№ 87 May/June 2006 $5.50 U.S. $6.50 Canada

STEAM IN THE GARDEN

Inside.....

ACCUCRAFT LIVE STEAM LIMITED

ACCUCAT SAYS "YOU CAN'T BEAT THE PRICE OR PRODUCT."

SCALE 1:32 * STANDARD GAUGE * LOCOMOTIVES & CARS

SP S-12 0-6-0 SWITCHER

7 VERSIONS AVAILABLE
PROTOTYPICALLY CORRECT COLORS
AS USED IN PASSENGER TERMINAL SERVICE
ONLY $2,200 !

GS-4 DAYLIGHT #4449

GS-4 50/50 #4439
GS-4 ANY VERSION ONLY $4,840

BLACK GS-4 - DUAL SERVICE - PASSENGER & FREIGHT

QUESTIONS? CALL ME
ACCUCRAFT LIVE STEAM LIMITED
PRODUCT MANAGER
JERRY HYDE
740-946-6611
e-mail: jerry.h@accucraft.com

ACCUCRAFT CATALOG SET $5

TO PURCHASE ANY ACCUCRAFT LIVE STEAM LIMITED MODELS CONTACT ANY OF THESE DEALERS

CRESCENT MODELS
Folsom, LA
985-796-5505

CROSS CREEK ENGINEERING
Spencer, OH
800-664-3226

NORTH JERSEY GAUGE ONE
Park Ridge, NJ
201-391-1493

THE TRAIN DEPOT
Winter Park, FL
407-647-2244

CANADA

GAUGE ONE LINES
Stittsville, Ontario
613-836-6455

QUISENBERRY STATION
Alexandria Bay, VA
703-799-9643

S.T.E.A.M.
Arab, AL
256-586-7061

SUNSET VALLEY RR
Bonney Lake, WA
253-862-6748

HYDE-OUT MOUNTAIN LIVE STEAM
89060 NEW RUMLEY ROAD
JEWETT OH 43986
740-946-6611

Exclusively from HYDE-OUT MOUNTAIN
2 HOUR STEAMUP VIDEO/DVD $19 postpaid

STEAM IN THE GARDEN

Vol. 16, № 3
Issue № 87

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

Articles

Departments

FRONT COVER:

Aster's magnificent NKP Berkshire #779, with modifications and extra detailing.

photo by Hans Huwyler

Editor
Ron Brown

Office Nag
Marie Brown

CAD & Other Drawings in This Issue
Tom Bowdler • Dan Rowe
Charles McCullough

Regular Contributors
Larry Bangham ..... California
Charles & Ryan Bednarik ..... New Jersey
Paul Blake ..... Australia
Tom Bowdler ..... New York
Keith Bucklitch ..... England
Jim Crabb ..... Texas
Les Knoll ..... Illinois
Jerry Reshew ..... Mississippi
Dan Rowe ..... Texas

Steam in the Garden (USPS 011-885, ISSN 1078-859x) is published bimonthly for $33.00 ($42.00 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.

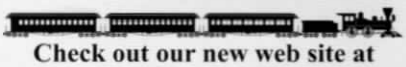
POSTMASTER: send form 3579 to Steam in the Garden, P0 Box 335, Newark Valley, NY 13811.

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: rbrown54@stny.rr.com



Check out our new web site at
http://steamup.info

CALENDAR OF EVENTS

Southern California Steamers - contact Sonny Wizelman for dates, places and any other pertinent information. 310-558-4872 ● sonnyw04@comcast.net

26-28 May, 2006, Pennsylvania Live Steamers Memorial Day Steamup at the PLS site in Rahns, PA. Contact Harry Quirk for details. e-mail cequirk@netzero.net or phone 610-346-8073.

27th - 28th May 2006, Garden Railways In The Hunter. Well, it is on again in 2006. After the great success of last years event we, the organisers felt that it would have been irresponsible for us to just let it go away and never held again. It is a lot of work by all involved to put a show like this on, but the effort is definitely worth it, especially when we receive great feedback like we have. Attendance will be as last year at $55 for the weekend and $35 for a single day. Children and spouses will be $25. Dinner will once again be $20. Lunch and Morning and Afternoon teas supplied. As with last year, the public are not invited as it is only for registered attendees. This show is for YOU and the growing family of Garden Railroaders, so we invite you once again to join us in Newcastle. Contact: Geoff Horne, 29 Kenley Crescent, Macquarie Hills, NSW Australia 2285 or email: geofhorn@bigpond.net.au

19th - 22 June, 2006. Steamboat meet at Mid Lakes Marina, Macedon (near Rochester) NY. Dave Conroy - Phone 315-945-7099, e-mail is libertyboat@Juno.com, or winter address is 2592 Cay Cove, Matlacha, FL 33993. Boats burning wood should let us know so we can plan ahead for an adequate supply. Free camping and launching on the marina grounds.

June 23 - 25, 2006 - Finger Lakes Live Steamers First Open House of the year. The event includes larger scale (1 1/2" & 2 1/5") "ride on" equipment - Live steam (coal, gas & kerosene fired) plus the diesel / electrics with gasoline and battery operated locomotives. We also have a 1" scale track which is presently undergoing major expansion, including a 28' thru truss bridge. The newest operation is our Gauge One Line which is over 600' of stainless rail (3 loops, 2 of which are interconnected) all with 10' minimum radius curves and # 6 turnouts, a 20 foot dual track wooden trestle (used primarily for steam up), new 6' thru truss steel bridge plus a growing number of other attractions. Bring your trains, we have something for everyone and regularly run steam, battery and track power all at the same time when compatible. If it goes on Gauge One Track, bring it along - we are still waiting for our first "clockwork". Information is available at http://www.fingerlakeslivesteamers.org/ or contact John Spencer (315) 689 - 3402.

June 17, 2006 - The Pine Ridge Lumber Co. in Jenison, MI, will host a steamup from 9 am until 6 pm. For more information contact Robb at steamlogger@yahoo.com or call (616) 667-1260. We have 450' of elevated 45mm track with 16' radius curves. Portable tracks will also be available for running. Visit mssls.info for photos of past steamups.

July 6 - 9, 2006 - 33rd 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 Web site: http://www.tuckahoesteam.org/

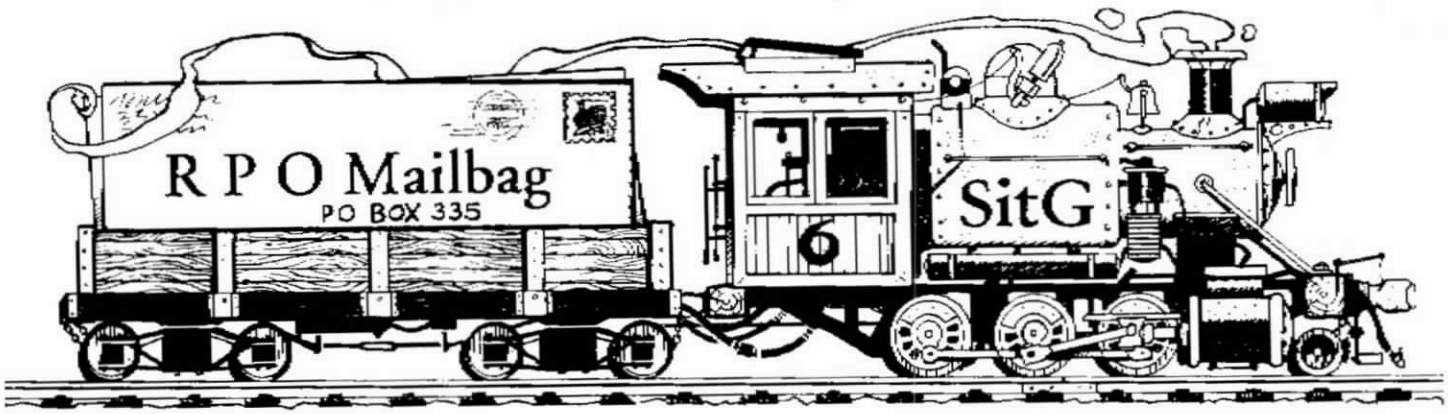
July 14-16, 2006 - The "American Invasion" (see article in this issue) in Ottawa, Canada. Any live steamer who may wish to attend and participate can get in touch with Doug Matheson at dmkkk@hotmail.com or at 613 - 692-4049.

July 19-23, 2006 - the 2006 National Summer Steamup will be held at the Lions Gate Hotel in McClellan, Calif., a suburb of Sacramento. The National Summer Steamup gives owners and operators of small-scale (1:13.7-1:32) live steam locomotives the opportunity to meet and run equipment in a secure, indoor, friendly setting. The 2006 event will feature both 45mm and 32mm tracks, a Saturday night BBQ dinner, clinics and workshops, exhibitor displays and swap tables. Because of the cancellation of the 2006 International Small-Scale Steamup in Diamondhead, Miss., the National Summer Steamup will be the only major small-scale steam event this year. The Lions Gate Hotel, on the grounds of the former McClellan Air Force Base in suburban Sacramento, will provide the steamers with a ballroom setting of more than 6400-square-feet. Event organizers have secured the services of the Pacific Coast Live Steamers' "original track," a 110-foot 45mm-32mm dual-gauge layout as well as the new "San Luis Obispo" track; in addition, they are working to bring in even more trackage. The hotel is providing live steamers with the low room rental rate of $85 per night (double-occupancy). Reservations can be made with the Lions Gate toll-free at 1-866-866-7100. For more information on the 2005 National Summer Steamup, please visit the web site at http://www.summersteamup.com/, e-mail steamup@summersteamup.com or call 650-557-9595.

August 31, September 1-3, 2006 - Pennsylvania Live Steamers Labor Day Steamup in Rahns, PA. This is an extended meet to celebrate the PLS 60th Anniversary! Contact Harry Quirk for details. e-mail cequirk@netzero.net or phone 610-346-8073.

September 22-24, 2006 - Finger Lakes Live Steamers Second Open House of the Year. See listing for June 23-25 for full information.

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.)



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>.

* * * * * *

Austria
via e-mail

Hi Ron,

SitG has arrived today. Very interesting stuff, I liked the Duchess article and it really looks a great engine. Having said that I must confess that I am not a friend of LMS (hell of a mess) locos, having grown up in LNER Darlington, but the Duchess really looks the part.

Peter was thrilled to see his photo, thank you, and another thank you for showing our track and the Shay on the (web site) home page. I'm looking forward to the follow up article on valve gear ***(Valve Gear Part I - how does it work? by Charles McCullough),*** which I feel will help a lot of us, particularly as it is written in a so easy to understand way. I have read a couple of articles on the subject elsewhere and they almost all assume the reader is a doctor of rocket technology. Those guys don't usually need an explanation anyway. Your article gets there where it is needed. Well done.

Regards,
Bert Horner

* * * * * *

Reading, Pennsylvania

Dear Ron,

In the review of an Accucraft GS-4 in SitG #83, the author wrote that the locomotive was operated with boiler pressures of 75 psi and greater while conducting the running tests on this locomotive at the Pennsylvania Live Steamers club track. Pennsylvania Live Steamers Boiler and Safety Standards requires all boilers with an operating pressure greater than 60 psig or an internal volume of greater than 50 cubic inches to undergo an annual performance test with all related records kept on file by PLS. This does not affect the majority of Gauge 1 steam locos, but for those that are affected we want SitG readers to be aware of these standards and regulations if they plan to use our club facilities.

Sincerely yours,
Robert M. Blackson

* * * * * *

Austria
via e-mail

Hi Ron,

In passing, a point which may be of interest to some readers. Most gear wheel manufacturers cut their gears from lengths of bar with the teeth cut first. The disadvantage of automatic production is that the remaining part is usually between 6 and 8 inches long, and this wanders into the scrap bin. Another interesting point is that usually the same module in different diameters is cut on one or two days.

Now, being an environment protector, I take it upon myself to help these companies with their disposal problems. I take them home, and as I need gears I just pull one of the pieces of scrap out and make my gear as I want it. Width of teeth, diameter of boss, length of boss are no longer a problem and my dividing head is almost redundant. A sharp parting tool and a three jaw is all one needs, being careful to centre and drill them accurately before parting off.

.....and now, back to my winch.

Regards
Bert Horner

WHAT'S NEW?

Triple R services, 231 Rutland Ave., Mount Holly, NJ 08060 - Phone: 609-267-0769 - E-mail: cebednarik@yahoo.com - Home Page: http://home.comcast.net/~suzyq/wsb/html/view.cgi-home.html-.html offers weathering, repairs, kit building, steam loco tuning, steamboats, etc.

The Astragal Press, PO Box 239, Mendham NJ 07945-0239 - 866-543-3045 - web site: www.astragalpress.com has a new catalog containing items of interest to all of us. Things like ***American Steam Engine Builders 1800-1900, The Baldwin Locomotive Works, The History of the First Locomotives in America,*** and many more. When ordering, please let them know that you saw it in SitG.

Gorgeous Garden Railways. The title says it all! This is a beautiful new book by Marc Horovitz and Pat Hayward and published by Kalmabach Publishing It contains 144 pages and 140 images of the most vivid, colorful and beautiful garden railway photos you've ever seen. This is a great book to relax with anywhere and any time. Order online at: www.kalmbachbooks.com, or check with your favorite bookstore. Highly recommended!

The Train Depot is now selling high quality PECO track and accessories. ***Check out the details in their ad in this issue.***

Building an Elevated Railroad with a Familiar Bounce

by Larry Goodhue

An easy, inexpensive way to get up and running...

I first joined the ranks of Gauge 1 Live Steam railroading when my wife and I traveled down to Mississippi from New Hampshire and attended Diamondhead in January of 1997. When we traveled down there, at the recommendation of Jerry Hyde, I didn't own a Live Steam engine of any kind, and had actually been an N Scale modeler for over 20 years. The trip to DH that year was a successful, enjoyable and rewarding one, and I found myself traveling home with a brand new Roundhouse Argyll that I had purchased and run at the event.

Dave Barker's Accucraft K-27 pulls a train around the railroad soon after it was completed.

However, upon arriving back home I came to the sad realization that even though this engine was a beautiful model, running it was more fun than just sitting and looking at it. I had a problem, however...those 45mm gauged drivers just would not fit on my N Scale track, and I didn't know anyone in my area that even owned Gauge 1 equipment, let alone own a track that I could use. As it was January in a very cold and snowy New England, the best I could do was call the man I purchased my engine from, order a set of test rollers and steam my engine on my dining room table (while dreaming of having my own Gauge 1 railroad.)

Later that year I purchased my second live steamer, a Roundhouse SR&RL #24, and soon thereafter joined a local Garden Railway Society by invitation of a new friend of mine. This gave me a place to occasionally run my engines at club shows and events. However, something was still missing. I really wanted to have a railroad in my own backyard so I could enjoy my trains any time.

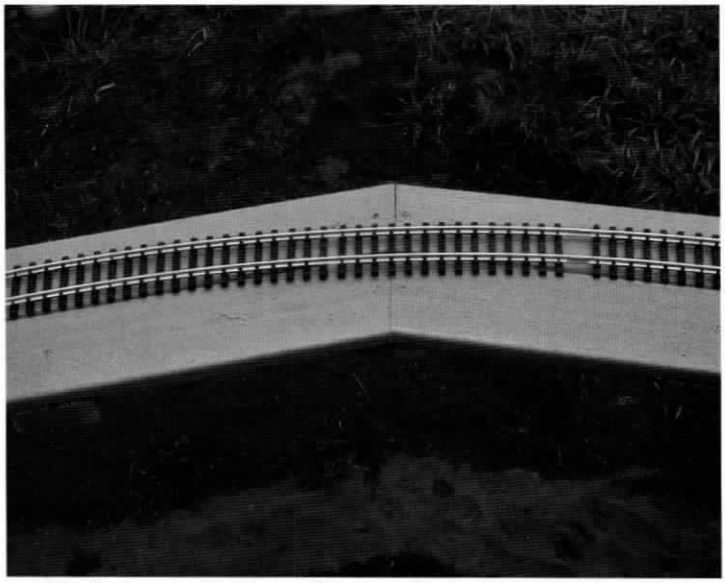
I began the process of researching all of the different methods of building either an elevated or garden railroad, and found that there were nearly as many methods as there were guys involved in the hobby. Some of these beautiful railroads involved time, money or resources that I just didn't have, or they were

A subroadbed joist is shown mounted to a curved section of the frame, prior to the positioning and mounting of the Trex subroadbed sections.

The back straight section of the railroad is all set, leveled and ready to accept track.

This photo shows a Waste Tee "Saddle" supporting the electrical conduit portion of the frame.

The adjustable PVC leg sections are leveled and held in place by the band clamp shown just below the 2" PVC top leg section.



14' diameter Aristocraft curved track is positioned on the hexagonally cut subroadbed sections on one of the end frame sections.

Our dog Gabriel lies in the shade under the straight section of the frame built to accomodate the mainline and two passing sidings (one on either side of the mainline).

built in a warm weather climate that I feared might not yield comparable results in my area. I was also faced with the problem that my wife and I were renovating an old Victorian home in the city of Manchester, NH, and our house was on a 0.4 acre lot, of which the house, front lawn, walks, driveway and detached garage took up more than half of the land. By July of 2001 we had finally completed enough of our house projects that I could actually consider building a railroad. Being a person that many times sets aggressive goals, I wanted to host my very first steam-up on the weekend after Labor Day of that year, as our good friends from our multiple visits to DH, Norm and Ruth Saley, would be in the area at that time. So, I needed to come up with something that I could build in a fairly compact space, in a small amount of time, and with limited resources (most of our time and money was still going into the restoration of our house).

