

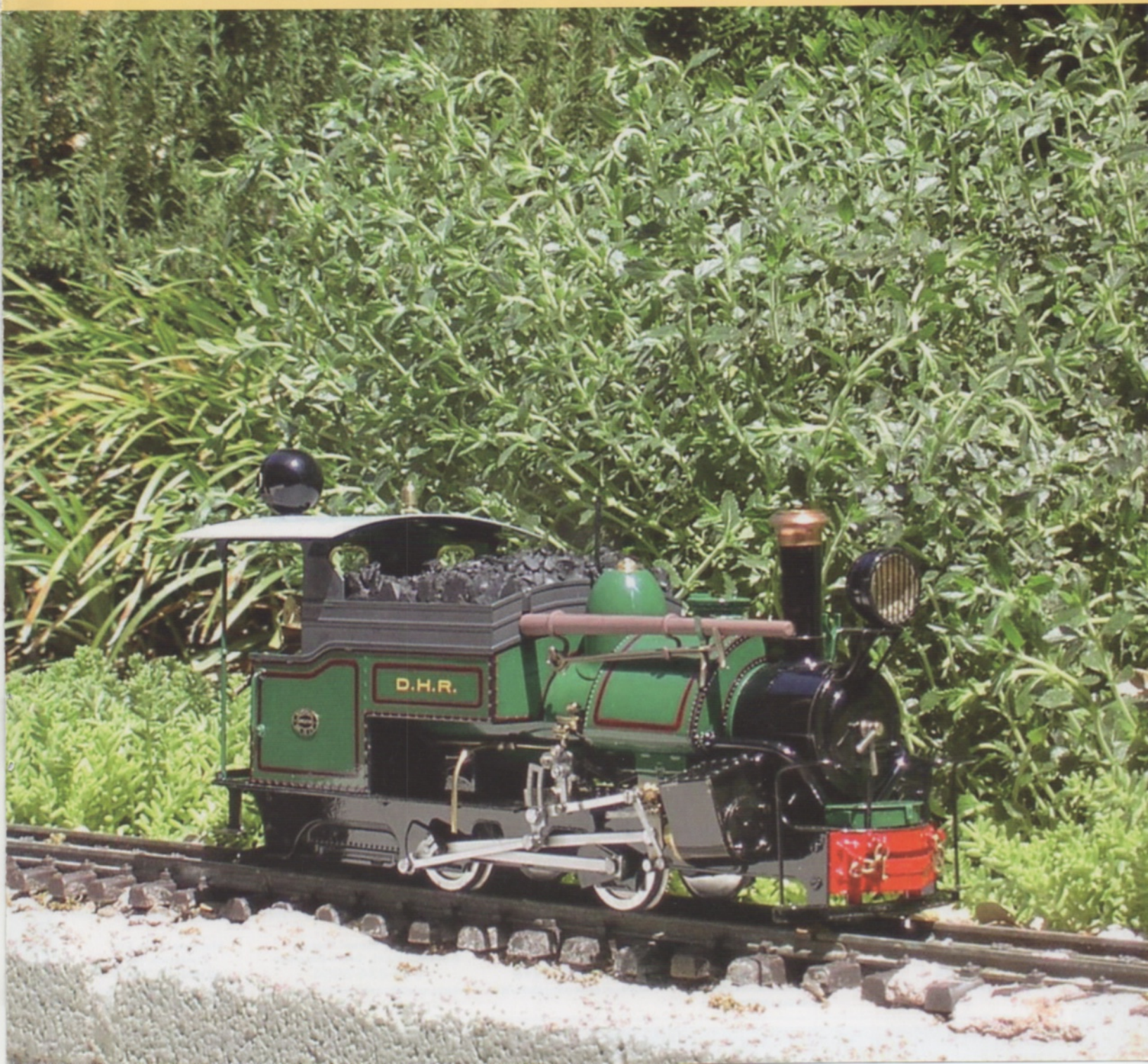
N° 70 May/June 2003

4.95 U.S.

\$5.95 Canada

STEAM

IN THE GARDEN



WORLD'S FINEST GAUGE 1 LIVE STEAM



KITS & RTR

BEAUTY * INVESTMENT * A PLEASURE TO OWN

QUICK DELIVERY ON ALL MODELS



BLACK MIKADO • KIT OR BUILT Kit Available Complete With

- Tender Pump (Unlettered)
- Axle Pump Decals Available
- Super Detail Kit



L & M LION



THUNDERBOLT



LMS CRIMSON JUMBO



GERMAN "BATHTUB" TENDER



JNR B-20



ONLY 25 LEFT

C&S MOGUL • KIT or BUILT



KPEV (PRUSSIAN) P8



SOUTHERN MIKADO • ONLY A FEW REMAINING



DB BR 38

BR-38
AVAILABLE IN
DR or DB
VERSIONS



T3/BR 89



JNR 9600 • 2 VERSIONS



JNR C11

CATALOG & MANUAL \$15

U.S. REPRESENTATIVE & DISTRIBUTOR

DIAMONDHEAD 2-HOUR
STEAMUP VIDEO \$29

HYDE-OUT MOUNTAIN LIVE STEAM 89060

NEW RUMLEY ROAD JEWETT, OH 43986

CALL US FOR INFORMATION

740-946-6611 * www.steamup.com/aster

AVAILABLE FROM THESE DEALERS

IN CANADA

Sunset Valley Railroad
Issaquah, Washington
425-255-2453
svrrted@sprynet.com

S.T.E.A.M.
Antioch, California
925-778-7061
www.steam4me.com

Cross Creek Engineering
POB 369, Spencer, Ohio
800-664-3226
crosscreektrains@juno.com

North Jersey Gauge 1 Co.
Park Ridge, New Jersey
201-391-1493
bobsteamtoys@yahoo.com

Bear Creek Railroad
Surrey, BC
604-594-8695
www3.telus.net/pantages

Gauge 1 Lines
Stittsville, Ontario
613-836-6455
gaugeonlines@yahoo.com

Doubleheader Productions
Dallas, Texas
972-247-1208
www.gaugeone.com

Sulphur Springs Steam Models
PO Box 178
St. Peters, Missouri 63376
636-272-6632
www.sssmodels.com

Crescent Models
Harvey, Louisiana
888-838-0315
www.crescentmodels.com

Southern Steam Trains
Travelers Rest, South Carolina
864-834-3954
www.southernsteamtrains.com

Machine Toys, LLC
Frederick, MD
800-842-7695
info@machinetoy.com
www.machinetoy.com

STEAM IN THE GARDEN

Vol. 13, Nº 4
Issue Nº 70

Publisher/Editor
Ron Brown

Faithful Assistant & Staff Shutterbug
Marie Brown

CAD & Other Drawings in This Issue

• Larry Bangham

Regular Contributors

Larry Bangham California
Keith Bucklitch England
Jim Crabb Texas
David Hamilton Canada
Les Knoll Illinois
Kevin O'Connor California
Ken Parkinson Florida
John Thomson Texas
Chuck Walters New York

Steam in the Garden (USPS 011-885, ISSN 1078-859x) is published bimonthly for \$30.00 (\$38.00 Canadian or overseas) per year (6 issues) by Steam in the Garden, PO Box 335, 6629 SR 38, Newark Valley NY 13811. New subscriptions please allow 6 - 8 weeks for delivery (overseas via surface mail may take longer). Direct correspondence to PO Box 335, Newark Valley NY 13811. Periodicals postage paid at Newark Valley, NY and additional mailing offices.

POSTMASTER: send form 3579 to Steam in the Garden, PO Box 335, Newark Valley, NY 13811. Printed in USA. Copyright 1998 Steam in the Garden. All rights reserved. The contents of this publication may not be reproduced in whole or in part by any means without the express written consent of the publisher.

USA, Canadian and overseas subscriptions may be sent to **Steam in the Garden, PO Box 335, Newark Valley NY 13811**. Phone, fax and e-mail subscriptions gladly accepted. We accept VISA, Discover and MasterCard.

In the U.K., contact Brandbright Ltd., The Old School, Cromer Road, Bodham, Near Holt, Norfolk NR25 6QG — phone 01263 588 755 FAX 01263 588 424

In Australia, contact RCS, PO Box 1118, Bayswater, Victoria 3153 AUSTRALIA — phone/fax (03) 97 62 77 85

Phone, fax, e-mail or write for mailing information on items for review.

Questions or comments? Phone us (Mon. - Thurs. - before 8:00 p.m. Eastern time, please) at 607-642-8119 • 24-hr FAX 253-323-2125 • e-mail address: docsteam@steaminthegarden.com

Check out *Steam in the Garden Online*, located at: <<http://www.steamup.com>>.



Articles

9 **Best Way to Learn How Steamers Work -- Beginner's Guide to Steaming**
by Chuck Walters

14 ... **The Resonator Whistle - Part 3 -- A whistle for the Accucraft Shay**
by Larry Bangham

23 ... **Mr. Murphy -- A classic steamer cloned**
by Larry Herget

29 ... **Aster's Finest? -- The mighty Allegheny H-8**
by Robert Hekemian Jr.

37 ... **David's Denver -- The author reports on his success in building the Denver Project Loco**
by David Hamilton

41 ... **Notes on a 4-2-0 Project Locomotive -- Simple and Satisfying**
by Steve Shyvers

Departments

4 **Calendar of Events -- Who, What, When & Where**

5 **RPO -- Our reader's write**

28 ... **Steam Scene -- Some scratchbuilt beauties**

36 ... **Weedwood -- An offbeat look at our hobby**

49 ... **Swap Shop -- One man's surplus is another man's treasure**

50 ... **End of the Line -- Blah, blah, blah.....**

50 ... **Advertiser Index -- Wish List...**

FRONT COVER:

Darjeeling & Himalayan Railway loco by Roundhouse Engineering, shown posed on the photographer's line in Texas...a long way from where the full sized loco operated. This beautiful loco reminds me of one of my dad's favorite sayings..... "I wish it was mine and he had a better one!"

photo by Carl Malone

2003 CALENDAR OF EVENTS

July 3-6, 2003 - 9th Annual Northwest Logging Modelers Convention in Kelso, Washington at the Red Lion Hotel. This year events will include layout tours, a modeling contest, clinics and lots more. For a registration form and details check the web site at www.nwlm.org, e-mail loggnhstry@aol.com or phone J. Clark McAbee at 253-939-6450 after 7 p.m. PST.

July 10-13, 2003 - 30th 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 The web site URL is: <http://www.tuckahoesteam.org/>

July 17-20, 2003 - National Summer Steamup in Sacramento, CA. A new layout -- meaning more track time -- and the auction of a customized Accucraft Shay are the latest highlights of the National Summer Steamup, which is scheduled for July 17-20 in suburban Sacramento.

The National Summer Steamup, now in its third year, brings together small-scale live steamers from all over the world to run their trains, which use a variety of scales ranging from 1:13.7 to 1:32 on both 32mm (Gauge O) and 45mm (Gauge One) track.

Accucraft Trains of Hayward, Calif., has donated one of its Shay live steam locomotives to be auctioned off to benefit the Pacific Coast Live Steamers, a loosely organized group of small-scale live steam enthusiasts. The Shay will have a custom whistle designed, installed and donated by Larry Bangham of All The Bells and Whistles of La Mirada, Calif. Detail parts for the customized Shay will be provided by Trackside Details of San Luis Obispo.

The event will be held at the Lions Gate Hotel, in suburban Sacramento on the former McClellan Air Force Base. The facilities for the event are secluded and large, giving steamers plenty of elbow room.

Organizers say there will be in excess of 600 feet of track in the hotel ballroom and that, "Everybody gets track time at the Summer Steamup."

Organizers say they expect more vendors than ever before and because the event has been extended to four days, there will be more clinics than ever before.

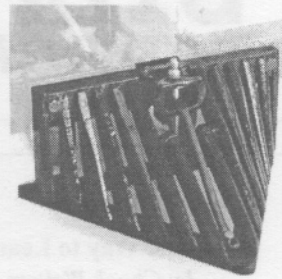
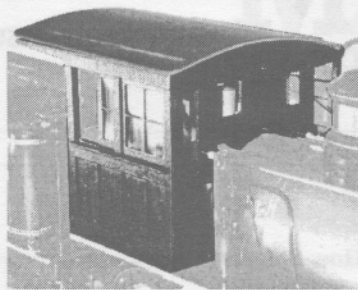
The admission fee for the National Summer Steamup is \$90 if registered before June 18 and \$100 after that date; a one-day pass is available for \$75. For more information on the steamup, go to www.summersteamup.com, e-mail steamup@summersteamup.com or call (650) 557-9595. Hotel rooms can be reserved by calling the Lion's Gate toll-free at (866) 866-7100.

August 2 - Jim Curry's Annual Maine Steamup, 9am-6pm, call 207-273-4049 or jjc@structureguard.com for directions.

August 29, 30 & 31, 2003 - Pennsylvania Live Steamers Labor Day Weekend Steamup. Rte. 29, 1 mile north of Rte. 113, Rahns, PA. Permanent Gauge 1 rack 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 - e-mail mikemoore@comcast.net.

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.)

KOOL KITS!



Our laser-cut wood and cast metal kits are perfect replacements for the low-detail parts on your C-16 or other loco projects. **Cab kit** features removeable roof, working glazed windows, options for all loco styles. **Only \$65 ppd.** **Pilot kit** features beveled spokes, metal link-and-pin coupler. **Only \$25 ppd.** Our Forney conversion kit is available again in a lower-cost version!

FH&PB Railroad Supply
6933 Cherry Hills Loop NE
Albuquerque NM 87111
<http://www.nmia.com/~vrhass/fhpb/>



Introductory price
for EVO-2

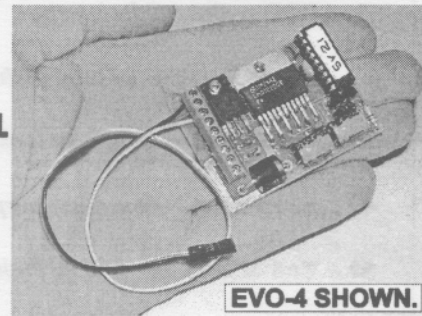
\$99.00

EVO-2 & 4. For any 2 ch stick R/C.

Super small, Long range 4 amp R/C throttle.

Smooth "Glitch Free" memory momentum.

- Intuitive to use.
- Variable braking & acceleration.
- Self seeking neutral.
- Optional decoder for ch #1 features: Whistle/Horn and Bell control, plus Auto "Ditch lights".

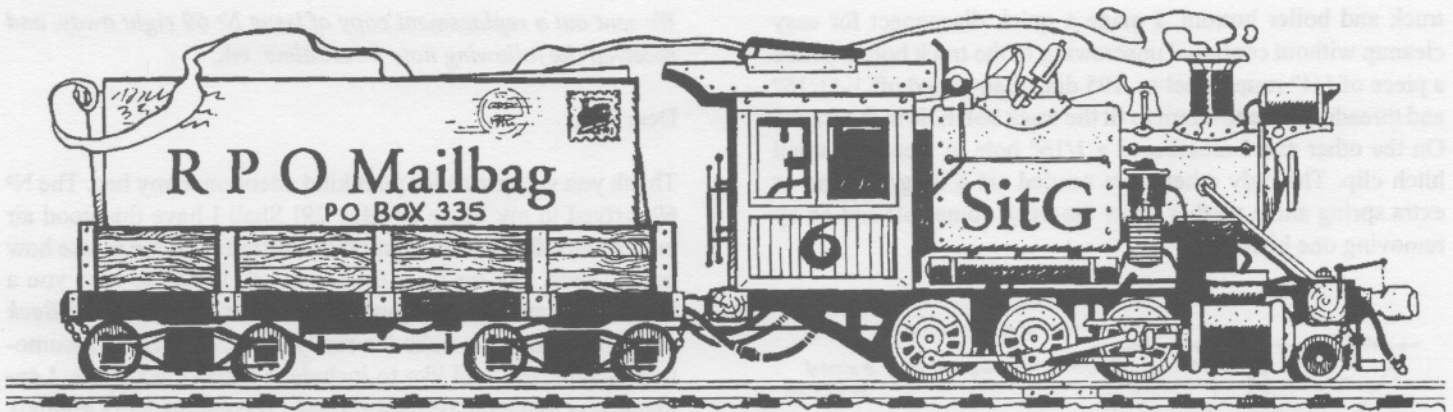


EVO-4 SHOWN.

**P.O. Box 1118, Bayswater, Vic 3151
AUSTRALIA. ++(613) 9762 7785**

www.rcs-rc.com

Toll Free 1 800 490 6945



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.

Ontario, Canada
via e-mail

Dear Ron,

I am reading issue 69. As usual, I am enjoying every word. I would like to respond to one comment that Chuck Walters made in his article on Winter steaming. On page 8 he states that "100% propane is NEVER used in a small-scale live steam engine. The pressure exerted by a sample of propane far exceeds the tolerances of the gas tanks on our little steamers."

I understand that these articles are geared towards beginners and newcomers to the hobby. And all of us must ALWAYS consider safety first. So as far as that goes, I'd have to agree with Mr. Walters completely. We should always use a fuel that is safe and appropriate for the engine we are running.

However there are, in our hobby, many who have the skill and experience to convert their engines to propane firing. This means abandoning the gas tanks provided commercially, and building new ones. Or installing accommodations for commercially available tanks, designed for propane.

Ed Cook, of Port Elgin Ontario, fires all of his locomotives on propane. He has a gondola, with a load of lumber, that hides a tank designed and available commercially for propane. There is an appropriate regulator and hose connections that run from the car to the locomotive burner. Any locomotive that he purchases commercially is soon converted to propane firing. I have even known Ed to convert an alcohol burning locomotive to propane. This involved designing and building a new boiler. The point is that it can and has been done - and done safely.

Not everyone has the skill or experience to build appropriate boilers, burners and gas tanks for propane firing. And beginners particularly should be encouraged to stay away from propane firing. But for those experienced builders who have the skill and desire to convert their locomotives, there is no reason why propane

cannot or should not be considered as an alternative fuel. The statement 100% propane is NEVER used is simply not true.

Respectfully,

David Hamilton,
Kincardine, Ontario, Canada

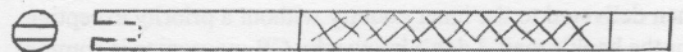
Massillon, Ohio

Dear Ron,

I would like to give my thoughts and a couple of helpful hints about the new Accucraft Mich. Cal #2 live steam Shay. After waiting 15 months the call finally came from Bob Pennock at Cross Creek Engineering...my Shay had arrived. I went to Bob's shop and we unpacked it together. I was pleasantly surprised, having sent a reservation on a loco I'd never seen. The paint work and workmanship are excellent.

Not going into the details of operation, the fact that the loco runs out of water before the gas runs out contradicts everything I've learned about not letting boilers run dry. It's even mentioned in the operating instructions. I made a goodall valve, but the Ruby valve #FVW-10R from Sulphur Springs also works in this loco. What I do is, after steam is up I inject 35 ml of distilled water into the boiler every five minutes, and at the end of the 25 minute run I still have 75-100 ml of water left in the boiler.

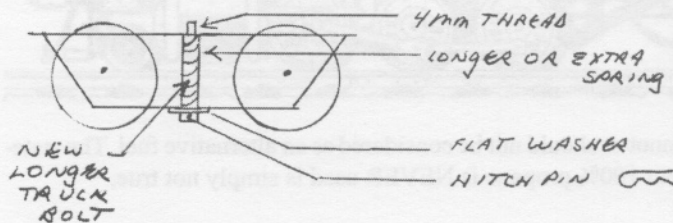
I also determined that the tee handle on the steam oil lubricator is still too hard to remove, so I made a small tool from an Exacto™ hobby knife. Remove and discard the blade holding device, then cut about 1/4" off the end with the screw hole, then hacksaw a slot 1/4" deep across the end per drawing.



This extension handle now slips over the tee on the lubricator cap, making removal quick and easy.

I like the design of the steam exhaust in the stack. Steam comes out the stack and most of the excess water and steam oil come out the bottom of the smoke box, but it gets all over the front

truck and boiler bottom. I made a quick disconnect for easy cleanup without continual unscrewing of the truck bolt. I turned a piece of 1/4" round steel to .195 dia., then parted off 1-11/16" and threaded one end 4 mm to fit the truck bolt hole in the frame. On the other end I crossbored a 1/16" hole to receive a small hitch clip. The only other parts needed are a longer spring or extra spring and a washer. Now the truck comes off and on by removing one hitch clip.



Accucraft has really done their homework on this loco...it runs slow and smooth.

Yours truly,
Clement E. Rook, Jr.

From Mexico via e-mail

Hello good Friends!

It is a pleasure to greet You. For the the third year I'm suscribed to SitG. Always waiting the arrival of every lovely issue with impatience and every time been so happy! When I receive it at last, enjoying it at extreme, and praying to God bless You.

I have loved the steam trains since my far childhood, now I'm 62 years old, and was widowed since 6 years ago and SitG has helped to me to survive. I can't be a retired man still, but I'm now starting to build my GR (a little one to begin) and my first loco is a nice *Beck Anna* that performs very well. I have many great projects for my RR, of course. but they will be step by step.

Now, for the first time I have not received the SitG N° 69. Two issues of my new GR magazine subscription has arrived at home in a month, however. *Steam in the Garden* is delivered to me in three weeks usually. In my second year subscription with you, I paid for the airmail service, but the delivery time in that year was three weeks too. My post office says all the mail in my country, México, travels from the U.S. to México City and is then delivered to the inner country without a priority excepting for the bank's mail. I don't know why GR magazzine is coming so fast to me, but I love my SitG more than another thing in the world!

Please, make the SitG N° 69 come to me, even if I have to pay any for it! So long My Friends and have a happy steaming! I appreciate your always kindly attention in a long way.

Jaime Chavez

We sent out a replacement copy of issue N° 69 right away, and received the following note from Jaime..ed.

Dear Ron:

Thank you very much for your kind attention to my beg. The N° 69 arrived to my home on May 29! Shall I have this good air mail service for the rest of my subscription? Tell me please how much I must pay for it. In the same way I wish to send you a little history and photos about the very nice Bill Reynolds' *Beck Anna* upgrading, to make it a really beautiful English locomotive. Maybe you will like to include it in SitG next time. I enjoyed very much the N° 69 SitG, but I missed the RPO Mailbox however.

Best Regards,
Jaime Chávez

Happy that we could help with your missing magazine, Jaime. Sorry that RPO was not a part of our last issue, but as you can see, it is still alive and well in this issue...ed.

Ontario, Canada
via e-mail

Hi Ron,

I'm sure not everyone knows the history of Emelia, as shown in the last issue of SitG. I sure didn't.

However, I'm reading the *Locomotives That Baldwin Built*, and on page 51 is a photo.

What fascinated me was that the engine had a 'Sleeper Cab'. Trust you are both well - expect to see you both at Shay Days.

Carol Homuth

via e-mail

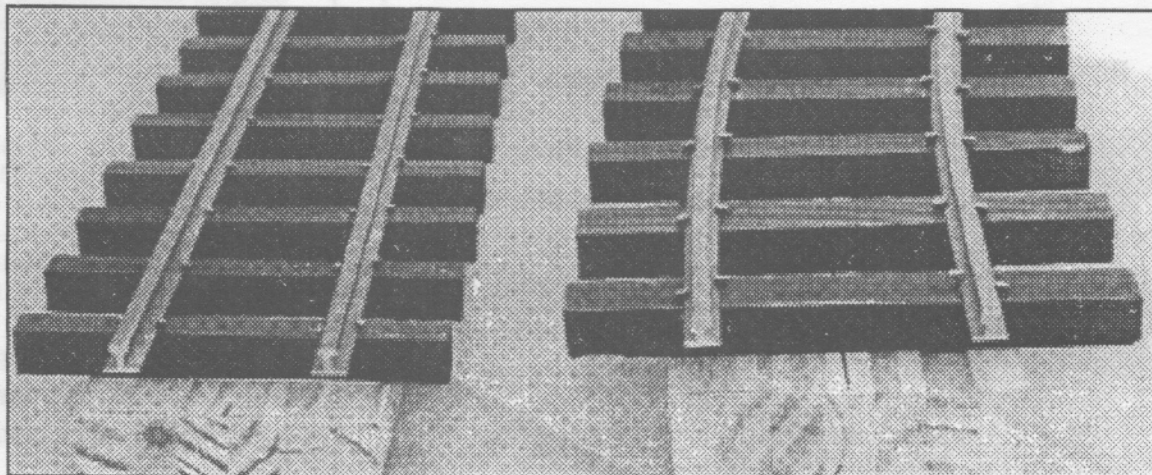
Hi Ron,

Just got my issue of SitG today. I found one error in the instructions (*Improving the Accucraft Shay, Issue N° 69*). On page 25, third line from the top-- cut a piece 1/4" long.-- Should be-- 1-1/4" inch long. I checked my original copy and found that the end of page one reads--cut a piece 1-- with the 1/4" on the top of the next page. Apparently you missed the "1" hiding at the end of the line. Also, my e-mail address has changed since the article was written. Otherwise it all looks great! Thanks for publishing it. Happy Steaming!

