

# STEAM IN THE GARDEN



## *In This Issue:*

*Put Yourself in the Cab of Your Favorite Loco*

*Winter Steaming in Massachusetts*

*Improvements to the Aster Lion*

*Cheddar CLAIRE Review*

*...and lots more!*



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# STEAM IN THE GARDEN

Vol. 15, Nº 3  
Issue Nº 81

Gather, friends, while we inquire, into trains propelled by fire...

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## FRONT COVER:

Snow?!!! In June?? Well..it wasn't really June when this photo was taken in Massachussets. Check out the report on page 27 in this issue, and then keep your copy handy to cool you down on those hot summer days that are sure to come eventually.

photo by James Chadbourne

Editor  
**Ron Brown**

Faithful Assistant  
*Marie Brown*

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Dan Rowe • Paul Stump

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• e-mail address: rbrown54@stny.rr.com



## CALENDAR OF EVENTS

**July 7-10, 2005 - 32nd Annual Tuckahoe Steam and Gas Show**, located in Talbot County on Maryland's Eastern Shore, five miles north of Easton between mileposts 57 and 58 on Route 50. Lots to see and do for the whole family. Mike Moore's portable Gauge 1/Gauge 0 track will be set up and operating, so bring your steamers and trains. For information call 410-822-9868 or e-mail: [info@tuckahoesteam.org](mailto:info@tuckahoesteam.org) Web site: <http://www.tuckahoesteam.org/>

**July 15-17, 2005 - 8th Annual Shay Days**, located on the hallowed grounds of Ephraim Shay's estate in Harbor Springs, MI. Geared locos only! For more information contact Bruce Gathman ● [shayloco@voyager.net](mailto:shayloco@voyager.net) ● 231-526-0174.

**July 20-24, 2005 - The 2005 National Summer Steamup**, at the Lions Gate Hotel in McClellan, California, a suburb of Sacramento. The National Summer Steamup gives owners and operators of small-scale (1:13.7-1:32) live steam locomotives the opportunity to meet and run equipment in a secure, indoor, friendly setting. The 2005 event will feature both 45mm and 32mm tracks, a Saturday night BBQ dinner, clinics and workshops, exhibitor displays and swap tables. The Lions Gate Hotel, on the grounds of the former McClellan Air Force Base in suburban Sacramento, will provide the steamers with a ballroom setting of more than 6400-square-feet. Event organizers have secured the services of the Pacific Coast Live Steamers' original track, a 110-foot, 45mm-32mm dual-gauge layout, as well as the new "San Luis Obispo" track; in addition, they are working to bring in even more trackage. The hotel is providing live steamers with the low room rental rate of \$81.50 per night (double-occupancy). Reservations can be made with the Lions Gate toll-free at 1-866-866-7100. For more information on the 2005 National Summer Steamup, please visit the web site at <http://www.summersteamup.com/> ● e-mail [steamup@summersteamup.com](mailto:steamup@summersteamup.com), or call (415) 794-4800.

**August 14, 2005 - Lockstock and Barrel 2nd Annual Aspen Steam-In.** Located high in the Colorado Rockies at 9,400 ft, the L & B is an elevated track specifically designed for Live-Steam 45 mm equipment. There is a single 200 ft mainline with no (very little, anyway) grade and minimum 10 ft radius curves. Plan now to attend and enjoy running in the cool mountain air with fellow live-steamers here in Western Colorado. Please RSVP to Don Beach at (70-862-8332 or [ngtrainman@aol.com](mailto:ngtrainman@aol.com)).

**September 2-4, 2005 - Pennsylvania Live Steamers Labor Day Weekend Steamup.** Rte. 29, 1 mile north of Rte. 113, Rahns, PA. Permanent Gauge 1 track and Gauge 0/Gauge 1 portable tracks in operation. Night running with lights. Food available on site with lodging nearby. For information and directions contact Harry Quirk, PO Box 215, Springtown PA 18081 - phone 610-346-8073, or e-mail [mikemoore@comcast.net](mailto:mikemoore@comcast.net).

**September 10-11, 2005 - 2nd Annual Cincinnati Small Scale Steamup.** For more information...[www.gcgrs.org/steamup](http://www.gcgrs.org/steamup) ● 513-385-6599.

**September 24-25, 2005 - Marty Cozads steamup in Nebraska City, Nebraska.** (see the report on this event in 2004 in SitG N° 80) Marty would like to know for sure ahead of time if you are coming, so please RSVP. A noon meal will be provided. For more information, or to RSVP,

*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.)*

## HELP WANTED!

We are always in need of articles, steamup reports, loco and product reviews, photos, etc.

This is YOUR magazine, and YOUR forum for exchange of ideas and information, so send 'em in.

Got questions? The combined experience of our readers is the best in the world, so go ahead and ask.

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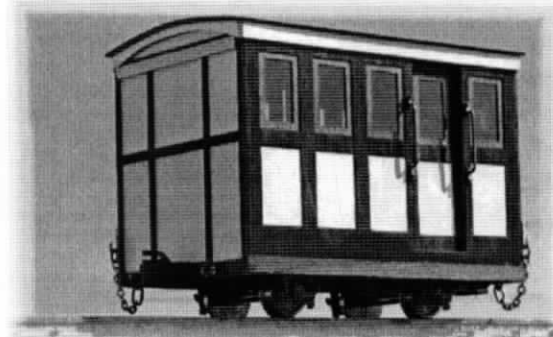


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*Letters from readers are welcomed and encouraged. Offer advice, encouragement, suggestions or constructive criticism. Tell us about your current project (and don't forget the photos!) or just share live steam experiences. But please keep your letters to a reasonable length so everyone has a chance to use this forum. Letters may be edited for length or clarity. Send your letters & photos to: SitG, Dept. RPO, P.O. Box 335, Newark Valley, NY 13811, USA...or e-mail to <rbrown54@stny.rr.com>.*

\*\*\*\*\*

Lexington, KY  
via e-mail

Ron,

As part of a proposed live steam track in Versailles, Kentucky at the Bluegrass Railroad Museum, we are also promoting a gauge 1 track. Please announce to your readers that interested gauge 1 steamers should contact me at this address if they would like to participate.

Steven Harrod  
Applied Arts Ltd.  
Lexington, KY

e-mail: a2soft@aol.com  
phone: 859 225 1572

\*\*\*\*\*

Ontario, Canada  
via e-mail

Hi Ron,

Enjoy your magazine, and the Jan/Feb 05 review of the new Accucraft Mogul by George Erhart.

I'm a REAL NEOPHYTE live steamer, but I chose this engine because it looked easy to run, is moderately priced, and being a narrow gauge fan - it's smack dab gorgeous.

A group of friendly live steamers in the Toronto area gave this novice some expert tutoring before the winter

snow arrived, and here's a couple additional observations to George's review:

1. My railway has a few tight 30" radius curves. With decent boiler pressure the engine negotiates these just fine, but the binding slows progress considerably. This isn't all bad, as it serves to "self-regulate" the speed of an otherwise manually controlled locomotive.

2. The safety valve isn't below the throttle as George states on page 31, it's in the steam dome. (I assume the valve George mentions is a clack valve?, and the holes in the tender are for a water tank and pump? You experts will know this, and no doubt you'll have other letters)

3. The photo on page 31 shows a large horizontal cylinder (air reservoir?) below the fireman's side of the cab. My loco didn't come with this, so I gather it's a photo of the model prototype and production models weren't shipped with it. Too bad, I like the look of it.

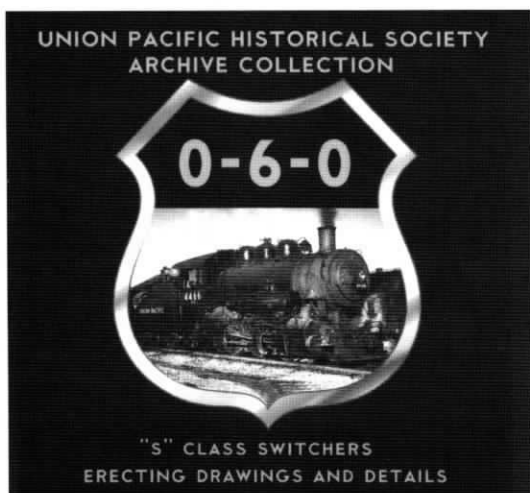
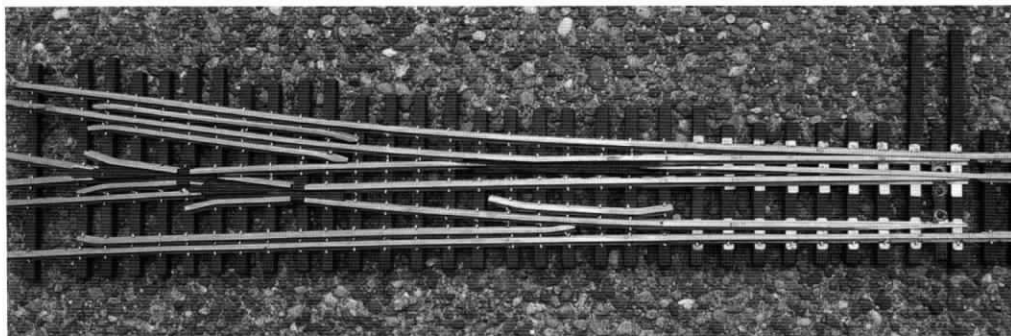
Anyway, this letter is getting too long if it's of value to print at all. Just want to add that Accucraft has been really great with this beginner & his dumb questions. I had a smoke box support broken in shipping and I managed to break off the smokebox number plate (I notice George's is missing in the photo on page 29) - Accucraft had replacements to me within a week, along with operating instructions that weren't originally shipped - wonderful customer service and I'm going to like dealing with them.

Cheers,  
Ralph Beaumont



# WHAT'S NEW?

**Sunset Valley Railroad** has introduced a dual gauge #6 switch (turn radius 90") for 'O' and '1' gauge. Made from code 250 brass rail and n/c machined Delrin frogs, these are hand spiked to 15% glass filled polypropylene ties using blackened stainless steel spikes. The switch is actuated by a switch stand or ground throw, sold separately. Pictures of this switch and other items available from SVRR can be seen on the SVRR website, [svrronline.com](http://svrronline.com). Price \$225.00. Phone: 253-862-6748



**For all you Union Pacific fans,** The Union Pacific Historical Society has available a CD filled with essential information on the "S" Class Switchers, including erecting drawings and details. This CD includes over 1200 drawings (every drawing in the UPHS collection) related to the "S" class locomotives. They are presented in the common .pdf format easily opened with Adobe Acrobat Reader software available on the Internet at no charge. There also is a full index of all steam locomotive drawings in the UPHS collection. A full set of instructions on the use of the CD is included. This comprehensive collection is priced at just \$25.00 plus 5.00 for shipping. There is a \$5.00 discount for UPHS members. Send orders to: UPHS, P.O. Box 4006, Cheyenne, WY 82003 - FAX to: 307-635-5197 or email [uphs@wyoming.com](mailto:uphs@wyoming.com). For more information check their web site at <http://www.uphs.org/>

**American Model Supply (AMS), a division of Accucraft Trains, announces their D&RGW Reefer (Narrow Gauge) in 1:20.3 scale, 45mm gauge.** These reefers are available in two logo styles: Flying Rio Grande or the Royal Gorge Herald. These colorful cars are sure to be a favorite. Our samples exhibit sharp and crisp molding, casting and lettering and are beautifully detailed with brass castings. Couplers are knuckles with working lift bars. The trucks are die-cast and are fitted with metal wheels. The doors are functional, as are the ice hatches on the roof. Concerning the ice hatches....I managed to lose one of the tiny parts while fiddling with a hatch, so if you are as myopic as I am, be very careful if you insist on opening the hatches! AMS thoughtfully included some spare parts with each car for those delicate and easily broken bits.



## TECHNICAL SPECIFICATIONS

Scale/Gauge - 1:20.3 scale / 45mm gauge  
Construction - Plastic body, Die-cast trucks,  
Brass castings  
Minimum radius - 1.2 M (48 in.)

## *Mighty Mouse - the Aster Lion/Thunderbolt*

*by Bill Payne*

### *Improvements to a tiny favorite...*

The Aster Lion has been around for some time now, but there still seems to be a lot of interest in calming the Mouse and reducing its tendency to run away, occasionally flinging itself off the track.

There have been many articles about modifying various locomotives, and unless you have the particular loco in hand, much of this advice is lost to the reader. This article will present the same problem, but hopefully some will find useful information.

One point I would like to make in the beginning is that the motion work in these little engines must be very free. Excess friction is very detrimental to performance. Most of the problem is misalignment. There should be slight side play in bearings, links,

etc. Check all bearings for burrs and free movement. If everything is carefully assembled it should not take more than 6 or 7 psi to run the engine on the initial test.