Well, to make a long story relatively short, I devised a method for constructing an elevated railroad that met my objectives. In spite of all of the other very excellent ways to build an elevated railroad, I found this method to work very well within my constraints, and allowed me to build a railroad in my backyard in less than one week's time.

The concept came to me by sheer coincidence. A few years earlier we had purchased a Jump King trampoline for our kids, which had been well used. By 2001, my kids were in high school, and when they decided to use the trampoline that spring we discovered that the surface of the trampoline had been torn by ice or snow during the winter. And, despite my kids comments to the contrary, they were not using the trampoline very much anymore. So, when they asked me if I was going to fix it for them, my reply was "Nope, I'm going to build a railroad out of it".

What I discovered was a very stable and sturdy tubular steel frame that was 14' in diameter, which could easily be converted into an oval steaming track of the same diameter. And, about the same time that this was all going on, Aristocraft had just begun releasing all of their sectional track in various diameters, including a new size that was 14'.

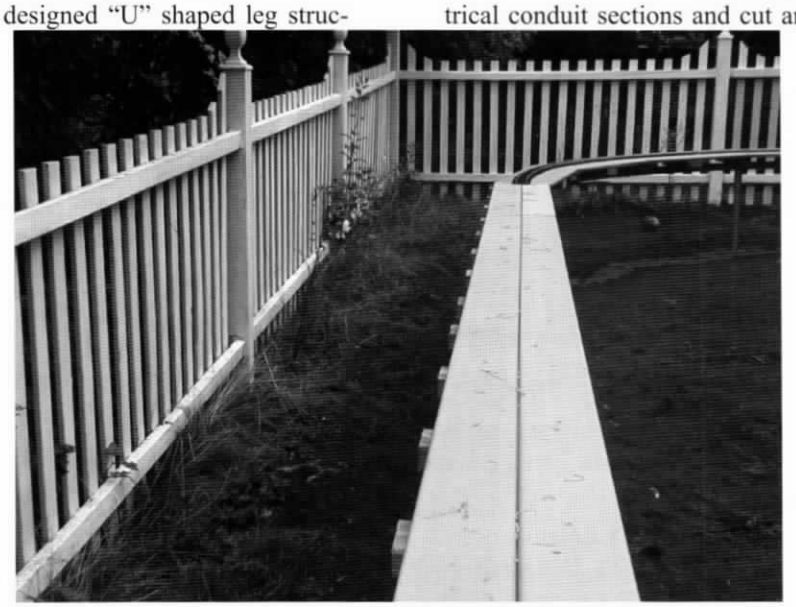
So, it was off to Home Depot to see what I could find to help fabricate my new railroad. In the electrical supply section of the store I discovered that 1.5" thin wall galvanized electrical conduit was the exact same OD as the tubing that was used in the heavier walled trampoline frame. These pieces of conduit come in 10' lengths, which easily and readily accommodate the use of 5' straight sectional track in multiple increments. And, they made very nice union couplings that could be used to mechanically fasten two lengths of the pipe together end to end. Also, I could use the "U" shaped hanger brackets for the conduit to attach sub roadbed joists, upon which I could attach my choice of sub roadbed to the frame.

I then began looking for a suitable sub roadbed surface, and a material for the joists. What I chose was pressure treated 2x4's as a material for the joists, and lengths of 5/4" x 6" Trex decking to be used as the sub

The Trex subroadbed was cut at 22.5 degree mitered angles to form the hexagonal shaped curves for the end frames.

roadbed. Given our climate, I wanted to use something that would stand up for a number of years.

Lastly, it was off to the plumbing aisle, as I needed to find a suitable solution for adjustable legs to support the straight sections of the frame (as the curved sections already had wonderfully designed "U" shaped leg structures, as a part of the trampoline frame). My solution was a relatively easy one, as I stole an idea from my friend Don Jackson, in East Boothbay, Maine. I took his idea and modified it slightly, as my railroad would be on the ground and not on hard or paved surfaces. He had designed a fully portable elevated track using PVC pipe for the leg supports. What I chose was several lengths of 2" PVC pipe, several lengths of 1.5" PVC pipe, several lengths of 1" PVC pipe, and a bunch of 1.5" PVC elbows, 1" PVC elbows, 1" PVC male thread adapters, 1" galvanized flanges, Band clamps that included a range of between 1.5" and 2" and 2" PVC Waste Tees. With these materials I could construct multiple sets of adjustable legs to support the frame anywhere I wished.



Track laying began with the two curved end sections, followed by the back and front straight sections. The seams between the Trex boards allow for runoff of water and snow, as this railroad performs equally well year round.,

My last stop was the hardware aisle, where I purchased an ample supply of 3/4" hex head sheet metal screws, 1.5" galvanized decking screws, 2" galvanized decking screws, and 1" galvanized sheet rock screws. From there I drove my pickup truck load of materials back home, and got ready to build my railroad.

The first thing I did was to pre-drill and then sheet metal screw together the trampoline frame at all connection points. These frames are designed in a manner that when fully assembled, the frame elements fit into each other without any mechanical fasteners needed. But, as I knew I was going to be using it in another manner, I wanted to insure that it was going to be permanently connected together.

Then I pulled out my sawsall with a bi-metal blade installed, and proceeded to cut the top frame in half at the 12 o'clock and 6 o'clock points of the circle, making sure to cut the frame in between two of the "U" shaped leg sections at both points. This essentially created two free standing semi-circular frames, which were about 36" tall.

As my railroad was designed to be made out of these two curved end frames, and four 10' electrical conduit sections, the oval frame would roughly measure 14' x 34'. The area in which it was to be installed was not completely level, and in fact fell off by about 12" in the 34' length of the oval. So, I began at the low end of the oval, and positioned the first semi-circular frame section, digging were needed in order to properly position the two "U" shaped leg sections, so that this frame would be level. Next I took the four electrical conduit sections and cut an "X" longitudinally into one end of each piece with my sawsall, and slightly peened the four resulting tabs I created inward, thus creating a nipple at one end of each conduit section. This nipple end was then inserted into one section of the semi-circular frame, drilled and fastened with two sheet metal screws, with the other end of the conduit being temporarily supported on a saw horse.

I then installed two PVC leg sections under this section of conduit, which had previously been fabricated in my workshop. Each leg section is made up of a lower flat bottomed "U" frame, and two adjustable top sections that will "saddle" the conduit. I used the "U" shaped design, replicating the trampoline legs, as this created a leg that would not settle further into the ground over time. The bottom frame is made up of three pieces of 1.5" PVC, each cut about 3' in length, and glued together with two 1.5" PVC elbows (the riser legs may need to be longer or shorter depending on your terrain and elevations). The two top sections are each made up of a section of 2" PVC pipe approximately 18" in length, and a 2" Waste Tee which I ran through the rip fence of my table saw, cutting off about 1/2" of the straight section of the Tee, creating a "saddle" to support the conduit in. The Waste Tee is glued onto the straight PVC, and this assembly slides down over the risers of the bottom frame, and is held in place by a band clamp fastened onto the 1.5" riser (allowing for adjustment and leveling of the top frames). This entire frame is installed by digging a small trench parallel and directly under the electrical conduit, which is backfilled and tamped down, placing the saddle up around the conduit, adjusting and leveling the conduit (and tightening the clamps), and finally cross drilling and sheet metal screwing the saddle to the conduit from one side.

The second section of conduit was installed with the non-nipple end of the conduit joined together with the first section, using the union couplings I had bought in the electrical aisle at Home Depot. I then replicated the installation of the two PVC leg sections under this conduit, and

once it was leveled, I proceeded to position the 2nd semi-circular frame section at the nipple end of the 2nd conduit. I trenched under the two leg sections of the semi-circular frame, and fine tuned this until this section was level and in position where I could sheet metal screw it to the electrical conduit nipple.

I then repeated the process of installing the two electrical straight sections on the other side of the oval, connecting both ends to the semi-circular end frames. I then took a little time to once again go around the entire frame and fine tune the overall level of the top frame, using the PVC legs and band clamps to adjust the frame up or down where needed.

Next, I marked each semi-circular frame section at the 45 degree, 90 degree and 135 degree points, thus divided each end in four equal sections. I then measured from the middle of the top frame pipe to each mark (0, 45, 90, 135 and 180 degrees) to calculate the length for the leading and trailing edges of the Trex corner sections that I would lay two-wide longitudinally as the sub roadbed for the railroad. I then cut the eight pieces for each end of the railroad, mitering the cuts at 22.5 degrees, thus making an octagon (that would be spaced 20' apart on the top of the oval frame). I then cut ten 10.5" long pieces of the pressure treated 2 x 4's to be used as the joists at the 0, 45, 90, 135 and 180 points of the frame. I installed these on the frame using the electrical "U" shaped hanger brackets I had bought in the electrical parts aisle at Home Depot, by centering them on the joists, attaching them with two 1" screws to the 2 x 4 (with the 2x4 hanging under the pipe frame, for ease of installing the brackets), swinging them around so the 2x4 was now on top of the pipe frame and positioning them so that they were slightly super-elevated and sloping towards the center of the oval (by using my level, and the second set of lines on the glass intended for use by plumbers when running waste lines), and then drilling straight down through the 2x4 and into the top of the pipe frame and "pinning" the joist in place with a 2" galvanized decking screw. Once these were all installed at the desired locations, I positioned the 4 inner and 4 outer Trex sections onto the curved frame joists, beginning at the 0 degree mark and working around to the 180 degree mark. These sections were drilled, counter-bored and fastened with the 1.5" galvanized decking screws. Once these 8 sections were installed, I then inserted 4 more joists under the center of each section of the curved sub roadbed, as these joists would be offset towards the outside of the circular frame as the inner edge of the octagon overlaid over the circle would come closer to frame on the "flats" of the roadbed sections. These joists were then fastened to the frame with the "U" shaped brackets, and secured to the Trex sub roadbed with screws.

Once the two curved ends of the sub roadbed were installed on the curved frame, I repeated the process of installing joists by centering them on the frame pipe, installing brackets, flipping the joists, pinning the joists (at level on the straights), and securing the Trex in a double wide configuration to connect the curved sections on the back side of the oval. On the front side of the oval I intended to install two passing sidings, so I was making the sub roadbed four boards wide on the sub roadbed. This called for joists 21" long, mounted in the same manner as on the rest of the layout, but requiring additional legs and bracing to secure it. These additional legs were made of three lengths of 1" PVC, two 1" PVC elbows, two 1" PVC threaded male adapters, and two 1" galvanized flanges. These were fabricated similar to the other bottom leg frames by gluing the three 1" straight sections together with the two elbows. I then installed and glued a threaded male adapter onto the top of each riser, and threaded on a galvanized flange onto each threaded adapter. I fabricated eight sets of these, and positioned them under the ends of the 21" joists equally along the inner and outer ends of the joists at four equal points along the 20' straight section of the oval. I dug small trenches where they were to be installed, screwed them to the underside of the joists using the flanges, leveled and backfilled the eight "U" shaped support leg sections. I then completed the installation of the Trex sub roadbed, four-wide, along this side of the oval, thus completing the installation of the frame and sub roadbed.

Now all I had left to was install the track. I positioned it along the top of the sub roadbed, connecting it all together (cutting some straight sections where needed), and joining it all together using Rail Clamps on the outer rail, and joiners as "sliders" along the inner rail. I then fastened the entire loop, switches and passing sidings to the sub roadbed with a sheet rock screw about 8 or 10 places along the entire oval (allowing for expansion and contraction of the track).

All in all, working very aggressively, this railroad was completed and installed in 5 nights after work, and on the sixth night I was running trains. The end result was a very stable and sturdy elevated railroad that was very weather tolerant, and had large enough curves that most engines on the market could be run on it. It remained installed in that location from the summer of 2001 until we moved from that home in March of 2005, at which point I disassembled it with help from my wife Pattie and my ten-year-old train buddy, Tyler Van Deventer, in about two hours. This was then transported in my utility trailer, along with the track, bridges, trestles and accessories from the garden railroad my wife and I built in the summer of 2002, to our new home in Bedford, NH. My wife and I then began the re-installation of the elevated oval, and the construction of a new garden railroad at our new home, with the "trampoline" railroad being expanded by 10', becoming a 14' x 44' dual track elevated railroad (the reinstallation of which was begun, but then halted as we constructed our new garden railroad in time for our 4th annual steam-up in September of 2005).

The gratification I got out of building this rather simple elevated railroad was amazing. To some, it may not portray the ideal manner of constructing a railroad, but it was cost effective, quick and easy to build, and most im-

portantly, it got me started on being able to run trains in my own backyard. It also had possibilities for larger and more interesting shaped railroads, with the use of an additional trampoline frame or two. Once I had accomplished this, the possibilities of garden railroad building seemed endless (and not nearly as daunting). And, it opened up a new world for my wife and me, as we began hosting steam-ups at our home, and enhancing our ability to enjoy time with many new friends in the live steam hobby. It also had the same effect on a friend of mine, Bob Cushman, who had considered building a railroad for several years, and finally decided he would try this method to build his first layout. The end result was that he built a nice little layout on his property, in a relatively short amount of time, and now he is outside steaming his engines several times a week, instead of watching them collect dust in his workshop while waiting for club meets and steam-ups at other people's houses.

Happy Railroad Building!

60th Anniversary for Pennsylvania Live Steamers

PLS will be celebrating its 60th anniversary over the Labor Day Weekend, beginning on ***Thursday, August 31st and running through Sunday, September 3rd, 2006.*** Early arrivals on Wednesday, August 30th are welcome; however, there will be no food service.

We invite all live steamers and their families to come and celebrate with us. We will not be open to the general public. In addition to Large scale ride on trains, we have a **permanent double track loop Gauge 1 track, and a portable Gauge 1 & Gauge 0 track.**

Pennsylvania Live Steamers reserves the right to test, inspect or refuse any equipment that does not meet the basic safety requirements.

Live Steam related vendor attendance is anticipated.

Registration: $5.00 per person for the entire weekend. Spouse and children under 16 free. Each registrant will receive a commemorative 60th anniversary pin, name tag, and information packet upon arrival.

Early registration is STRONGLY RECOMMENDED so that meals, parking and camping can be anticipated.
THE DEADLINE FOR REGISTRATION IS AUGUST 11TH, 2006 .

For more information, **registration forms**, PLS safety rules and hotels nearby, check our website at:
http://www.palivesteamers.org/Anniv.htm

Send registration forms to: Lee Nonnemacher, 60th Anniversary Secretary,
C/O Pennsylvania Live Steamers, Box 26202 Collegeville, PA 19426-0202
Phone: 610-275-6070
or
contact Patrick J. Murphy, 60th Anniversary Chairman at 610-454-0477
or
Contact Harry Quirk at 610-346-8073 or e-mail harryquirk@netzero.net

Boilers with a gross internal volume of 50 cubic inches or less and with an operating pressure of 60 psig or less are exempt from the PLS Boiler Inspection Standards.

TRAIN DEPARTMENT
YOUR SOURCE FOR REGNER IN AMERICA

YOU SPENT A BUNDLE ON THAT ENGINE!! AND THOSE CARS WERE NOT CHEAP EITHER!!

THEN HOW COME IT DOESN'T LOOK RIGHT???

MAYBE YOU NEED TO GET ON THE RIGHT TRACK.

IF YOU MODEL NARROW GAUGE AND USE MAINLINE STYLE TRACK , THEN YOU NEED THE PURPOSE BUILT NARROW GAUGE TRACK SYSTEM FROM

PECO

PECO TRACK provides a true to scale looking track. Featuring nickel silver rails, and slightly irregular spaced and "weathered" sleepers.

AVAILABLE IN SIZES

G-45 (45mm) CODE 250 NICKLE-SILVER:

SL-900 Flexible track in 36 inch fully assembled sections (6/box)	$5.29/Ft.
ST-902 Std Straight 11 13/16 in. Length, (6/box)	$6.49/Ea
ST-905 Std curve, 23 5/8 in radius, 30 deg angle; (6/box)	$6.49/Ea
12 sections per circle; (Provides small radius without flexing)	
SL-995/996 RH/LH N/S Turnouts 48 in radius, 23 5/8 in long	$87.00 /Ea
SL-910 Metal rail joiners, Code 250 N/S (18/Pkg)	$10.50/Pkg
SL-940 End of Line Bumper Kit for 45mm Code 250	$ 7.95/Ea

SM-32 (32mm) CODE 200 NICKLE-SILVER:

SL-600 Flex track in 36 inch fully assembled sections, (12/box)	$4.29/Ft
SL-E695/696 60inch Radius RH/LH Turnouts, 20 1/8 inch long;	$69.00/Ea
SL-810 Metal rail joiners, Code 200 N/S (24/Pkg)	$10.50/Pkg
SL-928 Large scale point lever kit, special hard wearing plastic;	$8.89/Ea
(will not corrode like metal levers and requires no maintenance.)	
SL-E697 "Y" Turnout, Code 200 N/S, 95 in radius, 19 5/32 in	$ 69.00
SL-627 Turntable Kit, Code 200, 32mm, Machined N/S Rail Parts.	$29.95
PECO Catalog full of a lot more goodies:	$10.00 including Postage.

PECO Track System also available in 45mm Code 200 N/S Gauge 1 mainline style.

