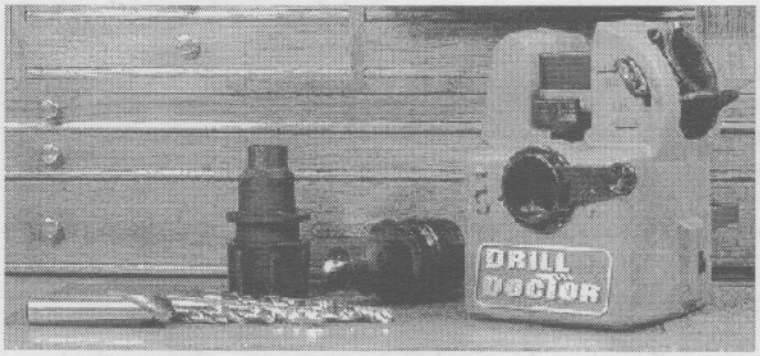
Neil Rose, General Manager of **Finescale Locomotive Works, Marlborough, England** has appointed **IE&W Railway Supply** as the exclusive agent for their products in the US. IE&W Railway Supply is also the east coast representative of **Barrett Railways of Hermosa Beach, CA. IE&W Railway Supply can be contacted at 38200 Charles Town Pike, Purcellville, VA 20132-2927; phone 540.882.3886 / fax 540.882.9670.**

– NOTICE –

Effective immediately, **BERKELEY LOCOMOTIVE WORKS** will close and cease production of the CRICKET STEAM MOTOR until further notice. All orders currently on the books will be delivered by July 1st, 1997. Any inquiries can be directed to Mike O'Rourke, 510.849.9284.

LLAGAS CREEK is now importing the Garden Railway Specialties (UK) line of gauge 3 and gauge 1 and 3 flex track. This new track system is manufactured in a UV stable plastic for outdoor use and uses code 330 brass rail held by Euro style chairs which are molded into the wood grained ties. For more information contact **DoodleBug Hobbies Ltd., Dept. G3, PO Box 1235, San Juan Bautista, CA 95045. Phone 408-623-1088 or Fax 408-623-9162.**

Mike Chaney now has a web site that is well worth a look. Check it out at: **<http://wkweb4.cableinet.co.uk/mikechaney>** Mike also has a new e-mail address. You can contact him at: **<mikechaney@cableinet.co.uk>**

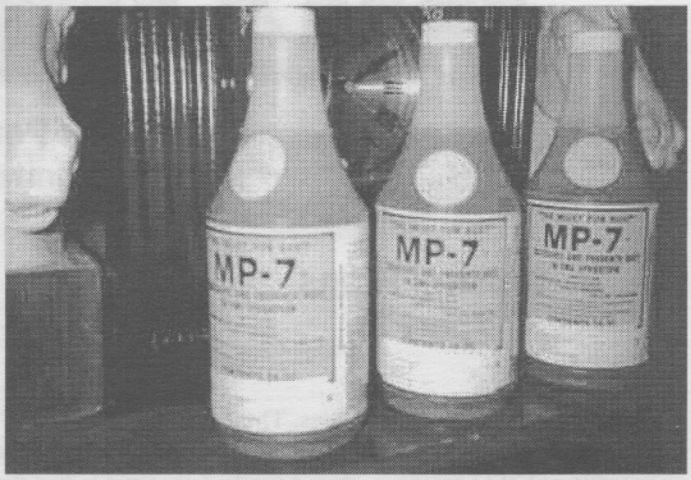


Having a problem getting round holes with your old, dull drills? Nothing is more frustrating (or dangerous!) than a dull drill bit. T.Q.M. Company, PO Box 663, Talent OR 97540, phone 541-482-6583 – Fax 541-482-6304 or e-mail tqmco@medford.net has the answer! Now even the home-shop miniature railroader or live steamer can sharpen drill bits without paying big bucks. T.Q.M. Company's model #750 affordable drill bet sharpener, Drill Doctor, sells for just $199.00. This American made drill bit sharpener sharpens drills from 3/32" up to 3/4". A diamond wheel is standard so you can sharpen HSS, cobalt and carbide bits. A selector switch gives you a choice of two standard points, as well as the option to split the points of the drill bit. Parabolic, masonry and standard twist drills can be sharpened on this machine. The affordable drill bit sharpener comes with a 90-day factory warranty, a 40 minute video and a 58-page textbook on the use and care of twist drills. This is a professional model and is not available in hardware stores. For more information, contact T.Q.M. Company.....and please don't forget to tell 'em that SitG sent you.

Our European connection, Thomas Hentschel, informs us that one of the more interesting live steam exhibits at the Nuernberg Toy Fair was by **Spring, Bahnhofstr. 105, CH-5430 Wettingen, Switzerland.** Spring has just released a new gauge 1 model of the class C 5/4 steamlocomotive, built in 1906 by the Maffei locomotive works in Munich for the Gotthard line of the Swiss railroad. The model from Spring comes either as a gas-fired live steam locomotive, or with an electric motor.

O.S. Engines Mfg. Co. Ltd., 6-15-3 chome Imagawa, Higashisumiyoshi-ku, Osaka 546, Japan - phone 81-6-702-0225 or fax 81-6-704-2722 announces a new addition to their fine quality line of miniature steam locomotives. The full-size prototype of this engine was a narrow gauge locomotive built by Orenstein & Koppel and delivered to the Igasa Railway Company in 1913. The O.S. Koppel is a faithful replica of this veteran loco, accurately scaled down to one-seventh of full size. The open deck type cab is conveniently "user-friendly" for the driver, and the side tanks, plus a bottom tank located within the main frame of the engine, contain sufficient water to run the engine for over 2km non-stop. The O.S. Engines line is available in North America exclusively from **Rio Pecos Garden Railroad Co., 27136 Edenbridge Court, Bonita Springs**

FL, 33923 - phone 941-495-0491 or fax 941-495-7264.



Favorite steamer, tools, automobile or what-have-you gotten rusty? T.Q.M. Company, PO Box 663, Talent OR 97540, phone 541-482-6583 – Fax 541-482-6304 or e-mail tqmco@medford.net has the solution! MP-7 dissolves rust with a safe mixture of phosphoric acid. It is used by the U.S. Navy and has passed the ASTM B117 Salt Spray Resistance test. Will not burn your skin, safe for the environment. 24 oz. container $10.00. Rust Doctor inhibitor is used after you have applied the MP-7 rust remover. Rust Doctor puts on a rock hard coating that is flexible, yet seals and protects, forming a waterproof barrier. Rust Doctor bonds to all wood, fiberglass and metal surfaces, fills voids and self-levels. $10.00 for a 4 oz. container. For further information, contact T.Q.M. Company.....and please tell them that *Steam in the Garden* sent you.

ASTER HOBBY CO. INC., 1-13-34, Hakusan-cho, Midori-ku, Yokohama, Japan 226 is pleased to inform you that they have decided to that Aster has at last decided to produce the USRA Mikado (2-8-2 wheel arrangement). The dimensions will be faithful to 1:32 scale, and the quality of the parts shall be high (i.e. the wheels to be made of stainless steel castings, side rods of stainless steel or nickelchrome castings). The kit shall be designed to be easily assembled. The kit should be as easy as our original Schools class of 21 years ago. Delivery is expected to be in summer of 1998. For more information, or to place your order, contact your local Aster dealer or Hyde-Out Mountain Live Steam, 89060 New Rumley Road, Jewett OH 43986 - phone 614-946-6611.

Digital Video Images, Inc., PO Box 2584, Littleton CO 80161-2584, phone 303-220-8998 has released a new video featuring fellow live steamer and garden railroader Alan Olson. The video, Weather With Chalks, starts with a review of the materials required to add the character and charm that is created by modeling the effects of weathering. Step-by-step instructions illustrate simple dusting techniques through hadvanced alcohol washes. Each method is explained clearly, and is demonstrated on a piece of rolling stock, a pickup truck or a small structure. Several interesting examples show what can be achieved by using the information on the tape. The VHS tape runs approximately 45 minutes and sells for $24.95.

GAZING INTO THE FIRE

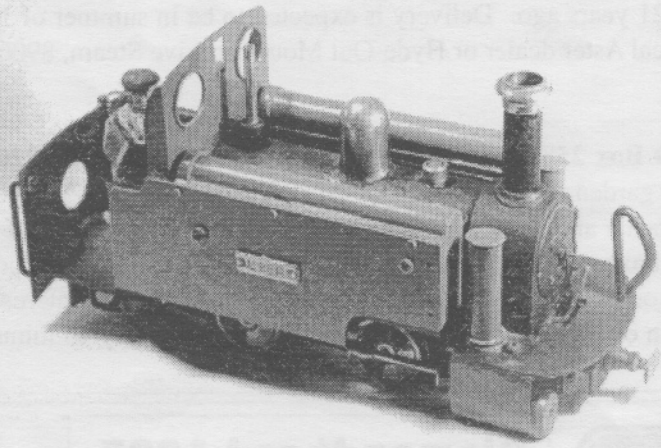
by Peter Jones
photos & drawings by the Author

Kissing Frogs (part 3)

We are going to need new axles. These are made from 5/32" silver steel or precision ground mild steel. Figure 10 shows that we just file a slight taper on each end (in the lathe) and radius the corners off a tiny amount. This will make the axle the right fit in the wheels.

For a deluxe job we can drill the ends of the axles 1/32" dia by 5/16" deep. A 3/64" hole is drilled radially in the axles (as in figure 11) to meet this hole. A hypodermic syringe can then lubricate the bushes. This is a useful ploy for other model steam engines.

The crankpins, even though they have been tapped out from the wheels, will have belled-out ends. This will need attending to before we can replace them. Fortunately, the three-jaw chuck seems to have been invented expressly for this purpose. The pin is held in the drill chuck, fitted to the tailstock. This is brought up until the other end is located in the 3-jaw. All that is now needed is a small tightening of the jaws, as in figure 13, and the job is done.



"ALBERT", one of the author's modified Mamods.

The pins are a slack fit in the crankpin holes and need locating with Loctite 'Nutlock' or similar. NOT SUPERGLUE!!! Now, provided that you haven't lost them, the circlips need to be put in place on the crankpins. This is important. Otherwise, when you come to rivet the pins in place, they may collapse.

A 2.6mm hole is drilled somewhere in our 'dismantling jig' (Fig 1, Part I, SitG Nº 34). A little pip of a punch gives the first stage of riveting. You will notice that the wheel has been packed out from the jig. The second stage of the riveting is to use a conventional punch to peen out the ends.

REMEMBER: When you refit the wheels, those on one axle have short crankpins and the other one has long crankpins. Yes, I know it's obvious, but.....

The wheels are reassembled in our old friend, the U-shaped cutout on the jig. The area of the frames adjacent to the axle hole must be well supported and hence the work is done at the deepest part of the 'U'. **REMEMBER (AGAIN)** that the wheels carrying the long crankpins go at the **FRONT** end of the frames.

We now have the two frames floppily held together by the axles and this needs prompt improvement. So the middle spacer tube is screwed in place. The chassis is stood on a flat surface and checked for wobble. Rectification is easy. One of the screws holding the frame spacer is slackened off and slight downward pressure will force the frame square. Without removing the pressure, the screw is tightened up again. Ah me; if only other model chassis could be trued up as easily as this.

Right: let's take a time out to check that things are right. The two front wheels have the long crankpins and one frame isn't upside down relative to the other.

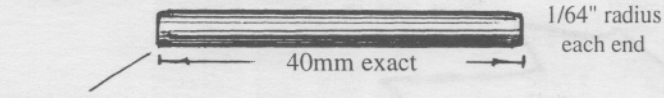
So now we turn to getting the wheels quartered. Put the coupling rods and washers on one side only and slip the little circlips in place. Now try and fit those on the other side. Unless someone up there thinks very highly of you, they won't fit. Take the trailing axle and rotate the wheels against each other until the crank pins are set at 90° to each other. Circlip pliers engaged in the cast-in holes are the perfect tool for the job, but long nosed pliers will do. You could make up a couple of simple tools yourself...just a couple of round pegs projecting from a bit of flat bar at the right places.

Because you took the trouble to make the wheels a really good fit on the axles, you should j-u-s-t be able to rotate them but, once set right, they shouldn't move on the working loco.

The front axle is now attended to. With a little trial and error, you will arrive at a situation where, once the coupling rods are slipped on, all four wheels revolve without binding. It is worth reminding ourselves that whilst 'quartering' means 90°, in practice a degree either side of this doesn't make any difference, provided that the front axle angle is the same as for the back one.

This work will leave us with a rolling chassis that should trundle up and down a test track sweetly.

Fig. 10 **Axles – 2 Off**



File slight taper each end, approx. 1/16" long

Fig. 11 **Optional oil holes**

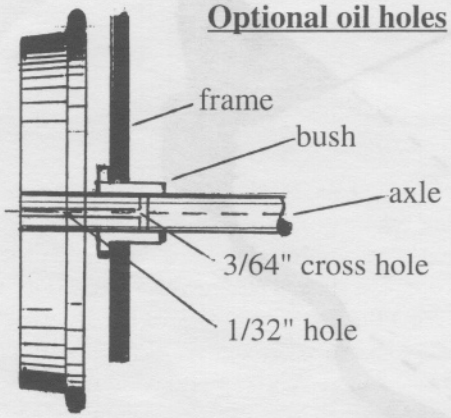


Fig. 13 **Compressing the Crankpins in the 3-jaw Chuck**

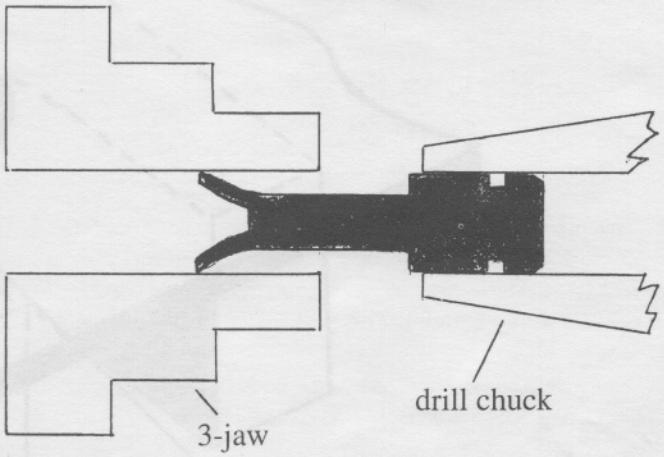


Fig. 12 **Crankpin Assembly Punch**

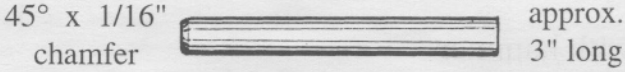
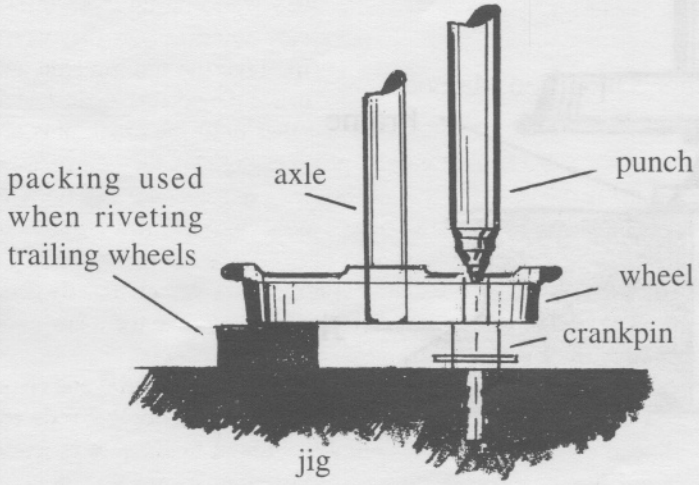
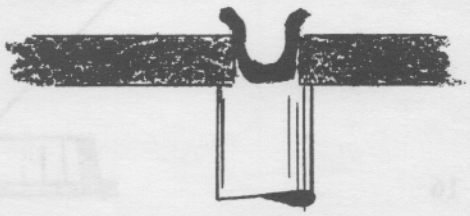


Fig. 14 **Riveting the Crankpins**



Crankpin After 1st Stage of Riveting



Crankpin After 2nd Stage of Riveting

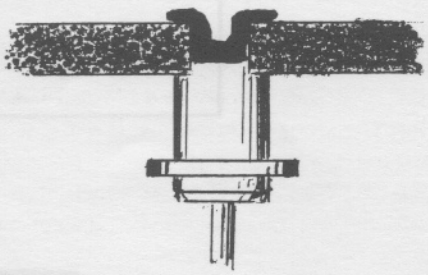
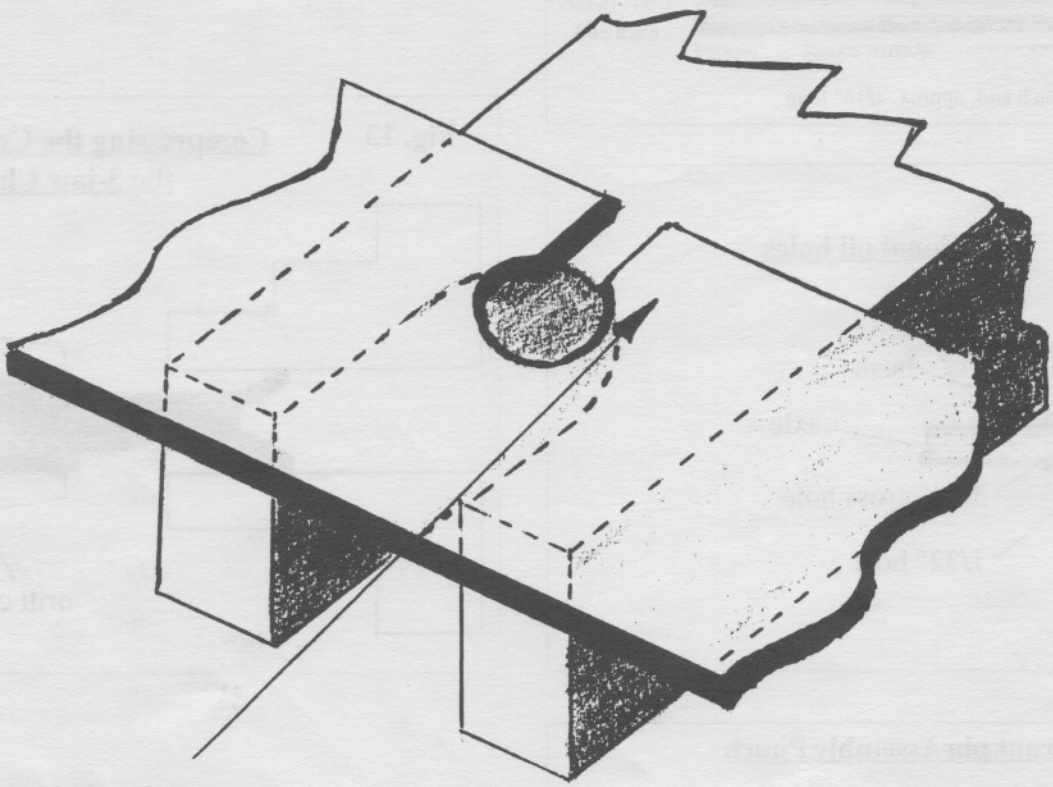


Fig. 15



This part of the frame rests on solid material

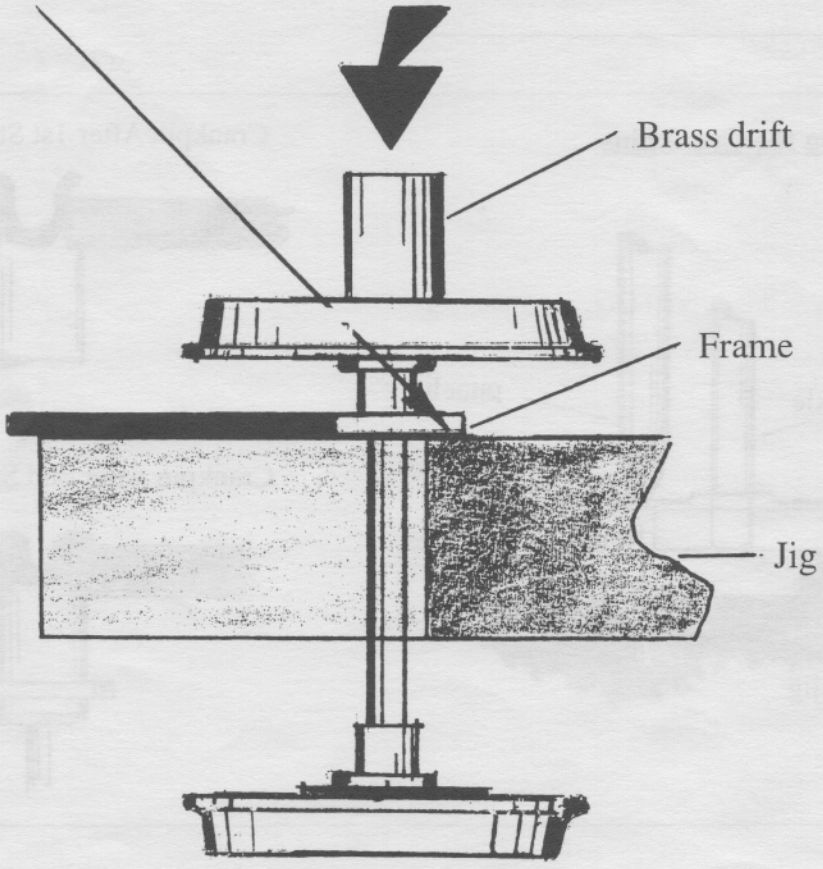


Fig. 16

1997 CALENDAR OF EVENTS

May 24 & 25, 1997 – Pennsylvania Live Steamers Memorial Day Steamup, Route 29, 1 mile north of Route 113, Rahns, Pennsylvania. We are currently building a permanent gauge 1 track on site. Come see our progress and run on the portable double track mainline with steaming bays, turntable and storage tracks. Also available – ground level tracks for 1/2", 3/4", 1", 1-1/2" (7-1/4" gauge) scale trains. Food available on site, lodging available nearby. For more information, contact Harry or Paul Quirk, PO Box 215, Springtown, PA 18081. Phone 610-346-8073.