Regards,
Alex Azary - chezsteam@comcast.net



LARGE SCALE TRACKWORK



32MM

45MM

**MUDDY RIVER
RAILWAYS**

Free Catalog

13 ELM STREET

BROOKLINE, MA 02445

617 731-2754

NATIONAL SUMMER STEAMUP

**JULY 17-20, 2003
SACRAMENTO, CALIF.**

**Customized
Accucraft Shay
highlights
auction benefit**

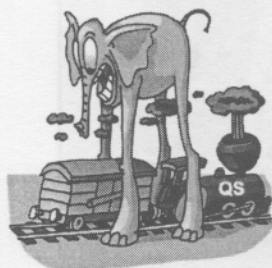
SMALL-SCALE (1:13.7-1:32) LIVE STEAMUP
Four layouts, 7 tracks, 45mm & 32mm, open 24 hours
Dealer room, workshops, swap table, door prizes
Lions Gate Hotel: (866) 866-7100

REGISTRATION FORMS:
NSS, PO Box 719, Pacifica CA 94044
<http://www.summersteamup.com/steamup@summersteamup.com>

Quisenberry Station

Your Full Service Dealer

Roundhouse / Accucraft / Aster / Jensen

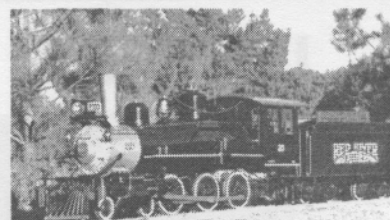


- Live Steam Locomotives
- Introducing Mini-Steamers
- Phoenix Sound Systems
- Kits, Parts, & Accessories
- Repairs & Painting On-Site

Color
Catalog
\$3.00

Royce Brademan
3903 Quisenberry Dr
Alexandria VA 22309
703 - 799 - 9643
(Evenings & Weekends)
turbohn@aol.com

New!
HO Live
Steamers



Ride Your Models!

For 10 years live steam hobbyists have looked to the 7+ RAILROADER for news on riding size railways. Now, with a new publisher and new format, the 7+ is even more devoted to bringing you the very best coverage of the live steam hobby! Subscribe today!

Layout tours, shop tips, photos, prototype reference, construction articles, hobby news and more!

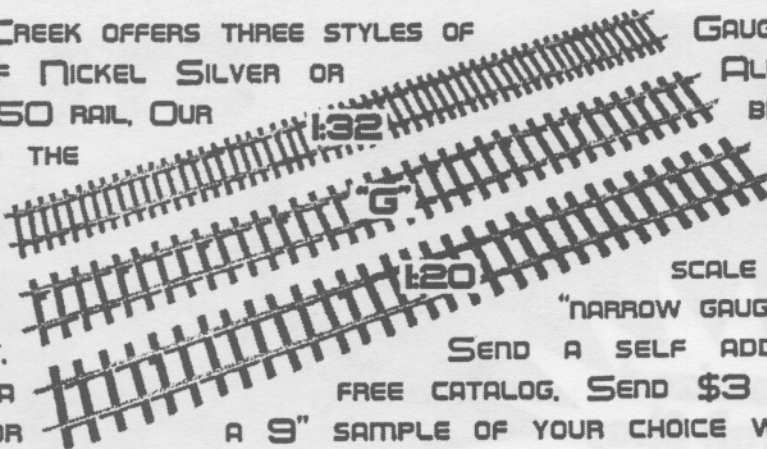


RAILROADER
530-527-0141

Robinson & Associates
PO Box 8953, Red Bluff, CA 96080
www.7plusrailroader.com
also: www.grandscales.com

LLAGAS CREEK RAILWAYS

ONLY LLAGAS CREEK OFFERS THREE STYLES OF YOUR CHOICE OF NICKEL SILVER OR CODE 215 OR 250 RAIL, OUR SPACED 20 TO THE BLACK "G" TIES THE FOOT AND THE NEW 1:29 1:20 SCALE 10 TO THE FOOT. ENVELOPE FOR A YOUR ORDER) FOR



GAUGE 1 TIE STRIPS WITH ALUMINUM 6061-T6 BROWN 1:32 TIES ARE FOOT. OUR NEW ARE SPACED 12 TO LOOK GREAT WITH SCALE TRAINS. OUR BROWN "NARROW GAUGE" TIES ARE SPACED

SEND A SELF ADDRESSED STAMPED FREE CATALOG. SEND \$3 (REFUNDABLE WITH A 9" SAMPLE OF YOUR CHOICE WITH THE CATALOG.

Order Llagas Creek Products From
CALIFORNIA & OREGON COAST RAILWAY
800-866-8635
(541) 582-4104

PO Box 57, ROGUE RIVER, OR 97537
DMANLEY@CDSNET.NET

Track and Track Accessories are Our Only Products. Custom Trackwork Available. Call C&OC for Details.

The Best Way To Learn How Steamers Work? Build A Kit

*Article and Photos by Chuck Walters
Manufacturer's Photos used with Permission*

One of my favorite activities surrounding this hobby happens when a bunch of us get together and talk steam. We steam together all day and talk steam.

We eat a nice breakfast or lunch and we talk steam. Why? Because it's fun...and if you listen, you can learn a lot from each other about the hows and whys of steaming. But what are often missing from these conversations are the intricate details, the details that can only be learned

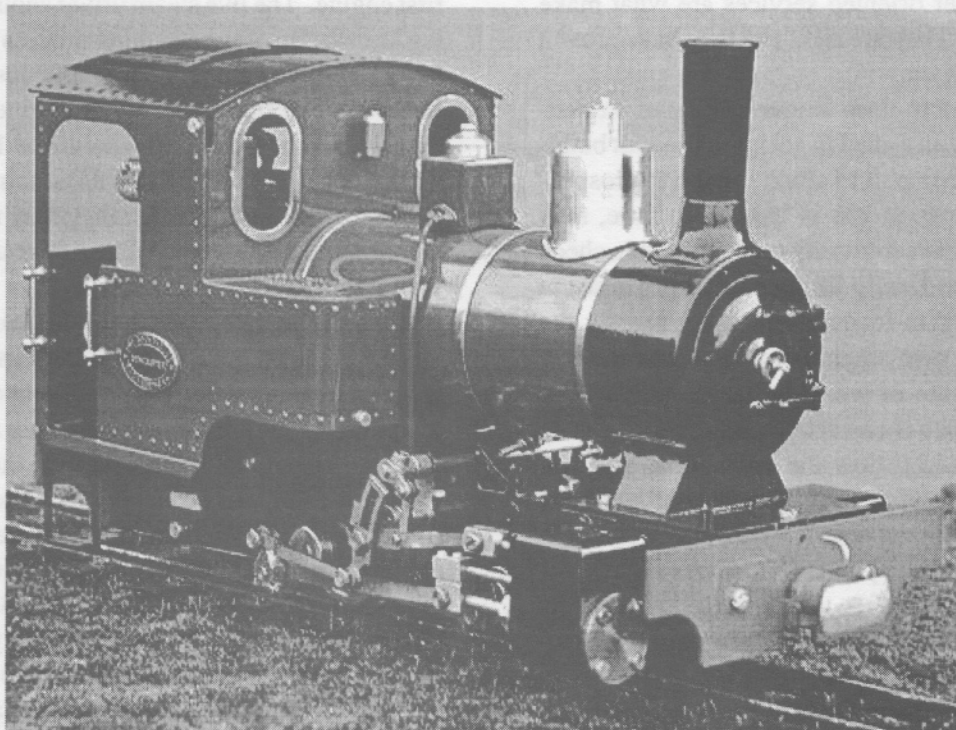
through experience or by taking something apart. However, we generally do not like to rip apart \$3000.00 engines just to look around. So taking apart an engine and getting to see how it really works is something many steamers may never get to do.

Most of our repairs are small in scale and generally revolve around stopping leaks, replacing rings and tightening up some screws. A lot of details are missed

or not seen at all when all we are doing is changing out an O-ring.

Well, if you really want to gain a working knowl-

edge of how the engine works, what the boiler looks like, how the fixtures, valve gear, driving gear and the burner works, then build an engine. Not only will you get to know the engine inside and out (literally), but also you will have the satisfaction of building something yourself and watching it run.



BILLY, available in kit form from Roundhouse Engineering.

Kit Building From The Manufacturer's Point Of View

I recently contacted Toyoki Inoue, the director of the Aster Hobby Company, for his take on the advantages and disadvantages of building live steam kits. Here is what he had to say; "One advantage of building a live steam engine from a kit is that the customer

can understand how the steam locomotive works and can accordingly repair the engine when necessary by themselves.

"Another advantage is that the customers can also put details if they want on some models and they can also improve performance if they wish while building the model."

Toyoki also stated that there are some disadvantages as well. "The factory cost to develop a kit is more than the cost of a factory built-up model because the assembly instructions and illustrations are required for the kit and creating these documents is expensive."

Inoue also stated, "Aster has to keep (and has kept) the spare parts and repair parts for many years (a minimum of 10 years, actually more than 10 years) to keep our customer's engines always in working condition, which we feel is our commitment."

Keeping and managing a spare parts inventory can be an expensive operation, but Aster feels that this and other customer oriented services are what make all the difference. They are right and they have proven it time and time again.

I also decided to drop Roger Loxley of Roundhouse Engineering an e-mail to get his take on kit building. He stated, "One point I always make to prospective buyers of our loco kits is 'take your time, read everything twice, have a dummy run then double check your actions before finally fitting anything. These are working model steam locomotives using exactly the same parts as our own assemblers do here in the factory and are capable of working just as well as our factory built engines if correctly assembled."

"Be patient and follow the instructions and you will end up with something to be proud of and have learned a little along the way."

This is an excellent point. Carpenters always say, "measure twice, cut once" so that no mistakes are made. Roger's point is made in the same vein, read the directions, do a dry run, re-read the directions again if necessary and then complete the task.

What Are Your Options

In this month's installment of *The Beginners Guide to Small Scale Live Steaming*, we will look at the options available for the beginner who wishes to build their own engine. The examples included in this article are by no means indicative of everything that is available. There are many sources and engines not listed here, so do some research, ask some experienced live steamers for information and ask the manufactur-

ers for information on their kits. An informed buyer is a wise buyer.

If you can turn a screwdriver, use a pair of pliers, file away very tiny amounts of metal flash and generally read directions (which very often are correlated with wonderful diagrams), you can build a live steam engine.

However, your choices are limited when it comes to kit building. There are just a few manufacturers that offer kits to buyers; Aster, Roundhouse, Mamod, DJB Engineering, GAGE and Mike Martin's Basic Project Loco to name a few.

Of course you could always scratch build a locomotive, but this does require a good working knowledge of machining and a well-equipped workshop.

Two points have to be made with respect to building a live steam engine. The first is more of an opinion that I happen to hold. I do not believe it is a good idea for a beginner to build a live steam locomotive for a first engine. The live steam driver should have a working knowledge of the steaming process before attempting to build an engine. Why? Because while I absolutely believe that building an engine from a kit increases a modeler's knowledge of how an engine works, what if the modeler does something wrong? When the engine is fired up they may not recognize if the problem is in the building of the engine or in the steaming up process.

The second point that must be made is that not all kits are created equal. Some of the kits are truly pliers and screwdriver kits. There are some middle of the road kits that will have you polishing metal parts and doing some soft soldering and then there are kits that have you doing some machining on the lathe and mill. So before you purchase a kit, be aware of the requirements for building the kit, the tools required and above all, that you CAN build it. There is nothing more frustrating than buying a kit that is way beyond your technical or mechanical skills to complete it.

Below is a sampling of what is available, complete with contact information and a description of one of the products these manufacturers sell.

Aster Hobby Company

Perhaps the best kit to start with would be a kit that requires only the use of some simple tools such as a set of screwdrivers, pliers, wrenches and maybe a file or two, and has everything else included. Such kits exist from the Japanese manufacturer, **Aster Hobby Company**.

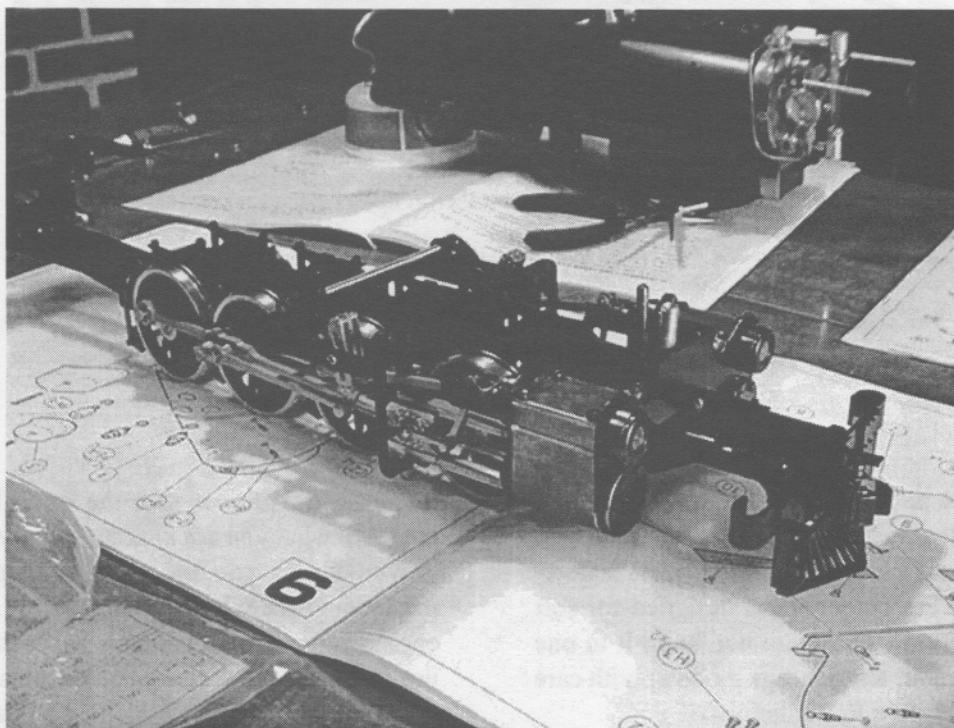
The kits from Aster are very well constructed and have very detailed instructions and illustrations that guide you in the construction, safety and operation of your locomotive.

Aster kits come packed in a large box with many smaller well marked boxes inside. Each box corresponds to the section in the instruction manual you are working on. The instructions help the builder understand everything from what tools and supplies are

For more information on what kits are available or how to find a dealer near you, please visit the Aster Hobby web site at www.asterhobby.com

Roundhouse Engineering

Just about everyone who is in the live steam hobby has heard the name **Roundhouse Engineering** at one time or another. This company manufactures



Author's Aster Mikado chassis and boiler, as built from the kit.

needed to a section on how to run your new engine. The photo above was taken when I built my Aster Mikado kit a few years ago.

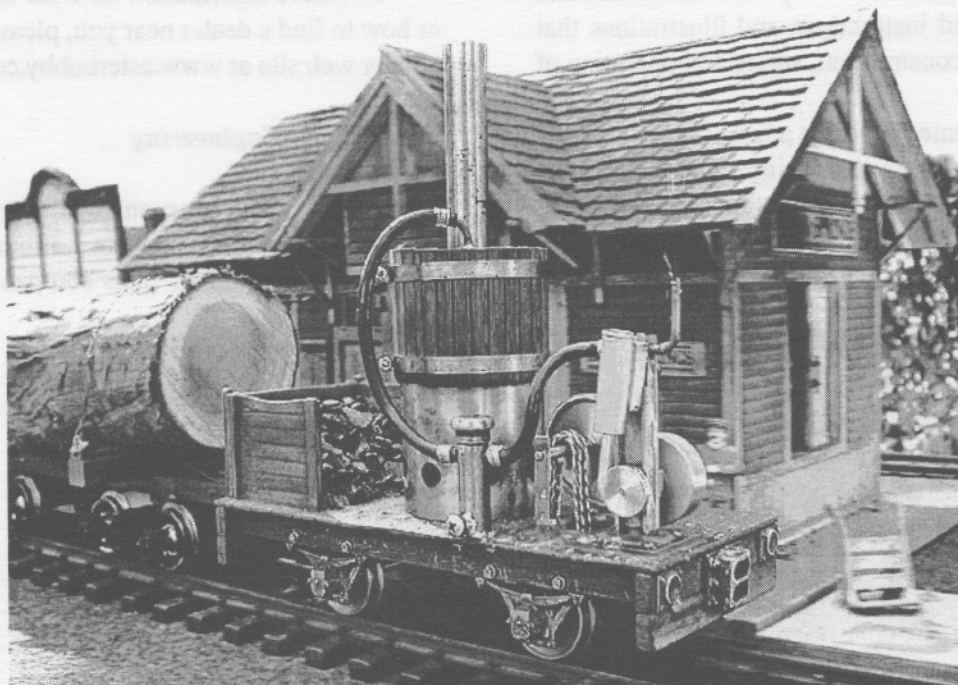
I spent a total of 25 hours constructing the engine and learned a great deal about how valves, valve gear, cylinders and boilers work. The nice thing about an Aster kit is that all you have to do is put it together. The details are all included and the painting is already done. When the last nut is tightened, the engine is complete. If you choose an Aster kit to build, you won't be disappointed. Aster kits are imported in the USA by:

ASTER HOBBY USA LLC
101 Theiler Road
Spartanburg, SC. 29301
(Mr. Hans Huwyler)
Tel: 828 894 5801 Fax: 864 587 2299

some of the best factory built live steam engines available on the market today, and certainly some of the most reliable. But many folks don't know that they also manufacture kits. The venerable **Lady Anne** and the diminutive **Billy** are both available in kit form. The uniqueness of the Roundhouse kits is not in the building of the kits. The uniqueness lies in the fact that the builder can purchase the engines in sections.

By that I mean you can purchase just the chassis for a **Billy** engine, take your time building it and only have the financial outlay of just what the chassis kit costs. When you save up some more money, you can then order the boiler kit, etc.

There are a few advantages to this unique offer. You can spread the cost of an engine out over a greater period of time and if you find that, for whatever reason, you cannot finish the kit, you are not out of a lot of money.



BAGRS Project Loco, designed by Mike Martin.

These kits are one level up from Aster kits in the amount of work the modeler must do. While no machining is necessary, a small number of holes may require drilling and the bodywork is designed for soft soldered construction. These are not 'build it in one evening' kits; however any average modeler with care and patience can build a Roundhouse kit.

Painting of all items is left to the builder. When you are done building the engine you will have something you can be very proud of.

For more information on Roundhouse Engineering, the kits they offer and where you can get one, please visit www.roundhouse-eng.com

Mike Martin's Project Engine

If you are looking for an engine you can build from a set of plans and have just a whole lot of fun with, this may be just what the doctor ordered.

It is a very well thought out project. This engine is a strong puller and best of all, can be completed for about the cost of a new large-scale electric engine.

Here is what Mike has to say about the project engine, "Building and operating miniature live steam locomotives can be a challenging and rewarding pastime. If you are just getting started in this hobby, it is important to select a project that fits your budget and capabilities. If you are looking for an easy to build,

low-cost first project, then the **Basic Project Engine** might be what you are looking for. By working to this proven design, you are assured of a properly operating locomotive when you are done. In building this engine you will gain valuable skills that can be put to use in future, more complex, projects. Likewise, you will have gained knowledge that will allow you to design and build your own model locomotives."

What you start off with is a free, downloadable set of plans that Mike has drawn up with his CAD program (the plans are available at www.panyo.com/project/).

On Mike's web site he has included everything you need to know, from where to purchase the parts, to how to make all the proper cuts and bends in the various wood and metal parts and even how to put the whole thing together. If a person has the time and has everything available on their hobby table to put the project together, you can complete this engine in a weekend.

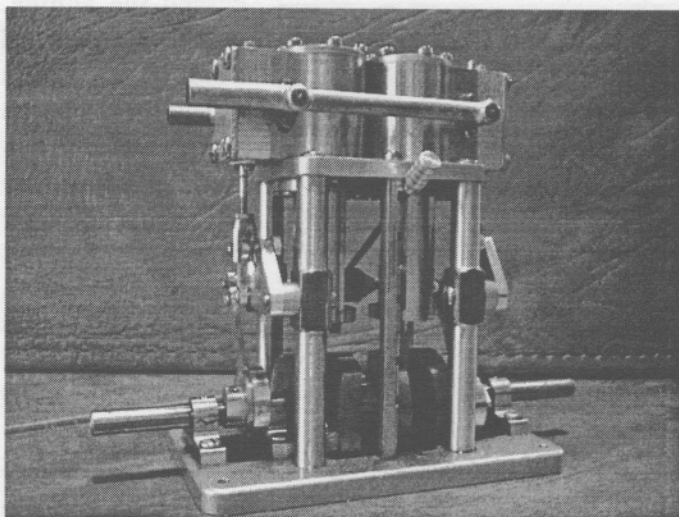
Aside from the cost advantage this kit offers, it has a few other unique attributes that make it attractive. The first is that the style of cylinder this engine uses is an oscillating cylinder. This exposes the modeler to a style of engine they may not have had experience with, which is always a good thing in my opinion.

Another advantage is that you can easily modify

this engine while building it to make it unique and personal. You can paint it the way you want, add your own special detail and even put a roof on it if you wish. Whatever your heart desires, you can achieve it. Mike has included a link on his web site that has a few examples of **Basic Project Engines** folks from all over have built. You won't go wrong with this kit.

GAGE (Gail A. Graham Engineering)

If you are looking for a project that will really allow you to see how cylinders and valve gears work, then the engines from **GAGE** (Gail A. Graham Engineering) are just what you want. Graham Industries carries a full line of engines that the hobbyist can build from a kit. In this case the word *engine* is not meant the way most of us use it. The engine is the *motor*, or *cylinder and valve gear mechanism*, of a live steam engine.



The GAGE TVR1A engine is available as a kit.

I recently had the opportunity to build the TVR1A, which is a two cylinder engine designed to work in a Climax. These kits are very well designed and extremely well built. A few tools such as a good set of small screwdrivers, needle nose pliers, a set of small files, and a few other miscellaneous tools are all you need to build these engines.

Gail Graham, the designer of the TVR1A and the owner of **GAGE** has thought of everything and has included it in the kit. The manuals are very well written and include several illustrations that tremendously aid in the construction of the kit. The kit is built in two parts; the lower support section with the driving gear and camshaft, and then the upper section with the cylinders, steam chests, etc. The final section has you

putting it all together and timing it. The whole process is very easy and the finished product is a joy to look at and watch run. I have been able to run mine on less than 5 lbs of pressure. Now that is a true testament to the quality of the design. I cannot say enough about this kit and highly recommend it.

Information on **GAGE Industries** and the engines they carry is available at: www.grahamind.com/ or at:

Graham Industries
PO Box 15230
Rio Rancho, NM 87174-0230
USA
FAX (505) 890-3051 24 hours/day

DJB Engineering

The final manufacturer I will mention is the David J. Bailey Engineering Company, located in the United Kingdom. David carries a whole slew of parts and plans that the hobbyist can use to construct their own engine as well as many ready to run engines. Many of David's creations can be seen running on many live steamers, layouts and at many of the national and international steamups. David also carries one kit that contains almost all of the parts needed to build an engine. It happens to be a Climax kit that uses the GAGE TVR1A engine kit mentioned above.

If you are building your own engine or looking for plans for engines, or even if you are just looking for that special detail part, head on over to DJB Engineering's web site at www.djbengineering.co.uk/. You will be very happy you did! David can also be contacted at:

D.J.B. ENGINEERING
17 MEADOW WAY,
BRACKNELL,
BERKS RG42 1UE, U.K.
PHONE / FAX: 01344 423256

Building a kit can be a very enriching experience besides being just plain fun! This article has only touched on a few of the options available to the modeler. What I have tried to present here are the options I believe are good for the beginner or for the modeler looking for his or her first kit.

Look around, ask questions and above all, have fun! Until next issue - Happy and safe steaming!



The Resonator Whistle - Part 3

text and drawings by Larry Bangham

photos by Eric Maschwitz

A whistle for the Accucraft Mich-Cal Shay

My hope in writing this series is, that by divulging everything that I have done in the last few years, maybe some young lion will pick up the scent and continue on with what has been for me, a wonderfully satisfying and worthwhile pursuit.