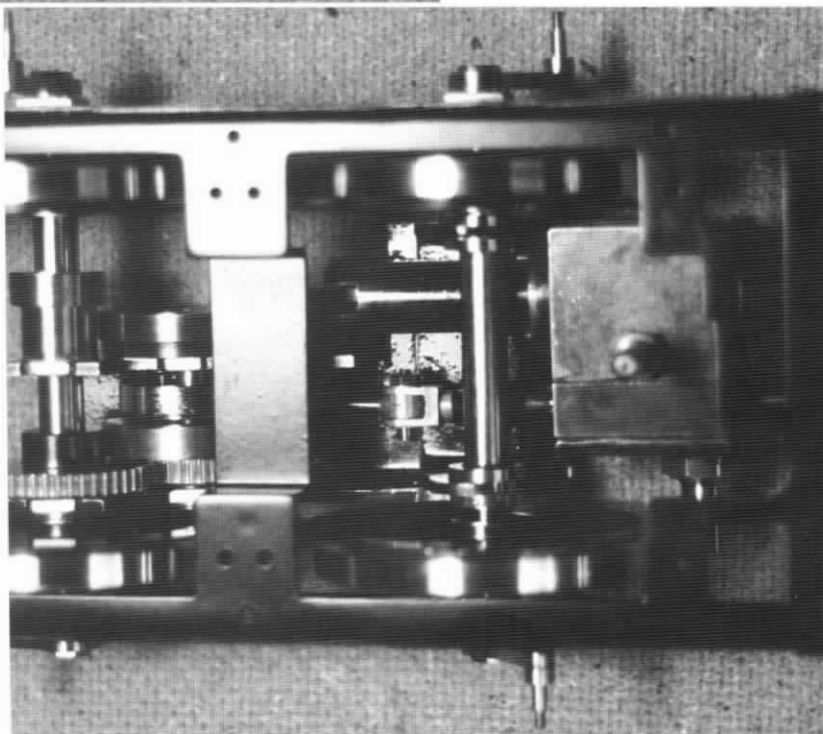
I discovered one problem in the manufacturing process. The engine unit hangs on the two driver axles, with bronze bearings in the rear and a pair of hooks in the front. When I first assembled these units I noticed the engine was crooked in the frame. This was because the rear drive axle was crooked, causing much binding in the side rods. Eventually I found the problem to be that the holes for the axles were not drilled in the center of the axle boxes in a fore and aft direction (about .004 off center). If one box is



*The author's Aster Lion, subject of this article.*



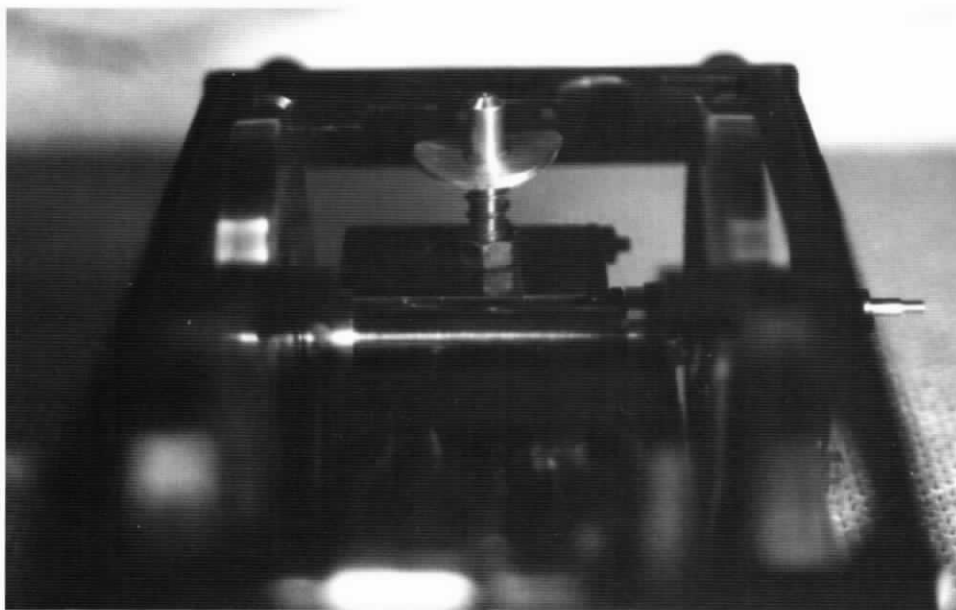
*Picture #1 - Aster Lion engine unit, as modified by the author. (See text for details)*



*Picture #2 - the engine and frame assembly.*



*Picture #3 - the author's smokebox sealing modifications.*



**Picture #4 - smokebox floor/exhaust nozzle sealing modification.**

installed one way and the opposite box the other way, misalignment occurs. Trying the boxes in various positions I was able to straighten things up and get free side rod movement.

Picture #1 shows changes I made to the engine unit. A brass tube was screwed onto the piston rod gland, enclosing the crosshead. I have no idea what its function was, as it did not touch the crosshead. The mystery tube went into the scrap box. The threads on the outside of the gland were turned off to make a locating spigot, and a new bronze tube with proper fit on the crosshead was made. It had a flange with which it was fastened to the cylinder with the same screws that held the rear cylinder cover.

In an attempt to get smoother operation of the engine, the original brass crank disc was replaced with one of steel, thicker and larger in diameter. The maximum diameter was restricted by track clearance. By turning the eccentric around and putting its drive pin just inside the frame on the crank disc side, I was able to get enough space to install a small flywheel. It's not much—but every little bit helps.

I did not like the hook to the front axle mount. It produced a steel-on-steel point contact—a poor bearing surface. A wheel was pressed off the axle and bronze bearings installed. The hooks had to be filed

out to accommodate the bearings. Care is required here as all four bearings must line up exactly, otherwise there will be friction from the twisting of the frame. To prevent the bearings from turning in the engine frame, one side has a brass pin through the flange and the other side has a flat spot resting against the frame. Picture #2 shows the engine and frame assembly.

The loco is alcohol fired so it is dependent on a good draft. However, the instructions ask that the smoke box be sealed with insulating material. This is useless—it is very



**Picture #5 - blower valve and throttle valve modifications.**

porous, being easily blown through. Picture #3 shows my modifications. The inside of the smoke box was lined with a hard bronze strip (brass would also work) carefully fitted to make good contact with the front flue sheet. It was also recessed at the front edge to allow a close-fitting frass disc to seal the front of the smoke box. Notice that it had to be hand filed in order to fit the distorted boiler barrel.

The chimney screws into the fitting on the top of the smoke box. There are enough threads on the inside to screw in a petticoat pipe. A flat filed on its flange permits the cover plate to go on and prevents the petticoat from unscrewing. A piece of insulation between the cover and the outer smoke box assures everything stays in place.

Another source of leakage is the exhaust nozzle coming through the smoke box floor. Some provision

for engine movement and vibration must be allowed. A brass disc was made with a good fit on the bottom of the smoke box, and a reamed hole for the nozzle. A light spring holds it in place. Cylinder oil accumulates in the bottom of the smoke box and produces a fairly good seal (picture #4). As long as the engine is turning over, even with no load, adequate draft is produced.

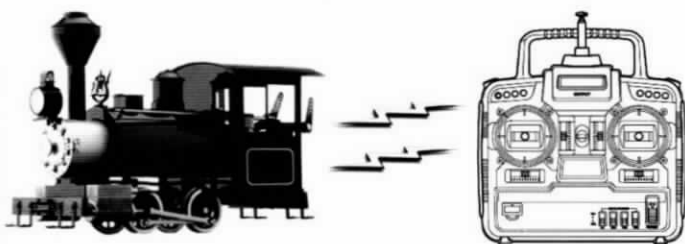
One more change helped control the speed. As supplied, the blower and throttle valves have essentially two positions—on and off. My fix was to turn back the seat on the valve stem about 1/16 inch, leaving a pip the same diameter as the hole in the throttle body. A very slight taper on the pip completes this simple change (picture #5). There are enough threads on the valve stem and valve body to allow the valve stem to screw in the extra distance. Be sure the pip is centered or the valve may not close completely.

I hope these notes will prove useful in getting a little more fun and a lot less fear in operating *YOUR* Mighty Mouse!



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## Wingnut sez....

Been tired of all them metal chips getting stuck in the cheep suction hose that came with the shop vac? Well, just go down to the pool supply store and buy a section of pool suction hose. It comes in various lengths to match most shops. I figured this out when a pool suction hose I bought was too dang short for the job. Upon closer inspection it was a nice sturdy lined flexible suction hose. Wow -- just what I had tried to get twice with hard vacuum hoses from a major non-SitG-advertiser that were not very flexible, plus the flimsy plastic tools that came with the vac kept breaking.

POOL HOSE -- problem solved.

Okey you might have to attack one end of the plastic fitting with a rough file so it is tapered and will fit the vac suction or blower end, but as it is really just jammed in the hole this is a minor issue.

You can even circulate the wash tank fluid through the hose, or just chunk it into the tank -- a prudent man would drain the hose because cleaning fluid costs money -- then put an old sock on it, use the shopman's secret weapon (duct tape) to secure the sock, set it for blow, and whoosh -- clean as a shiny new whistle.

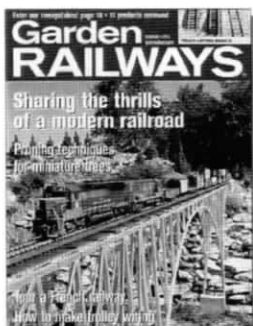
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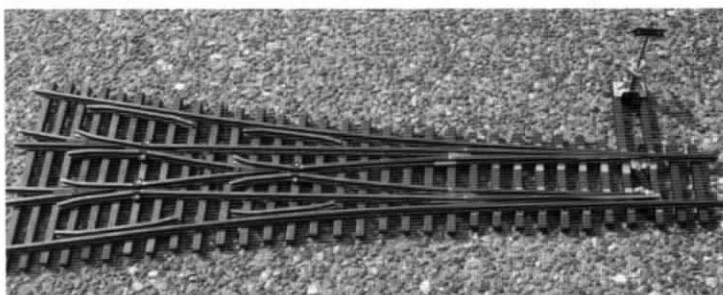
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# *How to Put Yourself in the Cab of Your Locomotive!*

*by Charles T. McCullough*

I have often said that the only thing wrong with my Aster Mikado is that no amount of dieting will get me small enough to fit in the cab.

Well... NO LONGER!

Sure, you can put a small video camera in the cab of the locomotive and see on a TV screen what

the view is from there, BUT I found it a surreal experience to see a photo of ME "in the cab" with a steely stare at the track ahead!

These instructions will be how to I put myself in the cab of my locomotive using the "Paint" program supplied by Microsoft Windows. Other programs could have been used, but I find that "Paint" is so simple that even I can use it. If you try this with



*Our intrepid author blasts down the mainline on the CMBY Ry. at the throttle of his Aster USRA Mikado.*

a different program you will have to infer what to do from my instructions here.

I take photos using a digital video camera, so I can get many images to choose from, but a still camera would also do. Also, since it is a digital camera it allows me to see the images right away and take more if something is wrong with them.

First, I set the camera on a tripod and aim it at the back deck of my house. I consider the angle I want for the final photograph (looking up at the cab of the locomotive) and how to get that angle when making the initial images. I aim it such that I will fit in the frame properly, and I give consideration to the angle of the light, but the surroundings don't matter as I will edit them out!

I hit "Record", and then go stand on the deck and lean against the railing like I am leaning out the window of the cab of a locomotive. I pose in several ways; wave at the camera, pretend to have my hand on the throttle, pull the non-existent whistle cord, etc. (bet the neighbors think I am NUTS!).

I then put the locomotive on the CMBY RY Elevated Mainline in a position to get the same sun angle, and position the tripod to get the same camera angle. I used several "Zoom" settings to get images of different sizes to select from.

I follow the instructions that came with my camera to feed both video segments into the computer. I select a single frame from each segment (one of just me and one of the locomotive) and save them as bit map (.BMP) files. I happened to already have a photo that had some trees to use as background (the background of my Railway is a chain link fence and that ain't good 'nuff), but I could also have video taped some other background and selected an image from that.

The "short" instructions are that I "Erase" everything around some part of one image (all the background around "me" on the deck) and "Paste" that over another image (the Locomotive). There are a few problems that arise in doing, but they are easily overcome with a bit of understanding of the process.

The "Paste" operation replaces what is in the "To" image with what is in the "From" image except you get to select one color as a "Transparent" color. You "Erase" everything you don't want in the "From" image (i.e.: the background) using THAT color. Areas of that color in the "From" image do not replace what is in the "To" image during the Paste operation.. I usually use pure stark white for the "Transparent" color (the left-most color swatch in the bottom row of the Color Selection box).

