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Inside.....

Accucraft Nevada County 4-4-0 Review

Accucraft SP Cab Forward Review and Comments

Roundhouse Boiler Conversion

...and lots more!



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STEAM IN THE GARDEN

Vol. 18, Nº 5
Issue Nº 101

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

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FRONT COVER:

There's a lot of traffic on a summer afternoon at the Mayberry Station on Mitch Mitchell's line in Heber Springs, Arkansas, and the Nevada County Narrow Gauge 4-4-0 impatiently waits in line.

Photo by Bruce Stockbridge

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



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

CALENDAR OF EVENTS

October 11, rain date October 12 9-30-5pm DOWNEAST LIGHT RAILWAY East Boothbay, Maine - Don Jackson R.S.V.P. by October 4 - 207-633-7703, scotia77@verizon.net - Gauge 1 elevated 124' level loop 10' min. diameter with stations and operating signals that nobody bothers with. Newbies, you may test run a locomotive if you wish. For non railroading family members this is the date that the Annual Fall festival is held at the Railway Village, featuring crafts, music, native Maine food concessions, antique auto museum and steam train rides.

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

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

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

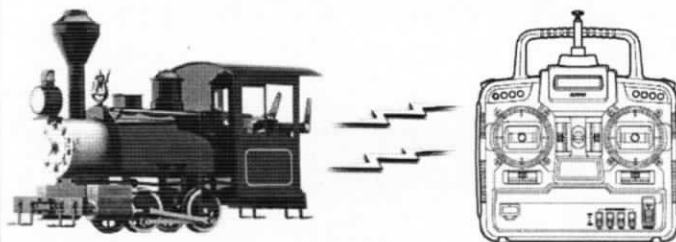
Puget Sound Garden Railway Society steamup schedule: We have 2 steamups per month, one at the Georgetown Powerplant in Seattle on the second Saturday of every month, and a steamup at a member's track on the fourth Saturday of the month. Here is a link to our steamup timetable.
<http://psgrs.org/livesteamtimetable.html>

Because of publication lead time, please send info for Calendar of Events well in advance. Include name of host and location of event, with address and/or phone number to contact for complete information. Some basic info about the site is also useful (i.e., ground level or elevated, minimum curve radius, ruling grade, etc.)



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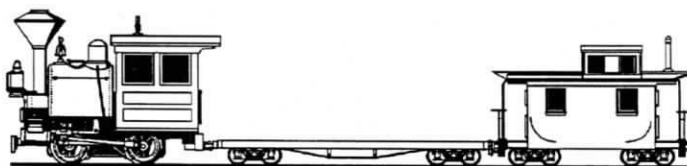
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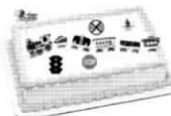


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Letters from readers are welcomed and encouraged. Offer advice, encouragement, suggestions or constructive criticism. Tell us about your current project (and don't forget the photos!) or just share live steam experiences. But please keep your letters 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>.

Japan
via e-mail

Hello Ron,

I received the 100th SitG today. I'm very impressed with the quality of the magazine. Thanks for using the photo of my Vincent.

I am enjoying the mix of articles, especially as I see some familiar names. I am most impressed with the pull-out drawings of the 7/8th loco. "Oh, colouring!" exclaimed my daughter.

Well, once again a smashing magazine, great stuff.

Best regards,

Matthew Foster.

via e-mail

Dear Friends of Westminster Locomotive Works, LLC,

Over the last 8 years it has been an arduous but enjoyable undertaking in trying to resurrect the Cricket MK II Live Steam Motor. It has involved countless hours of work with both frustration and enjoyment. However, due to the changing economic conditions and the unexpected ridiculous rise in raw materials, I find it no longer feasible to keep the Cricket MK II in production. Family health issues have also forced me back into full time employment as the financial aspect of the locomotive business is no longer profitable. It has never been a real profitable business, but the love of

keeping an American original available seemed like a good idea and I wanted to do it for as long as possible.

As a small one man operation the financial burdens of business taxes and manufacturing costs wipe out the profits. This, along with the inability to compete with the cheap labor of the foreign market forces me to shut down. I will attempt to complete 30 total units with 24 done to date. We will be in touch with those on the list in the near future.

I would like to thank all of the live steam community for their support in this endeavor and feel badly about not being able to continue on. If anyone has any comments please feel free to contact me at mkriion@comcast.net.

Happy steaming,

Mike Krionderis
Westminster Locomotive Works, LLC
593 Rich Mar Street
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Home of the Cricket Mk II
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via e-mail
Austria

Hi Ron,

Thanks for all your work producing about the only magazine, (except maybe Playboy) which catches us grown up kids just waiting for the postman. I particularly enjoyed the 100th edition.

In this edition I noted the content of the SitG Mailbag. I would like to point out that I am a Steam man (I was even born in the town where railways were born Darlington UK), which is my excuse for becoming infected with the steam virus before continuing. The reference to the diesel article was fortunately from only one person so I guess the vast majority of us are normal tolerant beings. I have noticed that over the last number of years the number of people who own and drive larger engines (eg 5" gauge) has remained constant. The development is tending to electric powered diesel or electric outline engines as a second engine! The amazing thing is that it is these electric engines which are

being driven almost daily on club tracks. The main reason being, waiting until the engine is cold and cleaning the engine after a days running. The development in our small scale in the direction of diesel is not something I object to, albeit their exhaust gasses do need getting used to.

We have read articles on track, on elevated railway layouts etc which if we try to insist on "steam only" would also not be allowed? I feel that the live diesel is a self powered and near to scale model which I feel many of us may welcome as an extended horizon to our hobby. Being honest, we have all seen many photos of the same model over and over again, be it Regner, Roundhouse, Accucraft, Aster, etc So why not include some articles that will not be more of the same in another colour.

Please let us have some diversity and extend our horizons to maybe include:- track and some of the problems various builders may have encountered, and perhaps scratch built rolling stock or improved commercial rolling stock, and why not live diesel? This is, after all, basically "model railway engineering" and many of are just model railway engineers and not a US engine driver. Who knows...maybe us old steam guys can learn something from the methods of the diesel guys.

