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# STEAM IN THE GARDEN



*Inside.....*

**Loco Review - Aster's Awesome Great Northern S-2**

**Diamondhead 2008 Steamup Report**

**Steam Powered Weinermobile**

**Book Review - Steam Trains in Your Garden**

**...and lots more!**





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# STEAM IN THE GARDEN

Vol. 18, N<sup>o</sup> 2  
Issue N<sup>o</sup> 98

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

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### FRONT COVER:

Aster's magnificent Great Northern S-2, in Glacier Green livery!

*Photo by Hans Huwyler*

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Ron Brown

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*Marie Brown*

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# CALENDAR OF EVENTS

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

Check the Calendar of Events on our web site (<http://steamup.info>) for regional and club events.

**Southern Highlands, New South Wales, Australia Steam-up 24 & 25 May 2008.** Rails in the Garden Inc. invite you to a weekend of steam, camaraderie and more. With 45mm and 32 mm gauge live steam layouts suitable for main line, narrow gauge and vintage steamers to run on. The weekend will feature flea market tables, trade stands and the option of a Saturday Night Dinner. Come and joins us in Bowral, NSW Australia. For comfort and insurance reasons, this gathering will not be open to the public - numbers will be limited and you must register to attend. For more details see: [www.shsteamup.com](http://www.shsteamup.com)

**May 24 & 25, 2008 Pennsylvania Live Steamers Spring Meet,** Rte. 29, 1 mile north of Rte. 113, Rahns, PA. Permanent Gauge 1 track and Gauge 0/Gauge 1 portable tracks in operation. Night running with lights. Food available on site with lodging nearby. For information and directions contact Harry Quirk, PO Box 215, Springtown PA 18081 - phone 610-346-8073 or Mike Moore at e-mail: [trainman722@verizon.net](mailto:trainman722@verizon.net)

**August 30 & 31, 2008 - Pennsylvania Live Steamers Labor Day Weekend Steamup,** Rte. 29, 1 mile north of Rte. 113, Rahns, PA. Permanent Gauge 1 track and Gauge 0/Gauge 1 portable tracks in operation. Night running with lights. Food available on site with lodging nearby. For information and directions contact Harry Quirk, PO Box 215, Springtown PA 18081 - phone 610-346-8073 or Mike Moore e-mail: [trainman722@verizon.net](mailto:trainman722@verizon.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.)*

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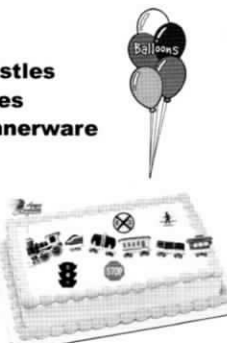
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*Letters from readers are welcomed and encouraged. Offer advice, encouragement, suggestions or constructive criticism. Tell us about your current project (and don't forget the photos!) or just share live steam experiences. But please keep your letters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

\*\*\*\*\*

Florida, USA  
via e-mail

Hi Ron,

My congratulations to Tom Bowdler for winning this year's version of the Regner locomotive bashing contest. Once again, Tom has demonstrated his skill at creating a model (and the "history" to go along with it) that is just about unrecognizable considering its humble origins. I met Tom at last year's Diamondhead, when we both brought our own very different, but curiously similar, versions of a Regner Willi bash. When I look back at the photos of Tom's model (and remember the excellence of his craftsmanship from having seen it in person), I consider myself very, very lucky that my "Betty" won!

Judy and I ran into Gail and Bob Whigham at Diamondhead 2007, and spent many enjoyable hours meeting and visiting with them--I didn't realize I had been such a good "salesman" for Ken Johnson's Regner products until they showed up (grinning from ear to ear as I remember) with both a Willi and a Konrad. I probably don't have to say how tickled I am to see Gail built her Konrad into a prize winner!

I have admired Eric's work for some time through the Large-Sacale.com website, and since I'm a backwoods-type modeler, his bash is my personal favorite. Bravo to all that entered this year's contest and especially those that won. What are "we" bashing next year???

Jerry Sheehan

\*\*\*\*\*

New Jersey, USA  
via e-mail

Ron,

Just a note to repeat how happy I am with my Catatonk Climax locomotive. I ran it on a large track this morning, pulling an assorted consist. It ran like a Rolex and I am very happy with its performance. I am still on the learning curve but getting better.

I understand Mike Chaney will be retiring after completing this run of Climax locomotives. If he ever decides to make another run of narrow gauge locomotives, I would certainly be interested.

Be well and Happy Railroading,

Nick Peluso Jr.

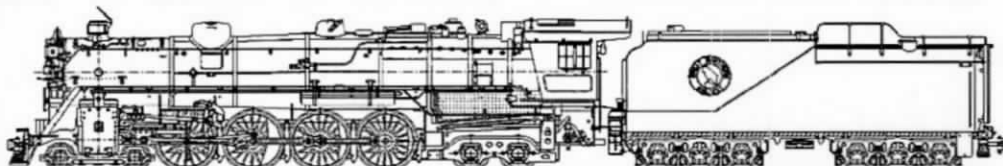


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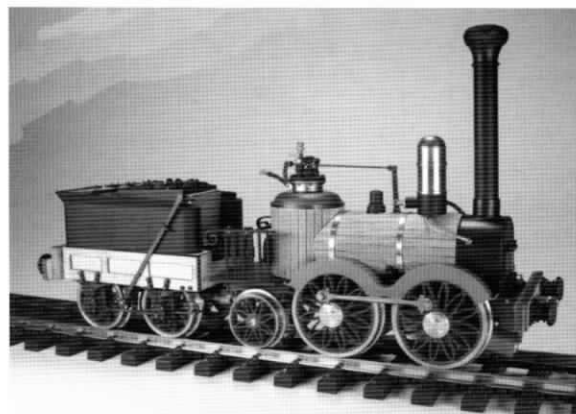
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# WHAT'S NEW?

**Just in from The Train Dept.....NEWS FROM REGNER OF GERMANY** - 30 Year Jubilee Celebration, 11 to 13 July 2008 : Come and help us celebrate our 30th Anniversary of manufacturing fine Live Steam Locomotives , Live Steam Boat Engines and Narrow Gauge Electric Trains. Celebration will be held 11 to 13 July 2008 at our Factory in Aurach Germany. Activities will feature various contests with some neat prizes. We will have several tracks open for railroad steamup operations, and a 7 meter water basin for those who would like to bring their steamboats. Steam oil, lube oil and water will be provided. We will have an open house of our factory on Saturday 12 July with staff on hand to answer your questions, and provide an opportunity to see how we go about producing our products.

**New Model for 2008 - Saxonia:** 30 Year Anniversary Model (2008). A special Anniversary deserves a special model. For our 30 Year Jubilee we wanted a locomotive which would stand out from the rest of your models, and capture the spotlight. And so we offer a model of the first German steam locomotive which became operational in the year 1838. We offer our model in 3 variations: Premium, which will have valve controlled cylinders as prototype, Standard, with 2 cylinder oscillating motor and gear transmission, and Electric, with Maxon electric motor. All variations will be in 1:32 scale for 45mm track gauge and of brass construction. A consist of appropriate cars is under design development and will be available in Fall 2008.



*Saxonia by Regner*

For additional information and prices, please contact our US Representative: Train Department of BAQS - Website: [www.traindept.com](http://www.traindept.com) - E-mail: [team-regner@traindept.com](mailto:team-regner@traindept.com) - Phone/FAX: 757-855-6364

**Accucraft** is proud to announce the limited production of the **DSP&P 2-8-0 in 1:20.3 scale** and 45mm gauge in live steam. The model is based on our popular D&RGW C-16 design. The chassis is constructed from brass and stainless steel. All valve gear, drive rods, and wheels are machined from stainless steel. Like other fine products from Accucraft, these models will be meticulously handcrafted.

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Scale: 1:20.3 Scale, 45mm Gauge - Minimum Radius: 1.2 M (48 in.)  
 Length: 746 mm (30 in.) - Width: 18 mm (4.9 in.) - Height: 82 mm (7.5 in.)  
 Driver Wheels: D 45mm (1.8 in.) - Power: Butane  
 Estimated Delivery: 2008 - Limited Production - MSRP: \$2,400.00  
 Order Information: DSP&P 2-8-0 #191, Black "As it is today" -  
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Another new product from **Accucraft** is their **REA 54' Reefer in 1:32 scale and 45mm gauge**. Like other fine products from Accucraft, these models will be meticulously handcrafted from brass with superior details. Features brass wheels, full underbody details, operating doors and operating ice hatches. See your dealer or contact Accucraft direct...

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 Estimated Delivery : Spring 2008  
 Limited Production - MSRP: \$ 315.00

## Order Information:

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- \_\_\_ AC92-010B REA 54 Foot Reefer, Green #6115
- \_\_\_ AC92-010C REA 54 Foot Reefer, Green #6125
- \_\_\_ AC92-010D REA 54 Foot Reefer, Green #6135
- \_\_\_ AC92-011A REA 54 Foot Reefer, Green & Silver #6100
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- \_\_\_ AC92-012A REA 54 Foot Reefer, Great Northern #2203
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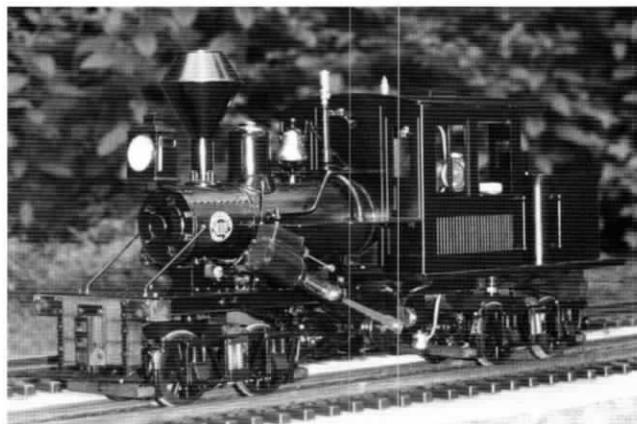
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## *Aster's Great Northern S-2*

by Ross Schlabach

photos by Hans Huwyler

Following on the heels of the very successful Aster NKP Berkshire project, Aster's reproduction of the Great Northern S-2 for the North American market takes Aster quality to the next level. This is Aster's first Vanderbilt tender-equipped model, and their efforts have resulted in a unique locomotive that will be released late in April. Both Glacier Park (green) and black versions of the locomotive will be available with details, paint and numbering specific to certain engines. The bulk of the models – both kits and fac-

the locomotive portion is longer. But the Vanderbilt tender is shorter than the box tender on the Berk. The large drivers give the S-2 a taller and leaner look, and the drivers are fully equalized. Originally, they were to be solid gray iron castings. However, the prototype and production models feature "tires" made of iron, pressed onto forged brass center sections. It has a main benefit of offering better traction than the stainless steel tires fitted on previous Aster models. This shows up in improved resistance to slippage – despite



*Aster's latest triumph, the Great Northern S-2, rumbles along a track with a passenger consist.*

tory builds – will be in the Glacier Park scheme which includes a green boiler and cylinder jackets, a graphite (silver) smokebox, and an oxide red cab roof. There is a separate black version that is only being offered by pre-reservations received before the end of February 2008. The black version will have the same graphite smokebox but the cab roof will be black as is the remainder of that model.

In order not to bore the reader, I won't replay all the vital statistics of the Great Northern S-2 other than to say it is almost identical in size to the Berkshire. The S-2 has an extra pilot axle and larger drivers, so

the larger driver diameter. The appearance and scale of the locomotive looks great in front of a string of heavyweight coaches, but it is equally at home on the point of a freight drag too.

While most of the improvements and changes are "under the hood", there are a couple of things live steamers may notice right off. This model is equipped with an operating headlight -- an LED bulb powered by a button battery for long life and simple operation. Also new to this model are a couple of changes to the gauge glass system. The glass and its supporting pipe system have been enlarged to improve the ac-





*The S2's Vanderbilt tender is a work of art.*

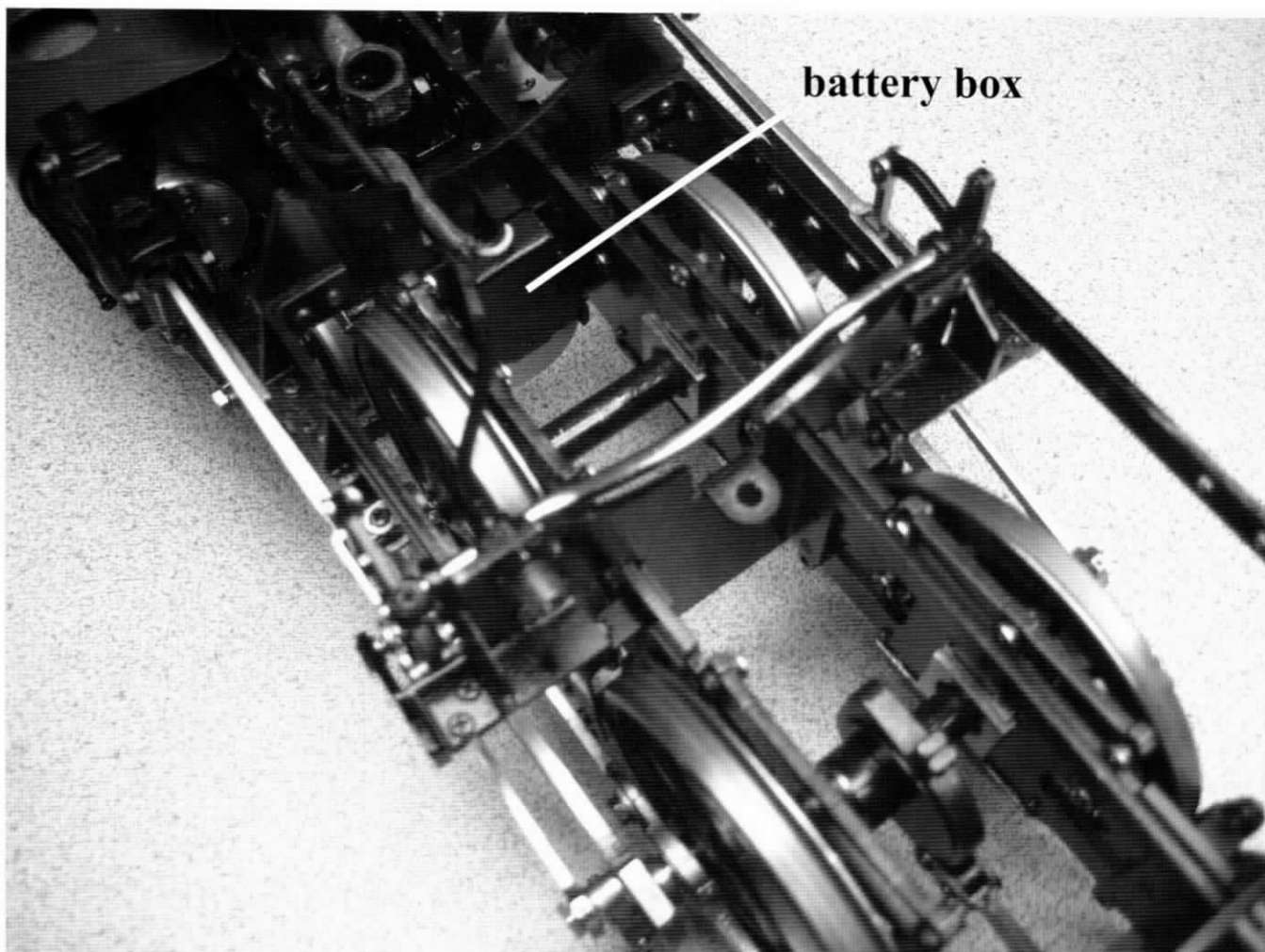
curacy of water level readings; and the gauge glass is now fitted with a blow-down to ease the elimination of pesky bubbles. This blow-down also doubles as the blow-down for the entire boiler.