May 30 - June 1, 1997 – National Spring Steamup, San Jose, California, USA. Come enjoy three days of live steam action as live steamers from around the world converge on Silicon Valley. Gauge 1 and gauge 0 tracks in abundance amid the unbeatable climate and surroundings of Northern California. The Bay Area is unequaled for easy access, exciting atmosphere and predictably great weather. For information see our ad in this issue, or contact Richard Finlayson, 2408 Grandby Dr., San Jose CA 95130 - phone 408/871-0318 (evenings) - e-mail: richardf@steamup.com - On the Web: http://www.steamup.com/steamup

June 20-22, 1997 – 4th Annual Hobo Gathering,"A Large Scale Narrow Gauge Symposium", in Durango, Colorado. Come to the narrow gauge capitol of the world and enjoy a 3-day extravaganza of large scale model displays, how-to seminars, layout tours, tradeshow and much, much more. For more information contact Renee Varble, Co-Chairman, 32496 Highway 550, Durango, Colorado 81301 – phone 970-259-5233 or fax 970-247-5715.

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

The Fitter's Bench

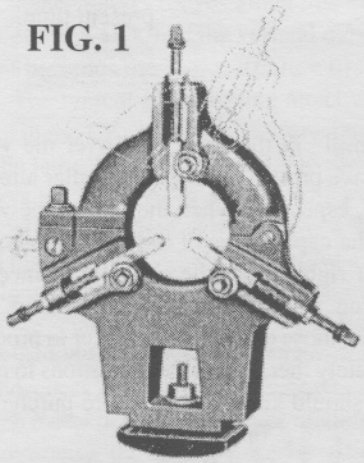
by Crankpin

illustrations courtesy Clausing Tool Co.

The Lathe Finale

This month we will close our lathe articles with a description of three of the less well known lathe attachments. The first two of these are the steady rest, which is shown in Figure 1, and the traveling or follower rest, shown in Figure 2. Both of these rests have the same function, which is to support unusually long, circular workpieces while they are being turned.

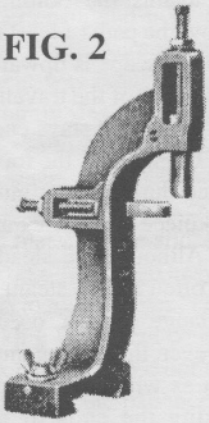
FIG. 1



The steady rest, sometimes called the fixed steady, is used when the work setup presents the condition of excessive overhang. Technically, overhang is the distance that the spindle mounted hardware, such as chucks and the material being machined, project beyond the front spindle bearing. As overhang increases, the spindle, and whatever is mounted on it, tend to become "floppy" and rigidity, and by extension accuracy, are reduced. For our purposes today we will take overhang to mean the distance that a workpiece projects from the chuck jaws. Just about everything we put in the chuck must have some amount of overhang otherwise we wouldn't be able to get to it with a tool to do any cutting at all. Also what we chuck up usually has such a proportionately small percentage of its length projecting that it is essentially a part of the chuck body and therefore assumes the rigidity of the chuck. That of course is crucial for lathe turning since we rely on this rigidity to force the tool to cut the metal.

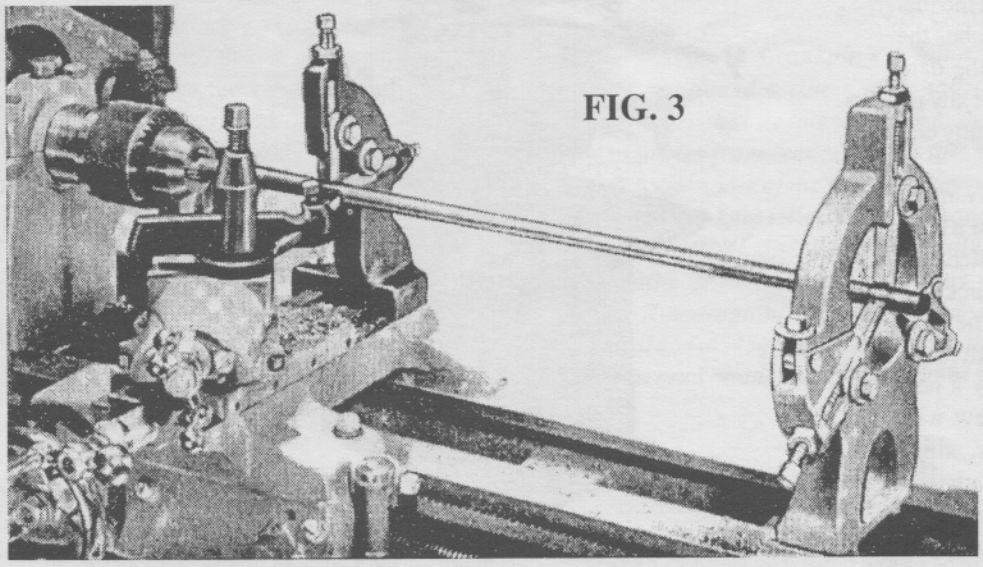
Excessive overhang, on the other hand, occurs when the workpiece projects beyond the chuck jaws far enough so that it loses any rigidity it had on its own and can no longer rely on its own stiffness, or the grip of the chuck, to lend it rigidity and hold it in place. Both Figures 3 and 4 show examples of this condition where you can see that the workpiece has virtually no stiffness of its own and derives little rigidity from the chuck. Without additional support at its unsupported end, the workpiece will not only escape the cutting tool, but by the time your lathe reaches speed it will be flailing about in the air. Before this can occur, the steady rest is installed to lend the required additional support and to provide the rigidity lost due to the distance from the chuck. The lathe operator determines where along the work the additional support is needed and the fixed steady in bolted down in that place. The turning is done and the steady is then removed.

FIG. 2



The fixed steady is normally made with its base machined to fit the top surface of the ways which allows it to be bolted directly to the bed. The top half of the head of the steady is usually hinged at one side and can be opened so that after being bolting in place and adjusted to suit the work, the work can be installed or removed from the chuck without disturbing the position of the steady. The carrier fingers are adjustable as to depth and can accommodate a wide range of work diameters and thus act as chuck jaws and allow you to center the end of the workpiece with good accuracy. Both Figures 3 and 4 show the fixed steady rest in place.

FIG. 3



The traveling steady or follower rest (Fig. 2) attaches to the lathe carriage directly behind the point of the tool bit and moves along the work as the carriage moves along the bed. Its purpose is to provide a backing structure which moves

constantly with the cutting tool in order to prevent the workpiece from "escaping" from its contact with the toolbit.

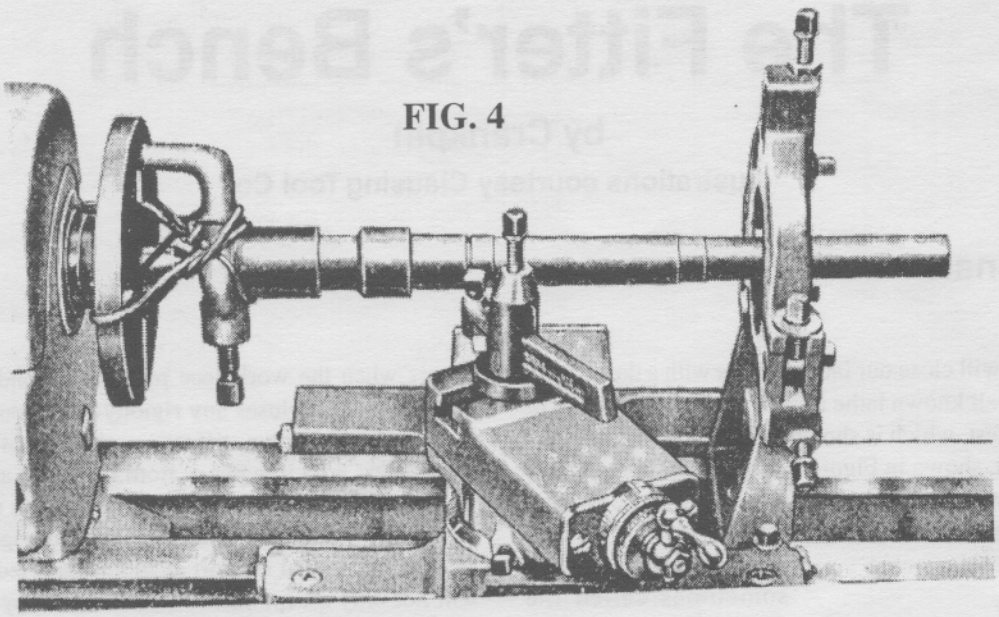
The traveling rest differs from the steady rest in that its base is machined to fit either a pad on the carriage or on the cross slide dovetails, and since it is open on one side, no hinging is required of its head. It has only two adjustable guides because of the direction of rotation of the workpiece. Due to the reactive forces of friction that are created against the toolbit, the workpiece, like water, will attempt to follow the path of least resistance and escape the toolbit. The only path of escape is upwards or outwards away from the toolbit, but the fingers of the traveling steady hold the work in place, insuring that the toolbit stays engaged in the metal.

In Figure 3, the traveling steady provides the rear support required during a continuous longitudinal cut where otherwise the workpiece would flex away from the toolbit.

Although the steady rest and traveling rest are not used all that often in live steam work, and that would be particularly true of Gauge 1 work, occasionally, however, there is a genuine need such as when trimming and recessing the ends of a copper boiler shell. Even at an overall length of only 7" to 8" for a Gauge 1 boiler, there will be too much material free of the chuck jaws to turn without a high risk of digging in. If set up at the distant end of the boiler tube, the steady rest will reduce the danger of digging in to practically nil and will result in consistently better work.

The rests are usually made by lathe manufacturers for a lathe in their own range of machines. It would be the purest luck if a rest from one maker fit the lathe of another without modification. If one is planning to buy a new rest, it is best bought new with the machine. However, since rests are the least used lathe accessory, depending upon what type of jobs you do, and therefore suffer the least wear, they can often be found orphaned by former owners and in fine shape for a fine price. One final alternative, especially for those in the UK, is to make a steady rest from castings offered by suppliers to the model engineering trade. I know of no such castings made in the U.S. at the present time.

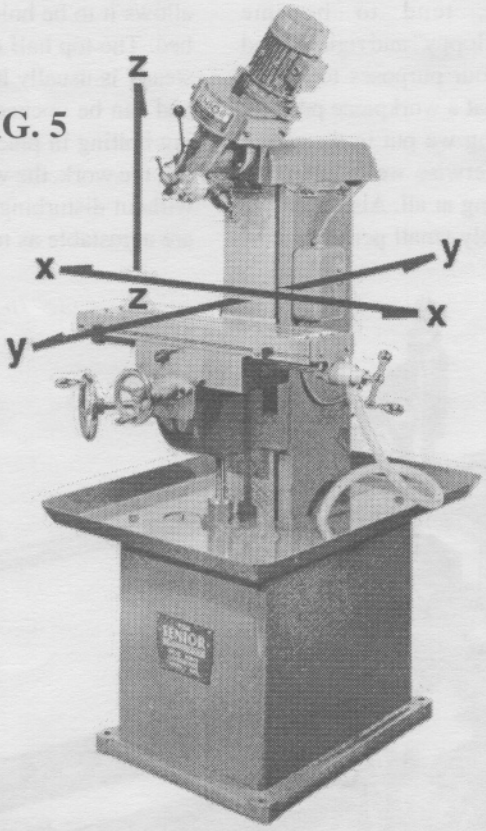
FIG. 4



Milling in the Lathe

One can, of course, "mill" in the lathe, and over the years lathe milling attachments have proven to be quite popular alternative to the milling machine, especially when the size of the work to be done can be fit into the capabilities of the lathe. Few of us can pop for a proper miller right out of the chute, and since we must at some point go milling, another means must be found. The milling attachment will allow those of us with no miller to proceed with a project, but unfortunately there are some limitations to milling in the lathe which you should know about before purchasing or using one.

FIG. 5



Before we dive into this perhaps I should explain basic milling terminology which will apply to any "milling" setup. In any milling setup there will be three cutting planes or "axes". These will be X, Y, and Z. In Figure 5 you will see a conventional vertical milling machine with the axes marked. The X-axis refers to the longitudinal direction of table travel, from right to left as you face the machine. The Y-axis, then, is perpendicular to the X-axis and refers to movements made across the X-axis. In a conventional milling setup, both the X and Y axes are in the horizontal plane. The Z-axis is perpendicular to both the X and Y axis and is in the vertical plane. When milling in the lathe this coordinate system is laid on its back. The milling

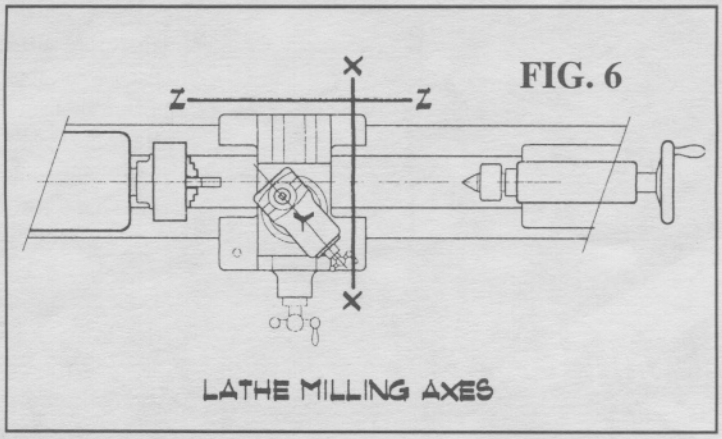


FIG. 6

LATHE MILLING AXES

cutter is held in a spindle collet or in the chuck jaws, thus the lathe center line becomes the Z axis and the carriage, which is now acting as the "knee", moves along this axis. The lathe cross slide becomes the X axis, and the vertical movement of the milling attachment becomes the Y axis. (Figure 6)

The typical lathe milling attachment, also called the vertical slide in the UK, is usually designed to be affixed to the cross slide of the lathe. Some are clamped to the topslide or compound slide, others are installed in place of the topslide. A very popular U.S. model by Palmgren (Figure 7) is sold as a universal attachment and installs on the topslide by using a crossbar through the lantern toolpost to clamp it in place. Although milling attachments such as this are relatively inexpensive and less time consuming to install, they lack rigidity and can sometimes present problems when there is looseness in the lathe slides or when one attempts to remove too much metal in one pass. Other models are designed to be installed by removing the topslide and installing the milling attachment in its place. Atlas, South Bend, Myford, Boxford, and many others install in this way (Figure 8) and the result is a much more rigid installation, although at higher cost.

I referred in the first paragraph to some limitations and drawbacks to the use of the milling attachment or vertical slide, and these are limitations of strength and size. The milling attachment is designed to do a certain job within size restrictions and to demand more of it than it was designed to do is asking for trouble. For instance, an attempt to take too heavy a cut will place a greater demand upon the rigidity of the tool than it will handle and may stress the setup beyond its design limits, resulting in chatter or ragged cuts. To remedy this, shallower cuts should be taken and this in turn affects the speed at which you can remove metal. This adds additional time to the job and you will need a bit more patience than you might otherwise. Keeping things tight will help with this problem, but even so there is a limit to what snugness will allow you to do.

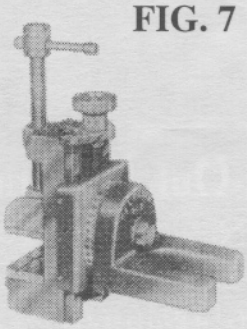


FIG. 7

The other limitation is the size of workpiece which can be held and the length of cut that can be made. In a proper milling machine the X and Y axes usually have the greatest amount of travel, with the Z axis trailing somewhat behind. In the lathe milling setup the Z axis has the greatest travel (although it is least used) and the Y axis has the least. The Y axis is usually limited to the amount of travel built into the vertical slide and, depending upon the particular lathe, could be as little as 2" thus limiting the modeler to 2" of cutter travel in that direction. Again, this is not a problem if the size of the work you have to do is matched to the capacity of the tools you have to do it.