Bert Horner



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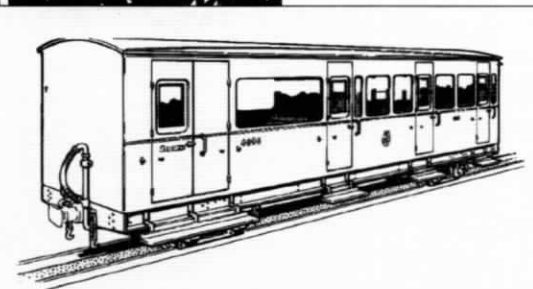
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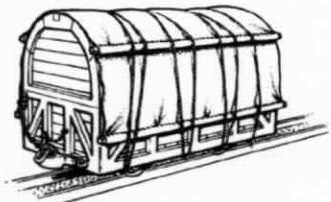


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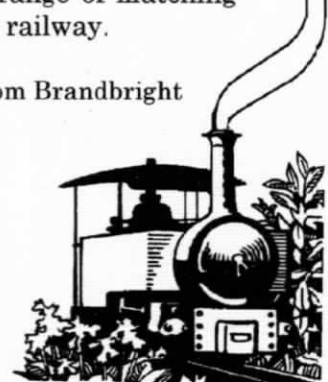
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WHAT'S NEW?

Bob Moser at North Jersey Gauge One Co., 8 Spring Valley Rd., Park Ridge NJ 07656, phone 201-391-1493, e-mail bob1027jane@verizon.net has added *Green Velvet Steam Cylinder Oil* to his product lineup. Their Sapon-A-Max Formula 1 is blended using traditional Pennsylvania Paraffin based oils, sweet acidless tallow oil and a tough, modern tackiness additive. It is blended especially for small engines and live steam models. It pours smooth and easy, yet develops a tough lubricating film in the cylinders and valve chests. It resists water washing with its tenacious lather and helps protect against rust when the engine is stored for the winter. No wonder it's called "The Live Steamer's Best Friend"!

Atlantic Publishers have released a new publication by Marc Horovitz, titled "A Passion for Steam". We have just received our review copy and have only had a quick glance through it, but as expected from this author and publisher, it doesn't disappoint. It's chock full of gorgeous color photos and descriptions of steam locos from the early days of small scale steam to current production. Many excellent and informative drawings are included. This is a beautiful book that should be in every live steamer's collection. We will bring our readers a full review in our next issue (Nov/Dec)

East Gary Car Co., 3828 St. Joseph Ct., Dept. S, Lake Station IN 46405 offers a narrow gauge archbar truck kit in both 1:20.3 and 1:24 scales. See the review in this issue for full details.

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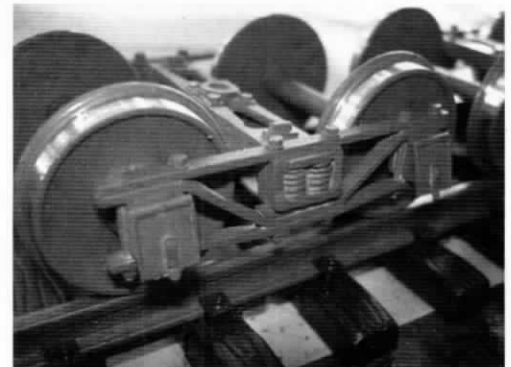


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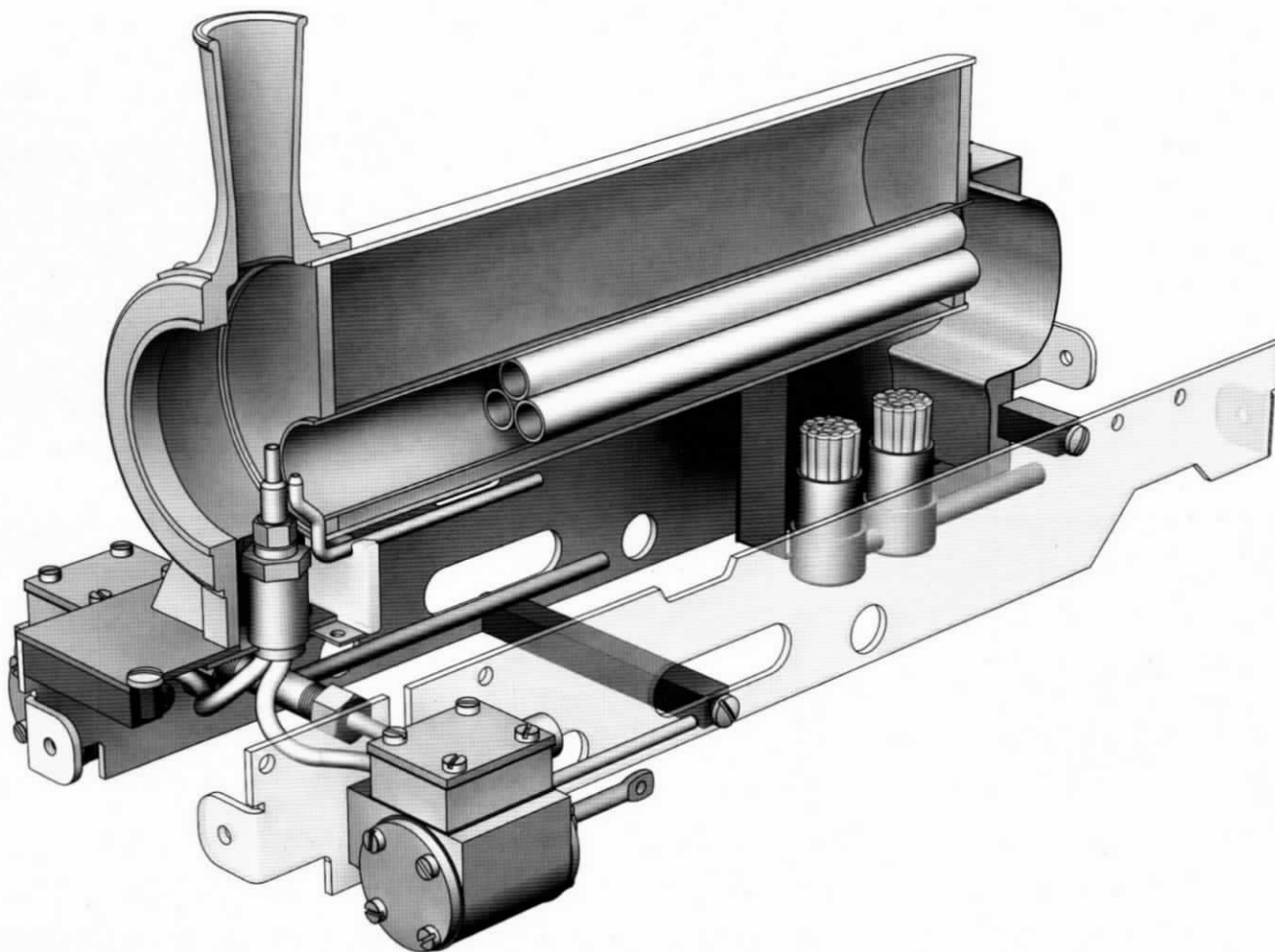
Converting a Roundhouse Billy Boiler to Alcohol Firing -- Part I

