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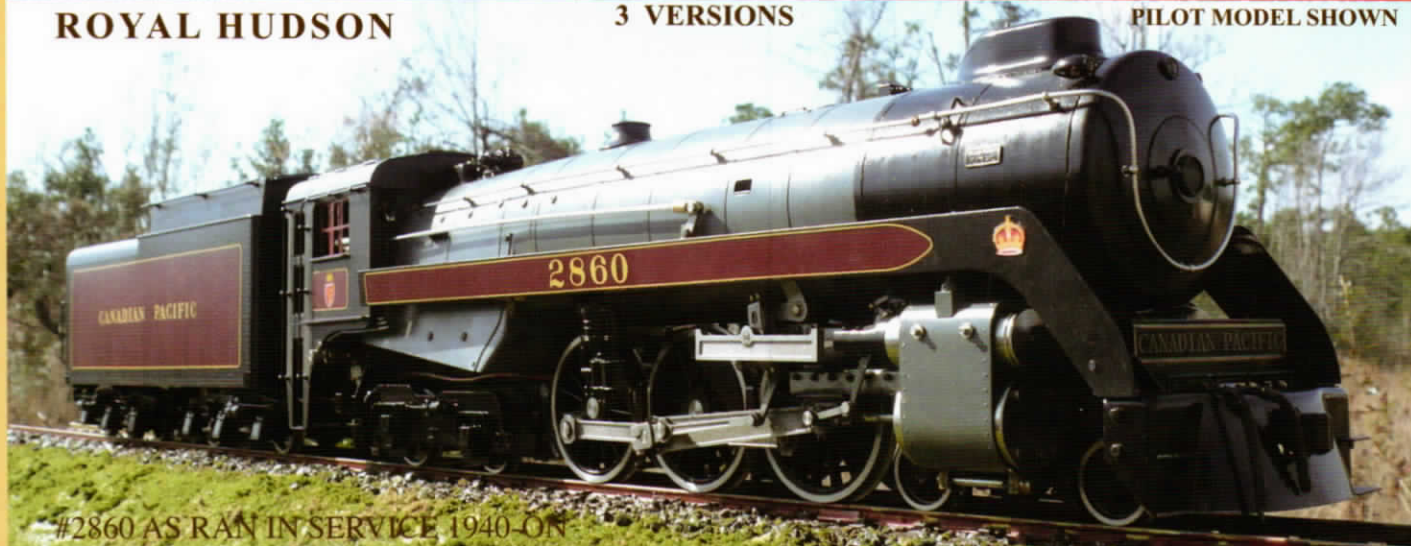


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# STEAM IN THE GARDEN

Vol. 18, N<sup>o</sup> 6  
Issue N<sup>o</sup> 102

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

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## FRONT COVER:

Sonny Wizelman's scratch built model of Atlantic Shore Line Railway Steeple Cab Locomotive No. 100, taken at the September SoCal Steamup hosted by Sonny.

*Photo by Rick Parker*

Editor

Ron Brown

Christmas Elf

*Marie Brown*

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Due to lack of interest or activity,  
we have shut down our web site.



# CALENDAR OF EVENTS

**Southern California Steamers** - contact Sonny Wizelman for dates, places and any other pertinent information. 310-558-4872 - sonnyw04@ca.rr.com

**Michigan Small Scale Live Steamers (MSSLS)** hosts a large number of steamups. For details on What, When and Where, go to their web site at <http://www.mssls.info/>

**Upstate Steamers, upstate New York steamup calendar.** If you are in the area, come out and join us!  
<http://gold.mylargescale.com/Scottychaos/upstatesteamers/>

**Puget Sound Garden Railway Society steamup schedule:** We have 2 steamups per month, one at the Georgetown Powerplant in Seattle on the second Saturday of every month, and a steamup at a member's track on the fourth Saturday of the month. Here is a link to our steamup timetable.  
<http://psgrs.org/livesteamtimetable.html>

**January 16-18, 2009 - International Small Scale Steamup and Arts Festival, Diamondhead Resort, Diamondhead, Mississippi.** This the big one...don't miss it! For location, registration and further information, check the web site at: <http://www.diamondhead.org/>

**January 17-18, 2009 - Cabin Fever Steamup & Metal Working Show, York Fairgrounds Toyota Arena, York Fairgrounds Expo Center, 334 Carlisle Avenue, York, Pennsylvania.** Questions Call: 1-800-789-5068 - Email: [info@cabinfeverexpo.com](mailto:info@cabinfeverexpo.com) - Check the website for more info....  
<http://www.cabinfeverexpo.com/index.html>

**February 13-15, 2009 - 12th Annual President's Day Weekend Meet, Electric City Trolley Station & Museum at Steamtown National Historic Site Grounds, Scranton, Pennsylvania.** 9 a.m. to 5 p.m. Live Steam, electric G scale and other assorted large gauges. Three tracks for live steam, one for electric and battery power. Sponsored by Pennsylvania Garden Railway Society, Warrior Run Loco Works and Aickenback Live Steamers. For more info on this event and local accomodations, call Clem O'Jevich, Jr. (570) 735-5570 or e-mail [wrnloco@aol.com](mailto:wrnloco@aol.com)

*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.)*



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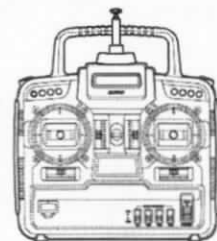
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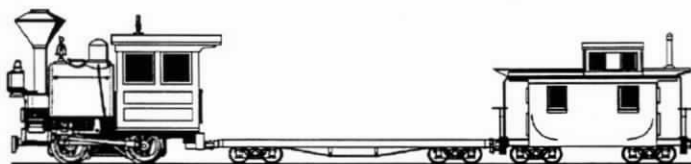
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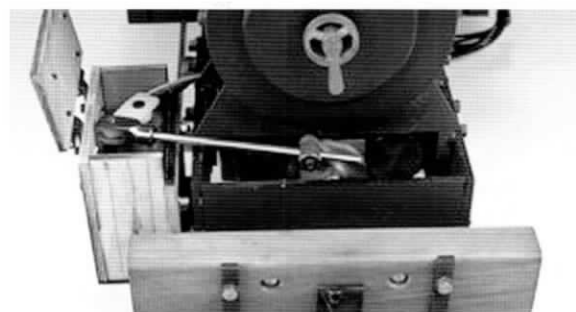


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**BF Industries** – announces that the current stock of WLDS systems and associated products is becoming limited. Although product is still available, future production runs are not planned at this time due to high initial investment costs. The utilization of Vertical Probes, eliminating the need to drill any new holes in the boiler, has proven to be very effective in the ease of installation of the system. We would like to take this opportunity to thank all who have utilized the system and the many who have sent letters and Emails expressing their satisfaction and enjoyment of the WLDS system. I look forward to seeing our many friends at future "Steamups".

**REGNER of Germany** has developed a Radio Control Kit for their popular 'Lumber Jack' Easy Line engine. The kit utilizes a wooden tool box mounted on the front right side of the engine to conceal 1 servo and operating linkage, and a 2nd servo located in the cab. The kit provides radio control of the forward and reverse steering, and the steam throttle. The kit is comprised of Laser cut wood box parts, metal hinges and box hardware, Servo holders, wiring harness, control rods, connecting hardware, and mounting brackets. The Kit is designed to be used with 2 HiTec HS55 Servo's (Not Included). English Translation of the German Instructions will be provided by the Train Department. Kit is priced at \$59.95 and is available from the **Train Department of BAQS, 512 Summers Drive, Norfolk VA 23509.** website: [www.traindept.com](http://www.traindept.com) Phone/Fax 757-855-6364.



**Doubleheader Productions** is pleased to announce that it will be a North American distributor of *A Passion for Steam*, a new book written by Marc Horowitz, editor of Garden Railways magazine, and published by Atlantic Publishers in England. This is a definitive work on model live steam locomotives run in the garden. Marc traces the history of these little engines and shows many locomotives from his personal collection. In simple-to-understand language, Marc explains how small steam locomotives work. The many illustrations and rich photographs that complement the text make this book a delight to the eye and to the intellect. For anyone who is interested in garden railways or steam engines, this is an essential addition to his or her library. Available for \$62.95 plus p&p from Doubleheader, 1438 W. Pine Avenue, Midland TX USA 79705. Doubleheader can be reached at 433.686.8883 or at [info@ukrailwaybooks.com](mailto:info@ukrailwaybooks.com)

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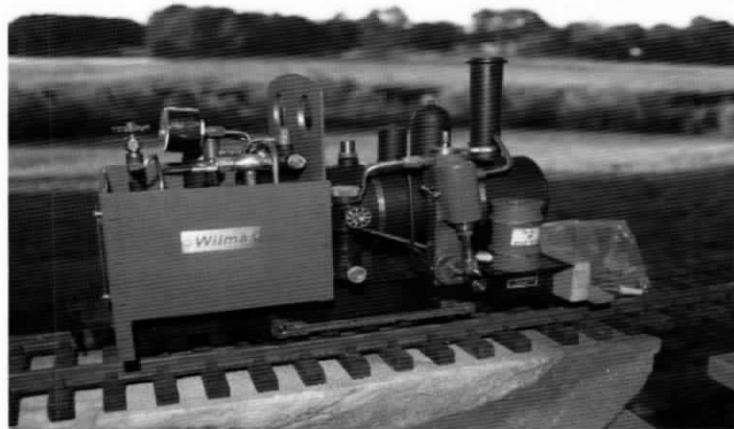
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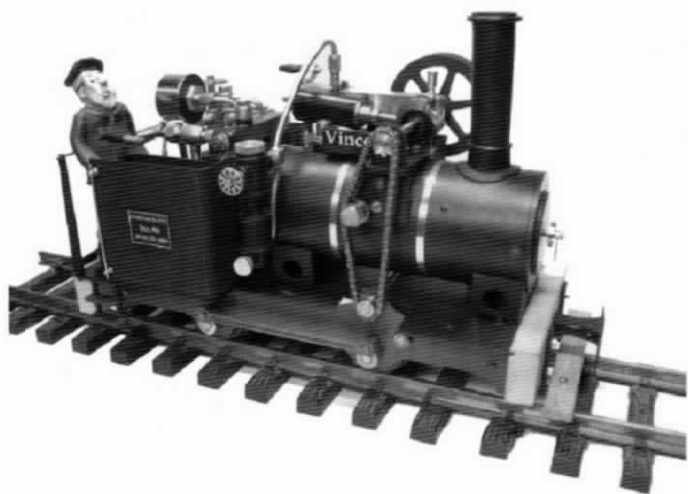
**HONEY! WHAT DO YOU WANT FOR CHRISTMAS THIS  
YEAR? YOU QUIT WEARING TIES AND YOU HAVE  
PLENTY OF SOX. PLEASE, ANY IDEAS?**



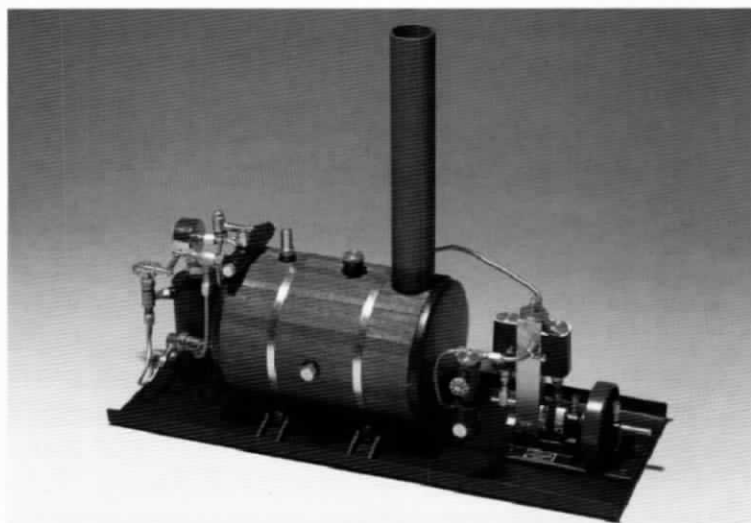
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## *A Passion for Steam*

### **Small scale steam locomotives and how they work**

**Author:** Marc Horovitz

**Publisher:** Atlantic Publishers

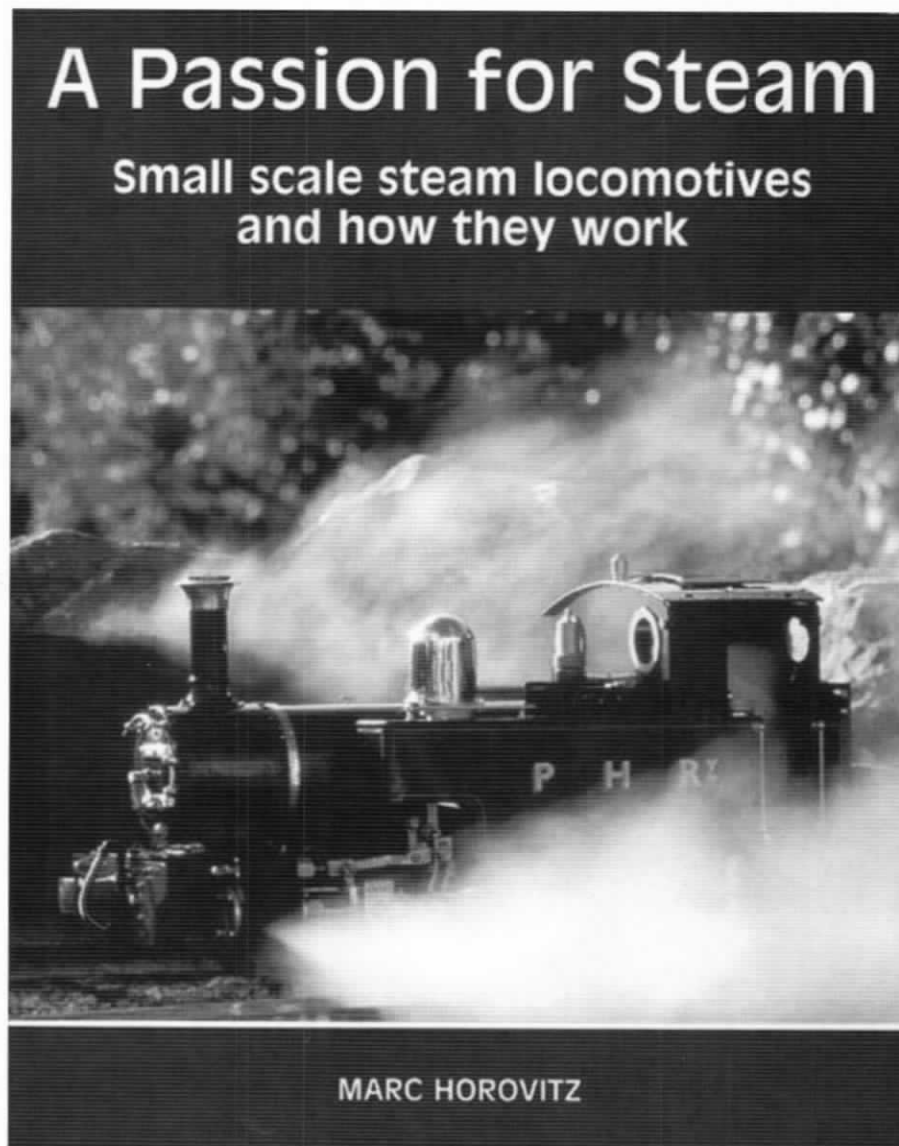
**Available in North America from:** Doubleheader Productions (see ad in this issue for contact info)

If you have a passion for small scale live steam, and since you're reading this I assume that you do, this is a book you will definitely want in your library. Author Marc Horovitz is a veteran steamer as well as an accomplished writer and editor. The subject matter is well presented, and Atlantic Publishing has done an outstanding job of wrapping the author's words, photos and explanatory graphics in a very high quality book.