Some things to note here:

1) This must be done in a "high color" mode, not just a 256-color (or less) mode. If you are not in a "high color" mode you will notice that certain areas of a photo are "blotchy"... human skin areas will look like the person has the plague, or a plain blue sky will have random shaped areas where the blue changes abruptly from one shade to another, rather than a gradual change across the whole sky. BUT, two things both have to be in "High Color" mode... 1) the display hardware on the computer AND 2) the images themselves. To get the hardware in a "High Color" mode, Right-Click on the desktop (anywhere other than on a desktop icon/shortcut) and select "Properties" in the "Context" menu that appears. Then select the "Settings" tab on the dialog box that appears and select the highest "Color Quality" available. Different flavours of Windows and computer hardware may have different ways/words for this action... you'll figure it out. You will have to determine how your method of importing images to your computer (video link, scanning a paper photo, etc.) work to select a "High Color" mode for the images. Most programs will automatically select the highest color mode (you have to deliberately override them to get something less).

2) Whenever doing a "Paste", first select the "Image" menu and make sure the "Draw Opaque" selection does not have a checkmark next to it. If you don't, the Transparent color won't be "transparent" and you will paste a white rectangle (with your photo in the middle) over the Locomotive.

3) Whenever doing a "Paste", set the "background" color to the same "Transparent" color used to erase what you don't want in the "From" image. For me I select "White" by Right-Clicking the left most color swatch in the bottom row of colors in the Color Selection box. If you used some other color as the transparent color then chose that same color as the "background" color.

Oh, and one more thing... save your work OFTEN! At least after each major step. And always do a "Save as..." to create a "new" file. Don't just "Save" back on top of the original image as you may have made a mistake (erased too much) and not realized it... these files can be deleted later when all is done, but I find it miserable to have to do everything over again because the computer dies or (more likely) I

make some stupid mistake.

Start with the image that you want to put "into" the other image. I start with the locomotive and erase all the background, including what shows through the cab windows and the parts visible between the wheels, frame and rails, etc. This is tedious to do because in a real world image the demarcation between objects is quite fuzzy and indistinct. Be careful to not erase too much, but do not leave any "extra" pixels that don't belong. I erase in small steps and keep my other hand on the "Undo" keys (Ctrl-Z) so if the mouse goes astray I can undo it immediately and continue from there. I zoom in and out often to be sure I am removing the pixels that it makes sense to remove, yet not remove what should stay. To erase large areas of the image, use the "Selection" tool (uppermost on the right in the "Tools" selector) to outline a rectangular area (being careful to not let it encroach on any of the image to be kept) and then type the "Del" key on the keyboard.

I can alter the outline of the locomotive and/or erase stuff I don't want (R/C antenna, wires to servos, etc.). This is one reason to have a separate photo of the locomotive and another for the background. Even if you want a photo of your locomotive in your own garden, take two photos, one with the locomotive and then, without moving the camera, remove the loco and take a second photo. Then you can correct the outline of the loco and paste that over the image of the garden.

Sometimes the area being erased will be nearly white, so close to white that I cannot tell if I have erased all the area I intended to. If I miss some areas then when I paste the image to the other picture there will be white blotches where I don't want them. To look for these areas I select some bright color that is not in the photo (like "RED!") and select the "Tipping Paint Can" from the toolbox and do a "Flood Fill" of the areas I have erased. If I see some white blotches I know I have missed erasing that area. When I have it all cleaned up, I Flood Fill back to white.

If this "From" image has anything white inside the part to be kept, (a "glint" highlight on the boiler barrel or a bright center of the headlight, etc.) then when the paste is done, the "To" image will "show through" there. This is bad. To cure this problem, you have to alter the white in the part of the image you want to keep to be something that is "almost" white.

Copy this whole image to the clipboard and erase the drawing window by typing: Ctrl-A (select the whole picture) and Ctrl-X (copy it to the clipboard,

and erase the drawing window) to prepare it for the next step. Don't go doing something else with your computer at this point (like editing your Last Will and Testament) until you do the next step... you don't want to lose the image on the clipboard. Of course, if you have been saving your work regularly, that won't be a catastrophic problem!

Double-click on one of the color swatches in the Color Selection box. I usually select the second from the left in the bottom row (the lightest gray). In the dialog box that then appears, click on the "Select Custom Color>>" button and in the RED, GREEN, and BLUE text boxes, type in the number "254". Setting all three to 254 selects a color that is "almost" white (255 for all three is as white as anything can ever get). Click "OK" and Flood Fill the entire image with that color. Now paste (type: Ctrl-V) the image on the clipboard back in. Any white pixels in the pasted-in image will now be this "almost" white color. Now select the White color swatch and "Flood Fill" the background to white again. What was "White" in the original image is now imperceptibly darker, but when pasting it to the final image those areas are not the "Transparent" color and thus will not show the background through.

Copy that entire image of the train to the Windows clipboard by typing: Ctrl-A, and Ctrl-C (like Ctrl-X but does not erase the drawing area), then switch to the photo of the trees and paste the clipboard (Ctrl-V) into it. (Remember to not do anything to the clipboard between the Copy and the Paste!)

Now I have a clean photo of my locomotive on a good background and I can see the background through the cab windows, but not through the headlight or a shiny spot on the boiler or wheels.

To add my image into the cab is a wee bit trickier. Again I erase the parts of the image that I don't want, just like I did with the locomotive. I also change all the White areas in the image I want to keep to be the "almost white" color as described above.

But my picture is not the right size to fit in the cab properly. Normally I have to shrink my image to fit and then do a bit of "clean up" after the shrink operation.

With both the composite (Locomotive/tree-background) image and the edited image of "me" on the screen at the same time (2 copies of Paint running), I guess at a "Shrink" percentage for "me" ("Image | Stretch/Skew..." menu) until I appear to be close to the right size for pasting into the other image. When it looks pretty close I copy the image to the clipboard (type: Ctrl-A, and Ctrl-C), select the other image and

paste (type: Ctrl-V) the clipboard there. Part of the Paste operation allows the pasted image to be moved around to stick it where I want it (point at the pasted image and hold down the mouse button and drag the image to where it goes). If the size is wrong, I "Undo" the paste and "Undo" the Shrink and try again. It usually takes no more than two or three tries at this. I always undo the shrink so the next try uses the original size image; otherwise it gets "mushy". Reducing an image 50% twice will produce an image that is 25% of the original but does not produce as good an image as reducing the original directly to 25%.

Unfortunately, this "Shrink" function "blends" the edges of the image with the white background and this produces a speckled fringe around the image that is very unsightly when pasted to the other photo. So, after I have the size correct, I "Undo" the last paste and go back to the image I just shrunk and Flood Fill the background around the image with some bright color that is not in the image I want to keep (like "RED"). Then it is easy to see the fringe the around the image and I can either erase these pixels (to white) or make them match the color of the pixels next to them using the "Eyedropper" and "Pencil" tools. Again, this is tedious, but it gets rid of the speckles. Then I "flood fill" the background to White again.

This new image can now be pasted into the Locomotive cab.

I used the "Selection" tool in Paint to surround a section of the cab-window stile (the vertical stick between the window panes) and copied and pasted that into the appropriate area in front of my image to make it look like I am behind that part of the window. This is sometimes more easily done using a "Clone" tool, available in other photo editing programs.

I did use a different photo editor to "clean up" the final picture a bit... I used a "Blur" tool to blend some of the "seams" between the images. If this is done, it must be done very lightly to maintain the crispness between them, but enough to hide the color and focus differences in the images. I also used a function that does some color and contrast correction, and another that is called "sharpen" that helps define edges a bit. But these are not always necessary to do.

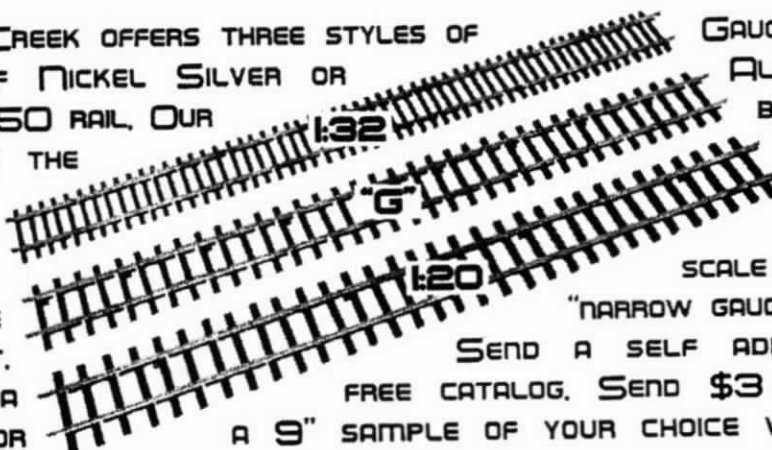
The result is ME in the cab of my locomotive (diet notwithstanding).

Semper Vaporo,  
Charles T. McCullough  
CMBY RY



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## *A Steamup You Don't Want to Miss!*

by John Fuller

For two years now the Michigan Small Scale Live Steamers (MSSLS) have been hosting a steamup at Crossroads Village and Huckleberry Railroad during their Railfan Weekend in Flint, Michigan. This steamup is quickly becoming one of the best events in the Midwest.

What does it take to make a *good* steamup? Well, if you're like me, not much; a few good friends, your favorite steam locomotive, a level track and a

comfortable chair. To have a *great* steamup, you need a few more things. That's where Crossroads Village and Huckleberry Railroad make the difference.

The Village, located just outside Flint Michigan, is like taking a walk back in time; you enter the village and walk past the depot and the running 1:1 scale 4-6-0 Baldwin locomotive. As you cross the tracks you enter downtown, circa 1860. The village contains 34 historic structures, including a steam powered saw



*Michigan steamer Tom Myers (inside track) watches over the trains and answers questions while visitors enjoy the steamup.*



*Railfans prepare to board one of the Huckleberry Railroad's working steamers for a ride.*

mill and steam powered cider mill.

Take a walk down to the lake and see the Genesee Belle, a paddlewheel riverboat. Then on your way back, stop for a ride on the 1910 Ferris wheel or the 1912 Carousel. But we all know what we are really after; bring on the Live Steam Locomotives!

The Huckleberry Railroad was so named because it ran so slow, a person could jump off the train, pick huckleberries and jump back on the train with minimum effort. The Huckleberry Railroad began its history in 1857 as part of the Flint Pere Marquette Railroad Company. Currently, the Huckleberry Railroad owns 7 locomotives. Of the 7 locomotives, #2 and #464 are the primary locomotives that serve the Huckleberry Railroad. The Huckleberry Railroad #2, formally known as #152 locomotive, is a 4-6-0 built in June of 1920 by Baldwin Locomotive Works of Philadelphia, Pennsylvania for the Alaska Engineering Commission (AEC). The AEC purchased #2 and the Tanana Valley Railroad to further its task of building the Alaska Railroad. The other primary locomotive,

#464, was built in 1903 by the Baldwin Locomotive Works for the Denver & Rio Grande Railroad. #464 was the final "Mudhen" in an order of 15 locomotives delivered with Vaclain Compound cylinders, Stephenson Valve Gear, and a slope back tender. The Rio Grande, a few years later, converted #464 to simple cylinders and slide valves.

Later in its life #464 was converted to its third set of cylinders, now with Walschaerts Valve Gear and piston valves. As of January 2003, the Huckleberry Railroad owns and operates 7 locomotives, two cabooses, one hopper car, and motor car (Speeder). Each and every coach, caboose, and car is very unique in its origins and history.

#2 has been the primary locomotive for the past few years as the Mudhen #464 was being rebuilt. The 464 is now back in action and will be running when Railfans weekend happens again in August of 2005. You don't want to miss this!

So you have 1:1 scale live steam to ride on and your small scale lives steamers to run - what could be

better? How about a free ride on the Huckleberry Railroad, after park hours, for the small scale live steamers and other exhibitors? Now we're talking!

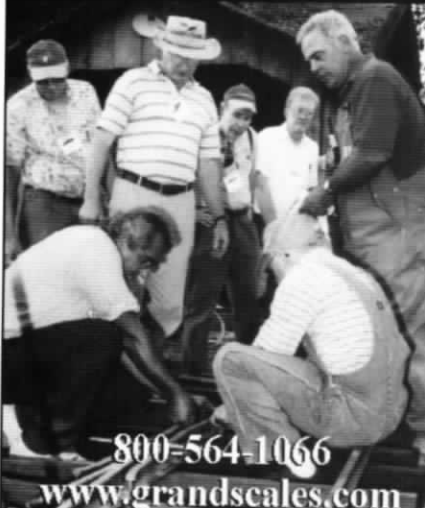
Then while you're riding, they stop the train at different locations, allowing everyone to get off. Then they back the train up so everyone can take movies and photos as the locomotive runs by. Some great shots have been taken at this time. They do 4-6 drive bys at different locations so there is plenty of time for photos.