Other not so visible changes include an improved C-type boiler with 3 flue tubes and simplified drain cock system. Not only is the drain cock system simplified from a construction standpoint, but it is very easy on steam pressure. And for those days when steam exhaust is most visible, the drain cock system gives off a very prototypical steam cloud – firing in sequence with the pistons left and right, front and back. The axle pump has been modified too. The pump stroke has been lengthened to 10mm from the 6mm stroke used on the Berkshire. This is to insure adequate water supply even as the S-2s larger drivers need fewer revolutions to cover each mile.

Like the Berkshire, the S-2 cab was designed with R/C installations in mind. There is a false backhead backed by insulation to provide some protection against the heat. Both the blower and the regulator

(throttle) protrude far enough back for manual operation; but servo arms can easily be attached to allow for R/C operation. The reverser is positioned in the engineer's side of the cab and looks like a miniature reproduction of a full-sized quadrant type with a ratchet detent system to hold the reverser in any position. It should be a simple matter to remove the mechanism and replace it with a servo to actuate the reverser rod directly – if desired. The cab controls also include a Berkshire-like whistle valve and the whistle body is mounted under the firebox shroud. The drain cock mechanism is not located inside the cab but below it. Under the right hand side of the cab, there is an actuator to control the operation of the very effective drain cocks, and the axle pump bypass wheel is just below the drain cock actuator.

The Vanderbilt tender is a work of art that hides some other handy modifications. As in the Berkshire, the S-2 tender has a removable alcohol tank and an easily operated, water tank drain. The design of the tender is such that there is plenty of room for R/C



**battery box**

*S-2 battery holder (see text).*

gear & batteries, and there is a hole below the footplate for servo leads to pass. Some may think that the clean lines of the tender means that something is missing, but not so. This engine had a fully-welded tender, so there are no rivets by design.

Another special treat on this tender will be the inclusion of real wood planking on the rear deck – above the water tank. The prototype models displayed at Diamondhead did not have this but we've been assured that the finished models will. For those of you who are familiar with the Aster Big Boy, the wood decking on the S-2 tender will be very similar to the wood decking on the Big Boy model. This detail should add a dramatic visual impact to the model.

Firing up the S-2 is simple – and quick. "Oiling around" is accompanied by filling the displacement lubricator on the left running board, and adding alcohol/water. Once the boiler is half full and the wicks have had enough time to get saturated, the burners can be easily lit using the fire door in the cab. With the external blower going, the S-2 builds pressure quickly. At 2 bars, the blower can be removed and the engine transitioned to internal steam blower operation; and 4 bars pressure is reached in a total of less than 5 minutes! (Average running time on one alcohol fill is an impressive 50-60 minutes.) Select your direction on

the Johnson bar, open the drain cocks, and ease the throttle open. You are rewarded with a nice sequence of steam exhaust as the drain cocks clear the condensate and signal the alternating blasts of high pressure steam. Surprisingly, this locomotive makes so much steam that the drain cocks can be left open during mainline operation with a solid string of cars, and the engine can still pop-off! The engine tracks extremely well with no noticeable "waddle" to its movement. In operation, I found the S-2 every bit the equal of the famous Aster Daylight. Traction is excellent and the S-2 provides drawbar pull unexpected on such a large driven model.

For the majority of folks who will be assembling their S-2s from kits, the instructions will be in the classic Aster format with isometric drawings and separate, detailed, step-by-step directions.

With the Great Northern S-2, Aster and its North American importer, Hans Huwyler, have developed an excellent model with new features and even better operation than the fine Aster models of the past. This is a model that Aster customers will be able to build and run proudly for many years to come.





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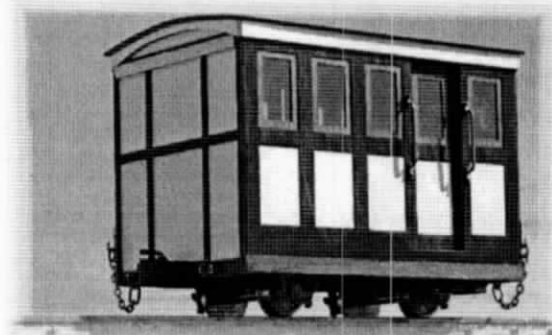
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# *New England G1MRA*

by Jim Curry

Announcing the formation of the Gauge 1 Model Railway Association (G1MRA) New England Group.

For those of you SitG subscribers not familiar with the Gauge 1 Model Railway Association (G1MRA for short) let me introduce us. G1MRA is an international organization of folks who run trains on 45mm track. This includes electric, windup, battery, and live steam powered trains in any scale that will run on the familiar LGB gauge track whether it be code 320, 250, 215, etc. Based in England, the organization has a worldwide membership over 2,000 strong. There are approximately 200 members in North America scattered across most of the 50 states and provinces. I am the USA co-coordinator, David



*At Don Jackson's steamup held in October, 2007, G1MRA members in attendance decided to form the New England Group. Members from left, James Chadbourne, MA; John Taylor, New Brunswick; Jim Curry, ME; Lance Elwell, CT; Don Jackson, ME; Richard Jenkins, MA; Larry Goodhue, NH; Scott Brauer, MA. Missing is Keith Taylor, ME.*





*Scott Brauer keeps an eye on Dad.*

Morgan-Kirby administers to Canadian members. GIMRA publishes a wonderful quarterly Newsletter, several books and CD's on modeling and Gauge 1 engine construction, and offers an assortment of clothes, etc. for members. Additionally, there is a Yahoo forum for members only which offers lively, informative discussions. GIMRA has a well developed website, <http://www.gaugeone.org>. In various regions members living in proximity to each other will form Local Groups. There are at least 3 here in North America that I'm familiar with; 2 on the west coast and another based in Ontario.

Over the past 10 years there has been a coalescing of fellow gauge 1 live steam locomotive engineers in the New England area. Meeting monthly from April (or May, depending on how long winter holds out) to November, friends have gathered at layouts in Maine, New Hampshire and Massachusetts to spend a day or two running trains together. We've come to realize there is enough GIMRA "mass" to establish ourselves as a local GIMRA group. All current members of GIMRA in New England are automatically members of the group. Nothing to do, no dues to pay and there are no obligations. We do publish a calendar of steamups early in the new year that will be posted on our webpage, <http://www.gaugeone.org/Local%20groups.htm>, and in the Newsletter. Steamups are well attended with hosts providing light lunches and refreshments. The word has gotten out about our gatherings and we've had visitors from across the country, Canada and England as well. Many a newbie has cut his oil rag in the company of experienced hands and there are usually a few teenage boys running an engine as well. Don Jackson serves in the only position we have, secretary-for-life. So for the lone steam wolf in our region or the traveling train guy don't hesitate to contact Don, he can be reached at [scotia77@verizon.net](mailto:scotia77@verizon.net) for further details about our schedule.

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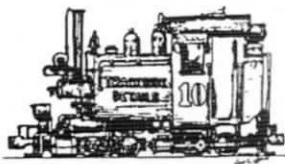
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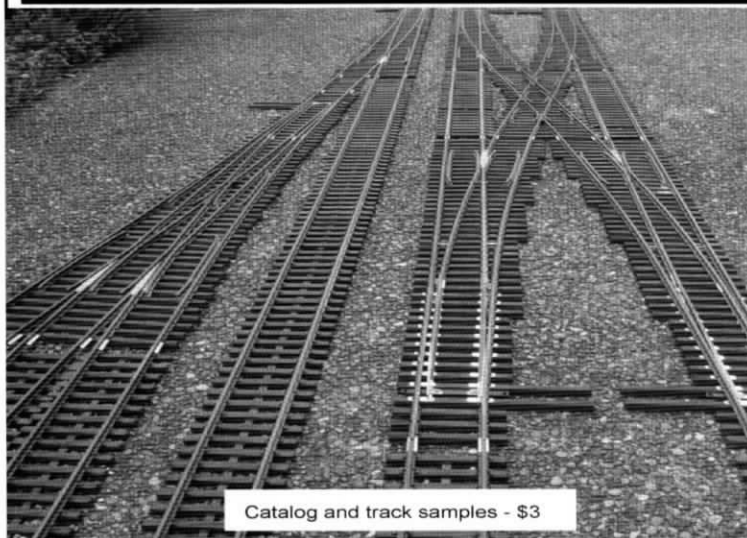
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# Steam Trains...In Your Garden

reviewed by Jeff Young

Title: "Steam Trains... In Your Garden"

Author: Brian Wilson

Publisher: Australian Model Engineering

Price: AU\$59.95 + shipping (about US\$75 at time of writing)

This has got to be the sleeper book of all time about small scale live steam locomotive construction. I stumbled across it thanks to the 16 mm scale narrow gauge Yahoo discussion group. Published in late 2007 by Australian Model Engineering, it is a full color, large format (8" by 12"), 190 page book on building a live steam locomotive called "Eric". "Eric" is a delightful freelance 16 mm scale butane fired 0-4-0 locomotive for either gauge 1 or gauge 0 track. It is a true blow-by-blow construction book, quite reminiscent of Kozo Hiraoka's works on constructing large scale live steamers. It is written by Brian Wilson, who has produced serialized live steam construction articles for Australian Model Engineering magazine.

Chapters cover chassis, boiler and body construction, along with making all of the boiler fittings. The book even deals with painting lining and operation. It is very comprehensive, with such things as full size drawings for bending the steam piping through the lubricator. Also, there are chapters on a coal-fired version, alternative variations based on other prototypes, and if you can believe it, a chapter for building accompanying goods and passenger rolling stock (with plans).

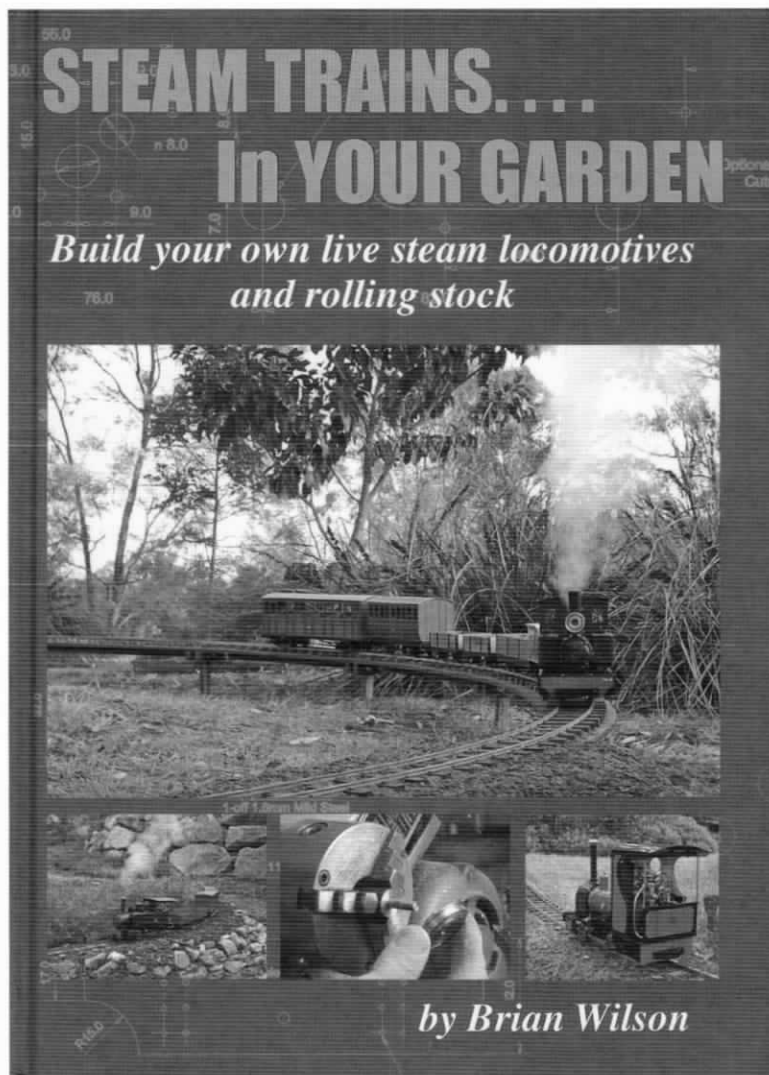
All the drawings have been done in CAD, many with

full color rendering. Suffice to say, it is very eye catching. Rare for such books, there are a number of exploded views, which will be of great use when it comes time to assemble the various bits. As well as the drawings, it is loaded with color photographs of the actual model under construction.