The book is in hardcover format, with glossy paper and full color photos and graphics throughout.

With 12 chapters and 208 pages, there is a wealth of information within. The chapters cover everything from Basics to Cylinders to Boilers, Valve Gears and much more. The text is supported by literally hundreds of photos and drawings, making this a very useful reference book for both neophyte and veteran steamers.

In addition to the technical information, the book is chock full of photos of steam locos both past and present, along with detailed specifications and comments on each of these. This makes *A Passion for Steam* great fun to read as well as informative.



A detailed index and Bibliography make it an easy matter to quickly find the information you are looking for.

Well worth the price and highly recommended!

RB





## *Finger Lakes Live Steamers*

by Roger Caiazza and John Spencer

The Finger Lakes Live Steamers ([fingerlakeslivesteamers.org](http://fingerlakeslivesteamers.org)) will be celebrating its 40th anniversary in 2009 and we want to extend an invitation to all the readers of *Steam in the Garden* to visit us. We have public open houses on the fourth weekend of June and September and last year we started hosting a picnic for the garden railway clubs in Upstate New York that will likely become an annual event in mid June. On the weekend of August 1 and 2 we will host our 40th anniversary celebration. Live steamers are welcome to any of these events and we are looking forward to meeting you. Check our web site for

specific details.

The club is located in Marengo, New York, half-way between Syracuse and Rochester on 12 scenic acres near the rural communities of Clyde and Lyons. We have three different gauge railroads: 7 1/4", 4 3/4" and Gauge One. The largest gauge has nearly a mile of track and the club has its own locomotives and cars so we can always give you a ride. Standard gauge trains on this gauge are 1 1/2 inch scale. Over the past several years a dedicated crew has added considerably to the 4 3/4" gauge layout that has heightened interest in this track and its one inch scale trains.



*Overview of the Finger Lakes Live Steamers gauge one club track.*

photo by Ed McConnell



*Roger Caiazza's Pearse Nevada rounds a curve under steam.*

The FLLS Gauge One garden railroad has been constructed over the last ten years. At the 30th anniversary celebration some local garden railroaders set up a temporary loop of track that set in motion the construction of a permanent layout. Since then we have constructed a true garden railway that enables live steam trains to become part of the landscape.

The Gauge One layout consists of three inter-connected loops. At one end of the layout there is a 65' wye leading to a waist-level trestle connected to the one inch turntable. The turntable includes a gauge one track that can be used to turn an entire train. The wye tracks connect to the 190' upper loop which is built on an embankment at the same level as the trestle. There are

two connecting tracks on a 1% grade to the lower level that enable continuous running between the lower loop (250') and an upper loop. In addition there is a four turnout crossover into the inner 140' loop. A new addition this past year is a large yard with plenty



*Bridge junction on the FLLS club railroad.*





*Tower wall, with trains operating on different mainlines.*

of room for long trains.

In order to add visual interest we constructed a mountain at one end of the upper loop, a stream and several bridges. Ed Christensen let us use the plans he prepared for a through truss bridge that club members constructed over one winter so the upper loop could cross the lower loop and stream. An Eaglewings bridge carries the lower loop and a siding across the stream. The latest bridge was a year-long labor of love for John Spencer that brings one of the connecting tracks into the elevated yard on the north side of the layout. Once we had an impressive arch bridge in place it seemed appropriate to build a water feature so that the bridge fit the landscape.

All that remains to build are some additional sidings to add operational interest and a branch line to provide a steeply graded test run for the geared locomotives that frequently visit the layout. We plan to have some of these tracks available for next year's open days. If you are in the area please look us up anytime. We think you would enjoy a special trip to share our 40th celebration event.



**Autumn leaves can  
create MOW problems  
on the Weedwood.....**

*Drawn exclusively for  
SitG by.....  
Joe Leccese*

# *Accessorizing an Aster Reno*

by Steve Baker

photos by the author except where noted

## *From shelf queen to pride of the track*

Having acquired an Aster Reno locomotive a while ago, and finally getting it to run, it was time to start building a complete train, and going beyond just the needed maintenance for running. Doing some research on the Virginia and Truckee Railroad, I found out enough details on rolling stock, prototype fuel, couplers, and other information needed to ensure enough historical accuracy of my train.

The Reno locomotive was wood fired up until about 1885, when it was converted to coal, and finally

to oil, in the first decade of the twentieth century. As this engine has a wood burning smoke stack, I would model the first 10 years of the Reno's activity. This meant link and pin couplers, a stack of wood on the tender, and appropriate rolling stock. Another key to accurate modeling will be to get all the brasswork polished, and then keeping the locomotive in shining condition.

How to model a stack of wood? Some problems to overcome included ensuring the wood didn't be-



*The author with his pride and joy.*

Photo by Jim Pitts

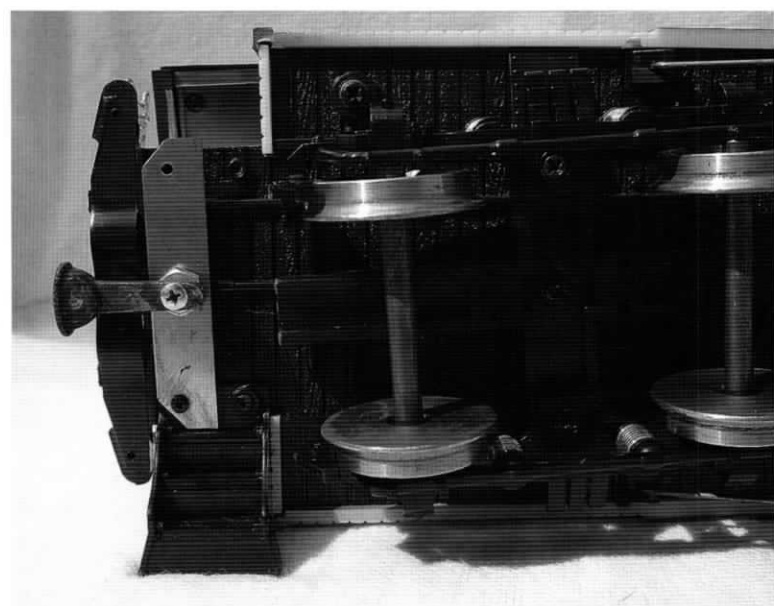




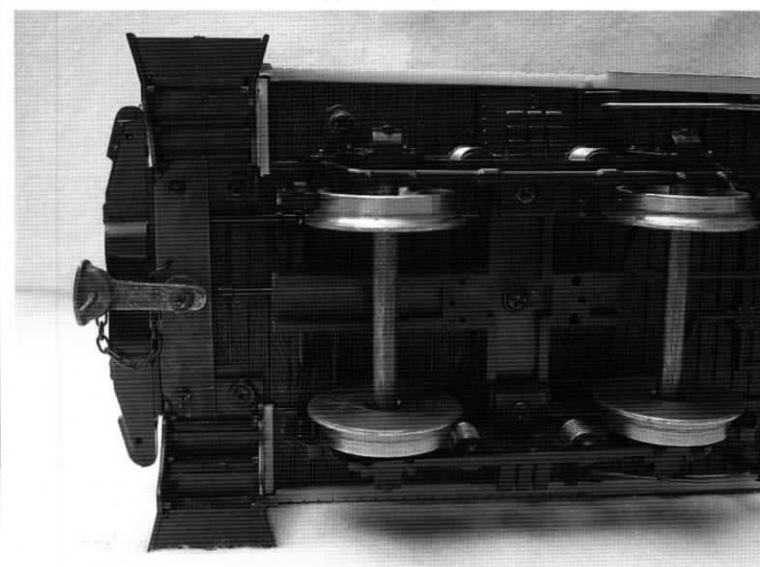
*Tender with scale wood load in place.*



*Combine with truck & coupler modifications completed (see text).*



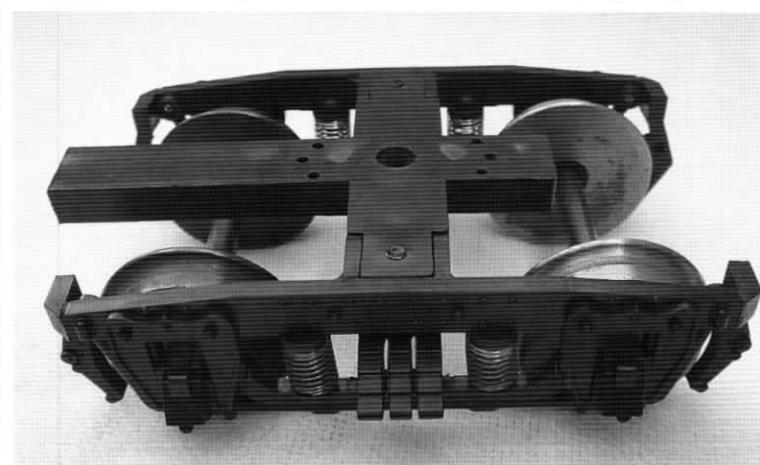
*First stage of modifications to combine coupler.*



*Combine coupler modifications complete with chemical blackening and chain to retain the coupler pin.*



*Wheelsets before and after blackening.*



*Wheelsets installed in trucks. After blackening on the left, before blackening on the right.*

come a secondary fire hazard from soaking up alcohol, making sure it didn't interfere with operations and of course, had to look good. Something that could be easily removed during startup, quickly put in place, wouldn't shift while running, and especially, looking realistic were also important.

I took an advertising magnet from last years phone book, and trimmed it to fit just behind the alcohol tank. A little trim of the corners to avoid screws had it sitting flat. Then I painted the paper black. Virginia City ran on cord wood during the 1870's. The ponderosa pine of the area were cut, and the top part of the tree (up to about 2 feet in diameter) were used for firing stationary and locomotive boilers. I used a beech branch, approximately 2 scale feet in diameter, and cut 2 foot long sections. Using a wood chisel, I split the logs in half, and then each half into 3 to 4 pieces. Then I used white glue Elmers(TM) or equivalent to attach the stack to the magnet.

Looking at era photographs, I knew I couldn't be too accurate, as the alcohol tank occupied where the firemen pulled wood from to put in the boiler. I also didn't want to load the entire top of the tender, so I settled for about a scale cord of wood, stacked on top. See photo of tender.

I was open to any appropriate looking passenger car as my first piece of rolling stock. The V&T was both a freight and passenger carrier, and the Reno was mostly used for passenger service (but I did find a reference to it heading a freight train at least once). The operating rules apparently weren't rigid, and didn't require there to be a baggage car / baggage end of a combine between the locomotive and the passenger section. The knuckle coupler was invented in the 1870's and wasn't required by law until the 1890's, so I had to have link and pin couplers. Off came the tender dummy knuckle coupler supplied by Aster.

This project didn't use any paint (except on the base of the wood pile). Gun blue produces a black oxide coating, which is only a few ten thousandths of an inch thick, so it can be used on threads to take the shine off, without interfering with installing a nut. Gun blue can be obtained at sporting goods stores that have hunting supplies, and is very inexpensive. It also doesn't dry out, need brushes, nor is difficult to clean up. Make sure you read the information on the bottle, use gloves, and wear glasses to prevent splashes from hurting your eyes, and work in a well ventilated area.

Gun blue works on most metals, as you'll see. It leaves a uniform, matt black finish. A small bottle will last a long time.

An alternative to gun blue are metal coloring chemicals, such as those that can be found on the *Sulphur Springs* web site.

The white metal link and pin couplers from Ozark Miniatures arrived. Knowing that couplers may get a lot of use, and wear, I used the gun blue treatment. However, instead of wiping the surface, I put a set of coupler, pin and link on a piece of copper wire, and immersed them all directly in the bottle, for the manufacturer's recommended time. The links, pins and couplers all came out with a black surface, which looks pretty good.

I spent a fair amount of time searching for either the correct Virginia & Truckee lettering font, or a set of decals. Champ had HO scale decals, so I bought a set, to see what I could do with them, using the miracle of modern technology. While waiting for them to arrive, I did find an AristoCraft combine, painted and lettered for the V&T. The car was immediately purchased.

Upon the combine's safe arrival, I found the combine was brightly painted, but my research indicated the train crews were especially proud of their equipment, and spent much time polishing and cleaning. Maybe later I'll investigate the finish on the roof, (suggestions from readers welcome, as to how much sheen there is on a well maintained passenger car roof), and work on that, but otherwise, it doesn't seem indicated to weather the car. The large plastic knuckle coupler definitely had to go. See photo.

I started planning how to convert the plastic, knuckle style truck attached couplers to body mounted link and pin. There were a variety of screws holding the car together underneath, so I investigated which would be best to use. I ended up using the pair of screws that hold the stairs on. A strip of thin brass stock ( 0.03 inch thick ), was cut to fit the area, and two holes drilled to pass the screws through to the body. One hole was drilled in the center, to take the coupler body. A small hole just offset from the coupler hole was drilled to allow attachment of the pin chain. Zinc plated fasteners were used to hold the link coupler body on to the brass strip. Again, the gun blue was used to take the bright metal to a dull black. It was great to have a good color on the screw, with no problem from a fat covering of paint. Also, a screwdriver will not scratch the oxide surface, the way it would a painted surface.

Taking the truck off, I carefully cut the coupler off, but left the protrusion long enough to maintain contact with the guide on the underbody. See photo. Also note the way I used the screws that attached the



stairs to the car body. You can see the shining brass and fasteners.

The bosses which aligned the stairs were filed down by hand for accurate fit and to avoid removing too much material. The brass strip needed some relief in the corners to fit flush.

Setting the coupler height took advantage of modeling a railroad that didn't interchange with other railroads. The link coupler body height was determined by how it fit on the Aster tender. That one installed easily in the pocket provided. (see photo) The use of an appropriate stack of washers set the combine coupler's height to be the same as the tender. I did this on a piece of track, as I realized the wheel flange widths were different on the tender and combine.

Once everything was set, I took it apart to, to cut another strip for the other end, and to finish the brass strip. A swipe with a rag soaked in gun blue gave the brass a dull black finish, and made it look more like it was always there. The second end installation went smoothly.

Last, I used the scale link chain, also purchased from Ozark Miniatures, to keep the pins attached and not get lost. The pins were trimmed just a little longer than the coupler body, which allowed using less chain. The finished result, as seen from underneath, is shown in the photo.

Looking at the shiny, but rusty wheels, something had to be done. Following the directions on the gun blue bottle (Hoppe's® brand, but any will work as well), I used steel wool to remove the rust. Then, using alcohol, I removed all grease, and residue from the steel wool.

Using my analog ohm meter, I did check electrical resistance of the wheel before and after applying the gun blue. There was no discernable change in resistance due to the coating. This is great news for those who electrify their track, for car lighting.

Using proper safety gear, and precautions, I used a clean rag to apply gun blue to the entire wheel and axle assembly. Waiting the three minutes per instructions, I then rinsed the assembly in water (be careful not to get any on your stainless steel kitchen sink – it will leave marks). Then, the assembly was dried with a rag, and was ready for re-assembly in the truck. See photo of wheelsets for a before and after view.