by Steve Shyvers
drawings by Mike Martin

Curiosity to try alcohol firing resulted in the conversion of my Roundhouse Billy's butane-fired boiler to a "C-type" alcohol-fired boiler. Here is how the conversion was done and how some of the design challenges were worked out. Mike Martin collaborated to create CAD drawings to illustrate the various details of the conversion.

As shown by Mike's fine drawings, the conver-

sion involved adding a firebox, alcohol burner, blast pipe, and blower to the stock Roundhouse single-flue boiler. The insertion of three "dry" flue tubes into the Roundhouse boiler's existing large-diameter single flue was an additional modification that I hope stirs up some discussion. Three lengths of 5/16" soft copper tubing were slid into the boiler flue so that they were pressed against each other and against the flue's



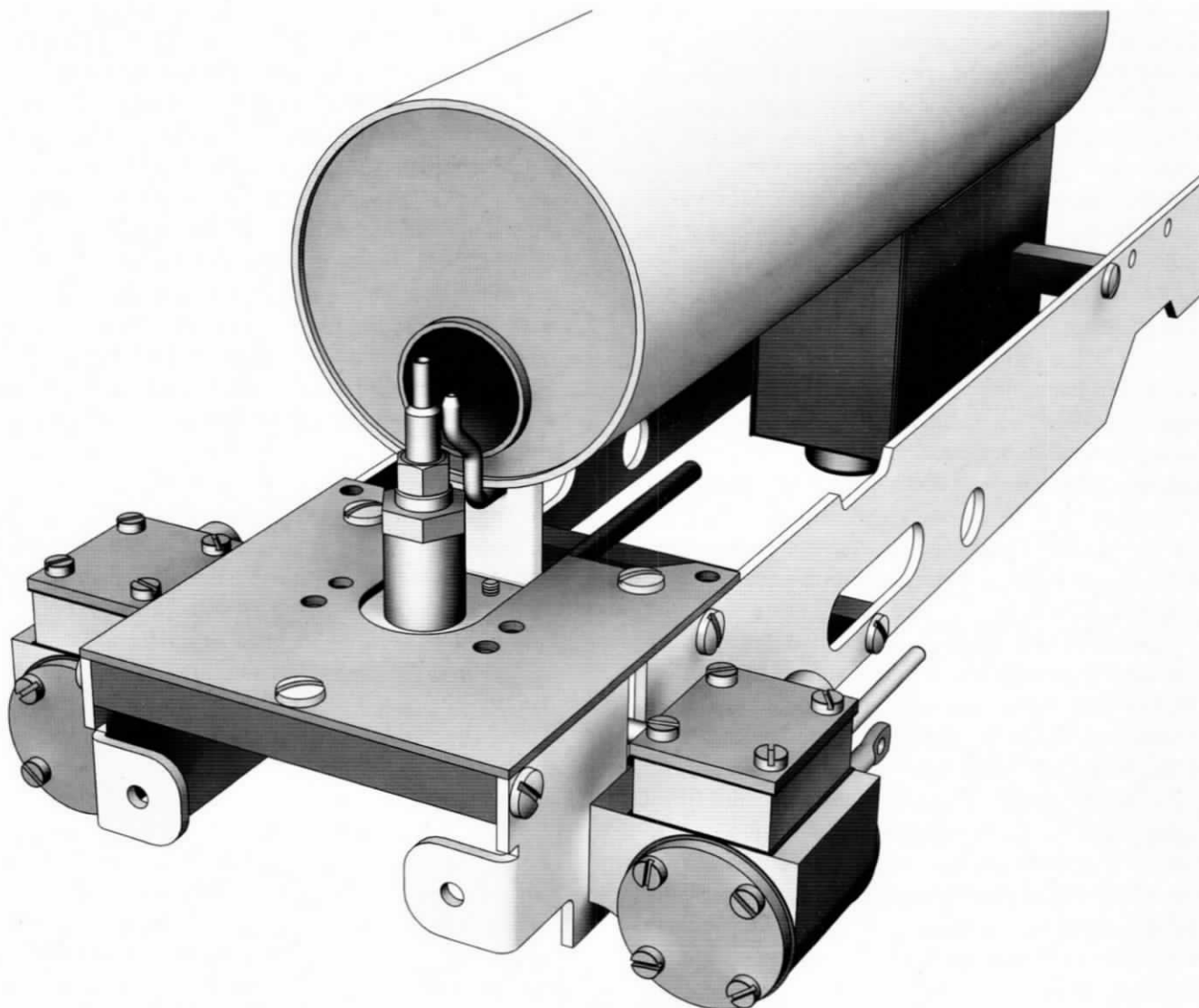
Cutaway view, CAD drawing by Mike Martin

interior wall. This was an experiment to determine whether the three tubes would enhance steaming capability by "capturing" heat from the fire's combustion gases that would otherwise pass down the center of the flue without giving up any appreciable heat to the boiler.