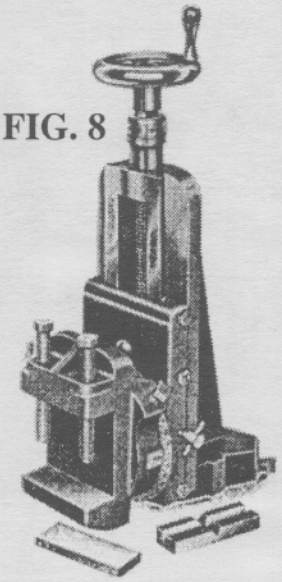
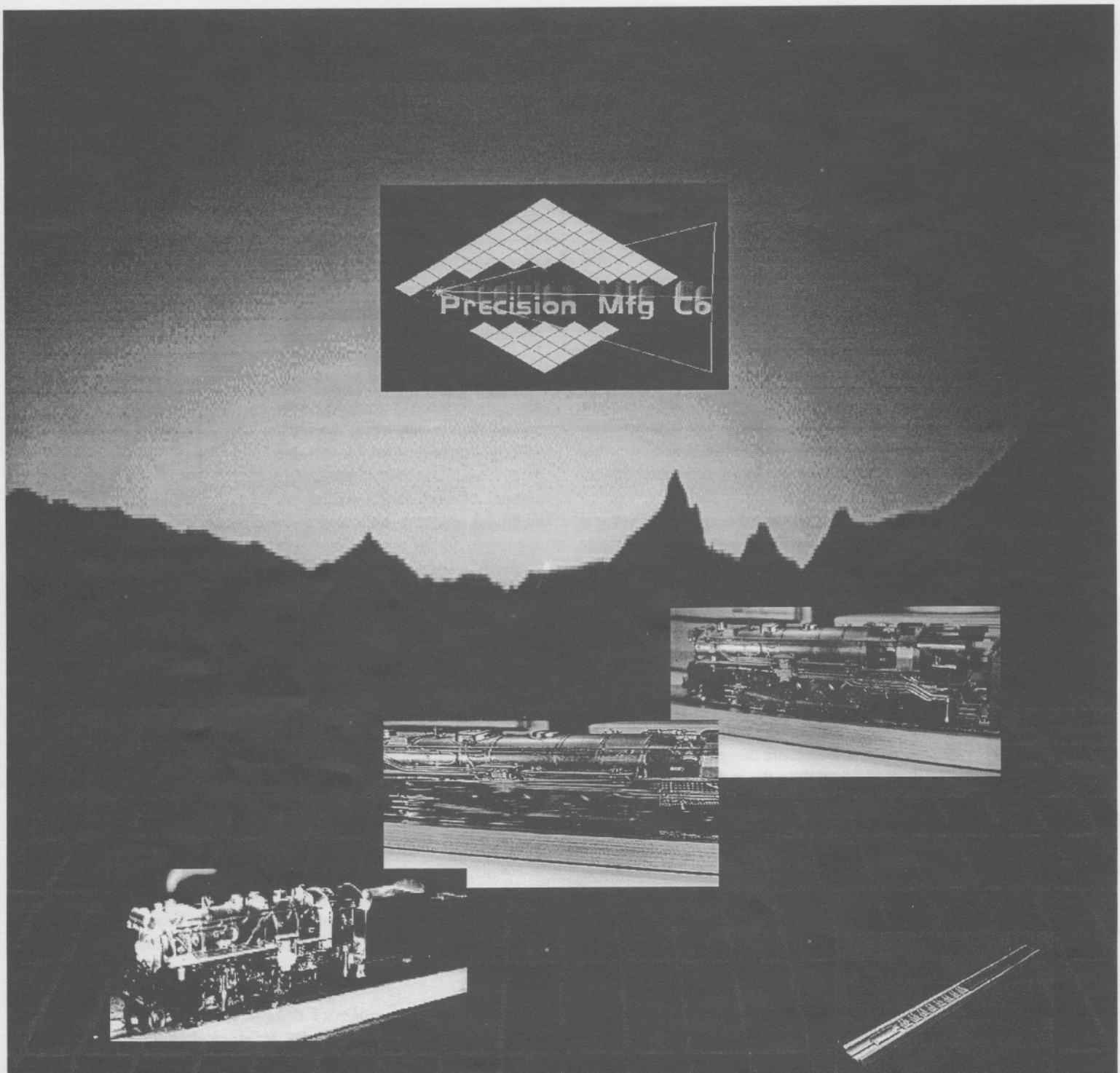


FIG. 8

To underscore some of what I have told you, I once had an unfortunate experience in my A.M. (Ante miller) days when using the lathe milling attachment, which was due to my own optimism about the amount of work that a milling attachment would handle and an underestimation of the rigidity needed to do the work. Ignorance, inexperience, and inattention on my part led to an unfortunate accident. There were no bodily injuries but a new lathe milling attachment was badly damaged and a very expensive milling cutter instantly destroyed, not to mention the humbling of an aspiring young model engineer. The lesson learned was that some of these attachments and their method of installation are more rigid than others and one must be careful to see that they are securely installed and that all lathe slides and components are tightened. You must also take care to go easy and take light cuts, and to mill in such a way as to avoid cutter "climbing". This is particularly true when working in bronze or brass. Aside from this, a great deal of good work can be turned out using the milling attachment when it is used with care and patience, and within its intended limits.

Now, at long last, we are done with the lathe and even though this series has been fairly lengthy, I hope you have benefitted from my notes. Beginning next issue, then, we will hear about the last of the major workshop machine tools, the milling machine and its principle accessories. I will see you then.

Editor's Note: In Crankpin's column in SitG issue Nº 36, the author mentioned a fine quality tailstock dieholder of British manufacture that he has used for many years. We received several inquiries from readers about this item, asking for information as to the name of the manufacturer, whether it was still available, etc. Crankpin tells us that the name of the firm is ARRAND ENGINEERING, and they make really first rate, no-frills Morse taper lathe & mill accessories. They can be contacted at The Forge, Knossington, Oakham, Leics. LE15-8LN, U.K. - phone 011-44-1664-454566. If you contact this firm, please tell them that you read about them in **Steam in the Garden** ***magazine.***



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Getting Started With FRANK S.

Part IV
by Kevin O'Connor

After the fun comes the cleanup - here's how to do a professional job

Super cleaning the locomotive for storage or display can be done at home in the kitchen sink. Locomotives that arrive in filthy condition here at Unit shop are treated to a kerosene shower to loosen caked on crud and dried out, congealed grease and oil. I use water white kerosene in a hand spray bottle similar to the window cleaning variety over a 24" diameter automotive lubricating oil drain pan which catches the runoff. Spray the top, sides, bottom, and ends till the locomotive is saturated with the kerosene. I even douse the smokebox! Let the locomotive rest with the covering of kerosene for ten minutes or so.

The next step is the kitchen sink. Place the locomotive in the sink's tray and turn on the hot water full blast; preferably using the dish rinsing spray head. Force the hot-as-you-can-stand-it water into every crack and crevice of the locomotive and try to drive every bit of dirt, oil, and muck off the surfaces. Don't forget the bottom and the ends of the locomotive as well. If this cleaning is done properly, all the accumulated dirt will have vanished and a fine patina of kerosene will remain. The kerosene will protect the locomotive from oxidation as it air dries, but will evaporate off over a few days time. As soon as the locomotive is reasonably dry, lightly spray it with WD-40 and wipe it down with a light cotton rag. The WD-40 will displace the remaining water and provide reasonable midterm protection against oxidation. Locomotives that are run regularly can skip the kerosene treatment and you will find that the hot water spray followed by a wipe down with a clean cotton rag will generally suffice. If your locomotive sports R/C control then extreme care will have to be exercised around the electronics and the servo motors; probably best to remove the R/C gear prior to the cleaning process. Go easy on the boiler pressure gauge as well, as they are not water proof and there is no point in fogging up the face glass with either oil or water.

The thrill of operating our small live steamers lies in being the conductor, fireman, brakeman, and engineer all at the same time. Sometimes it reminds me of trying to waltz to a polka. Attention has to be paid to so many interrelating factors, but that is the fun of it. Your ally in doing all these jobs well is your understanding of the physical principles that govern combustion, lubrication, heat loss, relative temperature, friction, and even relative humidity and ambient temperature.

In future Frank S. articles I will discuss some add-on features, such as combustion flue turbulators, "tuned" exhaust tubes (for that big loco sound), glitch free R/C, cylinder cock drains, and onboard boiler fill pumps, but for now I'm going to take a break from Frank S. to write about another locomotive.

Next issue I will show you how to make a ferocious steamer out of your Aster 0-4-2T Baldwin tank locomotive without having to perform major surgery. It involves a slightly altered concept in alcohol burner design and a discussion of fuels and wicking as they apply to our small scale live steamers. I think that you will enjoy another point of view.

A New Railroad & Open Invitation to a Steamup

I have been constructing a railroad in my back garden (as opposed to a garden railroad) since November 1996. It is an elevated affair that varies from 30" to 36" high, and has 12' minimum controlling radii. The construction is innovative as my intention was to defeat the elements and to avoid the pitfalls that I had observed in other gauge one live steam railroads. The mainline is double tracked and there are two yard/steamup bays; one for the inner and one for the outer mainline track. The bays are double tracked and are entered at one end and exited at the other. Traffic will run counterclockwise on the outer main while the inner will run clockwise (the better to show off the best part of a standard Shay). A path parallels the outer periphery of the railroad, and there is a concrete stair that allows access to the inside mainline and its steamup bay.

It is a busy layout as it is imprinted within a 32' by 35' footprint. Adult tulip and mayten trees shield the right of way from the Sacramento summer sun, and selected plantings of various specimens soften the route.

I have named the line the "Sacramento & Southside Rail Road", as I live in the metropolitan area known as the southside (I am located ten blocks from the California State Railroad Museum in Old Sacramento). The S&SRR's logo slogan is "The Route of the Roses".

Opening festivities for the S&SRR are scheduled for the Columbus Day holiday weekend, the second weekend in October, Friday the 10th through Monday the 13th, 1997. I am inviting the readership of *Steam in the Garden* to attend as your schedule permits. I will provide a buffet and suitable beverages in keeping with the traditions required in the opening of a new railroad on both Saturday and Sunday evenings. Nighttime operations are anticipated as the nights in Sacramento at that time of year are quite enjoyable. I understand the realities of other commitments at that time of year, and so if your attendance is not possible then, please feel free to contact me whenever you are in the San Francisco Bay or Sacramento Valley areas so that you might visit and operate a steamer or two on this new railroad. You can reach me at: PO Box 161631, Sacramento CA 95816-1631 or phone/fax 916-447-5433.

Notes From The Backyard

by Rich Chiodo

Tools of the Trade

Having just returned from the Woodstock of Steamups, Diamondhead, the charge of enthusiasm has me stoked. The variety of engines, vendor goodies, shop talk and general good times is hard to beat.

With such a large gathering of small scale live steamers, interesting observations can be made which are not possible in smaller groups. Certainly the dress code needs some work, but that's a whole 'nother article.

I was struck by the endless variety of tools we erstwhile engineers come prepared with to ply our favorite past-time. Since this hobby is inherently fiddly, the tool kit is unavoidable...or so I thought.

The range of support equipment at the National Steamup was thought provoking. On one end of the scale is the minimalist. He shows up with his engine and little else. The remaining attendees are thus challenged defending their meths, wrenches, and fire-sticks for the balance of the day as our interloping engine driver thoroughly enjoys himself.

On the other end of reality is the fellow with the roll-away Craftsman tool chest, replete with electric dispensing pumps for water, meths, light and heavy oil and a favorite beverage! Tim Allen has nothing over this guy.

Somewhere in-between are the rest of us, toting tool boxes, cardboard cartons, expatriated pieces of luggage and custom fashioned carry-alongs. Inside you will find all sorts of neat and interesting gizmos and labor-saving devices, all of which help to make the hobby more enjoyable.

One of the best discussions on the tools of trade I have encountered is contained in the Sidestreet Bannerworks Video, "An Introduction to Small-Scale Live Steam" by Marc Horovitz. This video is still available and is worth a look.

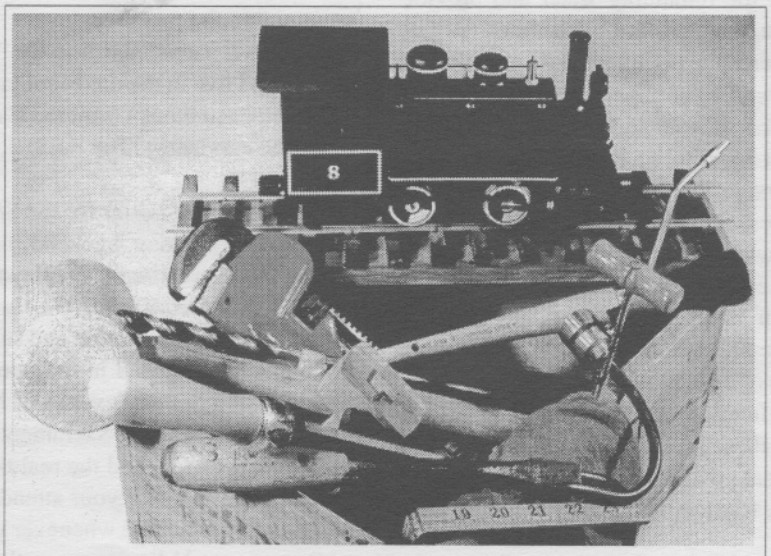
Over the years I have added and subtracted to what gets hauled out to the track. Here, in no particular order, is a descriptive list of necessities which seem to solve most of the problems most of the time. Water, meths, gas, motion oil, steam oil, wick material, and any particular gadget for that special engine go without saying.

Live Steamer Field Kit

● Several shop rags – The red kind you find bundled at your auto parts store. These are cotton, absorbent, reasonably free of lint and cheap. Best of all, they let people know you know what you're doing. Your son's Barney pj's just send the wrong message and probably don't do a good job of wiping up whatever mess you've created.

● Gloves – Live steam engines are hot. Cotton garden gloves work just fine. LGB/Aster packed a neat pair of woven material in with each Frank S. Lovely.

● Flashlight (torch) – A small AA battery job is fine. I have a neat unit which has the bulb at the end of a 6 inch gooseneck. This gets used countless times inspecting various nooks and crannies of the locomotive and as an aid in searching for that 00-90 nut that just dropped into the grass.



The author's own Live Steamer Field Tool Kit, containing such important items as a pipewrench, auger, folding rule, single cut mill file and a Stanley marking gauge. Note the classy tool box – United Shoe Machine Box for #2 eyelets. At least he remembered the most important item...the Creekside Baldwin!

Photo by Rich Chiodo

● Batteries – For the light, R/C, blowers, pumps, etc. Every steamup I have been to, some bloke runs around looking for 15 AA's...including yours truly, on occasion.

● Syringes – Several in various sizes will do for dispensing measured amounts of water and meths and siphoning out lubricators lacking a drain. Don't mix them up. I've tried squeeze bulbs and bottles, funnels and pumps, Syringes are simple and fool proof. A bit of silicon tubing over the tip will be most useful in fitting small openings.

● Gunge Jar – This is a screw top, smallish container in which you dump the effluent from your lubricator, excess

meths, spent matches, etc. Your host will be grateful to you for not having to worry about the damaging effects of steam oil sprayed all over the Clematis.

● Dental Mirror – This works great for peering into the bowels of the loco to determine if the wicks are lit. It also comes in handy with the light inspecting the workings for jams and debris.

● Fire Stick (Barbie Lighter) – Those piezoelectric, butane fired gizmos used for lighting charcoal fires are near perfect for igniting gas fired locos. I use a pistol style flint sparker which came with my Max Hemmens Porter. Must be my "Luddite" upbringing.

● Meths Fire Lighter – This is a must if you own a meths fired loco. Typically, lighting the wicks takes 3 hands and inevitably ends with you holding the loco over your head as alcohol drips down your arm. I solved this problem by fashioning a Q-tip holder. This device holds half of a Q-tip at 90° at the end of a 6" length of coat hanger wire. Dip the tip in meths, light and insert under the loco into the burner area. Inspect with the mirror and...Voila! 95% of the time all the wicks are lit. No fuss, no muss.

● Kitchen (wooden) matches – for when your fire stick fails. If you are really a Type A personality, dip the matches in paraffin, thus making them impervious to water damage.

● A small adjustable (Crescent-type) wrench – By small, I mean around 4" in length with an adjustment range of 1/2" or so. You machinists out there are fainting away, but for removing and tightening various fittings I find this wrench always does the job. With careful use it will not harm your investment. The alternative would be a set of spanners selected to fit every size nut, bolt and fitting you have. An alternative is NOT a set of needle nose or any other pliers. These will certainly guarantee damage to your precious beast.

● Side cutting needle nose pliers – Having said in the previous paragraph what this tool is NOT to be used for, pliers are quite helpful in holding, bending (gently), and extracting nuts, bolts, fittings, piping. The cutting feature gets you out of those situations where you need to strip a wire on your servo connector or cut a paper clip.....uh.....coupler.

● Several small US & metric Allen keys – Through trial and error I ended up carrying around a loose set of Allen keys which fit every grub screw on every loco I own. These are inexpensive. Don't buy the Swiss Army knife set...you won't use nine out of the ten keys included.

● A pair of small scissors - for general cutting and wick trimming.

● Several jeweler's screwdrivers – These smallish flat and Philips blade tools (also called + and -) usually come in sets from a variety of suppliers. Their use is obvious.

● Miniature nut drivers (optional) – I say optional, because most often these come in handy for serious assembly and disassembly not usually performed out in the field. Additionally, the sizes needed to cover US, British and Metric fasteners can be extensive.

● WD-40 – For cleaning, NOT lubricating. When the unthinkable happens and your locomotive goes "on the ground", this aerosol magic potion does a fine job of cleaning off dirt and gunk. Use the little plastic "directing tube" that comes with each can for precision cleaning. You MUST lubricate after use since much of your lube oil will be dissolved away.

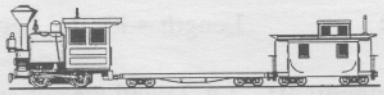
● Paper clips – the universal coupler.

Well that's it...sorta. The above works for me. However, we all would be interested in hearing about what ***you*** have found to be handy.

A few other objects have found their way into the tool kit. The gotta-have factor fades exponentially with time until the prized object languishes in the bottom of the tool tray.

Things like O-rings, nuts, bolts, links, pins, washers, etc. are handy...however, I don't carry "repair items", thus I am not tempted to do field repairs and must wait until I return to the shop where conditions and resources are much better.

Oh yes, the tool box...mine is an expropriated slide projector case with a wine bottle gift box as a tool tray!



LOCOMOTIVE REVIEW – Great Eastern Railway 2-4-2T Class G.69

by Jerry Reshew

TECHNICAL SPECIFICATIONS

Scale:	1:32
Gauge:	Gauge One - 45 mm
Dimensions:	Length – 13.3/4" between buffers, Width – 3.1/4", Height – 5", Weight – 5.1/4 lbs.
Wheel Arrangement:	2-4-2 w/all wheels spoked. Leading axle sprung, trailing axle in pony truck.
Boiler:	Internally fired, single flue with transverse water tube in flue and firebox, dry backhead, silver soldered copper. Tested to 120psi. Capacity – 180cc. Working volume – 150cc.
Fittings:	Regulator, blower, pressure gauge, safety valve, displacement lubricator
Firing:	Chicken feed reservoir with valve providing alcohol to a 3 wick asbestos burner
Cylinders:	2 internal bronze with 12.7mm bore and 19mm stroke. Pistons controlled by internal slide valves with 4mm travel
Direction control:	Slip eccentric
Availability:	Built to order by Harold Denyer of HB Models. Distributed world-wide by Sussex Model Centre, 1&2 Teville Gate, Worthing, West Sussex BN11 1UA, ENGLAND. International phone 011-44-1903-207 525 ● Fax 011-44-1903-202 933

I've been developing a love affair with tank locomotives over the past three or four years. This resulted from my complete ineptitude with packing and handling a tender locomotive for travel to live steam meets. By the time the locomotive had been through the airport security and the unpacking process at my destination I usually discovered that there was a bent, broken, or missing piece of decorative fluff, and that I'd invariably bent the draw bar or lost the pin. My tank locomotives never seemed to give me a hassle. They are one unit, possess a lot of character, and are a bit of a rarity still. One element that really did it for me was the lack of grace that I demonstrated on more than one occasion while trying to transfer a large tender loco under steam to a track from a steaming bay at a trackside table. For portability, the tank locomotive is the only show in town!

There is an audible sound to confirm that the wicks are indeed burning, and I still haven't figured out how this happens. Harold Denyer has hit on something which is a very comforting feature in an alcohol fueled locomotive.

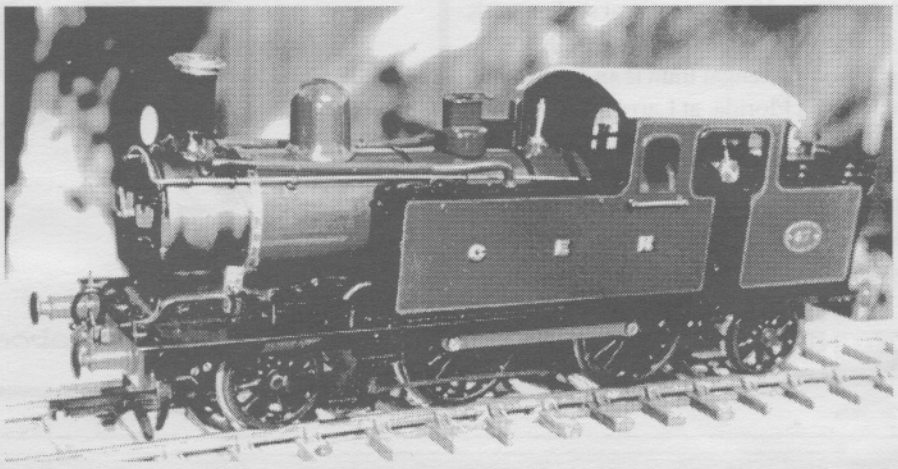
The tank locomotive which we'll be looking at in this review is a charmer built by Harold Denyer of HB Models. This model depicts the Great Eastern Railways 2-4-2T Class G.69 (Later the LNER Class F.6)

The locomotives were introduced into service on the GER by locomotive superintendent T.W. Wordsell in the 1880's. They were designed for suburban passenger service, and were dubbed "Gobblers" by the crews because of their voracious appetite for coal. A change in valve gear was incorporated, but it wasn't until 1910 that a new version was introduced by a superintendent Holden.

The new locomotive carried a commodious cab incorporating large window areas, and became fondly named the "Glasshouse Gobbler". A feature of the new locomotive is the addition of a sophisticated condensing apparatus. The large tubes above the boiler could allow diverting of exhaust steam back to the side tanks by means of a driver controlled valve. This was extremely

desirable when entering the tunnel under the Thames which led to the Victoria station. The reduction in pollution was accompanied by a reduction in draft as well. Many a GER passenger of the day was temporarily stranded when the locomotive decided to just rest for a while. It is the "Glasshouse Gobbler" that we have in our review.