The truck was re-mounted on the combine. The blackened wheels blend well, and do not detract from the finished appearance of the car. The additional benefit of the black oxide coating is that it greatly reduces corrosion. A light coating of oil will be retained by the coating, and resist rusting.

There might be some economies in buying inexpensive steel wheels, and blackening them, instead of going with nickel or other more expensive, but non-rusting wheels.

So, now I have a nice set of link and pin couplers installed, and some good looking, rust resistant wheels. The whole process, including initial investigation and one false start, took a pleasant morning of work. After all, this is a hobby, not a production facility. See combine side view photo for the completed installation.

The finished result is a great looking train, with some amount of period detailing. Doing research on the internet can be productive, but I must thank fellow live steamer Bruce Gathman for recommending the book "The Silver Shortline", by Ted Wurm and Harre Demoro. There is a wealth of information in books that can be a great assist in improving modeling accuracy.



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## ***Converting a Roundhouse Billy Boiler to Alcohol Firing -- Part II***

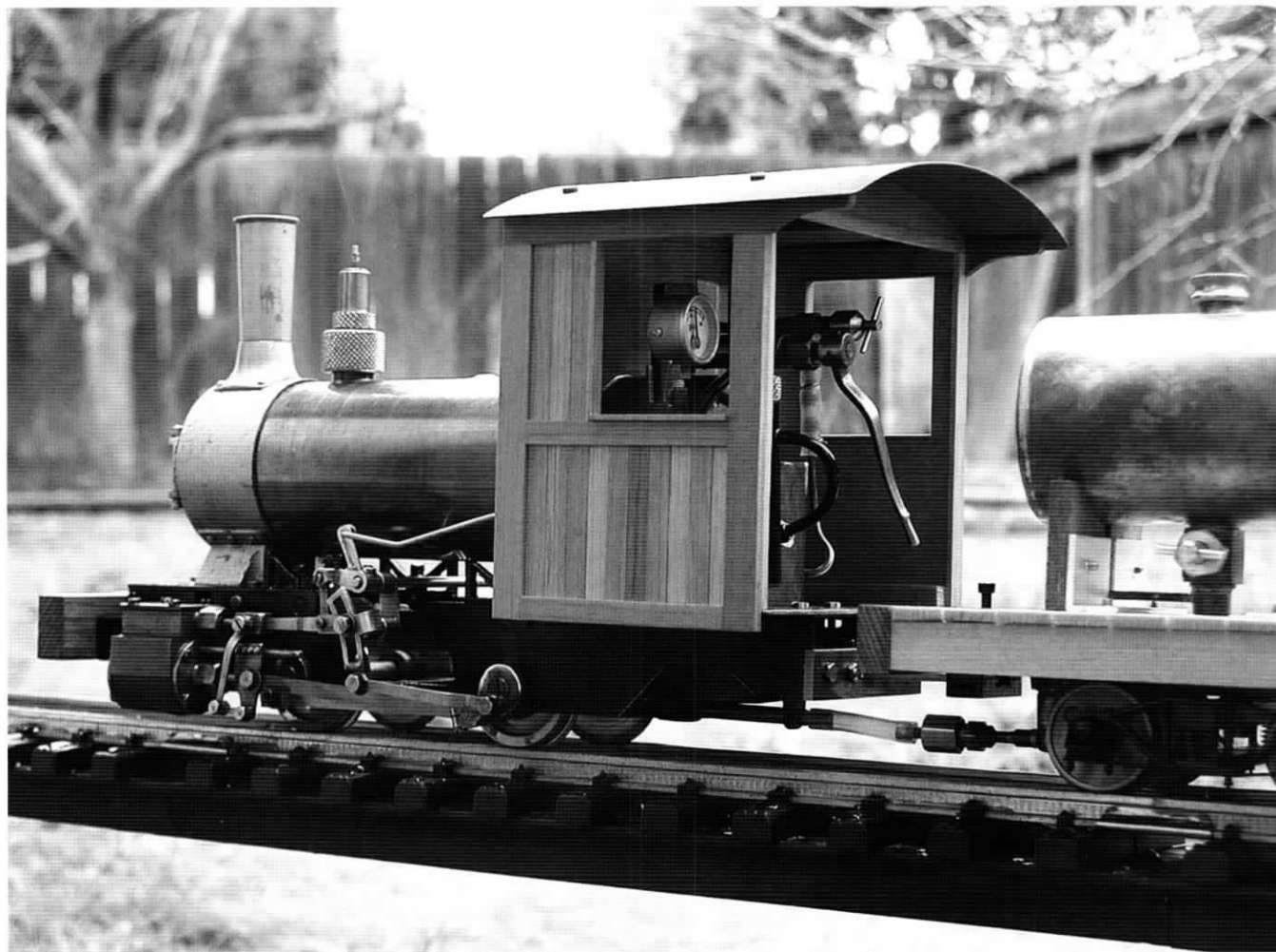
**by Steve Shyvers**

**drawings by Mike Martin**

The hardest and most tricky part of the conversion was figuring out how to terminate the cylinder steam exhaust lines into a blast pipe inside the smokebox. With butane firing the steam exhaust lines curve up through a large opening in the smokebox base and terminate inside the chimney. For the alcohol conversion the steam exhaust lines would need to terminate in a functional blast pipe, and the opening in the

smokebox base would need to be sealed off. Furthermore, I had no idea what the blast pipe proportions needed to be. It was hard to decide where to start, so I drew up a list of design requirements:

- The whole smokebox assembly and modifications could be disassembled and reassembled as necessary.
- Individual parts could be modified without hav-



*Under way with 40 lbs. of steam pressure on the gauge.*



ing to do a lot of redesigning and rebuilding of other parts.

- The blast nozzle could be removed through the smokebox door so that different blast pipe heights and nozzle orifice sizes could be tried.

The Roundhouse smokebox casting mounts to a steel plate that attaches to the locomotive's frame, and the steel plate has a cutout that matches the shape of the opening in the smokebox base. A smaller steel plate that attaches underneath the existing steel plate was made, and the new blast pipe base is silver-brazed to it. The idea was to allow the position of the smaller plate to be adjustable so that the blast pipe could be centered ("bore sighted") to the chimney. Centering the blast pipe directly below the chimney is critical for producing a strong draft through the firebox and flue. In retrospect I could have fabricated a completely new smokebox mounting plate, making sure to measure very carefully for the blast pipe position. The blast pipe base could then have been attached directly to the new smokebox mounting plate.

The blast pipe base extends up through the opening in the smokebox base. (Please see the drawings and photos for clarification.) The blast pipe base is tall enough to allow a small wrench to be used to remove and replace the blast nozzle through the smokebox door. The blast pipe base is fabricated from a length of brass pipe, and has a pressed-in cap with a 3/16-24 threaded hole for attaching the blast nozzle.

In the stock Billy configuration the cylinder steam exhaust lines curve forward around the cylinder steam line "tee" fitting and then up and into the smokebox and chimney. In order to get the steam exhaust lines to terminate in the blast pipe base, they must be cut a lot shorter and must be reformed with more severe bends. Additionally they need to attach somehow to the blast nozzle base. The close clearances in this area allow no room for standard miniature steam connection fittings. My solution is a cylindrical brass "ferrule" that slips into the open bottom of the blast pipe base. Two parallel 1/8" diameter holes are bored lengthwise through the ferrule. The steam exhaust lines are formed to be parallel at the same height as the blast pipe base, and then the ferrule is slipped over their ends. The whole smokebox assembly - blast pipe base, smokebox and mounting plates - is lowered in place so that the ferrule slips into the blast pipe base. No sealant is used between the steam exhaust lines, the ferrule, and the blast pipe base because the clearances are no more than 0.002" or so. It

was assumed that accumulated oil residue from the steam exhaust would provide sufficient sealant, and it appears to work just that way. Please refer to the photos and drawings for more detail about the brass ferrule and exhaust line routing.

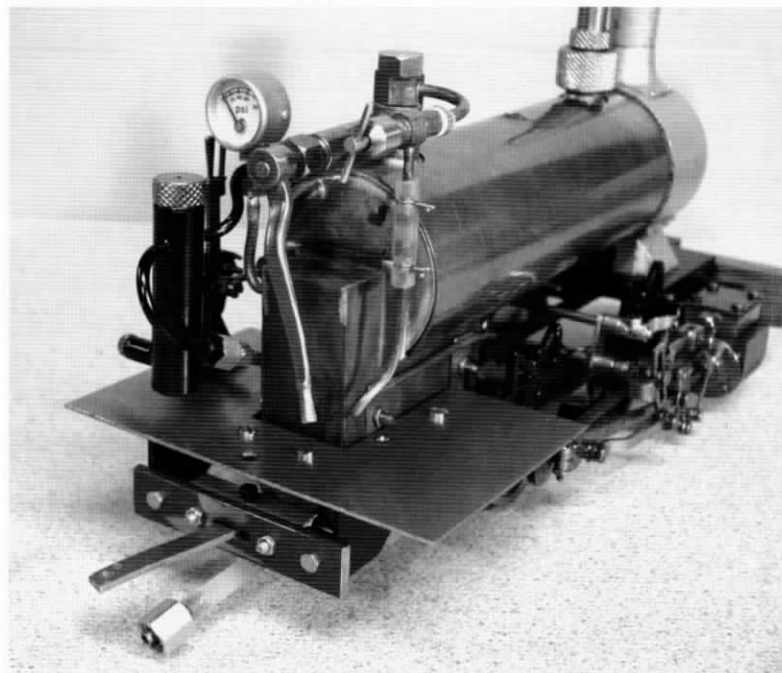
The blast nozzle is fabricated from a small brass hose barb that was already threaded 3/16-24 at one end. The blast nozzle orifice was made by drilling a suitable sized hole in a piece of brass rod, and then press fitting the rod into the end of the hose barb. To finish the job, the outside of the hose barb section was turned smooth and the orifice end was cleaned up on a lathe.

Several different blast nozzles were tried with different heights and orifice diameters. The best blast nozzle so far uses a 0.052" orifice (#55 drill bit) and its top is approximately 1-5/16" below the bottom of the narrowest diameter of the chimney bore, or "choke diameter". Since the chimney choke diameter is 7/16" (11 mm), the blast nozzle height corresponds to three times the choke diameter below where the choke diameter occurs in the chimney. Because the brass Billy chimney is a pressed into the smokebox casting, the choke diameter is not located right at the chimney opening at the top of the smokebox, but begins a little higher up inside the chimney. Blast nozzle heights at distances of 2.5 times and 3.5 times the choke diameter were tried, but these were judged during track testing to be less effective. The optimum blast nozzle height for any other locomotive would need to be determined experimentally.

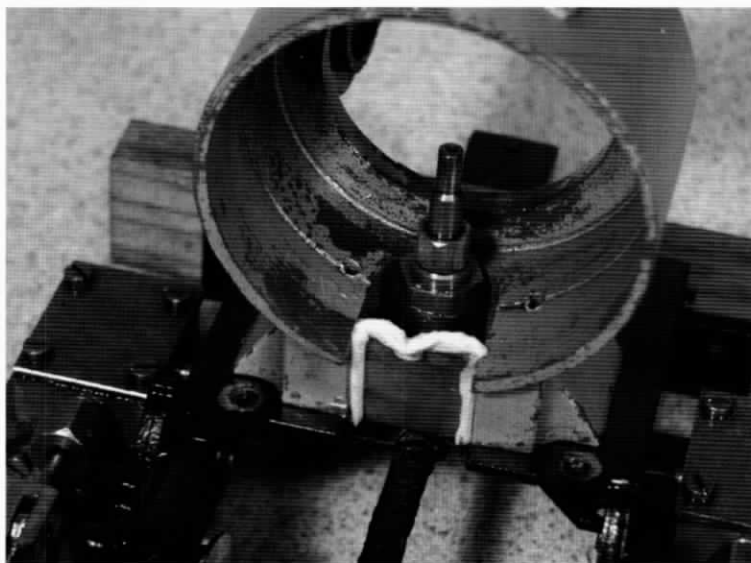
The smaller the blast nozzle orifice the higher the velocity of the exhaust steam blast, which means a stronger forced draft through the firebox and flue. Blast nozzle orifice diameters of 0.0625" and 0.078" were tried, but they seemed to be reduce steam generation. The 0.052" blast nozzle orifice seems to generate steam well and produces an audible "chuff" when the loco is pulling a load.

After the blast pipe was centered to the chimney it was noticed that the bracket behind the smokebox door (for holding the smokebox door closed) could possibly interfere with the exhaust steam blast from the blast nozzle. To reduce any interference the reverse side of the bracket was filed down in a semi-circular shape to reduce how far it protruded into the smokebox space above the blast nozzle.

While fitting the blast pipe it was also noticed that the boiler's flue pipe also protruded about 1/16" beyond the boiler's front tube plate. To reduce any possible interference to the exhaust steam blast from the protruding flue pipe, especially at the top of the pipe,



*Backhead view.*



*Blast pipe and blank-off plate showing seal detail.*



*Blast pipe and blower in smokebox.*



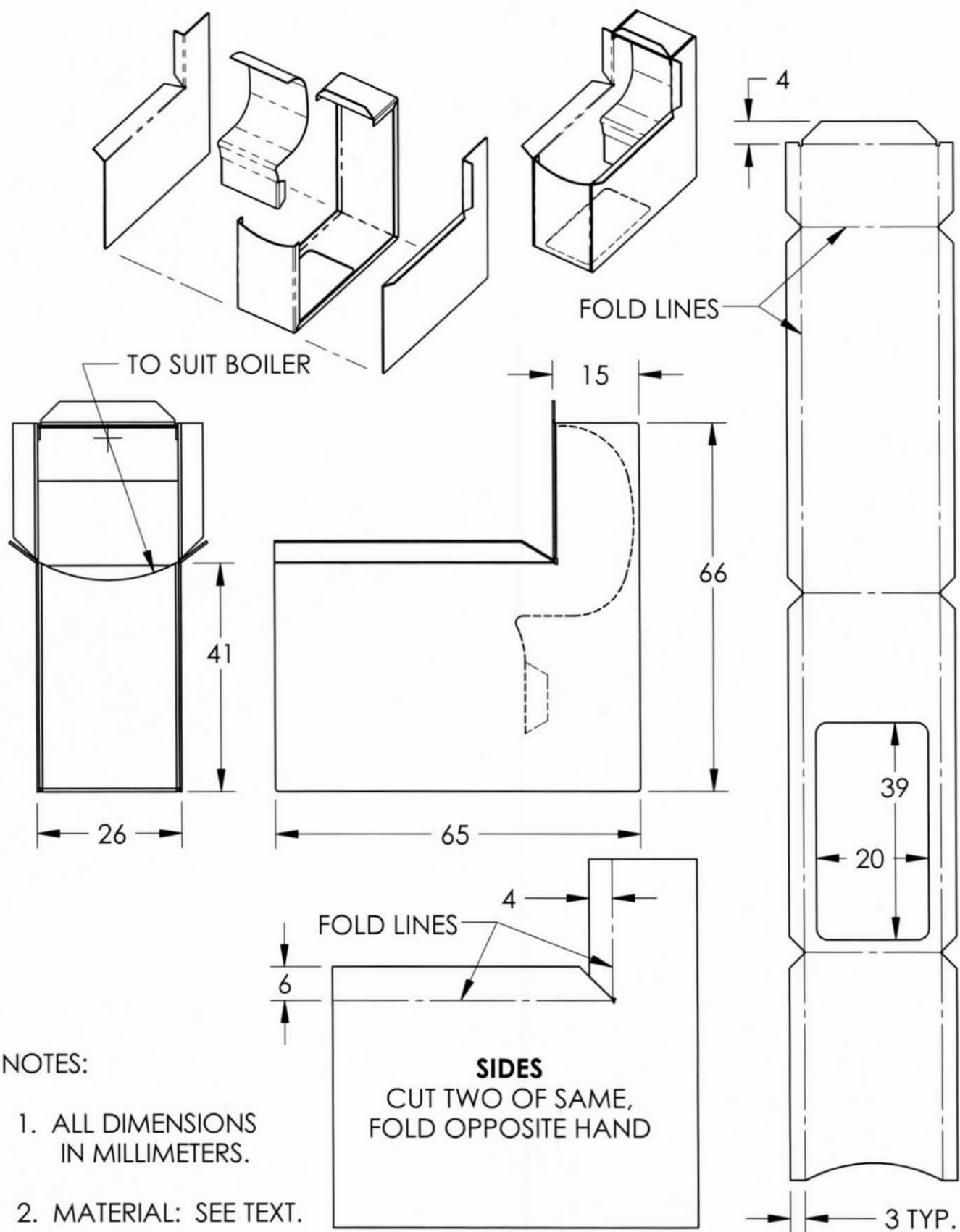
*Blower line leads underneath boiler.*



*Blower valve & banjo fitting.*



*Burner assembly.*



*Alcohol Firebox, drawing by Mike Martin*



the end of flue pipe is filed down a bit. It should be noted that the flue pipe is NOT filed flush with the surface of the tube plate, because I did not want to remove any of the silver solder fillet between the flue pipe and the tube plate and possibly weaken the brazed joint.