I am not a trained machinist. My profession was at one time in the music business. Then marriage and family dictated the need for a steady food supply. This resulted in a back to school effort, then a transition into the field of mechanical design engineering. Now retired, I have returned to my first love, trains, and find that it is ripe with engineering challenges, even musical ones.

The Accucraft Shay, an extremely popular engine, is one for which I have received many whistle requests. The system presented here features an internally supported whistle aperture which greatly improves the tone and pressure distortion

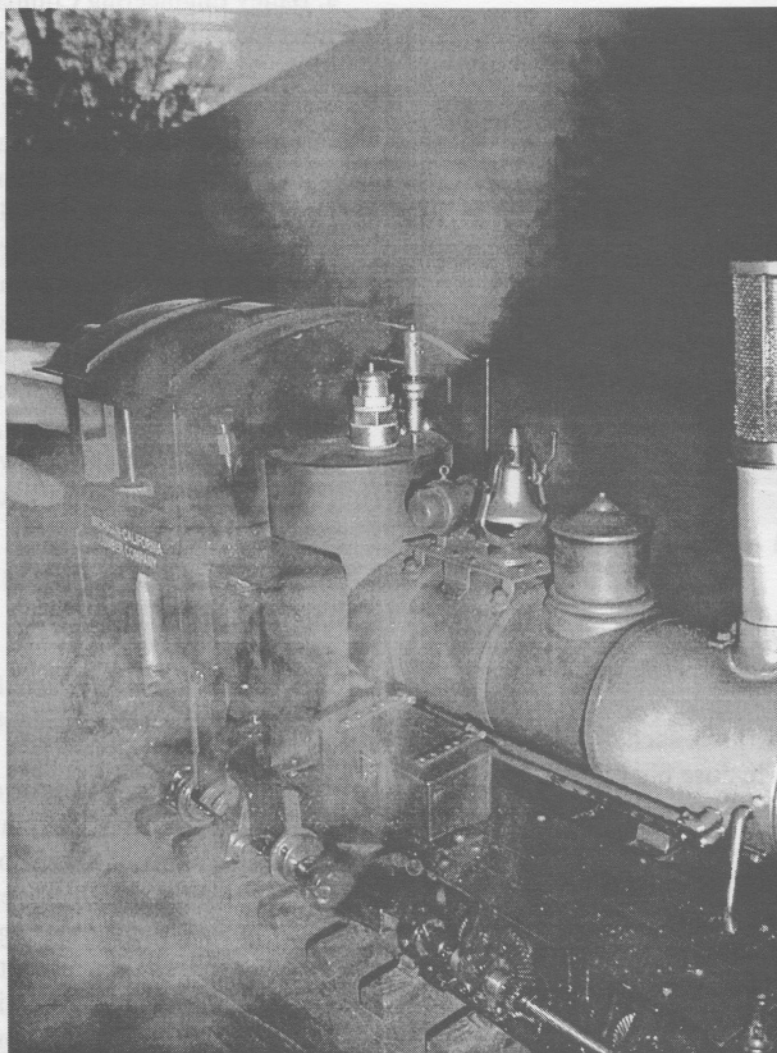
problem inherent with right angle whistles. This whistle system is now in use on a Shay owned by Eric Maschwitz of Berkeley, California, who put his request in at the National Summer Steamup of 2001, about

one year before he received the engine. His engine is serial number 13 which turned out to be his lucky number.

I took some measurements of the engine at the 2002 Summer Steamup, and from my rough sketches made a cad layout which was sent to Eric. He checked the layout against his engine, and recommended some changes which were incorporated and sent back to him for verification before I started cutting metal.

The right angle whistle is suitable for many different engines, including most geared engines, Porters and the dome whistle on the K-27.

Compared to some, this is a relatively simple system



With a blast on the whistle and a cloud of steam, we're off to the woods!

and can be accomplished on a basic lathe and drill press. Remember, concentricity, normalcy, and clean, flat, burr free cuts are indispensable to successful whistle building.

Detail Parts

Aperture Body and Housing

I have included the details of these two items for the brave hearts willing to give it a try. The body should be turned in one setup and the ornamental detail done before parting off at the end of the dummy acorn nut. The housing bore needs to be burr free, yet near sharp at the ring gap end.

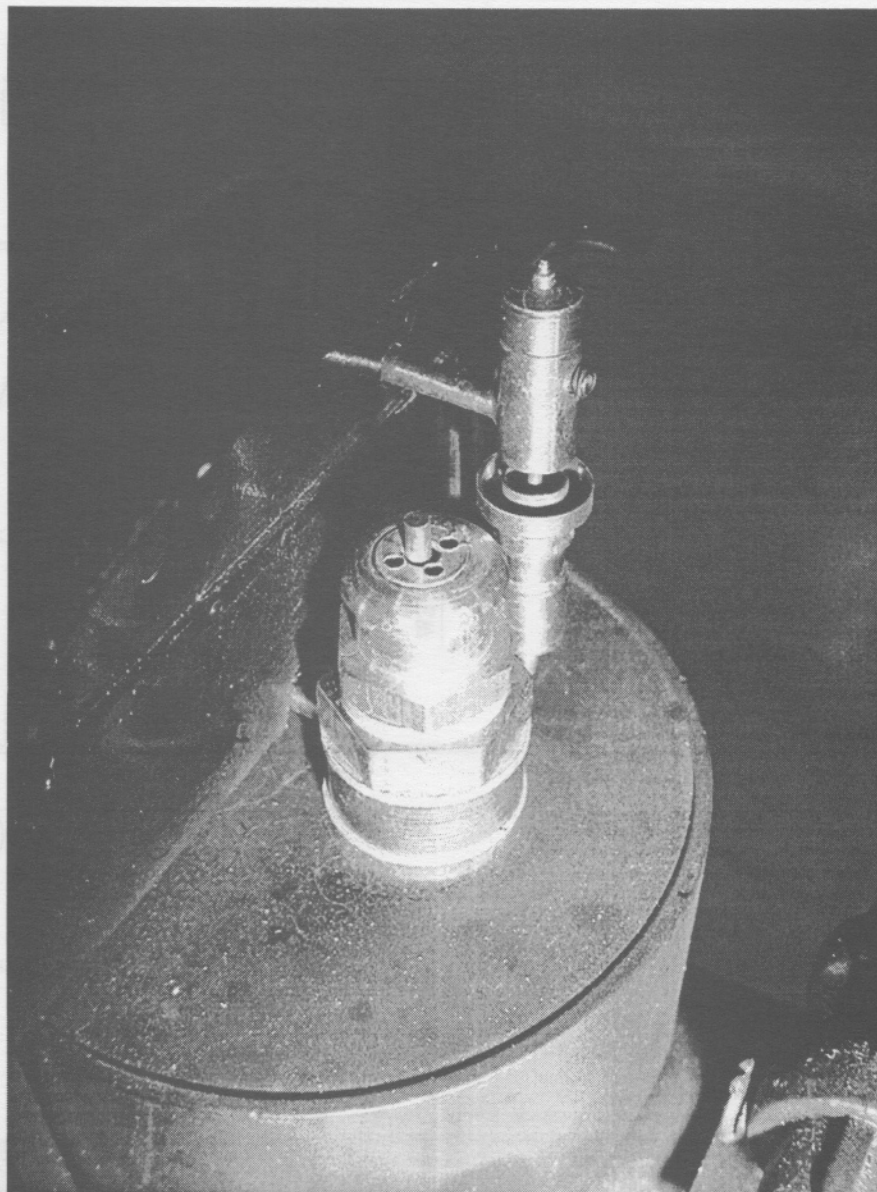
For those not so adventurous, these parts can be supplied, (LB2014-3 and -5), in their as received condition (as shown except no ornamental detail on the body), preferably, or in various stages of completion, (for a smart fee).

Deflector

This part should be turned in one setup. It can also be supplied as shown, (LB2015-5).

Banjo Bolt and Sleeve

Requires an M10 x 1.0 die, and an M5 x 0.5 tap for the small Accucraft, Aster or Wada safety valve.



A close look at the author's whistle, as installed on the Accucraft Shay.

Thanks to Graham Industries, a small quantity of these parts will be available while they last.

Elbow

The large and small hole should be done on one setup, as they need to be co-axial. The 3/16 side hole should have a reamer run through it to assure a good fit with the resonator tube. This part can also be supplied, (LB2015-3).

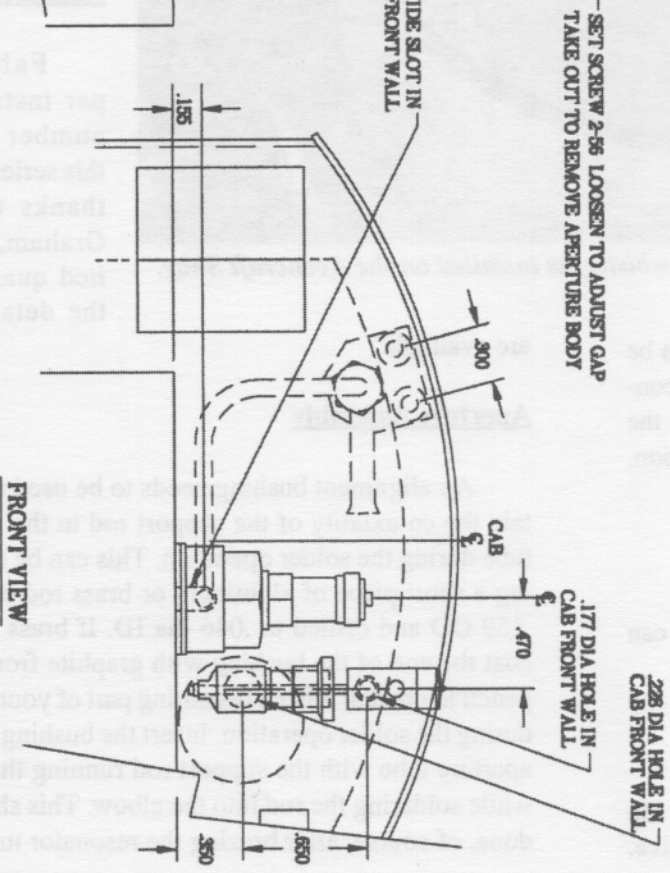
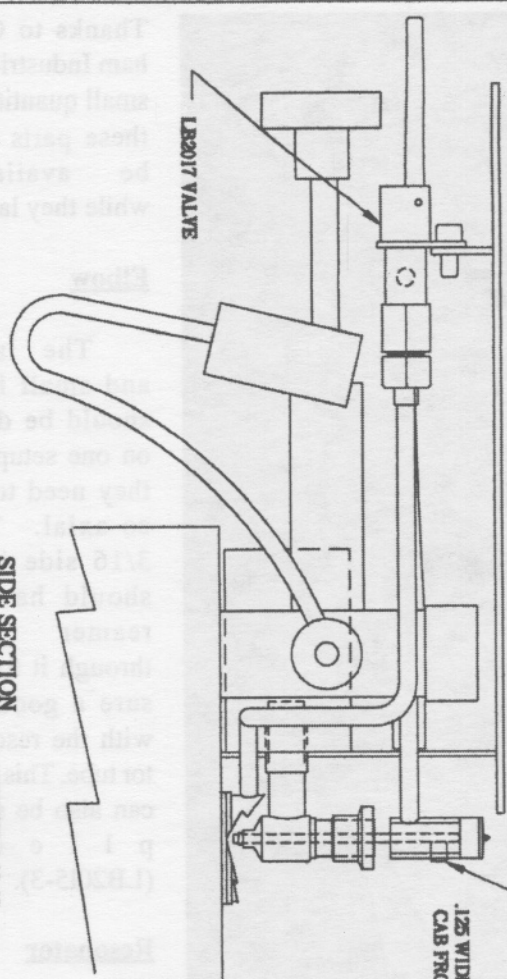
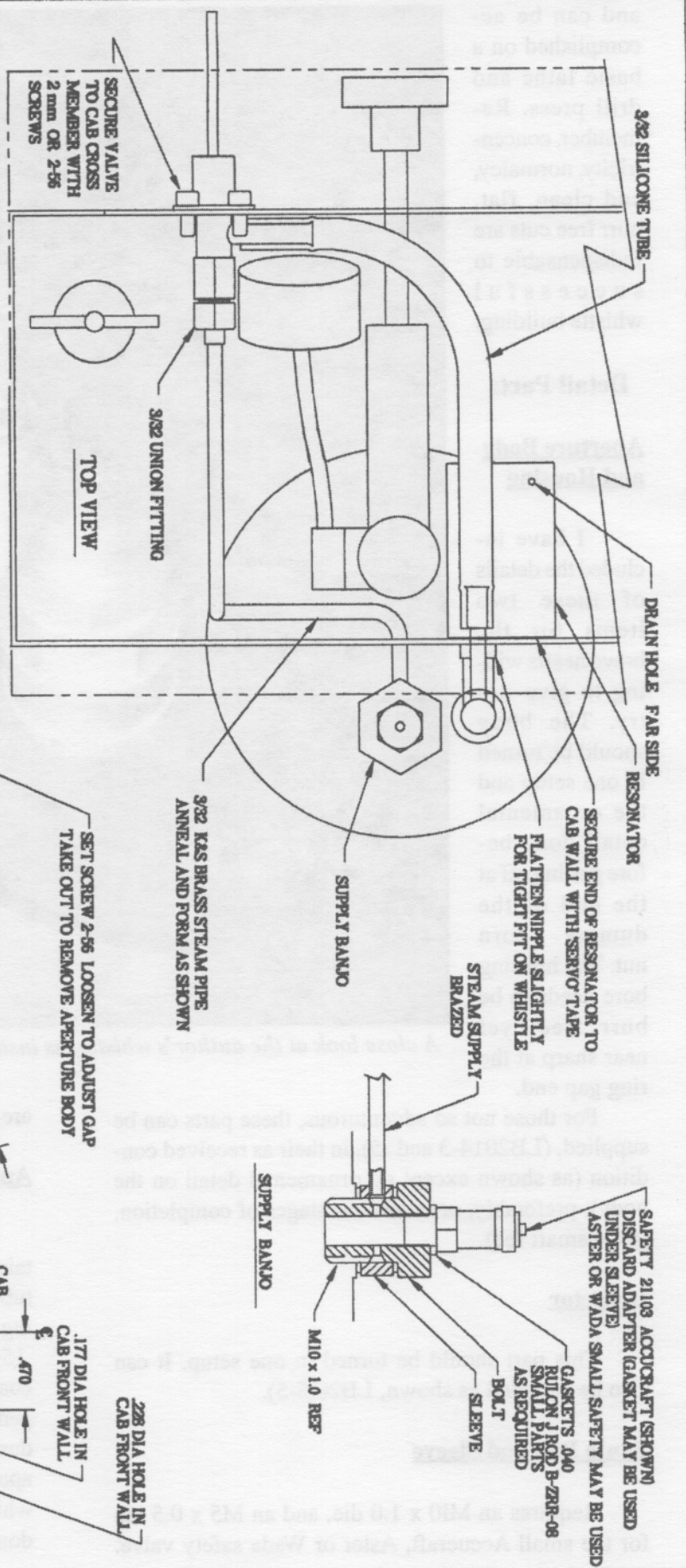
Resonator

Fabricate per installment number two of this series. Again thanks to Gail Graham, a limited quantity of the detail parts

are available.

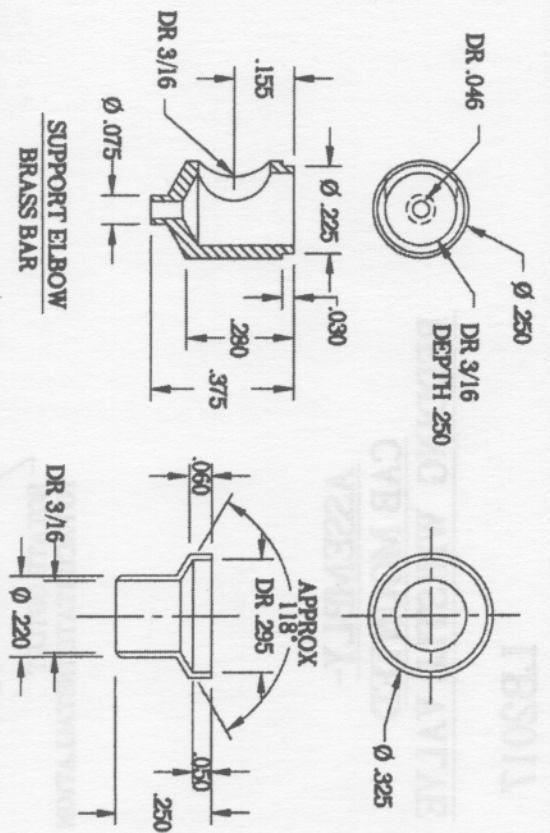
Aperture Assembly

An alignment bushing needs to be used to maintain the co-axiality of the support rod in the aperture tube during the solder operation. This can be done using a short piece of aluminum or brass rod turned to .159 OD and drilled to .046 dia ID. If brass is used, coat the end of the bushing with graphite from a soft pencil to prevent it from becoming part of your whistle during the solder operation. Insert the bushing into the aperture tube with the support rod running through it while soldering the rod into the elbow. This should be done, of course, after brazing the resonator tube.



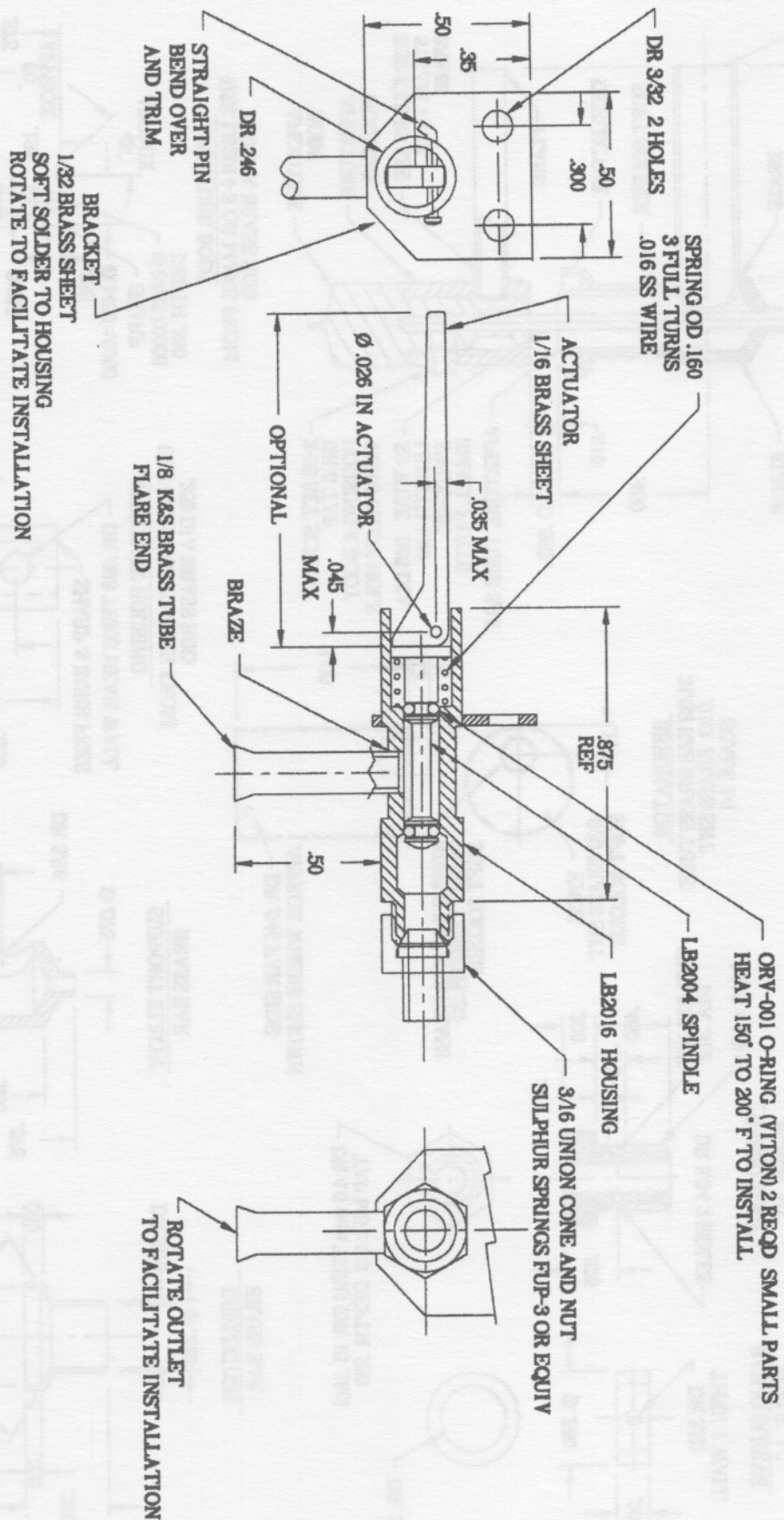
REVISED 4-18-08
L. BANCHAM 7-20-02
SCALE: 1/1

WHISTLE INSTALLATION FOR ACCUCRAFT MICH - CAL # 2



REVISED 4-18-03

WHISTLE ASSEMBLY & DETAILS
ACCUCRAFT • 2 SHAY

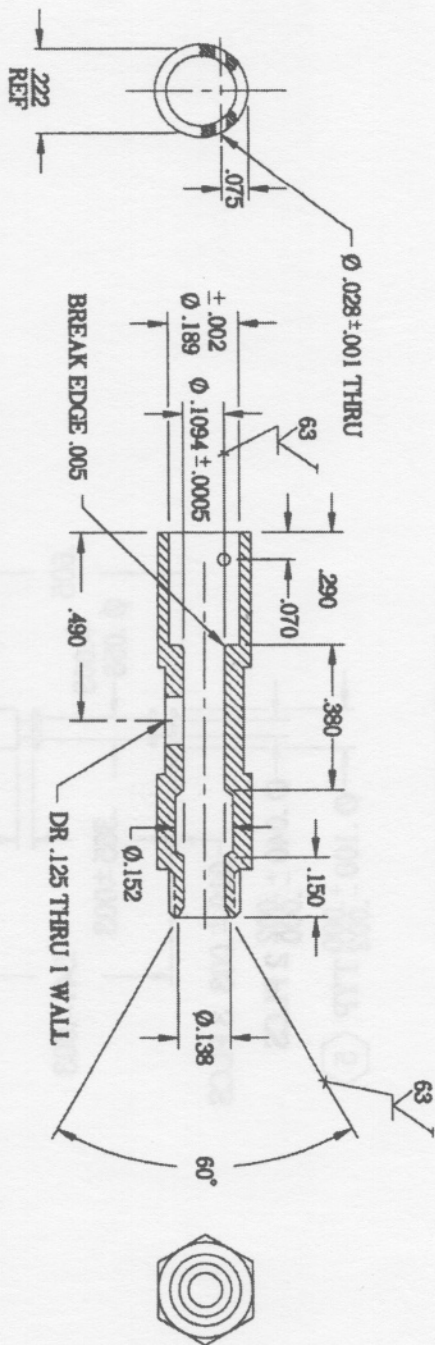
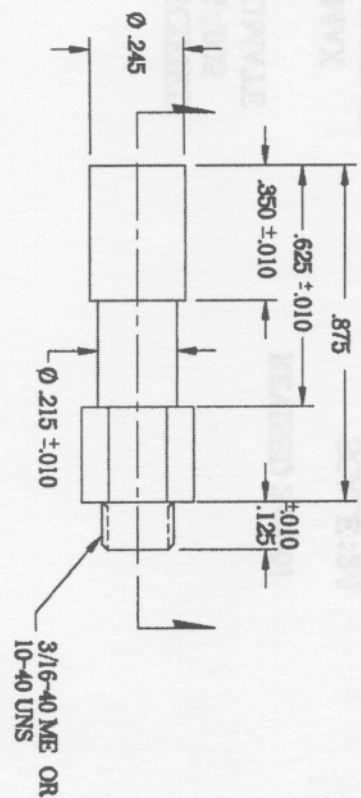


SCALE: 2/1

L. BANGHAM 2-27-03

ASSEMBLY-
CAB MOUNTED
BEDDING WHISTLE VALVE

LB2017



MAKE FROM .250 BRASS HEX BAR

- UNLESS OTHERWISE SPECIFIED
1. TOLERANCE ON DIMENSIONS ± .005
 2. TOLERANCE ON ANGLES ± 1/2 DEGREE
 3. UNSPECIFIED ANGLES ARE APPROX AS SHOWN
 4. MAX FILLET R .005
 5. SURFACE ROUGHNESS 125 MAX