Even if you never intend to scratch build "Eric", it is a gold mine of information on live steam locomotive construction. This book is definitely a must-have (right up there among such classic works as LBSC's *"Shop Shed and Road"* or Martin Evans' *"Manual of Model Steam Locomotive Construction"*). It is a very "readable" book, and like a good thriller, I found it hard to put down. My only gripe is that all the measurements are metric - not a much of a problem for those of us familiar such matters, but it might be a bit of a deterrent for the US readership. Don't let that dissuade you from getting a copy, the treasure trove of useful tips is alone worth it.

I have yet to find a retailer in North America carrying the book (hopefully that will change). However, it can be obtained directly from Australian Model Engineering (<http://www.ameng.com.au/retail.htm>). I found it took just over a month to get a copy from Australia to Canada. It is also available from Camden Miniature Steam Services in

the UK (<http://www.camdenmin.co.uk>). Both have secure on-line ordering facilities. I am sure you will enjoy this book as much as I did.





# First Impressions

by Steve Baker - group photo by Carol Jobusch

## *A Diamondhead first timer offers some impressions and observations...*

Bigger than life, yet twice as natural – a good way to start when describing the Diamondhead International Small Scale Steamup. Having gone for the first time, the Event was much more than I expected, based on the photos and articles I had read. Jerry Reshew has an event that runs smoother than an Aster locomotive, pulls together stronger than an Accucraft Shay, and does a wonderful job of promoting the brotherhood (yes, and sisterhood too) of small scale steaming.

The registration table schedule showed me that I had to wait a few hours before getting my badge and other materials. The sign said (and I paraphrase), “All times are on Mississippi Time” – which, I found out, was not referring to the Central Time Zone. A good reminder to me that this was an event to enjoy, and to relax. Every event happened, usually around the right (clock) time, but with a bit of “come on, slow down, savor what is happening”, and don’t be so rushed.

I brought my Mom, who knows as much about steam engines as I do about sewing machines – she watched prototype steam engines and rode behind them, just as I watched her making clothes for us kids with her sewing machine. She had a great time, watching the engineers steam up their locomotives and run for their allotted time. She spent some time at the “Snooty Ladies Table (No Trains Allowed)” – but they certainly were not snooty, but very friendly and welcoming. She read by the pool, and watched the steam powered boats cruising. And we had

many wonderful meals, both at the Resort restaurant, and other local eateries.

There was an incredible variety of motive power, running almost 24 hours a day. As I mentioned, the steam boats were gorgeous, as were the locomotives. I could not imagine the variety seen, as displayed in various magazine articles and advertisements. The biggest was a 1:32 scale Aster Big Boy, which took a large can of butane for fuel, and a couple of quarts of water (the prototype held 36,000 gallons of water in its boiler). The smallest I saw was an N scale live steamer, which ran smoothly and often.

The event was truly a 3 ring circus, with 3 tracks available, and occupied every minute I was there. Just as a well run circus looks chaotic, but is timed to the second, the tracks were scheduled, and everyone did their part to be on time. Folks borrowed rolling stock, advice was freely given (and much more valuable than the price!), and compliments given for sharing of eye candy. One comment regarding whistles – keep blowing them, it may have been your only Christmas present!

I loaded a CD with high resolution photographs – this will keep me looking back, and remembering a wonderful time for a whole year. Yes, I will be back again in 2009. I hope you will have a chance to be there too. You never know what you got ‘til it’s gone. Oh, and I plan to put down my camera, and bring something that moves on steam power.



## ***15th International Small Scale Steamup Diamondhead, Mississippi***

article by Jim Pitts

photos by Carol Jobusch, Jim Pitts,  
Kevin Schindler, Steve Baker & Jim Gabelich

"Let the Good Times Roll" – a Mardi Gras Party theme – is a continuing tradition each January in Diamondhead, Mississippi. Hosted by Jerry Reshew and supportive friends, "Diamondhead" is the January place to be. The 2008 Steamup was a success by all measures.

Jerry Reshew states that "the hotel was its usual state of confusion, the general availability of local food services was excellent, and there were smiles galore as old and new friendships were established. The outstanding efforts of our volunteer staff made it all happen and the program booklet does give recognition where due, even though it probably goes unread until later in the year.

A total of 203 persons attended. Confirming Diamond's "International" appeal: 14 were from Canada, five from the United Kingdom, three from Japan, one each from Mexico and Trinidad West Indies.

From across the United States, literally from coast to coast, people came by plane, train and automobiles to Diamondhead. 28 were from Florida. 19 each came from California and Texas. Eight each were from Colorado, Georgia, and Mississippi. Seven each came were from Minnesota and New Jersey. Six each were from Louisiana and Washington state. A total of five each came from Arkansas, Illinois, South Carolina, Tennessee and New York. Four each from the states of North Carolina, Ohio, and Virginia. Three each came from Alabama, Missouri, Utah, and Wisconsin. Two each were from Arizona, Kansas, Maryland, Pennsylvania, and Oregon. One person each from Iowa, Kentucky and Vermont were also in attendance.

Jerry reports the 2008 Steamup used 60 gallons of distilled water (including what Alan Walker used for tea), 4 gallons of alcohol, and a whopping 85 containers of butane. He warns that next year the gas fired steamers will have to purchase their own butane. Jerry says it costs too much to just include it when the large locomotives use about one can per fill. The coal burning guys bring their own supplies. "I don't have a count as to how many pounds

they used, but it was enough to set off the smoke alarms a couple of times - I love it!"

There was competitive fun for children of all ages: a Cricket Locomotive Match, Drawbar pulling or Weight Lifting contest and the world famous Shay-up. Sonny Wizelman had officially inscribed in the Wizelman Book of Records that 26 Shays were coupled together and running in unison. The objective is to get two full laps or better without breaking up the train. Some engines pulled or pushed ones that died, but proper Shay etiquette suggests that malfunctions be ignored. At previous Shay-ups, 29, 30 or 31 were operating in tandem, depending on who was counting. Also, while such mayhem was going on trackside, several steam boats were tranquilly navigating the hotel pool.

Dealer displays and the Steamup Flea Market were busy. There was something for everyone, both new and old, and prototypes of soon to be released models. Attracting attention were Accucraft's Southern Pacific Cab Forward and their Canadian Royal Hudson 4-6-4, Aster's Great Northern S2 with preproduction locomotives in Glacier Park Green and black performing flawlessly.

From the latest Aster's BR-9Fs and SNCF 140Cs to a Southern Schools with original passenger consist circulated before appreciative spectators. Naturally the coal fired locomotives with their natural aroma and fire box glow attracted trackside admirers for Bill Courtright, John Coughran, Yves Guillaume, Caleb Roberts, Geoff Spenceley and John Shaw. Watching John Shaw fire his Jumbo is a like a graceful ballet, moving coal firing from engineering science to performance art.

Demonstrating the inclusive spirit of Diamondhead, even diesels were on parade for the non-nostalgic rail enthusiast. Jerry Hyde's F7 and GP 9's diesels growled on command. Bob Pope's "one of a kind" diesel passenger train was a marvel all its own. It is a rolling wonder of superb and imaginative craftsmanship.

In addition to "one on one" tutoring and orientation to small scale live steam, seminars were presented by Bill Ford on electronic boiler monitoring, Phil Bronner on resin coaches. Howard Freed's recent trip to India provided the context for his seminar on the Darjeeling, literally one of the narrow gauge wonders of the world. With a Roundhouse Darjeeling "Class B" locomotive and a set of Stan Richmond's "The Car Works" Darjeeling coaches, you can have your very own.

Throughout the day, when the seminar room was not scheduled, "Diamond Jubilee" a DVD was shown. This hour and 45 minute program celebrates the 60th anniversary of G1MRA and reviewed the 2006 festivities across the UK. Also, before an appreciative North American audience, Jerry Reshew was presented the G1MRA "President's Cup" for his life-long leadership in Gauge 1.

The class act of the weekend was a superb Buffet luncheon at the Diamondhead County Club. Entertainment was by the nine musicians of the Clack Valve and Cornets Steam Band. A full concert program under the leadership of Bandmaster, Joe Hall, performed for a standing room crowd at the Diamondhead Resort later that evening.

Harry Wade said, "I was very glad to be back, mostly to see the friends I've made over the years who I would probably not see otherwise." He quipped, "Of course it is entirely possible that I wouldn't remain friends with some of these people if I saw them more often!" Harry then reflected, "It seems like the time passes too quickly, more quickly each year, and there are more people to catch up with than there is time and I end up thinking I needed and should have spent more time with this person or that. Then there are the new friends you make."

"Although the registrations were up to nearly the levels of past years there did not seem to be the congestion, especially around the track sites, there has been in some years past. Track time and prep table space seemed to always be readily available when one wanted it. Also, I thought the continuous free coffee and King Cake in the hospitality room was a bad thing to do because I've been trying to lose weight and I dropped in for a bite much too often."

"I always look forward to seeing two things, the introduction of new locomotive products, specifically Aster, and this year was no exception, and then I also am very interested to see what will show up that has been scratch built by builders such as Dick Abbot. Regarding the facility, Harry said, "I thought the hotel was back near to its former glory days (right!), it never has been even a 1-Star facility and never will be, it is what it is, but for this event so as long as there is a bed and hot water my needs are met."

Norm Saley of Orlando observed that "Diamondhead

2008 was a nice event; interesting people and materials, sharing of new ideas and improvement of old ones. Also, it is good to renew old friendships. I missed those who couldn't make it. As always, Jerry did a great job! Hats off to him!"

Why people come to Diamondhead is succinctly summed up by Jim Gabelich:

- To renew old friendships, people I have met over the years.
- Enjoy talking and being able to put a face to a person who wrote an article I found useful or enjoyed.
- Its a learning experience. There were 200+ steamers there and if they had an average of just 5 years in live steam that is "1000" years worth of knowledge! Think of the possibilities.
- Hopefully meet and make new friends and to encourage new people to join in on the fun.
- Lastly, just the good fellowship shared by all.

Since its beginning, the official Steamup Photographer is Carol Jobusch. Complimenting her portfolio of 600 plus pictures; Steve Baker, Bob Chatham, Jim Gabelich, Mike Martin, Kevin Schindler and Jim Pitts were busy digitally covering the Steamup for Steam in the Garden and for posting to their respective websites. Literally, hundreds of photographs and videos were made.

Our annual sojourn to the Mississippi Gulf Coast is gumbo mix of "good friends, good food and good times." Jerry Reshew invited us back to do it again in 2009. No where else on earth, especially in North America, can you steam morning, noon and throughout the night, literally 24 hours a day.

Besides never ending steaming is the plus of dining with friends at the Jourdon River Steamer in Kiln, Trampani's Eatery in Bay St. Louis, eating King Cake and drinking Community Coffee, plus the Dairy Queen and the Waffle House, combine for a wonderful time of reunion and inspiration.

Reassured by Jerry that the G1MRA President's Cup is safely on the mantle, we say (like our friends in the UK) to all that made Diamondhead 2008 a success .... "Thank you very much, indeed!"

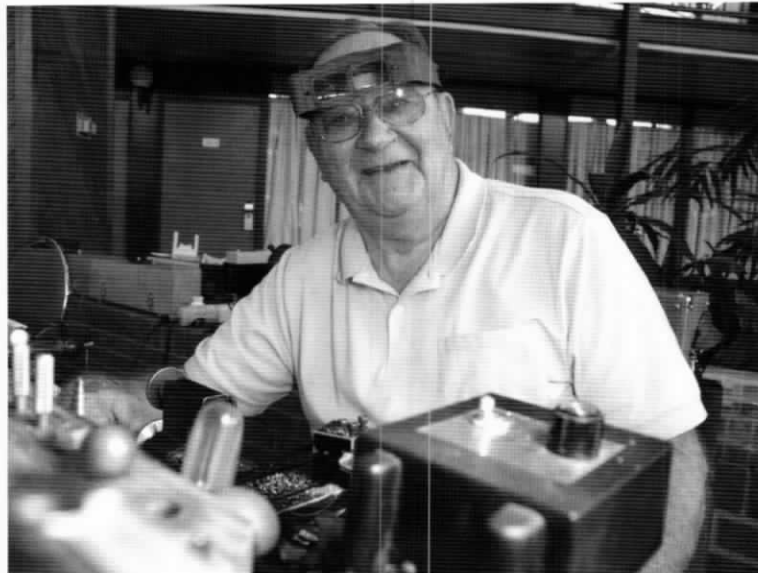
Mark you calendar, come January 16-18, 2009, the good times will roll again at the 16th International Small Scale Steamup in Diamondhead, Mississippi. For further details, go to [www.diamondhead.org](http://www.diamondhead.org)



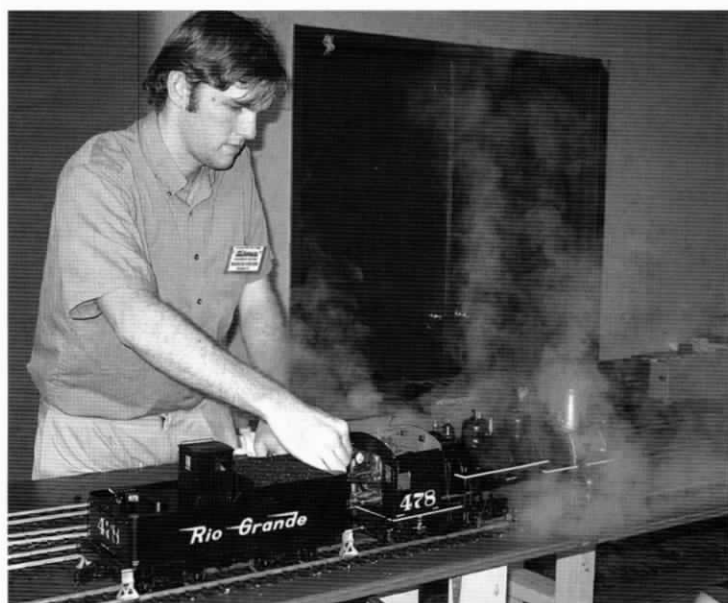




*Accucraft's Canadian Pacific Royal Hudson - coming soon!*



*(Above) Norm Saley at his stand. Norm comes prepared to repair any problem or make any necessary part. (Below) Judy & Dan Fuller preparing their new Catatonk Climax for a run.*