The model is delivered in the typical British pasteboard box and is not protected by the cast-in-place foam liner which is becoming a standard packing method in these high-tech times. The locomotive is swathed in all sorts of protective wrapping as the alternative method and it arrived without a blemish. Sussex Model Centre had really done a superb job of additional packaging and I have adequate plastic bubble wrap for family gift wrapping for the next few years as the result. With the model is a brief instruction sheet, a special tool for the lubricator cap, and a somewhat peculiar tube with a gland nut. More on this later.



The Glasshouse Gobbler is a striking model. It has a blue, black, and white color scheme with elegant lining out which is authentic for the period modeled. The internal cylinders and valves leave the locomotive with a simple elegance which I find very pleasing. The first impression is one of a rugged and capable machine - and it really is!

Looking over the model to see where all of the necessary things were located, I discovered that the lubricator and an auxiliary water filler were where they should be - under little protective doors on the top of the tanks. Not being of the strong left brain mold, I decided to fill up and go for a test run on the rolling road in the workshop without the benefit of having read the directions ! Filling the boiler was a challenge until I discovered that the steam dome lifts off easily and there is a handsomely proportioned finger accessible filling knob on the boiler. The dome is held in place with some transparent tape rolled around the filling screw, but this is for shipping and can be removed if desired. I filled the boiler with distilled water until the level was at what I estimated to be 3/4 full. I put the filler knob back in place just finger tight and replaced the steam dome. The lubricator cap is slotted for a medium screwdriver blade and appeared to be no problem - until I had loosened it and then tried to remove it. The clearance between the cap and the recessed lubricator in the tank just doesn't allow for such a frivolous approach. It is at this point that one uses the knurled and threaded little tool supplied with the locomotive. By screwing the tool into the partly loosened cap there is created an extension to the cap and the problem is solved. What about the other tool supplied. the strangely shaped tube? It turns out that the boiler can be filled through the other tank top which is set up for a pressure water bottle. I decided that the rather simple way that I filled the boiler was just fine and that I'd use the more elegant method when I wanted to show off my artistry at doing somewhat complex tasks.

While on the subject of complex tasks, it might be wise to mention that this is a slip eccentric model with a difference. The instructions describe the adjustment of the valve gear in the event that a heavy handed operator gets things hopelessly screwed up. This situation can occur if an engine which has been overfilled with water gets cranky and doesn't want to move under steam. The reaction might be to just force it along the track - all right up to a point, this being when the realization hits that steam under pressure won't yield to being asked to revert to water. The resulting embarrassment (this always happens in front of groups of people) can be averted by acting blase and going to plan A - reading the instructions and readjusting the valves which you have just set somewhere between where they shouldn't be and where they should never be. It is only a minutes worth of effort, but it would be hours of hit and miss without the thoughtfully provided instructions.

The alcohol tank is a gem. It is removable and can be filled away from the locomotive and then just dropped into place for firing up. This is a safety feature which should be incorporated in more locomotives. I filled the tank with about 45cc of denatured alcohol and dropped the tank into place. The blower and regulator control are on opposite ends of a steam manifold in the cab, and are accessible through the door openings. The cab roof of this model doesn't lift off since it is held in place by four screws. It is here that I discovered something that I'd like to see changed. The levers for the controls are designed so that the off direction is up on one control and down on the other. It would be a better arrangement if one of the controls had a reverse thread so that both levers would move in the same direction. The levers are short and they get quite hot when the model is in steam. I eventually fashioned an offset so that there would be a more comfortable way to regulate the locomotive. The regulator would not close completely when I first fired up the model, and I disassembled it at a later time and cleaned out a bit of packing compound which had somehow clogged the seating of the regulator screw - a minor adjustment.

Now comes the moment of truth – firing up. I opened the fuel valve a full turn and the waited for a full minute before turning on the auxiliary draft fan (not supplied with the model, but a must for operating any internally fired locomotive) and lighting the wicks. There is an audible sound to confirm that the wicks are indeed burning, and I still haven't figured out how this happens. Harold Denyer has hit on something which is a very comforting

feature in an alcohol fueled locomotive. Steam was up in about 7 minutes and I turned the blower on just to hear it work, for in reality the pressure was coming up to 30psi without even using the blower. As the pressure neared 50psi I cracked the regulator and shut down the blower . The GER was in its milieu and worked like a dream. The test run was about 20 minutes long and I experimented with different regulator settings. The break-in period should be at moderate settings, and there was a nice show of stack steam and an occasional blast from the safety valve to show that all was proper. I shut the model down and let it cool off before checking things over. The lubricator was about one third full of water, a sign that all is working properly, and there were no leaks anywhere to be found. I had a winner!

The first time that I ran the GER on an outdoor track was under somewhat rugged conditions at Jim Stapleton's - we had just undergone a hurricane. Running with a load of 5 teak coaches, the locomotive demonstrated that a 20 minute run at scale speeds was what it had been designed to do. The charm of the locomotive and its accompanying period passenger train is an eye catcher. I next ran the GER and coaches in Florida, at Larry Smith's. Walt Swartz had erected his portable track and the perfect conditions were a lovely setting for the train.

I'm going to see what Harold has on his drawing board so that I can get one of whatever it might be. You'd not be disappointed if you did the same.

The Artful Bodger

Part I

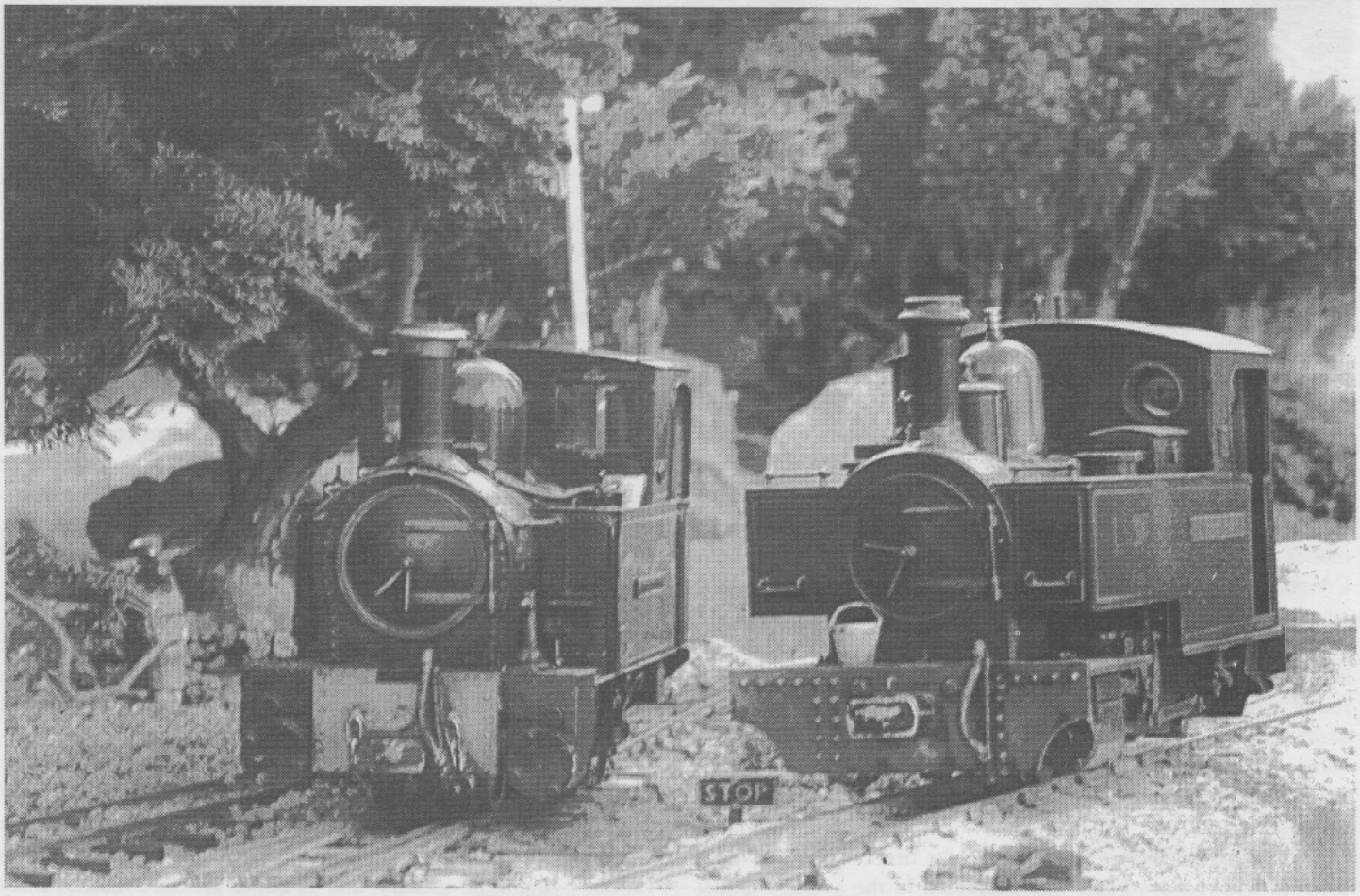
by Tag Gorton
photos by the author

Getting started in steam

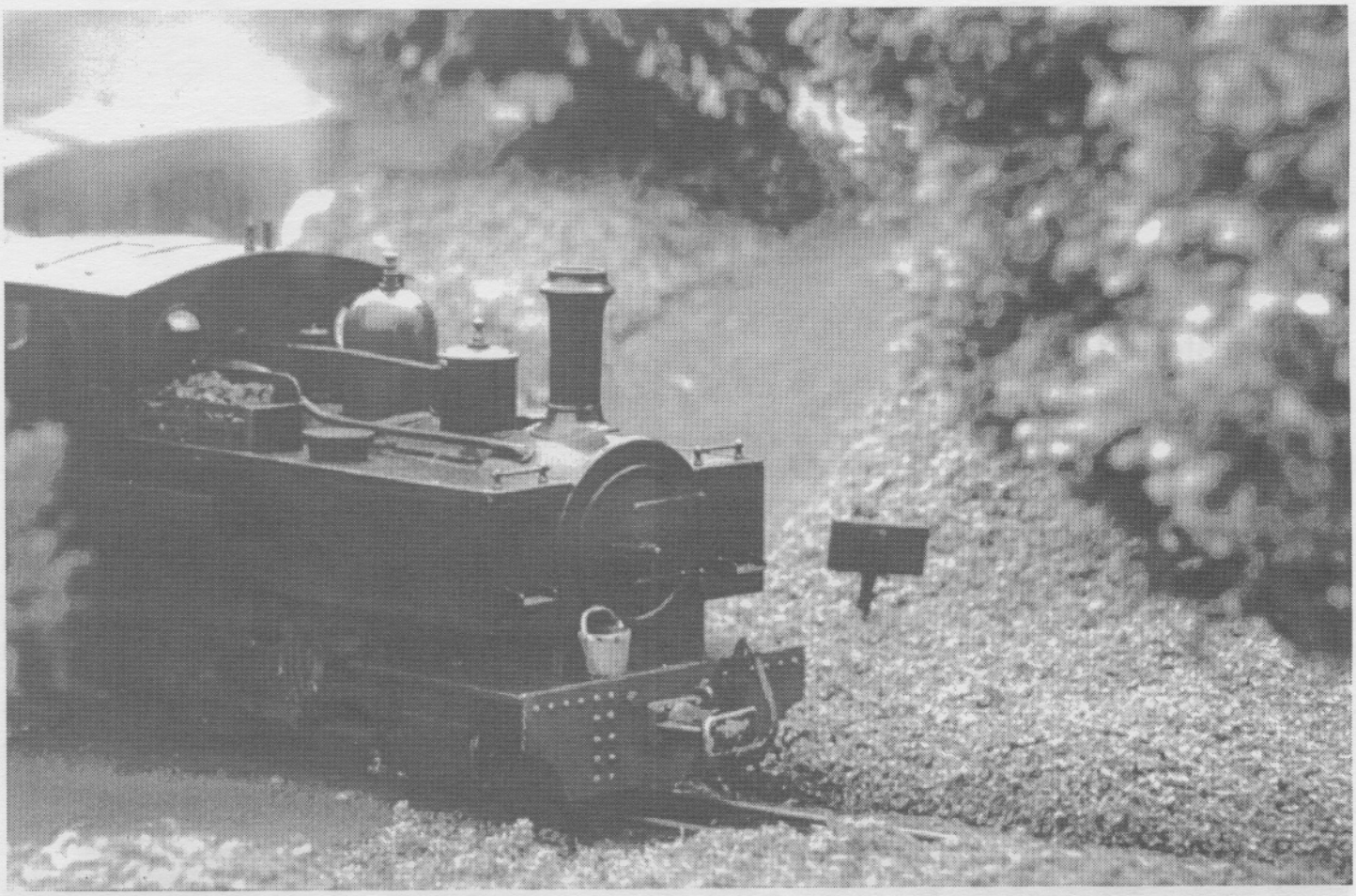
I was going to start this short article with the words "I am not an engineer" – until that is, I remembered that in U.S. railroad parlance, the engineer is actually the man who drives the locomotive. Bearing in mind the oft quoted tag that America and Great Britain are "two counties divided by a common language", I will try, in the interests of clarity, to herein watch my points and switches!

The rhythmic cadence from the stack fades atmospherically into the far reaches of the garden, leaving only a trail of steam slowly dispersing through the branches of the miniature conifers.....

In truth, what I am is a model railroader. I had always considered model engineering to be, not only a black art, but an activity carried out by people who cared for accuracy in miniature rather than the elusive atmosphere of the steam railway. Now there is nothing wrong with that of course, but to me, it was the difference between an engineering drawing and a canvas by Terence Cuneo. The former would tell me the exact dimensions and parameters of a King class Great Western locomotive, while the latter would provide the character and flavour of this main line steamer in action.



Garden scale steam locomotives don't have to be shiny and polished - lessons may be learned from HO scale and this lightly weathered Pearse Countess poses on the Longlands & Western with a grimy Merlin Meteor. This is not one of my skills and these locomotives were weathered for me by friend Paul Fletcher in his cottage in the middle of Dartmoor.



My heavily weathered workhorse Sir George Harvey negotiating a grade crossing on the Tincroft Valley Railway. This is art and engineering!!

A glance through the pages of *Model Railroader* will, I think you'll agree, support my contention that a model railroad is, in essence, a three dimensional art form.

Live steam in the garden did not, therefore, for many years, present itself as an option. It was not until I first set eyes on a radio controlled live steam "garden scale" locomotive, that I realised that such delights existed. From that point, a driver (or engineer) of one of these little marvels was what I wanted to be.

In the United Kingdom certainly, I believe that most people started out like myself, as a migrant from an interest in indoor model railways. As I watched a younger and less piratical Tom Cooper fuel, water and drive an early Merlin radio controlled four coupled locomotive at a West Country model railway exhibition, I thought, "I could do that!" This wasn't very expensive or highly skill-dependent live steam, with main line locomotives roaring round a bare trestle in a necessarily large paddock. Here was a comparatively affordable live steamer, controllable from afar, its narrow gauge format suitable for a suburban garden and, from this point, I could see a way of actually running my own real steam railway.

These early Merlins were perhaps the first commercial locomotives whose sales pitch was addressed to the average model railroad man rather than the embryo model engineer, and I can still remember Tom Cooper's steamy, sizzling advertising copy in various model railway magazines. These locomotives, rather like personal computers, did not always live up to their promise of user friendliness, but nevertheless they were the precursors of the reliable, internally gas fired locomotives, that make up the bulk of the commercial market today.

Are you new to the idea of living steam railways? If so, then first of all welcome – this is perhaps the one area of miniature modelling where in many ways, our garden size reproductions of the prototype are actually better than the original! In a world where steam locomotion is largely banished from the main line, where "preserved" steam railways, perhaps many miles away, are the norm if one wishes to see steam locos in action, I am in the position of running a real steam powered train *whenever* it fits in with convenience and inclination.

I share with friends the pleasure both of sitting by the lineside and watching the trains go by, or piloting one of my own locomotives up Trematon bank, its sharpened exhaust bark from the stack combining pleasurably with the rumble of the satisfyingly substantial rolling stock. Certainly summer days with steam in the garden are fun, but have you considered the possibilities of running a live steam locomotive in the still, frosty air of a winter's morning? As the watery winter sun struggles to disperse the rime on our living scale scenery, and as boiler pressure reaches forty PSI, our safety valve provides a six foot column of Persil white steam before, with our own hand at the R/C regulator, the locomotive proceeds down the line with a low-season mixed consist. The

rhythmic cadence from the stack fades atmospherically into the far reaches of the garden, leaving only a trail of steam slowly dispersing through the branches of the miniature conifers and the Doppler wail of the whistle to remind us of its passing.

Great stuff, isn't it? But if you are anything like me you may initially find yourself a little dismayed by the perceived technical content of many articles in this bible of garden steam – for I am, as I have said, not an engineer!! More at home professionally with electronics and originally happier modelling with card and plastic, I moved very tentatively indeed into the world of "The Old Curmudgeon" and metal bashing.

Now it may be that as your experience expands and your skills develop, you will become all fired up to build your own locomotive, gradually acquiring lathe, pillar drill and all the necessarily expensive workshop machinery. Conversely, it may be the case that your interests instead evolve to embrace perhaps the horticultural and miniature gardening aspect of this holistic hobby, while the locomotive that steams through this garden wonderland needs must remain a standard commercial model. This is our hobby and our choice, but please remember that one does not need to purchase expensive workshop tooling to enjoy the pleasures of garden steam, nor even to undertake improvements and additions to our chosen locomotion.

A Roundhouse or Pearse locomotive, for instance, can be used by the steam novitiate from day one, with advice only from the instruction manual. This comprehensive set of instructions is generally carefully laid out to enable the newcomer to proceed with confidence, despite in some cases being many miles from the nearest fellow enthusiast. Perhaps the best set of instructions I have seen are those for Roundhouse locomotives. The copious scaled perspective illustrations by commercial artist Peter Insole ease us gently into the terminology, because we can actually see what the instructions are banging on about!

I happen to think that for those of us who are not naturally engineering orientated, just learning to drive and fire our new steam engine can be enough for the moment. Certainly it seemed so to myself when studying a selection of catalogues, reviews and articles before purchase of my first steam engine. I can remember agonising over whether to purchase a meths fired Roundhouse **Lady Anne** or a gas fired Merlin **Mayflower**. My final choice was decided by my weakness for working steam whistles, but I did dislike the fact that the Mayflower had neither slidebars or crosshead and therefore looked strangely naked below the footplate. Conversely, the Roundhouse offering had a rudimentary slidebar/crosshead arrangement, but no whistle. I therefore learnt very early that no commercial locomotive had quite all the features that I wanted, and I had perforce to learn a few skills to get what I wanted.

There is of course no "correct" way to proceed, but SitG exists to further everyone's enjoyment of live steam locomotion, and to this end I hope in this series of jottings to both air some ideas about what sort of steam locomotive would suit you, and also to suggest some improvements and modifications to commercial models.

Please do remember that the very best garden steam railways are a delightful amalgam of art and engineering, and if I mention Peter Jones' Compton Down Railway you will know exactly what I mean! It follows then, that if you are, like me, a convert from HO or N, you will already have the sort of artistic skills which will stand you in good stead in the open air. All that is required is a gentle and pleasurable learning curve to acquire the driving and minor engineering skills to run your real steam railway.

May I suggest that you do read the articles that may appear to have a high technical content. I did – and while frightened of attempting some of the procedures described – I began to get some understanding of both how the steam locomotive works and what the component parts were.

And finally, if you have a problem or a query then do please ask for help. Within the fraternity of garden steamologists are many skilled engineers who I have found to be keen to assist and to pass on their skills.

Till next time.....