Initially I wanted to find out if converting a butane-fired Roundhouse to alcohol firing would work at all. It turns out that it works better than hoped. Raising steam takes about ten minutes, and once there is 10 psi on the gauge, the steam blower can take over from the stack-mounted auxiliary blower to raise steam pressure to safety valve blowoff. Run time is about 25 minutes on a boiler fill, which compares to stock butane firing.

This is not a complete set of "how to" instructions for a boiler conversion to alcohol firing. I describe only how I did it. While these ideas and methods were

successful, they are not the last word on this type of thing. Some readers would probably prefer to figure out the details for themselves. This conversion will undoubtedly work with other Roundhouse locomotives. Even some non-Roundhouse butane-fired locomotives might be converted successfully to alcohol using the ideas described here. But proceed cautiously! For any locomotive you must consider whether the boiler, cab, chassis and platework design will allow this type of conversion. The conversion could also compromise some other operational or aesthetic aspects of the locomotive that might be considered more desirable than alcohol-firing. Regardless of what locomotive is used, each will offer some unique challenges to work out. Other locomotives could very well exhibit very different operational characteristics than what I found with the Roundhouse boiler and cylinder combination.



Alcohol conversion front end detail, CAD drawing by Mike Martin.

Why did I choose to convert a butane-fired locomotive instead of building or buying one that was already designed for alcohol fuel? Well, it was obviously an engineering design challenge. Several years ago I had heard about similar conversions of Roundhouse locomotives, but I had no details about how it was done. Could I convert my Roundhouse Billy to alcohol firing without the expense of a custom boiler and with a minimum of modifications to the existing parts? More importantly, could I do it without making it irreversible in case it did not work out?

My Roundhouse Billy was built originally from Roundhouse chassis and boiler kits, and was fired with a stock Roundhouse butane poker burner. Prior to the conversion Billy had many hours of steaming without any problems. It fully demonstrated the meaning of "runs like a Roundhouse".

The Roundhouse boiler was already matched to the Roundhouse cylinders, so I knew that the boiler could deliver sufficient steam, provided enough heat could be delivered to the single flue. Gauge-one locomotive boilers typically maximize the heated surface by using multiple flues or, if a single flue design, by using cross tubes in the firebox and/or flue. Therefore the big question, which could not be answered except by trying, was whether or not an alcohol fire could deliver sufficient BTU's to the limited area of the Roundhouse butane boiler's single flue to produce enough steam.

A "C-type" boiler configuration was chosen for the conversion to increase the heated surface without major modifications to the boiler. A simple add-on firebox covers the backhead flue opening and extends underneath the back end of the boiler shell. The burner position is below the back end of the boiler shell. The firebox is held in place by the clamping action of the brass boiler wrapper that is supplied with the Roundhouse boiler.

I actually had two Roundhouse boilers to choose from for the conversion, and they were slightly different. The boiler that was already on Billy was an older version with an L-shaped mounting foot silver-brazed to the boiler just below the backhead flue opening. If this version boiler were used for the alcohol-firing conversion, then the L-shaped mounting foot would need to be removed, because the foot would be in the way of the flame path around the back of the boiler and into the flue. The firebox design would also have to be a bit different to clear two brazed-on blind nuts on the backhead that are used to attach the original butane poker burner. For the conversion I used a newer version Roundhouse boiler, which does not have the

brazed-on mounting foot or brazed-on blind nuts on the backhead. This meant that the boiler backhead was clear of any obstructions around and below the flue opening. Fitting a C-type add-on firebox was possible with no modifications to the boiler.

I did not have available a lot of burner design information for alcohol-fired gauge-one locomotive boilers. I studied the G1MRA "Project" and "Dee" designs to see how their alcohol burners and wicks were configured, but these fine locomotives use boilers that were designed for alcohol firing from the start. I decided to use two 1/2" diameter wick tubes because that was all that would fit behind the Billy's rear axle. The G1MRA Project locomotive also uses two 1/2" diameter wick tubes and about the same sized boiler, but the volume of its single cylinder is also about 42% greater than the Billy's two cylinders combined. I reasoned that two 1/2" diameter wicks should be adequate for the Billy alcohol conversion, because the probable lower efficiency of the Roundhouse single-flue boiler might be offset by the smaller steam volume required for Billy's smaller cylinders.

The firebox is a simple metal box made from 0.010" tin-plated sheet metal from an olive oil can, which was available and cheap. The firebox drawing shows how the firebox front, bottom, and back are cut from a single piece of material with two sidepieces added on. The three pieces are silver-brazed together. Flanges on the firebox sides and back are used for mounting and for sealing to the boiler shell. Two 5/8" holes were cut in the firebox bottom for the wick tubes, but these were later enlarged to a single rectangular opening for better airflow. (Refer to the firebox bottom view photo.)

Because the add-on firebox was purely an experiment it is crudely made. The firebox is not quite square, and the overall finish is rough. It would have been better to use rivets to hold the firebox together before silver brazing to make it easier to maintain alignment while being heated to brazing temperature. If a replacement firebox is ever made I might use 0.015" sheet brass, which would have about the same stiffness as the olive oil can material, and might be a bit easier to work with.

The firebox extends forward between the rear driving wheels, so it was made 26 mm wide to allow sufficient clearance for the driving wheels to be regauged for 32mm track. Unfortunately I failed to account for the driving wheel hubs, and the firebox extends about 1/8" too far forward to clear the hubs when the wheels are regauged. This type of small fit error is the kind of thing to look out for if you plan on

doing a similar modification. Check your locomotive to see how long the firebox can be without interfering with the wheel hubs and axle before you lay out and cut the parts.