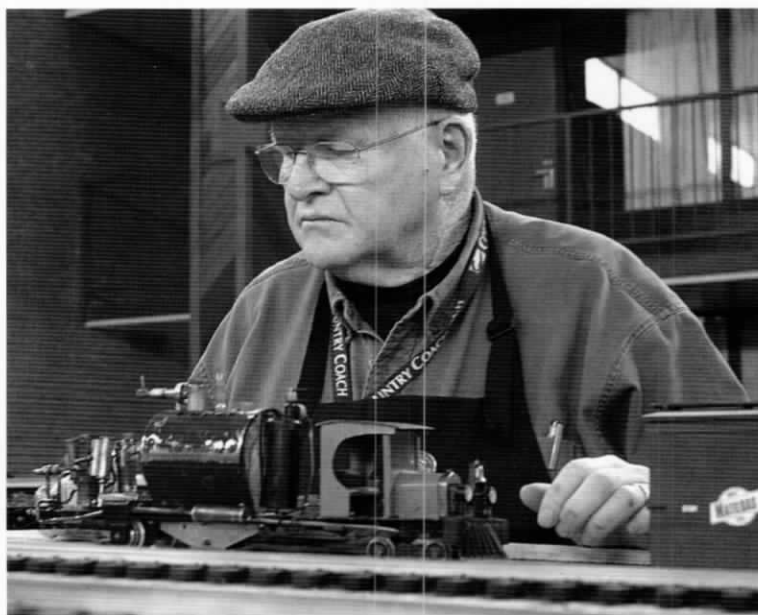
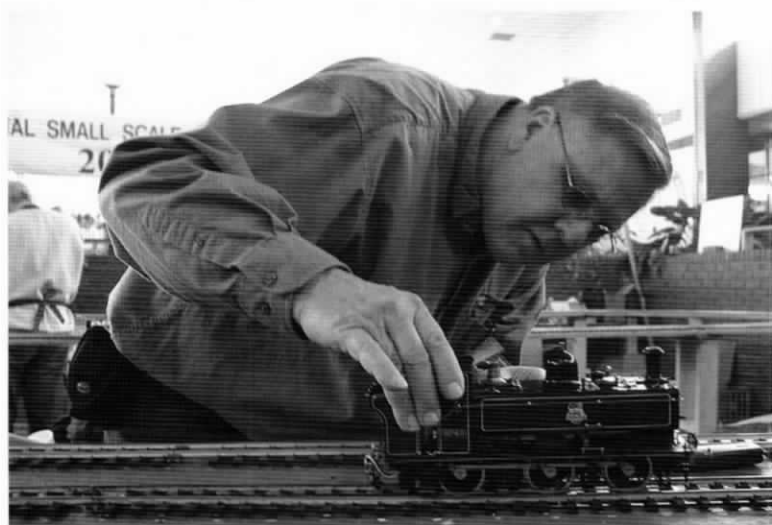


*Andrew Finnegan is off in a cloud of steam!*



*John Riley with his nifty steam truck....lid off for access to the inner workings.*

*Jim Gabelich carefully adjusts the throttle on his Aster Pannier Tank.*





*(l. to r.) Jeff Young, Mike Simpson and George Werner at one of the work tables.*



*Kevin O'Connor, creator of the "radiant burner".*



*Jim Hadden with his awesome scratchbuilt steam shovel.*



*Alan Walker from the UK running his detailed and painted Accucraft L&B "Lyn".*



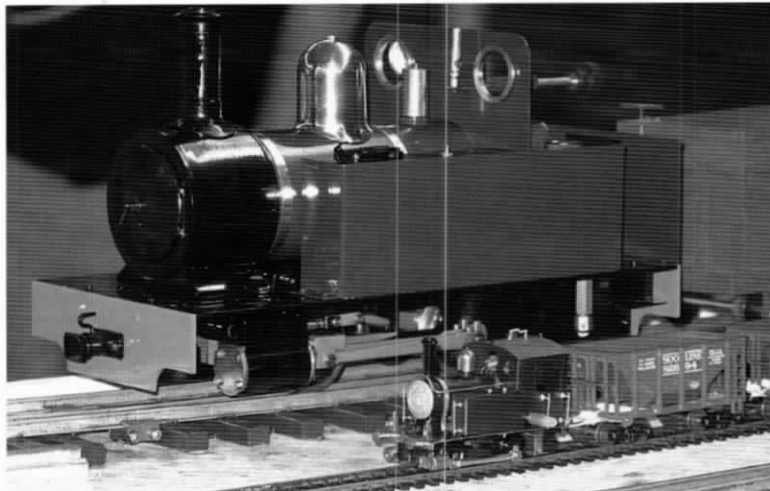
*Dawn Brightwell (l.) and Rob Cooley sharing a track.*



*Harry Gray, master craftsman.*



*Tom Meyers adds some water.*



*All Creatures Great & Small....16mm scale and HO scale steamers.*

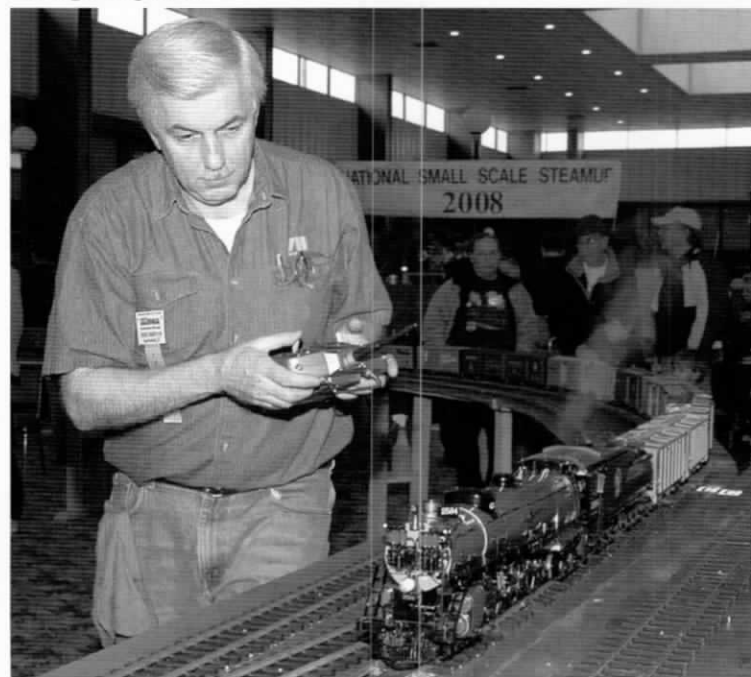


*Ross Schlabach (l.) adjusts the throttle and Dick Abbott observes.*



*Daniel Tilden couples up a train.*

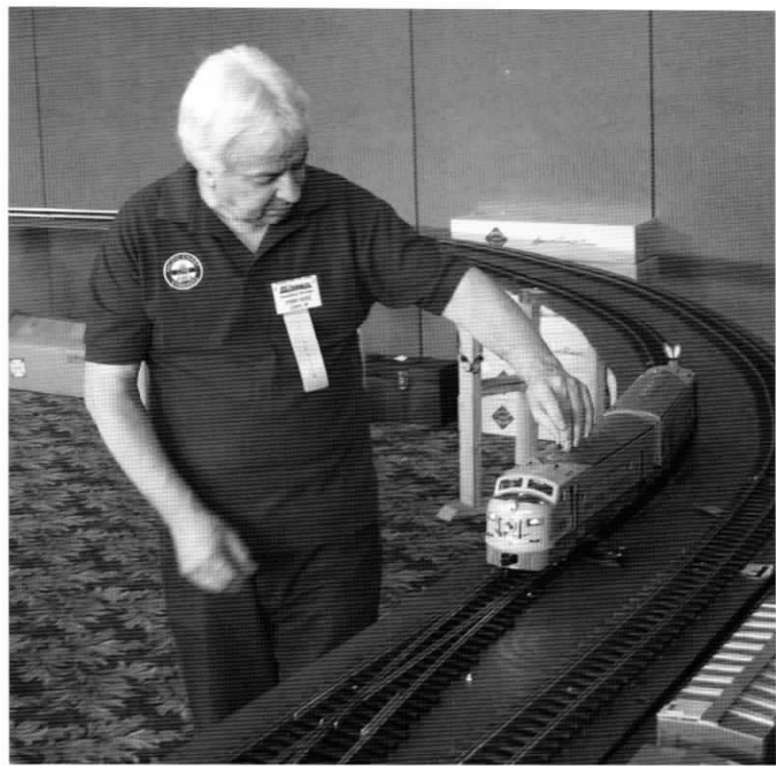
*Bob Pope with his scratchbuilt diesel electric. Beautiful loco with smooth, quiet, powerful performance.*







*Scott McDonald with his gleaming Burlington Zephyr.*



*Jerry Hyde sets off on a run with his live electric diesel.*



*(l.) Chip Rosenblum and George Erhart staked out a table in the pool area.*



*Emily Kaldestad with her Ruby.*



*Robert Orre from Union Grove, Wisconsin.*







*Shay Lashup...lots of Shays! More than we can count.*



*Jim Pitts (L) of Southern Steam Trains, stands with Susumu FUJII, President of Aster Hobby Company, Inc. in Japan, and Yuichi Sato, also with Aster Hobby Company, Inc.*

*Carl Weaver with some of his super detailed scratchbuilt equipment.*



*Peter Foley prepares for a run.*



*Cricket Match. At least 8 steamers got together with their Westminster Crickets (Mk II versions) for a multi-header run.*

*Below: Peter Jobusch with the Jobusch Garden Train.*





1/29  
SCALE

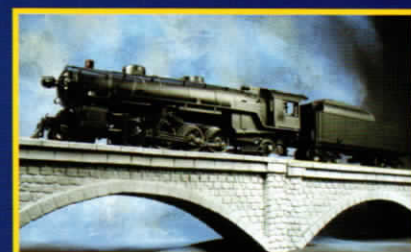


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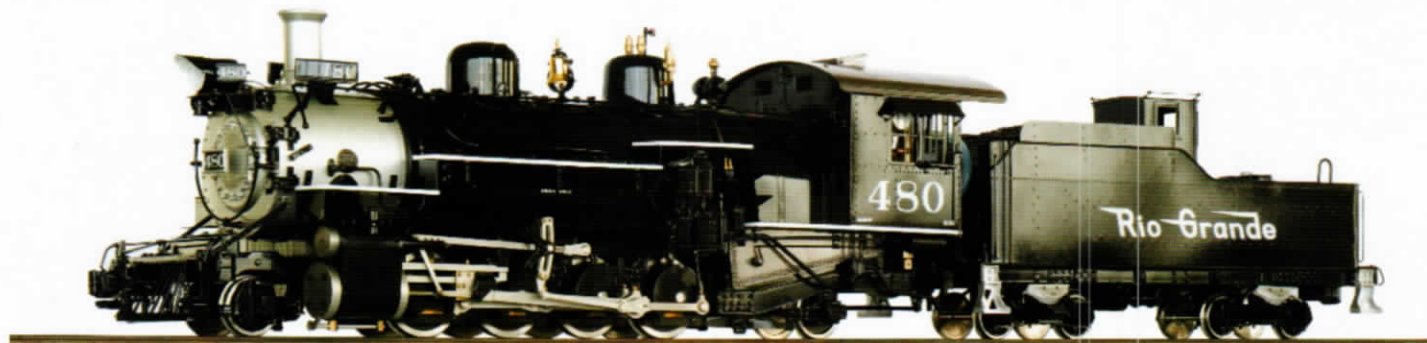


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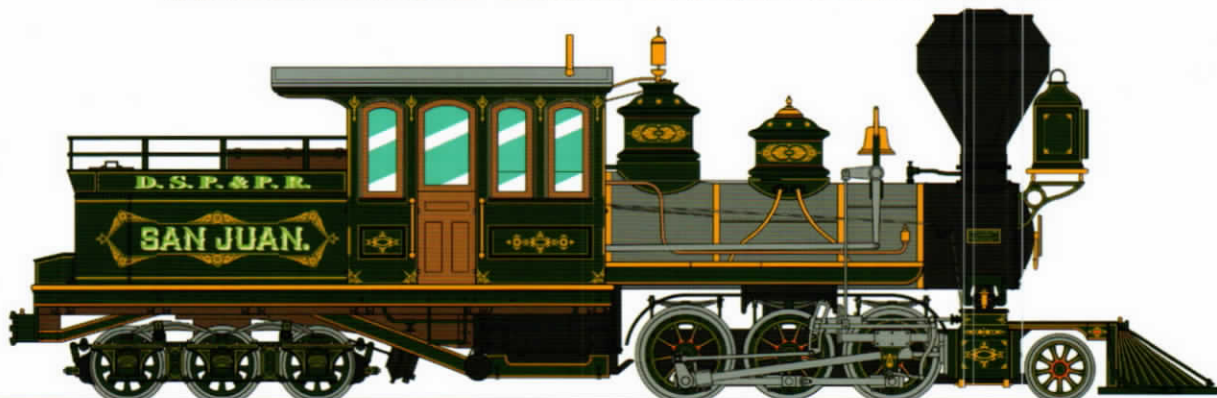


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*Gary Whaley's Weiniemobile, complete with its own condiment train.*

photo by Harlan Barr



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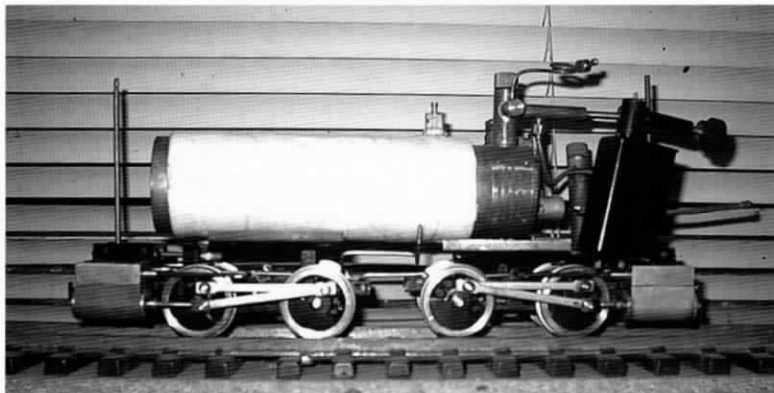
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# Live Steam Weinermobile

by Gary Whaley

(with apologies to Oscar Mayer)