NOTE: All code 250 and code 200 turnouts fitted with overcenter spring latching to eliminate blade drift derailments.
All Plastic components are UV resistant and designed for indoor and outdoor use.
Track sold in box lots only, FOB Norfolk VA.
All PECO products made in England.

FOR MORE INFORMATION: www.traindept.com or Call/Fax 757-855-6364
VISA and MASTERCARD ALWAYS ACCEPTED

MARK II Portable Live Steam Track

by Tom Bowdler

Tired of running on rollers?
No room for a track?

Jeff Young asked the fateful question at Ron and Marie Brown's Paradise East steamup in August 2004. We were discussing the portable live steam track I built (see SitG #77) which was in use that weekend when he queried, "have you thought of improvements you would make if you built another portable track", and then followed with "if you build a new one I'll buy this one".

Of course nothing is perfect and, yes, I could improve things and with Jeff purchasing the materials and offering some sections of Sunset Valley dual gauge track as a further incentive I put on my thinking cap. Jeff and Peter Foley picked up the track that November and took it to Jeff's home near Toronto. I had a commitment to provide a track for the Presidents Weekend steamup in Scranton, PA but first there was my annual Diamondhead project and travel there plus the holidays and working for a living so the pressure to get the new track built would increase.

Construction followed the same basic methods outlined in my previous article, luan plywood strips with pine 1x2 crossmembers for the frame with a ply top and luan strip "stiffeners" on the sides. The configuration was also similar, a 12' x 16' oval, but for this track I decided to widen the segments from 12" to 16" to allow the placement of a second set of rails to run two trains at once.

My wife Jane and I employed the same layout technique utilizing brown paper taped to our church social hall floor and using string and a marker as a compass. In order to keep the required outside dimensions and our desired 5' minimum radius for the inside loop of track we had to increase the outside loop radius to 6' and incorporate some tangent track on each side. We cut the paper template in 8 pieces no longer than six feet each and headed for the workshop.

Several years experience with the Mark I portable track showed the need for three major improvements: increased strength of each section to support two-train operations, easier and more stable leg attachment allowing simpler one-person set up and improved joining of the sections to one another with no tools required.

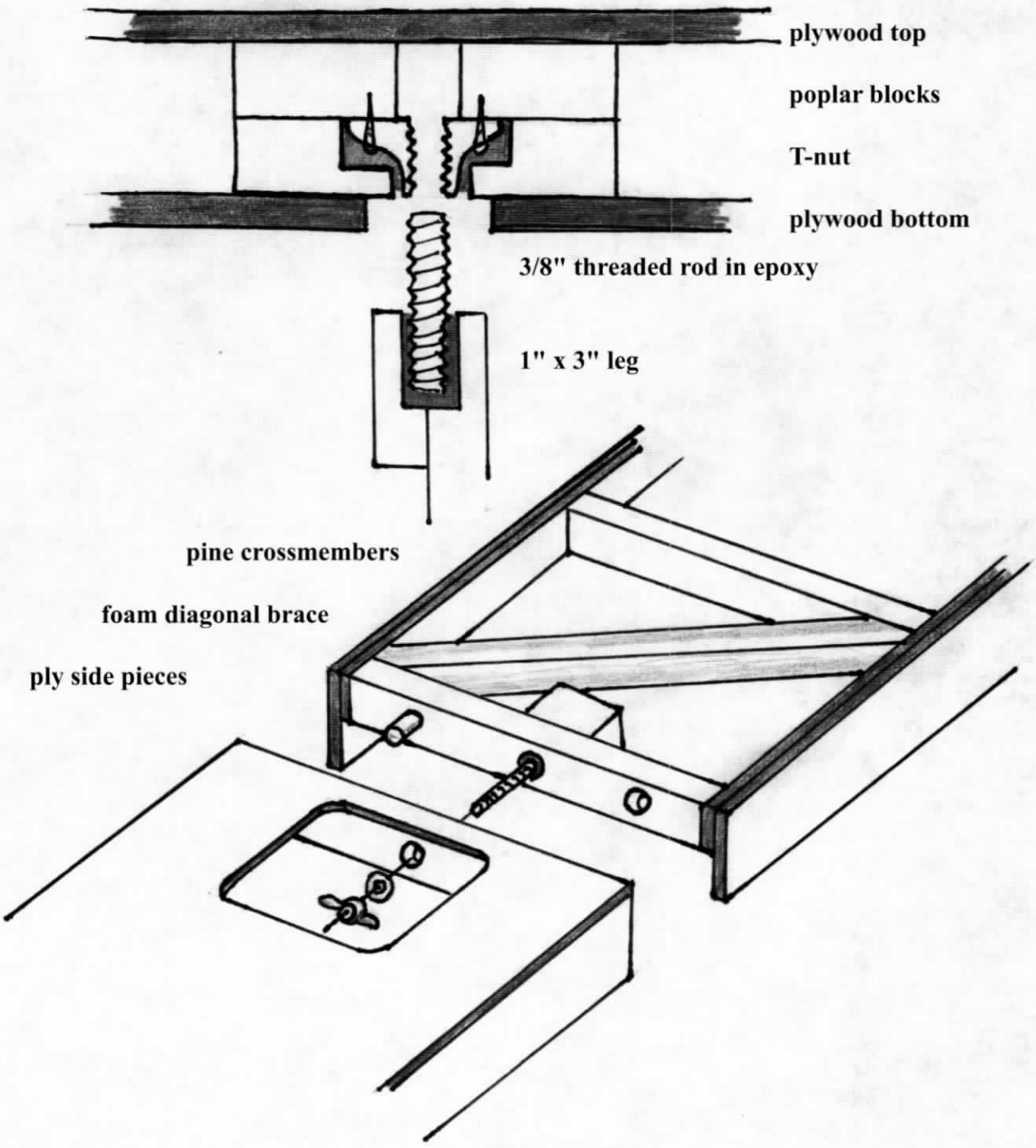
The first was easy to achieve. A bottom plate of luan plywood on each section would turn it into a "torsion box". Diagonal truss members cut from 1 1/2" thick, pink extruded foam board glued to both top and bottom plates add significantly to the stiffness but minimally to the weight. The track sections are now heavier due to the extra materials and increased width but are still easy to handle.

Improvements two and three are related, both involving 3/8" plated threaded rod held in oversize holes by thickened West System epoxy resin. The legs are the same 1" x 3" clear pine sections with a routed slot and bolts with wing nuts for vertical adjustment as on the Mk I track. The tops were doubled, drilled, and the rod bonded in place. They thread into screw-retained T nuts sandwiched between two pieces of 3/4" thick poplar, which is glued to the underside of the section top plate. The T nut is screwed to one piece of poplar which has a hole drilled to accommodates the threaded rod. The other piece of poplar has a hole for the top of the T nut, then a larger hole made with a Forstner bit to allow space for the T nut base. Thickened epoxy glues the wood together and stabilizes the T nut in position.

Guiding the alignment of the sections is the same successful dowel-in-hole system used previously. A piece of wood backs up the center of the 1 x 2 end plate into which a hole is drilled for the 3/8" rod, filled with thickened epoxy and the rod placed. The adjacent section has a hole in its end plate to receive the rod and a cut out in the ply bottom plate to allow placing the flat washer and wing nut that draws the sections together.

Setup is now easier: place the sections upside down and thread the legs into the T nuts, turn the main section upright and plug sections 2 through 8 into each other in sequence, tighten the wing nuts, adjust the legs to level, connect the track pieces with rail joiners and run trains!

A year has passed since the MK II track made its



Scranton debut with the sections temporarily clamped together. It is now completed with varnished plywood bottoms on all eight sections and an inner loop of AMS flex track for two-train operations. The track has been assembled at several venues near and far, indoors and out, where many engineers ran their locomotives on it and compliments were received.

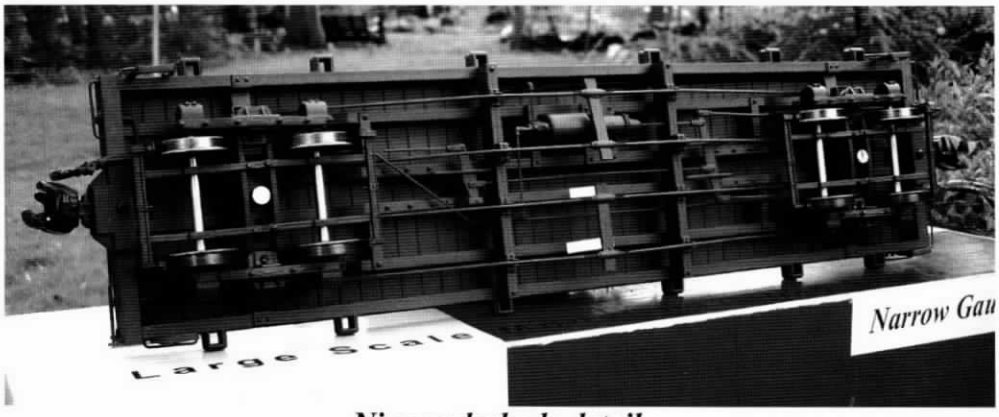
So far Accucraft C-16's and Moguls have been the largest and Carl Berg's one truck Heisler the smallest locomotives run on this track. With six foot radius curves and eight inch track spacing it will be interesting to see how some of the larger live steamers might fare.

You are probably wondering what I have up my sleeve for the Mark III portable track. Please don't ask!

AMS (Accucraft) Narrow Gauge Flatcar

text and photos by Tom Bowdler

Wow, a piece of East Broad Top rolling stock from the AMS division of Accucraft! When "Editor Ron" told me about it, I couldn't wait to get my hands on it. The familiar red and yellow box with molded foam insert protected the car on its journey from China, and what a flat car it is!



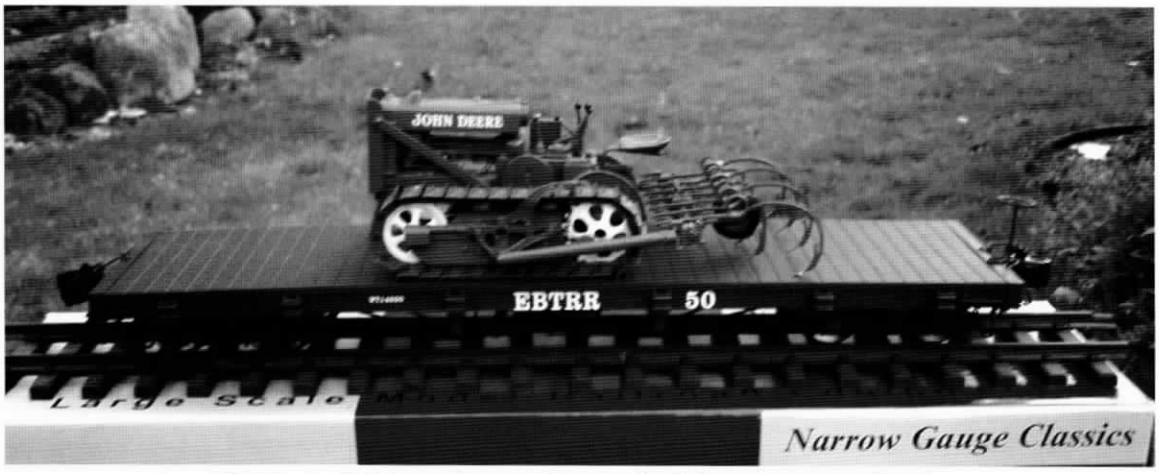
Nice underbody detail.

Painted box car red with convincing molded-in wood grain, plank detail, and nicely applied lettering, this flat car makes an excellent first impression and has a significant amount of "heft" when lifted. The A end beam details include truss rod ends, brake air hose with valve, grab handles, a heavy coupler pocket with Accucraft coupler and working lift lever. The B end adds brake wheel staff and chain and air valve. I turned the car over to reveal even more eye candy!

AMS' excellent free rolling fully sprung and equalized trucks with prototypically flanged metal wheelsets and brake beam/shoe detail allow excellent tracking on the less than perfect rails of my garden pike. The air brake system is modeled convincingly with clevis, piping, fittings, cylinder and bolt detail. The truss rod turnbuckles have wood planks inserted to prevent their loosening in service as might be done by a prototype railroad.

My 1:20.3 scale rule reveals that the AMS car's length of 30'1", width of 7'5 1/2" and truck wheelbase of 3'6" render it a close-enough but not scale model of EBT #50. Rainey and Kyper's "East Broad Top", considered the "Bible" for information about that road, says about the early flat cars, "it is nearly impossible to state anything about the cars' origins" and lists #50 as 28' 1 1/2" long, 7' 5 1/2" wide with a capacity of 40,000 pounds and retired from service in 1934. Early on #50 may have had mechanical brakes on only one truck and less modern couplers. Since it remained in use to 1934 it likely received many upgrades and could have had equipment similar to that of this model in its later years.

I am a fan of Accucraft products and, though not a perfect scale model, this flat car will look and function perfectly behind my Accucraft C-16, modified to represent EBT #7, delivering various types of loads to customers along the line. AMS list six road names with four numbers each so you should be able to find a version to use on your railway. See your dealer for a string of these excellent narrow gauge wooden flat cars.

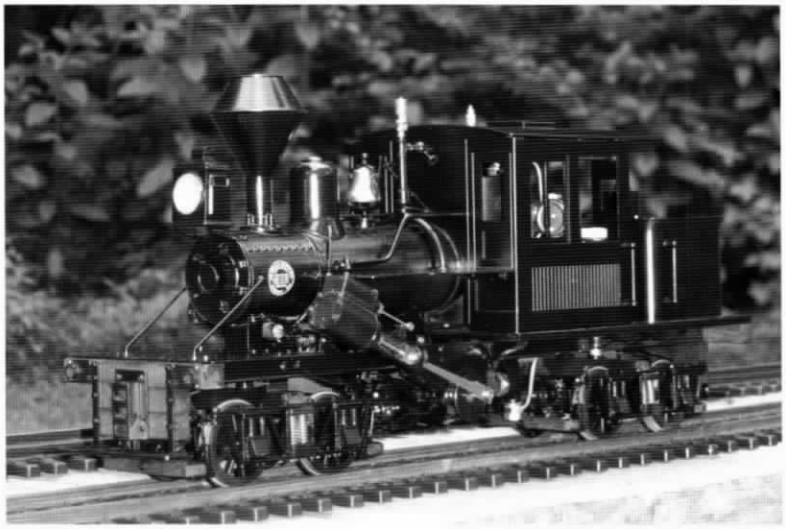


Subject of this review with a typical farm country load.

Catatonk Climax

by Peter Jobusch
photos by Carol Jobusch and Tascha Jobusch

Last of the "Big 3" loggers for Catatonk



Specifications

Scale: 1:20.3, a.k.a 15mm/ft. (45mm gauge track correctly represents 3 foot gauge in this scale).

Gauge: Adjustable between 32 mm (gauge 0) and 45mm (gauge 1).

Minimum Radius: 48" (will negotiate LGB 1600 curves or equivalent).

Cylinders: Two, 1/2" bore x 19/32" stroke, O-ring seals, brass crossheads.

Crankshaft: 3/16" diameter fitted with skew bevel gears to lineshaft and drive to water pump.

Valves: 80% cutoff slide valves actuated by Stephenson valve gear reversible from the cab.

Boiler: "T" type with single flue and gas fired radient burner, fitted with gauge glass, safety valve, blowdown valve, 1/4x40 tapping for aftermarket accessories, regulator and pressure gauge. All copper construction, silver soldered, working pressure 60 psi, hydraulically tested to 2x working pressure (120 psi) Safety valve set to 50-60 psi.

Fuel: Butane tank in bunker, working pressure 18psi, hydraulically tested to 2x working pressure (360 psi). Capacity sufficient for approximately 30 minutes running time.

Water Feed: Hand pump in bunker and crankshaft-driven pump with bypass valve.

Available from: Catatonk Locomotive Works, PO Box 335, Newark Valley NY 13811 l
phone: 607-642-8119 l e-mail: rbrown54@stny.rr.com

Grades on the East Serendipity Railway necessitate a love of geared locomotives on the roster, the best loved of which has been Mike Chaney's Heisler, offered by Catatonk Locomotive Works. It should then be no surprise that when Carol and I first saw your enterprising editor and his faithful assistant at the 2004 Diamondhead steamup, beaming over the gleaming prototype model of the Catatonk Climax, we placed an order on the spot. The locomotive was received just in time for its unpacking and initial steamings at the IE&W Railway 2005 spring steamup at the Stapleton's to an appreciative audience.