As stated earlier, the firebox attaches to the boiler by the clamping action of the Roundhouse brass boiler wrapper, which is stiff enough to provide sufficient clamping pressure. The wrapper needs to be cut out to make an opening for the firebox. This requires that the wrapper's rear clamping screw be moved forward of the firebox. The tabs on the wrapper for the rear clamping screw were cut from the portions of the wrapper that were removed, making sure to leave attached a small area of wrapper to serve as a mounting base. The tabs were silver-brazed to the wrapper just in front of the firebox. The photo of the blower line leading underneath the boiler shows the boiler wrapper clamping screw in this new location.

A simple baffle fitted inside the firebox directs the burner flames up toward the boiler shell and shields the back of the firebox where the fire curls around and enters the boiler flue. The baffle's shape and position is shown on the firebox drawing. It is formed from a piece of olive oil can material and is held in place by the friction between its two folded side tabs and the sides of the firebox. The baffle works fine, but a more solid construction would be to use fasteners to hold the baffle in place. A layer of ceramic insulation material was placed behind the baffle as a heat shield.

Ceramic insulation material is fitted around where the firebox flanges butt up to the boiler backhead, and a small strip of ceramic insulation seals the gap where the front of the firebox butts against the bottom of the boiler. No seal was used where the firebox side flanges butt against the boiler because these edges are clamped to the boiler by the boiler wrapper. Refer to the photo that shows the firebox to backhead attachment and seal.

To support the back of the boiler, the firebox is suspended from the footplate by two steel angle brackets on either side of the firebox below the footplate. The firebox then supports the back end of the boiler, and gravity helps to keep the boiler and firebox together. The front end of the boiler slides into the smokebox casting, but is not secured there by fastenings. The whole assembly has proved to be quite rigid and durable. I regularly pick up the locomotive by grasping the boiler without anything coming loose or moving out of position.

The burner assembly wick tubes are made from 1/2" copper pipe (1/2" nominal I.D.) and copper pipe caps, and the whole burner assembly is silver-brazed

together. The alcohol supply tube is 3/16" O.D. copper tubing, except for a short length of 1/8" O.D. copper tube used for a hose barb. A steel angle bracket silver-brazed to the 3/16" supply tube attaches to the underside of the footplate with two screws to support the burner assembly. After the removal of the two screws the burner is easily removed from the locomotive. Silicone tubing connects the burner assembly to the alcohol fuel supply in the tender. The tops of the burner tubes are 1-9/16" (40 mm) below the bottom of the boiler shell.

Each wick tube is packed with 14 strips of ceramic insulation material cut 1/8" wide and 1-1/8" long, about the same size as a paper match. (The ceramic insulation material is approximately 1/16" thick.) The ends of the ceramic strands stick up 5/16" or so above the tops of the wick tubes. The ceramic insulation makes good wick material, but lacks strength to withstand bending or twisting. After the wicks are wet with alcohol they are quite delicate and can easily be pulled apart. No alternative wick material has been tried yet.

After the experimental firebox was fitted to the boiler, and before it was decided to go ahead with the complete conversion, steaming tests were done with the boiler and burner propped up on bricks. The Roundhouse Billy smokebox was fitted with a makeshift blower made from 1/32" O.D. brass tubing, and the smokebox base was temporarily sealed. With the blower running on compressed air, and using a mirror to keep an eye on the fire and the wicks, the steaming tests proved that the firebox and two 1/2" wick tubes could raise 40 psig of steam. Further testing was done using the boiler's own steam to supply the blower, and then to power Billy's cylinders with steam from the boiler fed through a length of silicone tubing. At this point no actual modifications had been done to the original Billy locomotive, nor had a functional blast pipe been tested, but it was decided to plunge ahead and build the Billy up with alcohol firing.

(Continued in the next issue with more photos, drawings and text)





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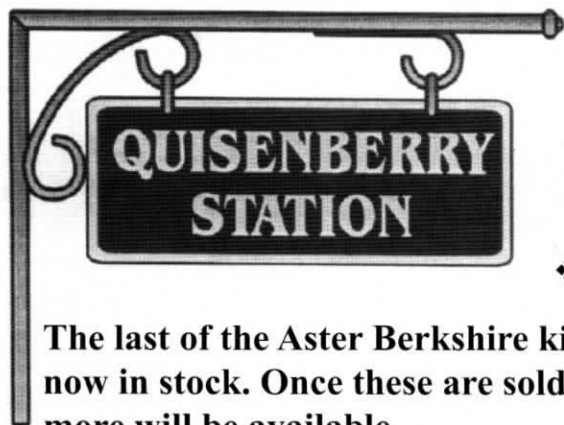
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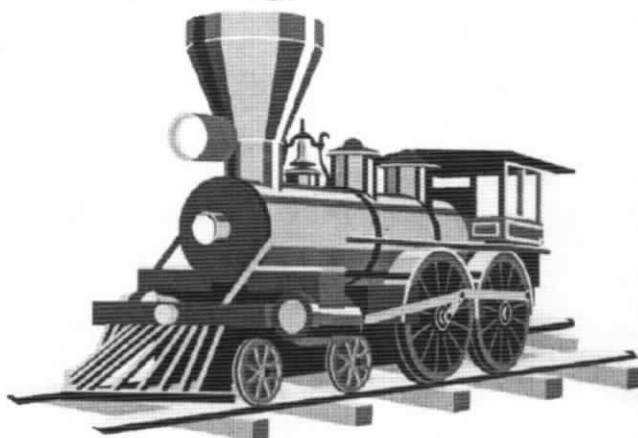


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Involuntary Cricket Modification...