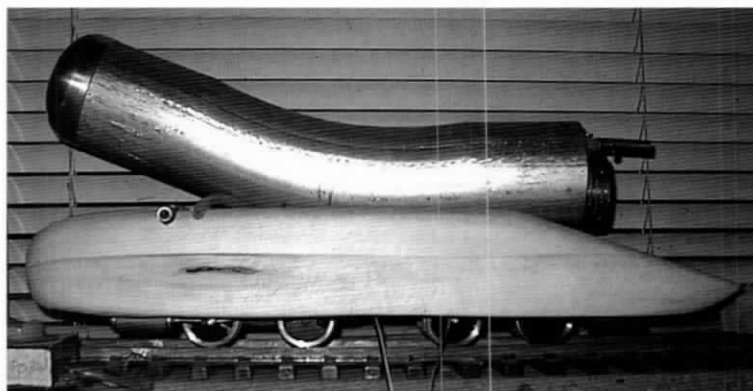


Chassis nearly ready for bodywork.

photo: Gary Whaley

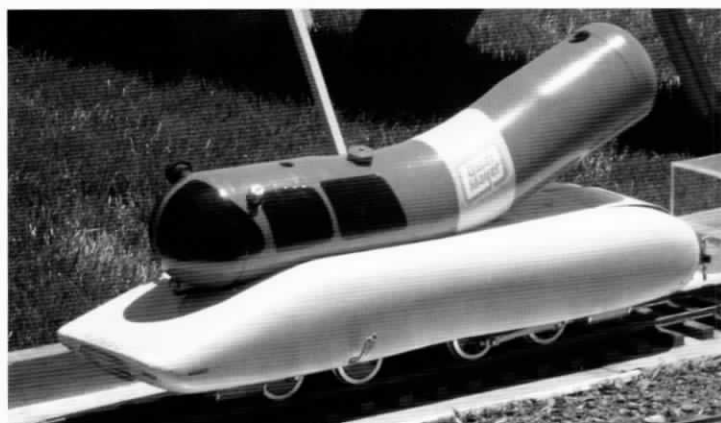
I needed a locomotive to pull my whimsical cars around a live steam layout. A Wienermobile would work if powerful enough. I got the drive train from two Accucraft Rubys and the boiler from an Accucraft three cylinder Shay. I figured out the sizes that I needed and got a 22.5, degree 2 1/2" EMT conduit elbow for the wiener/boiler housing. I turned the end plugs from blocks of aluminum. The car part is carved from basswood.

The big problem is getting steam to the articulated drivers from flex lines. I used model airplane fuel lines with Dubro™ clamps on the ends.



Wooden bodywork and metal "sausage" have been mounted.

photo: Gary Whaley



Completed Wienermobile in steam. The exhaust pipes on both sides are the steam exhaust. The right side is the front 2 cylinders and the left are the back 2 cylinders. The R/C receiver and batteries are in the "trunk". Definitely an eye-catcher and attention getter at steamups and garden railway meets!

photo: Harlan Barr

I know that the Rubys will run on low pressure, around 20-25 pounds, so the tubing should work okay for flex steam lines. Another problem is working the two Johnson bar linkages articulated. I did it with two servos with a "Y" splitter from the receiver to work both servos simultaneously.

The oiler sits on top of the boiler with an external plug.

I had to make a modified steam turret with a low profile to fit in the tube. I installed a blow down line that doubled as a water overflow. I had to make a low profile pop valve from an Accucraft

valve.

The custom butane fuel tank was scratchbuilt from 1" copper pipe. The paint is high temp engine enamel spray paint.

This was a great project to do because of lots and lots of fun research.

Gary Whaley  
15614 Wicks Blvd,  
San Leandro, CA  
510-614-9397

Please feel free to contact me if you need more information.



# Valve Gear Programs

By Dan Rowe

This article describes how two different shareware computer programs can be used to model direct Stephenson link motion. The programs, written by Rainer Radow and Charles Dockstader, have moving graphics of a cylinder showing the valve events like steam port opening, etc. This article is not necessarily the best starting point to learn about these programs; it will make more sense to someone who has fired up Radow or Dockstader on their computer and poked them a little. The link for the Radow program is: [www.steamboating.de/radow.html](http://www.steamboating.de/radow.html). The link for Dockstader is [www.tcsn.net/charlied/](http://www.tcsn.net/charlied/).

Most of the US locomotives that used Stephenson valve gear had the eccentrics between a set of driving wheels and used a rocker shaft to reach the valve and steam chest located on the top of the cylinder. This arrangement, with a rocker shaft, is called indirect Stephenson link motion.

In British practice, it was very common to have inside valve chests and the link block is directly connected to the valve rod. This arrangement is known as direct Stephenson link motion. Direct Stephenson motion was also very common on marine engines and stationary engines. Shays and some of the other geared locos used direct link motion, which is why I am most interested in this arrangement.

The three main types of radius links used with Stephenson link motion are shown in Figure 1. They are commonly known as the launch link, the marine link and the loco link. The launch link was the most common link used for locomotives in the US and was also used for small marine engines. Marine links were mostly used for ship engines for all the navies and merchant fleets before the

invention of the turbine. Loco links have the eccentric rod connection on the centerline of the radius slot so they act like marine links that are not allowed to travel the full distance to make the eccentric rod and the valve rod line up.

I have known for a while how to make Charles Dockstader's valve gear program for Stephenson outside admission work for direct Stephenson gear, and it is a very useful tool. I recently discovered a program by Rainer Radow that was written for steamboats. Radow's program shows direct Stephenson valve gear with a vertical marine engine. I decided to try to get the same engine running in both programs.

Figure 2 shows both engines side by side for comparison. The graphical view would be confusing if the valve was shown directly in front of the cylinder as it truly is when the observer is looking at the end of the crankshaft. The two programs use slightly different conventions to show the engines clearly. Radow moved the center of the eccentrics and rotated the valve by 90°. Dockstader also rotated the valve 90° but put the valve rod in the correct position on the engine centerline with an imaginary connection to the valve. The total valve rod length is variable D20 plus D50. So these could be seen better, I drew D50 connected to the valve with the imaginary line at the connection to the other section of the valve rod (D20).

Dockstader's program is a lot more flexible with engine configuration so you can modify the original program engine from indirect to direct Stephenson gear and marine links. I altered the original engine only where necessary so all the

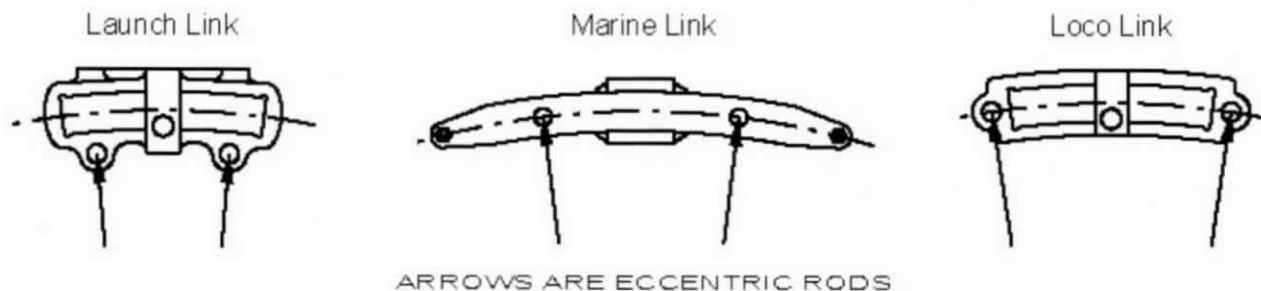


Figure 1 Types of Stephenson radius links



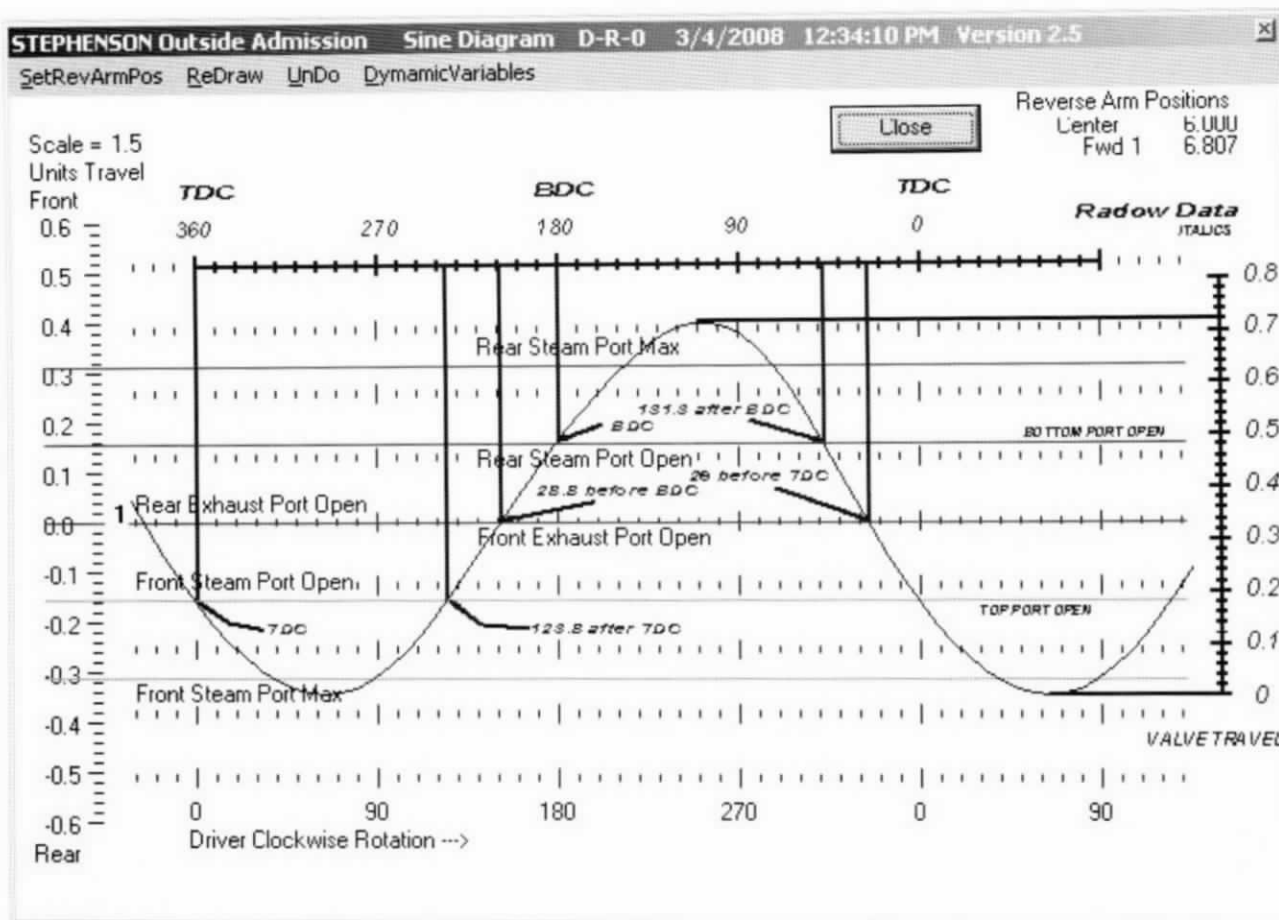


Figure 3 Sine diagram. (Screen shot from Dockstader with Radow data in italics)

Open/Close Data						
Actual data			Resulting Open/Close data			
Top	[°]	[inch]	[°]	Top	[°]	[inch]
Intake open	0.0	3.00	100.00	Intake open before TDC	0.0	0.00
Intake close	236.3	0.59	19.62	Intake close after TDC	123.8	2.41
Exhaust open	208.8	0.16	5.29	Exhaust open before BDC	28.8	0.16
Exhaust close	25.8	2.83	94.33	Exhaust open before TDC	25.8	0.17
				Exhaust close before TDC	25.8	0.17
				Fullness	---	2.41
				Compression	---	0.17
Bottom	[°]	[inch]	[°]	Bottom	[°]	[inch]
Intake open	180.0	0.00	0.00	Intake open after BDC	0.0	0.00
Intake close	48.8	2.43	80.84	Intake close after BDC	131.3	2.43
Exhaust open	26.0	2.83	94.22	Exhaust open before TDC	26.0	0.17
Exhaust close	208.8	0.16	5.29	Exhaust close before BDC	28.8	0.16
				Fullness	---	2.43
				Compression	---	0.16

Data only valid for outside admission valves  
Negative value = error in valve gear

Figure 4. Radow timing list.

preset zoom buttons will still work without any changes. The way to make Dockstader's program act like direct link motion is to make both ends of a long rocker shaft connect to the same point. The lower end of the rocker shaft (D17) is connected to

the link block and the upper end (D15) is connected to the valve rod. These points can be brought together by making both D15 and D17 the same length and making D15 negative. The x and y rocker pivot locations (D18 and D19) are chosen so the rocker shaft will be directly above the link block. The link block is on the engine center line so D18 is set equal to D17. The pivot is placed a couple of magnitudes higher than the engine so the lower end of this sky hook will move in nearly a straight line, and will be very close to true direct motion. The rocker shown in Figure 2 is just a sketch and is not to scale.

Radow's program is set up for marine links, and it can also be used for loco links as in British practice. The ability to change the operating parameters such as steam pressure and see the theoretical steam diagram for the engine change as the reverse lever is moved makes Radow's program a very powerful learning tool.

Making the two programs match for one engine was a very interesting exercise as it taught me a lot



about both programs and about direct Stephenson valve gear. The engines had to be timed using the same method, so I used the procedure of equalizing the full gear lead given in the Lima Locomotive Shay instruction manual. The length of the valve rod was adjusted in both program engines for equal valve openings at both top and bottom dead center or TDC and BDC.

The timing procedure used with Dockstader was to first set the engine in full forward gear and then toggle from 0° and 180° while adjusting D50 until the front and rear steam ports opened the same amount. The timing procedure used for the Radow version was to move the reverse lever to plus 23 and start the engine while viewing the timing list seen in Figure 4. In Radow, the length of the valve rod (R55) was adjusted until both top and bottom steam valves opened at the same time with respect to TDC and BDC.