To avoid modifying the boiler, both the steam line to the blower and the steam line to the cylinders run externally to the boiler. The blower steam line is 3/32" O.D. copper tubing that runs alongside the firebox, then underneath the boiler, and finally curves up into the smokebox through the existing opening in the base of the smokebox. To avoid excessive condensate in the blower steam line it is heated by using the boiler wrapper to clamp it against the bottom of the boiler shell. Four small tabs of thin sheet copper are silver-brazed to the blower steam line, and these tuck under the boiler wrapper before the wrapper is cinched tight with its clamping screws. The copper tabs not only provide mounts for the blower steam line but also conduct heat to it. The small diameter blower steam line fits into the normal gap at the bottom of the boiler wrapper, and is not visible when the boiler is in place on the locomotive. Two large copper tabs are silver-brazed to the blower steam line where it runs alongside the firebox, and these tabs mount to the firebox side to provide even more heating of the steam line. Hex nuts and two 4-40 studs silver-brazed to the side of the firebox hold the copper tabs against the firebox side. Refer to the photos for more detail.

Inside the smokebox the blower steam line curves

sharply to lie right next to the blast nozzle and to point up at the base of the chimney. A short length of 0.023" I.D. stainless capillary tubing serves as a nozzle and is silver-brazed into the end of the blower steam line. The tip of the nozzle is just below the level of the blast nozzle tip. The very small nozzle orifice results in high steam velocity from the blower and steam usage is minimized. The blower is quiet and works very well to raise steam, as well as keep the fire going when the locomotive is idle.

A brass blank off plate and a piece of ceramic insulation material seal the opening at the back of the Roundhouse smokebox base. The bottom edge of the blank off plate is folded over 90 degrees as a mounting tab, and two 2-56 cap screws secure the mounting tab to the blast pipe mounting plate. The blower steam line passes through a small opening in the blank off plate's top edge. The ceramic insulation is pinched in place around the edges of the blank off plate as its mounting screws are tightened. The assembly process is too fiddly, but it does work if the ceramic sheet gets positioned carefully. I still want to come up with something better. Refer to the photo showing the smokebox, blast pipe, and brass blank off plate.

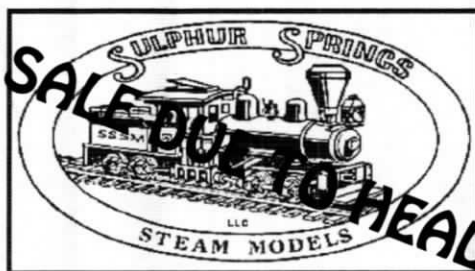
(Continued in issue #103)



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## ***Atlantic Shore Line Steeple Cab Locomotive No. 100***

**by Sonny Wizelman  
photos by the Author and Rick Parker**

### ***An electric locomotive running on live steam***

I was feeling the need to have a project to work on. I love having a challenge that allows me to solve the problems and come up with workable solutions.

I had been thinking about something with a trolley theme. I went on the internet looking for 1/24 scale trolley or interurban models. This led me to the web site of Light Rail Products, Pacifica, California. They were showing a model of the Atlantic Shore Line Steeple Cab Locomotive No. 100. After that I

Then I began inquiring about some drawings that might provide some dimensions that I could use to get the proper proportions. I found that The Seashore Trolley Museum in Kennebunkport, Maine was restoring one of these locomotives. I contacted them and asked if they had any drawings. The person in charge of the restoration asked what I was planning on doing. When I told him I was going to build a steam powered model, he said that this was not appropriate



***Author's completed model, ready for steaming.***

searched the internet for this locomotive and found additional photos. I decided on this as the project.

I contacted Light Rail Products. Karl Johnson, the owner, was very helpful. The model they offer was made of resin and I did not think that it would be suitable for live steam.

and did I know "it was an electric locomotive". I told him that I liked building models and steam was my hobby. That was the last time we corresponded. After that, he would not reply to my e-mails. I must have insulted him.

After several conversations, Karl Johnson of Light

Rail Products provided a set of plans. I also purchased the ALCO Interurban Truck Kit, the Trolley Base and Harp with Wheel and the Head Lights with LED bulbs from him. Now I was on the way. The drawings were to scale and I started planning the building of the cab. I made some crude drawings of my own and started to build the cab sides and ends. Then I made drawings and started to build the deck, allowing the spaces for the butane tank, boiler and steam motor. The wood is bass and came from Micro-Mark and Allied Model Trains. The bell, whistle, poling pockets and the front and rear pilots are from Trackage Details. The door pulls, lock on hasps, hinges, corner brackets, link and pin couplers and door knobs are from Ozark Miniatures. The steps are from an Accucraft Box Car. The battery pack and the on/off switch for the lights are in the space under the bell.

During the building process I started to gather the "steam" elements. Space in the cab was the limiting factor. I found a very small steam motor, lubricator and gas tank from Lutz Hielscher in Germany. When I received it, I felt it would not provide the power I needed. I did some additional research and purchased a Slide Crank Scotch Yoke Engine Kit from Graham Industries. This engine would fit in the limited space and provide the power needed to drive the locomotive. As with the other engine kits of theirs that I have built, it went together easily and, after running it in on air, performed beautifully.

I asked my friend Bill Turkel to build me a boiler. He did an excellent job. It is based on the Northwest design. The safety is from Accucraft and is also the fill for the boiler. He used an Accucraft Pressure gauge and a Coles' Power Models globe valve for the regulator. I added 1/8" insulation material from Sulphur Springs Steam Models, a brass boiler jacket and brass boiler bands. The displacement lubricator is from Accucraft. The burner is a Cheddar 50mm x 16mm Ceramic Burner.

Since there was no room inside the cab for the butane tank I decided to place it in front of the cab. I wanted something with a very low profile so when I put the crate over it to disguise it, the crate would not obstruct the view of the cab. Cliff Lusher of Accucraft found a good solution in his scrap box. Jim Gabelich did some modifications and gave it to UPS to deliver to me. To make a long story short, UPS lost it. I looked at the stock tanks that were available and could not find anything suitable, so I drew a sketch of what I was thinking and sent it off to Norm Saley. In a short time he sent back a tank that was the perfect solution. It met all the specifications. I made a bracket for the

tank that allows it to extend below the deck and kept the profile as low as possible. It is hidden under the brown crate.

I made two more brass brackets. One extends below the bottom of the deck and holds the burner, boiler and the lubricator. I needed to go below the deck to fit the boiler under the cab roof. The other bracket, which is level with the top of the deck, holds the motor.

Next I made the gear train. The sprockets, ladder chain and shaft collars are from Sulphur Springs Steam Models and Stock Drive Products. I used axles from extra trucks I had and made the brackets from brass strips.

I did my first test on the bench and all went well. The burner fired up, the boiler came up to pressure and the engine ran perfectly. The chain drive was turning the one powered axle. I put it out on the track and it would not run. It looked like the torque from the angle of the chain to the driving wheels was lifting the wheel up off the track and I was losing traction. It also was turning too fast and needed additional reduction. After several tries and consultation with a number of my train buddies, we determined that I needed another rack for reduction that was parallel to the driving axle and I needed to tie the front drive axle and the rear axle together for better traction.

Once these modifications were made the locomotive performed well.

I am very pleased with the results and I want to thank all of my friends who had a hand in the outcome. With this project as with everything else I have built, it is the journey that I enjoy the most, not the destination.

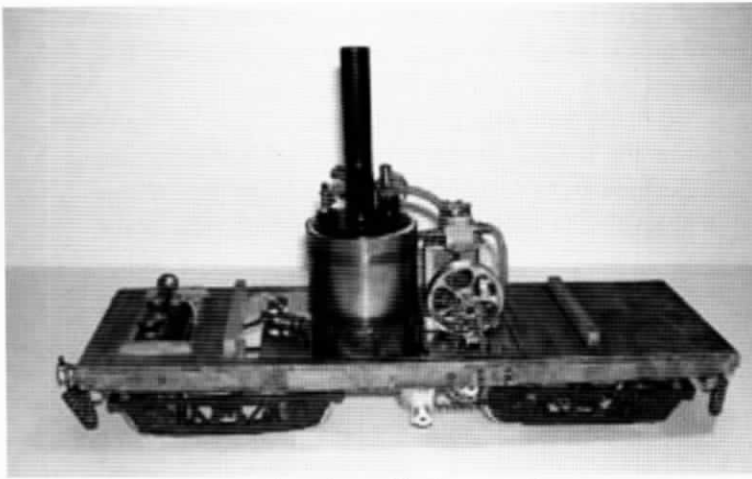
One last note... Bill Turkel, who was a long time member of the Paris, California Trolley Museum, told me that as Pacific Electric was converting their fleet to diesel they left the trolley poles on as this was the way the signals and crossing gates were triggered. So a steam trolley locomotive is just another step in that same direction.

Rick Parker's photographs add a lot to Sonny's article. You can find more of Rick's fine photography work on his web site.....

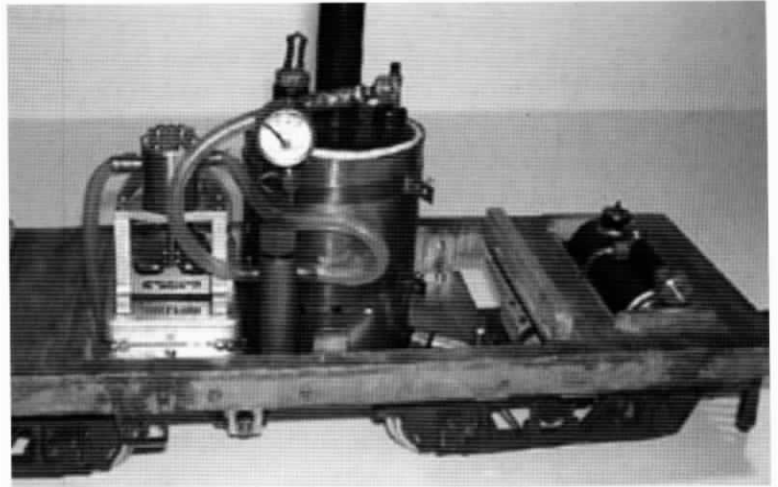
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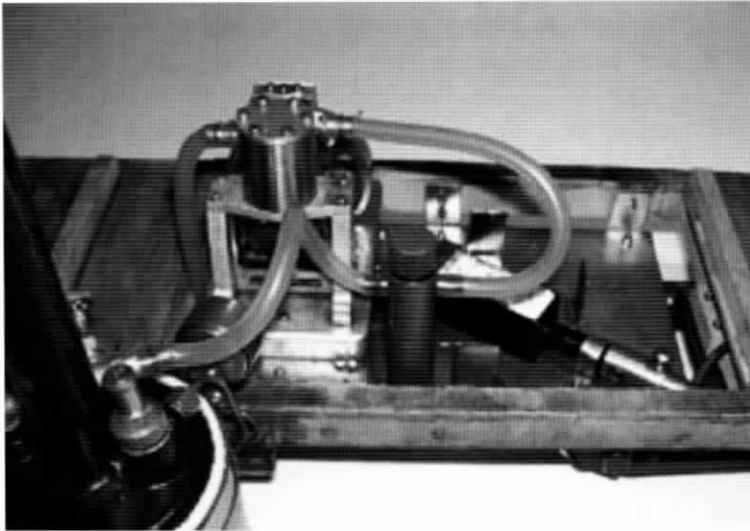