Just when you think your day couldn't get much better, the wonderful staff at the Village invite all small scale live steamers back to the roundhouse (actually it's more like a rectangle) for a bar-b-que and a chance to see the engines up close. Don't touch, very hot!!

WOW, talk about a great steamup!!!

After all of that on Saturday, you get to come back on Sunday, enjoy the park and run your engines with all your friends. Now you know why this is such a great steamup event and one you don't want to miss.

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I invite all the steamers out there to come and join us in 2005. The Village is located about 1 hour north of Detroit Michigan and just off I-75. Visit **www.mssls.info** for information regarding the steamup, hotels, directions and other information. For additional information on Crossroads Village and Huckleberry Railroad visit:

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# Ornamental Steam Locomotive Whistle

by Paul Stump

## A simple and fun weekend metalworking project

### Background

Having recently purchased a live steam Accucraft Michigan/California Shay locomotive to convert to 7/8n2 scale, it came to my attention that the model was missing a whistle.

Additionally, the safety valve outlet was not vented outside the cab. This weekend project corrects those shortcomings and is a good beginner's lathe exercise to boot. No lathe? Well, one should be able to build it using a drill press and a few hand files.

I began researching model and full scale whistles on the internet. I didn't find any model projects that interested me, and finally decided to free-lance one on my own. What follows describes my efforts.

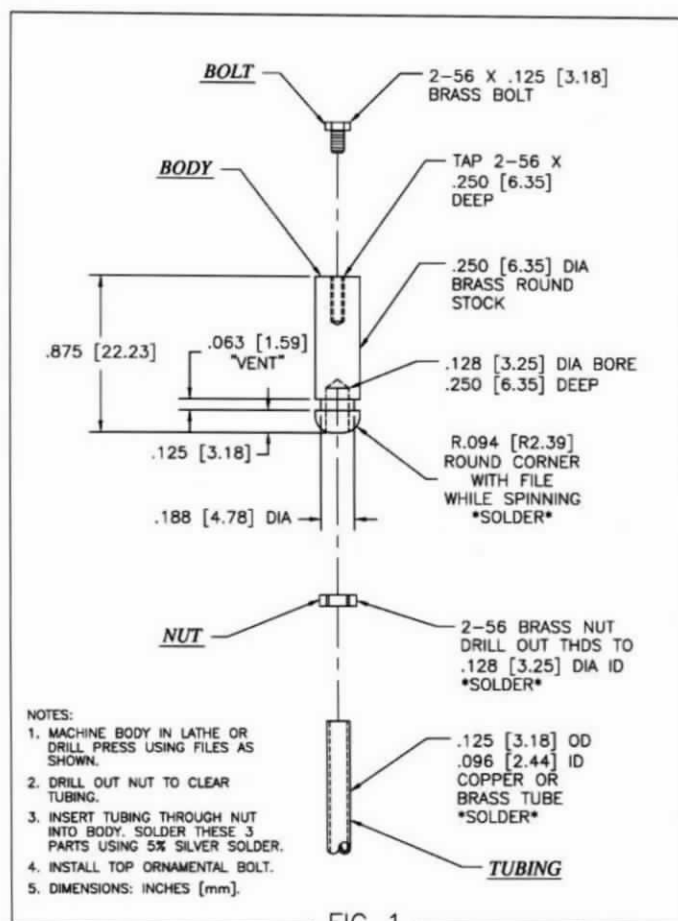
### Description

This is a single bell whistle which looks Shay prototypical and at the same time vents the safety valve to the outside world. At 7/8n2 scale (.875" = 1 foot, 24" gauge) it measures a little over 3" in diameter and is 12" tall. Reducing each dimension by the proper factor, this design can be used for the smaller scales as well.

FIG. 3 shows a top and side view of the completed whistle.

Referring to the Bill of Materials in FIG. 4, I was able to find all the materials and hardware in my shop. (Score one for the Chief Financial Officer's blessings). All materials should be made of brass, copper or a non-rusting grade of stainless steel.

Suggested sources are included in the Bill of Materials.



Construction: see FIG. 1

Referring to FIG. 1, machine the .250" [6.36mm] round stock. Chuck up several inches of stock with about 1.50" [38.10mm] sticking outside the chuck. Begin by rounding over the edge of the bottom of the Body using a hand file while spinning in the lathe. Use the file as you would file normally with forward strokes against the material, moving the contact point until you get a nice round radius. Experiment with various lathe spindle speeds to achieve

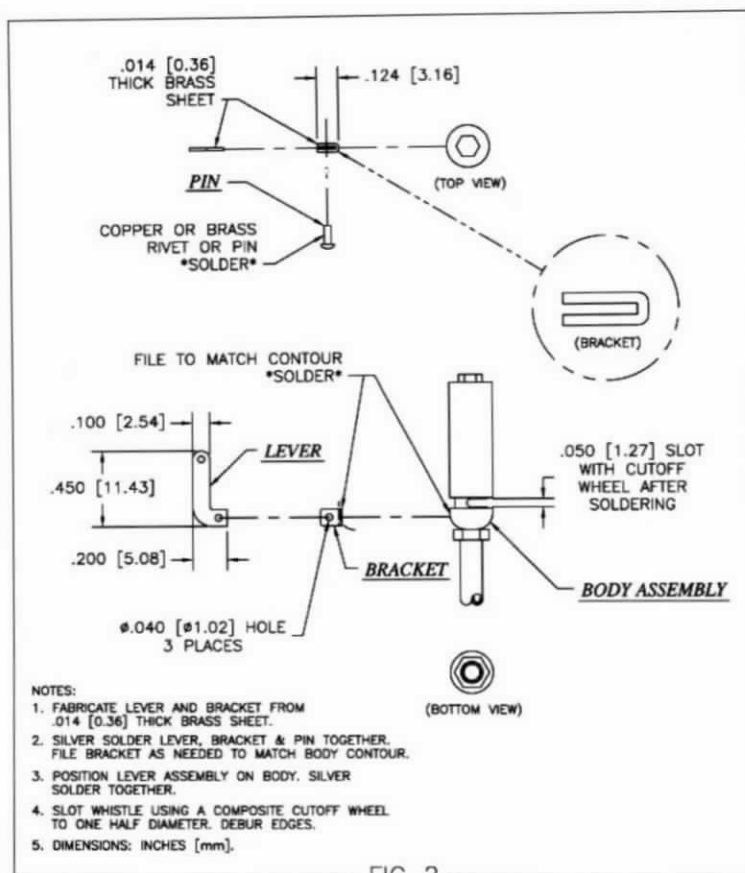


FIG 2

a smooth surface. Polish off with a finer file followed by emery cloth or Scotch-Brite® pads. Install a .128" [3.25mm] drill in the tailstock chuck and bore the clearance hole for the Tubing.

Using a lathe cut-off tool, undercut the whistle "vent" to .188" [4.78mm] diameter. Next, with the cut-off tool still in position, cut off the Body to a length of .875" [22.23mm].

Now reverse the Body in the lathe chuck and drill a .070" [1.78mm] diameter tap hole using the tailstock chuck. Follow up with a 2-56 tap, threading deep enough to accept the top Bolt. Install the decorative Bolt using the proper size wrench – NO pliers allowed around brass!

Next step is to drill out the Nut to clear the Tubing. This is a tiny nut so be sure to clamp it solidly and squarely in the lathe chuck. I used the drill press for this task, clamping the Nut in the drill press vise. Either way should work but drill very slowly and back

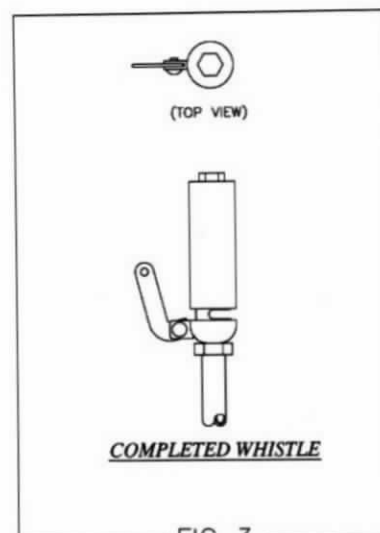


FIG 3

out the drill frequently to prevent the drill bit from seizing the brass nut.

The copper Tubing should be cut to a length to suit your application. Be sure to debur the inside and outside edges of both ends before the next step.

Now we are going to solder the above parts together. Be sure all surfaces are clean and bright. Mount the Body in a metal vise upside down. Coat the contact surfaces with soldering flux and insert the Tubing through the Nut and into the Body. Heat the assembly with a propane torch and then apply a minimum amount of 5% silver solder to flow inside the joints. Once it is cool, rinse with water to clean off the flux, then allow to dry.

#### Construction: see FIG. 2

I used hand shears to cut out the .014" [0.36mm] thick brass parts. Then I used a small emery belt bench sander to debur and radius the corners. Next center punch the hole locations and drill 3 places with a .040" [1.00mm] bit.

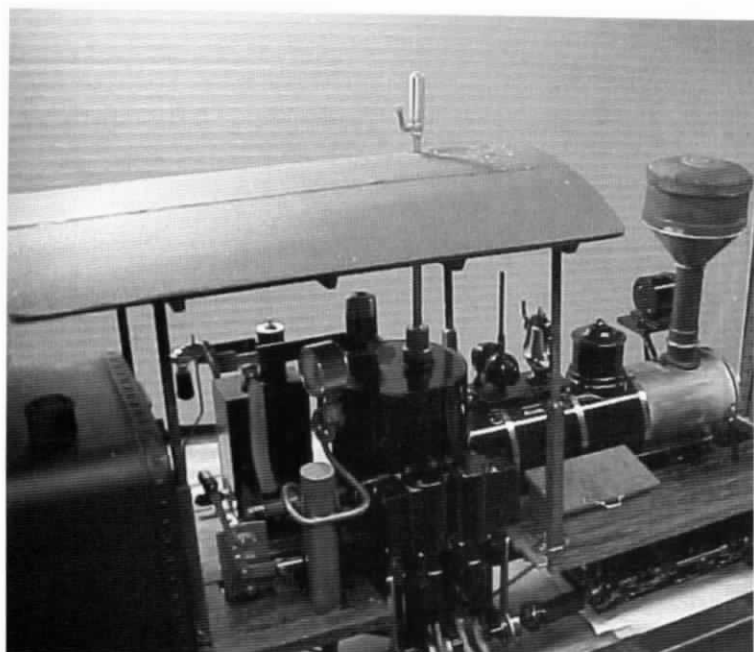
Now clean and flux the Lever, Bracket and Pin, assemble, and solder as we did above with the Body Assembly.

Next file the edge of the Bracket to approximate the contour of the rounded section of the Body. Carefully clamp the 2 assemblies in proper position and solder once again with flux and silver solder.

Clean off the

BILL OF MATERIALS			
ITEM	DESCRIPTION	QTY	SOURCE
1.	BOLT, 2-56 X .125, BRASS	1	MICRO-FASTENERS
2.	BODY, .250 DIA X 1.00, BRASS ROUND	1	JUNK BOX
3.	NUT, 2-56, BRASS	1	MICRO-FASTENERS
4.	TUBING, .125 O.D. X AS REQD, COPPER	1	K&S ENGINEERING
5.	PIN, .040 DIA RIVET/WIRE, COPPER/BRASS	1	JUNK BOX
6.	LEVER, .014 THICK SHEET, BRASS	1	K&S ENGINEERING
7.	BRACKET, .014 THICK SHEET, BRASS	1	K&S ENGINEERING

FIG 4



*Whistle installed in author's Accucraft Shay.*

flux and allow to dry. Then using a Dremel® type high speed rotary tool with composite cut-off wheel, slit the whistle "vent" one half way through (opposite side of the Lever) to provide an opening for safety valve refuse. Debur and clean the edges of the slot.

#### **Summary**

There comes a time in every project when you simply must stop what you are doing, step back, and admire your own work. That time is now.

So there you have it. A fun and simple little metalworking project and something you can point to and say, "I made that whistle from scratch!"