The valve data in Figure 4 was added in *italics* to the sine diagram in Figure 3. The actual data of crank angles is on the top line. The 'valve movement by crank angle' graph given in Radow's program is very similar to the sine diagram in Figure 3. The piston travel is the second line of the actual data measured from zero at BDC to 3" at TDC. The valve travel is measured the same way from the bottom to the top extreme travel. There is a tabular form of this data called the 'engine movement list' in Radow's program. This tabular travel data could be quickly used with a set of dial indicators to time an engine.

All the program values needed are listed below with the variable numbers I assigned to the words. To avoid a lot of typing, the program files will be posted on the "Steam in the Garden" website. Answers to questions and discussion are found at: [www.groups.yahoo.com/group/livesteamshays/](http://www.groups.yahoo.com/group/livesteamshays/)

### Rainer Radow

#### **Crank Assembly**

- R1 Crank radius [1.5]
- R2 Connecting rod length [10]
- R3 Piston rod length [5.75]
- R4 Piston diameter [2.125]
- R7 Top clearance [0.25]
- R8 Bottom clearance [0.25]
- R9 Piston thickness [0.5]

#### **Valve gear**

- R10 Ahead eccentric rod length [8.25]
- R11 Reverse eccentric rod length [8.25]
- R12 Eccentricity [0.334]
- R13 Radius of eccentric disk [0.0]
- R14 For. Angle of advance +90° [-118]
- R15 Rev. Angle of advance -90° [118]
- R16 Link travel [1.618]
- R17 Link slot overhang [0.5]
- R18 Link radius [8.25]
- R19 Reach rod length [2.814]
- R20 Reversing arm length [-2.065]
- R21 Reversing arm angle min [-23]
- R22 Reversing arm angle max [23]
- R23 Reversing lever pivot-X [2]
- R24 Reversing lever pivot-Y [6]

#### **Valve chest (seat data)**

- R25 Top seat - edge [0.313]
- R26 Top port [0.156]
- R27 Top bridge [0.187]
- R28 Central port [0.375]
- R29 Bottom bridge [0.187]
- R30 Bottom port [0.156]
- R31 Bottom seat - edge [0.313]
- R32 Valve seat length [1.687]
- R33 Top clearance [0.25]
- R34 Bottom clearance [0.25]
- R35 Valve chest height [2.187]
- R36 Valve chest depth [0.625]

- R37 Straight passage [0.162]
- R38 Steam line diameter [0.38]
- R39 Exhaust line diameter [0.375]
- Distance bottom port edge
- R40 to crank X [0.5]
- R41 to crank Y [15.4695]
- R42 Port breadth [2]
- R43 Passage length top [2.75]
- R44 Passage length bottom [2.75]

#### **Valve**

- R45 Overall length [1.374]
- R46 Valve cavity height [0.75]
- R47 Top face-valve [0.312]
- R50 Bottom face-valve [0.312]
- R53 Valve body thickness [0.5]
- R54 Valve cavity depth [0.375]
- R55 Valve stem length [7.223]

#### **Picture layout**

- R56 X-Distance crank [2.25]

- [0.0] Data input
- {0.0} Calculated Data

### Charles Dockstader

#### **Frame Dimensions**

- D1 Driver Diameter [6]
- D2 Stroke Length [3]
- D3 Main Rod Length [10]
- D4 Eccentric Circle Dia. [0.688]
- D5 Eccentric Dia. [0.0]
- D6 Eccentric Angle Forward [242]
- D7 Eccentric Angle Reverse [242]
- D8 Eccentric Rod Forward [8.25]
- D9 Eccentric Rod Reverse [8.25]
- D10 Link Radius [8.25]
- D11 Link Center Pivot Back Set [0.04]
- D12 Link Center Pivot Vert. [0.809]

- D13 Link-Ecc Rod Pivot Vert [0.809]
- D14 Link-Ecc Rod Pivot Back Set [0.04]
- D15 Rocker Upper Vert Length [-300]
- D16 Rocker Upper Back Set [0.0]
- D17 Rocker Lower Length [300]
- D18 Rocker Pivot Vert [300]
- D19 Rocker Pivot Horz [8.13]
- D20 Valve Con Rod Length [4.75]
- D21 Lifting Link Length [2.814]
- D22 Reverse Arm Vert Length [2.065]
- D23 Reverse Arm Back Set [0.0]
- D24 Lifting Arm Length [2.065]
- D25 Rev/Lift Arm Pivot Vert [2]
- D26 Rev/Lift Arm Pivot Horz [6]
- D27 Rev Arm to Center Norm [0.807]
- D28 Rev Arm to Center Max [0.843]

#### **Cylinder Dimensions**

- D29 Cylinder ctr to Driver ctr [16]
- D30 Cylinder CL above Driver [0.0]
- D31 Cylinder Bore Diameter [2.125]
- D32 Cylinder Bore Length [4]
- D33 Cylinder Steam Port Width [0.312]
- D34 Piston ctr to Crosshead ctr [6]
- D35 Piston Width [0.5]
- D36 Valve Surface to Cylinder CL [1.75]
- D37 Valve Stem CL to Cyl CL [0.0]
- D38 Exhaust Port Width [0.375]
- D39 Bridge Width Rear [0.187]
- D40 Bridge Width Front [0.187]
- D41 Steam Port Width Rear [0.156]
- D42 Steam Port Width Front [0.156]
- D43 Valve Chamber Height [0.625]
- D44 Valve Chamber Length [2.187]
- D45 Valve Height [0.5]
- D46 Valve Length Rear Half [0.687]
- D47 Valve Length Front Half [0.687]
- D48 Valve ExhCavity Rear Half [0.375]
- D49 Valve ExhCavity Front Half [0.375]
- D50 Valve ctr to Joint [3.004]

## TUNING A CRICKET BURNER - A Lesson From The Slow Learner's Class

by Mike Simpson

If a little knowledge is a dangerous thing, I am a truly dangerous man. I have read a library of live steamology, in this magazine and elsewhere, but turning information into practical understanding has been a slower process. I would sleep with *Steam in the Garden* under my pillow, but my back issues are tattered already.

Regular readers may recall my review of the new Westminster Locomotive Works Cricket last year (SitG No. 92, March/April 2007). My delight in this funky little engine was tempered by frustration with repeated burner problems, eventually relieved when I took a Dremel motor tool to the engine at the height of Diamondhead 2007. Unfortunately, what I "fixed" wasn't the problem. A year later, I really have fixed it. Read on. It is cheaper to learn from the mistakes of others.

Tinkering is best done with a cool head and a gentle hand. Based upon later experience, I did little good by amputating the chimney drain in 2007. I did scar the end of the smokebox with the shaft of the Dremel, a visible reminder that good work is not the usual product of dim light, fatigue, frustration, and a crowd.

The burner would not light properly. Gas lit readily in the smokebox, but the flame would not pop back into the flue. As the gas regulator was turned down, the fire went from a soft blue flame in the smokebox to nothing.

According to *SitG* (and many advisors), most

gas burner problems involve the jet. I pulled the gas jet. Many times. It looked okay. I could see light through it.

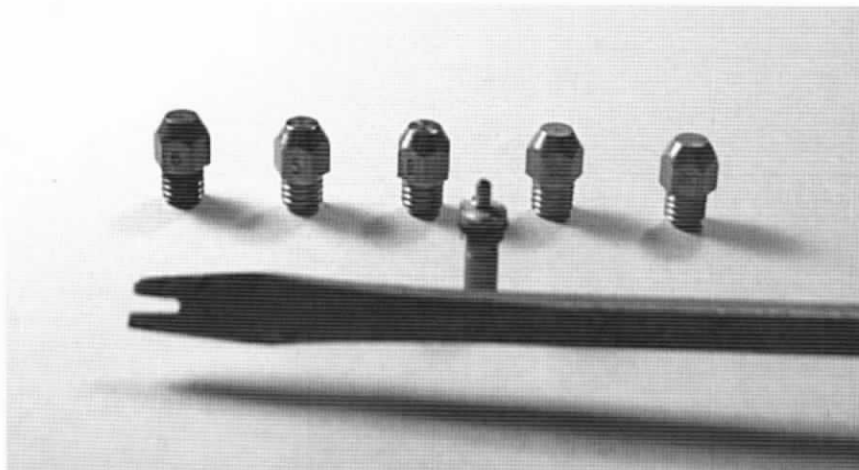
A partially blocked jet is worse than a fully blocked one – it doesn't work right but it fools you. The clue was that the gas burned with a soft, weak flame and only developed a shape when the gas regulator was turned to the blow torch setting.

At Diamondhead 2008, Chip Rosenblum and George Erhardt showed me how to check for a partial blockage. Remove the gas tank assembly without the burner, so that you have assembled the tank, feed line, and jet. Fill with gas. Invert and open the regulator. A partially blocked jet spews erratically. An unobstructed jet gives a nice, steady stream. Shooting the liquid butane out lets you see what is going on in that tiny orifice. Check for spark and flame sources before spraying the area with volatile, flammable, and explosive liquid.

Back in 2007, I wasn't sure whether the jet was blocked or not. Since I had it out anyway (many times), I blew it out (many times), using a can of butane. Blow from the face of the jet backwards, so you are not simply lodging the crud more securely in the jet. Send it out the same way it came in.

Take the jet off the gas line before you blow it. Otherwise you are just recycling crud in your gas tank, not getting rid of it.

Many small steam experts advise that you should never use wire to clean a gas



**What's in your tool box? Gas filler "wrench" made from screw driver, spare filler, spare jets from #5 up to #20.**

jet. A hard steel wire can turn a soft brass #3 jet (.006 inch) into a #15, passing ten times as much gas as before. Nonetheless, when Paul Brink offered his wire jet cleaner, I tried it.

This was a tiny wire in a small holder, which inserted easily. I slid it in and out gently, a couple of times, but did not do anything vigorous.

I don't know whether this did anything more than blowing the jet already had, but there was no obvious damage. Take this as information, not recommendation. (I only did this on the last cleaning, not the many earlier ones.)

As an aside, there was no vendor at Diamondhead 2008 with gas jets or Ronson filler valves. As mail order only items, it is worth buying several of each before you need them. Otherwise, you may have hundreds or thousands of dollars worth of engine sidelined for a six dollar part. ("For want of a nail . . .")

While you have your tank out, attach the burner and see what the flame looks like. It will burn differently outside the flue, but gross problems may be apparent. And, it's fun. Again, check for flammables, such as a can of alcohol or your buddy's arm.

At one point in my



**A bevy of burners.** From top, stock Ruby burner, modified Accucraft Shay burner (mesh sits above burner where wire is below mesh), Ruby burner with Milton Locomotive Works replacement poker, Cricket burner modified as described in this article, stock Roundhouse Sammie burner.

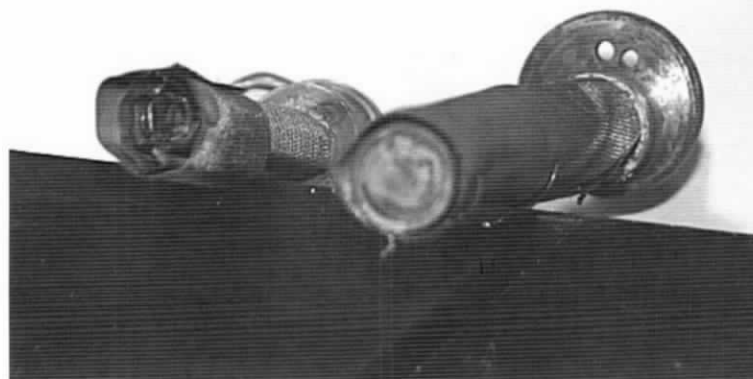
tion. The same nut was not tightened enough, so that butane leaked out and ignited around my hand. That was the hand on top of the full gas tank in the center of the ball of flame. Quite exciting while it lasted.

The lesson here is *just tight enough*. Line everything up, wiggle it a little, and make it finger tight. Then add a small fraction of a turn with the wrench.

I would get temporary relief from blowing the jet, but it didn't last. It took a long time, and a lot of trials, to understand that the jet was continually re-clog-

ging. Debris was left in the tank during manufacture or came loose thereafter. Every time I blew the jet clean, more debris lodged in the jet. This finally became clear once I saw the stream of butane. (I have talked to half a dozen WLW Cricket owners and seem to be the only one with this problem.)

Dr. Flame to the rescue. I took the



Cricket turbulator (l) and tented Shay (r) burners.



filler valve off the tank. Chip filled it with alcohol, shook vigorously, and decanted. We reinstalled the filler, refilled with butane, and blew out the tank again (without the jet). This last was intended both to purge the alcohol and to get any remaining debris. Chip says that acetone would be better for cleaning the tank, but so far this has not been necessary.

The gas filler "wrench" is an old flat screwdriver with a blade the same width as the valve. Use a Dremel™ tool to slot out the center of the blade, so that it fits over the nipple in the valve's center.

George gave me a piece of fine stainless steel screen, 60 or 80 mesh (to the inch). I rolled a tube of it and slid it tightly over the poker burner. Reinstalled everything. With the mesh and a clean jet, flame settled readily on the poker. Life was good.

Except for the Banshee wail! Have you ever heard a really bad Ruby burner? Multiply it by ten. Even the people across the street at the Waffle House complained. Run time in that configuration will remain undetermined, as I didn't have the courage to further antagonize the angry mob at trackside.

I had some mesh left, and remembered something Kevin O'Conner called a "turbulator," a plug of mesh used to further slow the escaping gas. I made a spiral, about two and a half turns around and three quarters of an inch long. The spiral fits snugly over the end of the poker (still covered with the first mesh). Cricket continued to light easily and run well, but now in blessed silence. Several of the mob asked if the burner had gone out, since it was nearly inaudible. The spiral disrupted the Banshee resonance.

Moreover, the mesh acts as a radiant burner. Gas particles like to travel in a straight line, mostly out



*Two, four, six eight, make your burner radiate! The orange glow around the right side of the burner is doing most of the work.*

of the slots in the smoke box end of the burner. Some of the benefit from the turbulator may be from slowing the gas flow, some from the mesh acting as a "wick" and stabilizing the flame, and much from the mesh glowing orange and radiating heat into the walls of the flue. While my previous run times were around twenty

minutes, I now routinely get about thirty (topping off the gas after water boils).