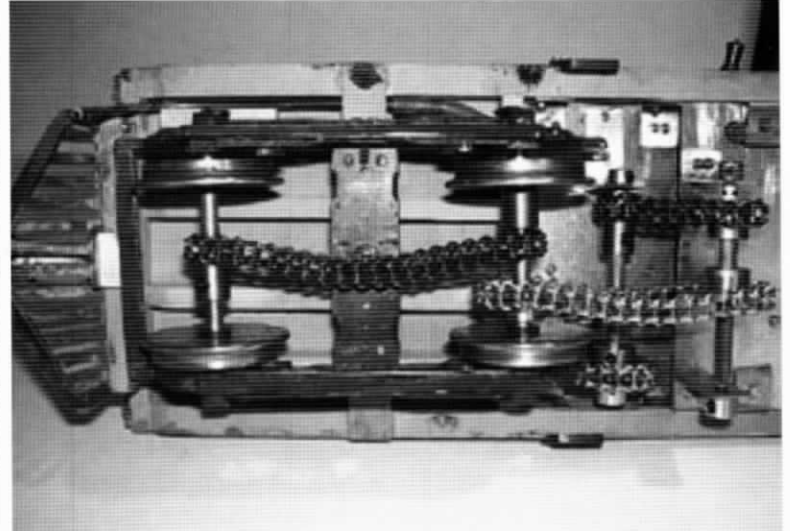
*Steam plant installation on frame.*



*View from opposite side.*



*View with the boiler off the frame,  
showing burner installation.*



*Underside view, showing jackshaft,  
sprockets and chains for drive.*





*Sonny Wizelman's steam powered Atlantic Shore Line N° 100 Steeple Cab locomotive.*

photo by Rick Parker



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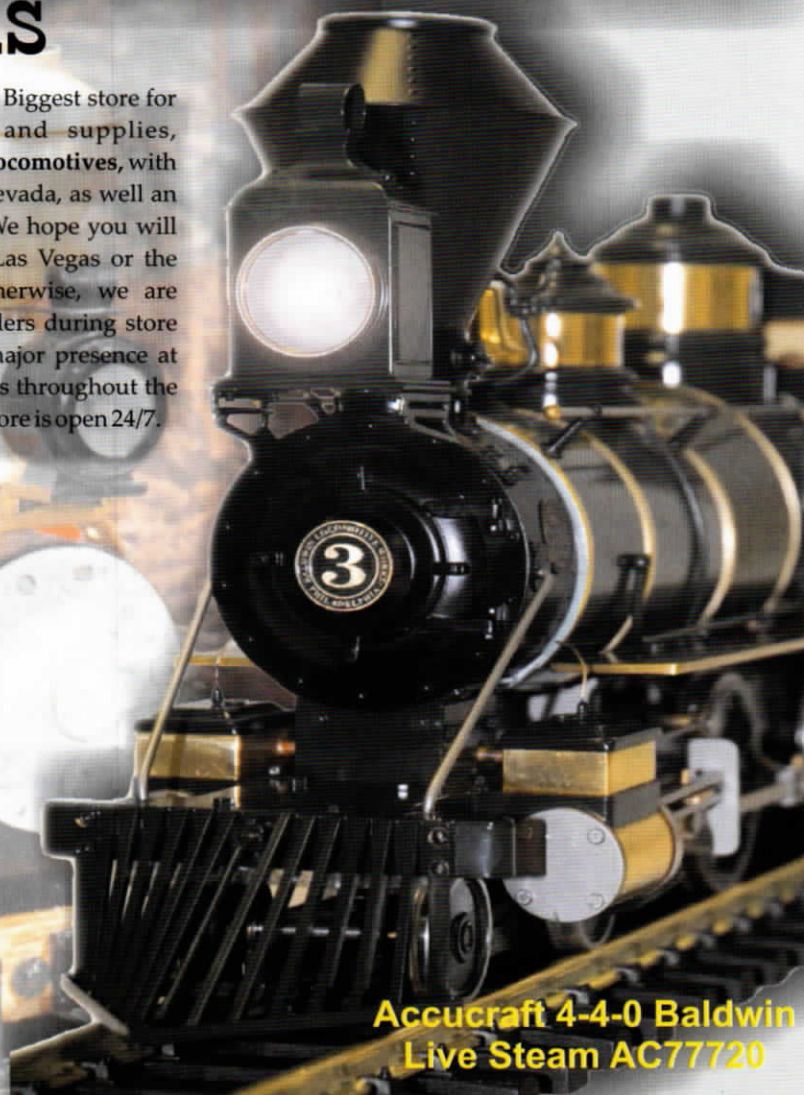


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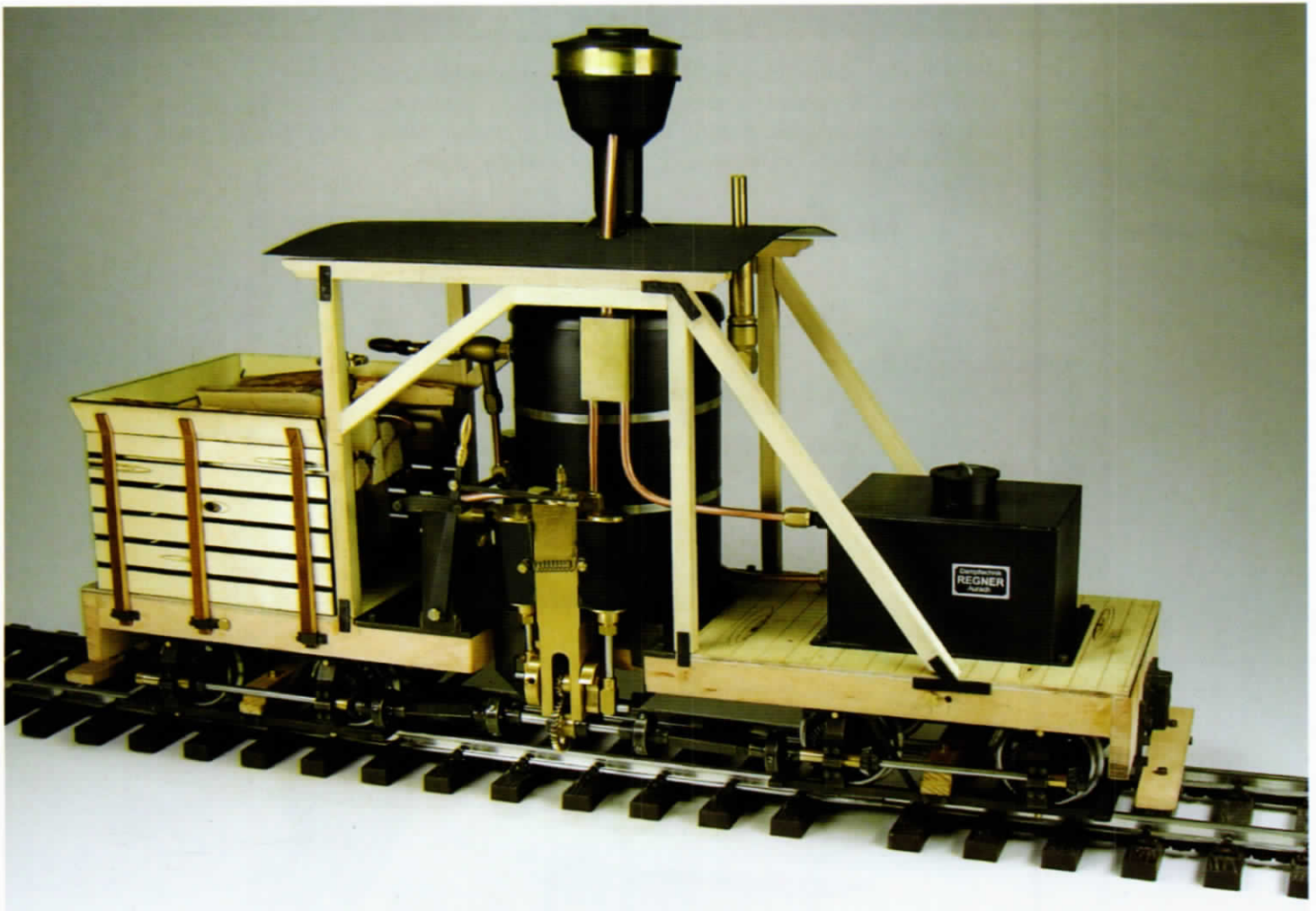


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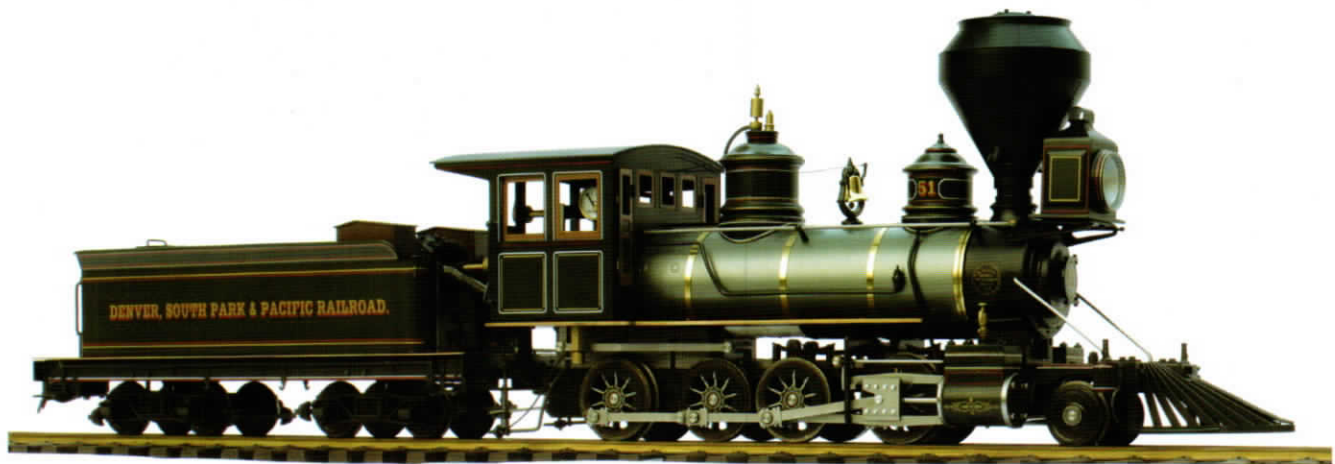
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# *The Nuts and Bolts of Shays*

## *The Dulong Shay Frame*

*By Dan Rowe*

The last article about the frame construction showed the end timbers for S/N 2800 which was named the Mapleton. This article has the more typical end timbers used on S/N 2091 named the Dulong.

There are several differences in the designs. The running boards are normally installed with the top edge set flush with the top edge of the end timbers. To accomplish this, a rabbet is cut in the top of the end timber to support the running boards. The builders photo of the Mapleton shows the running boards covering the entire top edge of the end timbers, and print B10317 does not show a rabbet on the top edge of the end timbers. Those folks with eagle eyes might have noticed my error in the rear end view of the drawing in issue #100. I have bolt heads showing on the top of the end timbers. As the running boards are in this space, those bolt heads can not show.

The second difference is the use of heavy L-iron on the Mapleton to stiffen the end timbers and act as foot board brackets. The Dulong and most of the plan 1553 Shays did not have the vertical stiffeners and used two sets of the forged foot board brackets shown last issue on card B10317.

Card 5361 shows the old style of forged end timber angle brace. This bracket used the old layout shown on the frame plan. Only the center holes marked with arrows leading to the omit notice on card 10351 are used for the early forged brace. The new cast style of end timber angle brace in the last article (card 11065) uses the other set of holes shown on the standard end timber card 10351.

The drawhead shown on card 10419 is the typical style used in the US for small Shays. On this version of the drawhead all three pockets will accept the Lima coupler. The early version of this casting will only accept the Lima coupler in the top pocket. Take note, the holes for the vertical bolts have a different spacing on the casting and timber layout. The timber was most likely marked out from the casting.

The grab iron shown in print A10386 is for the Mapleton. I could not locate the correct grab iron for the early version shown in the Dulong photo. I am sure it is very similar only with a 90 degree bend and it was mounted on the running boards not the end timbers.

I have shown two styles of boiler pad clamps. The style of clamp shown on card 4787 was used on both the Dulong and the Mapleton. These clamps were riveted to the frame and the boiler pad shown in print 4539 was bolted to the boiler. The boiler pads are not completely restrained; they can move sideways for firebox expansion. If the boiler has to be removed for repair or replacement the simple way is to torch off the rivets that hold the clamps in place. The style of clamp shown in print 10724 has a bolted upper half that solved this problem.

The front boiler mounts are the saddles shown on card 4539. My drawing shows line 2 for steel bolsters. The original card was drawn for line 1 that was for wood frame bolsters. Line 3 and 4 are left and right side offset saddles. I am not really sure which of the steel bolster saddles were used for the Mapleton Tramway Shays. I chose line 2





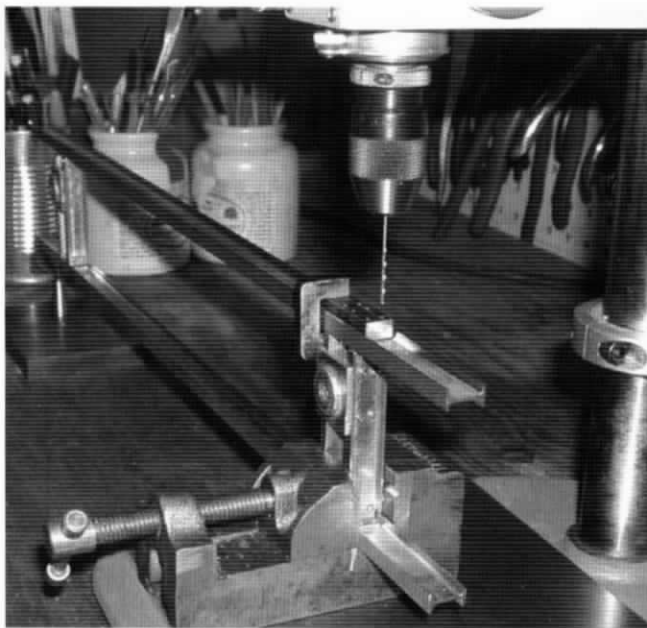
Shop Number 2295 is a 3 foot gauge wood burning Shay built to Plan 1553.  
Photo courtesy Allen County Historical Society Lima OH

because it is a universal pattern and I only have to make one.

The photo of S/N 2295 shows the left side of a similar Shay built to plan 1553. This is the photo I used to detail the left side of the drawing in issue #100. I mentioned the 5/16" holes in the front end of the left side frame in the last issue. I found an oval shaped Lima Locomotive Property plate that has the same hole spacing, now I wonder which Shays had the plate applied. The single pocket drawhead in the photo was common but not as popular as the three pocket version used on the Dulong. I believe the drawhead used for the Mapleton (card A10463) was made special for that locomotive.

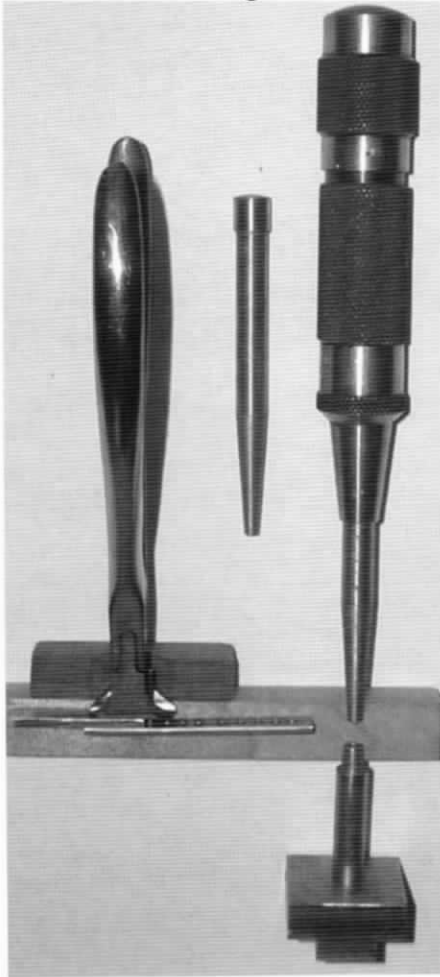
I made the jack screws with a 10-32 stainless steel hex head socket screws. The spud for the pad is a piece of SS silver soldered in the hex and turned to the proper diameter. I made them for display but when I was drilling the frames they were useful for supporting the far end of the frame not clamped in

the vice. The frame drilling jig can be seen clamped to the frame. This jig needs to be adjusted to take into account the thickness of the channel which is not true scale of the full size channels.



The rivet set tools were made to fit my automatic center punch. The spacer

between the work and the flush cutters is 1.5 times thicker than the diameter of the rivet body. This is the general rule of thumb I got from some old engineering books. Other books give slightly different values so some experimenting is required. I simplified the system of rivet sets to two setting dies.