*Closeup view of the author's decorative whistle design.*



*Note the spray and condensation from the safety valve, which the author piped through his decorative whistle.*

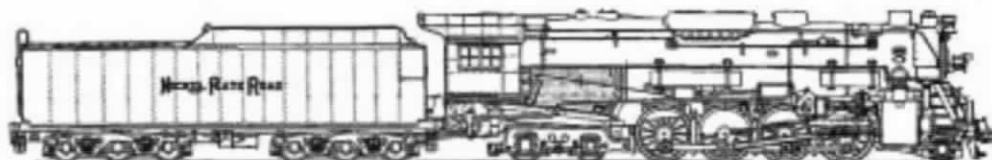


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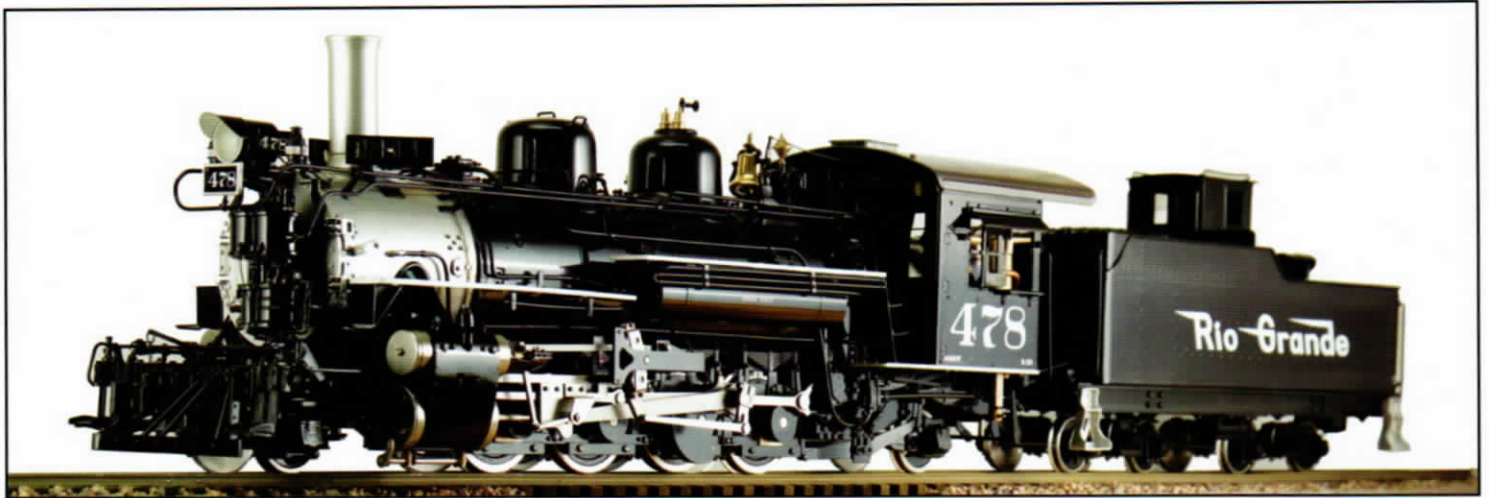


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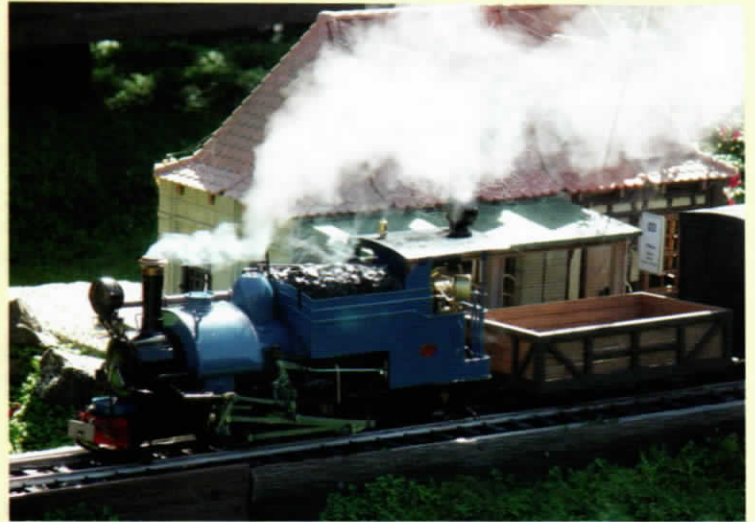
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# STEAM SCENE



*Steamup on Richard Heisler's Mad River Short Line.*

Photo left: The balloon track features both 1:32 and 7/8 scale locos in the same lineup.

Photo top left: A Cricket works the beer train.

Photo top right: Geoff Spenceley's B Class Darjeeling with a rake of hand built, turn of the century stock.

*photos by Richard Heisler*





This page, top: Robert Hekemian's long train of reefers moving at speed on his elevated track.  
*photo by Robert Hekemian*

Photo above: Rob DeVries steams his Catatunk 14-ton Shay at the Shay Days Steamup in 2004. This great event is coming up soon.... check the calendar in this issue and we'll see you there!

Photo top right: John Fuller's Accucraft Shay fresh from the woods with a string of logs.

Photo bottom right: Wayne Sorenson moves some more logs with his Aster Climax.

*Shay Days photos by Marie Brown*

Photo opposite, bottom: Teaser! Watch for more on this modified Accucrat Ruby in our next issue.

*photo by Ed Johnson*



JULY 20-24,  
2005



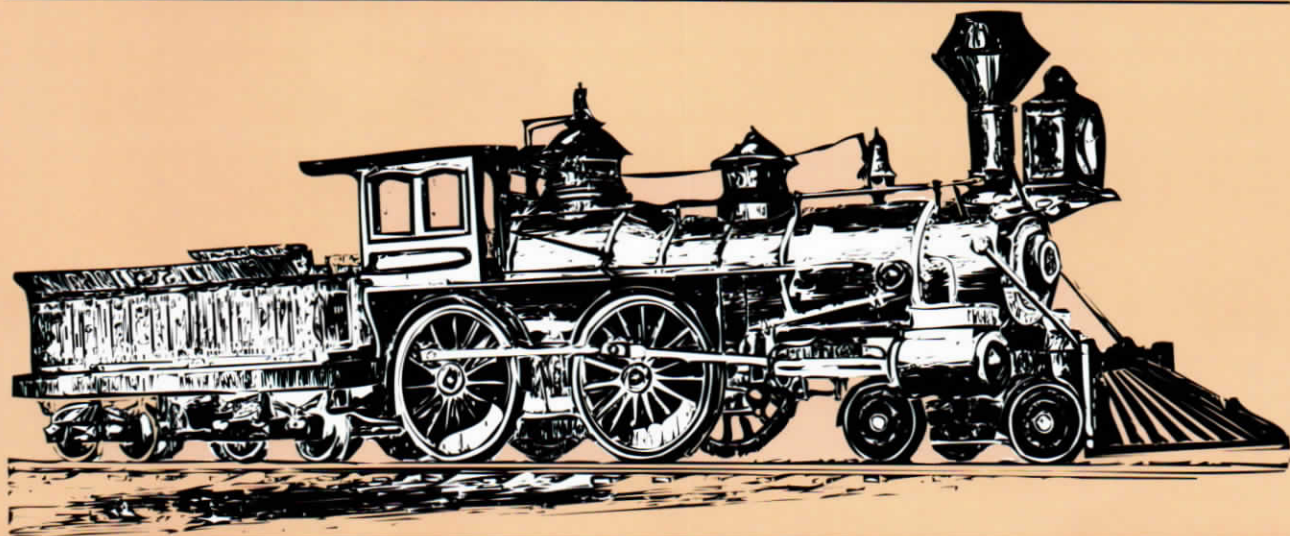
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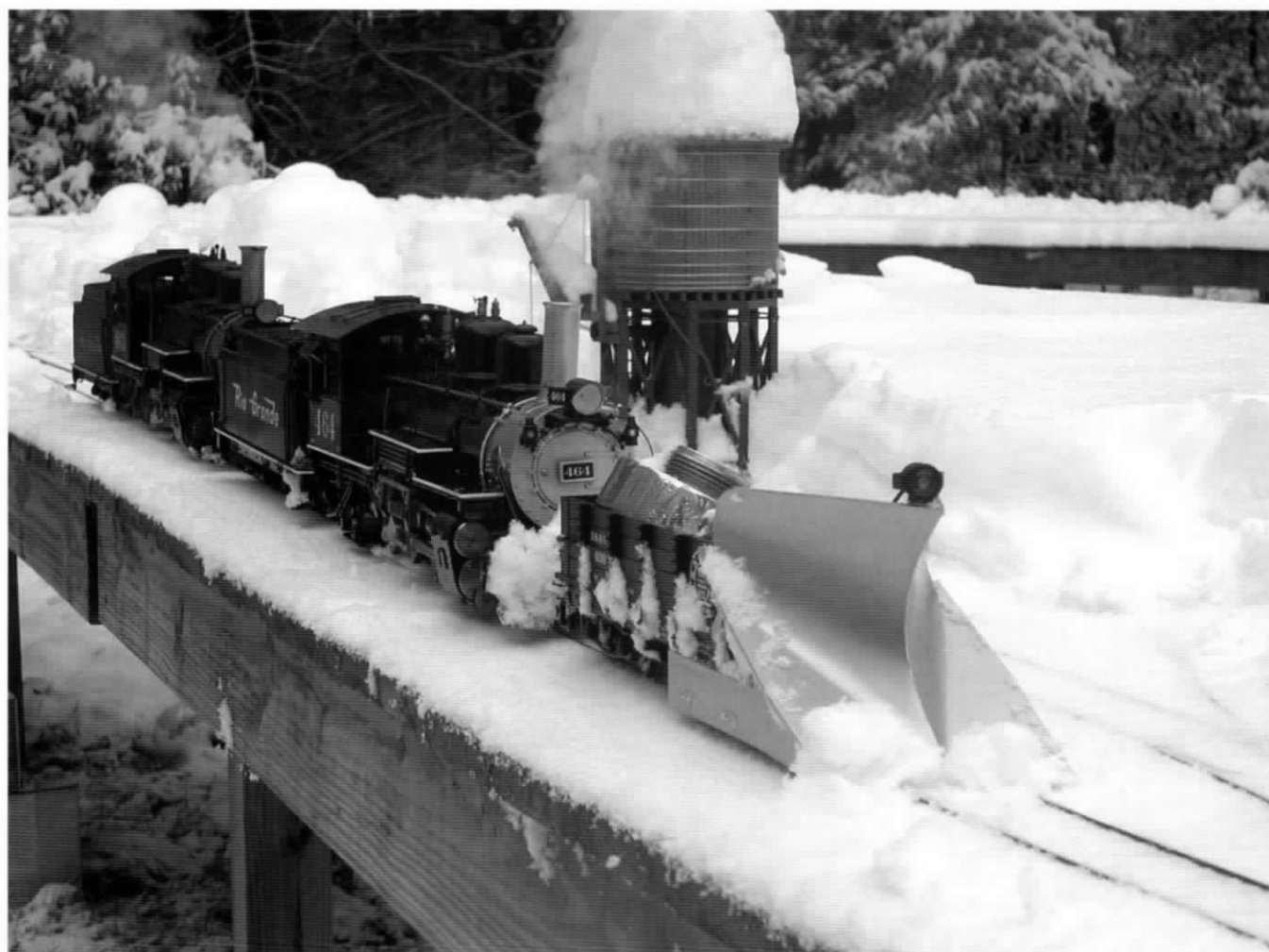
## *Winter RRing in Massachussetts*

*by James Chadbourne*

Yesterday (November 13th) I had planned a final steamup for the year. We were going to brush the leaves off the railway and brave the cool fall weather for one last run. Unfortunately, I used the phrase "... unless it's actively snowing" in my invitation.

Mother Nature called my bluff, with over 8 (scale) feet of snow. We decided to steam anyway. Here are some photos...

Once the line was cleared, we did run a little freight. We had a lot of fun steaming under somewhat different and difficult conditions.



*Doubleheaded K-27's on the plow train at the Edgville water tower. #464 is the author's, and #463 belongs to Andy Brauer.*



*Doubleheaded K-27's  
on the plow train at  
Mosquito Hill*

*K-27 #464 departs  
the yards at Cano-  
py with plow #039.  
That's Andy Brauer  
in the background,  
warming up #463.*

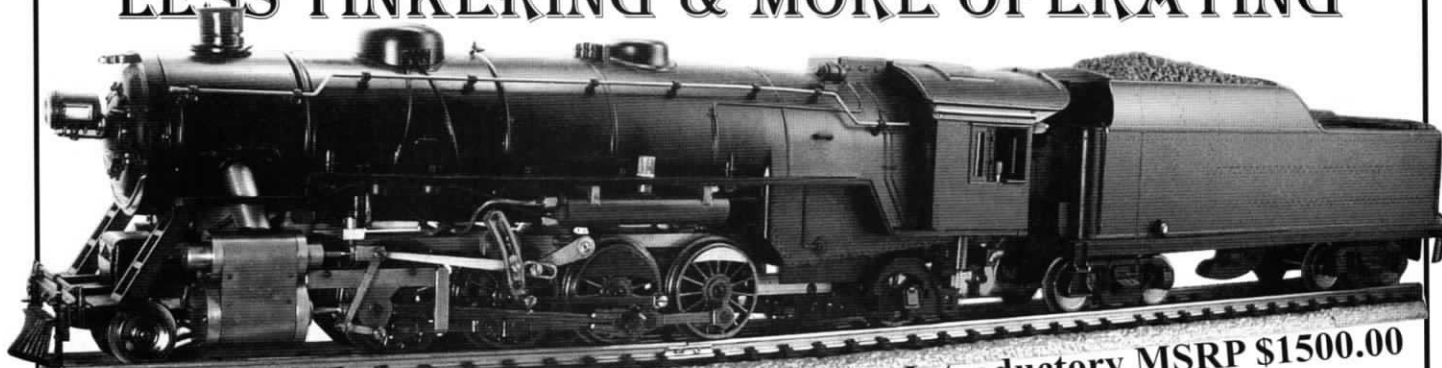


*#463 foreground, and  
#464 background with  
plow 039.*



*It really works! #464  
rounds Kay's point with  
plow 039.*

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# *Gordon Watson's March Steamup*

by John Simon

*Steaming in Puffing Billy country...Victoria, Australia*



*Steamers are hardy souls...a little rain doesn't deter them!*

When I found out that Gordon Watson was holding a Steamup in the first weekend of March 2005, I started planning and plotting on a way to wangle myself an invite. I finished up flat out asking GW if I could attend. He said it was OK so.....