by Chip Rosenblum

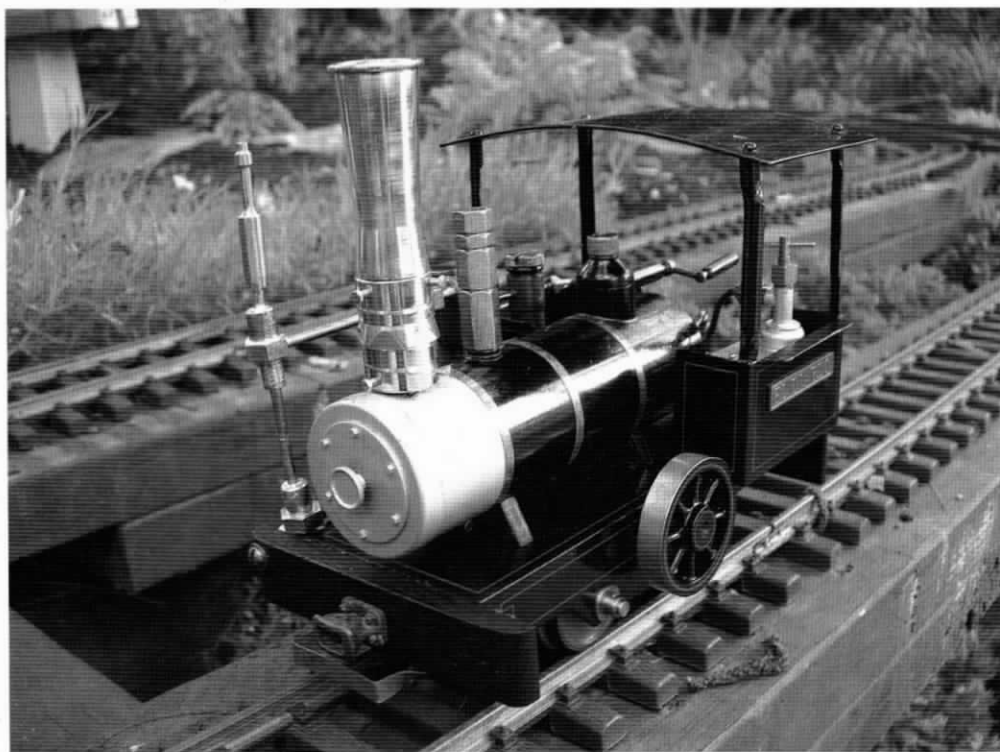
I wanted to have an engine to run at Diamond-head last January, and with all of the horror stories of airline security I decided to ship one to myself there. I picked my Cricket to ship, as I enjoy running it and it seemed to be small enough to pack adequately and ship at a reasonable cost. I double boxed it, with bubble wrap cushioning both inner and outer layers, and made the serious error of entrusting it to UPS. To make a shaggy shipping story short, when I arrived at DH and opened the outer and then inner box, the stack was no longer attached to the smokebox and the exhaust line had been broken free and was no longer attached to either the stack or the cylinder.

My Cricket is a pre-production model, signed by one Michael O'Rourke his very self on the bottom. It has had, so to speak, a checkered career.... At a steamup in Noblesville, Indiana in the early '90s I achieved a notorious presence for my engine, and the beginnings of my hobby name of Doctor Flame. I had recently received the Cricket and was very anxious and excited to run it. I set up all of the required "stuff", and proceeded to lubricate, fill, and then try to light off the burner. And try. And try. And.... Well, I think I could have passed

for a steel smelting plant after a while, with the flame shooting from the stack into the air with the sound not that of a burner, but rather of any external combustion engine. Erv Mueller and Ernie Noa threatened to stop by with marshmallows and cocktail weenies.... We all finally gave up, and I sent the Cricket back to Mike, who eventually did get it back to me equipped with a new gas tank, valve and burner system. I renamed it, complete with plates, "El Diablo", and learned how to get it to reluctantly light.

And reluctantly might be the operative term, here. I have spoken with other Cricket owners and they have related the occasional problem with getting the flame to flash back onto the burner. George Erhart

and I used to have to pull the burners with some regularity and clean the burner and the dispersing screen to improve lighting off. This seemed to be the result of routing the exhaust line through the side of the stack and up to provide an imitation of an actual steam plume with central



The author's Cricket, modified as described in the article.

placement. The problem here was that the grunge also exited at the top of the stack, and a good proportion of it seemed to fall back down and coat the exhaust tube and the burner. With no actual smokebox for access and cleaning, I think that this grunge made it even

more difficult to light the burner due to foreign body contamination of the slots and the mesh.

So, inspecting what was left of my Cricket, the "stack", after the shipping fiasco, now consisted of a 1/16" or so high flange of sheet metal, with some soft solder blobs still attached. The cylinder had simply a hole for the exhaust, with the original stack and exhaust line nestled safely, but separately, in the bubble wrap. I decided that esthetically this needed vast improvement, but also wanted to avoid running the exhaust back up [and unfortunately, down] the stack again. So I figured I'd build the modifications in two stages. First the replacement stack, and then a retrofit of the exhaust piping. A clue that this might work out was that at DH the cricket lit better and ran fine, if you can tolerate significant horizontal spitting, without either stack or exhaust piping.

I decided to make the stack from two pieces, and attach them by friction with #2-56 brass machine screws in case I changed my mind. The lower piece is a 1/2" IPT female threaded connector. The top is a stack I purchased from Pete Thorpe a long time ago that was floating in my parts box. The bottom of the turned stack was too small a diameter for what was left of the Cricket stack, but it was a slip fit into the top of the pipe connector. The other end of the connector I bored [you can drill it] to fit the stack remnant. I drilled and tapped three places at the top and bottom of the connector for my setscrews, rounded off part of the connector and polished it and the stack on a buffing wheel with green rouge.