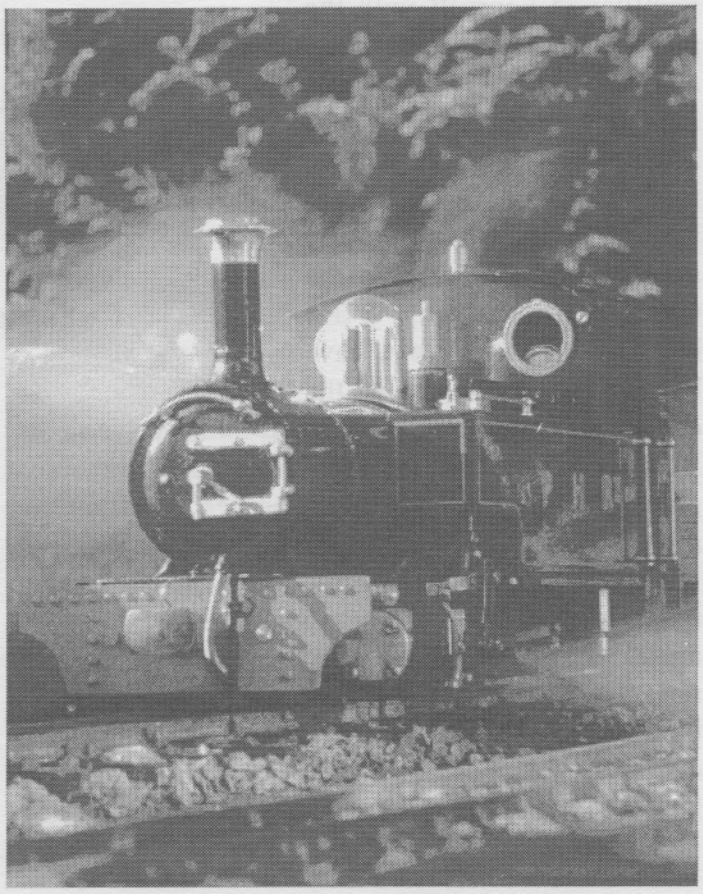


Photo right: A superb kit built Lady Anne constructed by George Mckie of Plymouth England. This is not a standard engine and you will have noticed the delightfully riveted buffer beams made for George by Steve Morris. This locomotive also has a three channel radio system controlling regulator, reverser, steam whistle and draincocks! Both draincocks and whistle may be employed whilst the locomotive is on the move. This locomotive will feature in a later article – handtools only required!

BUILDING THE VEST POCKET CLIMAX

text and photos by Mel Ridley

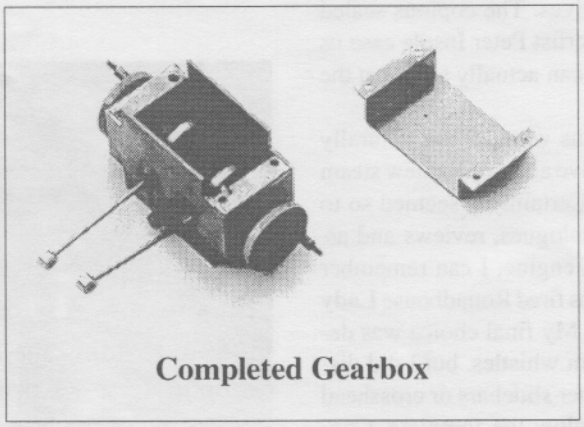
drawings from the author's sketches by Harry Wade

Part 3 – Gearbox

3:0. GEARBOX. This will be covered in three stages. The first part dealing with the body assembly, which will also call for a couple of shafts, gearset and flycranks. Section 4 is the production of slip-eccentric gear and rocker arms, entitled TRANSMISSION because it will also incorporate manufacture of the UNIVERSAL COUPLINGS.

MATERIALS REQUIRED: 1 - Gearbox Body & Cover Plate Fret, 1 set Helical Gears, 2 - Flycranks, 2" of 1/2" o/d P/B or Brass roundstock, 5" of 3/16" o/d BMS rod, 2" of 1/8" o/d BMS rod, 2 x 6BA grub screws, 8 - 8BA x 1/2" Cheesehead screws + 4 8BA nuts and a couple of l0BA washers & nuts.

3:1. GEARBOX HOUSING: Familiarize yourself with the gearbox body and cover frets and compare them with drawing. Note the various fold lines and understand which will be front & rear and top & bottom when folded. Clean up any swarf or dross left over from the Cad/Cam machining. Pilot holes, 4 top and bottom, have been located for mounting the chassis and cover plate and centres for the drive shafts. Before folding, and using a stout pair of protective gloves to hold the piece, drill through by stages and open out the 4 shaft holes to 3/16" o/d. Ream 3/16" full. DO NOT try to hold it by hand, the author can attest to the folly of his ways with various bandaged digits. We are drilling relatively large diameter holes in thin material (.036") and, particularly with incorrectly sharpened bits, the drill has a tendency to grab the workpiece. In conjunction with the shafts and helical gears, these will be used for an initial fit and alignment prior to soldering up.



Completed Gearbox

Using a pair of broad nosed pliers or Molegrips, fold the tabs 90° up towards you and then by hand, fold round the body.

3:2. DRIVESHAFTS: Cut and dress some 3/16" BMS rod into 2 lengths, the transverse driveshaft 2.5/8" long and the universal shaft 1.1/2" long.

The transverse shaft is now finished but the universal shaft needs boring and cross drilling in order to accept driving lugs from the universal couplings. In the 3 jaw, centre and drill 1/8" x 3/8" deep both ends. Insert a spare piece of 1/8" rod (left over from the Trucks) in the bore to prevent distortion and centre-pop 1/8" in from each end. Remove the rod and using a V–block, cross drill 1/16" right through on centreline, cleaning up any swarf. The 1/8" drive shaft which slots into it will be dealt with later, so keep the material safe.

3:3. GEARS. Having checked the helical gears for any flaws, as you did for the truck gearsets, chuck in the 3 jaw, bore and ream 3/16". Using the shafts as a mandrel to prevent crushing, centre-pop and drill each blank end one side Nº 44, tap 6BA and fit grub screws.

Offer up the shafts to the body sliding on the gears and nip up. Revolve the shaft by hand and try for fit. The free gear will want to twist away so adjust it on the shaft against the gearbox wall. This stage is again fairly critical, because we are going to open out these temporary shaft holes to house bushes and it is easier to correct these now using a half-round Swiss file and easing a few 'thou than later on. The gears should revolve freely without bind but not so sloppy that slip could occur in

the mesh. Clamping the box together by hand, try it now in the frames for fit, noting that the shafts are 90° to each other and square with the chassis, and again see that the gears are correctly meshing.

3:4. Holding the assembly together using a small clamp, with the shafts and gears in place, run flux into the tabs and folded corners, bring up to heat and solder up with multicore, running a fillet into each fold. Check alignment again in the frames. The soldering operation has to be carried out in two parts. We need to know that the components and gearbox chassis are all square and aligned correctly and form a strong integral box before drilling for the shaft bushes. Open out the shaft holes to 5/16" by stages, clamping each time in the machine vise. A suitable piece of wood is ideal as packing material for this operation. File off the swarf and 'rims' both outside and in. A small hand held 'Dremel' or similar with a burr is ideal to get to the inside of the transverse shaft holes.

3:5. BUSHES: The shaft bushes are made from round 1/2" o/d bronze or brass. Chuck a length in the 3 jaw, centre, drill and ream 3/16" for about 1.1/2". We need two bushes 1/4" long and two 1/8" long. These are going to fit into the 5/16" holes in the housing so skim the outside of the barstock down to 5/16" for a length of .036" - the thickness of the material. Part off two of them to 1/4" and the other two to 1/8".

Referring to the Drg., on the two transverse bushes only, we need to file a flat so they will sit on the lower lugs of the housing whilst locating in their respective holes. The short 1/8" Universal Drive Bushes sit either side of the helical gear and additionally take up thrust transmitted by the transverse shaft.

3:6. ASSEMBLY: Assemble the housing once more together with the shafts and gears, clamping it up as before, flux the bush joints and solder with multicore. Take care not to get flux on the shafts, though they can be 'drifted' out later if stuck. Play the flame on each bush in turn and solder up, ensuring that the housing is not distorted from its previous configuration. It is very probable that some of the corner fillets done before will run but is nothing to worry about. Clean up the flux and any solder residue.

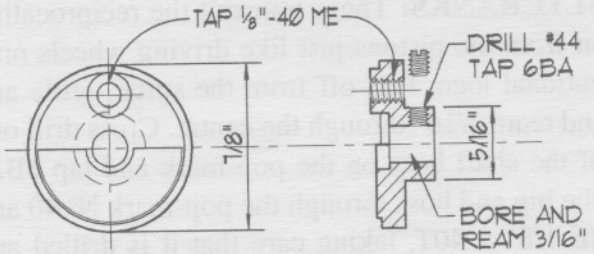
3:7. FLYCRANKS: These transmit the reciprocating motion from the pistons just like driving wheels on a conventional loco. Part off from the sprue, fettle and drill and ream 3/16" through the centre. Cross drill one side of the shaft boss on the pop-mark and tap 6BA. Drill the big end boss through the pop-mark № 40 and tap ME 1/8" x 40T, taking care that it is drilled and tapped squarely. Any angle will throw off the big end during part of its revolution, causing a bind when the connecting rod is fitted.

3:8. BIG ENDS: Made from 1/8" BMS, thread one end ME 1/8" x 40T for a length of 3/16", the thickness of the flycrank web and boss. It doesn't matter if you exceed this dimension as any excess will be filed off later. Measure along a further 3/16", indicating with a gentle saw mark as before and a further mark for an overall length of 1/2". Part off the 1/2" long section and chuck the shaft including the threaded portion into the 3 jaw, turning down to 1/16" for 1/8". Using cutting compound, thread l0BA turning the chuck over by hand. Care is required here - as the die meets the shaft, it can easily snap off. De-grease and using 'bearing fit', screw it firmly into the flycrank, removing any excess thread material on the reverse. Run on the l0BA washer and nut. You can now paint the gearbox housing and flycrank if you wish.

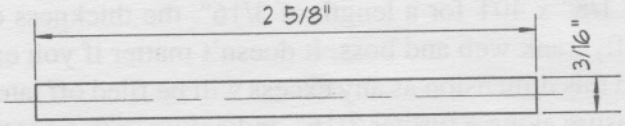
3:9. MOUNTING: The gearbox is mounted using 4 - 1/2" long 8BA screws and nuts. Drill 3/32" 8BA clearance holes through the top set of mounting lugs and clamping in the chassis, carefully drill through again from the top. This will open out any discrepancies in the fit. Holding the chassis and gearbox upside down, drop in 4 screws from the inside of the box and tighten up from below. (i.e. the nuts sit on top of the chassis) Turning the whole assembly upside down again and locating the folded cover in position, drill through № 51. Tap the mounting lugs 8BA and open out the cover plate holes to 3/32". The cover plate is held in position by 1/4" long screws.

SOURCING

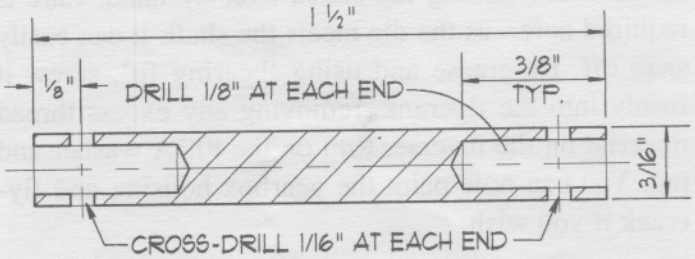
In order to assist our readers in the acquisition of all the bits & pieces they need for the Vest Pocket Climax project, we will publish this list of sources at the end of each article in the Climax series. We will continue to add sources to this list as they come to our attention, so if you know of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



CRANKDISK (3:7)
2-OFF BRONZE CASTING

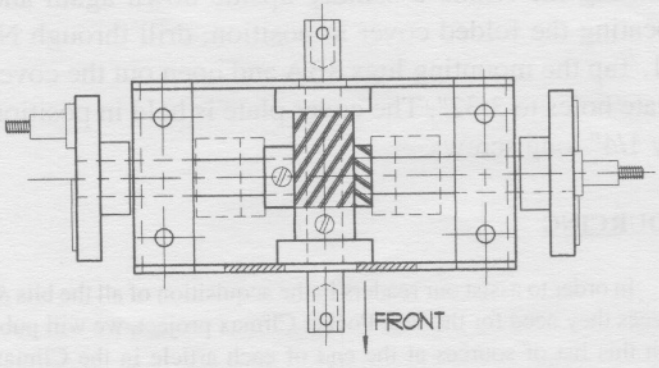


TRANSVERSE DRIVE SHAFT (3:2)
1-OFF 3/16" DIAMETER BMS OR CRS STEEL

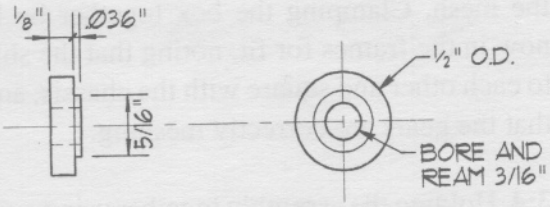


UNIVERSAL DRIVE SHAFT (3:2)
DRAWN AT TWICE FULL SIZE
2-OFF 3/16" DIAMETER BMS OR CRS STEEL

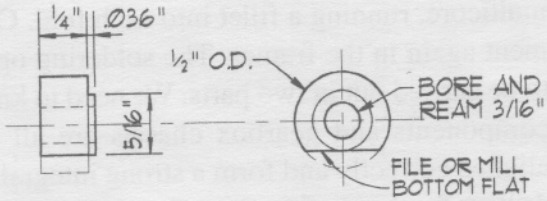
UNLESS SPECIFICALLY NOTED,
ALL PARTS ARE DRAWN FULL SIZE.



UNDERSIDE VIEW
OF THE GEARBOX ASSEMBLY

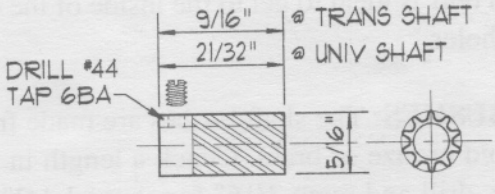


2 OFF FOR THE UNIVERSAL SHAFT

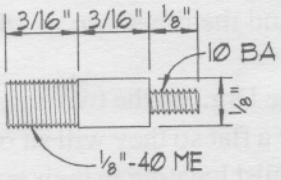


2 OFF FOR THE TRANSVERSE SHAFT

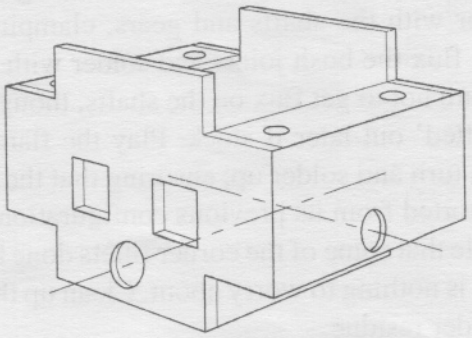
GEAR SHAFT BUSHES (3:5)
1/2" DIAMETER BRONZE OR BRASS



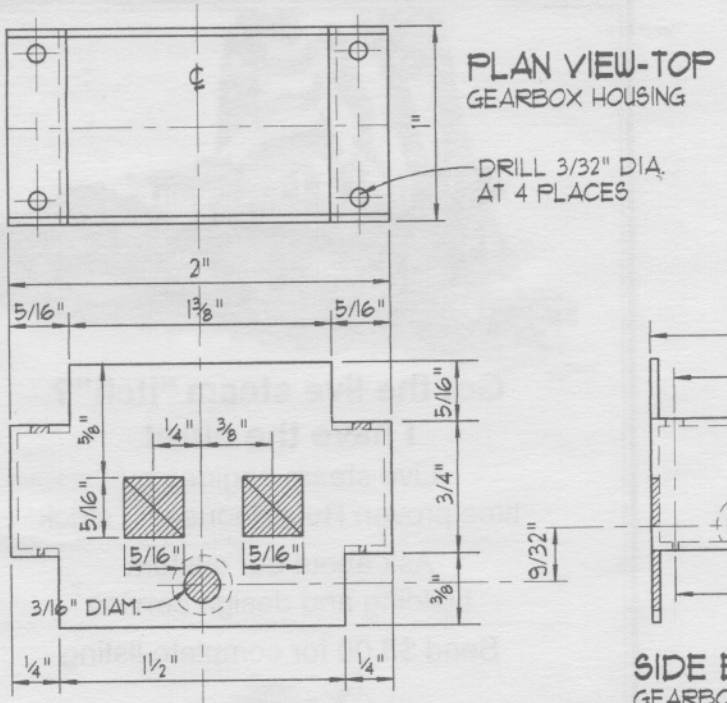
HELICAL GEAR (3:3 & 4:4)
2-OFF BRONZE CASTING



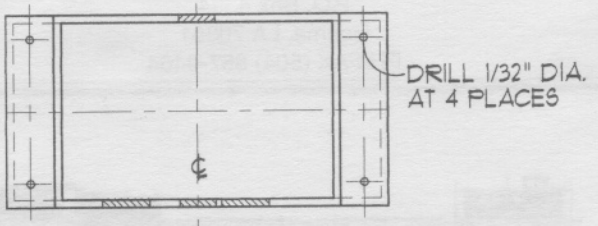
BIG END (3:8)
2-OFF 1/8" BMS/CRS
SHOWN TWICE FULL SIZE



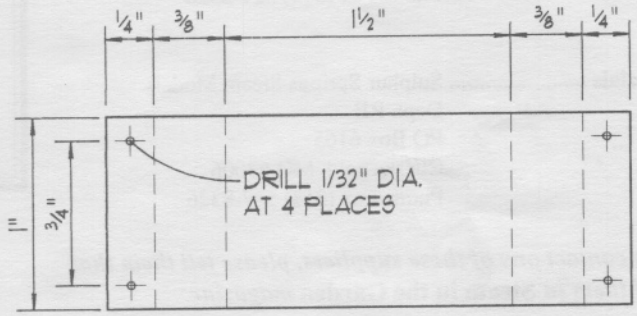
OVERALL VIEW



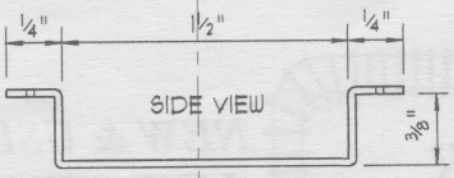
FRONT ELEVATION GEARBOX HOUSING
MATERIAL: 20 Ga. (Ø36") CZ108 (½ hard) BRASS



PLAN VIEW-BOTTOM
GEARBOX HOUSING

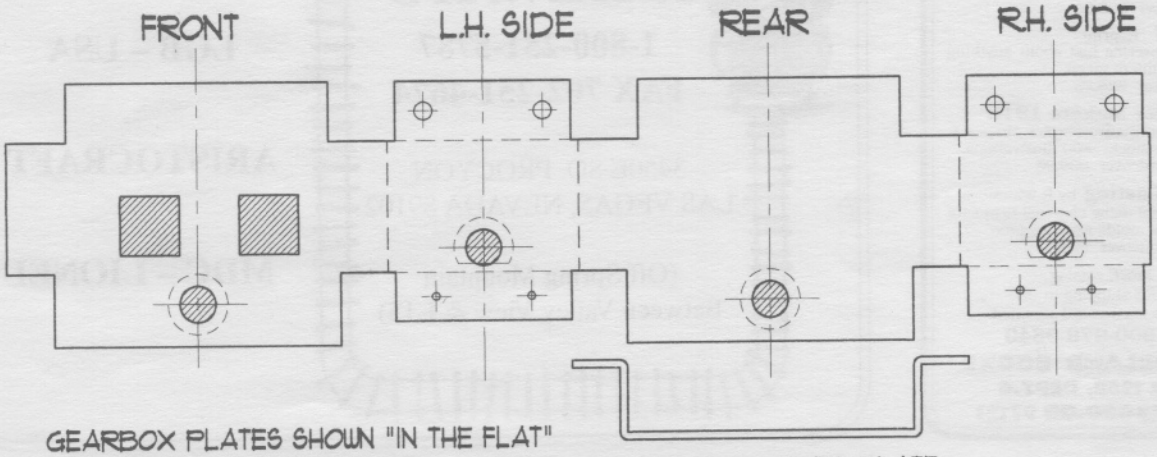


UNDERSIDE COVER PLATE (3:1)
1-OFF 20 GA. (Ø36") HALF HARD BRASS
PLATE SHOWN "IN THE FLAT"
BEND LINES SHOWN DASHED



UNDERSIDE COVER PLATE

NOTE: DIMENSIONS ARE "FOLDED" SIZES.
NO ALLOWANCE HAS BEEN MADE FOR
BENDING DEVELOPMENT ON FOLDS.