The trip south was a nine and a half hour drive, allowing for three stops, and as I now have a vehicle with cruise control I enjoyed the trip. With the exception of the twenty-two wheeler who tried to take me out, that is! Why do they let idiots drive large vehicles?

On arriving at Fern Tree Gully Motel I was invited out to dinner by Gordon and Michelle to a Pizzeria in Belrose. The food was superb.

Saturday morning was overcast with the possibility of rain. Arriving at the Watson's home at 0930, Gordon and I had a quick look at the Weather Radar on his computer. "See that band of rain? And after that we'll have clear weather."

Oh brother did we have weather!

People started arriving about 1015. Before anyone else arrived I had the chance to look through the

workshop of Argyle Loco Works. Well set up and everything needed to produce the locos is within easy reach. (that's a polite way of saying that the workshop area is small B-) I saw some bits for my new loco, SR&RL #10.

Out at the track various locos from Accu-craft, Aster, and Round-house were seen and please don't ask me to name all of the people that I met as I'm getting to that stage of life - well, you know the problem. There were about fifteen to eighteen people throughout the day so the variety of locos kept changing.

To say that we did have some rain throughout the afternoon might be an understatement, and every few minutes Gordon would slip into the house to check the weather RADAR on his computer system. Until finally someone said to Gordon, "Please stop looking at the weather RADAR, you're making it rain!"

Everyone enjoyed themselves. I know I did as I haven't run on a such a large track before, with 10 foot radius curves my Shay couldn't believe her luck.

The steam plumes were magnificent all day and with the



*The Great and the Small.*



*Humidity makes for great steam plumes.*

Na's and G42 of the Puffing Billy Railway plying their trade at the bottom of the garden there were a lot of interruptions to go do some train spotting.

Lunch consisted of very tasty little sausage rolls, Quiche Lorraine and a myriad of different sandwiches by Michelle, Gordon's wife, and the other

ladies. Many thanks, ladies...it was very tasty.

During the rainy periods the larger locos were slipping on the wet rail coming up the grade, which made for a lot of throttle work to keep up the momentum of the trains without overspeeding on the down-grade.

On the Sunday I had a look at the Puffing Billy Railway. This is the two foot six inch preserved railway in Victoria using Balwin Na 2-6-2's and a Beyer-Garratt 2-6-0 + 0-6-2 locomotive.

I have several DVD's on the railroad, but there's

nothing like the real thing in front of you to grab the interest.

I even managed to place my Argyle Na #7 on the footplate of the 12" to the foot #7a and take a couple of pix. The Fireman and Driver of #7a were fascinated that a



*A beautiful setting for a steamup.*

working model of their loco was possible. Then onto Train #11 for a run to Lakeside and back. A truly exhilarating experience.

The drive home was uneventful until I was coming into Robertson, about an hour from home, when I hit a wombat and damaged the car enough to cause me to reduce my speed until arriving home just before midnight. A wombat, for you non Aussie's, is a small

animal similar in size to a half grown pig, but they are all bone and muscle and built like brick out-houses.

All in all a fascinating and very enjoyable weekend.

By the way, if I get another invite next year I'll be there with bells on.



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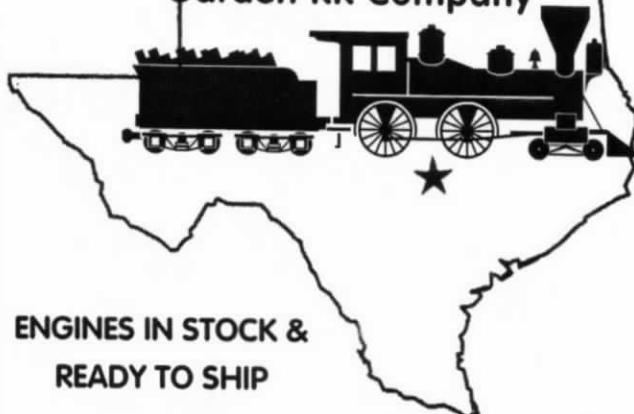
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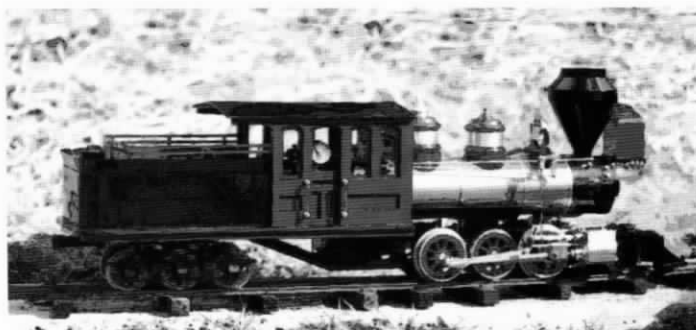
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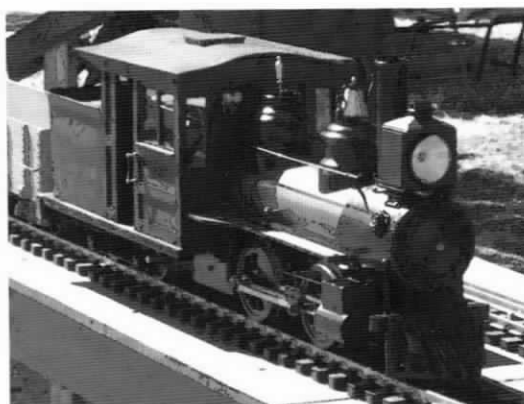
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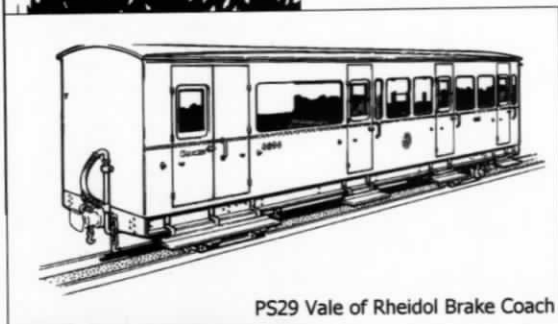
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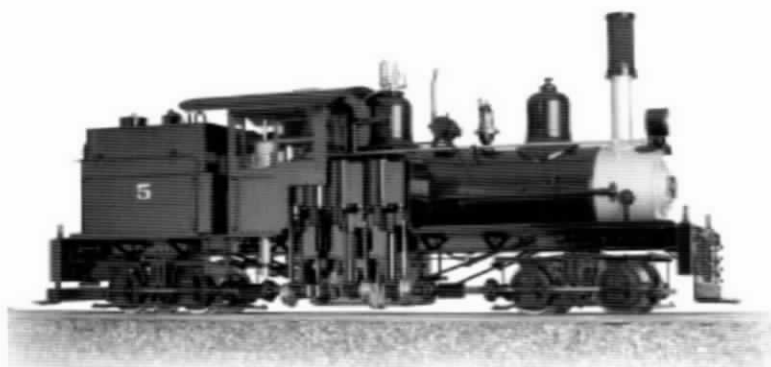
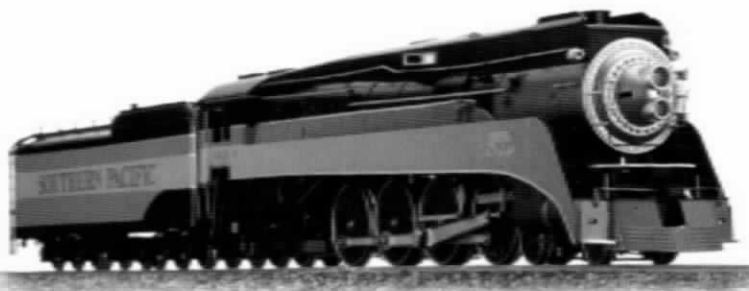
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# *The Nuts and Bolts of Shays*

*Shay engines pre-1900*

By Dan Rowe

All the photos of Shays engines with shop numbers below 132 that I have seen show a steam chest that extends beyond the cylinder bore at both ends. This was a mystery to me: what is inside the box?

An example can be seen on S/N 129. The photo of shop number and road number 129, which left the erecting shop on 4/27/1885, shows the early version of the 2-7x7 engine with a long steam chest. The hand brake is on the fireman's side, and the reverse lever does not have a quadrant. This arrangement gives the fireman the extra duty of braking the engine. But without a quadrant to lock the reverse lever in place, the engineer has to keep his hand on it at all times. Operating this little Shay on a grade was definitely a two man job.

The drawing of the two-cylinder engine in the last issue is based on Lima drawing card T-54, showing the short steam chest version. This is the only 7x7 cylinder drawing that survived, and the first drawing I worked with. All the photos I have seen of 7x7 engines show the long steam chest.

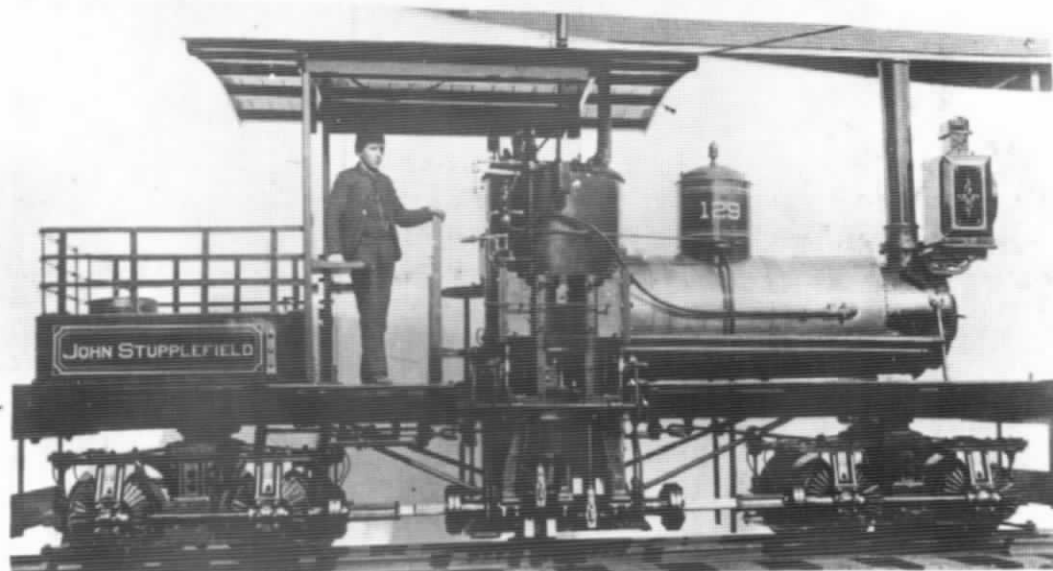
My early attempts to model a Shay engine started well before I knew what was inside the long steam chest. I kept ordering early cylinder drawings that I knew from photographs to have the long steam chest. The early drawing for the 10x10 engine Lima

drawing 1649 (Figure 1) solved the mystery.

Figure 1 shows two D slide valves and two exhaust ports. The steam ports have a straight path into the cylinder. This requires the steam chest to be longer than the cylinder so the slide valves can travel past the port. The upper and lower exhaust ports are connected internally. A comparison of the cross sections of the engine drawing in the last issue and the ones in Figure 1 reveal the difference between the double D valve and the far more common single valve engine.

After the wood pattern is removed from the sand mould, a baked sand core is used to form the internal hollow spaces. The core is often made in several pieces and in this case includes the cylinder bore and all the steam and exhaust passages. The steam passage in the double D engine is much simpler than the steam passage for the single valve engine which is swept around the cylinder and shaped like an S in the vertical cross section. The single valve engine requires a lot more ingenuity from the pattern maker to make a core.