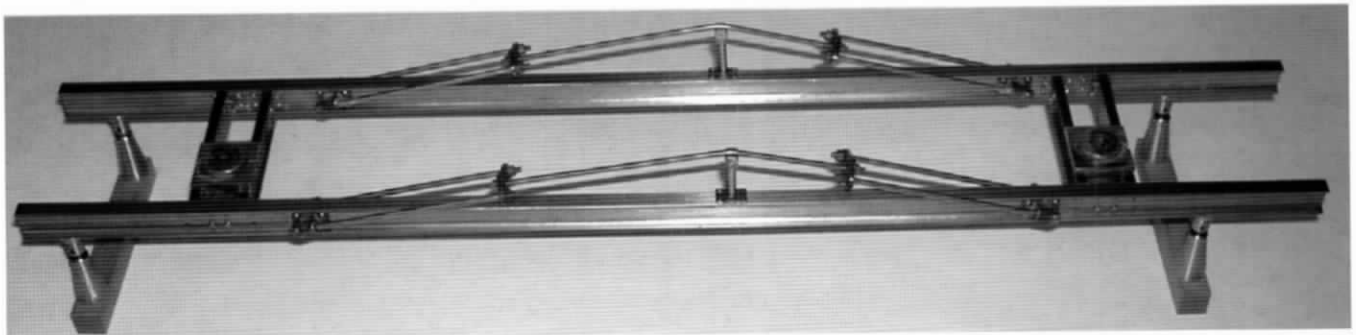


The first die is made with a center cutting end mill that has the same diameter as the rivet body. The hole depth on this die is about 1.2 to 1.3 times the body diameter. A small countersink is used to enlarge the start of this hole and this provides a space for the rivet to mushroom out at the base only.

I made the dies by trial and error so I do not have exact sizes. If the mushroom at the base is not large enough, simply face off a bit of the end and countersink the end again. This first die will tend to stick on the rivet because the body has expanded to fill the die. A gentle rocking motion will remove the punch. The second die and the bucker or dolly are made with a ball end mill with a diameter that is 2 times the rivet body. The factory rivet head is used as a guide for the depth. The factory head should not quite completely fill the die. The check for this is to make sure the dolly or the final set do not leave a mark on the plates that are riveted.

The last photo is the model frame flipped upside down to show the truss rods and center plates. The truss rods have enough strength to bend the steel I-beams the hard way.

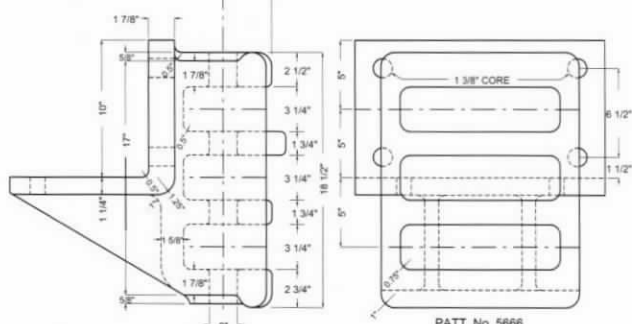
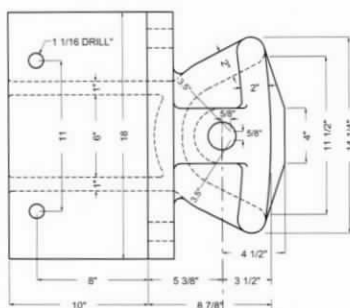
The next issue will wrap up all the loose ends in the frame construction. Hopefully the advance building team can spot any errors before print time.



A number line is shown with major tick marks at 0, 3", 6", 9", and 12". There are 8 small tick marks between each major tick mark, representing 1/8 inch increments. A bracket below the line spans from 0 to 12 inches and is labeled  $7/8$ ".

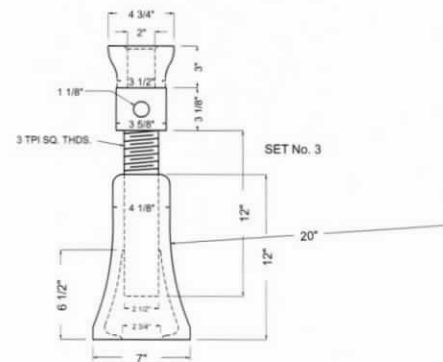


CARD 5361 END TIMBER ANGLE BRACES

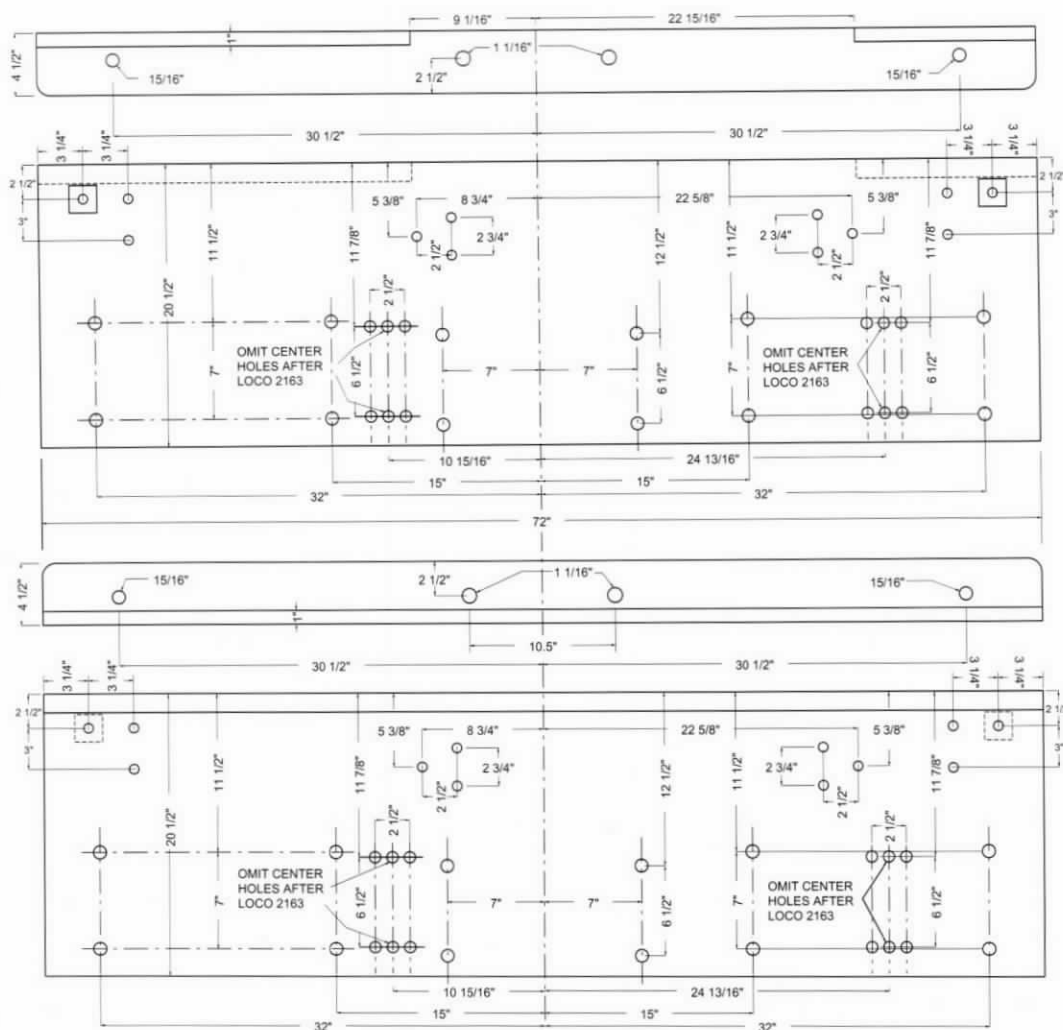


PATT. No. 5666

10419 DRAWHEAD

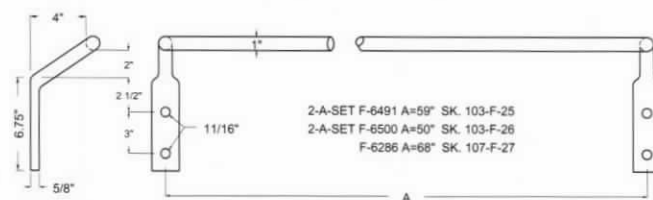


15000 JACK SCREWS

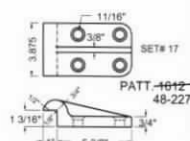


10351 END TIMBER

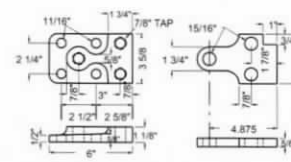
FOR 6x10 LOCOS - PLAN 1553 - WOOD DECK  
DRAWHEAD No. 5666 - BOTTOM POCKET 13" ABOVE RAIL



A10386 GRAB IRONS No. 1

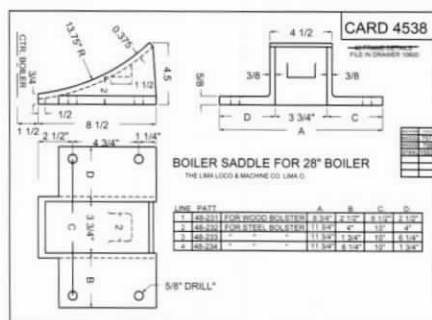


CARD 4787 BOILER PAD CLAMPS



CAST STEEL PAT # 9754-48-433  
CAST STEEL PAT # 9754-48-433  
10724 BOILER PAD CLAMPS 12-8-14

10724 BOILER PAD CLAMPS

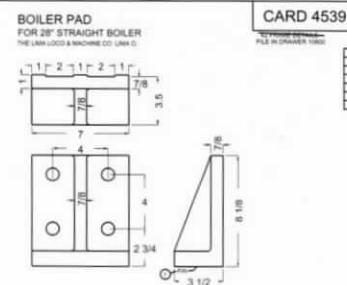


BOILER SADDLE FOR 28" BOILER

THE LISA LOGO & MACHINE CO. LISA G.

LINE	PATT	A	B	C	D
1	48-231 FOR WOOD BOLSTER	8 3/4"	2 1/2"	8 1/2"	2 1/2"
2	48-232 FOR STEEL BOLSTER	11 3/4"	4"	10"	4"
3	48-233 " "	11 3/4"	1 3/4"	10"	8 1/4"
4	48-234 " "	11 3/4"	8 3/4"	10"	1 3/4"

5/8" DRILL



**BOILER PAD**  
FOR 28" STRAIGHT BOILER  
THE LUNA LOCO & MACHINE CO. LUNA, N.J.

CARD 4539

FILE IN DRAWER 1000

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

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CHECKED BY L.F.  
 9 96 7-20-02



## *Accucraft ACF REA Steel Refrigerator Car*

by Jim Stapleton

**Scale :** 1:32

**Length** - 19 1/8" = 51' 0"

**Height** - 3 5/8" = 9' 8"

**Width** - 3 1/2" = 9' 4"

**Wheelbase** - 2 1/2" = 78"

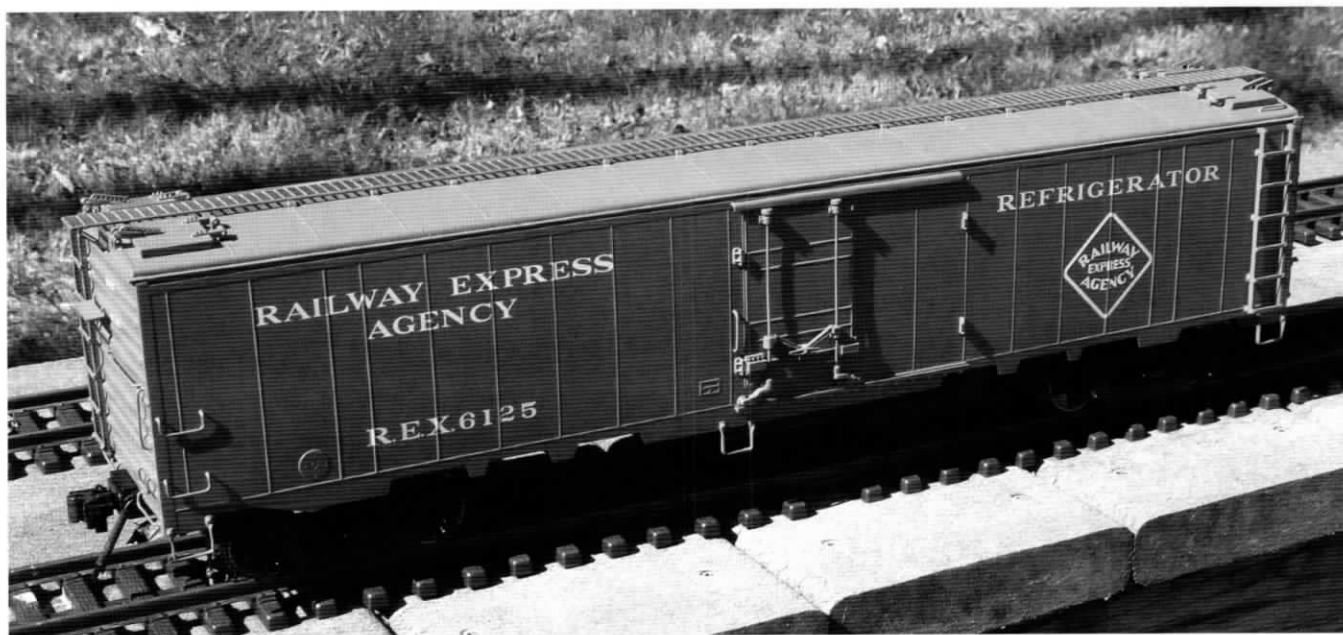
**Prototype History:** In 1947 American Car and Foundry (ACF) built a group of 500 welded all steel refrigerator cars for Railway Express Agency (REA). The lengths for refrigerator cars were reported in various ways by different organizations. The references cited provided three different lengths; 54 ft 10 in (over coupler pulling faces), 51 ft 0 in, (exterior body length), and 42 ft 0 in (inside length). The prototype had a low arched roof, rather than a peaked roof typical of most box cars and reefers. The car used General Steel Castings Corp (GSCC) BX high speed trucks with a wheelbase of 6 ft 6 in, 33 inch wheels, Timken roller bearings and clasp brakes. The car had six foot Youngstown flush (plug) doors, Preco FH-2 circulating fans, Apex Tri-Lok steel running boards, and Universal XL power hand brakes.

ACF also built 50 cars for Atlantic Coast Line

(ACL) in 1948 that were virtually identical to the REA cars.

The REA cars were originally painted DuPont #83-4474 Dark Green side bands and ends, aluminum side bands and roof, and DuPont #83-909 red enamel stripes. Lettering was Delux Gold and black. The underframe, trucks ladders, and grab irons were black. Although a very striking paint scheme, the aluminum sides needed frequent cleaning, and in 1949 REA began repainting the cars a dark green for the sides, ends, and roof. Lettering was still Delux gold. The REA diamond logo was 60 in tall. Later the gold lettering was changed to white.

**The Model:** All major dimensions of the car match the prototype information available almost exactly, including the truck wheelbase. Lettering is correct for a car from the early to mid 1950s. The car is fabricated in brass. The trucks are a good representation of the prototype, including the clasp brakes. The underbody detail is very complete and well executed. Door and reefer hatch latch mechanism detail is very good. Exterior finishing (paint and lettering) is excellent, although the shade of green is much closer to the Chromate Green of 1963 than the earlier Hunter





Green. Without paint chips to match, it is risky to assume the colors printed in a book are particularly accurate.