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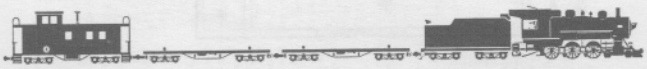

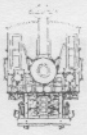

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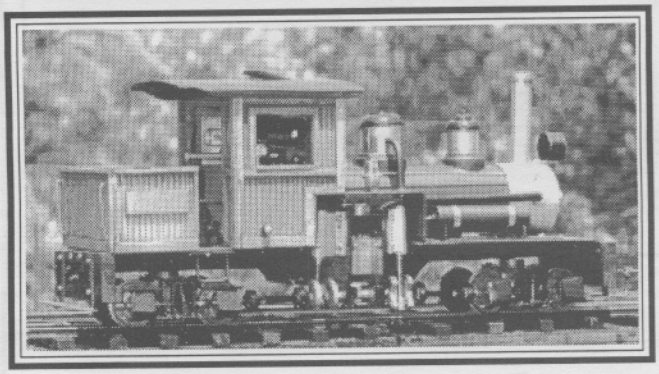

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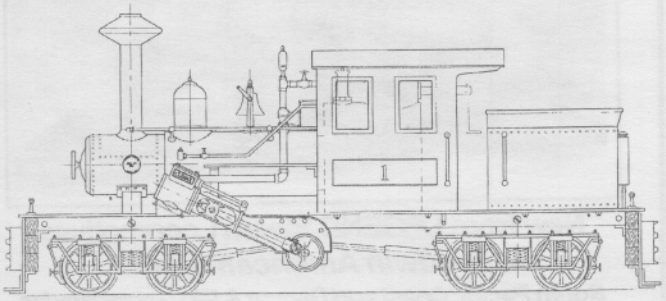

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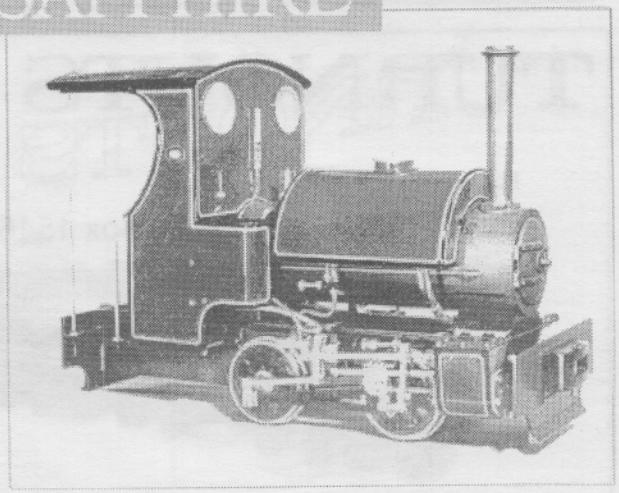

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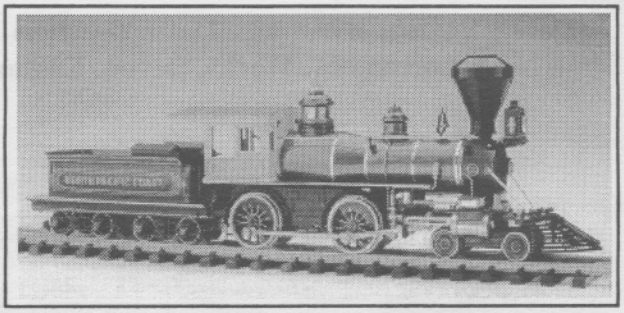

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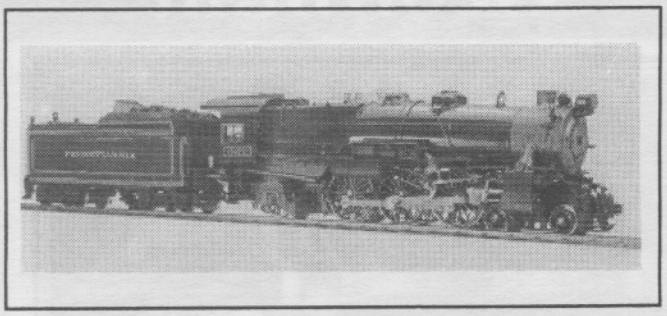

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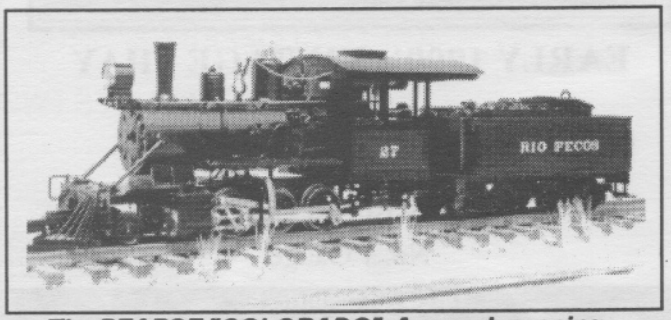

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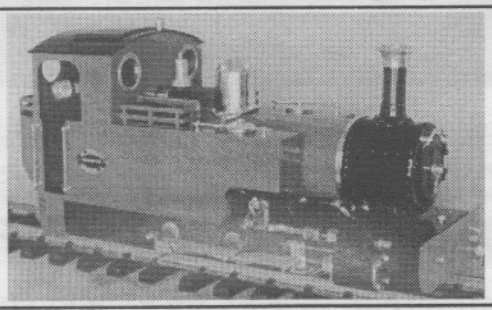

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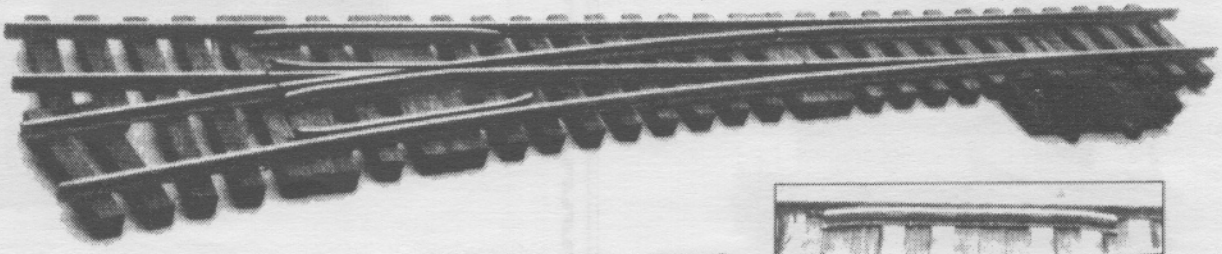

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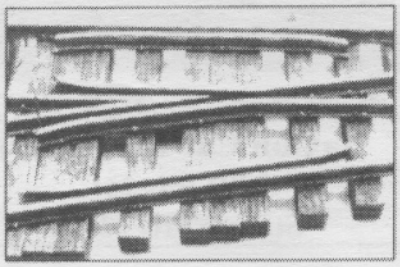

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Build a Pop-Pop Boat

by Marc Horovitz
Photos and drawings by the Author

Clean out the pond!

Pop-pop engines, or pulsating-water engines, as Basil Harley calls them in his book, *Toyshop Steam*, date back a hundred years or so. Their origins are obscure, which adds to their charm and mystery.

The pop-pop engine is simply a tube of copper, with or without a coil or coils, that has both ends in the water. The middle of the tube is heated and the boat in which it is installed goes.

How these work, in scientific terms, is still open to conjecture and it has been the source of some controversy. What appears to happen is that a little water in the tube flashes into steam, forcing the rest of the water out the back, making the boat go forward (see one of Newton's various laws) . The vacuum thus created within the tube draws in more water and the cycle repeats.

All of a sudden, your mighty craft will leap forward...an inch or so.

In practice there are many variables, as follows: the length and diameter of the tube, the heat source, the weight of the boat, and whether or not the flame is shielded. Any or all of these will affect performance. Admittedly, I have not seen a great many pop-pops actually at work, but of the ones I've seen, none put on a performance that I would call great, or even good. However, if one considerably lowers one's standards, a well-designed pop-pop boat will perform in a manner that could be described as acceptable.

Pop-pops have always been the stepchildren of the steamboat family. They can truly be called steamboats, but they bear little resemblance to a proper steamboat. They have no moving parts, after all. Not even one! In the early days of pop-poppery, the German manufacturers often built a thin, flexible metal diaphragm into the water/steam circuit. This diaphragm was dished slightly and, when the water flashed into steam, the thing would spring out, making a noise like a metal cricket that you snap by pressing it with your thumb. That's how the boat got its common name. (The Germans call them toc-toc boats for the same reason.)

Building the boat

Building a pop-pop boat is a good exercise in simple sheet-metal work. You can build it out of brass, but I prefer tinplate from an old paint-thinner can. If you use brass, don't build the boat from material more than .010" thick.

The hull I show here can be made from a single piece of metal. I have deliberately not included any type of superstructure. You can be as creative as you like here. I've only included the bare minimum required to get your boat working in the water.

The hull

Begin by gluing the pattern onto the metal. I like rubber cement for this, as it will keep the pattern in place but can be easily removed later. The solid lines are cut lines and the dotted ones are fold lines.

Drill the holes for the water tubes. Then cut the sides and the transom (back end), but do not cut around the bow (front end). Leave the bow a flat chunk for now (see the photo). Carefully fold the three tabs. This can be done in a vise or with some long, flat-nose pliers.

In a vise, fold up the sides and the transom so that they meet. Adjust the tabs to fit, if necessary. The sides, as they come together to form the prow, will define the shape of the front of the boat.

Solder the transom to the sides. I like to use a small torch, but a resistance solderer will also work. If you are good with an iron, that should work fine, too.

The bow should now form a floor upon which the sides rest (see the photo) . Solder the two sides together at the prow, then run a good bead of solder all around the bow floor where it joins the sides. When everything is solid and watertight, trim around the bow with snips, cutting as close to the sides as possible. File the rough edges flush, and the hull is complete.

The motor

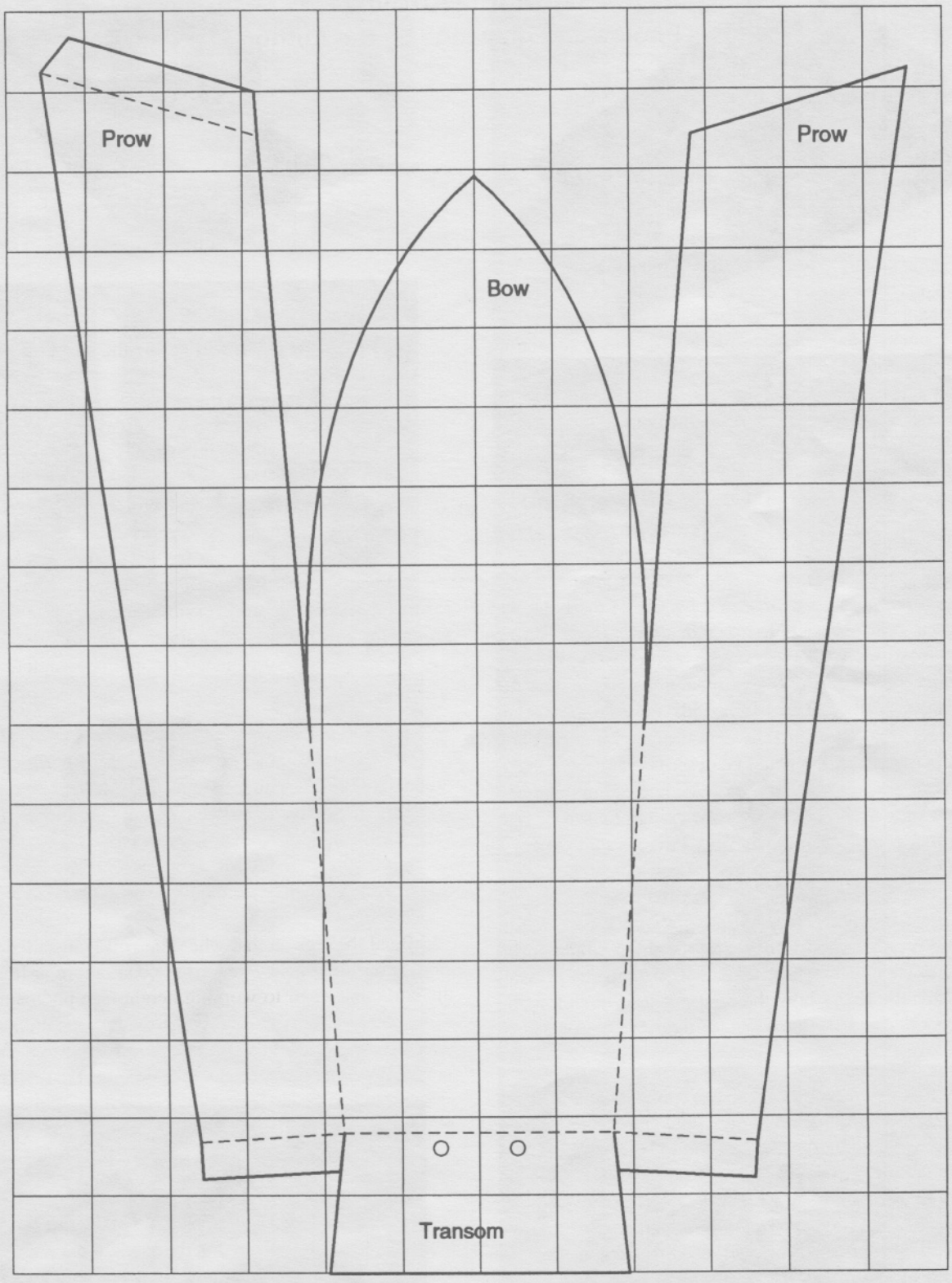
The pop-pop motor (and I use the term loosely) is but a simple coil of 3/32" OD copper tube (you might experiment with 1/8" or other sizes) . Start with a 12" piece of K&S copper. Bend the tube around a l/2"-diameter wooden dowel held in the vise. If you are careful, the 3/32" tube can be bent without annealing and it will not flatten or crimp. (A 1/8" tube isn't so easy.) I've seen designs that include anywhere from one to five coils. I suggest two, for no good reason.

Bend the legs so that when the coil is installed, small extensions protrude from the rear of the boat, more or less level, while the coil is elevated to working height (see photos and drawing). Insert the two legs into the two holes and position the coil. You should have plenty of extra copper sticking out. Trim the ends, leaving the tube in its final configuration. Position the coil properly (you may need to temporarily prop it up) and solder the unit in place.

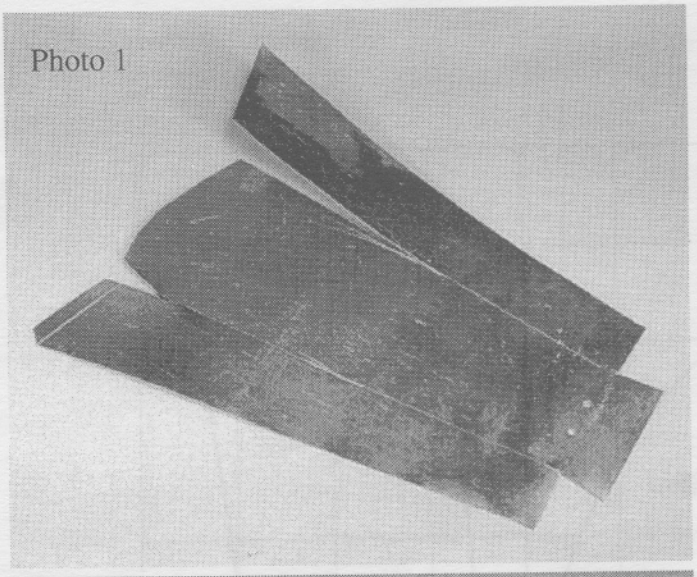
The alcohol burner

Make the burner out of a copper plumbing cap of any convenient size. I used 1". Drill a 1/4" hole in the top and a 1/8" hole in the edge. The big hole is for the wick. Also, drill a small hole, 1/16" or so, near the wick hole. This acts as a vent and is important. Now solder the pipe cap to the floor so that the wick hole is directly beneath the coil. Make sure you have a good solder joint all around.

Cut a small piece of 1/4" OD brass or copper tubing and solder it in place. Soft solder is fine. The 1/8" hole is for the filler tube. Solder a piece of 1/8" tubing into this hole and bring it out to



The hull. Each square is 1/2".



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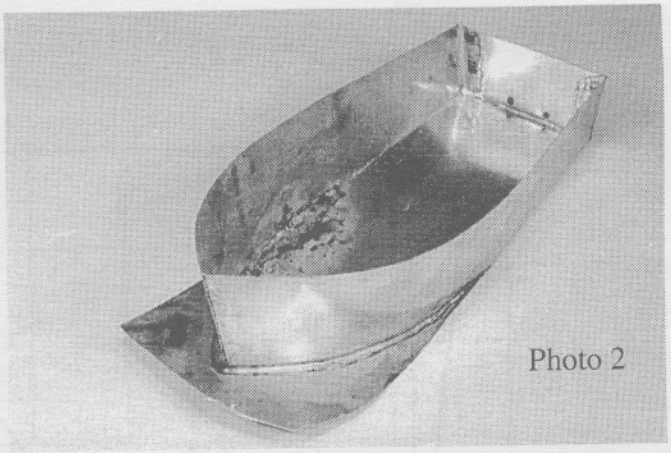

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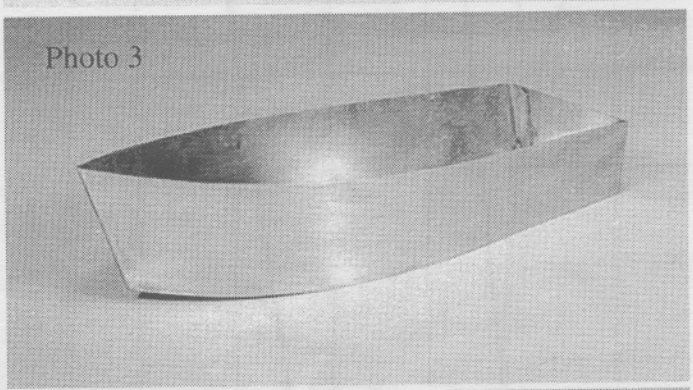