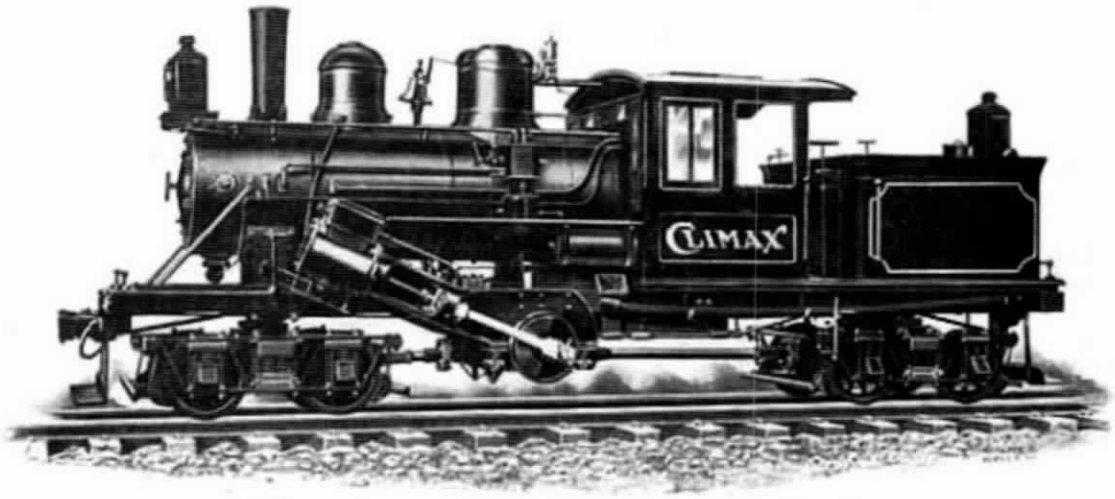


Figure 1: Page from 1900 Climax Mfg. Catalog

History

The first known Climax locomotive was outshopped in March, 1888, by the Climax Manufacturing Company of Corry, Pennsylvania, built to plans developed by Charles Darwin Scott. Over the next 40 years about 1000 locomotives were built. In September, 1928, the company was sold to the General Parts Corporation, and except for completing four locomotives under construction and two for stock, production ceased.

The Prototype

The Catatonk 18-ton Climax is a model of an 18-ton two truck, two cylinder, 42 inch gauge class B Climax locomotive with 28 inch drivers supplied in 1899 to the Lahey Brothers Timber Mill in Canungra, Queensland, Australia. Drawings by Richard Dunn in 1/4 inch scale appeared in the January/February 1985 issue of the Narrow Gauge and Short Line Gazette.

The Model

Fortunately for garden variety live steamers, Climax production continues with this Mike Chaney built beauty. While the sophistication of the model will appeal to the experienced user, the novice will be well served by that same level of sophistication as all the goodies actually make for easier operation of the locomotive.

This Climax is simply loaded with great features for both the novice and experienced steamer including:

- Gas fired with a radiant burner
- Pressure Gauge
- Sight glass
- Blow down valve
- Stephenson valve gear
- Hand and axle-driven water pumps
- Gunk deflector in the smokestack
- Variable feed control on the displacement lubricator
- Cab roof hinged to the side for easy access to the cab interior

- The center stem of the safety valve is a scale dummy safety valve

In another Mike Chaney innovation the water valve for the hand and axle pumps is ... the water valve on the tender!

First Firing

Unpacking and inspecting the locomotive at the IE&W Ry Spring Steamup was a real treat! Everything you need is in the box, and the instruction book is well worth the read (this from a guy who never reads the manual!)

1. Oil around. With a Shay or a rod engine I usually oil around while waiting for steam pressure to build. With a Climax or a Heisler there are a lot of lubrication points on the gear train, which is centered under the locomotive. Best get those while the locomotive is cold and you can tip it over to be sure everything gets lubricated properly [see photo x].

2. Steam oil ... might as well fill the lubricator while you are lubricating. As delivered, the feed rate is set for breaking in the engine. Mine is now only open about 1/4 turn after a few hours running. You know your lubricator is working when you see waste oil collecting on the rear axle of the front truck, dripping from the vent hole in the bottom of the smokebox [see photo x].

3. Water ... close the bypass valve, fill the tank with distilled water, take the pump handle, and pump away until you have 3/4 glass of water showing. On subsequent runs you should work the hand pump even if the boiler is full to prime the axle pump for reliable operation.

4. Fuel ... close the gas valve and fill the gas tank with your favorite gas.

5. Light ... open the gas valve about 1/4 turn and light either down the stack, or, my preference, at the bottom of the smokebox. A satisfying pop will let you know the flame has flashed back to the radiant burner, and it takes a sensitive ear to hear the fire on the almost silent burner. Looking down the stack provides no information because your view is blocked by the gunk deflector, so listen carefully.

6. Test the safety valve by gently lifting the central stem. Take care not to damage the scale safety valve that adorns the stem.

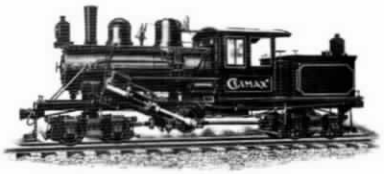
7. Clear the cylinders ... crack the throttle open, rock the "Johnson bar" back and forth to clear condensate. DO NOT expect a shower of hot oil and water to issue from the stack, as Mike has thoughtfully included a deflector in the stack to drive the gunk back down.

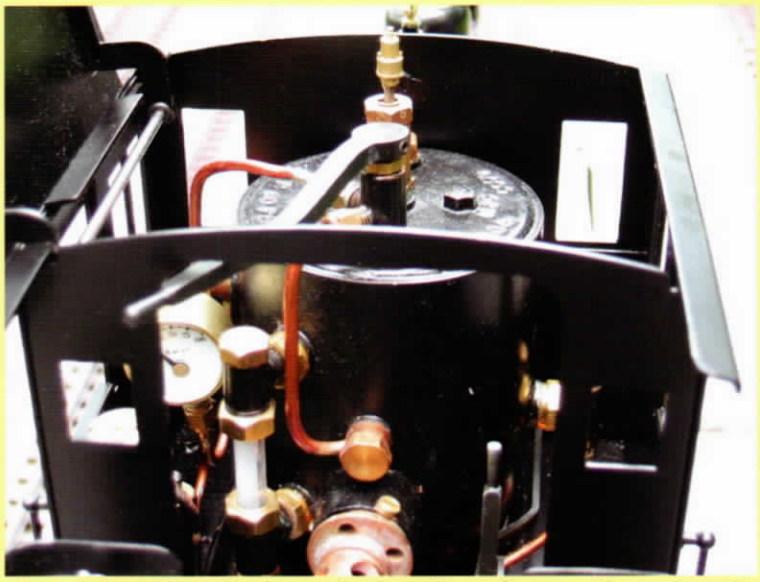
Enjoy the run ... adjusting gas flow and the water bypass valves can increase run time. Try to keep the water level between 3/4 and 1/2 way up the glass, and 25 – 40 pounds of pressure in the boiler.

The pulling power of this locomotive is awesome! At the President's Day Weekend Steamup in Scranton, PA it pulled 40 heavy cars with no problem. It never did run out of power, but started to slip on the oily rails after the 40th car.

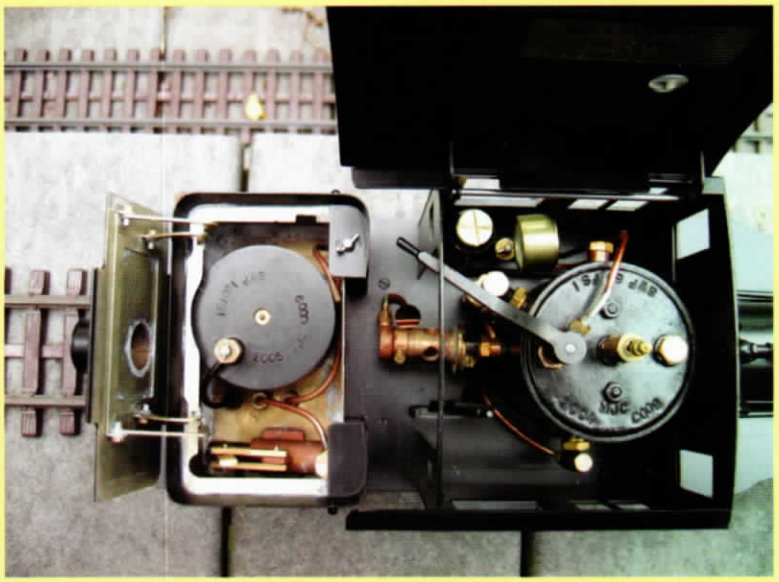
At the end of the run close the throttle and the water bypass valve, shut off the gas, open the blowdown briefly. If you now fill the tank with water, then as the locomotive cools down it will draw water from the tank into the boiler, making preparation for the next run easier (just don't forget to prime the axle pump with a couple of strokes of the hand punp).

Catatonk Locomotive Works has completed their presentation of the "big three" designs for geared locomotives with a really great Climax.

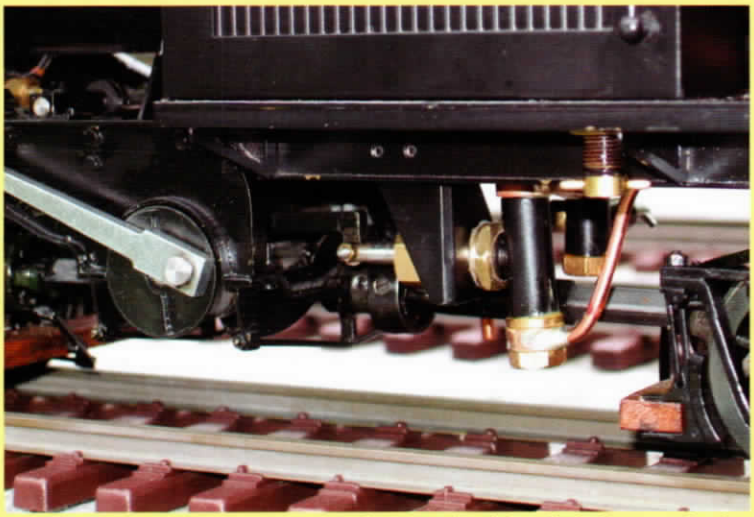




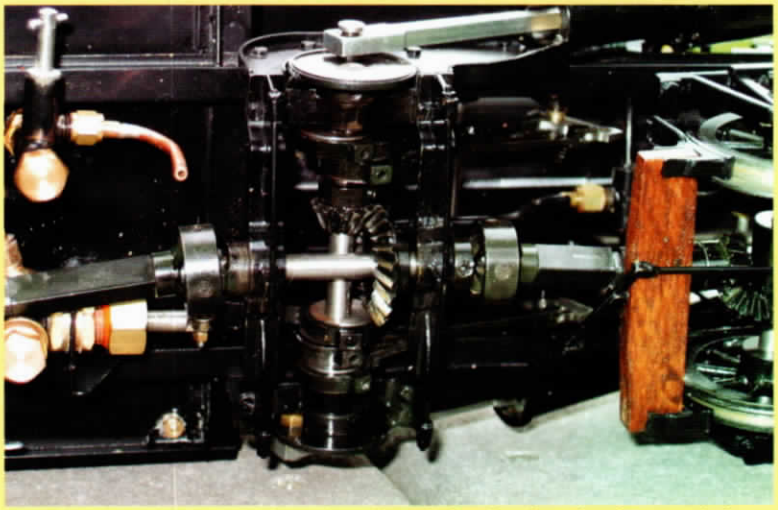
A peek into the cab shows the location of water glass, throttle, pressure gauge, safety valve, burner and Johnson bar.



Helicopter view shows the gas tank and manual water pump inside the bunker. The valve handle on the top right corner of the bunker is the axle pump bypass control.



Under the deck plate on the fireman's side...lubricator drain, blowdown valve and tube, axle pump.



Underside view showing details of the brake rigging, u-joints, gears and axle pump.

The Catatonk Climax (front right), with a load of logs headed for the mill, rolls by as the author instructs his 18-month old granddaughter, Emelia Grace Jobusch, on the operation of his Catatonk Heisler.

ARISTO-TECH PRESENTS

LIVE STEAM FOR EVERYONE

ARISTO CRAFT TRAINS

G 45 mm

#1 GAUGE

1:29 SCALE

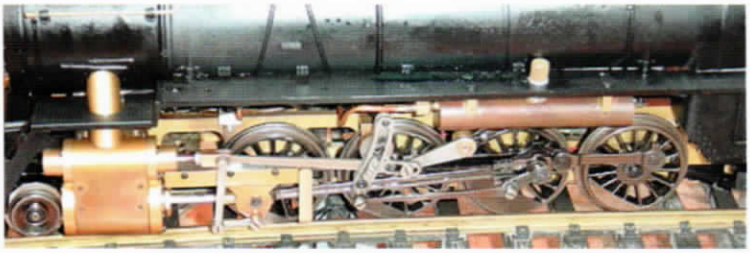
LESS TINKERING & MORE OPERATING

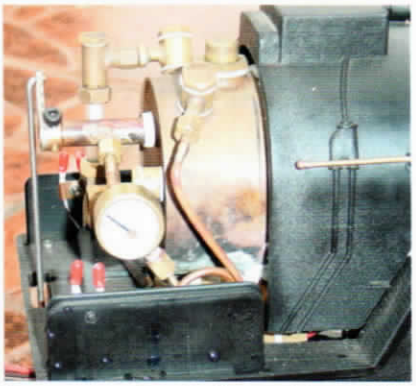
THE MIKADO W/RC, SOUND AND ELECTRONIC AUTO-START

Ready to run! Just add lube oil, fuel and water.

- Factory installed Radio Control.
- Butane fired with built in Piezzo igniter.
- Reversing and speed control servo motors.
- Rechargeable loco batteries w/charger.**
- Transmitter controlled bell, whistle, & chuff sounds.
- Large mouth lubricator.
- Locomotive boiler with large water capacity.
- Drain cock & pressure valve.
- Sight glass & pressure gauge.
- Butane tank pre-heater bath with drain valve.
- On-board control panel in tender under coal load.
- Metal carrying case with wheels & handle.
- Pulls 10 freight cars or 4 Std.Hvy.Wht. cars.
- Capable of 10' diameter curves & 3% grades.
- Running time 40 minutes or better.
- Goodall Valve available separately.
- Roadnames: ART84100 Undecorated
  ART84101 Pennsylvania
  ART84102 Santa Fe
  ART84103 Rio Grande

**Transmitter batteries not included





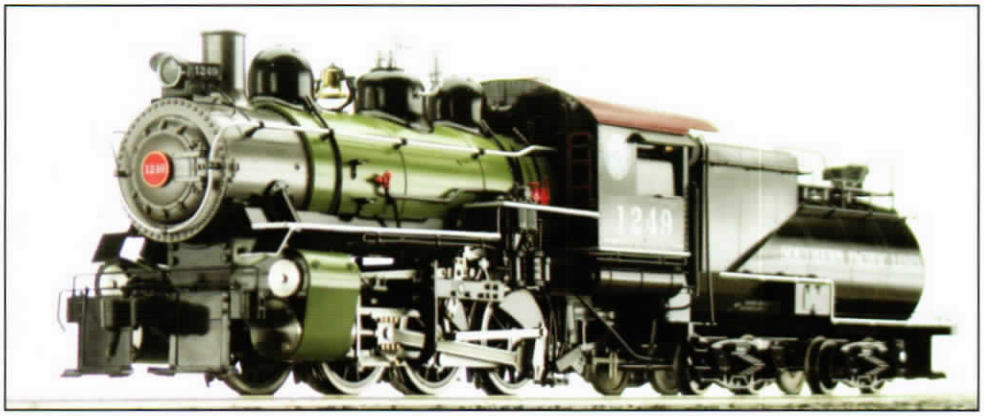
Photos are of Engineering Sample. Appearance of production model may differ. Cylinders, under frame & many other metal components will be blackened.

Here's your chance to operate Live Steam in G-Gauge and not need a mechanic next to you because Aristo-Craft has made Live Steam simple with the Aristo-Tech Live Steam Mikado! Factory installed R/C gives you locomotive speed and direction control without chasing after it. Smooth locomotive operation allows delicate control and even switching enhancing realism for all senses. This is fun guys! The Aristo-Tech Live Steam Mikado by Aristo-Craft is something new you will want and treasure!

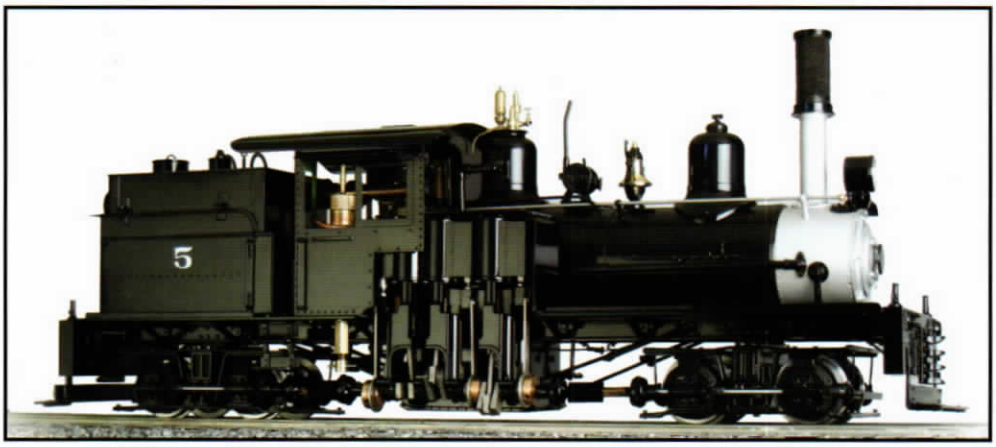
ORDER DIRECT OR SEE YOUR FAVORITE ARISTO-CRAFT DEALER!