The brake wheel, ladders and grab irons have been modeled more crudely than the same items on Accucraft's plastic models in 1:32 or 1:20.3. This makes them more robust and less prone to damage during use, but represent to the reviewer, a step back from what they are capable of producing. In normal operation or viewing, this does not detract from the model. Three cosmetic details worth noting: there is no air line or retainer valve or true brake wheel housing, the "A" end of the car has a brake wheel platform that should not be present, and most notably, the large buffer plate above the couplers was not includ-



ed. This plate was intended to match the buffer plates found on passenger cars to reduce the "slack action" between the cars. These are items that the "prototype" modeler can correct with a minimum of effort.

A couple of owners commented that they wished the ice hatches had been made to open. I suspect that Accucraft listened to the many owners of the plastic PFE reefers who complained that the ice hatches were always coming off

during handling of the cars, resulting in the owners gluing them to the roof. Based on typical use, I think Accucraft made the right choice.

The car tracks well on my layout, but I have only #8 and #10 turnouts, so it may not be truly representative. However, since the trucks were mounted quite freely to the body, I don't think this is an issue. What is an operational challenge is the draft springing in the couplers. The springs are very soft and compress fully when the car is at the head of a heavy passenger train. This means the space between the locomotive as well as the space between the reefer and the rest of the cars is noticeably wider than it should be. To correct this, much stiffer draft gear springs need to be installed in the couplers to counteract the heavy weight of the train behind.

**Overall impression:** An excellent model of proper proportions with a reasonably high level of detail. Excellent overall "fit and finish" and a good runner. Very good value for the price. Very well suited to the "runner" as well as all but the most fastidious rivet counters looking for a museum replica.

The model was produced with three paint schemes, ACL aluminum with purple striping, REA aluminum with green striping, and REA all green. I was only able to review the third version.

#### References:

Article: BR and BS class Refrigerator Cars, Pat Wider, *Railway Prototype Cyclopedia*, Volume 7, RPCYC Publishing, 2002

Book: *Railway Express, An Overview*, V.S. Roseman, Rocky Mountain Publishing, 1992



## Accucraft Mogul 1880s Backdate

by Bruce Stockbridge

I have always wanted to make my ACCUCRAFT Mogul into a wood burner, and I recently had the opportunity to drive a couple of hours to see the Arkansas Live Steam "GURU", Dave Hottmann of Accucraft.

Dave converted my 2-6-0 Accucraft Mogul into a beautiful American 4-4-0; the only thing it truly needed now was a wood burning stack and a large oil burning headlight.

About a year ago, Accucraft advertised their new American 4-4-0 was to be made available soon. I called Accucraft in California (1-510-324-3399) to ask if the Radley-Hunter stack and the large oil burning headlight as pictured on that 4-4-0 in their new 2008 catalog were available separately. I was advised that they were, and I placed an order for both.

The stack part number is: AP11815, while the headlight part number is: AP11418.

When the parts arrived I was amazed at the quality, and immediately sat down to make the conversion.

It doesn't take but a few minutes to do this; you will need a pair of long nose pliers and a socket wrench that Accucraft provides with each engine to remove the original headlight and bracket. I removed the



*The author's Mogul with the new Radley-Hunter stack and box headlight installed. Isn't she a beauty?*

headlight bracket first, then opened the smoke box door and, using the long nose pliers, loosened and removed the knurled ring holding the original stack on the smoke box.

After both the stack and headlight have been removed, simply replace them with your new stack and headlight. I did have to make a slight bend in each of the headlight bracket braces to make them fit into the original holes in the smoke box. Be careful not to tighten the headlight bracket too tight, as you can strip the threads in the smoke box ("been there, done that....!!")

If this does occur, simply re-thread

it to the next biggest Accucraft bolt you have, as they do provide a couple of extra bolts when you purchase a new locomotive.

To make the conversion complete, you should make a box to fit into the tender to hold your wood load. I made mine from styrene (no heat back there to worry about) and painted it black to match the tender, then weathered it to suit.

Now, step back and take a look at your "new" 1880s wood burner....!!!!



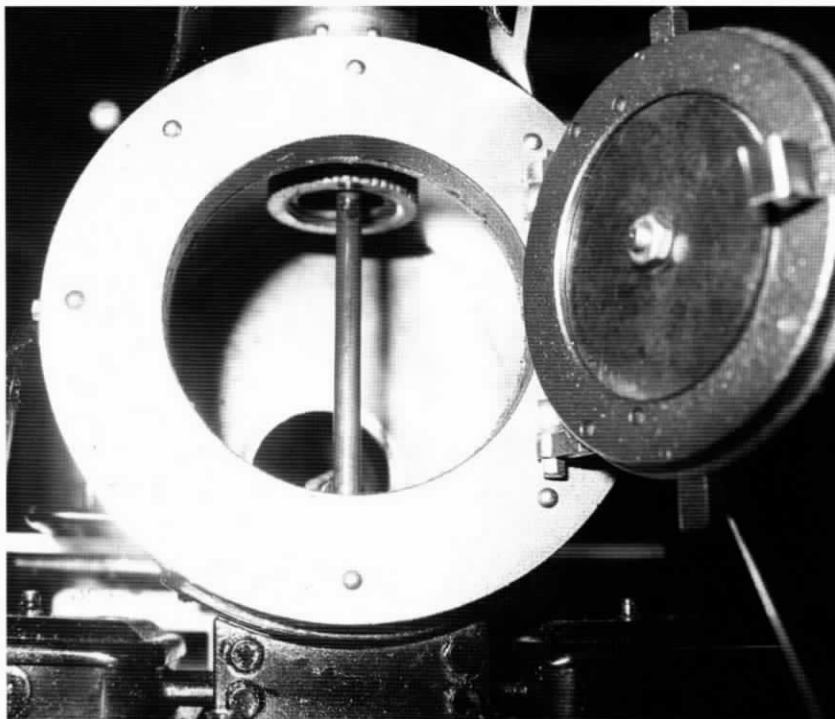




*New stack from Accucraft.*



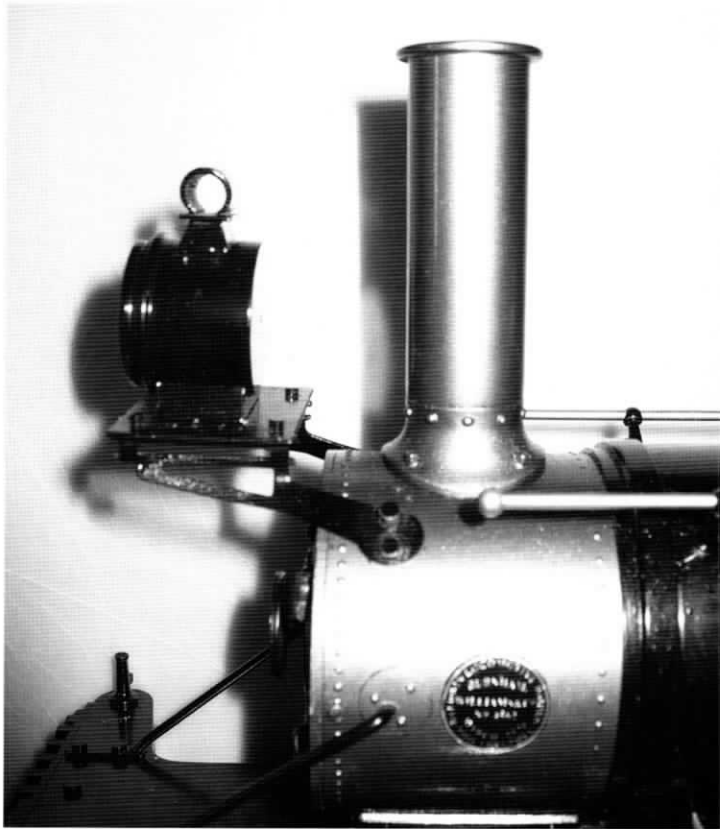
*New box headlight.*



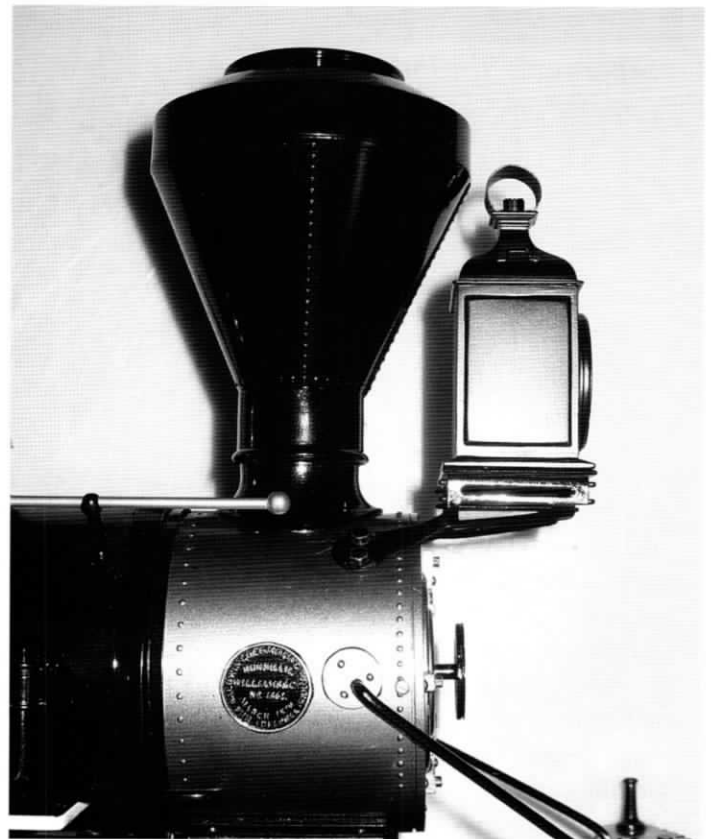
*Knurled ring at the top inside the smokebox.  
Remove this ring to remove and replace the stack.*



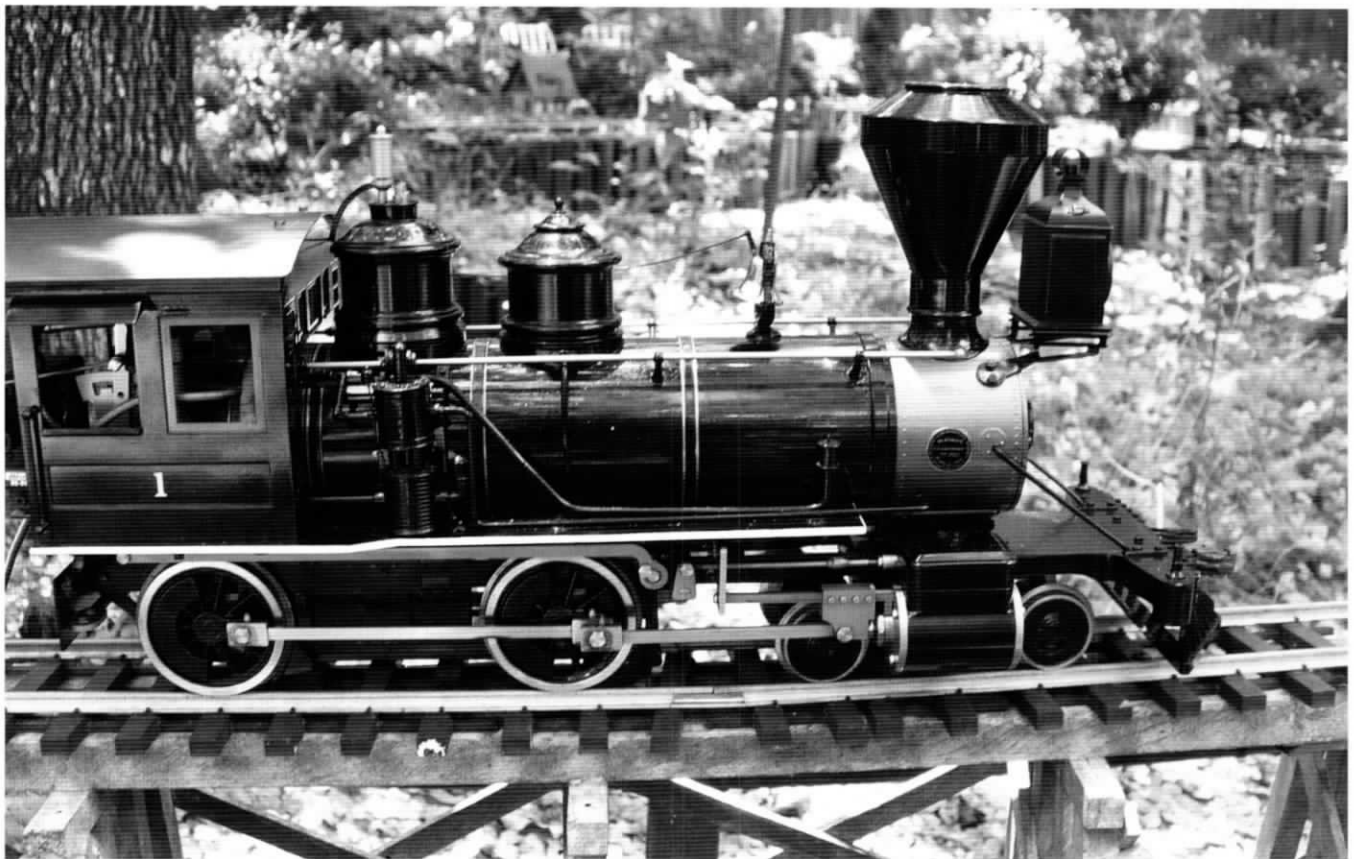
*Original stack and headlight.*



*Original factory headlamp,  
bracket and stack.*



*New stack and new headlamp  
& bracket installed.*



*The author's backdated Accucraft Mogul, modified by Dave Hottman with  
additional detail added by the author, runs on the author's railway in Arkansas.*

## *The Great Fuel Container Adapter Mystery*

By Carl Weaver

### *Fill 'er up!*

Most seasoned steamers have already chosen their fuel sources. They have also found suitable adapters to mate between the container the fuel comes in and the filler valve on their fuel tanks. However, for the new steamer, getting fuel from a container to their locomotive fuel tank can be a daunting task. I'm no expert, but I am experienced and have made several observations over the years that might be useful in alleviating some of the mystery for the newbie. I apologize to anyone other than those mentioned who provide fuel adapters and whose names or products have been omitted.

If you use King® Premium Butane in the 6.0 ounce (170 gram) cartridges available online, then you are lucky and usually won't need to use an adapter to get fuel from the container into your tank. King cartridges have a 3/4-inch metal filler spout that can easily reach and fit the Ronson® valves of most fuel tanks. The protective plastic top on the cartridge has five different detachable adapters to fit the spout and make it compatible with most valves.

If you use any brand of the Korean straight butane 7.8 oz to 8 ounce (220 to 227 gram) cartridges available from Asian grocery stores that are designed for portable stoves, then the spout is far too short to reach the filler device on a fuel tank and the end is not machined to mate with a Ronson valve. There are three adapter solutions available for use with this type of container and the paragraph numbers correspond to the item numbers in the picture:

1. Accucraft offers a 3-1/2 inch fuel adapter made up as a piece of copper tubing with brass fittings at each end. The part number is AP-29204 and can be found on the Accucraft Store web site. One end of the adapter is flat with a slight indentation to fit on a Ronson Valve. The other end is slightly pointed to fit into the hole in the end of a Korean cartridge. Perfectly straight alignment and constant sufficient pressure are the keys to using this adapter.