Indeed, I now must be sure that gas runs out before water. I take out only 25 ml of water, from a full boiler. Since this engine has a true, if small, steam dome, priming has not been a problem.

More adept steamologists may recommend better fixes. I am happy to quit on the Cricket's burner while this far ahead. ("If it ain't broken, I haven't fixed it.")

I applied my "little knowledge" to my Accucraft open cab Shay, a well-known whistler that is almost up to Ruby standards. There is very poor access to the burner retaining screw, which is below the jet holder. I removed the gas tank to get access to the left side of the burner. Bob Pope held a screwdriver bit firmly in the screw, while I turned it with a wrench. Fortunately, the screw broke free with minimal effort. (It will never be that tight again.)

When I pulled the burner, I found a naked slotted poker, longer than a Ruby burner and even less refined. Drawing on Kevin's articles (*SitG* No. 63 and the Southern Steam Trains website), I covered it with 100 stainless steel mesh from McMaster-Carr. (I also bought some 60 mesh, but am hoping that mesh with smaller holes will do a better job of disrupting and slowing the gas flow.) This time, I used mesh to more than encircle the burner. I poked three pairs

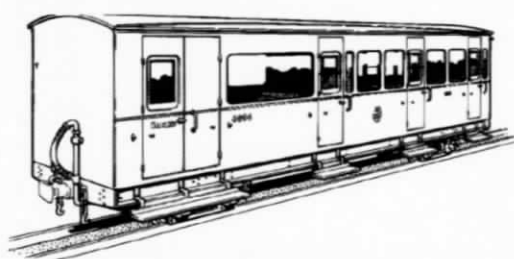
of holes in the mesh, towards each end of the poker and in the middle. I "sewed" the mesh to the poker with stainless steel wire. The mesh sits about 1/8 inch above the slots.

Again, my imperfect fix was a great improvement. Burner roar is markedly lower than before. The raised mesh glows orange and radiates heat. Last weekend, I had a thirty minute run in reverse and a thirty-five minute run forward, pulling fifteen two-axle cars. My best previous run was twenty-five minutes.

A decade or two ago, steamers referred to wick trimming as a "black art." Burner tuning is at least as complicated and frustrating, perhaps a blacker art. My experience demonstrates that persistence can triumph over frustration, even absent talent. Keep trying and listen to your friends. Thanks, guys.



*Brandbright*

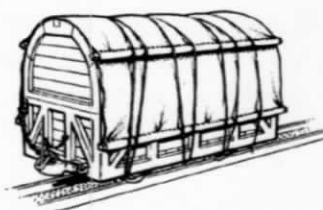


PS29 Vale of Rheidol Brake Coach

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# *Another Ruby Conversion*

by Cliff Goding

## **The Engine**

This RUBY conversion is mostly the designing and building of a sloped back tender, with only minor revisions to the engine itself. With my limited machining and metal working equipment and no experience in soldering, the changes are all cosmetic -- no attempt to change RUBY'S original mechanical or boiler design characteristics. All fastening is done using small (No. 4) or (No. 6) screws and an adhesive called Goop™. Goop is a powerful household cement which sets fairly fast and reaches its full strength overnight. At that time it is almost impossible to separate two joined pieces without destroying them, and it is pretty good where heat is involved.

Refer to figure 1 which shows RUBY and gives 8 steps for the revisions to be made. Most of these are easily made, though some are rather difficult. The most difficult is shortening the cabin. The easiest is...

**STEP 1:** Remove the side tanks and discard the tanks and metric screws. After removal replace with new walkways. Fabricate walkways from 3/4" wide x 1/32" thick x 4-3/4" long brass strip, reinforced on the outer and front edges with 3/16" preformed brass angle. Make four mounting bars from hollow preformed 3/16" square tubing. Cut these to the width of the walkways and make one drilled and tapped hole for a No. 4-40 machine screw on one side of each of the four pieces of tubing. Two walkways are then assembled with Goop, making sure the mounting hole in each bar lines up with the existing brackets on which the tanks were mounted. When fully dry, mount each walkway using two No. 4-40 x 7/32" long machine screws. For future handling of RUBY, it is recommended to grasp the boiler (when cool), not the new walkways.

**STEP 2:** Add front coupler. Add the coupler of your choice to the front wooden bumper. I chose to use the standard Aristocraft™ knuckle coupler because most of my rolling stock is of that manufacture. Remove the wooden bumper from the engine and re-

move the metal pin receptacle from it. Drill a clearance hole through the dead center of the bumper for a No. 6 x 1/2" long screw. To add my coupler I removed the rear section of this 3-part unit, leaving a stub in which I could drill a 3/32" mounting hole. Then I mounted the coupler to the bumper using Goop and a single No. 6 self-tapping screw. This sub-assembly is then re-assembled to the front of the engine.

**STEP 3:** Adding a (non-working) headlight. The headlight is one of two purchased from Ozark Miniatures, Inc. The second one is mounted on the sloped-back tender. Fashion a bracket from a small piece of the same 0.015" thick sheet stock that will be used to make the tender parts. This bracket will be about 1/2" wide, flat on top with a bent down section and flare-out on each side. Fasten the bracket (at the two side flares) to the top of the boiler as shown in figure 1, with Goop and mount the headlight to the top flat surface of the bracket with Goop.

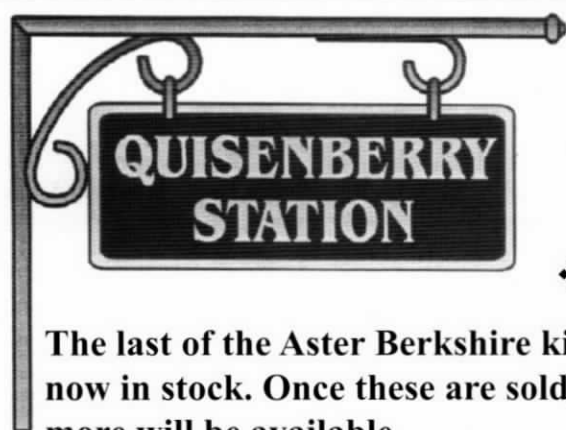
**STEP 4:** Shorten the smokestack. There is a knurled round retaining nut inside the smoke box, accessible by opening the firebox door. Hold this nut in place while unscrewing the smokestack. Using a sharp saw or a Dremel™ cut-off disk, carefully cut off the formed roll-back on the very top of the stack. Then cut off about 1/2" from the remaining top portion of the stack. File cut edges smooth and square. Replace the previously removed roll-back piece to the top of the shortened stack using Goop. Even though heat is involved in this stack, the Goop seems to hold very well. Screw stack back in place as originally held. Do not cut anything from the small steam exhaust tubing inside the stack, even though a little may protrude.

**STEP 5:** Shorten Cabin Height. I feel that the cabin looks much too high, and the widows too big, so I chose to shorten the cabin. Remove the cabin and scribe lines on the outside, around both sides and the boiler end. These lines will encompass a 1/2" wide section to be removed from around the cabin at approximately the middle of the oversized windows.





*The Author's Ruby with a freight train at Ron & Marie Brown's steamup in 2007.*



The last of the Aster Berkshire kits are now in stock. Once these are sold, no more will be available.

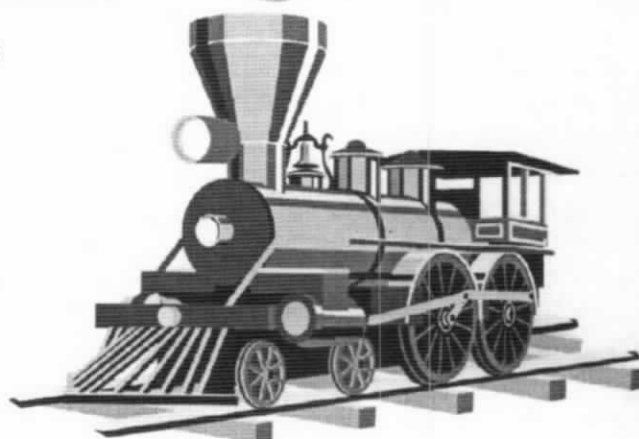
We have a few of the Aristocraft Live Steam Mikados left...Priced to sell.

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Remove 10 small screws to completely disassemble all parts, i.e., you will now have four pieces; two sides, one boiler end plate and the roof. Note: you may have to contact Accucraft™ to get a special wrench that will fit these small hex head screws. Six of these small screws will be reused. Using your best cut-off tools (I used a pair of heavy duty shears plus my Dremel™ cut-off wheel) remove this 1/2" strip from both sides and the end plate, and completely remove the vertical stanchion between the two windows.

Reassembly will require use of several flat reinforcing plates that will be located at the seams and adhered with Goop. Do each part separately before reassembly. Make the plate for the boiler end using 1/2" wide x 1/32" thick brass strip which is cut to fit the length between the two front windows. Add this plate to the inside only. For the two side members make a plate (or plates -- you may have to make each in two pieces in order to cut the window opening), using the same 0.015" thick brass plate you will be using for the tender. My plates included a visor at the top of the window, and a sill at the bottom. Also, trim off the corners of these plates so they do not cover the existing mounting holes. These little cutoffs will not show when the finished pieces are painted black to match the original finish. Add these to the outside only, making sure to keep the seams together and flat during this operation. To provide more rigidity, adhere a piece of 3/16" brass angle, 2-7/8" long to the inside of each side member, full length along the cabin's (rear) open end. Trim the top edge of these angles to match the curve of the roof.

**STEP 6:** Reassemble the cabin sides with the boiler end using the original small hex head screws. Do not reassemble the roof. I always have trouble replacing the cabin to the frame when ready for a run. The little bottom clips never seem to line up properly before RUBY wants to start off. So I decided to fasten the cabin assembly to the turned-up edges of the floor. Locate a 7/64" D. mounting hole in each lower corner of the cabin sides (four holes), as close to the bottom and side edges as possible, (you may want to do these holes before the reassembly described above). Place the assembled cabin over the floor and mark the location of the No. 4-40 x 7/32" long mounting screws from the four holes in the side corners. Drill and tap four No. 4-40 holes as located from the cabin sides. Be very careful when drilling, tapping and inserting the screw in the threaded hole located near the butane fuel tank, so as not to puncture the tank. Fasten the

cabin to the floor using four mounting screws. Shortening the screw near the fuel tank is recommended.

**STEP 7:** Make the roof easily removable. Both the sides and the roof are brass, so add magnetic strips to both surfaces. I used 1/2" wide x 1/16" thick strips cut from a roll purchased from a hardware store. There is a turn-back at the top of each side member where the magnetic tape will be adhered. The turn-back on the left side requires a semi-circular cut-back, about 1" long, to allow for use of a Ronson™ style butane cylinder. Adhere a strip of the same tape to the underside outer edges of the roof. Fill the original mounting holes with a hardening putty and sand smooth so they will not show when roof top is painted. Easily replace roof on top of cabin.

**STEP 8:** Add the draw bar of your choice to the underframe of RUBY. I liked the unit used on my Aristocraft 4-wheel switch engine. This is a hook and loop arrangement which is available as a spare part from Aristocraft. I fastened the loop part to RUBY, and the hook part to the front of the sloped-back tender. Remove the wooden bumper from the rear and discard. Make a hole in the center, rear of the cabin floor and fasten with screw head on top, nut on bottom. You may have to add a washer or two to make hook and loop mate properly. The handy thing about this hook and loop coupling is that it allows you to have a consist of cars all ready and coupled to the tender while you prepare RUBY for a run. Then you can quickly and easily hook the tender and consist of cars to RUBY as it steams away!

**Painting:** I hand-painted the new brass pieces, added to the cabin, with glossy black to match RUBY's original finish. Close inspection shows it has been hand painted. A better way is to remove the cabin from RUBY, take off the now easily removable roof and spray paint the added pieces with a glossy black - - after masking and taping the other areas that do not require new finish. The only other parts needing paint are the two new walkways, and the front bumper which has a natural wood finish. Remove the bumper and the front coupler. Sand the bumper to remove the original finish, then repaint it with a flat black finish. Spray paint the two walkways a gloss black finish. Re-assemble all parts in their proper location. Ruby is now ready for a new sloped back tender, which I will tell you about in the next issue.