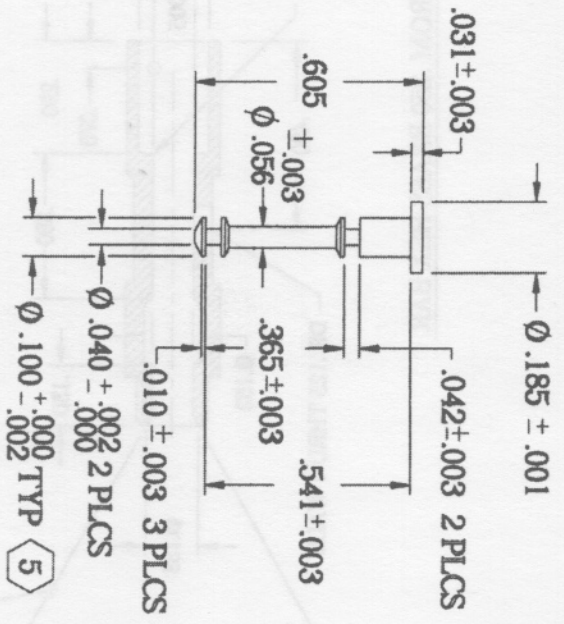
SCALE: 2/1

L. BANGHAM 3-22-01

HOUSING -
CAB MOUNTED
BEDDING WHISTLE VALVE

LB2016

1. SURFACE FINISHES NOT SPECIFIED
 2. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES
 3. TOLERANCES ON DIMENSIONS ARE AS SHOWN
 4. TOLERANCES ON DIMENSIONS ARE AS SHOWN
 5. TOLERANCES ON DIMENSIONS ARE AS SHOWN
 6. TOLERANCES ON DIMENSIONS ARE AS SHOWN



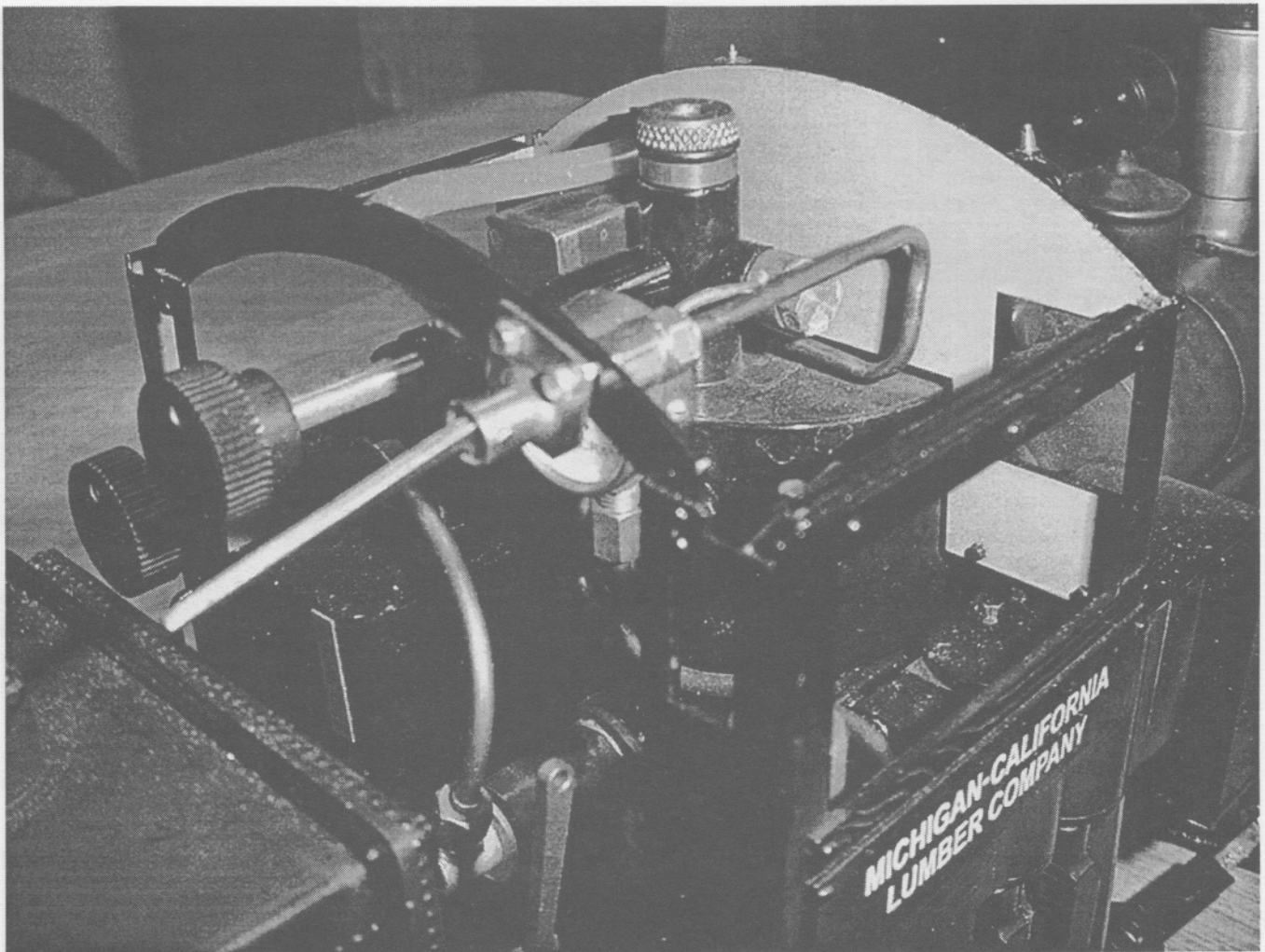
MAKE FROM BRASS BAR

- NOTE: UNLESS OTHERWISE SPECIFIED
1. TOLERANCE ON DIMENSIONS $\pm .005$
 2. ANGLES SHOWN ARE APPROXIMATE
 3. FILLET R. SHARP TO .005
 4. SURFACE ROUGHNESS $125 \sqrt{\text{MAX}}$
 5. BREAK SHARP EDGES ON THIS SURFACE
 6. CLEAN

REVISED 2-28-01

SCALE: 2/1
 L. BANGHAM
 1-25-01

VALVE SPINDLE
 - MINIA TURE
 LB2004



The Bedding valve, which allows precision feathering of each whistleblast.

Bedding Valve Detail and Assembly

This valve will be used on most of the whistle installations in this series. I have included details of the housing and spindle, again, for those same brave hearts who want to tackle the whistle aperture. Parts are available unassembled or built up in various stages of completion. The mounting bracket and outlet can be oriented to suit many different cab installations.

The spindle requires feeding out a little at a time to control the deflection.

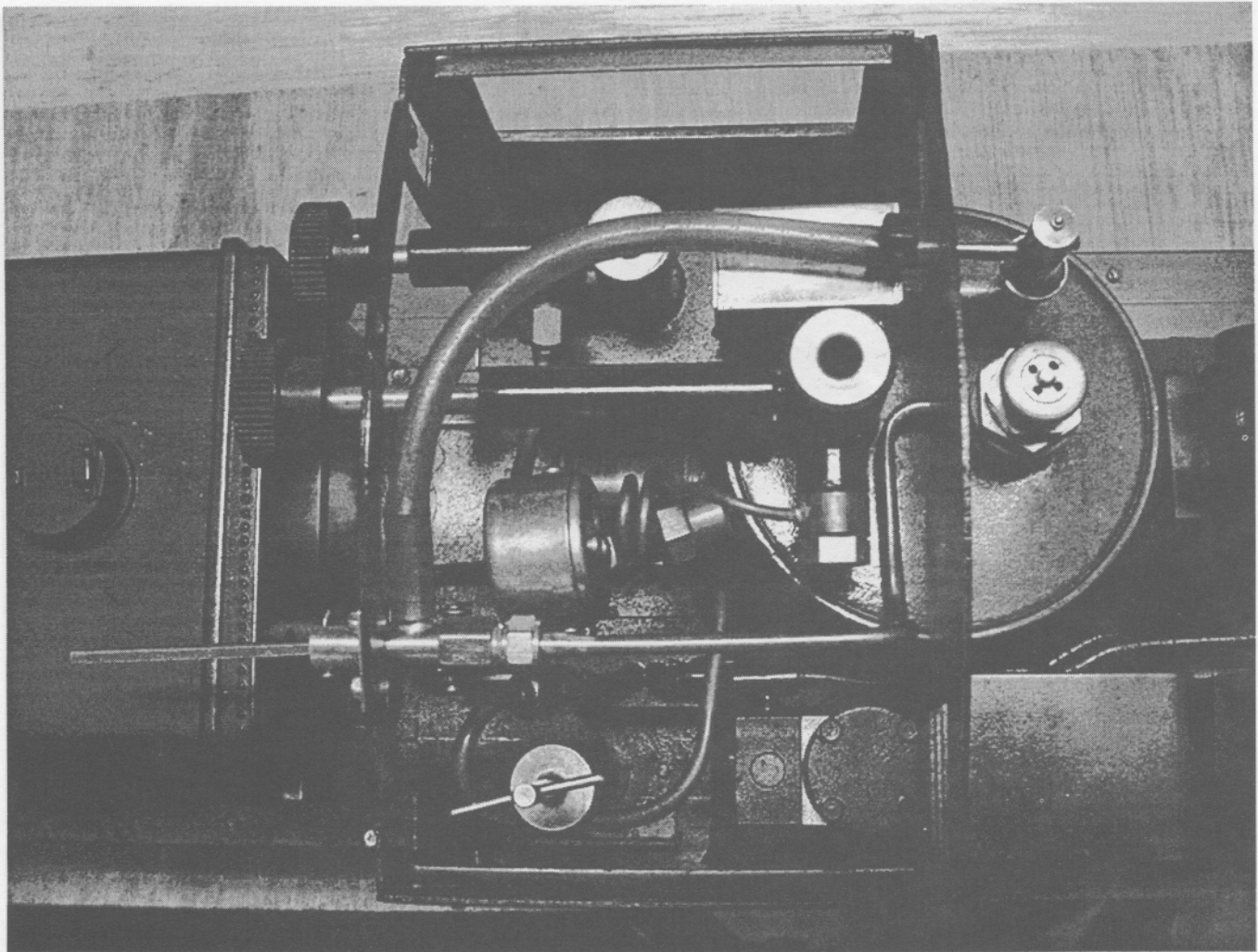
The O-rings require heating prior to installation on the spindle. I accomplish this by boiling a cup of water in the microwave. Place the O-rings and spindle in the cup while preparing for the deed. A little Vaseline helps too.

Handling and Installation

1. Care should be taken to avoid applying force

across the whistle throat gap. When installing the inlet tube or the aperture body, grasp the housing securely.

2. The aperture body should be a snug fit in the housing. A slightly loose fit can be corrected by placing a 1/4" steel ball on the bore and tapping it lightly and squarely with a small brass hammer. Hold the housing and ball in your fingers while performing this operation.
3. The deflector should be a snug fit on the aperture tube, as well as the resonator tube into the resonator nipple. A loose fit on these parts can be corrected by distorting the female part slightly, squeezing with smooth jaw pliers.
4. Always test the whistle with the deflector in place. Its location has a great effect on the tone. Solder it after testing.



Top view showing connections and component parts of the Bangham Whistle for the Accucraft Shay.

5. When testing on air, cover the resonator drain hole to prevent screeching.
6. The aperture tube end must be square and flat. A small chamfer on the front end will aid resonating.
7. Pin gauges are great for setting the gap. A small change can make a big difference.
8. Make sure the aperture alignment is not disturbed by pressure applied on the steam tube connection or interference with the mounting holes in the cab wall.
9. Rulon J is an excellent gasket material, is easy to machine and slice off as needed. Using this material, the banjo fittings can be assembled dry with very little torque.

The whistle will start sounding at about 25 psi and will increase in volume with pressure. If a sudden change occurs in the sound it is probably debris in the aperture ring gap. This is common on new installations. If it doesn't clear itself out, it will be necessary to remove the aperture body. Wipe the critical surface with your fingertips and reinstall.

If I have missed some critical point in this operation, or for further information on part availability, feel free to contact me by phone (714)521-6254.

The next installment in this series will cover the Aster K4 and NYC Hudson.



Mr. Murphy

photos & article by Larry Herget

A Classic Reborn



On the through bridge.

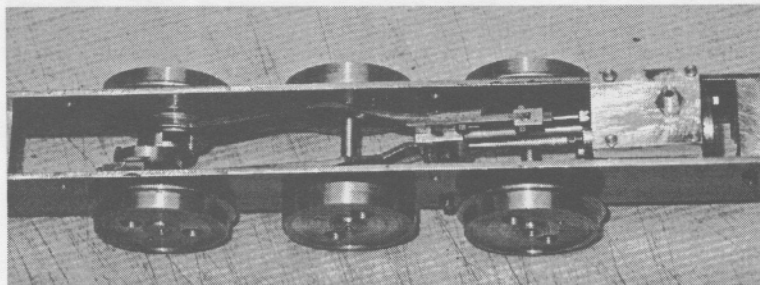
In July of 2001 I had the unfortunate duty of attending a wake for Erv Mueller. After the funeral we all went to Erv's home to celebrate his life. That afternoon Pat (Erv's widow) suggested running all of Erv's favorite 'O' Gauge locomotives.

I ended up with an UGLY 16mm 0-6-0. It took forever to get it hot, and not knowing the loco before hand I set it off too early. It went half of the way around, stopped in a far tunnel and never came out. I started over to get it and about halfway there it came back out in reverse, down a

slight grade thru a valley, up and around a corner and stopped again under the walk over. I changed directions and started for it and here it comes again, forward and this time it kept going & going & going. Kinda like the Energizer Bunny.

That evening Pat ask me if I would take it home with me and repaint the cab sides and the tanks so she could display it on a shelf. Aha! Now I've got a pattern. I made some sketches and began making some parts.

The wheels are Sierra Valley's 7/8n2 with a 1.450" tire di-



The author's Murphy chassis, complete with wheels, cylinder and valve gear.



Under steam with a coach in tow on the Author's line in Missouri.

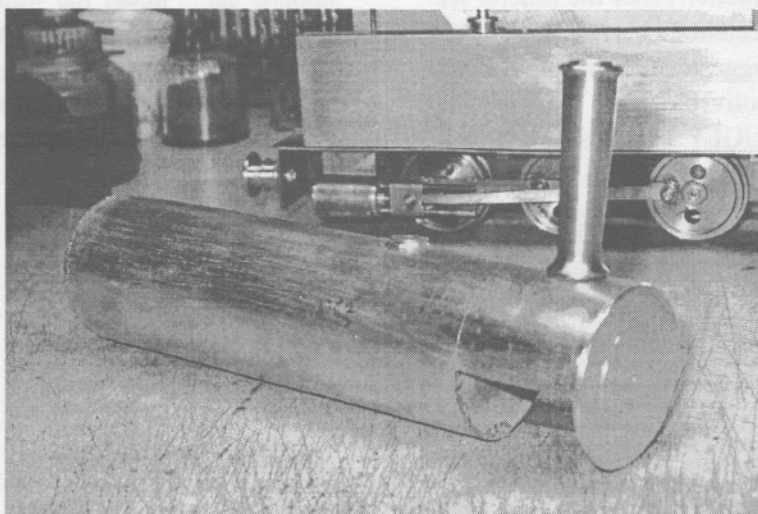
ameter. I reduced the width to a size suitable for 16mm and drilled the 2 holes per wheel to replicate the Murphy wheels. The center drivers are flangeless. All of the plate work is straight forward and went very fast.

The power head; The Murphy has a single cylinder between the frames. Not wanting to disassemble the original Murphy's cylinder assembly, I used all of the external dimensions of the Murphy along with all the internal dimensions of L.B.S.C's Juliet. Juliet has a 1/2" bore and a

3/4" stroke. The valve ports and slip excentric are also from the Juliet plan, modified to fit the Murphy. I did not use a packing for a piston seal as on the Juliet, I

instead used an O-ring. I also drilled two holes on the front of the piston so I could at a later date use a pin spanner to remove the piston from the front for installation of a new O-ring, if it is ever needed, without disassembly of the locomotive.

The boiler is a 'pot boiler', just a tube with two ends. Not having a tube, I rolled my own from a sheet



The completed Murphy boiler.

of .040" copper. I made a former of plastic tubing the internal size of the boiler. Annealed the sheet of copper and hand rolled it as tight as I could around the tubing. Then I placed 4 hose clamps around it and pulled it down right against the former.

I hammer worked the lap joint so there was no off set and drilled the holes for the rivets. I removed it from the former and installed the rivets and set them. Then I went to the shop and Fos-copper brazed the lap joint.

The ends were cut and brazed in next. After an acid bath and a polish job it was ready for laying out all of the fitting/bushing locations and the center thru stay. All of the fitting bushings and stay rod were silver soldered in place. Another acid bath, a polish job and a pressure test to 150 P.S.I. for an operating pressure of 40 P.S.I.

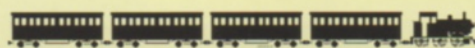
The fittings (sparse) included throttle, safety valve, gauge syphon and lubricator. These were fabricated from scrap brass & copper. The burner assembly (alcohol) is all brass with (3) 3/8" OD wick tubes

which have ceramic inserts. I copied the safety valve as close as possible as I wanted to get that "Twwwwwww" raspberry sound of the original Murphy's valve. It has it.

That big dome was turned from a solid, bored out to fit the safety valve, annealed and the flange hammer worked on a former to fit the boiler. Then I polished it to a high shine and laquered it to keep it shiny.

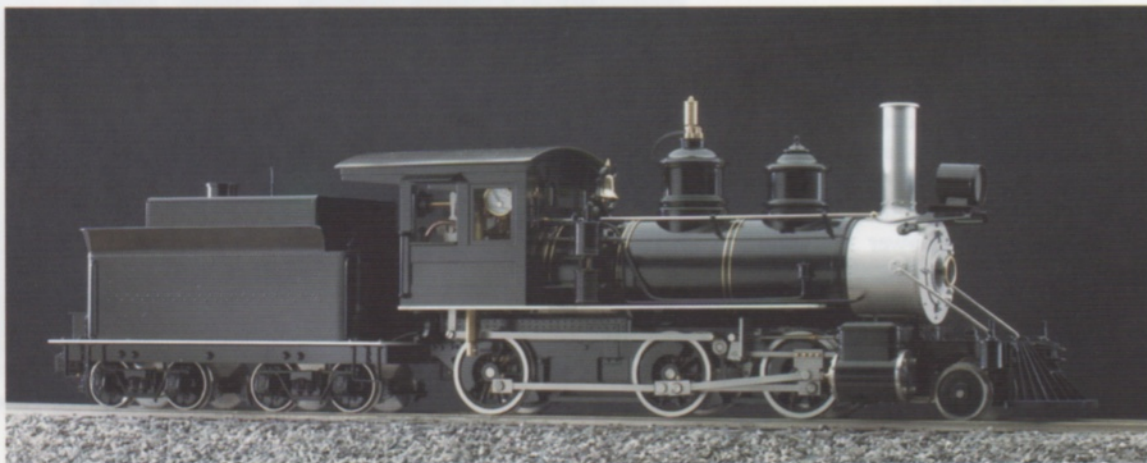
The major difference between the two locos is the buffers. The original Murphy has nylon buffers painted red, mine has polished brass buffers. After the first steaming I found out why the original Murphy has nylon buffers. You can't pick my loco up by the brass buffers as your fingers will stick to them they get so hot.

The final test was January 2003 at Diamondhead, where the loco ran very well, pulling the set of (4) 16mm coaches I scratch built for it.



Worm's view shot on the elevated line.

Never Settle



2-6-0 Mogul Live Steam

1:20.3 Scale, 45mm Gauge, Available Fall 2003



Shay - Mich. Cal #5 Live Steam

1:20.3 Scale, 45mm Gauge, Available Fall 2003



Ruby #1



Mimi



Shay - Mich. Cal #2



Shay - Open Cab.

Classic Series

 **ACCUCRAFT TRAINS**
MUSEUM QUALITY BRASS MODELS

A World of Great Machines



K-27 2-8-2 Narrow Gauge Live Steam

1:20.3 Scale, 45mm Gauge

Limited to 150 Units

Accepting Reservations



C-16 2-8-0 Live Steam

1:20.3 Scale, 45mm Gauge

Limited to 200 Units

See your Accucraft dealer



C-21 2-8-0 Live Steam

1:20.3 Scale, 45mm Gauge

Limited to 100 Units

Available Fall 2003

Accucraft Custom Line
Custom - built Brass Models



31112 San Clemente St., Hayward, CA 94544 Tel: (510) 324-3399 * Fax: (510) 324-3366
www.accucraft.com

WORLD'S FINEST GAUGE 1 LIVE STEAM



ASTER HOBBY

KITS & RTR

BEAUTY * INVESTMENT * A PLEASURE TO OWN

QUICK DELIVERY ON ALL MODELS



ASTER HOBBY



BLACK MIKADO • KIT OR BUILT Kit Available Complete With

- Tender Pump (Unlettered)
- Axle Pump Decals Available
- Super Detail Kit



L & M LION



THUNDERBOLT



LMS CRIMSON JUMBO



GERMAN "BATHTUB" TENDER



JNR B-20



ONLY 25 LEFT

C&S MOGUL • KIT or BUILT



KPEV (PRUSSIAN) P8



SOUTHERN MIKADO • ONLY A FEW REMAINING



DB BR 38

BR-38
AVAILABLE IN
DR or DB
VERSIONS



T3/BR 89



JNR 9600 • 2 VERSIONS



JNR C11

CATALOG & MANUAL \$15

U.S. REPRESENTATIVE & DISTRIBUTOR

DIAMONDHEAD 2-HOUR
STEAMUP VIDEO \$29

HYDE-OUT MOUNTAIN LIVE STEAM 89060

NEW RUMLEY ROAD JEWETT, OH 43986

CALL US FOR INFORMATION

740-946-6611 * www.steamup.com/aster

AVAILABLE FROM THESE DEALERS

IN CANADA

Sunset Valley Railroad
Issaquah, Washington
425-255-2453
svrrted@sprynet.com

S.T.E.A.M.
Antioch, California
925-778-7061
www.steam4me.com

Cross Creek Engineering
POB 369, Spencer, Ohio
800-664-3226
crosscreektrains@juno.com

North Jersey Gauge 1 Co.
Park Ridge, New Jersey
201-391-1493
bobsteamtoys@yahoo.com

Bear Creek Railroad
Surrey, BC
604-594-8695
www3.telus.net/pantages

Gauge 1 Lines
Stittsville, Ontario
613-836-6455
gaugeonlines@yahoo.com

Doubleheader Productions
Dallas, Texas
972-247-1208
www.gaugeone.com

Sulphur Springs Steam Models
PO Box 178
St. Peters, Missouri 63376
636-272-6632
www.sssmodels.com

Crescent Models
Harvey, Louisiana
888-838-0315
www.crescentmodels.com

Southern Steam Trains
Travelers Rest, South Carolina
864-834-3954
www.southernsteamtrains.com

Machine Toys, LLC
Frederick, MD
800-842-7695
info@machinetoy.com
www.machinetoy.com

valve, a link is not used. Instead, the Baker valve uses an arrangement which eliminates all sliding motion between the parts to obtain the necessary reversal of motion and a change in cutoff. This is accomplished by the parts partially turning or rotating on pins. Confused? So am I. Nevertheless, Aster has done a great job perfecting this complicated valve gear, and it works flawlessly.

Unlike the gas or coal-fired Big Boy, the Allegheny utilizes dual ceramic alcohol-fired wicks as an alternative to coal firing on this engine. Many proponents of gas firing were concerned that such a large boiler could not sustain a high enough working pressure if fired on alcohol. In fact Aster, at one point, was also advocating gas firing the Allegheny due to the same issue of boiler size. For those still in doubt about alcohol firing a boiler of this size, rest assured it not only has more than an adequate capacity to raise steam; it is also very capable of sustaining 4-1/2 atmospheres of pressure in the boiler even under a heavy load and with 40° F ambient temperatures.

Speaking of boilers, the H-8's boiler is a locomotive-type design and, although it has an identical water capacity to the Big Boy of 800 cc's, it is the largest in terms of volume and weight in the Aster line.