Aristo-Craft Trains 698 S. 21st Street, Irvington, NJ 07111 Phone: 973-351-9800 Fax: 973-351-9700
www.aristocraft.com aristo@mindspring.com

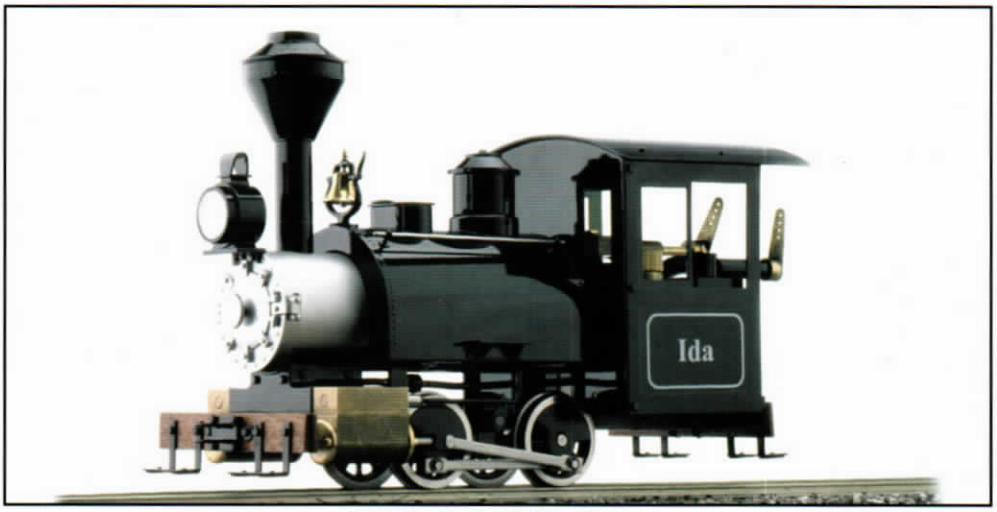
Beauty Defined



Southern Pacific S-12 0-6-0 Switcher, Live Steam
1:32 Scale, 45mm Gauge
Available Summer 2006



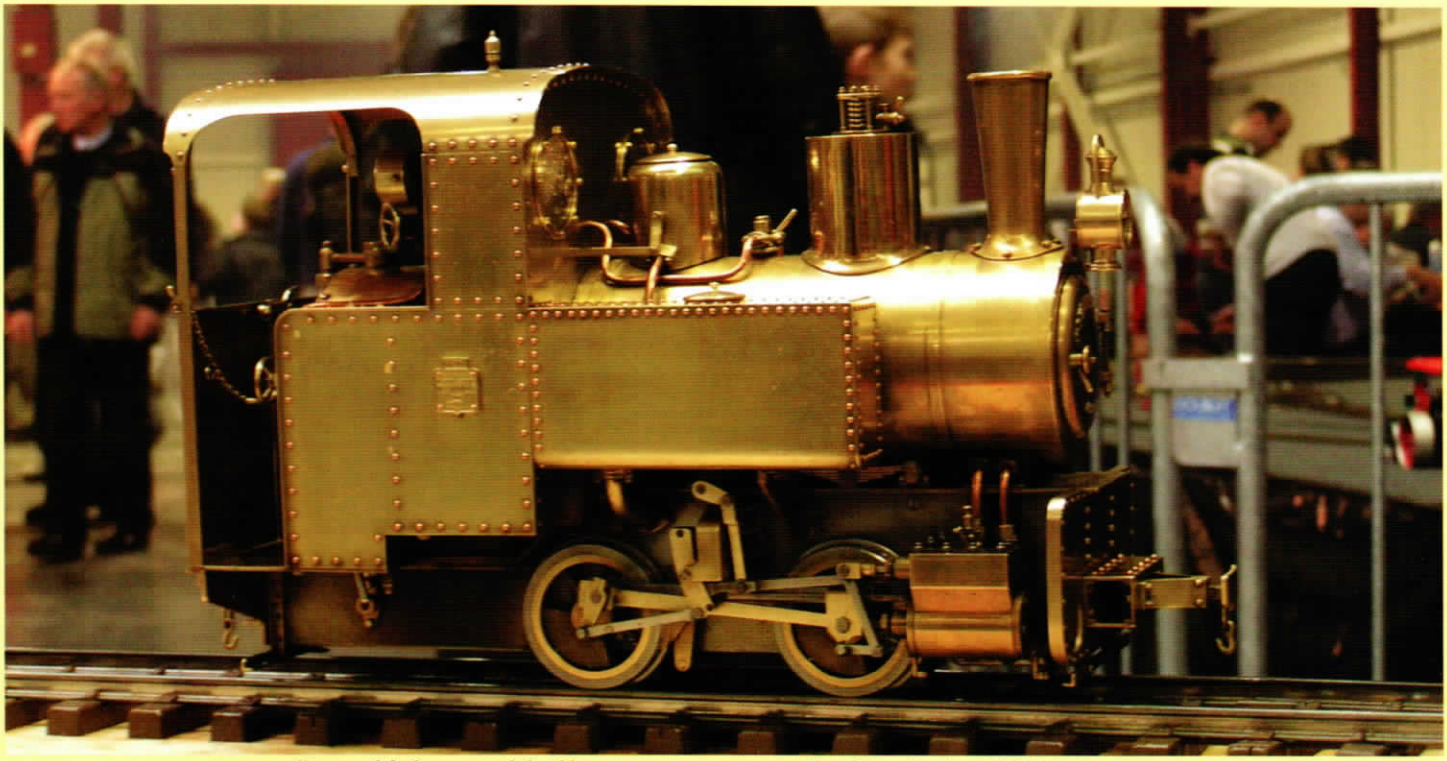
Shay Mich. Cal #5, Lettered and Unlettered, Live Steam
1:20.3 Scale, 45mm Gauge
Available Now



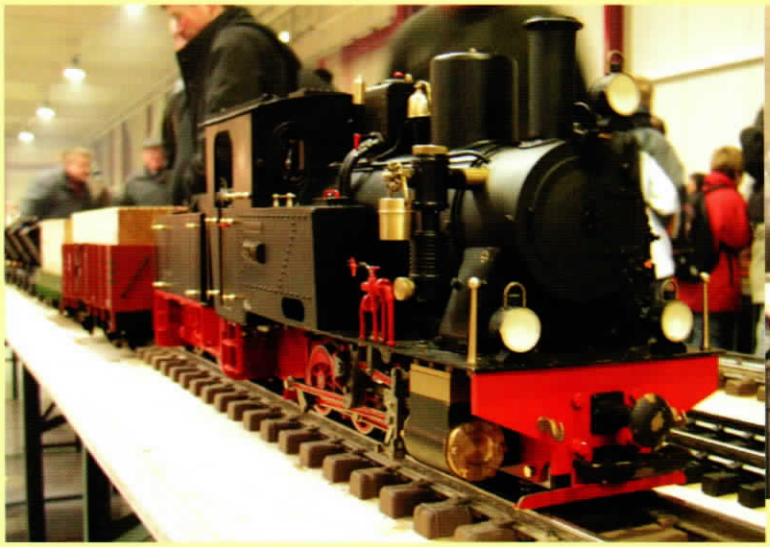
Ruby #3, Ida 0-4-0, Live Steam
1:20.3 Scale, 45mm Gauge
Available Now

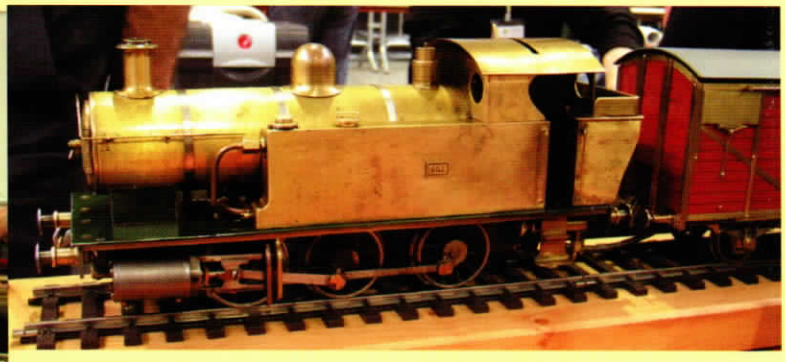
ACCUCRAFT TRAINS
MUSEUM QUALITY BRASS MODELS

33268 Central Avenue, Union City, CA 94587 Tel: (510) 324-3399 * Fax: (510) 324-3366
info@accucraft.com www.accucraft.com



Beautiful scratchbuilt steamer seen at the Sinsheim 2005 event.





Locomotives seen at the Sinsheim, Germany Live Steam Meeting in 2005. **photos by Bert Horner**

Steam Convention Report

10th Annual Echt Dampf Treffen (Live Steam Meeting) Sinsheim, Germany 2006

by Bert Horner

The 10th Annual "Echt Dampf Treffen" (Live Steam Meeting) at Sinsheim Germany took place on 13th, 14th, and 15th January, 2006. While outside the weather was cold and uninviting, in the exhibition centre it was warm and inviting. Here for one weekend in the year steam fans from not only Europe but also as far afield as Japan, India, and the U.S.A. etc, get together with only one topic - STEAM POWER, in all its forms. Stationary engines, boats, road vehicles, railway engines and more. Steam rules for three days, and the nostalgic smell of coal smoke mixed with steam oil fills the nostrils. (Chanel N°1 ?)

Vast stages displayed stationary engines up to triple expansion marine engines, large enough to power 30 foot boats, hot air engines, beam and mill engines all doing their work. The model ships had a large basin where they could show off their capabilities and those of their captains, Road engines up to the size of agricultural tractors ran through the halls, warning the public of their approach with whistle and steam klaxon.

The 5" railway fans had a traverser to simplify getting from their service point onto the five (5) kilometres of track. The 7.25" gauge track was a little shorter. Several gauge 1 tracks were available for those of us running "G" scale engines. Add to this the dealers from all over Europe offering everything you could wish from a 0.5mm tap to milling machines, lathes, metal castings and of course complete engines in all scales.

On Saturday evening after the last paying visitor had left the exhibition hall, a meal (with beer) was provided by the organisers. Then it was lights out and the night running started. During the next hours it was an orgy of flying sparks from smoke stacks and glowing fireboxes with that unmistakable smell of coal fired engines.

Those of us running Gauge 1 and 0 engines found our way to a track, set up our base and got down to renewing acquaintances and running our engines, which for most of us was the first time since the winter broke in late November. After three long days and short nights it was time to break camp, pack up and head home after booking the hotel room for next year.

To photograph Sinsheim would just take up too much time, but enclosed are photos of some of the engines which ran on 45mm track. The AristoCraft Mike ran for the first time in Europe as far as we can determine, and I had the honour of being first to fire her up. I must admit I was very sceptical about a plastic live steamer. The engine performed very well indeed, straight out of the box. The radio control worked as it should and was easy to use. The sound system, in my opinion, detracted from the loco. I would suggest a synchronised sound, or my personal preference would be no sound at all, because the engine has a respectable natural chuff. The mechanism reminded me very much of an Aster.

The enclosed photos are just a few of the models running this year. They were intended originally for our circle of friends and are largely "G" scale engines. The steam ferry caught the attention of many of us... the machine room is fantastic. Pity the train boarding was electric. As the ferry is Canadian and our engines are U.S. NG engines, maybe we can correct this next year with a White Pass engine?

The Nuts and Bolts of Shays Line Shafts and Brake Rigging

By Dan Rowe

Line Shafts

Early Shay photos show round coupling sleeves. These round sleeves were quickly replaced by the system shown in Figure 1. This drawing is for a Class A Shay that was typical of the Lima Locomotive and Machine Works early locomotives. A horn coupling attaches to both ends of the engine crankshaft. The coupling ring joins the horn coupling to the sleeve coupling and forms a universal joint. Brass bushings reduce the friction between the horns and the coupling ring, and serve as a replaceable wear part. The square shaft fits in the square hole in the sleeve coupling. The other end of the square shaft with horns is joined to the line shaft by another coupling ring. This telescopic section between two universals allows the truck to swivel.

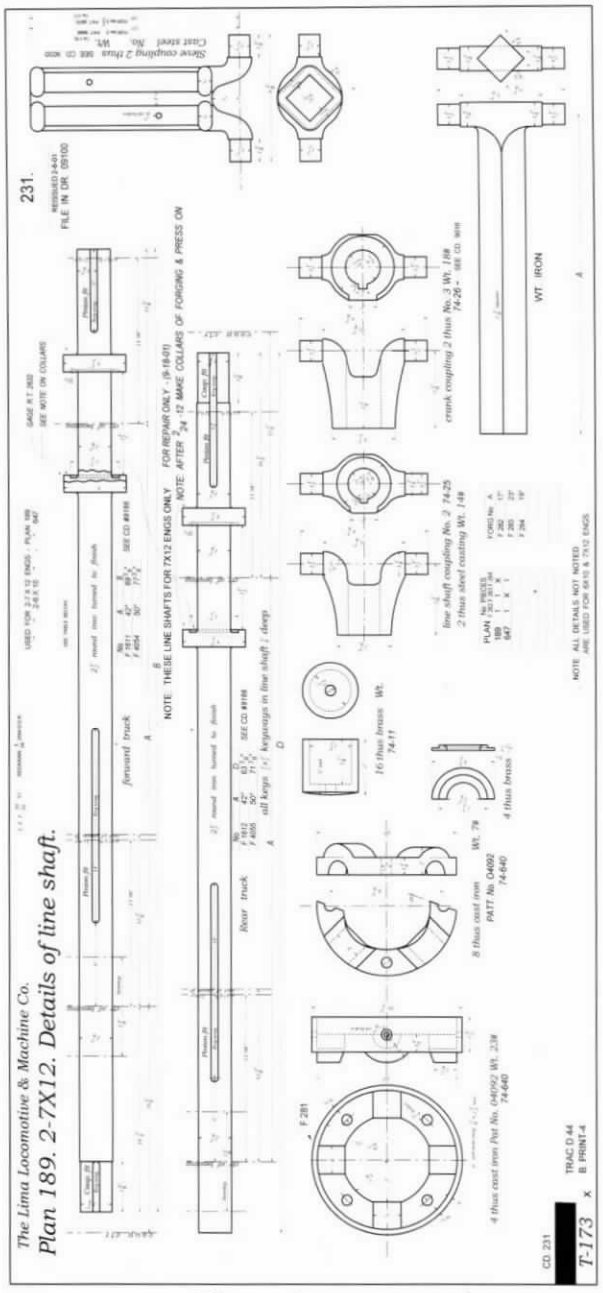


Figure 1

The right truck box line shaft bearings support the line shaft. Brass line shaft washers take up the gear thrust. These washers have a smaller stepped diameter, and are split in half across the diameter. The small stepped diameter fits in a machined recess in the line shaft collar, allowing easy replacement of this wear part. The gear pinions and the coupling horns are keyed and pressed onto the shaft.

As the engines got bigger and more powerful, photos of coupling sleeves show circular bands. This type of coupling sleeve was made from two identical parts each with a single horn, as shown in Figure 2. Wrought iron circular bands hold the two halves together. This would have made the

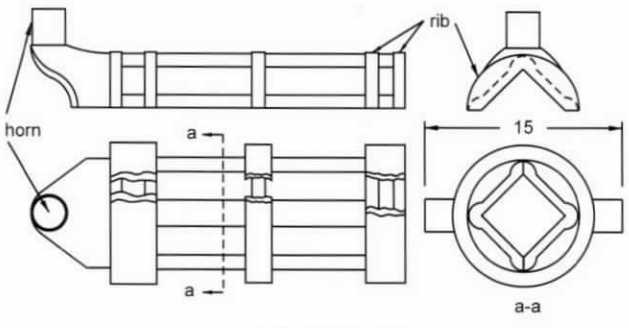


Figure 2

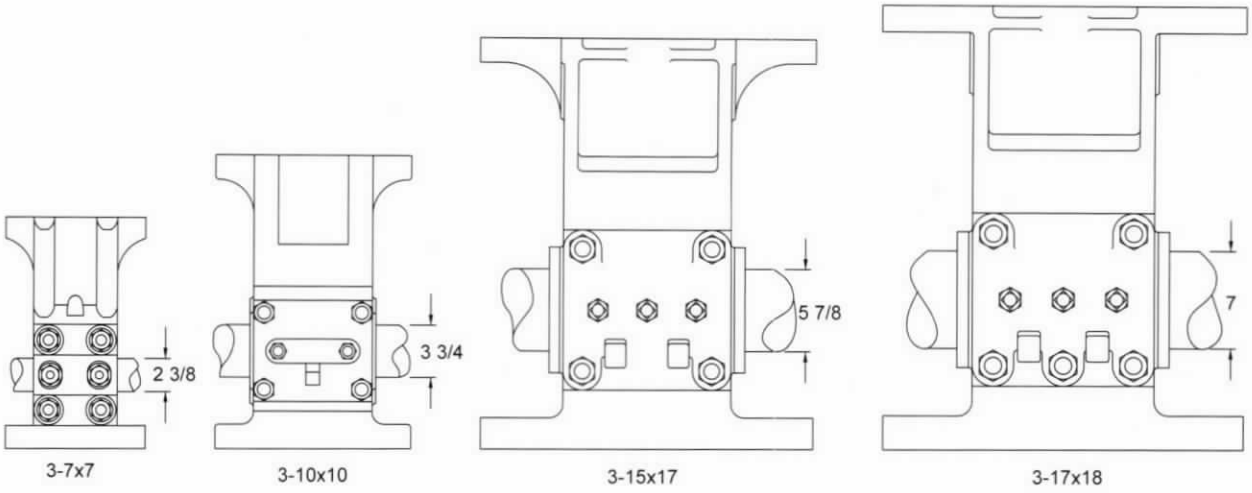
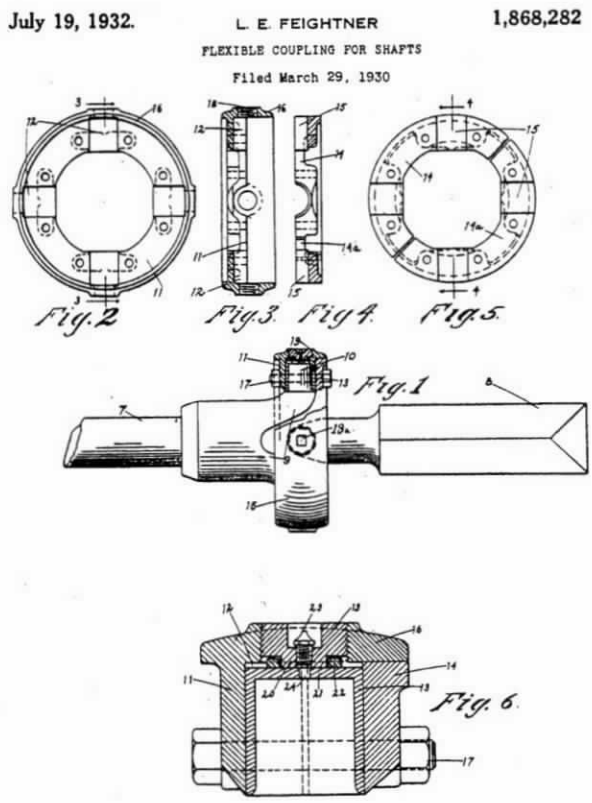


Figure 3

machining of the inner square surface much simpler, with no special tooling to make the part.