Unfortunately, it usually takes two hands to use this device because the fuel tank has to be held steady so the adapter cartridge be properly aligned. In addition, these adapters are easily lost, so having more than one is a good idea. One solution to not losing an adapter is to drill a hole in a penny or a piece of brass and slip it over the adapter and solder it in place. A second hole can then be drilled in the penny to accommodate a slip ring attached to a retractable line pinned to your steamup apron. That way it's always handy and almost loss proof. This type adapter is the least expensive choice.

2. Quisenberry Station offers a second alternative for the Korean cartridge that has a built in on-off valve. This device has a collar type fitting that can be firmly attached to the cartridge. A hose is attached to the valve body that has an Accucraft fuel adapter in the end of it. This unit can be used with one hand, but pressing down on the Accucraft adapter with your hand can be quite difficult, especially if you have arthritis or greasy hands. So, soldering a piece of brass or a penny with a hole drilled in it to the Accucraft adapter is a helpful modification. (See the modified Accucraft adapter at the end of the hose in picture Item 2.) One thing to keep in mind is that the hose does not mean that you can stand the cartridge on its bottom while fueling. The cartridge is designed to be used in the horizontal position in a portable stove and it must be in this position or upside down in order for all the butane to be removed.

3. Norm Saley offers a third alternative by fabricating an adapter with a collar that also firmly attaches to the cartridge. The main feature of this device is that the cartridge and adapter can be manipulated with one hand. Also, this adapter is large enough to not become easily lost, unless you throw it away with an empty container. This type adapter is the easiest to use with Korean butane cartridges.

If you use any brand of butane/propane mix can-





1. Accucraft fuel adapter
2. Korean cartridge device with a retaining collar, valve, hose and a modified Accucraft fuel adapter
3. Korean cartridge adapter with a retaining collar
4. Primus screw-on adapter with lanyard
5. Screw-on stand adapter with a valve, hose and Accucraft fuel adapter
6. Screw-on fuel adapter

**Not numbered: King cartridge**

**Not shown: Press-on fuel adapter for Gaz canisters (looks like Item 6)**

isters with threaded nozzles available from hiking and camping stores (the most common of which is the 220 gram Primus® 2202 seasonal mix canister), there are three solutions:

4. Primus and Brunton® each offer an adapter that is available from camping stores that sell screw-top type canisters. They are both small and easily lost,

but the Primus comes with a split ring and a short lanyard and the Brunton has a wire handle attached. These adapters when not screwed on a canister can be hooked to your steamup bag or apron. One disadvantage of this type of adapter is that they both have a short nozzle similar to the King cartridge, which may not reach the Ronson valve on some fuel tanks. This

type adapter is the least expensive choice.

5. Quisenberry Station offers a screw-on device that has a valve and a folding stand positioning the canister upside down. A hose is attached to the valve body that has an Accucraft fuel adapter in the end of it. This device takes two hands, one to turn the valve and the other to hold the adapter against the Ronson valve. The adapter is hard to hold, so modifying it with a penny or piece of brass soldered on, makes it easier to use.

6. Sulphur Springs Steam Models, Sunset Valley Railroad and Quisenberry Station each offer a screw-on adapter that fits threaded canisters. It has a long nozzle that reaches the Ronson valves on most fuel tanks. Norm Saley no longer fabricates this type of adapter because of the variation in screw threads among canisters. So, make sure the one you purchase fits the brand of canister you use. This type adapter is the easiest to use with screw-on butane/propane mix canisters.

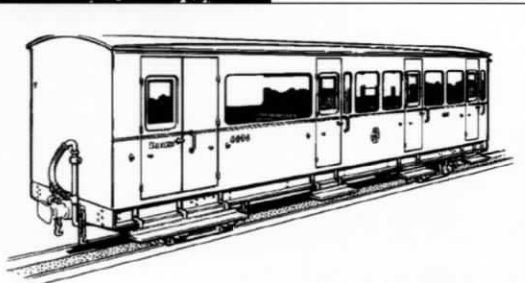
If you use a Gaz® type butane/propane mix canister available from hiking and camping stores that

does not have a screw-on top, then an adapter similar to the Primus type above, but with a press-on fitting with a seal is available from Norm Saley and Quisenberry Station. Sulphur Springs offers both short and long neck versions of the device, which in their online catalog is called a Hadden Valve. As far as I know, this is the only adapter type available for Gaz canisters. I have not provided a picture, but it looks similar to Item 6, but with no internal threads.

Finally, you can make your own adapter. Several steamers have come up with some very innovative solutions. Search the MyLargeScale.com Live Steam Forum, including the Archive, for 'fuel adapter' and see what pops up. I hope this short article has cleared up the mystery of how to get gas from any type of container into a live steam fuel tank, especially for you newcomers.



# Brandbright

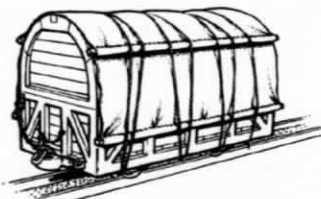


PS29 Vale of Rheidol Brake Coach

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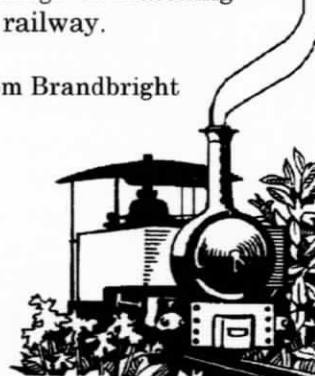
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# *My Adventures with the Transportation Security Administration*

by Jerry Reshew

*Flying to a steamup?  
Better Read This First!*

The core of this short story relates to the experiences that many of our fraternity have bandied about in the past year or so - how do we travel with our live steam locomotives? I personally have enjoyed relatively hassle free travel since I always allowed enough time at the airport to talk to the TSA agent inspecting my luggage and show him or her what the items are that they were wandng. Of course the ease of this not too unpleasant exercise was related to the size of the airport and the number of passengers waiting in line. I decided to raise this issue with the Transportation Security Administration in DC and sent off an e-mail to the appropriate division.

After hearing nothing for a couple of weeks. I decided to just go to the Gulfport / Biloxi airport and see what trouble I could make as an affected citizen and passenger. I was able to meet with the senior on duty agent and explained my situation to her. She did seem sympathetic, especially when I told her that expecting a reply to an inquiry from D.C. was something that I understood could take a long time, having been in the federal service myself. I left the airport and arrived home to find the following reply on my Mac:

**Mr. Jerry Reshew**  
[reshew\\_j@bellsouth.net](mailto:reshew_j@bellsouth.net)

**Dear Mr. Reshew:**

*Thank you for your e-mail of June 2, 2008, to the Transportation Security Administration's (TSA) Contact Center, concerning the security screening process at Gulfport Airport (GPT). Specifically, you report that passengers were not permitted to carry their model trains on board an aircraft.*

*An inquiry into this matter was conducted by the Assistant Federal Security Director at GPT. TSA management was not aware of the situation. Model steam trains are permitted on board an aircraft. Should you*

*encounter difficulties during the screening process at GPT in the future, please contact Mr. Greg Dion at (228) 365-7524.*

*Thank you for taking the time to share your concerns with us and I hope this information is helpful.*

*Sincerely yours,*

**Morris McGowan**  
*Assistant Administrator for Security Operations*

What timing! I of course contacted Mr. Dion immediately and set up an appointment to meet him (carrying a couple of locomotives, a copy of *Steam in the Garden*, and a Diamondhead program for this year).

The interview with Mr. Dion went swimmingly, or at least I thought so. I was taken into the scanning facility and shown how these huge MRI machines can look into the innards of our models and produce an extremely detailed print if needed. My locomotives were wandng, and while this was going on I gave a bit of a primer on the hobby to the agents who were gathered about. All seemed to be going too smoothly, but I didn't notice. I thought we were on the verge of a breakthrough, and Mr. Dion told me that if the airlines had no problem then TSA had none either.

I waited for a couple of months and during this period TSA had garnered police powers, given the agents the title of OFFICER, gave them new uniforms, and done nothing for us travelers. The most recent discussion with Mr. Dion puts us back where we were when all of this started - wandng and Officer discretion. The airlines will most probably act as before, but the adventure with the TSA at least got us into the game. I still will try and take a small locomotive with me next time that I fly, but I'll carry a copy of the TSA letter with me... just in case.

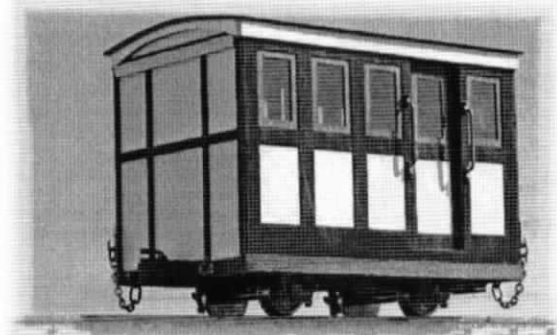




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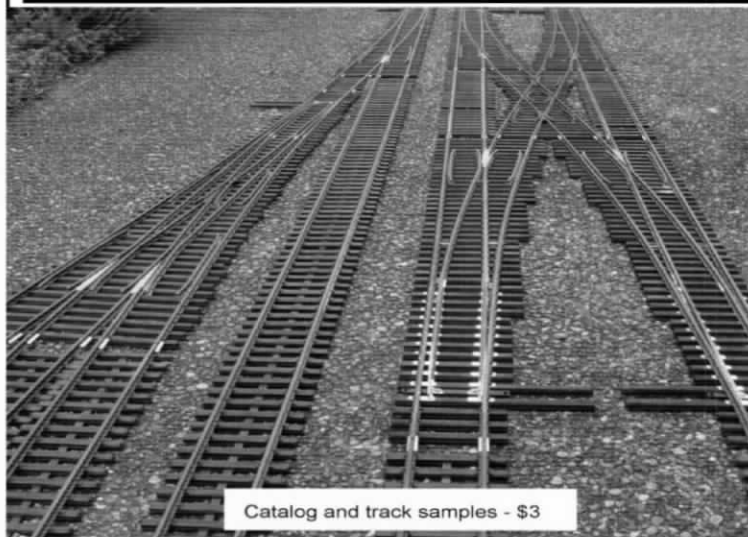
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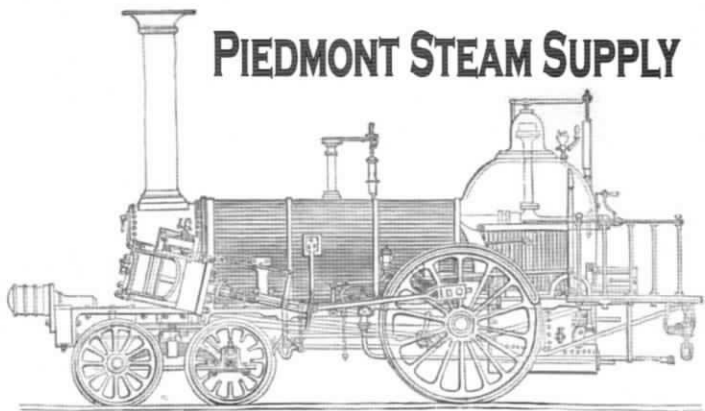
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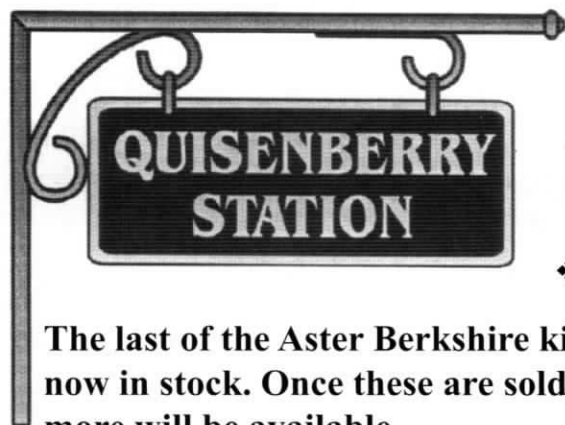
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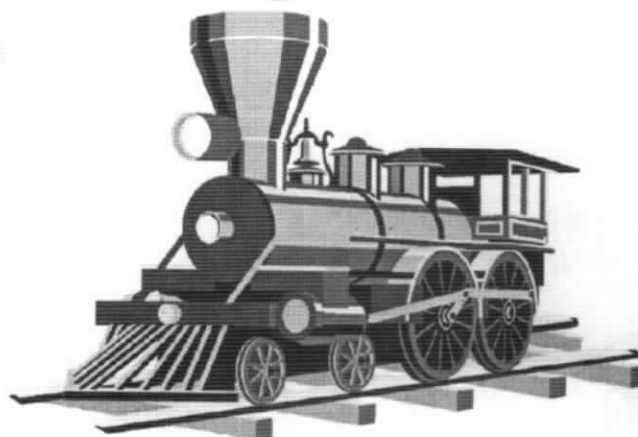
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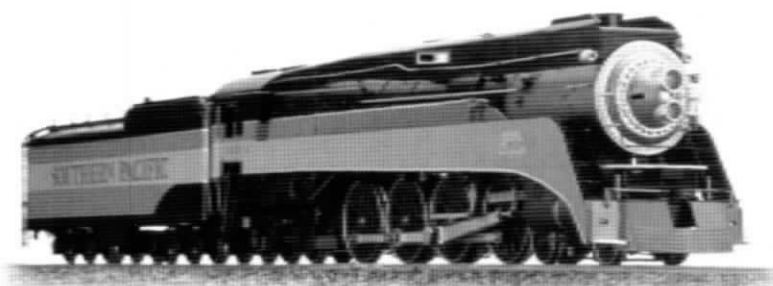
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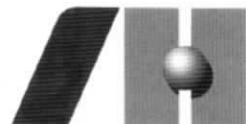
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## END OF THE LINE

### On the Calendar...

Here we are at the end of another year. Time sure flies when we're having fun! Although winter is upon us, there are still some great steamups on the calendar....even in the northern climes. Diamondhead, Cabin Fever, President's Day Weekend for starters. Be sure to check the Calendar of Events in this issue!

At this time of year we like to take some time to reflect on all those

things we have to be thankful for. Blessings of family, friends, the world's greatest hobby...and all those who help keep our little publication going. Subscribers, contributors, advertisers.....our sincere thanks to you all!

Happy steaming!

*Bob & Marie*



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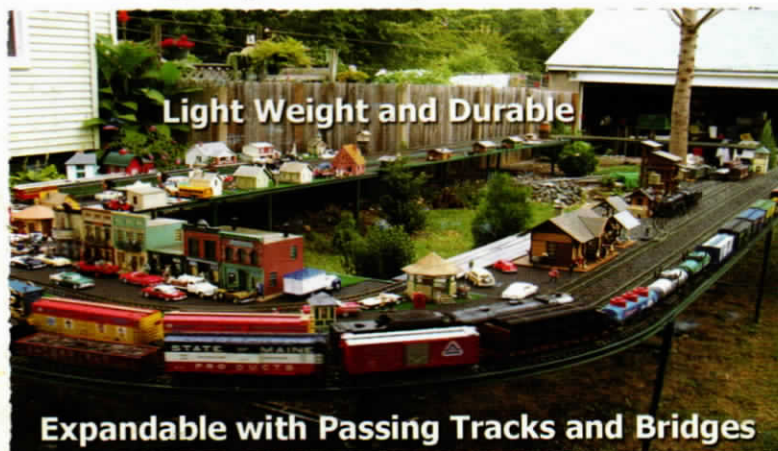
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