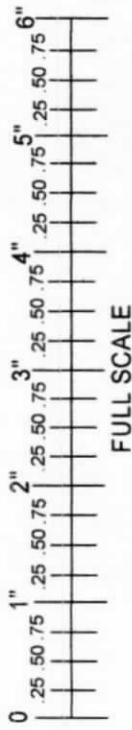
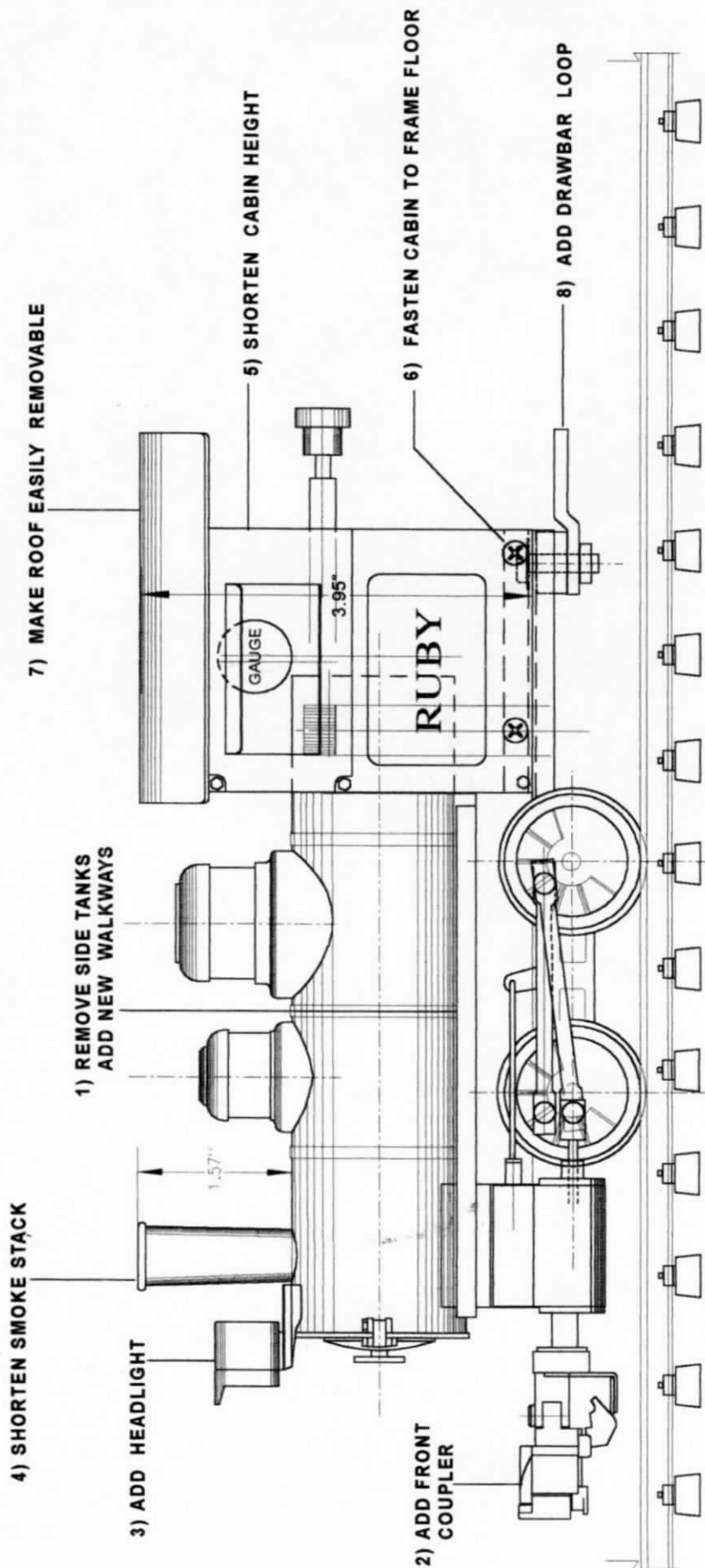


FIGURE 1

RubyAlteration  
 FULL SCALE on 11" x 17" Sheet  
 Date: Rev JAN 08



# ***AMS Jackson & Sharp Coach***

**by: James (Mitch) Mitchell**

## **Jackson & Sharp Coach**

1:20.3 Scale, 45 mm Gauge, Plastic Construction

Features Brass Castings, Die-Cast Sprung Trucks and Metal Wheels

MSRP is \$ 279 - some retailers have advertised for \$280 + or -



Well.....It's finally here! A coach, that you can be proud to have in your fleet. A coach that looks good, performs well and is close to scale. A coach that is affordable for the budget-minded modeler with a desire to be accurate.

This AMS product is a continuation of several narrow gauge models released by AMS (American Model Supplies) a subsidiary of Accucraft. The Coaches arrived in hobby shops shortly before the International Small Scale Steam-up in Diamondhead in mid January.

This coach is offered in 5 different liveries and several different car numbers:

1. D&RGW Green – Unlettered
2. DGS Red – Unlettered
3. D&RGW Green - #256, #280, #304 & #306
4. DGS Red - #252, #256, #257 & #259
5. C&S Green - #70, # 73, #75 & #76

I had my order in for a Red, undecorated model to complement my kit-built Hartford combine, which is painted Tuscan Red. As it turned out, the first delivered models were green, which are appropriately lettered for the Denver and Rio Grade Western.

Accucraft informed us the first container shipment from overseas was completely sold to their dealers within a few days of release. The second container is due to arrive in mid March. The third container has been held up by winter weather, but should follow the second with the red coaches and undecorated versions in that shipment. AMS plans to release, sometime in the near future, two other narrow gauge models: a drop bottom gondola and an 'East Broad Top' three bay hopper.



*Interior detail, as seen through the windows.*

The coach is well proportioned and appears to be close to scale. When compared to Bob Hartford's Combine Kit, I found the length and height of the car body to be very close to the same. The floor was a little higher than the combine, by about 3/16" or 4" or so to scale. The number of windows and other exterior details of the car compare very well to pictures of the full scale cars.

The coach comes well packed in preformed Styrofoam and in a typical AMS box, though it does have a view panel to see the product inside the box. The end panel of the box depicts the type and number of the coach inside. From this label I determined the other options available for the car.



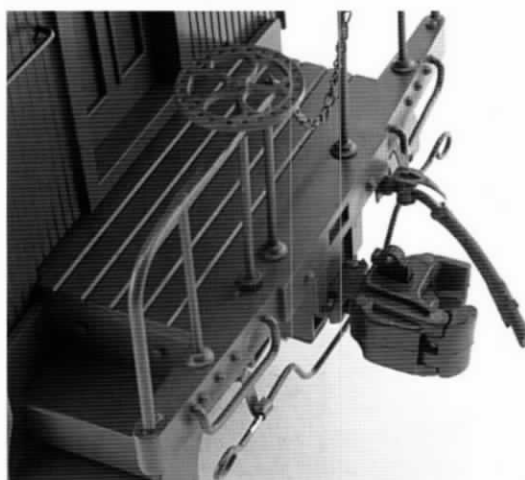
*Truck and end beam step detail.*

The details on the exterior are many. The end-railings are made of brass and even have a safety chain across the center access opening to the next car. The end sills have grab bars and a cut bar for coupler release. The release bar did not operate the couplers on my model, but with a little adjustment would probably work fine. The cut bar does operate the coupler from the bottom side as did the full scale versions. The end doors swing open and have a spring mechanism to keep the doors closed.

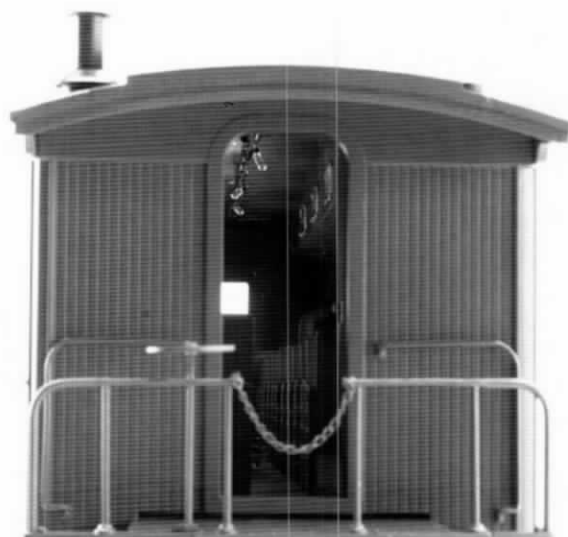
The interior is fully detailed. The seats are all

there and visible through the outside windows. Both ends of the car have a privy, one for the men and one for the women. Both ends of the car have a coal stove with a stove pipe and a short partition to separate it from the seating area. All of the interior detail was constructed from Tuscan Red plastic. The interior also has electric light bulbs in the ceiling, which are wired to a voltage regulator on the floor and thence to pick-up leads on all eight wheels. The Author does not use track power on his layout because it is live steam, but it appears it would not be very difficult to hide a battery pack somewhere and put a control switch under the floor to control on/off operation of these lights.

The Coach operated very well on 10' minimum radius track and #8 switches where the trials were conducted. This is what the author uses on his railroad. By the way, all of the main switches



*Coupler and end beam detail.*



*Car end, showing door in the open position. Also showing end railings and chain.*

measured in the D&RGW in Colorado were found by the author to be #8's. AMS says that this car will operate on 48" minimum radius track. Caution.....Radius is half the diameter and Aristocraft track is sold with diameter nomenclature, not radius. The trucks are fully sprung. This helps them hang onto rough places in the track-work. The electric pick-up wipers rub the inside of the wheels. This produces a drag coefficient and slows the free rolling affect of the car, but this can be remedied if you plan on not using track power for the lights. Just remove these or simply bend the wiper inward.

The car weighs in at 6 pounds, 15 ounces. This may limit the total number of cars you can pull, but it sure helps it hold onto the rails. The wheels are all metal, and anyone who has had plastic wheels knows this is a plus. The gauge was checked on the author's car and they all were fine. However it is advised that all cars, no matter who made them, should be checked before operating. Shipping has a tendency to affect the gauge no matter how well it was packed. One thing should be noted about the trucks. AMS simulated the sway bracing arms and rollers found on the full scale cars with a plastic molding. Due to the way it is mounted on the trucks, it does not contact the rub rail under the side beam of the car. The author modified this by removing the trucks and filing away some of the material from the center of the arm at the pivot point. This brought the rollers up to the bottom of the side beam. It also lowered the floor height of the car, making the Kadee couplers, mounted in the original coupler boxes with #835s, exactly at the Kadee coupler height gauge allowances. Obviously this is not necessary for this model if mated with other AMS fleet cars of this scale.

I would recommend this car to anyone. However, you should be aware, it is very close to scale and therefore may look large when coupled up to or near other manufacturers so called 'replicas' of the same narrow gauge equipment models. I don't know why they sacrifice scale unless it is to make the equipment fit in smaller space or to run on tighter radii tracks. It may even be to cut production costs. Remember, you get what you pay for. But in this case I think you get a lot for what you pay for.

**Pros:**

Good scale  
Operates well  
Good looking  
Well detailed

**Cons:**

Electrical pick-ups add drag  
Poorly operating cut levers  
Sway- brace arms not in contact with car



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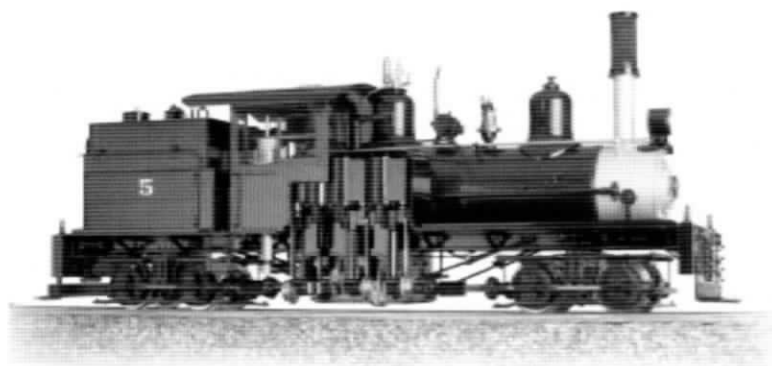


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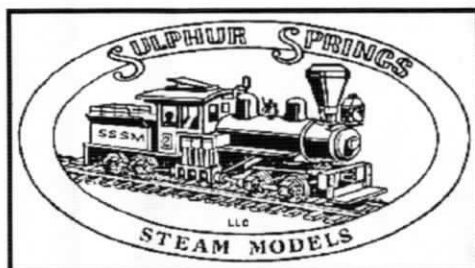
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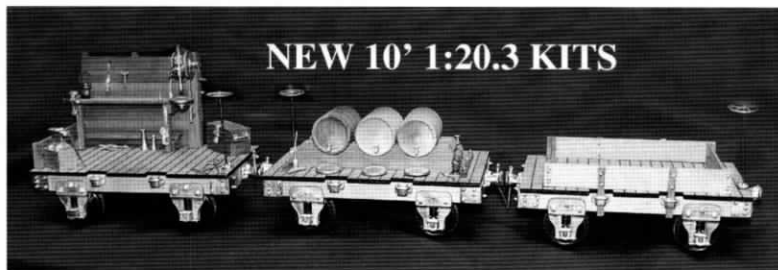
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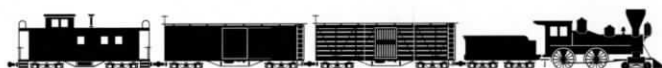
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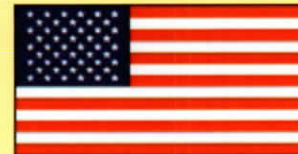


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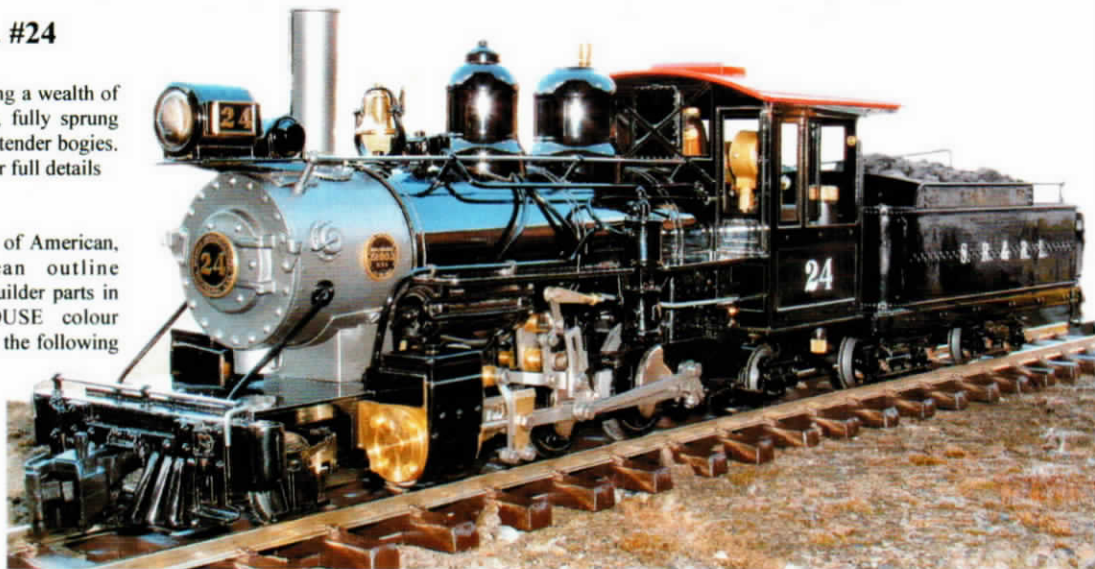
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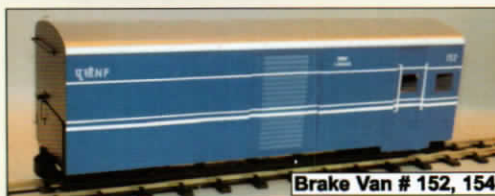
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