The size and power of the steam engine dictated the diameter of the line shaft. The smallest diameter line shaft was 2 3/8 inches and the largest was 7 3/8 inches. The size of the truck boxes, bearings and gears had to be sized to match the power output of the engine. Figure 3 shows right truck boxes all drawn the same scale with a typical engine size listed for comparison.

The early design of the coupling rings for the larger engines had two identical parts that were bolted together, and then a wrought iron band pressed around the outer diameter. On later models the wrought iron band is replaced by a cast lip on one half of the coupling ring. This looks very much like *Fig.1-5* on the patent drawing (1,868,282) of this part.

A small improvement which is the subject of this patent is really the only difference. The oil cellars were pressed-in coupling rings before this improvement. *Fig. 6* on the patent drawing is an enlargement of the adjustable oil cellar that can center the horns and allow for wear. The easy way to spot an adjustable oil cellar is the square socket used to turn it. This improvement was applied to only the last few Shays built.

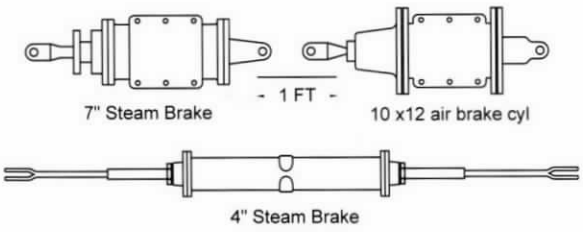
Brake Rigging

The truck brake rigging for a Class A truck with wood brake beams is shown in Figure 4. Later models had the wood brake beams replaced

with steel I beams. This drawing shows the typical arrangement for arch bar trucks.

The power to apply the brakes could be hand wheels as found on early small Shays or steam cylinders. The larger Shays equipped with air compressors usually had air cylinders to operate the brakes. Dual systems with both air and steam cylinders were used on some Shays. The steam brakes on the engine were favored by engine crews because they were fast acting and there is a much larger supply of steam than air. Some of the steam cylinders as shown by the 4" brake in Figure 5 were mounted near the side of the firebox where the boiler would keep them warm. There was another style of steam cylinder that had the same mounting bracket as the Westinghouse 10x12 air brake cylinder. This allowed the plan to be modified for either steam or air or dual braking systems as needed.

Figure 5



An observant reader spotted an error in the article on Bilgram's Diagram in issue # 78. The lap is 19/64 inches not 19/32 inches. The drawings are the correct size. I must have accidentally given the diameter of the lap circle not actual number which is the radius of the lap circle. I hope that this did not cause any extra work on the part of the reader, as that is a complex subject even without errors.

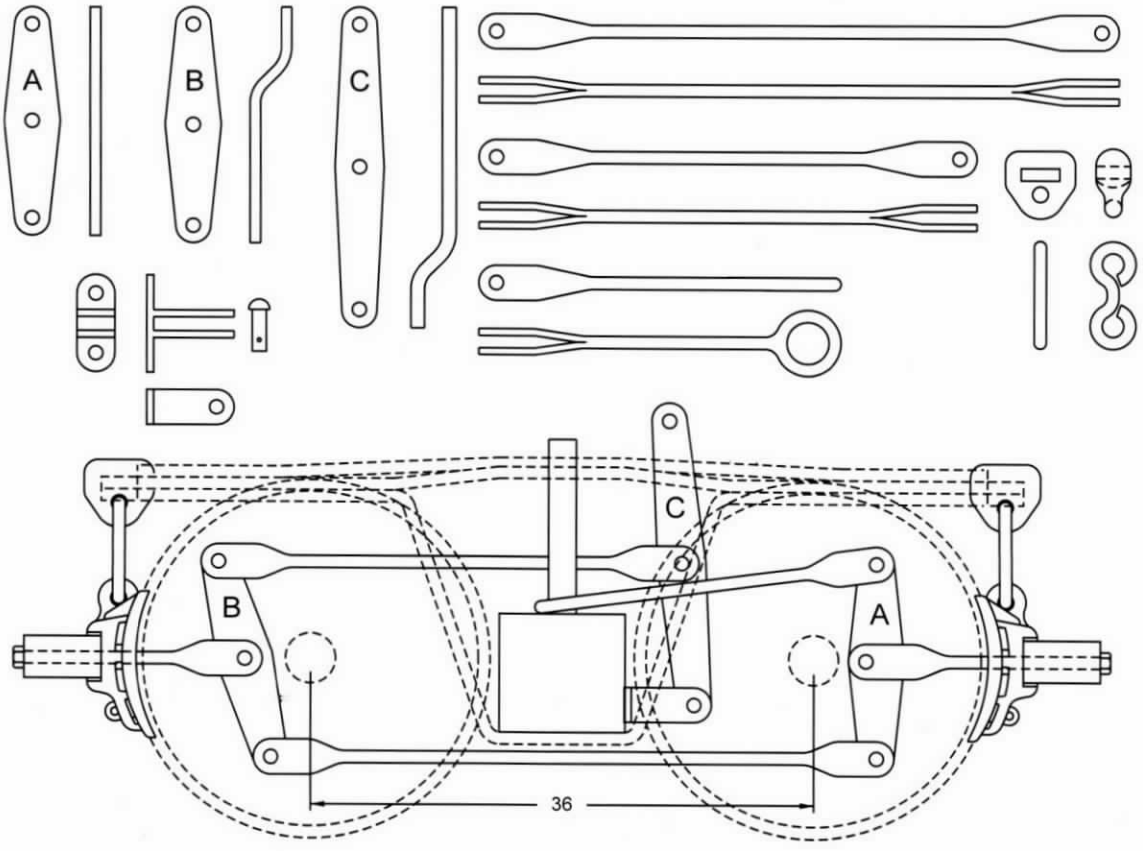


Figure 4

Valve Gear - Part II

text and drawings by Charles McCullough

In the last issue we discussed how to make a piston move in a cylinder with steam pressure and got some general idea of when to open and close the valves to move the piston with some regularity. Now let's look at some real world valves.

The valve resides in a container, known as the "Steam Chest", that is next to, or what is said to be "in close communication with", the power cylinder where the piston is that is to be moved. The steam chest has several openings for certain purposes. The supply of steam connects to one of them and another is open to the outside in some manner to exhaust the used steam. There are two openings where one each goes to opposite ends of the power cylinder. The "Valve" is some sort of moveable partition in the steam chest such that the steam supply can be directed to either of the openings to the power cylinder, and the other opening of the power cylinder directed to the exhaust, and, very importantly, keep the steam supply from connecting directly to the exhaust!

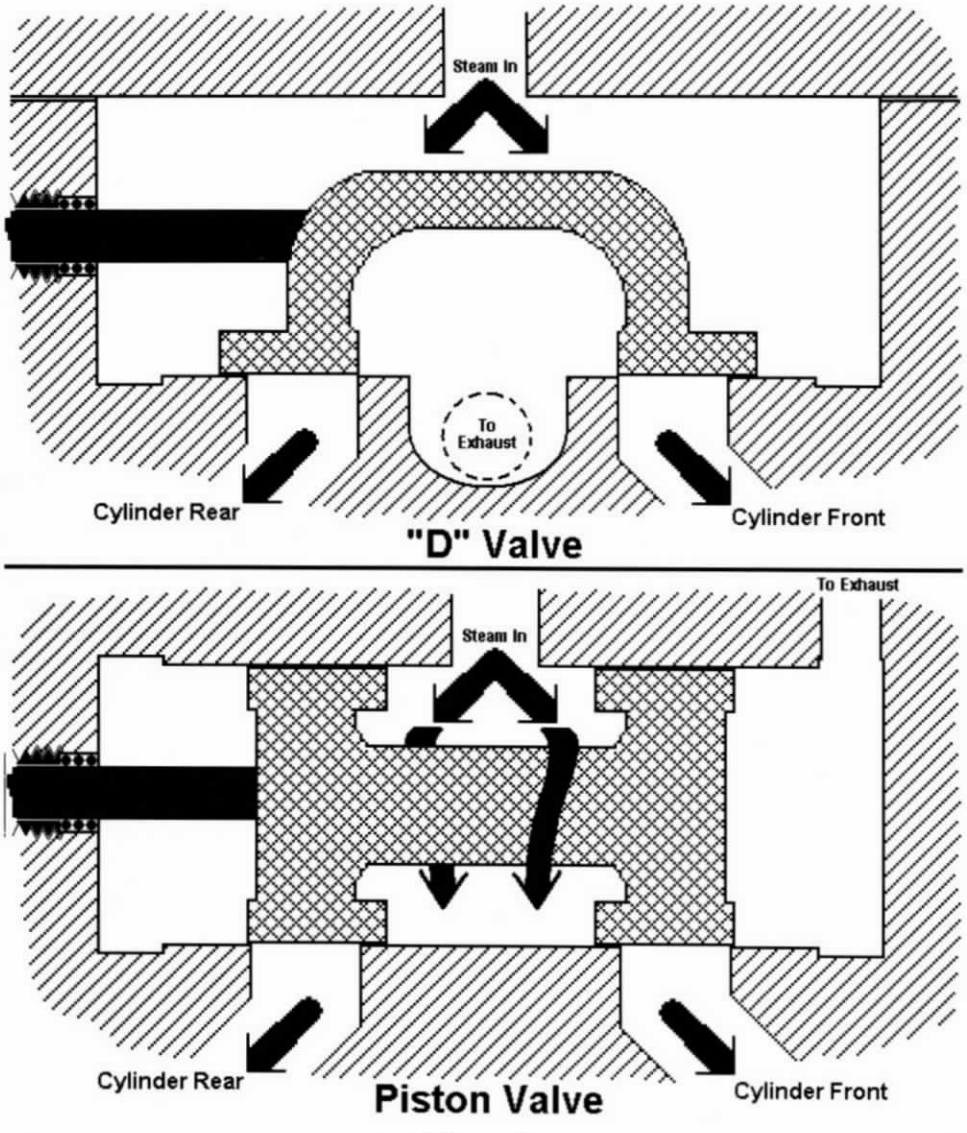


Figure 4

Aside from other possible openings used to inject lubrication or to connect measurement instrumentation, one other opening is very important... that being an opening for a shaft from outside the steam chest to move the valve. The seal around this shaft, (known as a "gland") keeps steam from leaking out around the shaft.

For our purposes here, I will discuss the two types of moveable partitions that were almost exclusively the only types used on RR

steam locomotives. These two types are "D" valves, and "Piston" valves. For the record, some of the other types of valves are "Poppet", "Rotary" and "Disk".

The "Piston" here named is not the same object as the piston that is being pushed by the steam pressure in the power cylinder, but is a round device in the steam chest. These are two different objects with the same name due to their round shape. I would have named it a "spool" valve, because it is a long round shape that is of greater diameter at the ends than in the middle, but it is probably too late to go changing the nomenclature now.

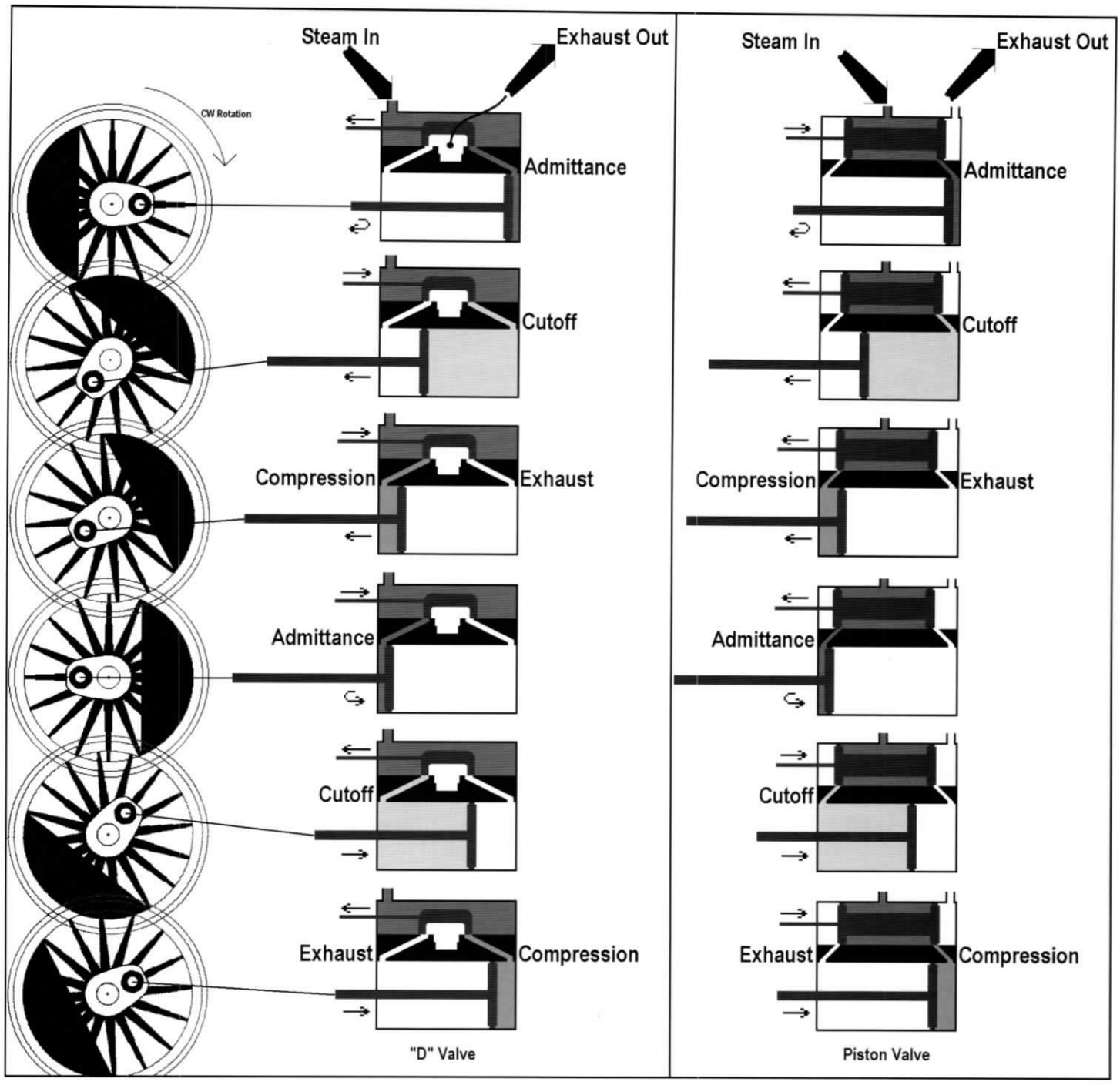


Figure 5

The "D" valve is sometimes called a "Slide" valve, but both the Piston and the "D" valves "slide", so I will refer to it as the "D" valve to differentiate them. However, I have always thought "D" was a

misnomer, also. I would have named it a "C" valve, since the moving part of the valve is not a closed structure like a "D" but is open like a "C". The valve seat that the "C" shaped part is sliding over forms the straight line of the "D", but...likewise to the piston valve, it is also too late to change the nomenclature.

Figure 4 is a representation of these two types of valves. The slash-hatched area is the body of the valve chest. The crosshatched area is the moveable portion of the valve. (The piston valve is drawn as solid, but in reality it is a hollow tube so the exhaust from one end can get to the other end to be released outside the steam chest.)

Note that with the appropriate arrangement and sizes of the parts, this one device takes the place of all four of the "faucet" type hand valves used to control the distribution of steam in the previous article. If the moveable part slides to one side, one of the two ports to the cylinder will be connected to the steam supply and the other to the exhaust.

Each type of valve has advantages and disadvantages. The "D" valve is quite simple to manufacture, and during use, it tends to wear such as not to lose the effectiveness of the seal between the valve face and the seat... it can actually improve the seal. It is said to "wear IN" instead of "wear OUT". It has two major disadvantages... since the steam pressure presses the valve to the seat, higher steam pressures increase the amount of energy required to move the valve, and the full steam pressure must be contained by the gland where the valve stem that moves the valve passes to the outside of the steam chest.