The exhaust piping I wanted to form into a "T" shape. This was so that most of the steam would go up and most of the grunge would go down. The top of the pipe is some other connector found in the parts box, and the front lower edge is a modified connector that I could machine screw

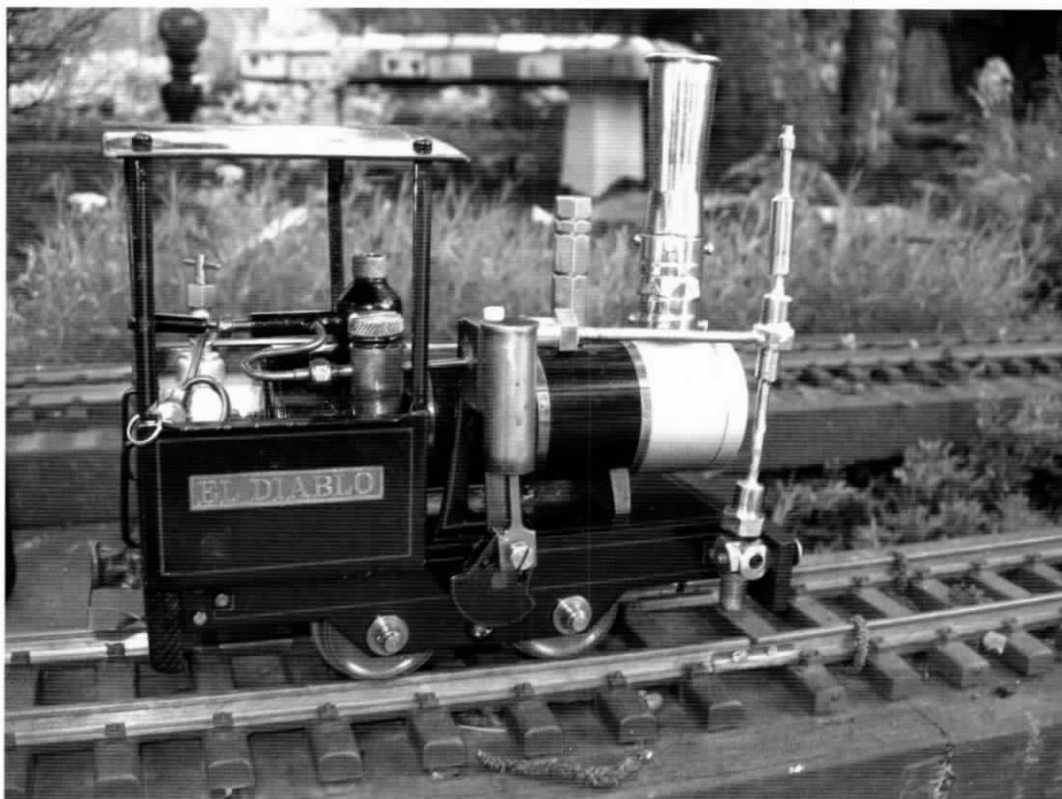
to the back of the front buffer beam to stabilize all of it. The section that "fits" the cylinder is merely caulked into place with JB Weld epoxy. I expect this to not adhere well for very long, but as the entirety of the piping is stable the leakage should be minimal.

Another modification was to replace the whistle as a fill valve with an actual plug. The whistle was always frustrating to remove to fill the boiler as the spring would "catch" and not remove easily. Also, except for the sound of a tortured chicken, the whistle was only good for providing a perfect 3/32" round third degree burn on the tip of your finger if you forgot and tried to blow it without using a tool. The fill plug was made using a piece of brass hex stock with a few turning grooves and a threaded bottom. I don't know why Mike, with his Irish background, held such slavish appreciation of old British bicycle thread [which Mamod also used], but this is 1/4 x 26 tpi thread. I throw this in to save you some measuring if you decide to replace it.

I find that the performance of the now repaired Cricket is as hoped as much as planned. When operating, the steam does exit from the top of the "T" exhaust piping, and the grunge, for the most part, drops out the bottom. This is enough

outside the track that I don't find much landing on the rails. The burner is easier to light. I won't equate it with the ease with which I can light a Roundhouse, but it is easier than it was originally. I removed the burner after a few runs just to check, and it re-

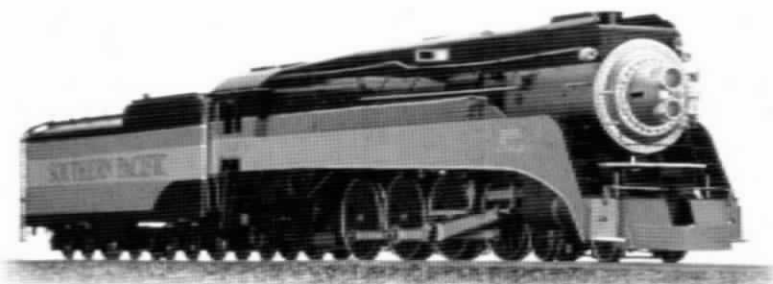
mained quite clean, as expected. I think that any available parts box pieces could be used for these modifications, and I hope that you have a good time when you try them!



El Diablo, much easier to light and maintain.



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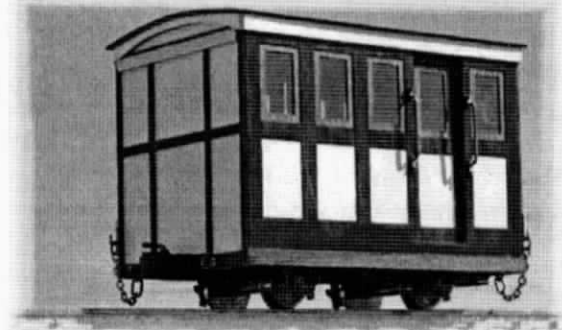
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ACCUCRAFT NARROW GAUGE

LIVE STEAM 4-4-0

The "NEVADA COUNTY"

by Bruce Stockbridge

ACCUCRAFT TRAINS has produced a very accurate model of the Baldwin Locomotive Company's narrow gauge 4-4-0, based on the South Pacific Coast engine # 3, in 1-20.3 scale. This engine is the NEVADA COUNTY, "GRASS VALLEY" # 1, with brown cab and tender, Russian grey boiler with a Radley-Hunter stack.

Following are the advertised stats:

- **1:20.3 scale**
- **For use on 45mm track**
- **8 foot minimum diameter curves (NOT radius)**
- **Driver wheels are 2.10 inches in diameter**
- **Simplified Stephenson valve gear**
- **"D" type slide valves**
- **Johnson bar controlled links**
- **Butane fueled**
- **Single flue boiler**
- **300ml water capacity**
- **40-60 psi working pressure**
- **Safety valve**
- **Water filler valve**
- **Throttle w/metal R/C arm installed**
- **Steam pressure gauge**
- **New hydrostatic lubricator**

When the locomotive arrived in ACCUCRAFT'S very well packaged 38.5 pound carton, I knew Christmas had arrived early!