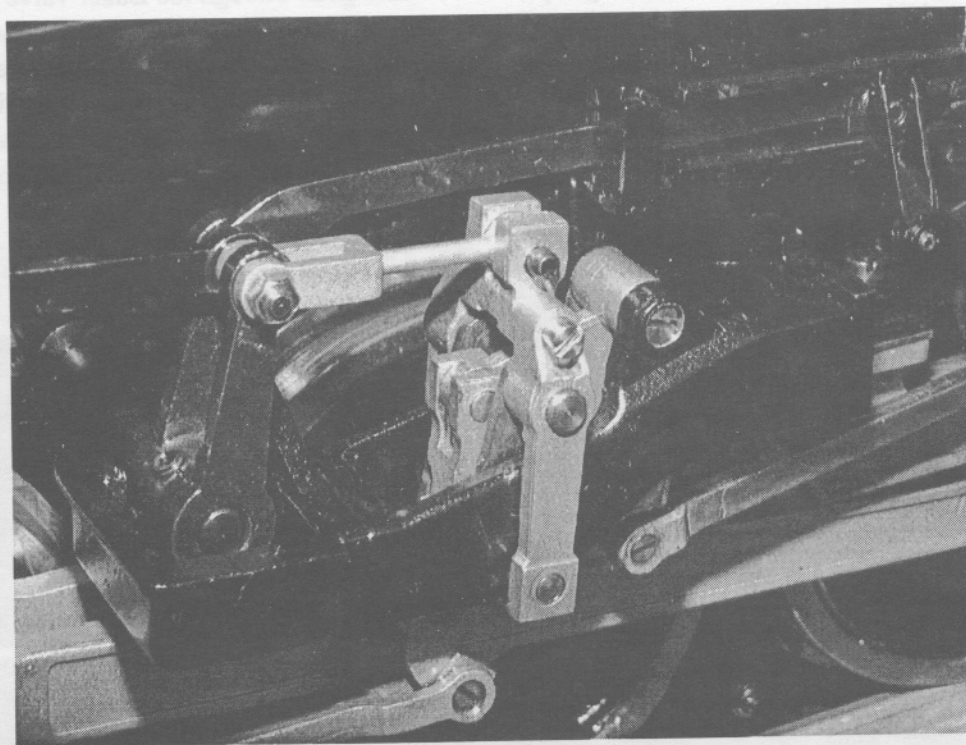
As was is evidenced by the 2003 Diamondhead International Steamup, coal burning is clearly on the rise on these miniature steam engines and, to be candid, there is nothing like the aroma of a coal-burning fire and the red hot glow of coals in the firebox to add another dimension of realism to this fantastic hobby. Nevertheless, the question must be asked--are these

miniature locomotives properly designed for the intense heat and the excessive wear associated with coal firing? Interestingly, I had asked a boiler manufacturer what the temperature at the crest of a coal-burning fire is in the firebox. His response was that he estimated it to be approximately 1100~1200°F. (Personally, I think it's even hotter.) Either way, there is no question that this is very hot for a small brass locomotive. This fact, in conjunction with the incredible amount of coal dust which is generated from the fire and the abrasive nature of this coal dust on miniature bearings, bushings, etc., raises significant concern as to the 'appropriateness' of coal burning on the Allegheny, or on any Gauge 1 locomotive, for that matter.

I recall a discussion I had with Mr. Inoue at Diamondhead 2002 regarding this very topic as it pertains to the Allegheny. His general response was that he did not at all recommend coal firing the Allegheny for the reasons outlined above. He emphasized to me that alcohol is much better and safer,

not only for the boiler but for the moving parts of the locomotive as well. A statement such as this from the manufacturer must be taken seriously.

Undoubtedly, having said this, there will be certain diehards who won't be able to resist the temptation of that wonderful aroma as well as the realism associated with a coal fire. Nevertheless, in my opinion, this engine is simply just too valuable to risk unnecessarily damage. Having said this, however, I too am drawn to the wonderful scent of those red hot cinders and admit that on one of my locomotives, though in all probability not the H-8, there will be a plume of



The H-8's Baker valve gear.

Aster's Finest...?

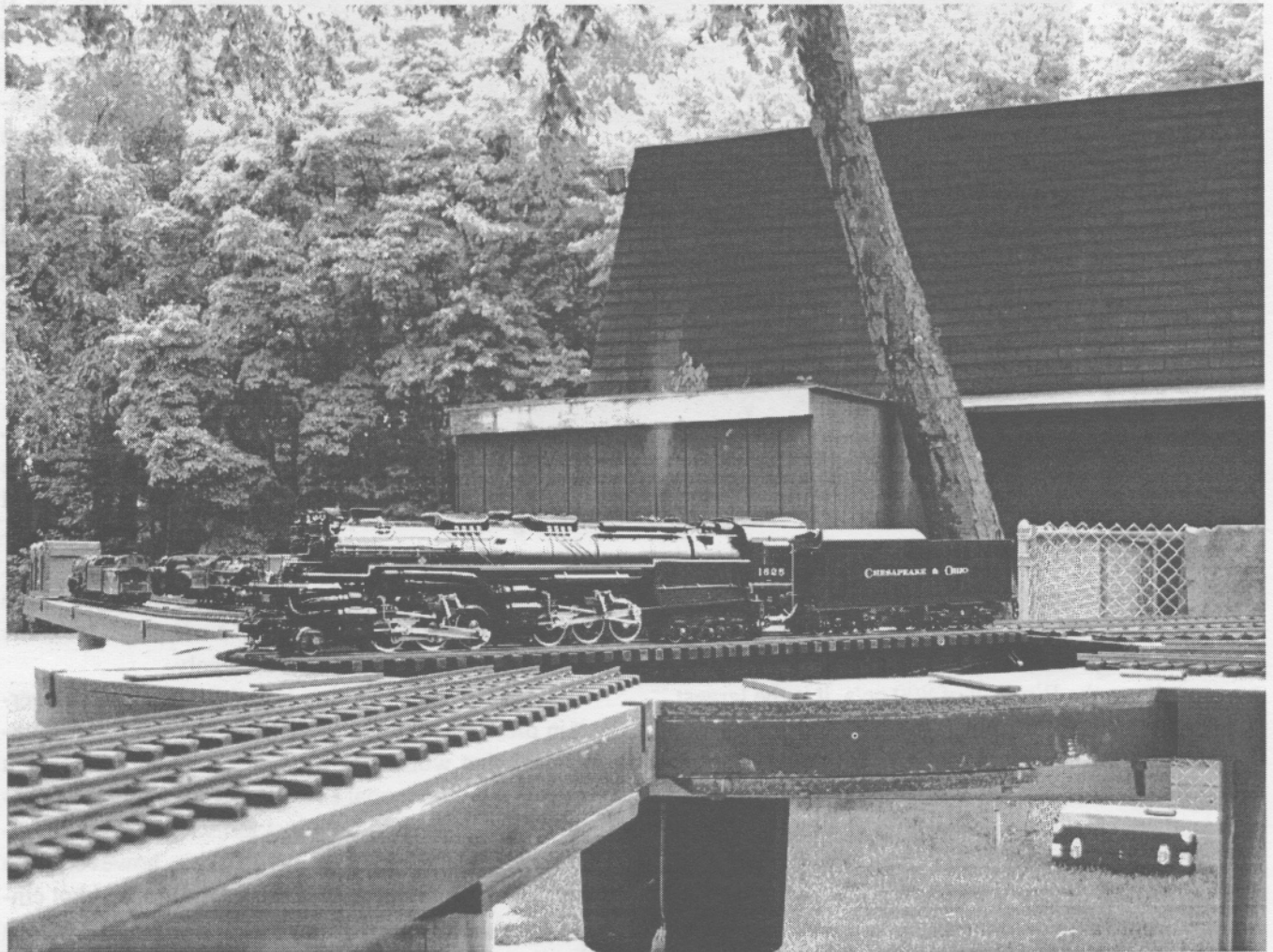
by Robert Hekemian, Jr.

photos by Bob McHale and Robert Hekemian

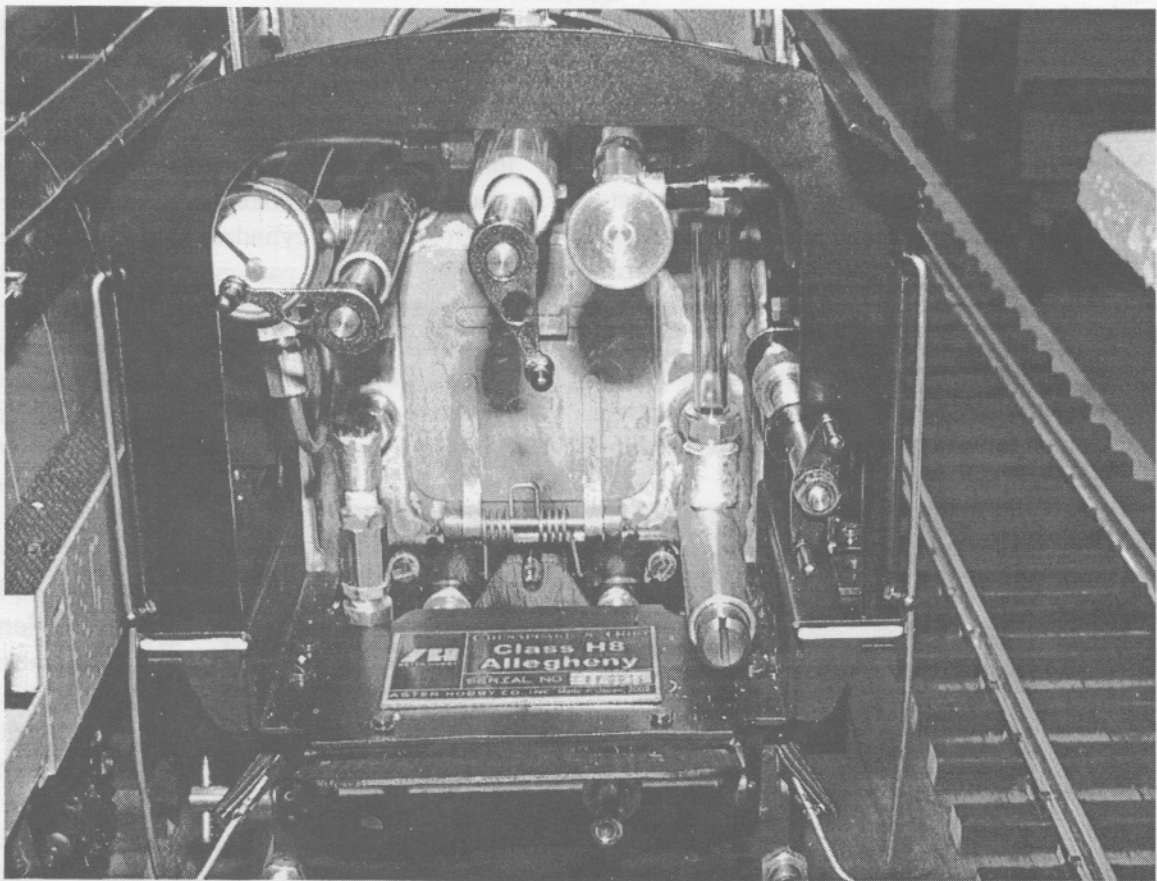
The mighty Allegheny H-8

Aster's new crown jewel, the Allegheny H-8, is very detailed, large and powerful. The four large cylinders, coupled to its huge boiler, give it the ability to haul a lot of tonnage, oops, I mean, poundage. The locomotive, simply put, looks like it means business. With the introduction of the Allegheny, Aster has ventured into a new realm of design and execution. For

example, for the first time Aster has utilized the Baker valve gear. Though the Baker valve gear in many respects resembles the Walscherts valve gear, the Baker gear is placed outside the frame(s) and the valve derives its movement from an eccentric crank attached to the main crankpin and a combination lever connected at one end to the crosshead. Unlike the Walscherts



An Aster H-8 Allegheny rotates on the turntable, taking it from the engine service area to the mainline tracks.



A look inside the cab at the backhead. Simple, functional and attractive.

black smoke and coal dust exhausting from the funnel while cinders reek havoc on my bearings. Then again, I don't recall anyone ever stating live steamers were a rational bunch!

The locomotive is heavy and impressive. Couple it to the tender and it is overwhelming. In fact, engine and tender are more than 50" over buffers and both have a combined dry weight of over 51 pounds. The cab is imposing, and there is more than ample room to house the large firebox door, thereby making the burners very accessible. The water glass is large and quite visible while operating the engine. Further, it accurately indicates the level of water in the boiler without the often-encountered problem of bubbles forming in the water glass. The pressure gauge is Aster's standard gauge. The large blowdown valve at the bottom of the cab is very accessible. The blower and throttle controls are large and function smoothly. The screw reverser enables the engineer to adjust its position in the tiniest of increments - a big advantage when notching up.

Probably one of the most useful features that Aster has incorporated in this locomotive is a permanently attached cab roof which mechanically lifts up about

one-half inch, providing even easier access and visibility into the cab. This roof, unlike the poorly designed Mikado roof, is not flimsy and operates flawlessly.

The locomotive's lubricator is located at the base of the smokebox. Here, too, Aster has improved their design. The lubricator, quite frankly, is huge and has a wide fill nozzle on it which prevents the steam oil from backing up when filling.

The tender houses the alcohol tank, hand pump (which is adequate) and the water tank. Interestingly, Aster provides two alcohol tanks with each locomotive, and there is good reason for this. This engine consumes a large volume of alcohol; Aster's idea behind the second tank is to provide an on-the-go ability to replace the depleted tank. For the engineer who is attempting to operate this engine uninterrupted for forty-five minutes to an hour, the second tank is a necessity and Aster's decision to provide two tanks is well received.

Running this locomotive is exciting. After turning the alcohol valve on, I suggest waiting at least a minute or two for the burner plates to soak, as I do with my other alcohol-fired engines. Initially, two turns

on the tank valve are more than adequate. One might notice that the alcohol flows through the feed tubes into the locomotive very slowly at first due to a persistent bubble in one, if not both, of the tubes. In order to release this bubble, I suggest gently rocking the locomotive back and forth. Even then I have noticed that persistent little bubble continues to exist; however, this is not a problem since an adequate supply of alcohol still reaches the burners as evidenced by strong flames in the firebox.

Once an igniter is placed in the firebox, the burners light almost instantaneously. Be sure that you have one of the exhaust funnels plugged with the brass plug Aster provides and that there is a suction fan in the other. Incidentally, in speaking of suction fans, the two 'C' cell suction fan is not adequate for this engine; simply put, the locomotive takes too long and burns too much fuel in order to raise steam. Instead, I recommend using Aster's three 'D' cell fan, which draws

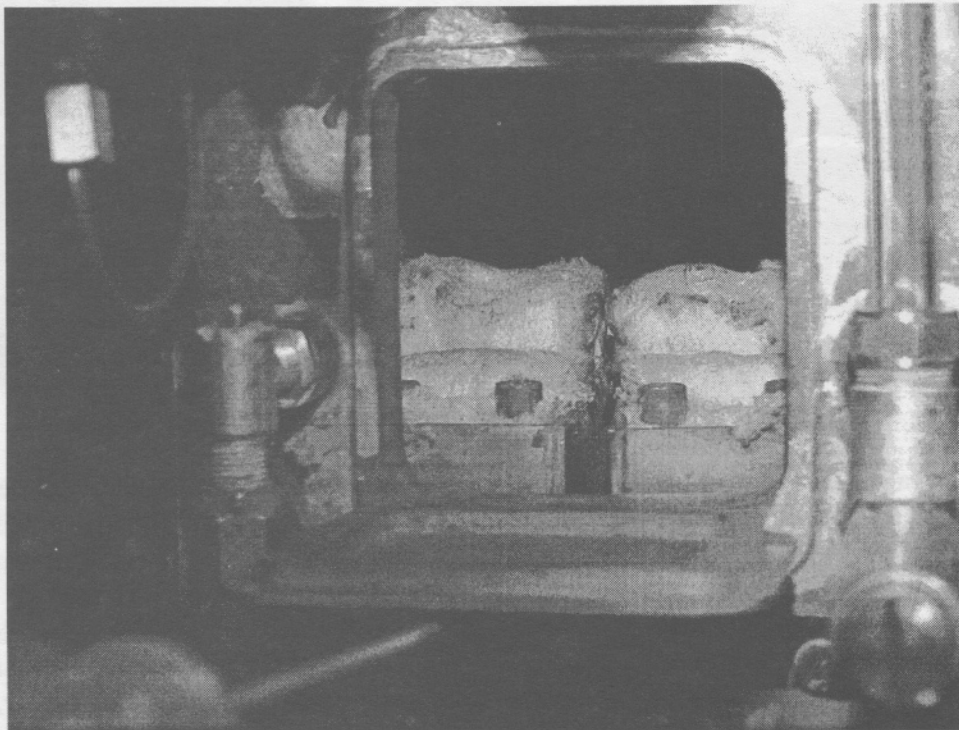
many more cubic inches of air. This fan enables you to raise steam in approximately 10-15 minutes.

When the pressure gauge indicates 1-1/2 atmospheres, remove the blower fan and the plug from the second stack and immediately open the locomotive's internal blower. Once the locomotive's blower is on, the pressure rises very quickly. At 3-1/2 atmospheres the locomotive is ready to get underway. I do recommend keeping the blower cracked in order to maintain a proper draft until there is a load on this engine and also closing down the alcohol valve by one turn (more on this later).

For the past few months we operated two H-8's putting about five to six hours on each. The first couple

of runs proved to be somewhat disappointing. Neither locomotive was pulling the amount of weight I felt that it should. In addition, I run most of my engines in a notched-up position on the Johnson bar. On the Allegheny the drivers, particularly on the rear engines, continually broke loose. In fact, it seemed as if the front and rear cylinders were out of sync with one another. This was particularly bothersome because it occurred on both locomotives. Fortunately, Mr. Rudi Kouhoup, who is an exceptional engineer and in my opinion a leading expert on a host of topics including miniature steam locomotives, kept urging me to notch the engine back further to the point where we had the

screw reverser set back to the 65% position. (I was amazed at the power of this locomotive despite the reverser being notched back as far as it was.) Clearly, notching the engine back *calmed the beast down*, so to speak; slippage was dramatically reduced, causing the



A peek into the firebox reveals the ceramic burners.

locomotive, in all regards, to behave significantly better and water consumption decreased significantly. Surprisingly, in a notched-back position from a dead stop and with a 20-car train, the engine could still proceed forward on its own.

Despite this noticeable improvement, I was still not satisfied with the drawbar pull and the adhesion that the engine displayed. In fact, I had no doubt that my Daylight could pull more weight than the Allegheny, despite the Allegheny's four huge cylinders and tremendous weight. (This fact was confirmed in later tests.) These realities forced me to analyze the weight distribution of the locomotive. Interestingly, Lima's prototype was designed to have 33% of the

locomotive's weight on the three front drivers, 32% on the three rear drivers, 25% over the trailing truck and 10% over the lead truck. Keeping these figures in mind, I attempted to assess what the weight distribution is on this miniature version. I quickly discovered two significant differences: 1) that much too much weight was distributed on the trailing truck (in my rough estimation, about 40%-45% vs. the prototype's design of 25%) and 2) , because of the position of the trailing truck, the rear engine's drivers were not seated fully down on the rails, thereby reducing adhesion significantly. (This being caused by the trailing truck slightly lifting the back end of the locomotive, which in turn also lifts the rear engine's drivers.)

In an effort to confirm these conclusions, the following two air tests were performed. Each set of the Allegheny's engines was operated independently. When the forward engine was operated, it easily pulled the locomotive forward and dragged along the rear engine. However, in doing this with the rear engines, the result was significantly different. In short, the rear engine operated, but the drivers had barely enough adhesion to propel the weight of the locomotive in a forward or reverse direction. In effect, the rear drivers spun and the locomotive hardly moved.

The second test required the removal of the trailing truck. Doing this obviously caused the back end of the locomotive to sag. However, the adhesion issue, or I should say the lack thereof, virtually disappeared and the locomotive was capable of pulling a great deal more. (Keep in mind that with the removal of the trailing truck the weight also shifted from the front engine, thereby reducing some of its traction.) Nevertheless, the improvement in overall adhesion was tremendous. Taking into consideration the foregoing we identified a number of possible solutions, the most promising of which was milling out the trailing truck frame which would have allowed the rear engine to sit lower, in turn permitting the rear drivers to make better rail contact and redistributing most of the weight from the trailing truck to the rear drivers. This was probably the most effective solution to the problem and I resolved to do this. However, one afternoon Mr. Bob Moser had stopped over and I decided to review the situation one last time with him before disassembling and modifying the trailing truck. Incidentally, I have been operating Aster live steam locomotives for the past 20 years and, during this period I've gained a tremendous regard for Bob's general knowledge of this hobby and his ability to identify simple and effective fixes for what otherwise could be complicated prob-

lems. With regard to the Allegheny, once again Bob's ability shone through. Bob studied the problem and suggested exploring what would happen if we removed the washer between the trailing truck and the frame and replaced it with a thinner one. The results from this simple act were impressive.

As I indicated, prior to implementing Bob's suggestion, the locomotive pulled 20-25 cars and had a significant amount of slippage. Post modification, we gradually loaded 49 freight cars onto the back of the Allegheny and there was virtually no slippage. Further, in our conservative estimate, the engine could easily pull another 25 cars and that is probably a very conservative estimate. (The Daylight no longer reigns as Aster's top puller.) In effect, the removal and replacement of this one washer redistributed the weight from the trailing truck to the rear drivers which resulted in a locomotive that operated in a smooth and controlled manner. Physically, the locomotive looks the same with the exception of the trailing truck sitting minutely higher in the front and minutely lower in the rear, about one millimeter in both cases. A number of people have asked about the negative impacts of replacing the washer. Although I have not consulted with Aster on this, Bob and I have observed no adverse effect on the locomotive. (In fact, I don't really see a problem with eliminating the use of a washer altogether thereby further improving the foregoing results considerably.) My only suggestion in replacing or eliminating the washer would be to keep the area appropriately lubricated. By the way, even with this change, it is absolutely necessary to run the engine notched back; otherwise, there is simply too much power being transmitted to the drivers, resulting in unnecessary slippage.

This brings me to another point -- among the engines that I have operated, the Allegheny is by far the most powerful. The trick, obviously, is getting it to transmit the power from the pistons and the rods to the drivers with minimal slippage (a problem, incidentally, with Lima's prototype as well). Removal of this one washer helps do this in a very efficient manner, although I do believe that certain additional modifications could even further improve this engine's tractive effort and adhesion. A milling out of the trailing truck, as outlined earlier, along with a shift of some weight from the pilot to the front drivers would undoubtedly yield dramatic results. For my purposes, these modifications are not justified as I do not plan on pulling 75+ car trains.

The last issue regarding this topic, which merits

brief mentioning at this time, is the synchronization between the front and rear engines. I believe this is an area which can be improved, although I cannot verify this presently. Over the next six months I will endeavor to explore optimizing the linkage between the two sets of engines. I'll be sure to let SitG readers know if my findings yield results which may be useful.

Another significant situation encountered is the gradual failing of the coil springs on the tender. Once again, this condition is a phenomenon existing on both tenders, as well as a third which I am now aware of. This condition created two separate problems: first was the overall unsightly condition associated with the sagging front end of the tender and 2) as the tender continues to sag towards the front, the coupler on the back of the tender rises up to a point where the rolling stock is dangerously close to uncoupling from the tender with the slightest undulation of the track. I reported this condition to Mr. Jerry Hyde and sent him some pictures. (As the reader may be aware, Jerry worked closely with Aster Hobby in Japan helping to turn the *Allegheny Project* into reality. Not only did he obtain engineering drawings and a host of other information on the locomotive, but his efforts undoubtedly assisted Aster's competent engineering staff in producing an accurate rendition of this locomotive.)

Jerry forwarded the information and pictures on the spring problem to Aster, and Aster is currently in the process of reviewing the data. In the meantime, I removed four springs from two different tenders and sent them to a manufacturer who specializes in the production of miniature springs. They performed a series of compression tests on these springs and the results showed a significant variance in the strength of the various four springs; in fact, two of the of the four springs I sent them had a 35%-40% variance in strength. The spring manufacturer inquired as to the weight of the item the springs were supporting and has since reported back to me that these springs are being significantly overstressed by a weight far exceeding their design capacity. They suggested increasing the strength two to two-and-one-half times the strongest springs that are currently being supplied with the tenders.

This brings me to an interesting point...the *proper* springs required to perform this task are not standard springs (according to this manufacturer) and require a custom design and manufacturing. They also indicated that many product manufacturers who use miniature springs opt to use *off-the-shelf* currently available spring inventories and, therefore, are limited to an in-

ventory which often really does not adequately satisfy the requirements of the job. (Recall the Mikado and the tender of the NYC Hudson.) The Allegheny tender also seems to be a victim of this reality.