The "piston" valve has two disadvantages. Manufacturing it is more difficult due to having to create some of the steam passages inside of an enclosed tube (instead of being able to drill them from an open topped chest). The other is that the seal it forms with the valve seat will "wear OUT" and the seal will eventually be lost. One of the major advantages is that because the steam pressure does not press the valve against the face it does not require more energy to move it when using higher steam pressures.

Valves are also known as either "outside" or "inside" admission. These names are based on whether the steam is supplied on the outside or the inside of the moving part of the valve (the "D" or the piston). "D" valves are exclusively "Outside" admission. If they were "Inside" admission, the steam pressure would tend to lift the valve off its seat and it would leak steam directly to the exhaust. Piston valves can be either type, but "Inside" admission is a great advantage for the piston valve because the valve stem gland is not subjected to the full steam pressure and thus does not need to be as tight a seal with an attendant increase in friction.

Note in Figure 4 that due to the differences between inside and outside admission the two valves have to move in opposite directions to produce the equivalent result of which end of the cylinder gets connected to the steam and which to the exhaust.

From the outside, you can make an educated guess as to which type of valve it is. If the steam chest is square-ish, it is probably a "D" valve, which means it is an Outside admission valve. If it is a round cylinder shape, it is probably a Piston valve, which means it is probably an Inside admission, but not necessarily, as some piston valves are Outside admission.

Some companies supplied a retrofit kit to convert a "D" valve to a piston valve, but there were not very many done so. Those that were done were usually still Outside admission. In the model world, "decoration" is often hung on the outside to disguise the innards.

Figure 5 shows the two types of valves in the six unique positions that coincide with the major events named in Figure 3 (last issue) for both ends of one cylinder. There are actually eight unique events (four for each end of the cylinder), but since Exhaust (at one end of the cylinder) and Compression (at the other end) occur almost simultaneously, I have combined them in the diagrams. The arrows show the directions the valve and piston are moving.

Note the similarities and differences between the two types of valves... the direction arrows for the power piston are the same in both figures, but the direction arrows for the valve are opposite because the "D" valve is Outside admission and the "Piston" valve is Inside admission.

Now, we can look at a mechanism to control the valve. If you think about what has been described so far, you will realize that the same flywheel (or drive-wheel in the case of a locomotive) that the piston is driving could be moving the valve to maintain the uniform timing to get the drive wheel to move in one direction smoothly. This mechanism is what is called "Valve Gear".

Next issue we will get into the actual mechanisms. But... what about that error I said was in Figure 1 in the previous issue? Well, I'm not going to tell you! HA! I will however, give you some hints... Something is drawn in the wrong position and it is something that has some significance in the design of valve gear. It is subtle, but definitely an error. Oh, and I corrected it in Figure 2, (though not with great accuracy).

Semper Vaporo

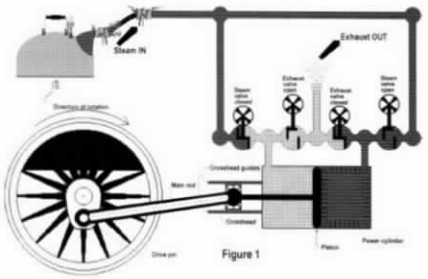


Figure 1

Got your Regner WILLI?

Let your creative juices flow and see what you can do with the little gem!

The Train Dept. and *Steam in the Garden* are sponsoring a Willi Bash. Send us photos and a writeup on what you did and how you did it. At the end of the year (2006) our panel of impartial judges will decide who is the best craftsman.....and who has the most imagination.

Prizes will be awarded!

1st Prize - $100

2nd Prize - $50

3rd Prize - $25

All winners will also receive a one-year subscription to *Steam in the Garden.*

SitG Back Issues

Currently Available

Prices shown include postage and handling for North American addresses -- all others please add USD$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 thru #22	$5.50 ea.
#23 thru #30	$5.75 ea.
#31 thru #34	$6.75 ea.
#36 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.

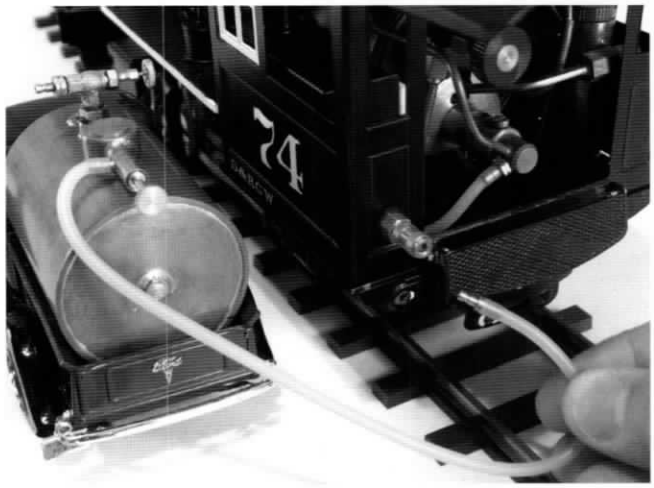
Call or send a list of issues requested with your check or money order to:

Steam in the Garden Magazine
PO Box 335
Newark Valley, NY 13811

Credit cards cheerfully accepted. Orders may be phoned to us at 607-642-8119 or contact us via e-mail at:
<snowflake99@stny.rr.com>

DISCOVER NOVUS MasterCard VISA

Miniature Quick Connect Couplings Make Connections a Snap!



Quick Connect Couplings can be used for many different connections. In this photo an auxiliary fuel truck is easily connected to an engine for raising steam, then quickly disconnected when it is time to leave the station.

Contact: **John Synnestvedt**
5172 Lake Shores Road
Virginia Beach, VA 23455

757-363-0958
synnestvedtjd@hotmail.com

Aster NKP Berkshire - kit version Part II

by Ryan and Charles Bednarik
some photos courtesy Aster Hobby

Building Log:

Establishing a good work surface, well lit area and keeping tiny parts from falling off the bench top are some key aspects of preparation. The most important aspect of preparation is checking the components and reading the assembly instructions. When you are going to assemble a section, "dry" fit the pieces as a double check to the instruction photos and captions. I would recommend obtaining most of the tools and other recommended supplies in advance of getting started.

There are three major details with this kit that need to be attended to or improved. My recommendation to aid the process of identifying screws, springs, washers, etc would be to label the small individual pouches with box related tags A-R, as was the case with older Aster kits. Secondly, there are some photo images that lack good explanation through detailed captions. Third, and I cannot stress this enough, ***do not be afraid to use Loctite® on anything that you feel will work its way loose.***

1. Pilot Truck [A] - The building of the pilot truck the engine was as per the photo layout of each step. Doing this was a confidence booster, allowing us to look forward to the next segment.

2. Trailing Truck [B] - The trailing truck gave us the first indicator of the increased requirements of frame construction that was coming up next: springs, equalizer bars, and details parts.

3. Main Frame [C] - The main frame needs to be done on a flat surface as per instructions. Here in this section, we encountered our first situation relative to parts supplied vs. what was actually necessary. On the second page of the instructions for [C] in the last frame at the bottom it is indicated that the pan head screw M2-4 should be used when assembling the equalizer plate to the frame. The M2-

4 screws are too short and have been corrected for M2-6 screws.

4. Axle Driven Pump [D] - This is the second area of concern in the construction of the Berkshire. During the installation of the axle pump it is easy to reverse the banjo nut D7 and D8. The key to preventing this is that D7 has a groove in the banjo bolt. D7 should be installed on the fireman's side with the banjo towards the smokebox and groove towards the frame.

5. Drain Cock and Reverser Devices [E] - A remarkable mechanism for operating the drain cocks. The lever is notched, allowing the cylinder cocks to be opened partially or fully. A word of caution about drain cocks - when fully open, keep your distance at the start of a steam up in clearing the cylinders. The drain cocks will emit a stream of water about two feet in distance. The reverser is modeled after the real thing with a scale size handle in the cab. The actual notching is on the linkage forward in the frame.

6. Cylinders [F]-The starting point of building the running gear requires that the fundamentals of preparation are done correctly. Paramount to a good running engine is the surface area of the cylinders (given all other aspects to be correct, such as cylinder/piston tolerance) with the valve chest. This involves the lapping of the cylinder head, valve chest, and slide valve on a piece of plate glass with at least 1000 grit wet emery paper. Of course, with proper preparation it is necessary to install the numerous parts such as "D" valve, piston, drain cock lever, linkage to Baker valve gear, etc. The crosshead had some rough spots/binding. A moderate filing ensured smooth travel of the cross head. This step also required the preparation of the smoke box saddle and exhaust nozzle.

7. Baker Valve Gear [G] - Here is one of the areas it is best to study, dry fit and double check. The parts for left and right sides are easily reversed or substituted for one another.

8. Installation of Cylinders, Baker valve, side rods [H] - The excitement builds as we look ahead with the knowledge that it will be show time shortly. Once the items in this section are fitted onto the frame, then comes the timing and a test of the running components. First, there is the critical aspect of alignment involving the cross head guide and Baker valve gear support to ensure a smooth motion of the slide valve.

9. Valve Setting: Timing is the most critical component in making this completed model either a shelf queen or a rambler of the rails. Obtaining the right setting of the slide valve and eccentric crank is critical to the overall performance. Take your time here, make a few templates from the diagrams and double check your angles and valve settings.

10. Air Test: Having double checked the connections and following the instructions (in particular lubrication of parts) of the setup for air run we were successful with the timing. We happened to have a spare Saito marine boiler and decided to do one more test of the running gear. So, we hooked up the lubricator (not necessary on air), fired the Saito boiler and attached a steam line to the steam tee. Such excitement having the running gear powered by steam (full steam ahead)! The finishing aspects at this stage are to place the covers on the cylinders and smoke box saddle on the frame. Then we are about half way to completion.

11. Boiler [I]: The boiler dressing is comprised of the water sight glass, fire box, back head plate, check valve, pressure gauge, then the connections to the other aspects of running the engine (e.g. throttle, super heater, safeties). The engineering on the sight glass on this model is second to none. Aster has used the bracket-aligned style of sight glass on other engines, the most recent being the JNR C62-2. This perfectly aligns the sight glass and almost eliminates the concern for fracturing the sight glass. The completing step here is the fitting of the four burner tubes with wick material.

12. The final task on the boiler is a leak test utilizing air pressure. Make sure you check the safeties; carefully lift the center point with tweezers and add a little drop of light machine oil on the mechanism. The boiler could also be hydro tested if the tender has been completed as we had done. The pressure should read holding at 4 to 4.5 bars on the pressure gauge.

13. Detail fittings and casting, Boiler [J]: Handrail stantion holes are the wrong thread size. On the parts that required tabs to be bent to hold them in place, a drop of CA would not go amiss should the tabs become frail or broken. When assembling parts J23 and J24, place the generator bracket (J24) on the boiler first, then place the generator (J23) atop the bracket.

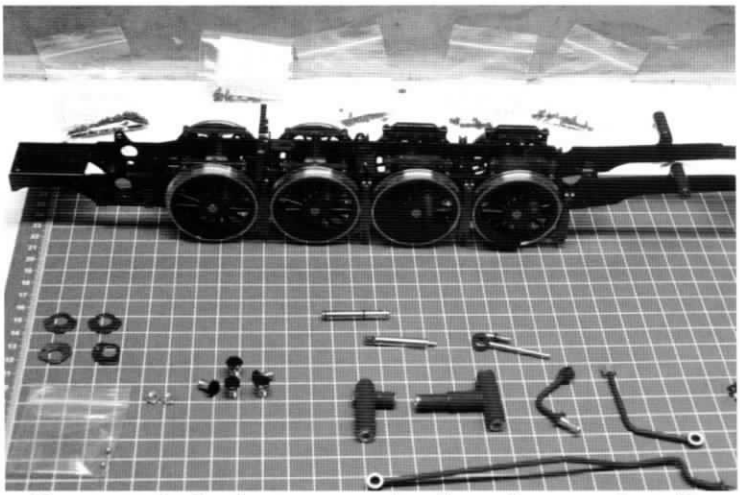
14. Details - Running Board [K]: Be sure to measure twice, cut once for the dummy piping on the air tanks. I mistook one pipe for another and ended up having to cut a new pipe from my scrap box.

15. Details- Smoke box [L]: The Spring pin 1x4 that holds the smoke box door on was a real pain in the butt!! I ended up not installing these to reduce the risk of scratching the paint on the front, and instead substituted some spare handrail bent at the corners and it works OK. Be sure to affix the details that may work loose with CA, as described in section "J". It would have been nice if Aster had included a template for cutting out the ceramic insulation on the smokebox door and front. When attaching the glass lenses to the headlight and Mars light, I would suggest glue that is formulated for watch crystals, like GS-Hypo cement, which I have used with great success.

(GS-Hypo cement can be found at www.micromark.com. Part # 80343)

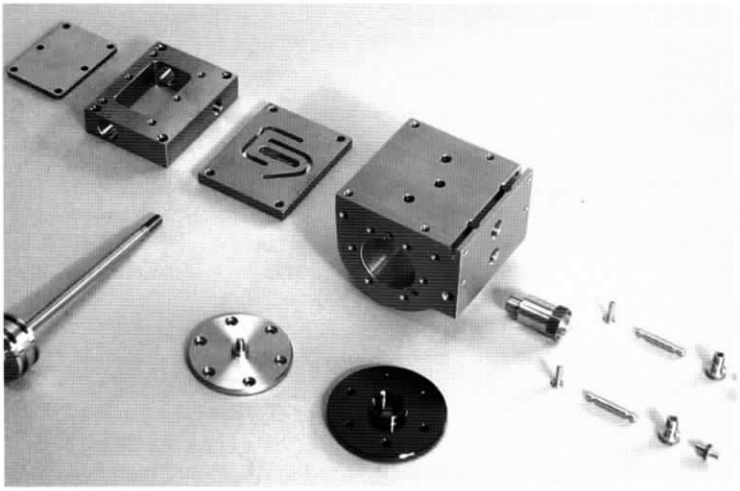
16. Details- Cab [M]: Not much to say here, just be sure to attach the windscreen glass with watch crystal cement.

17. Details- Front Coupler Beam [N]: The front pilot was an

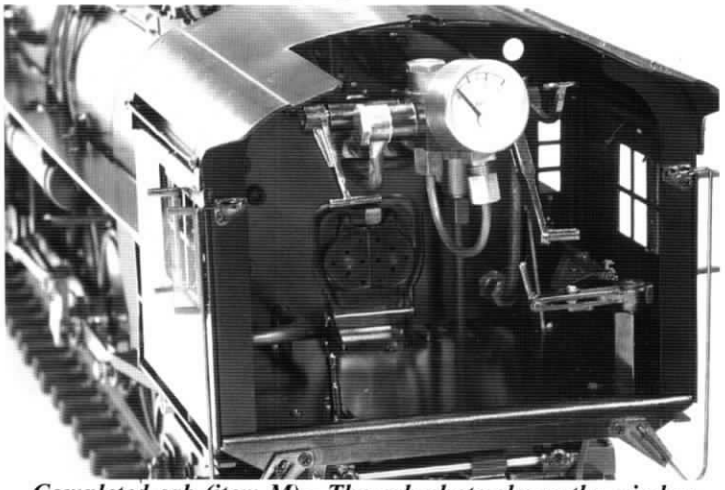


Frame and wheel set - preparing for axle pump installation (item D on the building log).

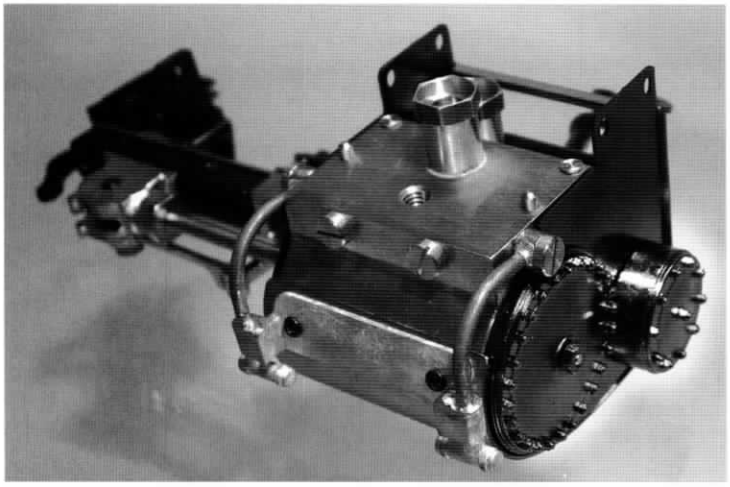
Boiler (item I) - On top of the boiler are the safeties, on the bottom is the blowdown valve and on the body at the backhead is the water gauge and throttle.