Photo 3

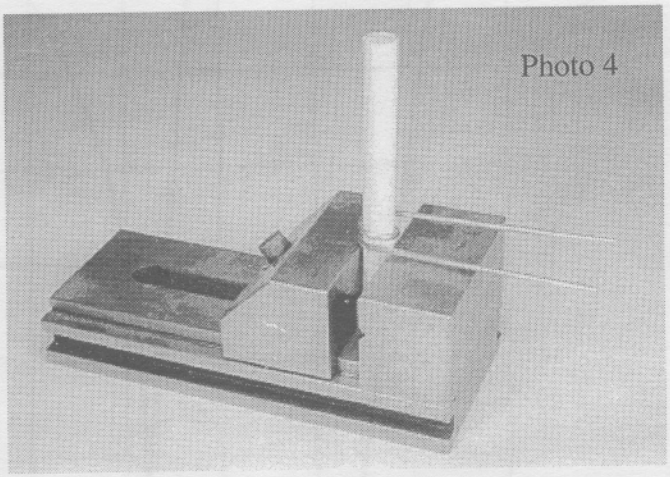


Photo 4

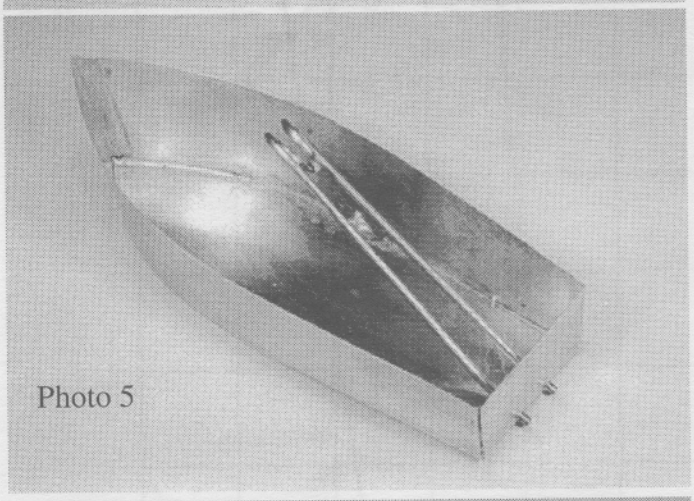


Photo 5

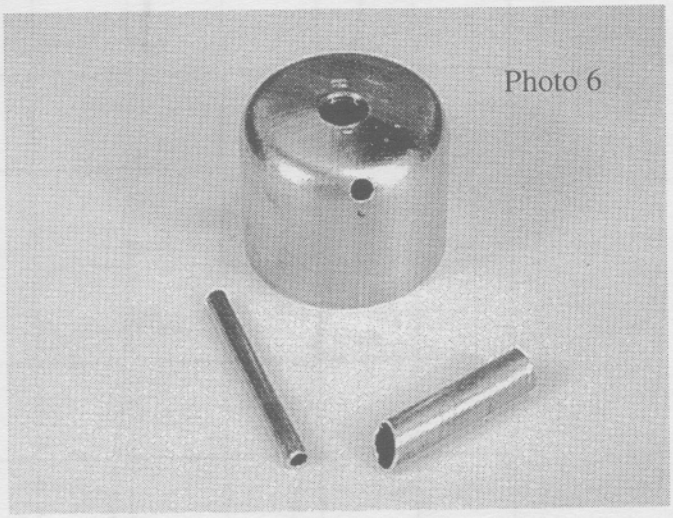


Photo 6

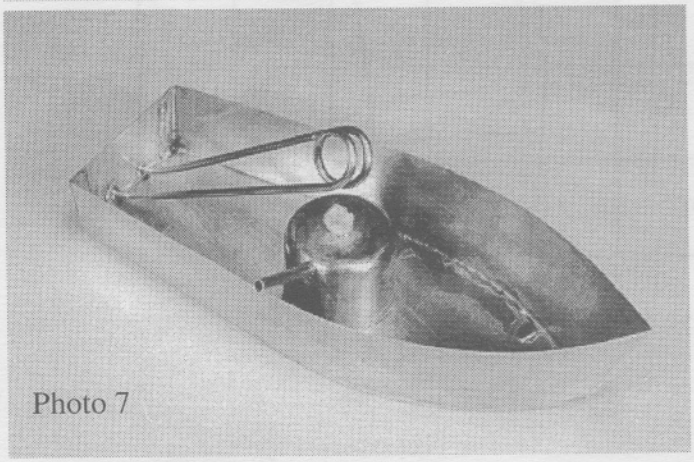


Photo 7

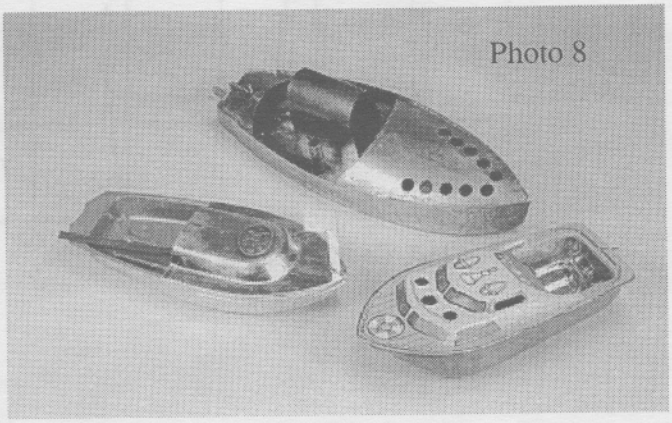


Photo 8

the side, away from the flame. Cut and fit some fiberglass wick material, and you're done with the basic unit. The rest is up to you.

The rest

You may find that the slightest breeze affects the flame and, thus, the running characteristics of the boat. I have found that a shield in the form of an inverted "U" around the flame and coil can help. You might want to experiment with some screen on one open side of the "U" for further protection, or you might want to come up with some other system entirely. One boat I saw has a dummy vertical boiler that encloses both the flame and the pop-pop motor. It seemed to work pretty well.

If your boat does not sit low enough in the water, you may need to add some ballast. This can be just about anything – metal ingots, lead tire weights, pennies, sand, broken locomotive parts, etc.

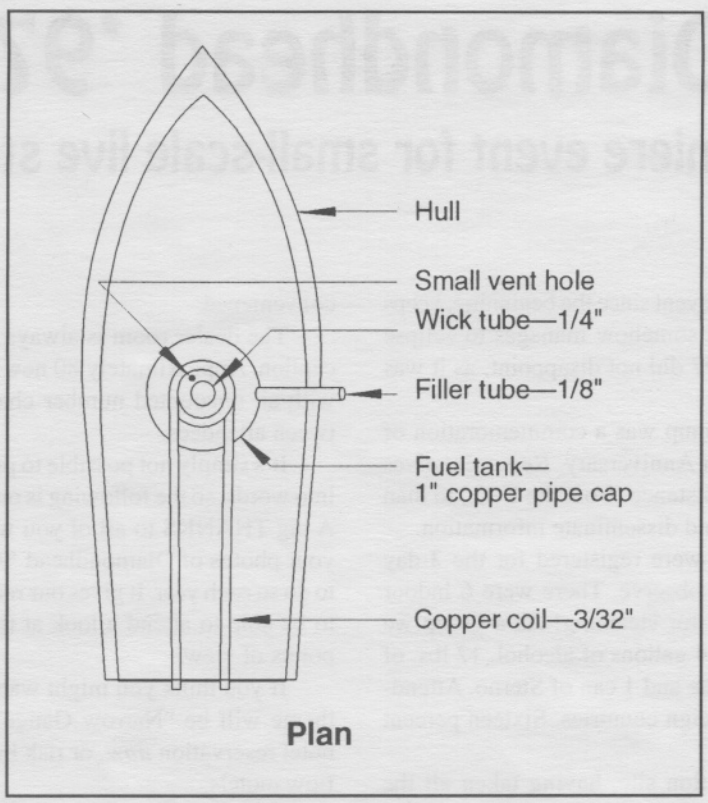
There is any amount of room for creativity in the area of building a superstructure for your boat. I've just given you the basics here. This is a wonderful project in which to let yourself run amuck, as you should have little time invested in its creation up till now. In other words, if you ruin it, you're not out much.

Operation

To get your boat going, you must first fill the tube with water. Having just filled the burner with alcohol, I'll fill the tube with meths as well. Works just fine. Set the boat in the water. The bathtub is a good place for testing, but make sure the kids are out first (the water needs to be calm). Light the fire and wait a minute or so. You may hear some faint pinging sounds as the thing heats up. All of a sudden, your mighty craft will leap forward...an inch or so. Then it will do it again. This is how it acts, so don't expect much more.

Performance in the boats I've seen tends to be erratic. Perhaps someone with more experience in these matters will have better information. In some instances, the boat will have impressive spurts of energy during which it will appear to actually have some ambition. At other times it will just putter along lethargically. The amount of heat directed on the coils appears to have a definite effect on performance, which makes sense. I suggest that you try experimenting to determine optimum wick height. Let us know your results.

I found that my test boat would greatly benefit from a rudder of some sort. This could be nothing more than a rudder-shaped piece of metal soldered to the transom and extending into the water. If you want to get fancy (and who doesn't, sometimes?), then a moveable rudder could be fashioned.



Plan

An open invitation

At the 5th National Gauge 1 Steamup in Diamondhead Mississippi last January, there was a pop-pop-boat regatta. While there were only four boats in attendance, there was great interest from other attendees. Reactions fell into two distinct categories. The older attendees all had pop-pop boats when they were kids, and the younger ones had never heard of them, but were fascinated.

So, consider this article as an invitation to attend and participate in the Second Annual Pop-Pop Regatta in Mississippi in 1998. I look forward to seeing what bits of bush engineering, ingenuity, and whimsey you end up producing in this obscure field.

And finally, since I'm not a proper boat guy, I must apologize to those who are for any incorrect use of boat terminology or lingo.

Those of you who have access to the Internet will find more information about pop-pop boats on the Pop-Pop Pages (http://www.nmia.com/~vrbass/pop-pop/) compiled by Vance Bass, with a little help from the Author.

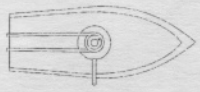


PHOTO CAPTIONS

1. The cut-out hull with the pattern removed.
2. The hull has been folded and soldered together. The floor of the bow has not yet been trimmed to shape.
3. The finished hull after a going over with some steel wool.
4. Bending the 3/32" copper coil around the 1/2" wooden dowel.
5. The coil soldered into the hull.
6. Burner parts. The tank is a 1" copper pipe cap.
7. The finished boat, lacking only a rudder and cosmetics.
8. A selection of other pop-pops. The two in front are current commercial products; the one on the right is from China and the one on the left is from India. Both are fitted with the popping diaphragm. I've heard good reports regarding their performance. The boat in back was built by the Author and has an inverted-U shield over the coil and flame. It is also fitted with a moveable rudder.

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the premiere event for small-scale live steamers

Jerry Reshew, promoter of this event since the beginning, keeps raising the bar. Each annual event somehow manages to eclipse the previous one. Diamondhead '97 did not disappoint, as it was bigger and better than ever.

The theme of this year's steamup was a commemoration of the Gauge One Association's 50th Anniversary. Representatives of the Association traveled a long distance (from the U.K.) to man a booth to sign up new members and disseminate information.

This year over 200 steamers were registered for the 3-day event, and lots more came just to observe. There were 6 indoor tracks available 24 hours per day for steaming! As a group we went through 24 gallons of water, 4 gallons of alcohol, 12 lbs. of Welsh steam coal, 60 cans of butane and 1 can of Sterno. Attendees came from 32 states and 9 foreign countries. Sixteen percent were from outside the USA.

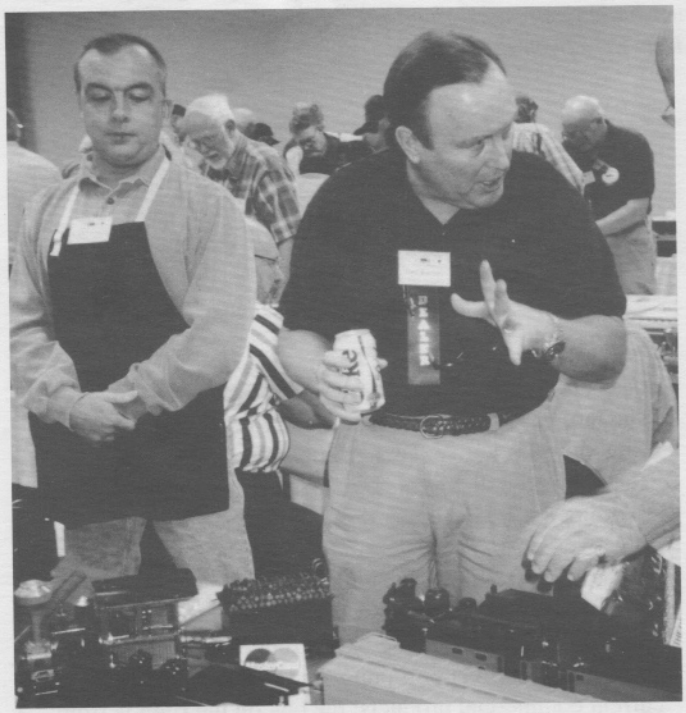
We've outgrown the Convention site, having taken all the rooms at the motel this year and spilling over into two other local motels.

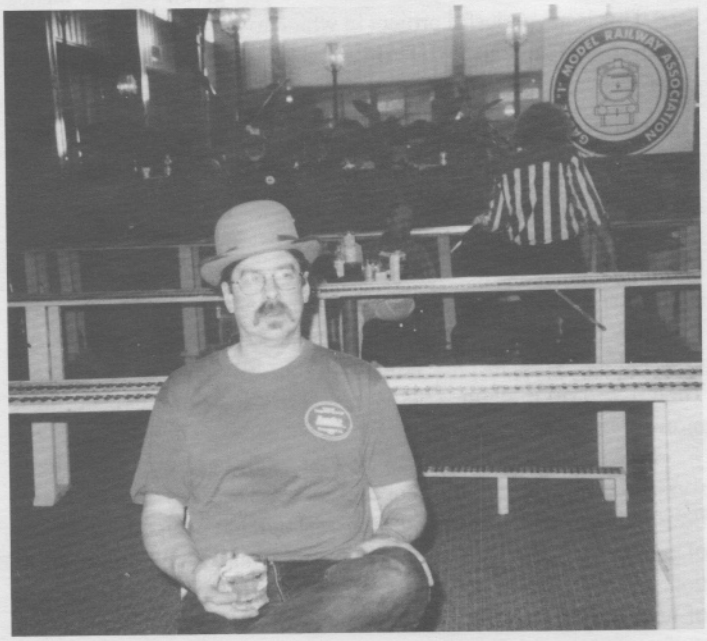
Local restaurateurs and innkeepers look forward to our coming each year, and at least one of them changed their hours for our convenience.

The dealer room is always popular, and this year was no exception. Approximately 80 new steam locos were sold by dealers, with an uncounted number changing hands in private deals between attendees.

It's simply not possible to put the "Diamondhead Experience" into words, so the following is our annual photo report on the event. A big THANKS to all of you who went to the trouble to send us your photos of Diamondhead '97, and we hope you will continue to do so each year. It gives our readers who are not fortunate enough to be able to attend a look at the steamup from several different points of view.

If you think you might want to attend Diamondhead '98 (the theme will be "Narrow Gauge"), I suggest that you make your hotel reservation ***now***, or risk having to settle for one of the overflow motels.



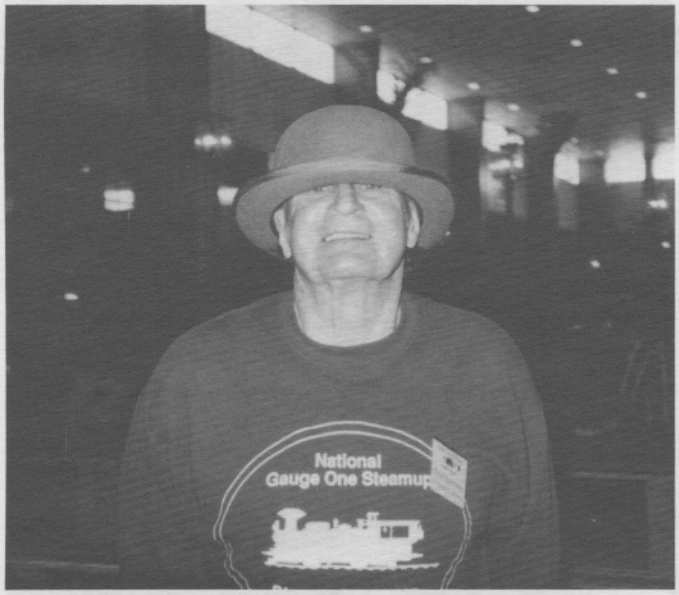


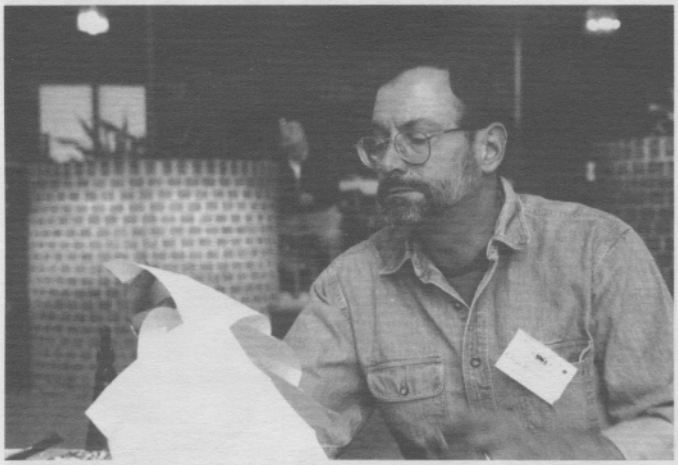
Above Left: Paul Kenney (right) of Bayou Limited (Louisiana), with an assist from his brothe Bobr, answers questions from a potential customer in the dealer room.

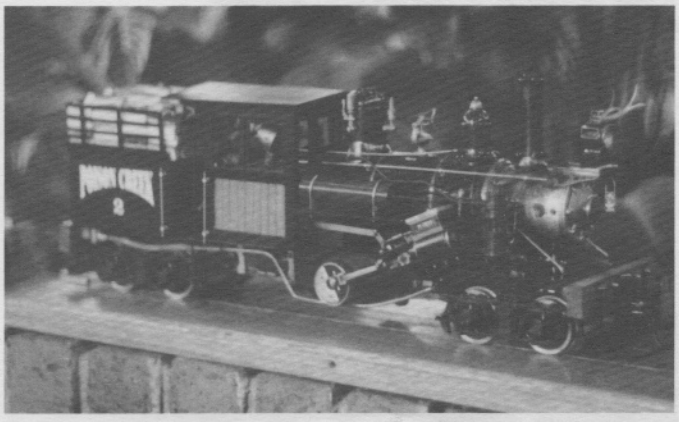
Photo by Carol Jobusch

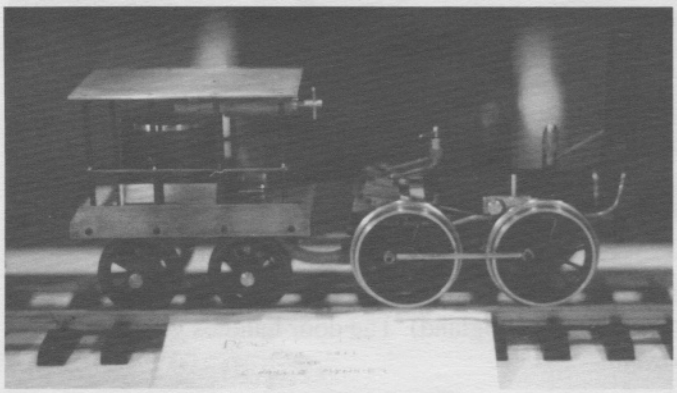
Above Right: Jim Montgomery (Washington) takes a turn as Track Marshal. The hat comes with the job.

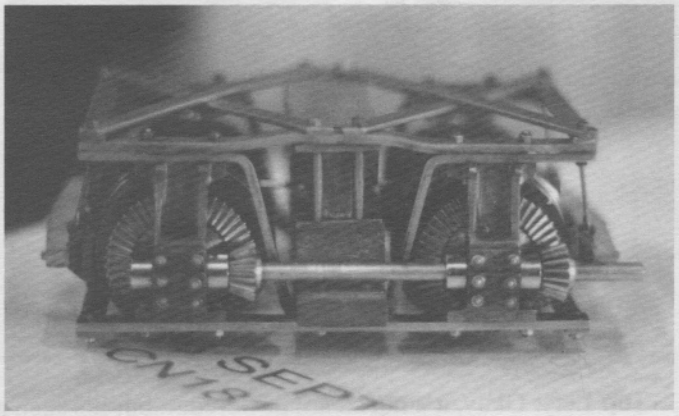
Photos by Geoff Spenceley











Top Left: Another aspiring Track Marshal. Geoff Spenceley (California) may need some packing in that hat!

Photo by Joan Cohen

Top Right: Bob Cohen (California) and Dan Rowe (Texas) discuss Dan's Aster S.P. Daylight.

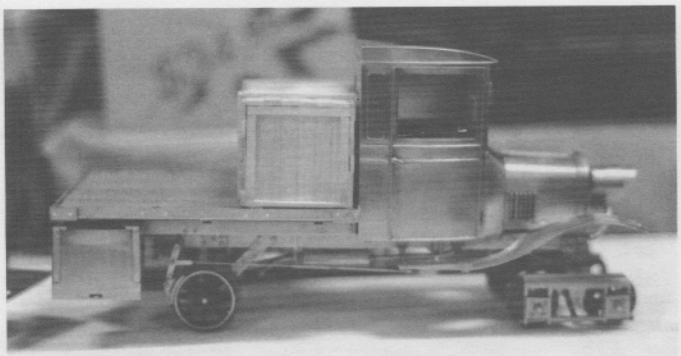
Center Left: Chip Rosenblum (Ohio) peruses the Steamup Packet. Jim Hadden notes that this is proof positive that Chip really does read the directions!