The other topics in this issue on Shay engines before 1900 are the addition of a third cylinder, and a two cylinder engine made with a single casting. At the close of the 19<sup>th</sup> century about 60 percent of the Shays built had two cylinders. The popularity of the



Shop Number 129

Photo courtesy Allen County (Ohio) Historical Society

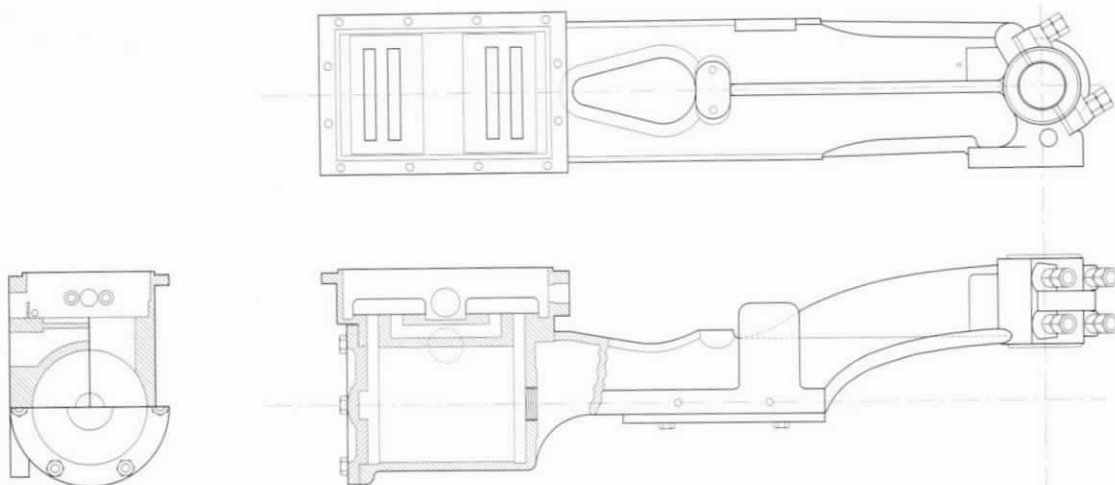


Figure 1. Shay cylinder with double D slide valves and ten inch bore and stroke



Shop Number 126 Photo courtesy Allen County (Ohio) Historical Society

two cylinder engines declined to 25 percent of the total of all Shays built.

The first Shay with three cylinders was S/N 126, which was completed 12/24/1884. This was a one of a kind experimental engine that was shown at the Louisiana Cotton Exposition in 1885. The engine frame is made of four vertical sections, instead of the usual one per cylinder. The long steam chest covers face out and there are no eccentrics.

The tumbling shaft is not a straight shaft like most Shays. The line shaft universal couplings are much smaller than usual. The other thing of interest in the photo of S/N 126 is the early gear guard that appears to be a sheet of flat metal forming a fender.

The most common type of valve gear without eccentrics is Joy gear, so it is the leading contender for the type of gear used. The fact that this style of engine was never repeated indicates that this solution

for adding a third cylinder was not well received by the owners.

The eccentrics for a two-cylinder engine are easy to install or remove. They are simply keyed and pressed on both ends of the crankshaft. The addition of a third cylinder using Stephenson linkage requires eccentrics in the middle of the crankshaft. The next three-cylinder engine, S/N 128, used three of the cylinders shown in Figure 1. The middle eccentrics were machined as part of the solid one-piece crank. A two-piece split eccentric was used on engines starting in the mid-1890s to reduce the complexity of machining the crankshaft, and make replacing the middle eccentric simpler.

The 2-7x12 engine was the first one to be designed with a single slide valve and short steam chest, similar to the one shown in the last issue. The first Shay with this engine, S/N 132, was completed

7/31/1885. By about 1890, the double D engines were all phased out.

Lima introduced a new style of engine, the 2-6x10, in 1891 with S/N 341. The engraving of S/N 341 appears to have too many eccentric rods. Two rods per eccentric join at the top just before the connection to the Stephenson link. This gives the rod extra strength to operate the rocker shaft. Figure 2 shows the indirect eccentric straps next to the eccentric straps used on a 7x7 Shay engine.

The new 6x10 design used a single casting for the engine which including both cylinders, both frames, and crankshaft bearings. Lima referred to this engine as a 6x10 twin. At the closest point, the cylinder bores are only one inch apart. The closeness of the cylinder bores eliminates the space for a center crankshaft bearing and the middle crankshaft webs are back-to-back. The steam chests face out on these engines, and have a common cover. The bulge wrapping around the center of the cylinder bore is a set of cast in pipes, connecting steam and exhaust between the steam bracket and the steam chest.

Indirect Stephenson valve linkage with a rocker shaft operates the valves, which also face out. This arrangement is very similar to standard rod locomotives, only rotated to a vertical position. A larger version of this style engine was used on S/N 503, which was the only example of an 8x10 twin engine built.

The sand dome and lid on S/N 341 are simpler than earlier Shays and the exhaust pipe is a single pipe instead of one pipe for each cylinder. The early

top angle brace bar that is used on all of the Shay trucks in this issue is easier to see on the etching of S/N 341.

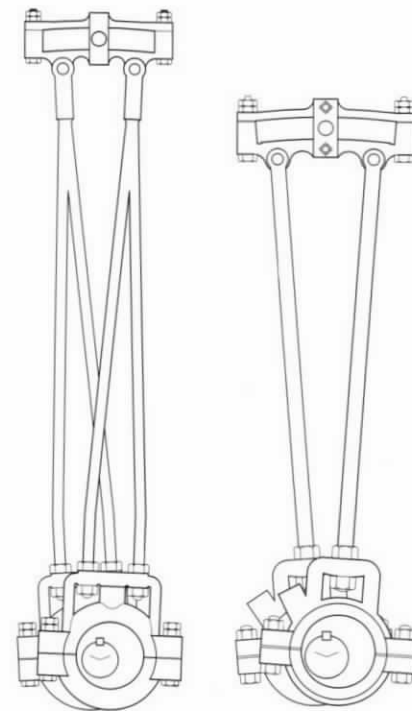
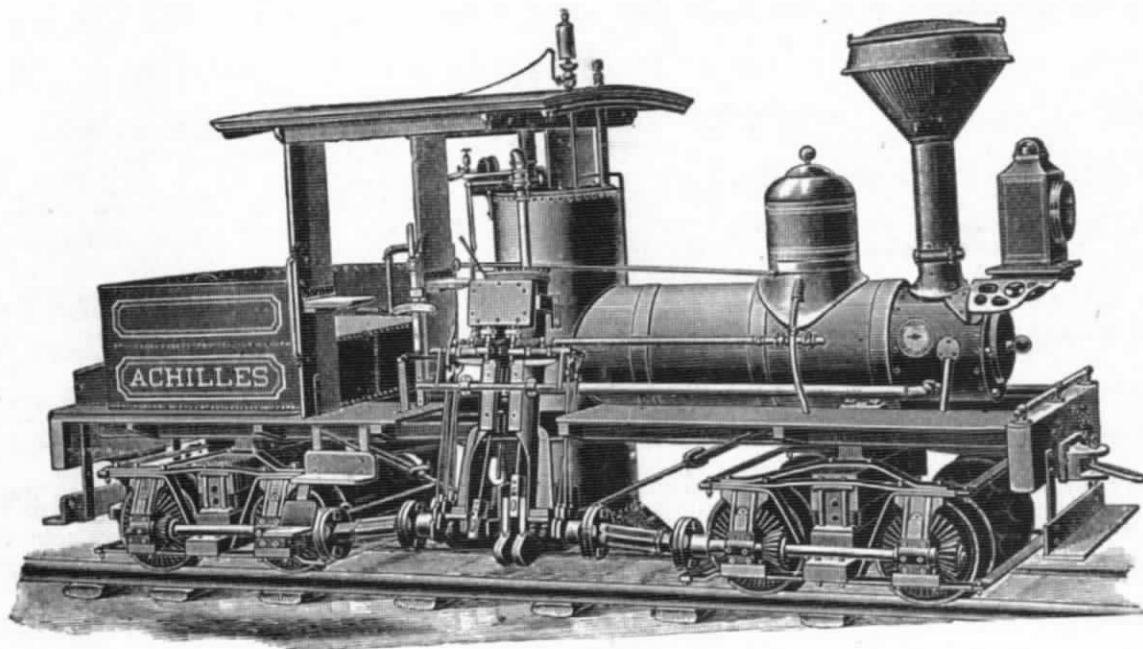


Figure 2. Comparison of indirect (S/N 341) and direct (S/N 129) eccentric straps

In the next issue, I will talk about another experimental engine.



Shop Number 341 Authors collection

## ***Cheddar's CLAIRE***

by Mike Simpson

### **Specifications:**

length:	36 inches
beam:	9 inches
weight:	9 pounds
hull:	ABS plastic, black w/white canopy or white w/white canopy
propeller:	brass, 2 & 1/2 inch diameter
scale:	approximately 10:1
engine:	Cheddar Pintail Vee Twin
cylinders:	two, oscillating, double-acting
bore:	5/16 inch
stroke:	7/16 inch
boiler:	vertical, single flue, with cross-tubes total capacity: 325 ml. working capacity: 205 ml.
burner:	gas fired ceramic, round, approximately 1 & 1/2 inches
fittings:	sight glass, pressure gauge, safety valve (40 psi), vacuum relief valve, displacement lubricator, flag staffs and mounts, exhaust oil separator, cleats
spares:	extra sight glass, o-rings, wrenches
control:	two channel radio, fitted with servos but U. S. customer must supply transmitter and receiver
duration:	30 minutes
speed:	faster than a swimming duck
supplier:	Quisenberry Station (703) 799-9643, evenings and weekends or e-mail Royce@Quisenberrystation.com
price:	to be determined – contact Royce Brademan



*The author's CLAIRE plays tag with some friendly ducks.*

When we bought our lake place last year, I saw that it was a nice place for a steamboat. No track to lay, no grades to climb, and the perfect addition to coffee on the dock. However, most kits said 150 to 200 hours to build and seemed more likely to become a toothpick collection than a boat.

I sought advice on "Steamboats for Dummies" through the SitG web site and soon received an e-mail from Royce at Quisenberry Station. He was awaiting receipt of the new Cheddar steam launch Claire, which comes ready to run and is designed for the novice. He received a demonstrator just in time for delivery at Diamondhead. After three weeks and more than a dozen steamings, my opinion is that Claire is a great boat, great value, and great fun.

Claire is modeled after a turn of the century American fantail steam launch. These pleasure craft were used on protected waters and typically had top speeds of 6 or 7 knots. For a full-sized version, see [www.steamlaunch.com](http://www.steamlaunch.com). Although no scale is stated, Claire appears to be about 10:1, or a model of a 30 foot prototype.

Claire's hull is made from two ABS castings, for the deck/cockpit and the shell, which are permanently joined. Mine is black, with a white canopy. The pro-

peller/shaft and rudder assemblies come mounted to the hull, as do cleats and flagpole sockets. The ABS is durable, looks good, and wipes clean easily.

The instructions are generally complete and caused no problems, despite my lack of prior steamboat experience. There are minor errors, such as mention of a set of U.S. flags (which are no longer shipped) and instruction to put the "F" on the canopy and stand to the front (there is no "F" on the canopy). There was no mention of the vacuum relief valve, so I thought it was a Goodall valve. These are quibbles.

The entire power plant is fixed to a quick-release mounting plate. Twist the stack into the boiler and slide the rubber exhaust tube onto the stack. Align the universal joints with the propeller shaft, set rear keyholes slots over mounting screws, slide the plate aft until the front holes drop over bolts, finger-tighten a safety nut up front, slip the clevis on the end of the rudder control rod over the servo arm and you're done.

Claire comes with servos for the rudder and for speed and direction. The North American customer must supply a transmitter and receiver with domestic frequencies. The Futaba set I found for \$60.00 was easy to mount – slip the antenna through a tube into

the hull, screw the off/on switch onto the mounting plate, Velcro the battery box and receiver into place, and connect the leads. Velcro is also used to attach seats fore and aft.

The oval canopy sits on a folding metal frame. The eight posts of the frame fit into holes in the hull. Use velcro on the corners and friction to hold the canopy on. The canopy gives the final, jaunty touch, like the straw boater atop a period swell.

Claire comes with a wooden stand, which assembles from four sides. It would have been easier to assemble with a second pair of hands. Mine is now painted "colonial red" and will get a line of felt on the contact areas.

The power plant is attractive and substantial. The large vertical boiler bears a sight glass, a pressure gauge, a safety valve, and a vacuum relief valve. There are at least four cross-tubes,

forming a spiral in the single flue and completely blocking the view down the stack. The instructions say fill the boiler to the top of the glass. This allows 70 ml. for steam formation and avoids priming. Stopping at the bottom of the glass leaves a 50 ml. safety margin, with 200 ml. to run the boat. My safety valve lifts at 41 psi.