I will tell you that custom springs are not cheap by any means. In fact, they will cost, depending upon the size of the order, anywhere from six to seven dollars per unit. Changing the springs is easy and requires minimal dissassembly. (By the way, the rear truck of the tender is not subject to this problem due to its inherent design and therefore requires no changing of the springs.) I have ordered replacement springs through this manufacturer along with a few extras. Anyone experiencing a similar problem can contact me and you are welcome to them.

Changing the springs on the first tender we tested satisfied the coupler height problem entirely; however, on the second tender we still noticed an aesthetic issue concerning the coupler height. In short, although the risk of uncoupling had been eliminated, the coupler was still too high. We milled out the shank, thereby lowering the coupler's height and improving the overall look.

Getting back to the operation of the locomotive, the axle pump is barely able to keep up with the demands of the boiler. For this reason I suggest that initially running off with the boiler 80% full, but don't fill it up to this capacity prior to lighting the burners, as it simply takes too long to heat the water. Allow the engine water temperature to begin rising and then start slowly pumping water in with the hand pump before you are underway, bringing the water level from 60% up to 80%.

Closing the bypass and notching up the reverser will enable you to run about 45 minutes, supplementing the boiler water level perhaps once with the hand pump. By the way, in my opinion, any engine fitted with a "properly designed" axle pump should not require additional hand pumping unless the locomotive is stopped for some length of time. As I indicated, the axle pump barely does the job so I strongly suggest checking the water glass religiously every 12-15 minutes. (In all likelihood, although the water level in the sight glass will drop somewhat, the locomotive will not require any supplemental hand pumping for at least 20-25 minutes.)

The Allegheny performs well at all speeds; however, it looks best at a scale 40 miles an hour. One gets an appreciation for all the actions associated with the rods, pistons, drivers, etc. Like the Big Boy, it is an exciting engine to watch.

As is the case with most Aster alcohol-fired engines, the Allegheny's safeties pop off regularly, even under significant load. It is on this issue I agree with Mr. Kevin O'Connor's point about gas firing being much more controllable in terms of the flame. Although I dare not get into a discussion of alcohol versus gas firing (which I think is better left to another time as well as another writer), the reality is, as it pertains to the Allegheny, the engineer will have to contend with the continuous lifting of those safeties.

By the way, as I indicated earlier, once the engine is underway, reduce the alcohol tank valve from two turns to one turn. This helps to keep the safeties *some-what* under control.

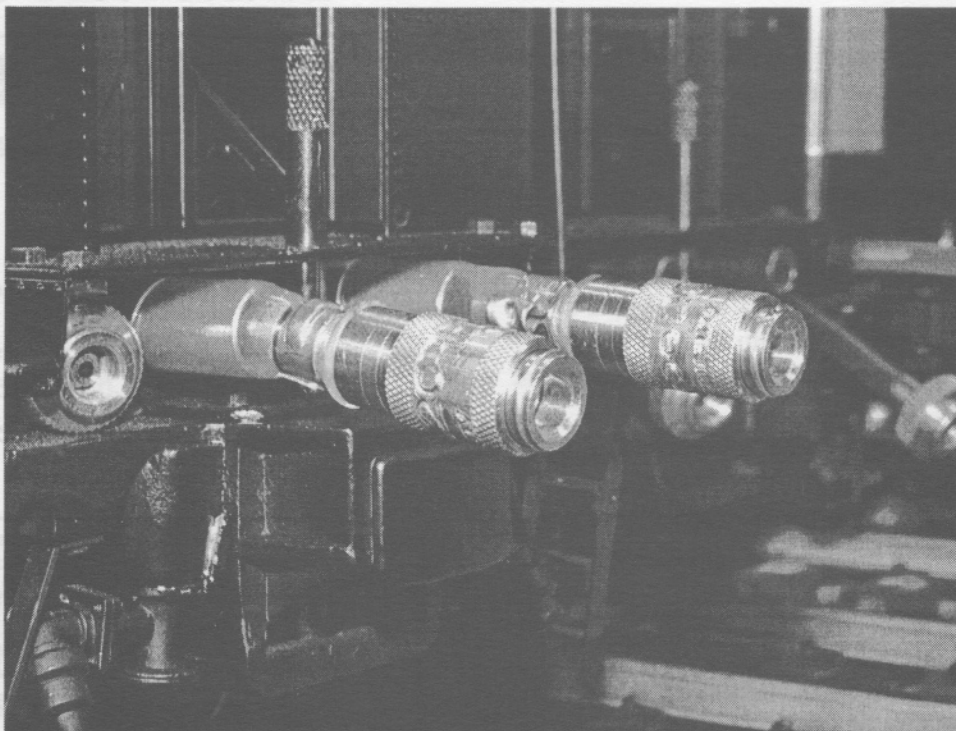
There is one other bothersome issue associated with alcohol firing on the Allegheny. The alcohol feed tubes connecting the tender and the locomotive obviously must be disconnected when removing the tender from the locomotive. On most of my locomotives I generally

keep the tender and locomotive coupled together; however, the Allegheny is simply too long and too heavy and requires a continuous disconnecting and reconnecting of all the appropriate lines. One quickly discovers that after four or five disconnects and reconnects, the alcohol tubes begin to stretch and weaken, and then shortly thereafter they tear. For those of you who know Bob McHale also know that he has an incredible ability to locate parts and a host of other things that most of us don't even think exist. How he does it I don't know; nevertheless, I discussed this problem with Bob and he mentioned that he knew of a high-quality connector which could be used on these alco-

hol lines, made of either stainless steel or brass. Bob said to me, "I think I know where I can locate them.", and the next day he faxed me a picture of the connectors, in a host of different sizes, as well as the name of the manufacturer. I ordered the 1/8" brass connectors which retail for about \$10-\$12 each and, though not inexpensive, their quality is exceptional. I suggest the single shut-off type which seals the female side of the connector via a check valve, thereby preventing any alcohol remaining in the line from discharging. By the way, the brass connectors can be blackened to blend in with the locomotive. In any event, the connectors are convenient, reliable, very well made and, will undoubtedly greatly prolong the life of your alcohol tubes

many times over.

I think Aster could have improved the design of certain parts such as the water pump and tender springs. I find it unacceptable that on a model priced at this level that both of these issues were not adequately addressed. Fortunately, both situations are either tolerable or cor-



New connectors between loco and tender, as discussed in article.

rectable, as are all of the problems I have encountered as outlined above.

There are three additional items which I find troublesome: first, at this price point the Allegheny should have been equipped with working cylinder cocks. There is a lot of piping from the boiler to cylinders and cylinder cocks would have made for an even smoother start up. If the \$4,000 Accucraft K-27 has working cylinder cocks, why doesn't the much more expensive H-8?

Second, Aster did not equip the locomotive with a proper whistle. What I mean by proper is not *prototypical sounding*, but at least better sounding than the

awful, high-pitched whining whistle that is on there now. Mr. Larry Bangham has done a formidable job of designing and building resonating whistles which sound great; in fact, he designed and produced a prototype whistle for use on the Allegheny, and Aster simply chose not to use it. I have yet to receive a reasonable answer as to why.

Third, my next concern may sound petty but I think it is very relevant. Where is the coal load? For those of you who are collectors, having a locomotive on a shelf without a coal load on top of the tender must be a very frustrating experience, and I just cannot fathom as to why this very important finishing touch was not included with the locomotive? Does Aster expect that the customer build his own coal load after spending all this money?

Fortunately, the good news is all of the conditions outlined above are correctable, though I must admit it is disappointing Aster didn't go the extra mile and rectify these rather bothersome issues.

Having said this, however, I don't want the reader to misunderstand me. The Aster Allegheny is a superb rendition of what many enthusiasts feel was one of Lima's finest locomotives. Tweak the H-8 up a bit, as outlined above, and it settles into its own and really evolves into a wonderfully exciting and consistent engine to operate.

Will Aster's Allegheny have bestowed on it the same distinction as Lima's? There is no doubt that this H-8 is an exceptional piece which is true to the original in its overall look, and is highly detailed, es-

pecially for a working steam locomotive. Further, its exceptional workmanship, in conjunction with its smooth operation and potentially immense pulling power, set it apart from other live steam Gauge 1 locomotives. In the final analysis, it is all of these attributes that will increasingly distinguish Aster's Allegheny as being heavily sought after by both the collector and operator. Aster's finest? Only time will tell...but I tend to think so.

*Brass connectors are available from Small Parts, Inc., Item #217005 Telephone No.: 1-800-220-4242.



CHECK IT OUT!

Steam in the Garden
Online
at

www.steamup.com

Swap Shop, Articles, Photos, Steam Chat, Message Board...and lots more!



Les lecteurs francophones peuvent contacter
Guy Ozanne pour obtenir, gratuitement, une
traduction sur un élément de texte paru dans
SitG .41 rue Jeanne d'Arc, 94.500 Champigny,
France; tél (33) 01-48-83-62-86; e-mail
<Guy.Ozanne@wanadoo.fr>

TRACK 1

1073 Foley Avenue
Ottawa, Ontario K1G 2R4

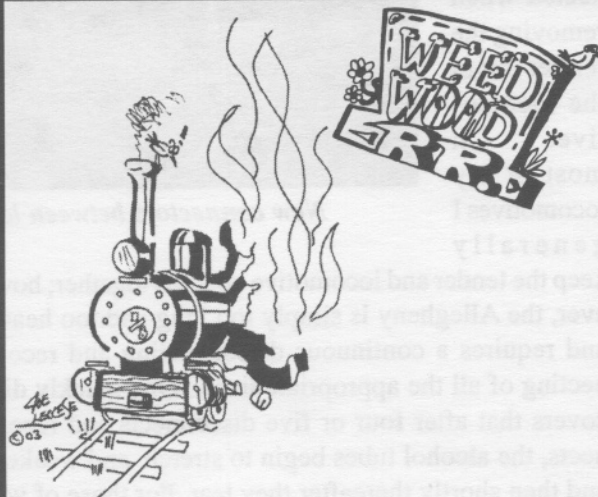


3/8" scale Clerestory Roof stock

C-D-S Lettering Ltd.
Dry Transfer Lettering
3/8" scale (std. ga.) - 1/2" scale (n.g.)

Custom lettering a specialty

For latest list please send a #10
self-addressed envelope
with an International Reply Coupon



Another failed fuel experiment
on the Weedwood! Nitrous oxide/propane mix. Our cartoonist will be up and around in no time.

DENVER Project Locomotive

text by David Hamilton

photos by Curtis Glen

Introduction

Issue № 63 of this magazine announced "DENVER - a new project loco YOU can build!" I have become very skeptical about projects that are heralded as something

"you" or "anyone" can build. Many times you have to go out and buy very costly machine tools and have a foundry close at hand. However, the DENVER locomotive requires no castings. All the machine work can be done on a small Taig lathe and a bench drill

press. The gears, chain, wheels, safety valve and boiler end caps are available from Sulphur Springs Steam Models. (S. S.S.M.) They have put together a package of these parts just for this project locomotive.

S.S.S.M. also have many of the other bits and pieces that you would also need. For people in Canada, copper pipe for the boiler is available at Home Hardware (Home Depot). Ted McJannetts, of Miniature Power Products in Woodstock Ontario, has all the square, round, hex and tube stock, as well as the nuts

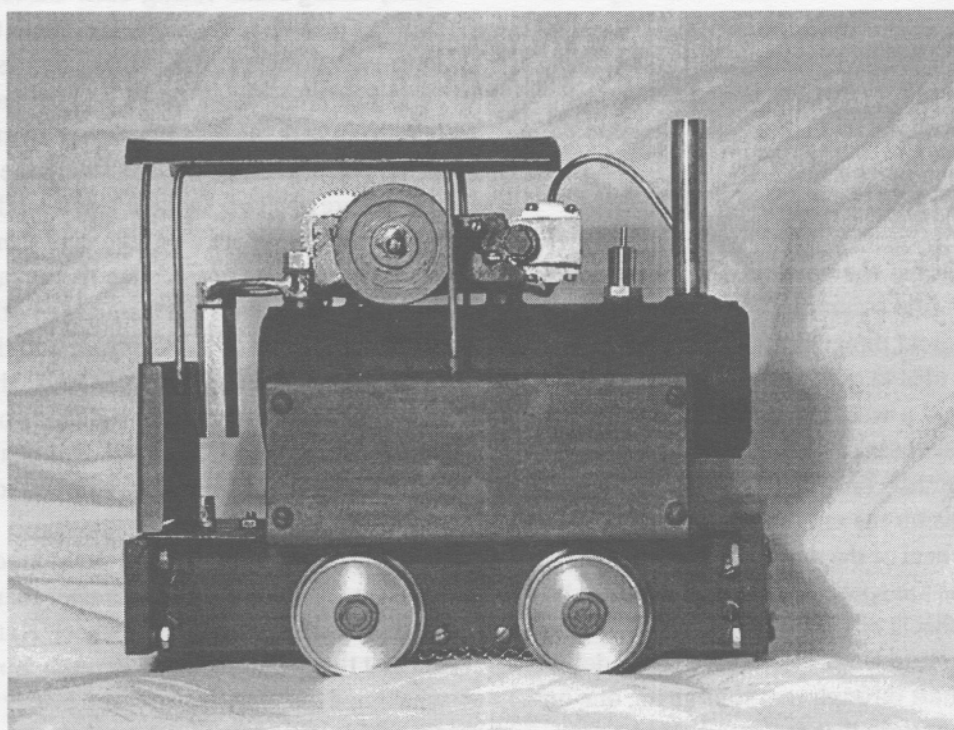
and bolts. Ted is the local Roundhouse dealer in Southern Ontario. His contact information is in the Roundhouse ad, right here in this magazine. Nothing that you

would need to finish the project is hard to find.

I first became aware of the DENVER project locomotive at Diamondhead, in 2002. Marc Horovitz gave a talk about the locomotive. He and his daughter, who was 12 years old at the time, had each built one. I was impressed with its relative simplicity and unusual design. A single

acting, oscillating engine, mounted on top of the boiler, driving the wheels below with a chain on sprocket gears.

I was not able to attend Diamondhead in 2003, so, as both a penance and a consolation, I decided to have a go at the project. I ordered the drawings from Ken Orme. The gears, etc. arrived from Sulphur Springs. And on January 18, 2003, while most people were at Diamondhead, I got started. I had the engine assembly finished and running on air by the end of



The author's completed DENVER Project loco

February, and the whole locomotive was finished by the middle of April, 2003. My hope is to take the new engine to Diamondhead in 2004.

I believe that this is an excellent project for anyone. I'm sure that more experienced builders may be able to spin one of these little kettles out in no time, with little more than a photo of the finished product to go by. Others, with less metal working experience, may shudder at the thought of building a live steam locomotive from scratch. But fear not! The drawings are very clear. And there is plenty of support to be had from others in the hobby. The end result is a delightful and unique little locomotive that will not tie up your time for thousands of hours.. And it can be done on a very limited budget..

I am not a very experienced locomotive builder. This is my first completed locomotive. So what I have to offer here should not be considered *THE* way to do things. It is simply an outline of the way I did it. I hope that it will be a source of encouragement to anyone thinking about a first locomotive. Because I am quite sure that if I can do it, YOU CAN!

PART ONE. THE ENGINE ASSEMBLY

I decided to begin the construction of the locomotive with the engine assembly. This is where some of the few very critical dimensions are. I thought that it would be a good idea to get these out of the way, and make sure that I had a working engine, before going on to the boiler and chassis.

The frame is made out of 1" square steel stock. There are two axles on the engine assembly. One has the crank and flywheel of the engine. That is the crank shaft. The other has the sprocket gear that is linked by chain to the rear wheels of the locomotive. That is the drive shaft. The motion from the crank shaft is delivered to the drive shaft through two spur gears, one on each shaft. It is important that the axle holes be accurately laid out and drilled on the frame. Otherwise the gears will not mesh properly. I laid out all the holes as carefully as I could. The axle holes were laid out on both sides of the frame. Then I center punched all the holes, using a magnifying glass to make sure that I had the center punch where I wanted it.

After center drilling all the holes, I drilled them out with small drill bits and then opened them out gradually until each was at the correct finished size.

The axle holes were drilled from each side at first. When I got close to the finished size, I ran the drill right through, from one side to the other, just to make

sure that the holes were going to line up.

I learned the hard way that when you are drilling a number of holes of different sizes, it is a good idea to cover the smaller ones with masking tape when they get to their finished size. Otherwise you may accidentally drill them too large, thinking that you are opening up one of the larger holes!

When all the holes were drilled, I cut off the one side of the square stock that didn't have any holes. That was the side with the seam on it. The part was then filed and sanded to its finished size and shape.

The crankshaft and driveshaft themselves are quite easy to make. Round stock in both diameters is readily available. All you have to do is cut and finish them to the proper length. I had some of the correct diameter stock on hand for the crankshaft. I cut it a bit overly long and finished to the correct length on the lathe, taking small facing cuts. Careful filing and/or sanding would accomplish the same thing. I did not have any stock on hand for the driveshaft, so I cut a length of larger stuff that I had on hand, finished to length, as with the crankshaft, and then turned it down to the correct finished diameter on the lathe.

There are two spacers, each made of brass tube stock. Both were cut a bit long and then sanded to finished length. One goes on the driveshaft, to the left of the spur gear, inside the frame. The other goes on the crankshaft between the flywheel and the outside edge of the frame. There is also a fibre washer that goes on the driveshaft, between the right side of the frame and the large spur gear. The small spur gear, on the crankshaft, had no set screw in it, so I had to drill and tap a hole for a 4-40 set screw.

I had some solid round brass stock on hand that was just 1/16" smaller, in diameter than what is called for on the drawing of the flywheel. Ken Orme assured me that this would be good enough. So, using some of what I had on hand, I cut a piece overly wide and faced one side, taking out any scratches or saw marks. I turned the piece around in the three jaw chuck and did the other side to the correct width. Then a hole was drilled through the center of the wheel to fit the crankshaft. Another hole was drilled from the outside circumference, through to the axle hole. This was tapped 4-40 at the bottom for a set screw. The top portion of the hole was drilled out a bit larger, to about 2/3 of its depth, to allow access for the set screw and Allen wrench.

The crank wheel has another of the critical dimensions. That is the distance between the center of the crankshaft and the center of the crankpin. I started

by making a small jig, laying out and drilling the holes for the crankshaft and the crankpin in a piece of 1/16" thick brass. I put a short length of round steel, the size of the crankshaft, in the axle hole, securing it with Loctite™. I then cut a length of round brass stock, of the correct diameter for the crank wheel, and faced each end. When I got it down to the finished length, I drilled a hole in the center for the crankshaft. I removed it from the lathe and placed the short length of axle on the jig into the axle hole. This gave me a pilot hole, exactly in the right place, to guide the drill for the crankpin hole.

After drilling for the crankpin hole, I removed the jig and turned the piece on its side.. I drilled a hole through the side, meeting the axle hole in the middle. This was tapped 4-40 for a set screw. Then the piece was returned to the lathe and the smaller diameter portion of the piece turned down.

The crankpin was made out of a length of round steel stock, a bit bigger around than required. I turned down a length, a bit longer than required for the part, to its finished diameter. Then cut it off, turned it around in the lathe and finished to the correct length. The crankpin was secured to the crank wheel with a bit of soft solder.

The parts completed to this point were assembled. All went together easily. The gears meshed, and the parts rotated freely in the frame. All systems "GO" at this stage of the construction! But I still had to make the parts for the engine itself..

Stay tuned for the next installment!



Unique Locomotives

Live steam 1:32, 1:20 scales,
Custom builds of quality
U.S, Foreign prototypes.

Argyle Locomotive Works

www.argyleloco.com.au

241 Belgrave-Gembrook Rd.,
Clematis, 3782, Australia.

U.S. Agent: SSSM, LLC

PH/FAX: 636-272-6632



FINESCALE RAILROADER

The hobby's finest photography.

Superior models, layouts, and dioramas.

Outstanding prototype photos, articles, and plans.

And now your \$26.00 one year subscription (\$39.00 foreign) also includes two books, **THE NARROW GAUGE ANNUAL** and **THE LOGGING, MINING, & INDUSTRIAL ANNUAL**, (cover price \$14.99 each) plus two magazines.

Or visit www.finescalerr.com and download the magazine for free.

WESTLAKE PUBLISHING COMPANY 1574 KERRYOLEN STREET WESTLAKE VILLAGE, CA 91361
PHONE: 805-494-4070 • FAX: 805-379-1870 • E-MAIL: FINESCALERR@EMAIL.MSN.COM



**CALIFORNIA &
OREGON COAST
RAILWAY**

CATALOG #5

CONTENTS

C&OC	4
DEL-AIR	12
GARDNER BENDER	34
GREYWOLF	35
HARTFORD	11
KADEE	24
LAGAS CREEK	6
MARTIN	11
MDC	36
MICRO ENGINEERING	10
MICROSCALE	11
NORTH EAST NARROW GAUGE	29
OLD PULLMAN	36
OZARK MINIATURES	31
GARY RAYMOND	27
SCALECARD	34
SIERRA VALLEY	36
SPLIT JAW	28
WIZARD	10
WOODLAND	34
♦ PRICE LIST	15

**NEW
CATALOG
RELEASE
ONLY \$3
(REFUNDED
WITH YOUR
ORDER)**

800-866-8635
PHONE OR FAX YOUR ORDER
OR CALL 541-582-4104
C&O RY
PO Box 57
ROGUE RIVER, OR 97537
COCRY@COCRY.COM

Brandbright

THE NEW FORNEY

We know the picture isn't the Forney, but the new Forney is similarly styled to and as superbly detailed as the popular Liberty Belle. With its Roundhouse chassis and boiler, Liberty Belle is the first production steam engine to be fitted with the new, totally 'glitch' free RCS radio control which not only reliably controls the engine, it also gives you radio control of the optional whistle and bell sounds!

Not only do both locomotives perform excellently, Liberty Belle and the Forney look exceptional! With their large lamp, fancy domes, Liberty Belle's real wood framing and pilot beam and lots of polished brasswork, they both give a century old style.

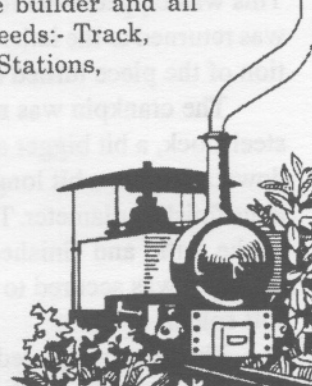
In fact they make a great pair of locomotives for display and hard work!

Brandbright offer many other real steam locomotives, a lot of bits and pieces for the steam locomotive builder and all the other things that a garden railway needs:- Track, Coaches, Wagons, Passengers, Bridges, Stations, Station Lamps - and a whole lot more!

To get a copy of the Brandbright Catalogue for supply direct from the UK, at keen prices, send \$5 to:

Brandbright Ltd

The Old School, Cromer Rd, Bodham, Holt, Norfolk, NR25 6QG, U.K.
Telephone: 01263 588755 Fax: 01263 588424 e-mail: steam@brandbright.co.uk
www.brandbright.co.uk



This Locomotion diesel/electric locomotive is based on a locomotive used by London's standard gauge Metropolitan line.

The model features two power units powered by a sealed lead acid battery and radio controlled by Brian Jones' MAC-5 electronic controller. Models come for either 45mm or 32mm gauge track and include a battery charger. INTRODUCTORY PRICE OF \$650.00 plus shipping. Sound system with R/C control of horn, add \$208.50.