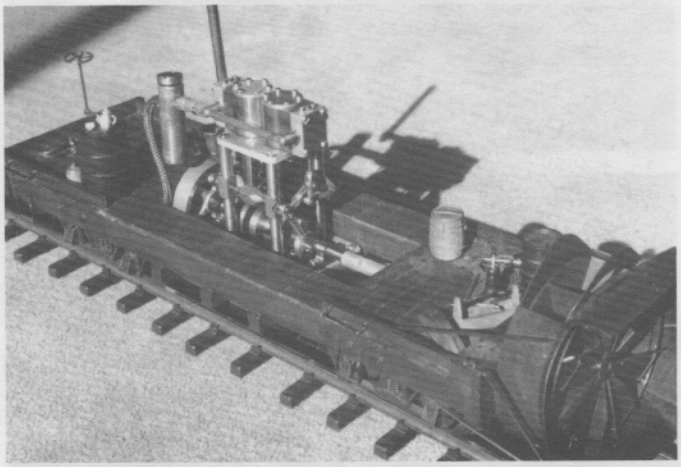
Center Right: Jim Hadden's (Utah) Aster Climax, having been converted by Jim to a 2-truck, 1:20 scale logger.

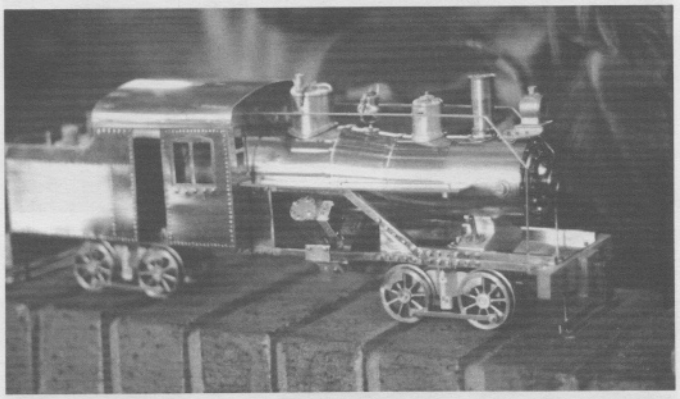
Bottom Left: Charlie Mynhier's (Texas) latest scratchbuilding project. It may be tiny, but it runs like a Swiss watch.

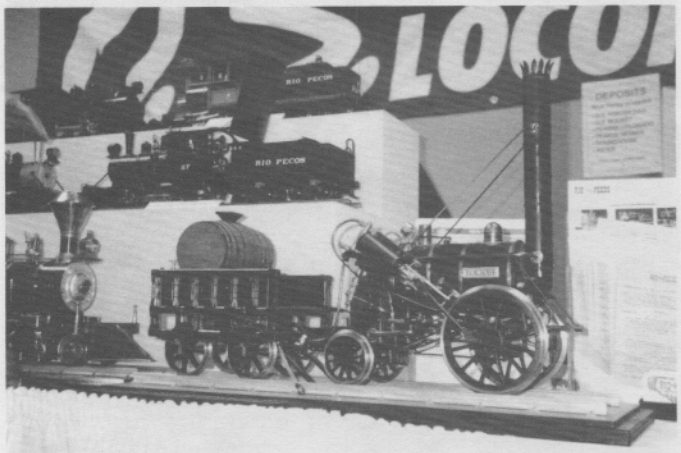
Bottom Right: Dan Rowe's scratchbuilt 7/8" scale Shay truck. Awesome!

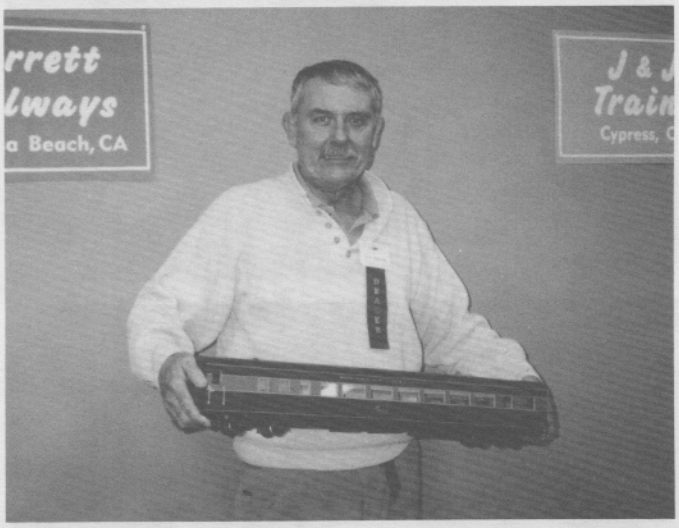
All these photos by Jim Hadden











Top Left: Okay, it's not steam powered.....but it's such an absolutely gorgeous 1:20 scale model of a Model T rail truck that I couldn't resist. Superb craftsmanship by Graham Smith (England). The door handles work and it has full underbody detail. Battery power or rail power.

Top Right: "BABE", Larry Herget's (Missouri) scratchbuilt One-Trucker Heisler. Larry is a natural born engineer with lots of great ideas.

Center Left: Cover's-off view of Jim Hadden's (Utah) scratchbuilt, working, steam-powered rotary plow.

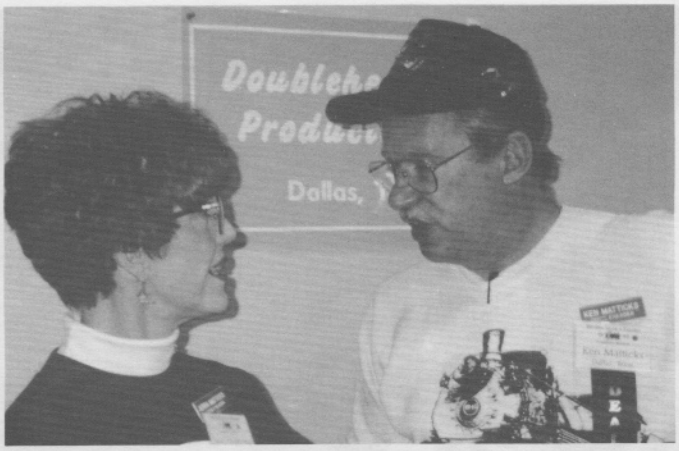
Center Right: Another of Jim Hadden's scratchbuilt beauties. It would be a shame to paint it!

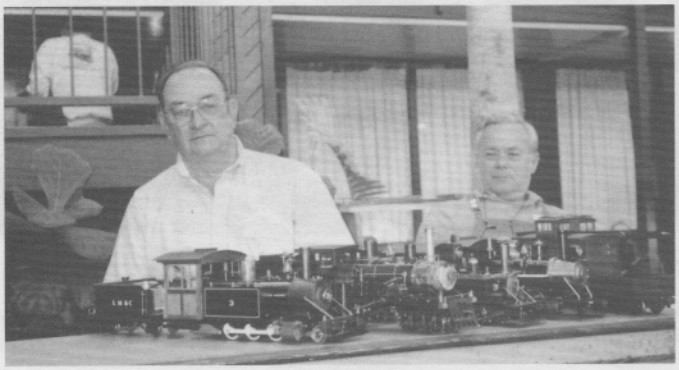
Top four photos by Jim Hadden

Bottom Left: Rio Pecos' stand in the dealer room. Their O.S. Locomotives display really attracted a lot of attention.

Bottom Right: Lee Barrett of Barrett Railways (California) shows off one of his exquisite Daylight coaches.

Bottom two photos by Carol Jobusch





Top Left: Neil Rose of Finescale Models (England) brought plenty of examples of his lovely 1:32 coaches.

Top Right: Jerra & Ken Matticks of Doubleheader Productions (Texas) plan their dealer room strategy.

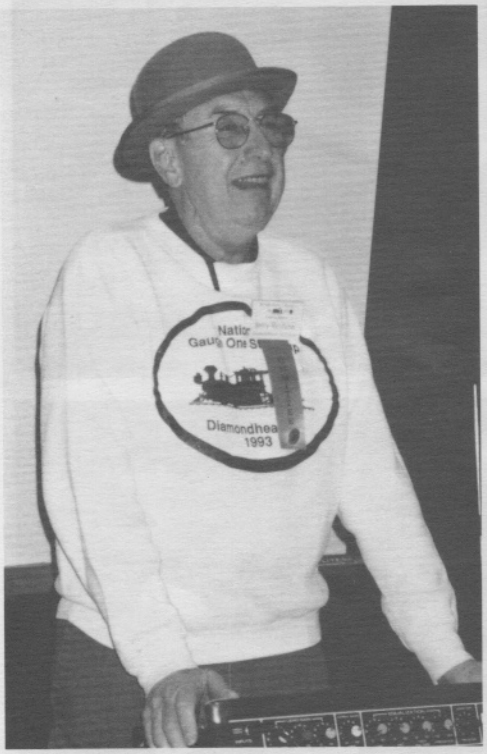
Center Left: When the dealer room was open it looked like feeding time in the shark tank!

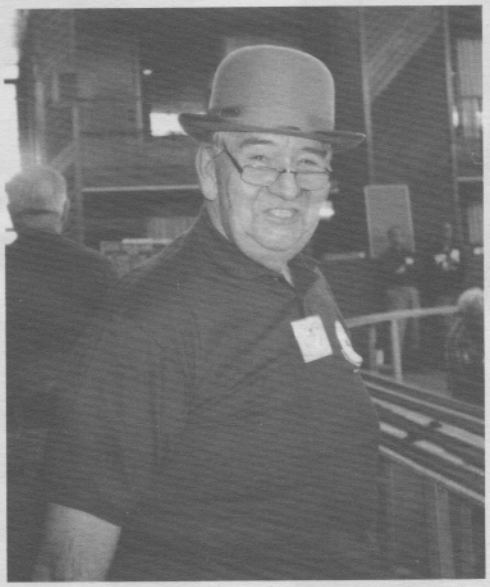
Center Right: Tanabe-san (Japan) prepares his smooth running Aster Stirling Single for another run.

Bottom Left: Don't let the serious looks on Norm Abrams and Bill Casteel (Florida) fool you - they were having just as much fun as the rest of us!

Bottom Right: Anthony Dimaggio (Florida) brought his fleet of beautiful steamboats, which ran just great in the pool.

All photos this page by Carol Jobusch





Top Left: Richard Finlayson of LEGEND Locomotives (California) explains the fine points of his new 4-4-0 to a potential customer.

Top Center: Gary Lyons (Florida) is one of our hobby's excellent scratchbuilders. Shown here with his latest creation, still under construction but running just fine.

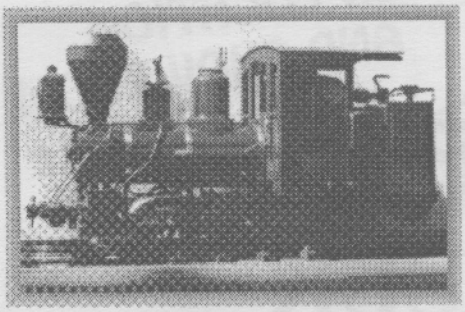
Top Right: John Shawe of Shawe Steam Services (England) is a master at coal firing and modifying standard commercial locomotives to burn coal.

Bottom Left: Jerry Reshew, promoter of the Diamondhead event, has threatened to institute a "Founder's Hour" next year, just so he'll be able to get some track time!

Bottom Center: Roy Scott (England) shows the folks in the Colonies how the Track Marshal's derby is properly worn to denote authority and instill the proper degree of fear and respect.

Bottom Right: Harry Quirk (Pennsylvania) and Peter Jobusch (Maryland) check out a switch kit at the Llagas Creek stand.

All photos this page by Carol Jobusch



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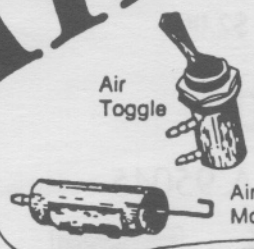

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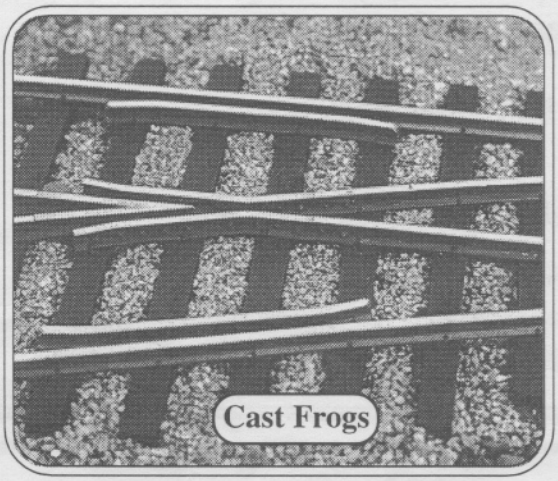

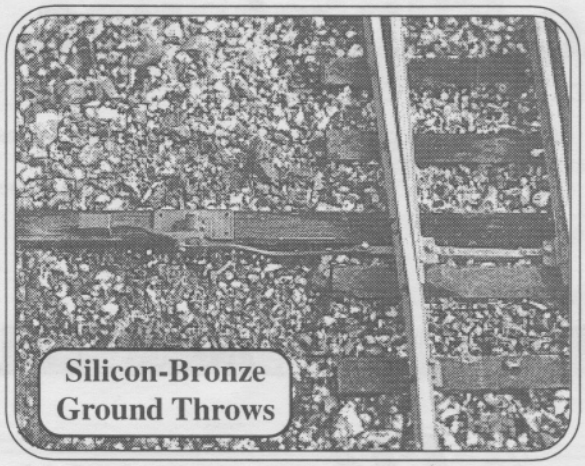

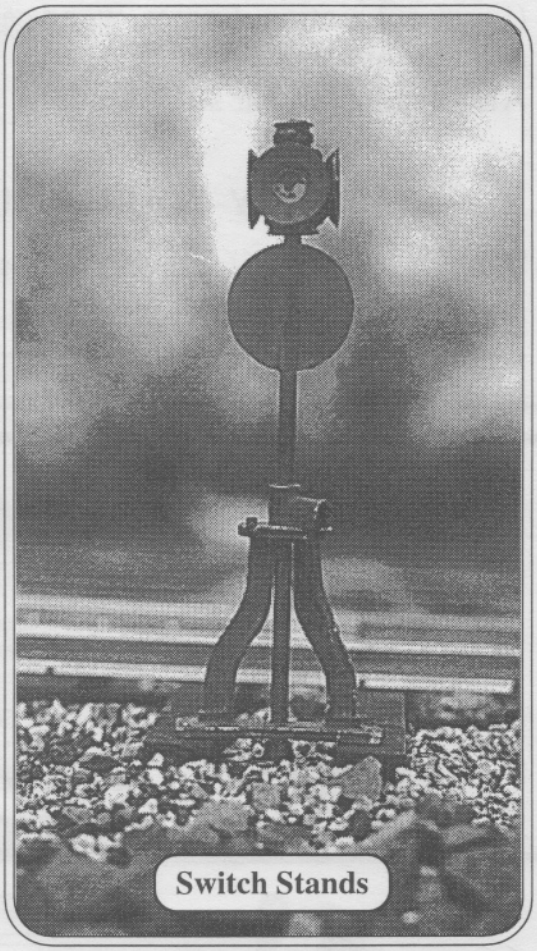

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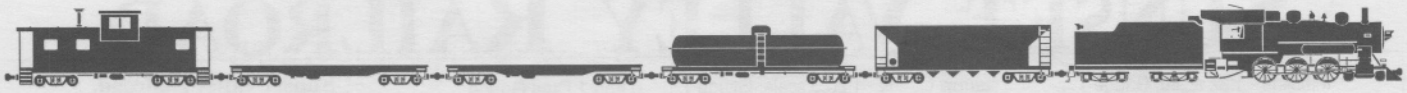

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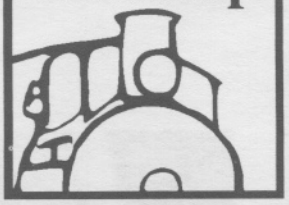

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For Sale: Aster Glaskasten 0-4-0 locomotive. Never fired, original tools & box. $2900.00 ppd. Larry Bean, 3550 Linwood Ave., Cincinnati OH 45226 - phone 513-321-8736. (38)

For Sale: (1) ASTER Schools 4-4-0, never run, excellent condition. $2875. **(2)** Aster 0-6-0 GER Tank, never run, excellent condition. $935. **(3)** Aster Schools 4-4-0, excellent runner. $2575. **(4)** Aster "76" 0-4-0 Plantation Engine, never run, with matching goods wagon also never run. $875. **(5)** Mamod Freight Set, factory built, excellent runner, only run once. 0 gauge track and original box included. $575. **(6)** Mamod gauge 0 factory built engine in excellent condition, meths burner, original box. $385. Bob Uhrmann, 935 Seasounds Ave., Marmora, NJ 08223-1061, phone 604-390-1259 evenings 8-12 pm. (38)

For Sale: Aster brass electric 2-6-0 C&S Mogul #22. Never run. $3,500. Stephen Hoffman, 1626 Hastings Court, Casselberry, FL 32707-2919 or phone 407-695-8457. (38)

For Sale: 1:32 scale, #1 gauge PSC SP C-30-1 Caboose Ptd., $475; PSC SP and NYC Composite Gondola Ptd., $265 ea.; PSC Undec. USRA Composite Gondola, $220; Eastern Rwy NYC Covered Hopper, $350; PRR H-30 Covered Hopper, $350; PFE Wood Reefer, $400; PRR and Reading Flat Cars, $275 ea.; GHB B&O and C&O GP-9 Ptd., $1,100 ea.; Aster SP GS-4 Daylight Live Steam Kit, $6,200. All new in box. Call Joseph Hultay (914) 446-5626 or write PO Box 618, Fort Montgomery, NY 10922. (38)

For Sale: 13 issues of *Locomotive & Railway Preservation* (1-13). #1 and #2 are very rare. These are in near-mint to mint condition. $65.00 + S&H. Also 31 issues of *Steam in the Garden* (1-30 + Special Issue of #1-#3). All in good to near-mint condition. $125.00 + S&H. Contact Robert Nowell, 160 Woodside Drive, Jim Thorpe PA 18229 - phone 717-325-8246. (38)

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End of the Line

Late again.....

We expected to be caught up with our publishing schedule by now, but here I am apologizing once again for a late issue. A two week vacation to warm, sunny Florida in February, followed by a four week bout with pneumonia in March & April, really put us behind with this issue. We'll try to make up some of the lost time on the next one, and we're really sorry for any inconvenience this may have caused our readers and advertisers.

Climax fever.....

We know that quite a few of you are following the Vest Pocket Climax series, but fellow steamer and all around good guy Clark Lord, of Las Vegas, Nevada, has really gone the extra mile. Clark has established a web page on the internet that is totally devoted and dedicated to the VPC Project. Clark has done a super job on this site, and he offers information and photos there that would benefit anyone interested in or working on the project. Check it out for yourself at:
<http://www.uwimona.edu.jm/users/kmanison/fls/climax/vpc.html>

You'll be glad you did! And don't forget to let Clark know how much you appreciate his efforts.

We'll close this column with a shot of Walt Swartz's outstanding portable track, all packed up on its storage cart and ready for next year.

Happy Steaming!

Ron

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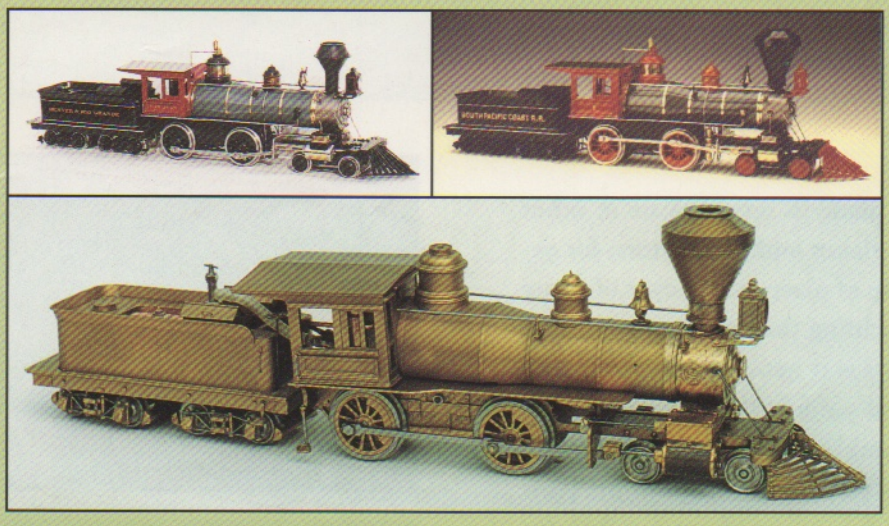

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