The gas tank uncouples easily, for filling outside the hull. As in the prototype, heavier than air gases can fill the hull and ignite catastrophically. Cheddar specifies either butane or a butane-propane mix which does not exceed 30% propane. The gas line feeds a round ceramic burner, inserted into the side of the base of the boiler. Both the position of the jet in the holder and a ring over the air inlet can be adjusted for the hottest flame.

Light the burner from the boiler stack. It roars a

little while raising pressure, but nothing like a Ruby. On the bench, with no load, I have had steam up in four minutes and run for thirty more before reaching the bottom of the glass. There was fuel left, but not enough to boil off the remaining water. With the burner turned down and the throttle held wide open for lengthy periods, pressure stayed around ten pounds and the shaft kept turning. This engine produces enough steam to maintain headway, no matter how low you turn the burner and no matter how hard you try to use up steam.

The steam line leads directly to a large displacement lubricator. While this puts ample oil into the



*The installation of the Cheddar Pintail marine steam plant in CLAIRE's hull is clean and neat.*

steam line, I am not wholly satisfied with this arrangement. A shortage of fluid in the lubricator after steaming and the gradual clouding of the sight glass suggest that oil is being sucked back into the cool-

ing boiler. Worse, the vacuum relief valve refused to close one cold (40 degree) day, making a lovely plume, but no forward motion. Cheddar, via Royce, said to oil the valve and this seems to have worked. The glass was easy to wipe, with a pipe cleaner. I will be mounting a shut-off valve between the boiler and lubricator. I may also substitute a Goodall valve for the vacuum relief.

From the lubricator, the steam line goes into a Pintail Vee Twin oscillating engine. Forget notions of wimpy Mamod oscillators and the like. These brass cylinders are large, powerful, and precisely made. The engine runs smoothly, with a little vibration. Get steam up and it absolutely hums. A single servo takes the engine through both directions and all speeds, from full forward, slowing to neutral in the center, and then back to full reverse.

My engine now turns over at 9 psi in forward and 11 psi in reverse, probably differing because it has been mostly run forward. At end of run, it turns until no pressure shows. A large brass flywheel is set on the power shaft, behind the engine block.

Engine lubrication points include the point where the pistons attach to the crankshaft, an oil cup on the main shaft, and all moving parts. In operation, the engine will drip and sling some water and oil. Just wipe it off with a rag when you are done.

The power shaft connects to the propeller shaft by two sets of slippery plastic universal joints. Initially these were too long, so the shaft would not turn. Royce's solution was to sand down the ends of the plastic universals until clearance was achieved. (It pays to buy your vessels from a naval propulsion engineer.) Royce later reported that Cheddar was rushing to ship in time for Diamondhead and failed to test-fit the power plant before shipping. This should not be a problem in the future and is not a serious one if it does occur.

Both the quick-release plate and the universal linkage are recent Cheddar changes. A gentleman at Diamondhead had an earlier model Claire, from about three years ago. The engine and propeller were connected by what appeared to be a large rubber tube. The power plant could be removed, but only by removing four screws. I like the improvements, now that the shaft problem is fixed.

Note that the propeller is a heavy, rapidly-rotating blade. Keep fingers and other valuables out of the way, unless you have spares.

The exhaust from the engine goes forward, into an oil trap. This environmentally friendly device pulls most of the oil and some water from the exhaust,

keeping it out of the water and off your boat. When you start your next run, pull the stopper from the drain line and direct it to an appropriate receptacle. Pinch the exhaust line to the stack and the diverted exhaust will force the waste out the drain line. Re-stopper and run.

The rudder linkage permits several adjustments. Put the servo link at the outer position and the rudder link at the inner position and the "big wonking

rudder" will turn Claire around in not much more than her own length. This is great for swimming pools and bathtubs, but a little rough on the passengers. For more open waters, I have moved to the outer-most (of three) positions on the rudder and to the inner (of two) positions on the servo arm, for the slowest/least rudder movement. I still get tight turns, without nearly as much rocking.

In a similar vein, I have ordered ratchet plates for my transmitter. By removing the springs and installing the plates, I will be able to set the controls and run hands off. This should temper my tendencies to run full throttle and to make all turns hard ones, and also leave a hand free. With the transmitter controls sprung, as purchased, release returns them to neutral, engine stopped and rudder centered.

I cut a flap in the top of the shipping box, so the stack protrudes, and use the box for a carrying case. There is ample room for the stand, gas, water, and the transmitter. It won't last forever, but is a good temporary means of getting the essentials to the shoreline.

So how does it run? Very well. Last Sunday, in 65 degree weather, Claire ran for 33 minutes, after steam was up and the prop was turning. She still had fuel and water, but the oil trap overflowed, causing



*The author's CLAIRE coming in after a long run on a good day at the lake.*

sputtering and smoke in the burner and spatter on the canopy. With calm waters, Claire glides at the tip of a long vee wake. Up to a point, she handles winds well, although that makes sailing more complicated. When the winds are cold and gusty, steamboats and prudent sailors come inside.

Claire is quick and maneuverable. She is easily faster than a swimming duck and has herded many of them. (When she gets too near, the cowards take to the air.) Both other steamboaters and casual bystanders have complimented her looks and performance. Just the thing for the person who would rather run a steamboat than build one.

I will add some details. I have located a wood paneling kit for this boiler, which will add both style and insulation. The cleats need ropes. Claire comes with flagpoles and flags are available, but Stars and Stripes or Jolly Roger? I am looking for a 10:1 canoodling couple and a weathered helmsman. And I am soliciting suggests

for attaching a nameplate ("Duckhunter") to ABS.

Royce has been a friend indeed, for locating Claire, getting her in time for Diamondhead, giving me a good price, and helping me through the birthing pains. Despite an exhausting trip and being in the middle of a crowd of steam-crazed customers, Royce took the time to get me set up and to sort out the shaft problems. He was up after midnight, bleary-eyed, trying to sand the universals on a scrap of worn-out sandpaper. Since Diamondhead, he has checked in frequently by e-mail.

I'm pleased with my Cheddar CLAIRE....Cheddar makes a high quality line of marine steam products, including this very fine, ready-to-run steamboat.

If this sounds like your kind of fun, contact Royce at Quisenberry Station.



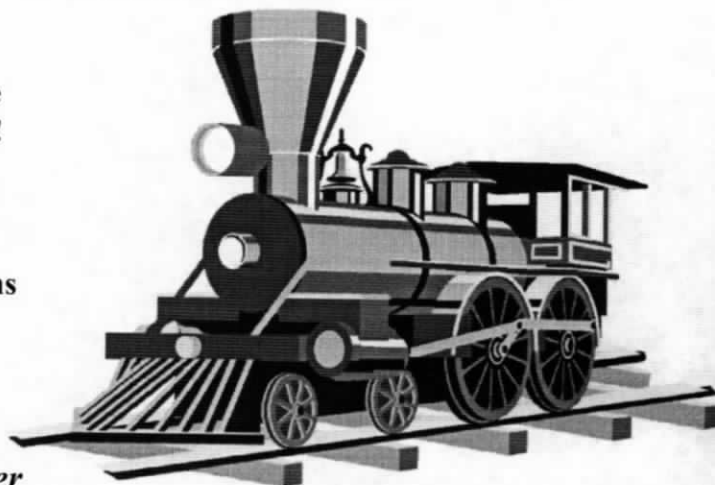
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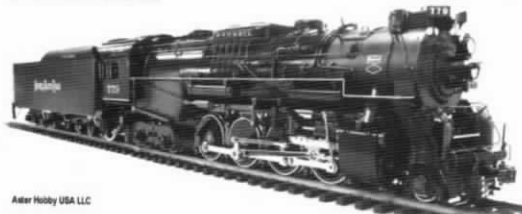


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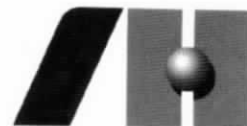
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### END OF THE LINE

#### Oops!

In the last issue I mistakenly associated Jon Dekeles with the wrong organization. He should have been associated with...

#### Large Scale Online (www.lsol.com)

My apologies to Jon for the error, and for any inconvenience or embarrassment it may have caused him.

#### Oops Again!

Also in the last issue, I gave credit for the Steamer's Biography of Larry Bangham to the wrong contributor. **Sonny Wizelman** should have gotten credit for that excellent article. Sorry, Sonny...

#### Photo contributions

We need a constant supply of photos for use in Steam Scene, front cover, etc. For the front cover we can use both landscape and portrait

format photos, but we prefer portrait (vertical) format. Don't forget that in addition to seeing your name in lights and having bragging rights with your friends, we'll give you a one-year, 6 issue subscription to SitG for every photo of yours we use on the front cover. If you are already a subscriber (and we hope you are!) we will extend your subscription for another year.

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Thanks for all your support, and...

**Happy Steaming!**

*Ron*

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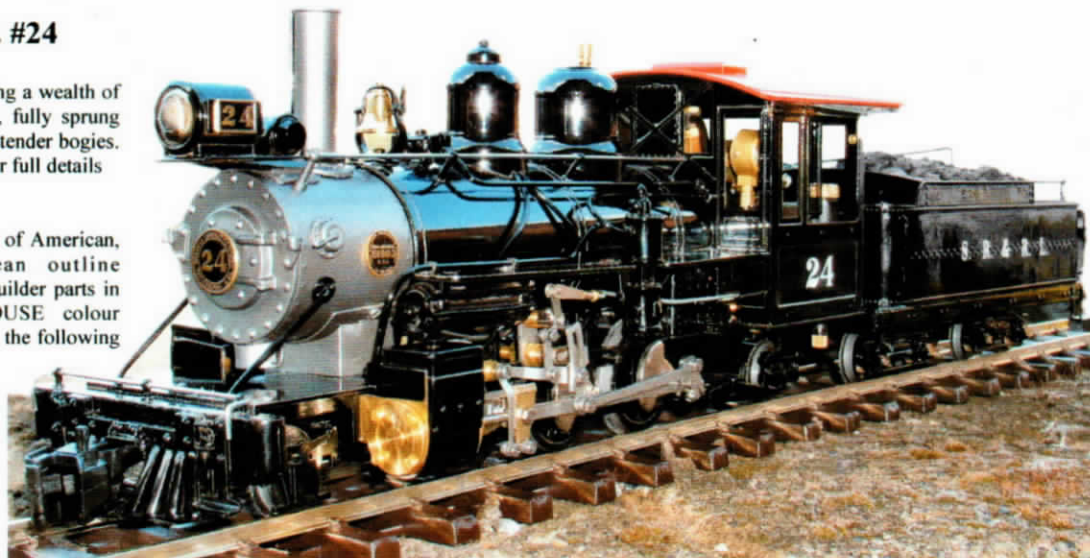
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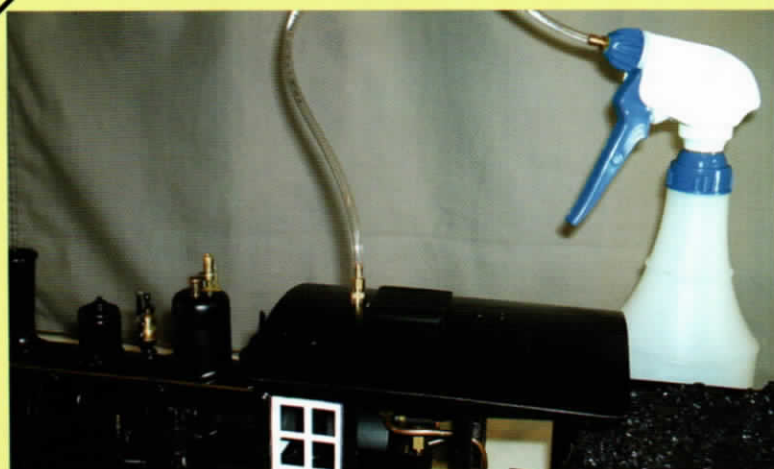
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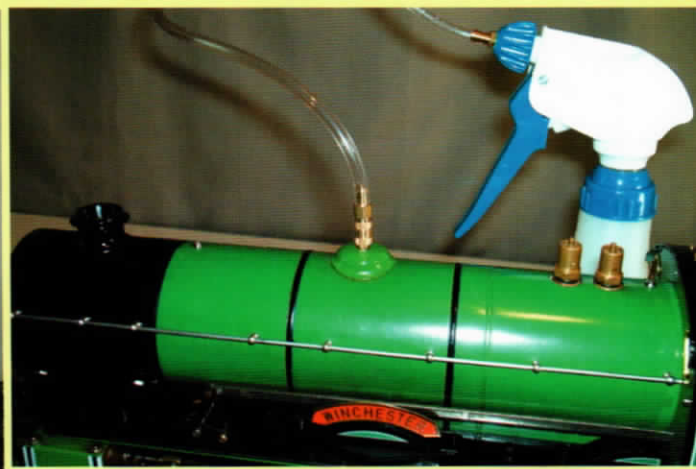
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