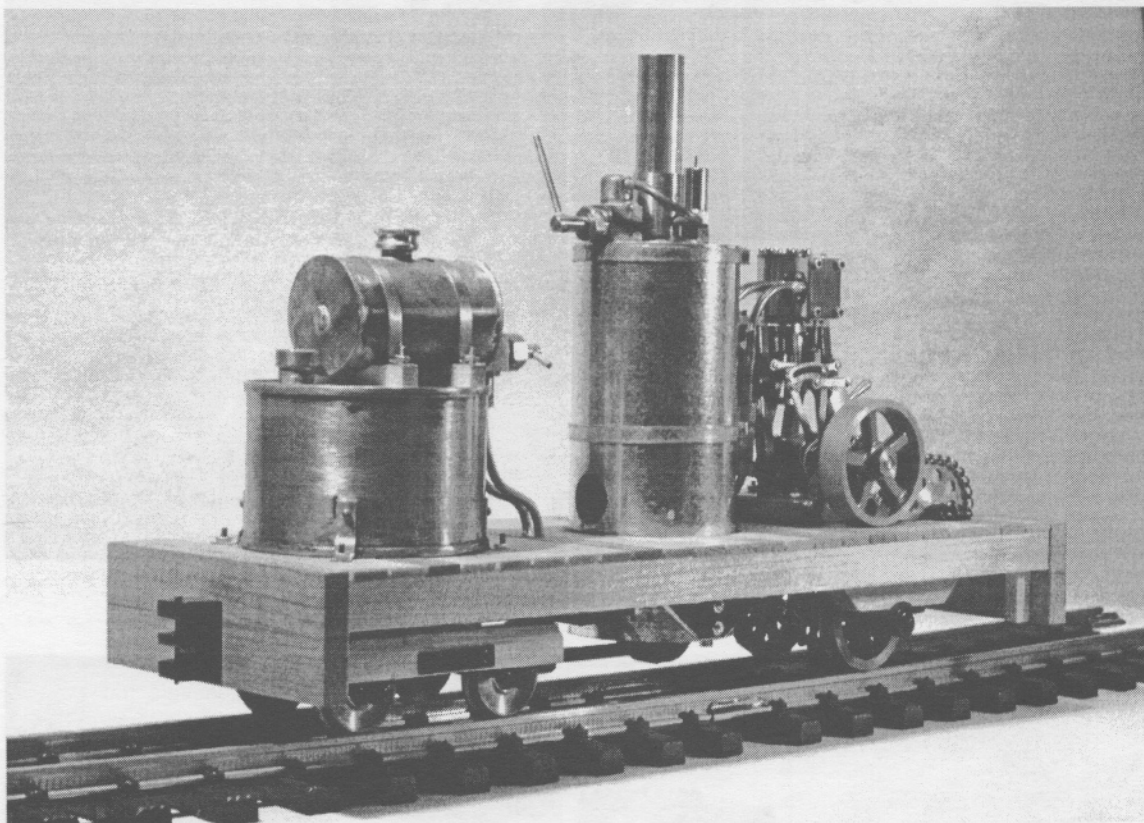
We sell the entire range of LOCOMOTION locomotives!

DOUBLEHEADER

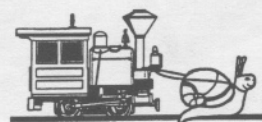
3725 PAGEANT PLACE
DALLAS, TEXAS 75244
972.247.1208
www.gaugeone.com

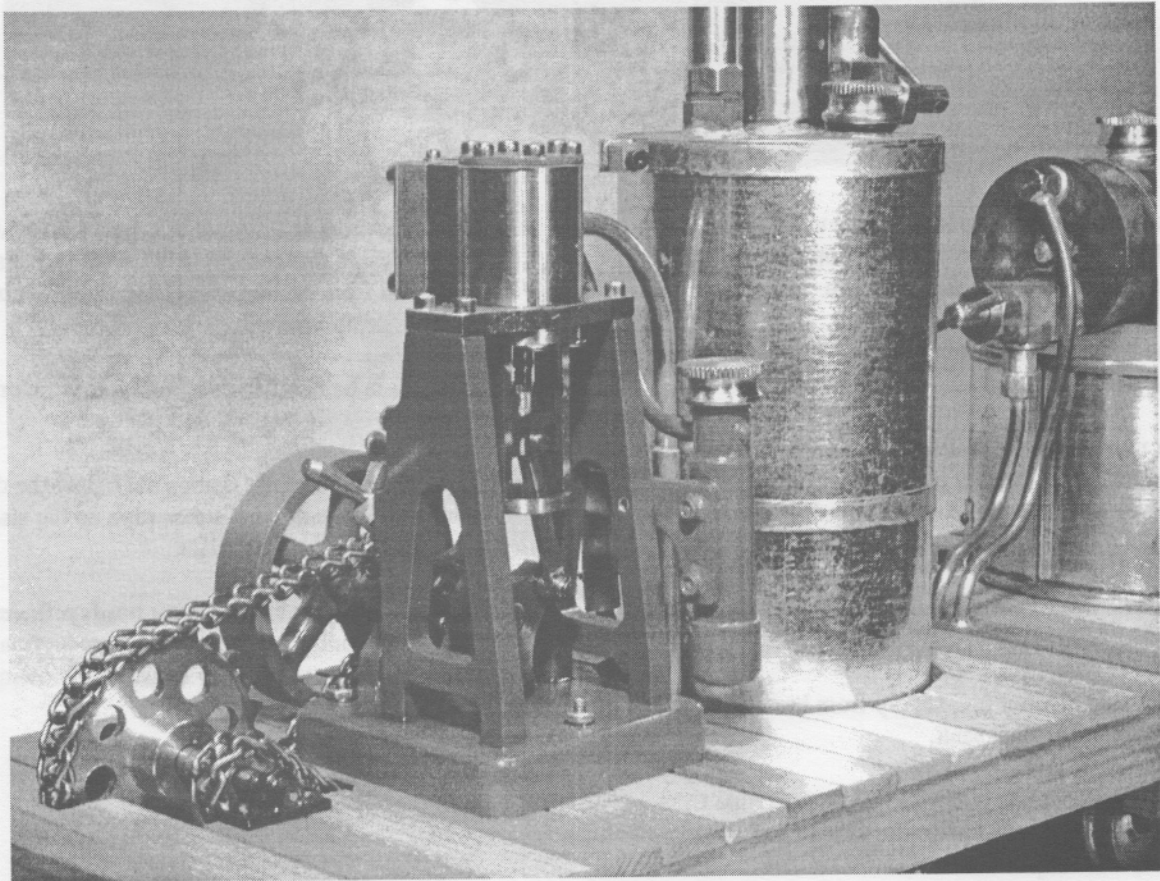
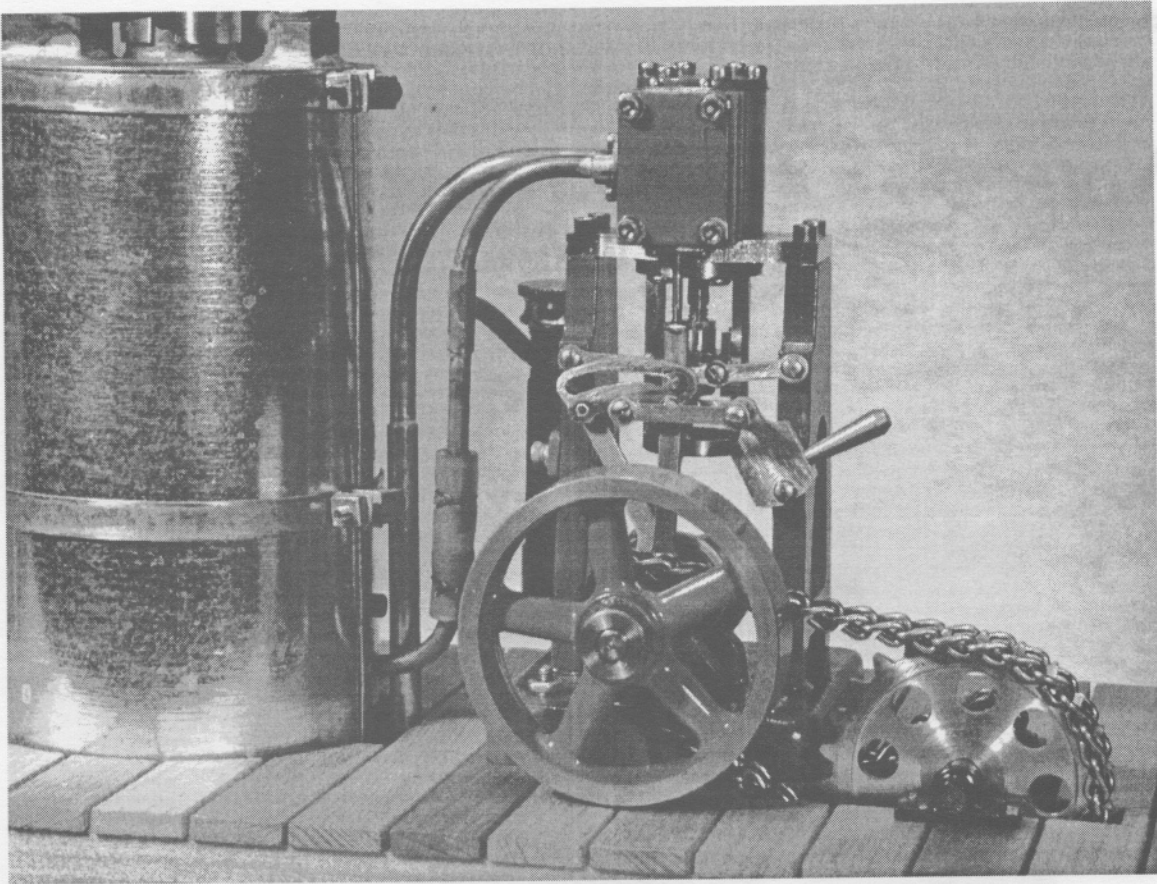
Notes on a 4-2-0 Project Locomotive

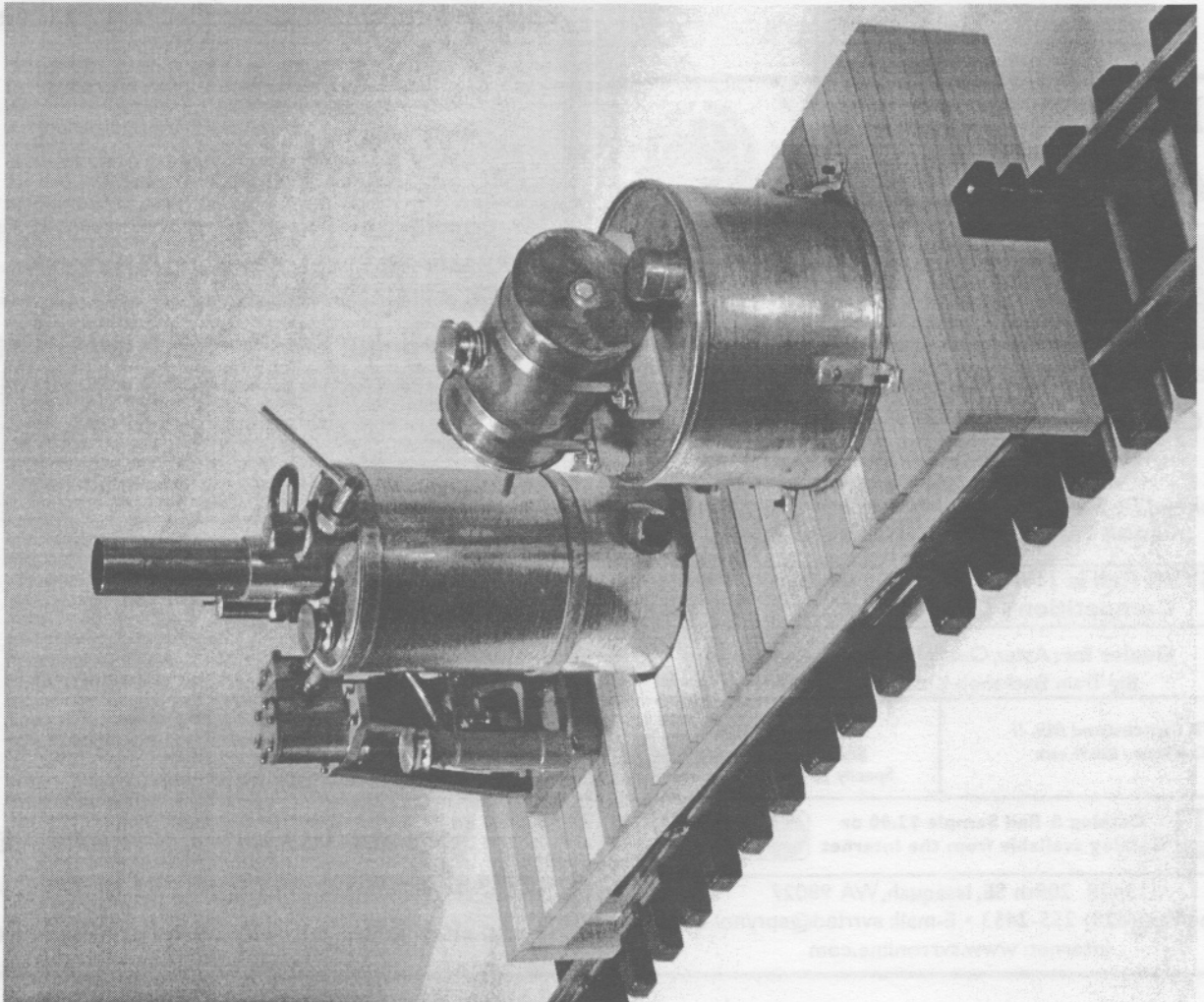
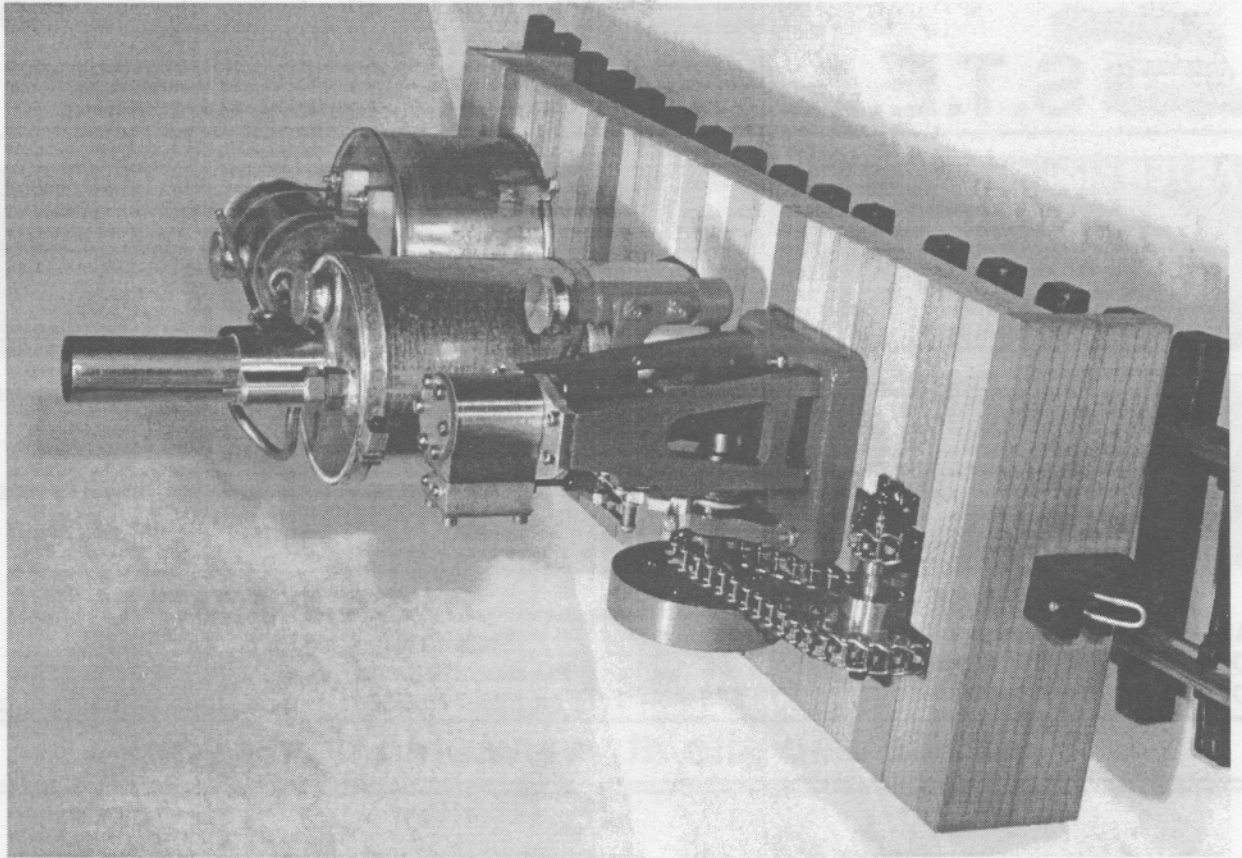
by Steve Shyvers



1. Patterned after portage locomotive used in Oregon in the 19th century. Photo of the prototype is on Mike Martin's website. www.panyo.com
2. Engine is a Graham vertical single with Stephenson valve gear.
3. Boiler uses Midwest Models boiler parts, but longer length of 2-inch copper pipe was used to increase water capacity. Center flue is copper pipe instead of brass.
4. Boiler also has I.P. Engineering safety valve for 25 psi, intended as Mamod upgrade.
5. Chickenfeed alcohol fuel supply from brass tank on top of dummy water tank.
6. Burner assembly has two wicks. Overflow pipe from alcohol sump discharges to the side so that a sump overflow is easy to see.
417. Sprocket drive to driver axle is based on BAGRS Project design, but reduction is 1:5.5. Drivers are turned from castings available from Sulphur Springs Steam Models.
8. Lubricator is homemade dead leg type and works very well.
9. Steam exhaust currently dumps out below the deck. Plan is to fit a sump and steam pipe up the stack after more thorough running trials.
10. Loco runs steadily but regulator needs refinement. Reversing works very well. Steam production seems adequate without the safety constantly blowing off.









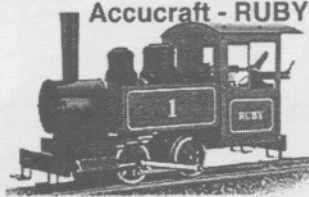
S.T.E.A.M.

For the finest quality in live steam, we offer products from ASTER, FINESCALE LOCOMOTIVE COMPANY, Accucraft, Roundhouse and O.S.

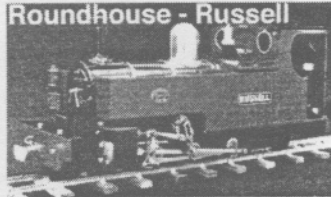
ASTER Mikado



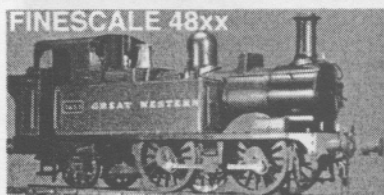
Accucraft - RUBY



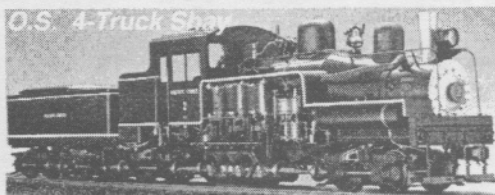
Roundhouse - Russell



FINESCALE 48xx



O.S. 4-Truck Shay



These and other fine Live Steam Locomotives and accessories are available from:

Live Steam Locomotive Information:

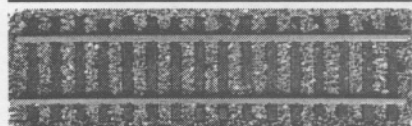
ASTER Latest Catalog & Price List	\$15
O.S. Latest Catalog & Price List	\$5
O.S. 30 minute Video (NTSC ONLY)	\$20

S.T.E.A.M.

Steam Trains, Engines, And Models
PO Box 2235, Antioch, CA 94531-2235, USA
Tel/Fax 925-778-7061, e-mail: steam4me@aol.com

Visit our web site at: www.steam4me.com

SUNSET VALLEY RAILROAD



Tired of that Bright Yellow?

Mainline (shown) or Branchline Tie Strips

Complete Code 250 Rail SYSTEM

- Choice of Rail: Aluminum, **Brass**, **Weathered Nickel-Silver**
- Choice of Tie Styles: Mainline, Narrow Gauge, Dual Gauge
- Turnout s Available in MANY sizes and Styles

SVRR Rail is TWICE as strong as the Competition's Code 250 rail.

Dealer for
ASTER

Dealer for: Aster, Ozark Miniatures, Kadee,
Big Train Backshop Kits, LIVE STEAM

SVR Switchstand Mk. II
Cast Brass - \$20.95 each

SVR Curve Maker RAILBENDER
\$82.00 plus shipping
Specify 250 or 332 Rollers



Catalog & Rail Sample \$2.00 or
Catalog available from the Internet



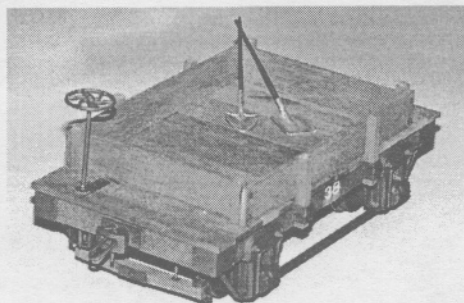
13428 209th SE, Issaquah, WA 98027
Phone/Fax (425) 255-2453 • E-mail: svrrtd@sprynet.com
Internet: www.svrronline.com

SIERRA VALLEY ENTERPRISES

SUPPLIERS OF ACCURATE, CUSTOM BUILT,
READY-TO-RUN 1:20.3 & 7/8" SCALE ROLLING
STOCK & METAL WHEEL SETS FOR GAUGE 1 & GAUGE 0

Munger Mining Series #M6 Sand & Gravel Car

1:20.3
scale

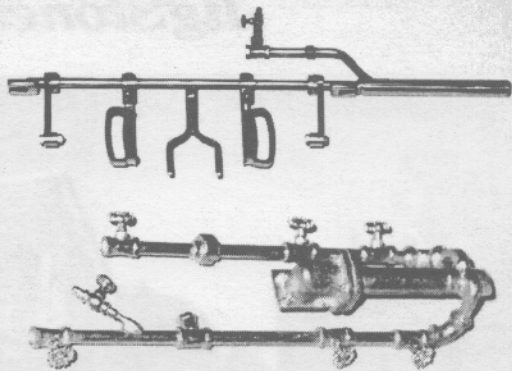


Gauge 1

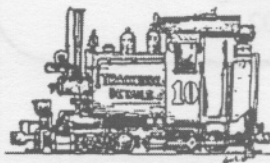
SEND \$2.00 FOR
PRODUCT SPECIFICATION SHEETS
WITH PRICING TO:

SIERRA VALLEY ENTERPRISES
2755 SARATOGA AVENUE, MERCED CA 95340
web site: <http://www.sierravalleyenterprises.com>

Illustrated Catalog \$3.00 plus SSAE



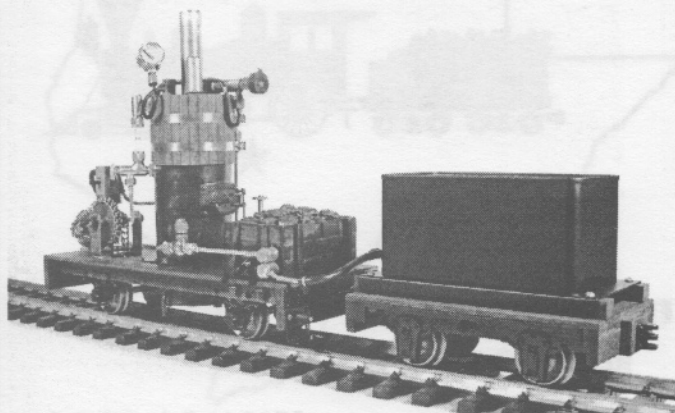
Exciting news! We are working on a super-detailing kit for the Accucraft Shay. These photos show just a few of the items that will be included. Watch this space and the What's New department in this magazine for full details.



TRACKSIDE DETAILS

G-1:20.3 Scale Parts
1331 Avalon Street
San Luis Obispo, CA
93405

New, Improved Coal-Fired Donkey



- **READY TO RUN**
- **EASY TO FIRE, OPERATE AND MAINTAIN**
- **COMPLETE WITH TENDER & AUX WATER PUMP**
- **FOR NEW, LOWER PRICING, CONTACT:**

JOHN THOMSON

4321 CRESTOVER DR.
MESQUITE, TX 75150

PHONE: 972-226-3229

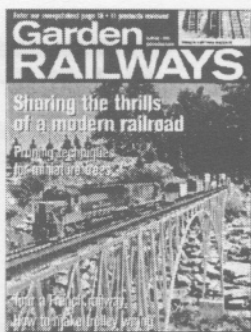
E-MAIL: JTHOMSON@FLASH.NET

Make your own backyard come alive!

The secrets are in *Garden Railways*, the leading magazine for outdoor model railroaders. Every issue is packed with expert tips to help you combine a realistic railway within a beautiful garden.

You'll discover:

- Train operation
- Landscaping tips
- Track and roadbed construction
- The best new locomotives and accessories
- Project plans, product reviews, and more!



Subscribe now !

6 Issues — Just \$27.95
(\$34.00 Canadian/Foreign)

Call 1-800-533-6644

Or order online at
gardenrailways.com

**Garden
RAILWAYS**
MAGAZINE

G31941AD

A31G

HARD TO FIND

small fasteners for the live steam
hobbyist at reasonable prices.