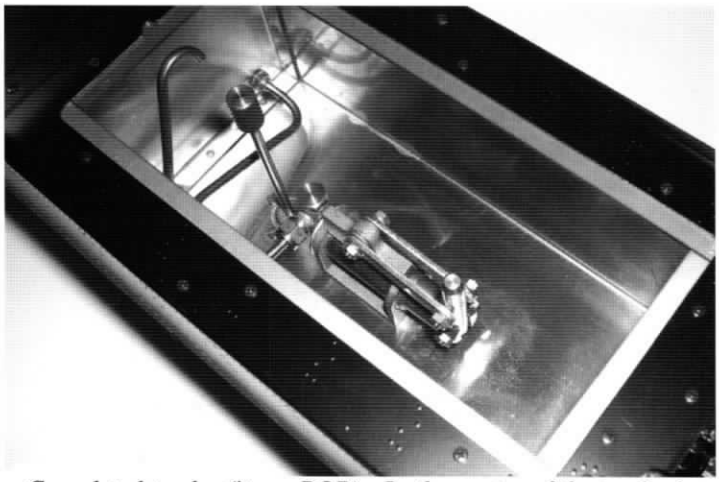
Cylinder parts: main parts (l. to r.) for cylinder (item E in building log) - cover, valve block, cross port, cylinder block, drain cock parts, and below the body of the cylinder block is the piston and cylinder covers.



Completed cab (item M) - The cab photo shows the window deflectors, pressure gauge, throttle (r. side), reverser (r. side), firebox door, and to the left of the gauge (toward the roof) is the blower. Down on the cab floor is the drain cock lever.



Completed cylinder. Attached to the cylinder is the crosshead guide, Baker valve gear (left rear) and the drain cock lines.



Completed tender (items PQR) - In the center of the tender is the water pump, bypass line return and the drain plug (vertical rod with round handle) in front of the water pump.

easy assembly and had only one flaw, the steps on the pilot. These side steps on the cow catcher have no back end support and if the locomotive were ever to hit something on these, they would not stand a chance.

18. Details- Front Deck Pilot [O]: Check for careful alignment of your parts here. If you want to save yourself from mental anguish, don't attach the O11 pilot deck just yet; you have to install the screw to mount the deck to the frame first.

19. Tender- Buckeye Truck [P]: Be sure to file the side frames of the truck to ensure a smooth action. Use Loctite® when assembling the trucks to assure yourself that your engine will not be falling apart on the tracks. When inserting the axles into the side frames, be sure to coat the axle end with grease and grease the inside of the journals. The brake hangers and frames on the tender trucks were the most difficult kit requirements that I have dealt with! This design needs to be rethought by Aster due to the fragility of the rods for the swinging arms and for the tight fit on the brake shoes themselves.

20. Tender- Frame [Q] : The tender deck went together very well, just make sure that you check the alignment and orientation of all parts before assembling them.

Berkshire tender.

Detail view of a tender truck.

21. Tender- Body [R]: The handrail stanchions in this section seemed to go in well enough, but that was until I began to install the hand railing. The holes were absolutely too small for the handrails! These had to be individually reamed out to accept the hand railing. The water tank must be sealed and the easiest way to do this is to detach it from the tender shell. When building the hand pump, be sure to seat the valve balls in the pump using a spare ball of the same size. This ensures the balls have a good seat to rest upon should the boiler check valve fail. The threads on the gland nuts for the water lines were a little rough when first starting, and felt almost like they were trying to cross-thread themselves. A careful application of the wrench remedied this problem and all works beautifully. Inspect your fuel tank for leaks and check to be sure the valve is straight and turns freely. If it does not, then roll it on a piece of plate glass to straighten.

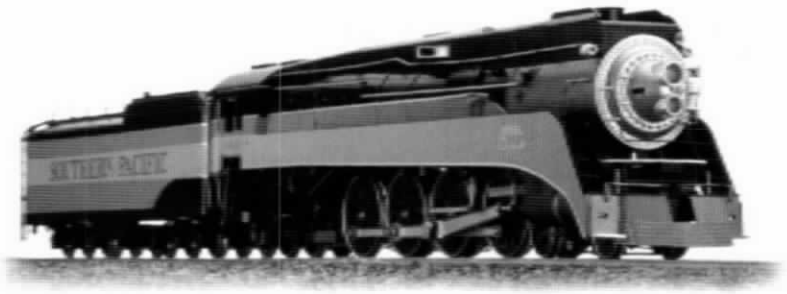
22. Tender- Assembly: This is when the locomotive finally begins to take shape. The tender of this locomotive is massive, yet the assembly of the tender is very easy. The shell fit on the frame very easily, almost too easily in fact. This then secures with 8 screws discreetly located along the bottom edge. The water hose clamps are something else, easily sliding over the tube and clamping over the connector or ferrule. When installing the tender trucks, time and patience will see you through. Be sure to use Loctite® to secure the nut that holds the truck in place; you wouldn't want to pick the tender up and have the truck left on the rails!

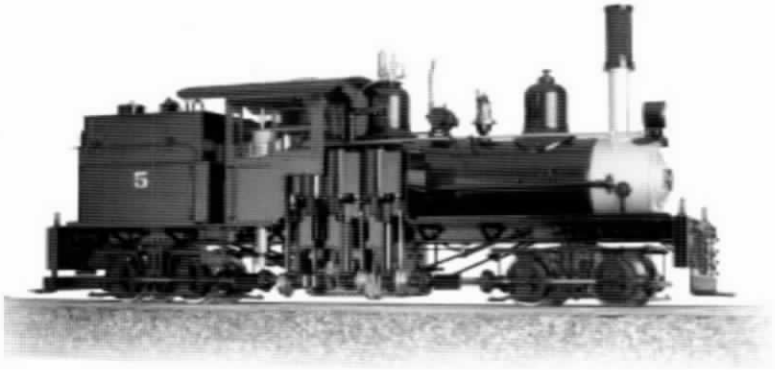
23. Locomotive - Final Assembly: This section gives great satisfaction and joy once completed. When sliding the boiler into the shell, take care not to catch the various tabs and parts. Cut the five 15mm wide strips of ceramic insulation and insert them into the front of the boiler. The burner holder assembly could use considerable improvement. As it stands, you must first remove the trailing truck, unscrew the rear trailing truck bolster, and then remove the burner tube bracket. I will be experimenting to find a quick and easy way to drop the burner without dropping the trailing truck bracket. The lubricator connection into the steam pipe is a tight fit, but be patient and you will pull through, albeit with a few nicked fingers and vulgar words. The rest of the assembly is straightforward, but be sure to check the travel of the reverser to ensure that you get the full travel in each direction.

24. DONE! Sit back and marvel at your accomplishment. Now, find your steamup box and take it out to the track!

We will conclude this review in our next issue with an overview of the Operations Manual.

Accucraft's exciting new SP Daylight (GS-4) in Live Steam, priced at just $4449.99! Now taking orders...don't miss out on this one! Call for order forms. A small deposit will be required to secure a place in line. ("Built to order" engines - C-21, K-27 Daylight require deposits)

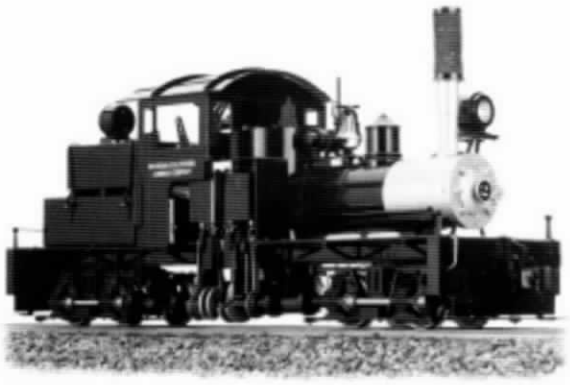




Accucraft 3-Cylinder Shays....

We've got 'em in stock!

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 № 68)

IN STOCK

We've got Aster Mikado kits with both pumps....call for our price.

- *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!

CROSS CREEK ENGINEERING

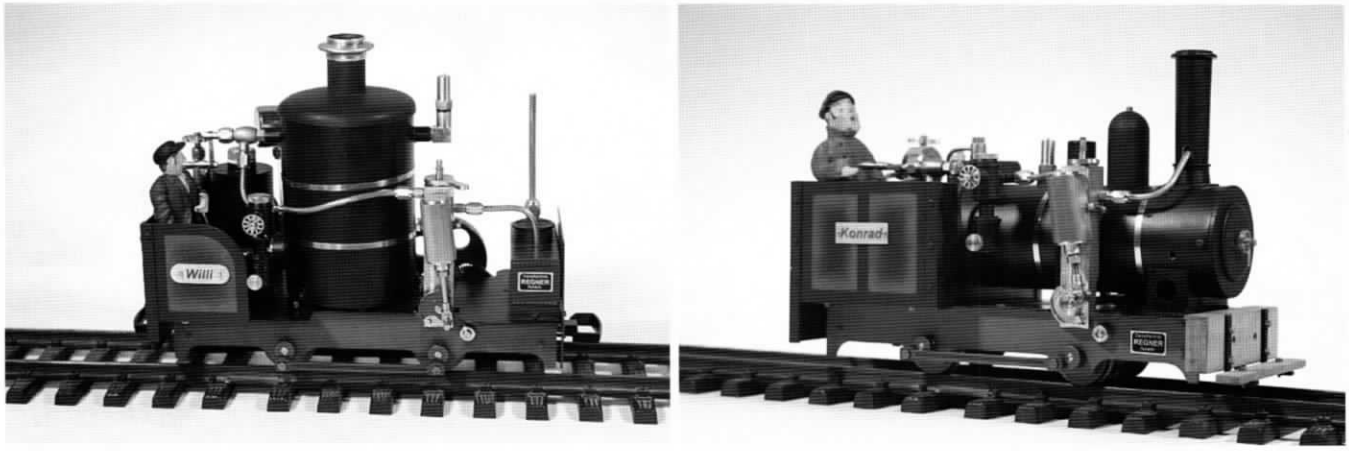
P.O. BOX 369
SPENCER, OH 44275
PHONE 1-800-664-3226
e-mail: crosscreektrains@direcway.com

TRAIN DEPARTMENT

YOUR SOURCE FOR **REGNER** IN AMERICA

Introducing REGNER'S new Ready to Run
"EASY LINE" Live Steam Locomotives

"Willi" **and** **"Konrad"**



Butane fired, 0-4-0, Single Cylinder Geared Drive w/Flywheel,
Adjustable 45-32-30mm Track Gauge, In Stock ready to ship.

Only $595.00 Each, plus S&H

Introductory Price Ends 31 July, 2006

Price Includes: Steam Oil, Water Sight Glass, Pressure Gauge, Gas Fill Adaptor, Wheel Gauge, Link & Pin, Metric Tools and a Handpainted Cast Metal Figure

We Accept Checks, VISA and Mastercard

On the Web: www.traindept.com
e-Mail: ken@traindept.com
Phone/Fax: 757-855-6364

SWAP SHOP

For Sale: COLORADO & SOUTHERN # 22 Gauge #1 ASTER Live Steam Locomotive. Runs well. Has FM radio control of throttle, reverse, and the whistle by Larry Bangman. Fuel system reworked so that it works. Also has electric drive on pump with on-board batteries. LED in headlight, also fitted carrying case. $2500 or might consider trades. Dave Conroy 239-283-8323 or LIBERTYBOAT@JUNO.COM (85)

For Sale: ACCUCRAFT RUBY 1 in original box, never steamed - 2 gondola cars and caboose - $275 all - I pay shipping (lower 48). Robert Mayer, 5307 E Corkery Rd., Spokane, WA 99223 e-mail: mayerville@msn.com phone: 509-4438034 (85)

For Sale: Two older (early 1990's ?) Jeff Saxton 1:20 scale Westside Lumber Company Kits. One kit is for a 24' Deckless Log Flatcar and the other kit is for a 22' Russel Skeleton Logcar. I didn't buy these kits new but got them as part of a model trade. After looking at everything, it looks like both kits are complete. These kits include the trucks, but need wheel sets. $50.00 for both kits including postage within the US. Over seas buyer pay shipping at cost. ALSO...Eight axles of spoked LGB metal replacement wheels - Part # 67319. Six of the eight have never been taken out of their packages (two axles per package), the other two have been unwrapped, but never actually used. $36.00 includes shipping within the US. Overseas buyer pay shipping at cost. Payment accepted via PayPal, money order, or cashiers check. Will ship upon receipt of payment. E-mail with questions - scottandnancy@charter.net (86)

Wanted: Catatonk 24-ton Shay from the 2nd run, and Geoffbilt Shay. Contact Joel Lawrence, Windham, Maine - Phone: (207) 892-6427 - e-mail: joel@normsoscale.com (87)

Swap Shop listings are offered at no charge as space permits. No dealers and no phone-in ads, please! Send your listings to SitG, PO Box 335, Newark Valley NY 13811 ● fax to 253-323-2125 ● e-mail to <rbrown54@stny.rr.com>. Ads must contain sellers name, plus address and/or phone number. Ads will be run one time only unless previous arrangements are made.

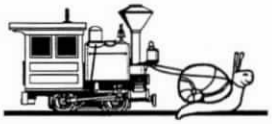
END OF THE LINE

Above: ANITA, a 7/8 scale cutie built by Harvey Watkins.

Below: RISHON Locomotives COFFEE POT. ***photos by Carl Malone***

ADVERTISERS INDEX

Please tell our advertisers,



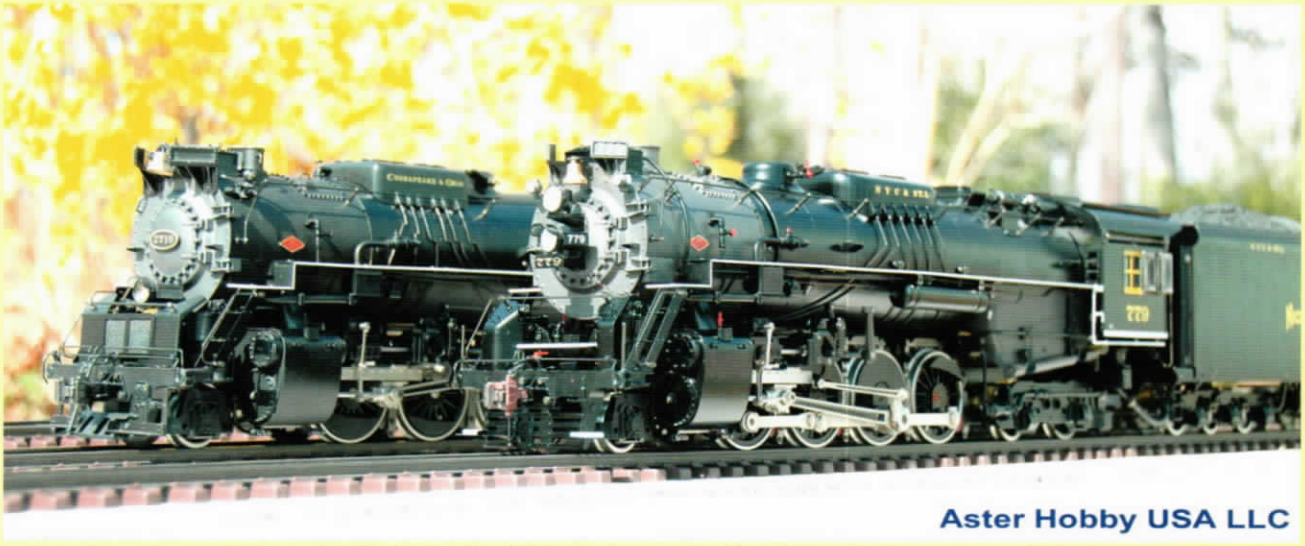
Aster Hobby USA LLC

101 Theiler Rd. Spartanburg SC 29301 USA
Tel: 864 587 7999 Fax: 864 587 2299
Web: asterhobbyusa.com Email: asterhobbyusa@teleplex.net

--------- Exclusive US importer and distributor for Aster live steam locomotives and accessories ----------

If your passion demands 1/32 scale live steam models of highest precision, aesthetic presentation and prototypical functionality, look no further than Aster. All locomotives are designed and manufactured by Aster Hobby Co. Inc. of Yokohama Japan.

The stunning Nickel Plate Berkshire # 779 is still available in kit or factory assembled version.



The above picture shows a slightly modified NKP Berkshire #779 in the foreground and a highly modified conversion to C&O "Kanawha" in the background.

First picture of the new Aster prototype

British Railways "Bulleid Light Pacific", also known as "Spam Can".

The "Spam Can" is projected in two versions; Southern Railways "Spitfire", and in the later British Railways livery "Winston Churchill", as shown. Projected production release is Summer 2006. Reserve your preferred version early. Check our website for more details.

Southern Steam Trains LLC Travelers Rest SC 29690 Tel. 864 834 3954 Web: southernsteamtrains.com	Sunset Valley Railroad Bonney Lake WA 98391 Tel./Fax: 253 862 6748 Web: svrronline.com	Cross Creek Engineering Spencer, OH 44275 Tel.: 800 664 3226 Email: crosscreektrains@direcway.com	North Jersey Gauge One Park Ridge NJ 07656 Tel.: 201 391 1493 Email: Bob1027Jane@aol.com
Quisenberry Station Alexandria VA 22309 Tel. 703 799 9643 Web: quisenberrystation.com	Gauge One Lines Stittsville Ontario Canada Tel.: 613 836 6455 Email: gaugeonelines@yahoo.com	Bear Creek Railroad Surrey British Columbia Canada Tel.: 604 594 8695 Email: pantages@telus.net	The Train Depot Winter Park FL 32789 Tel.: 407 647 2244 Email: mykal54@att.net

Aster Hobby USA LLC has in stock for immediate delivery NKP Berkshire, USRA Mikado, BR 52, BR 38, BR 89, KPEV P8, LMS Jumbo, Thunderbolt, JNR 9600 Hokkaido or regular version, as well as JNR rolling stock and all popular accessories.