Examples: Socket head cap screws,
4-40 x 3/4 alloy - \$4.75/100, stain-
less \$6.95/100. Hex head machine
screws, 2-56 x 3/8 stainless \$7.25/
100, 2-56 x 1/2 brass \$5.75/100.

Sizes 0-80 thru 10-32 in brass, alloy,
aluminum & stainless. Call, fax or
write for **FREE CATALOG**.

MICRO FASTENERS

24 Cokesbury Rd St. 2
Lebanon, NJ 08833

Phone (800) 892-6917

FAX (908) 236-8721

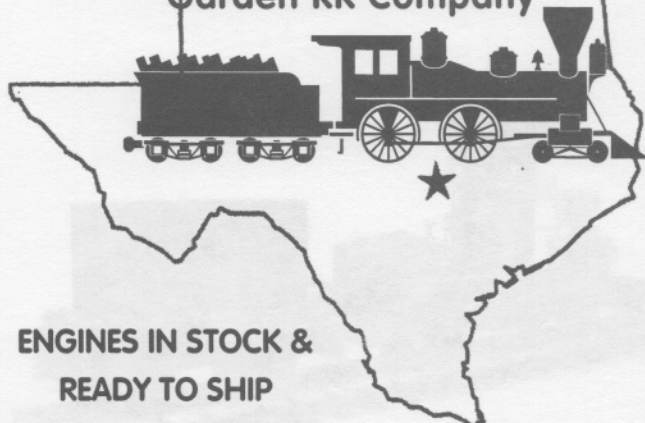
e-mail:

info@microfasteners.com

visit our web site: <http://microfasteners.com>

TEXAS ROUNDHOUSE

Garden RR Company



ENGINES IN STOCK &
READY TO SHIP

send \$4.00 for catalogue

For entire offering, see
www.roundhouse-eng.com

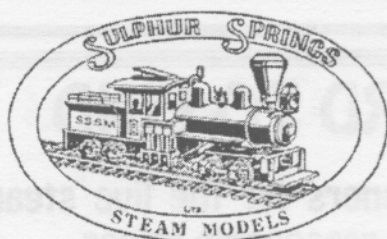
e-mail: TexasRoundhouse@aol.com

Proudly selling and servicing **Roundhouse**
live steam locomotives exclusively

2509 Hollybrook Drive
Seabrook, Texas 77586

Ph 281-474-9579

Fx 281-474-5703



SULPHUR SPRINGS STEAM MODELS, LLC

ACCUCRAFT, ARGYLE, ASTER, CHEDDAR,
D.J. B. ENGINEERING, GRAHAM ENGINEERING,
(NEW) HISTORIC STEAM MODELS, MAXITRAK,
RISHON LOCOMOTIVES, ROUNDHOUSE, STUART MODELS

STEAM STUFF CATALOG #6 \$5.00

We've got those *GOTTAHAVIT* items for scratchbuilders, kitbashers, and everyone who owns a small-scale steam loco. BA fasteners, taps, **dies**, valves, pressure gauges, wick packing, gas filler adapters, fiber and copper washers, **Sievert** propane silver soldering outfits, **silver solder supplies**, boiler insulation, check valves, castings, gaskets, and gauges of all kinds. Taig and Sherline lathes and mills, loco wheels, **test stands**, Steam in the Garden Back Issues, thread locking compound, syphons, **water injection valves**, screws, **nuts**, washers, safety valves, brass, bronze, steel, cast iron ... and much much more... in stock.

Check out our web-site at

www.sssmodels.com

or contact us at 636-272-6632 or at

sales@sssmodels.com

Sulphur Springs Steam Models

PO BOX 178

St. Peters, Mo 63376

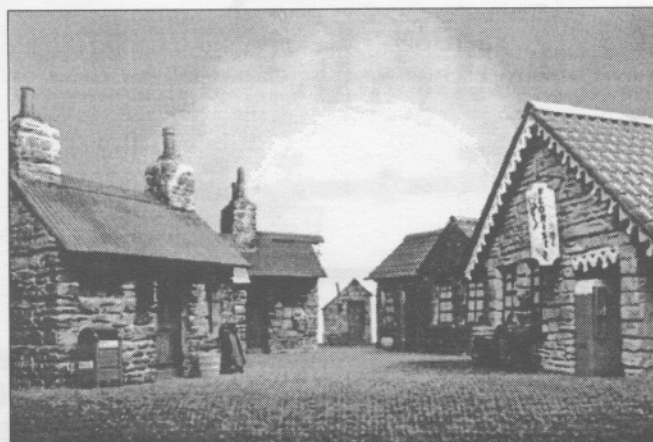
hours 4-8PM Monday thru Friday

most Saturdays 9 AM to 4 PM

central standard time

"The Kit That Doesn't Quit"

JigStones



Silicon rubber molds for building garden railway structures. Catalog & color photos, send \$3.00 (refundable) Sticks & Stones, PO Box 211, Elbridge NY 13060 (315) 689-3402

CHEDDAR MODELS
CATALOG \$6.00

STUART MODELS
CATALOG
\$7.50

MAXITRAK
CATALOG \$6.00

ASTER
CATALOG
\$15.00

ROUNDHOUSE
CATALOG \$6.00

➔ NEW ITEMS ➔

MZNC-20 NICHROME MESH
\$1.00 SQ IN

FVG-RH Roundhouse classic
series goodall valve \$16.50

FVG-C16 C16 goodall valve
\$16.50

Rishon Locomotives

Live Steam Motor Coach

Orders now being taken for the
Live Steam Motor Coach

Coffee Pot

Basic features:

Gauge 45mm/ 32mm

Scale 1/20.3

Fuel Butane

Fittings Pressure Gauge, Goodall type valve,
Safety/filler plug, Throttle,
Electronic water gauge

Reversing gear Slip-eccentric

Lubricator Dead leg

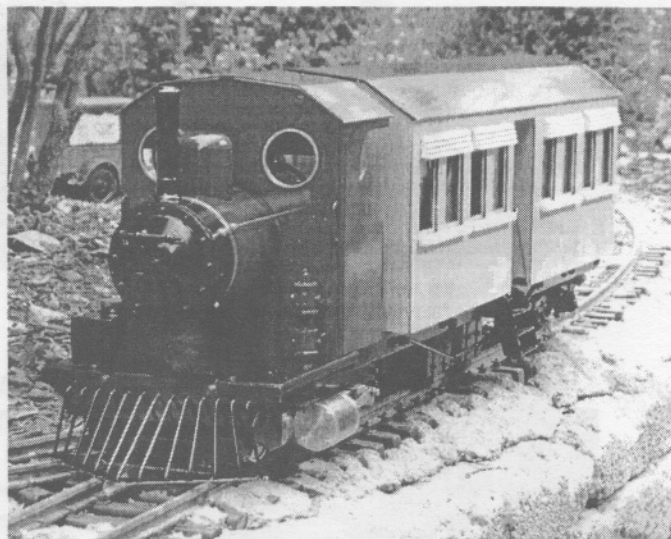
Safety blow-off pressure .. 40 psi

Radio optional

AVAILABLE FROM:

Sulphur Springs Steam Models, PO Box 178, St. Peters, MO 63376-3401

Tel/Fax 636-272-6632 • e-mail: sales@sssmodels.com



Rishon Locomotives

8 Ewandale Cl.

Clunes NSW

Australia 2480

Tel: 61266291115

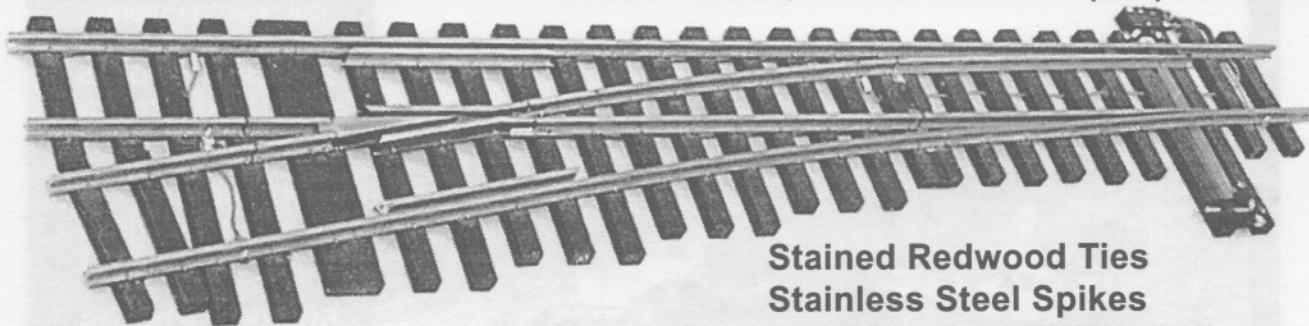
e-mail: rishonloco@optusnet.com.au

TURNOUTS

CODE 332 RAIL

For info, send LSASE to:

the PARKER Co, P.O. Box 1546 • Camarillo, CA 93011 • FAX: (805) 987-6432



WIDE RADIUS TURNOUTS

100% Compatible With LGB & ARISTO Track

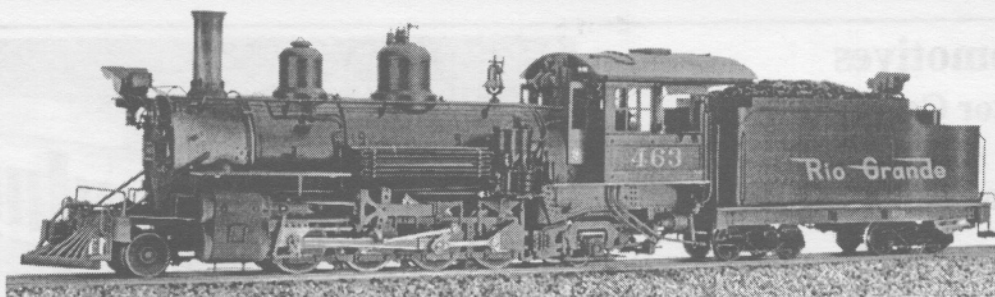
Available Electric or Non Electric



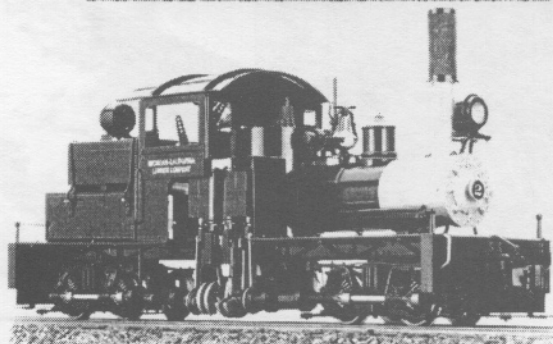
We accept Mastercard & VISA

Stained Redwood Ties
Stainless Steel Spikes
Brass or Nickle Silver Rail
Tenmille or Del-Aire throw Included

Visit our Website at: www.coparker.com
or e-mail us at: coparker@msn.com



We are one of only a handful of Accucraft dealers authorized to sell the magnificent new K-27 in live steam. Call now to reserve yours!



We have the popular and smooth running Accucraft Mich-Cal Shay. (see the review of this loco in SitG N° 68)

CROSS CREEK ENGINEERING

P.O. BOX 369

SPENCER, OH 44275

PHONE 1-800-664-3226

e-mail: crosscreektrains@juno.com

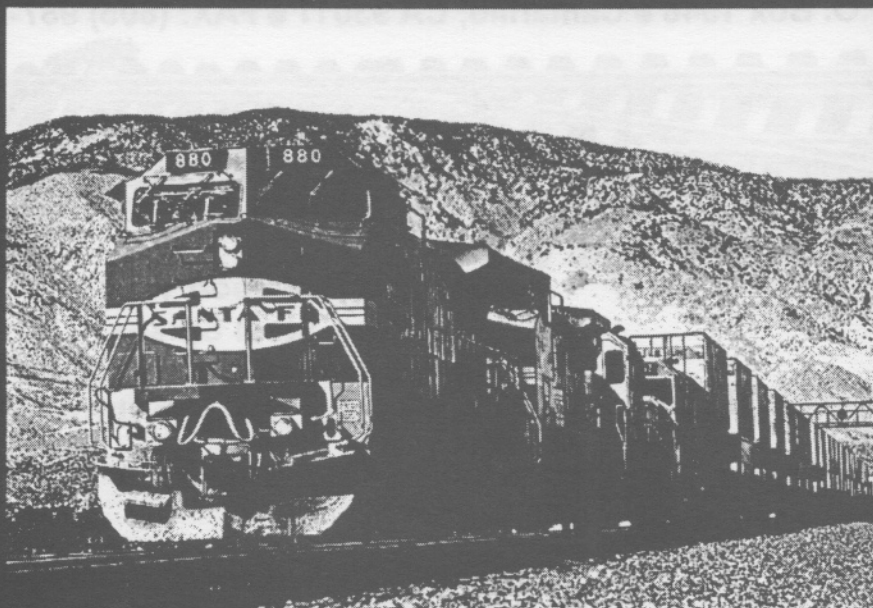


- *ASTER LOCOMOTIVES*
- HARTFORD CAR KITS
- DELTON CARS
- ACCUCRAFT DEALER
- KADEE COUPLERS & GAUGES
- DEL-AIRE PRODUCTS
- SPLIT JAW RAIL CLAMPS
- 70%/30% Butane/Propane, 15.9 oz. (800ML), \$5.50 each in boxes of 12. Twice the gas per can - a 27% savings!



TrainWeb.com

Trains on the web? TrainWeb.com!



Free web hosting for rail enthusiasts & non-profit rail organizations!

**Rail Travel,
Model Railroading,
Railfanning
& Rail Industry**

RAILsearch
most comprehensive
rail search engine!

360x360 Photos
virtual tours of many
trains and stations!

RAILcams
live video coverage of
action along the rails!

50,000+ Photos
of trains & train travel!

Rail Travelogues
of many rail travels
from several authors!

Also featuring schedules,
fares, forums & live chat!

SWAP SHOP

Wanted: Aster BR 86. Contact Larry Stone (919) 776-2620 or e-mail at larrymstone@aol.com (69)

For Sale: Steam Launch SeaHorse. A Beckman Boatshop Compromise 25, VFT 30 Boiler, Compound Engine 3" by 5" with 4" stroke. **PRICE REDUCED TO \$24,4500.00** Dave Young, 3308 Bruce Hall Road, Santa Fe, Texas 77510, Telephone 409-925-3312, e-mail K8DY@arrl.net (69)

For Sale: Back issues of Live Steam, Modeltec, Garden Railways, Outdoor Rillroader and over 200 other rail magazine titles and used rail books. \$1.52 stamped LSAE for list. Paul Gibson, 161 Gilmore Rd., Wrentham MA 02093-1227 ● www.railpub.com (70)

Swap Shop listings are offered at no charge as space permits. No dealers and no phone-in ads, please! Send your listings to SitG, P0 Box 335, Newark Valley NY 13811, or fax to 253-323-2125 (24 hours), or e-mail to <docsteam@steaminthegarden.com>. Ads must contain sellers name, plus address and/or phone number. Ads will be run one time only unless previous arrangements are made.

HELP WANTED!

We're running low on articles, steamup reports, loco and product reviews, photos, etc. So...we're turning to our readers for assistance. You have always been generous in your response to our requests for publishable materials with a focus on gauge 1 live steamers.

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.

SitG Back Issues

Currently Available

Prices shown include postage and handling for North American addresses — all others please add US\$1.00 per copy for overseas surface mail.

SAVE! When you order five or more back issues, deduct \$1.00 per copy from the price shown here.

#20 - #22 \$5.50 ea.

#23 thru #30 \$5.75 ea.

#31 thru #52 \$6.75 ea.

#54 thru current issue \$6.75 ea.

Sold out issues are available as reprints from Sulphur Springs Steam Models. See their ad in this issue for contact information.

Send a list of issues requested with your check or money order to:

Steam in the Garden Magazine

PO Box 335

Newark Valley, NY 13811

Credit cards are cheerfully accepted. Orders may be phoned to us at 607-642-8119 or faxed to 253-323-2125.

You can also contact us via e-mail at: <docsteam@steaminthegarden.com>



For reprints of sold out back issues, contact:

Sulphur Springs Steam Models, Ltd.

PO Box 178

St. Peters, MO 63376-3401

phone/fax: 636-272-6632

e-mail: <sales@sssmodels.com>

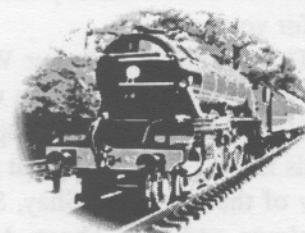
the site and source exclusively Aster

roster • references • photos • prices • awesome array of links

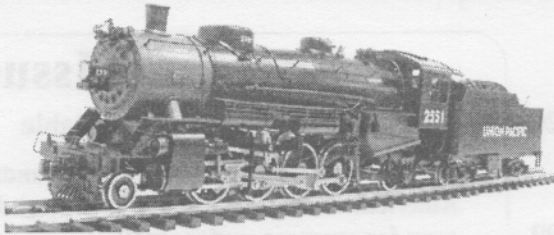


JIM PITTS
201 GRANDVIEW CIRCLE
TRAVELERS REST, SC 29690
864 . 834 . 3954
864 . 834 . 7625 FAX

e-mail: info@SouthernSteamTrains.com



www.SouthernSteamTrains.com



NORTH JERSEY GAUGE ONE CO.

8 Spring Valley Rd., Park Ridge, NJ 07656

dealer for
ASTER HOBBY INC.

•
ACCUCRAFT TRAINS
museum quality
live steam trains

201-391-1493

Bob Moser



ASTER HOBBY

LIVE STEAM AND ELECTRIC
GAUGE 1 LOCOMOTIVES

also larger scale & gauge live steam locomotives

e-mail: bobsteamtoys@yahoo.com

End of the Line

Rain, rain and more rain! That's pretty much the litany you would be chanting if you lived in the northeast this year. Three consecutive steamups in our area have been rained out so far, and it's only early June as I write this. Sigh....

Faithful Assistant and I were delighted to receive the Denver Project article by David Hamilton. You may recall that Jim Reyer wrote about the development of this project loco back in issue No 63, and it's great to see that at least one of our readers, with no machining skills at the outset, has jumped in and built one. We will continue with David's Denver in upcoming issues, so read about it and then head for the workshop and build one for yourself!

This should go into our What's New department, but we ran out of space and had to leave that dept. out of this issue. Noting the great popularity of the Accucraft Shay, Sonny Wizelman and Pete Thorp, Master Craftsmen both, decided to design

and market not just one, but two detailing packages for this fine little steamer. The information we have received indicates that one package will be for a "stock" Mich-Cal Shay, and the other will have more of a backwoods flavor. Pete Thorp of Trackside Details tells us that he hopes to have both packages ready for unveiling at the National Summer Steamup in California in July. I'm sure that these detailing kits will find homes on other Shays and locos of all kinds!

I hope our readers will notice the added color content in this issue. You can thank our "in color" advertisers for this, and we hope that we will be able to bring you even more color in future issues. How about dropping a note or making a call to our advertisers to let them know how much you appreciate their support of our hobby?

Faithful Assistant and I plan to be at the Shay Days event in Michigan in July...hope to see you there!

Happy steaming,

Ron

ADVERTISERS INDEX

7+ RAILROADER	8
ACCUCRAFT TRAINS	26, 27
Accu-Finish	52
Argyle Locomotive Works	39
Aster Hobby Co., Inc	51
Brandbright	40
C & O C Ry.	39
Cross Creek Engineering	48
Doubleheader Productions	40
FH&PB Railroad Supply	4
Finescale Railroader	39
Garden Railways Magazine	45
Glendo Corporation	52
Hyde-Out-Mountain Live Steam	2
John Thomson Coal Fired Locos	45
Llagas Creek	8
Micro Fasteners	45
Muddy River Railways	7
National Summer Steamup	7
North Jersey Gauge One Co	50
the Parker Co	47
Quisenberry Station	8
Remote Control Systems	4
Rishon Locomotives	47
Roundhouse Engineering Co. Ltd.	28
Sierra Valley Enterprises	44
SitG Online	36
Southern Steam Trains	49
Steam in the Garden Back Issues	49
S.T.E.A.M.	44
Sticks & Stones	46
Sulphur Springs Steam Models	46
Sunset Valley Railroad	44
Texas Roundhouse	46
Track 1	36
Trackside Details	45
TrainWeb.com	48

Please tell our advertisers,
"I saw it in SitG!"

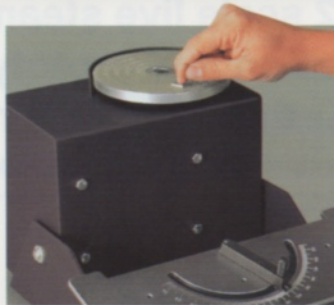


Accu-Finish® gives a sharper, stronger cutting edge that lasts longer and makes better parts

- Sharpen tools to **BETTER** than **NEW**. Accu-Finish gives an extremely sharp, fine edge that reduces cutting forces and works more efficiently.
- **IMPROVE** tool performance. Making them less likely to chatter, a big advantage when boring.
- **SAVE** hundreds of **DOLLARS** by doubling, if not tripling, the life of your tools.

Visit www.glendo.com and check out all the fine tools we manufacture!

Ask about our 30-day
FREE Trial



Lapping

Accu-Finish machines pivot to allow horizontal lapping. Renew carbide inserts and other tools by hand-lapping on the low-speed diamond wheel... it's that safe!



Accu-Finish will pivot up to a horizontal position, **WITHOUT** disturbing the table set-up, for fast and easy wheel changes OR quick hand-lapping.



DIAMOND WHEEL

Now, **YOU** can make special tools like a toolroom expert. Accu-Finish works on HSS, carbide, coated carbide, cermets and many types of ceramic and PCD/CBN.

Choose the exact tool geometry and set up in just 30-seconds.

Not only is Accu-Finish the most **VERSATILE** and **ADVANCED** sharpening system, it's the **SAFEST**, thanks to its unique low speed spindle technology that grinds **WITHOUT** heat.

Call for Free Catalog

1-800-835-3519

Source # 6109

Phone: 620-343-1084

FAX: 620-343-9640

glendo@glendo.com

Glendo Corporation
900 Overlander Road
Emporia, KS 66801



The calibrated table glides parallel to the sharpening wheel. This allows you to securely hold the tool against the protractor and slide the table back and forth, limiting the amount of tool material removed.

The table can be locked in position if desired.



This optional heavy steel cabinet turns your Accu-Finish Series II into an organized sharpening center.

Accu-Finish®
Series II

For the creative machinist.



Living Steam Railways for SM32/SM45 & 'G' scale

'Forney'

The latest addition to our 'Classic Series' of locomotives is a detailed model of the well known American 'Forney' type locomotive. Available with full radio control and capable of negotiating curves down to 2' (600mm) radius (on 45mm gauge track), this powerful model is the perfect motive power for your garden railroad.

Available for either 32mm or 45mm gauge



Check out the full range of American, British and European outline locomotives and home builder parts in the latest ROUNDHOUSE colour catalogue, available from the following dealers

Quisenberry Station Tel: 703-799-9643

S.T.E.A.M. Phone/Fax 925-778-7061

Double Header Productions. Phone/Fax: 972-247-1208

Sunset Valley Railroad Phone/Fax (425)255-2453

Texas Roundhouse Tel: 281-474-5654 Fax: 281-474-5703

The Train Depot Tel: 407-647-2244 Fax: 407-647-2120

Sulphur Springs Steam Models LLC Phone/Fax: 636-272-6632

Ridge Road Station Inc. Phone Toll Free 1-877-477-2253

CANADA

Miniature Power Products Tel: 519 539-9981 Fax: 519 539-8303

Meg Steam Inc. e-mail: meg_steam@intertrek.com

Roundhouse Engineering Co. Ltd. Units 6-7, Churchill Business Park, Churchill Road, Wheatley, Doncaster. ENGLAND. DN1 2TF
Tel: 011 44 1302 328035 - Fax: 011 44 1302 761312 - e-mail sales@roundhouse-eng.com

www.roundhouse-eng.com



Both of the photos above were taken at one of Larry Smith's steamups in Parrish, Florida. The interesting 4-2-0 loco on the left was scratchbuilt by Hank Povee, a Florida resident. Hank's workmanship is excellent, and the engine, though very tiny, ran well. Many of you will recognize Master Craftsman Norm Saley of Orlando, Florida in the photo on the right. The engine was scratchbuilt by Norm, and, as is the case with all of his locos, it runs as good as it looks.

photos by Marie Brown