I sat down and started unpacking everything right away.... Having been the recipient of a heavily damaged carton from one of the largest shippers of goods in America, I was very happy to see that the engine and tender came extremely well packaged from the factory. It took roughly 30 minutes to unpack the strapping tape and styrofoam packing and

black soft foam, as well as the 4 bolts holding the engine to the wooden bottom plate in both the tender and locomotive cartons. The locomotive is especially well packaged to avoid shipping damage. I did notice while unpacking the tender that the rear truck would not turn. Upon closer inspection, I noticed the rear step plate was bent inward, not allowing the truck to pivot. A little 'armstrong movement' cured that situation quickly.

The standard instruction book, along with a couple of separate clear plastic bags with hex head bolts and nuts and user installable parts (loco and tender steps, whistle and loco pilot) were included, along with a 60cc syringe and a hex head bolt driver and an Allen wrench.

Being a "typical" male, I was skeptical of reading the instruction manual at first. However, when I raised the hinged cab roof, I immediately noticed a new hydrostatic lubricator, and decided I had to read the instruction manual right away. I was glad I did. There is an entire section dedicated to the use of that hydrostatic lubricator.... It MUST be set to deliver the proper amount of steam oil to the steam line, in order to properly lubricate the cylinders and valves. It has been set at the factory at 2 turns from the closed, or off point. Leave that setting alone until you have the locomotive well broken in, and you can just barely see some oil residue at the top of the stack and/or on the cab roof following a steam up run. If you set the hydrostatic lubricator to use too little steam oil and you ruin your D-valves or the cylinders or block, your warranty is VOIDED...!

I installed the locomotive cab steps and the whistle as well as the pilot, and then installed the tender steps. The cab steps are rather small and easily bendable items, so be very careful when handling your locomotive and tender following their installation. The tip of the pilot, when installed, is very close to the

track while the engine is running. As a matter of fact, I had the misfortune of 'picking' a squirrel chewed half of an acorn with the point of the pilot and the frog of one of my turnouts, and subsequently dumping the engine on its side....! As a result, I added a small 2-56 washer to the inside bottom of the pilot mounting plate, which raised the front edge of it and solved the problem.

Following the reading of the instruction manual, I set the locomotive and tender on the steam-up bay of my layout, connected the tender to the engine with the coupling bar in the rear hole, and connected the butane line from the tender to the back of the burner. I filled the boiler with 300cc (or ml's) of distilled water, withdrew 40 cc's of water with the included 60cc syringe (to make room for making steam), oiled the hydrostatic lubricator (making certain the drain valve at the bottom was closed all the way), filled the butane tank in the tender, filled the tender with water to help stabilize the butane temperature, (if you are like me, you will wonder where all the water is going as you fill the tender around the butane tank; I found out quickly, there are 2 holes that actually drain into the tender body itself) opened the smoke box door, cracked the fuel valve and listened as the bubbles in the butane tank "bubbled out", and yelled, "FIRE IN THE HOLE" (yelling like that doesn't do anything but make ME feel good....!) as I lit the remaining fuel in the boiler, and listened as the flame went back to the burner and made the traditional "POP" noise, indicating the burner was lit.... looking back into the smoke box proved the flame in the burner was burning well, and I shut the smoke box door to wait for the pressure gauge to reach 40 pounds, and/or the safety valve to pop. In roughly 10-11 minutes, I had 40 pounds of pressure; I closed down the fuel valve to a barely audible sound and put the Johnson bar in the reverse position, then cracked the throttle valve just a bit to allow the cold condensate to be blown out of the cylinders. I was rather surprised to see the locomotive move quite readily in reverse right away with just 1 or 2 small 'jerking' movements..... I stopped her, and placed the Johnson bar in the forward position and cracked the throttle again, and off she went on her own with NO finger push or help what-so-ever!! There was no load behind her, but the chuff coming out of her stack was AMAZING.....!! The Radley-Hunter stack internal shape design and the design and position of the steam pipe in the smoke box is just PERFECT!!! This engine has the BEST stack talk I ever heard from a 'stock' live steam locomotive right out of the box.....!!!!!! Even the ACCUCRAFT live steam "guru", Dave Hottmann, was impressed with the stack talk....! The more load you put on behind her, the more chuffing you will hear. On the first 2.5% grade she pulled, I could actually hear her working the grade from roughly 30 feet away....! That first steam-up, she ran for 41 minutes.

Made a trip to see Dave Hottmann after the first week of running the engine, and on his steam track, we put on his "special" live steam engine 'test car'; an AMS flatcar upon which he places up to 8 - 5 pound 1/4 inch thick steel plates that are the size of the flatcar..... The Grass Valley walked

off with ALL 8 plates (40 pounds....!) as though there was nothing behind her....! Pretty impressive....!

She has roughly 20 hours of run time now, and will run for about 50 minutes with a normal train of 4-5 AMS freight cars, or 2 of the new AMS Jackson Sharp plastic coaches behind her on a level track layout. BTW: she really looks good with those coaches in drag....!

I took her to Grove, Oklahoma to a friend's open house "GATHERING" for the CENTRAL ARKANSAS GARDEN RAILWAY SOCIETY, and she was the talk of the "GATHERING", where over 100 visitors showed up and literally asked hundreds of questions about the how's and how-to's regarding live steam engines.... A lot of the female visitors (as well as the males) were impressed with the colors of the engine, and the men were impressed not only with the running as well as the loud chuffs, but also the way the factory installed decals looked. The decal work is an exact replica of the original Nevada County "Grass Valley" engine. The ACCUCRAFT folks did an awful lot of research to get this beautiful locomotive looking like the original engine. KUDOs, ACCUCRAFT for your work in that effort....! Not only did you produce a fine running locomotive, but a GORGEOUS one in this case too..!

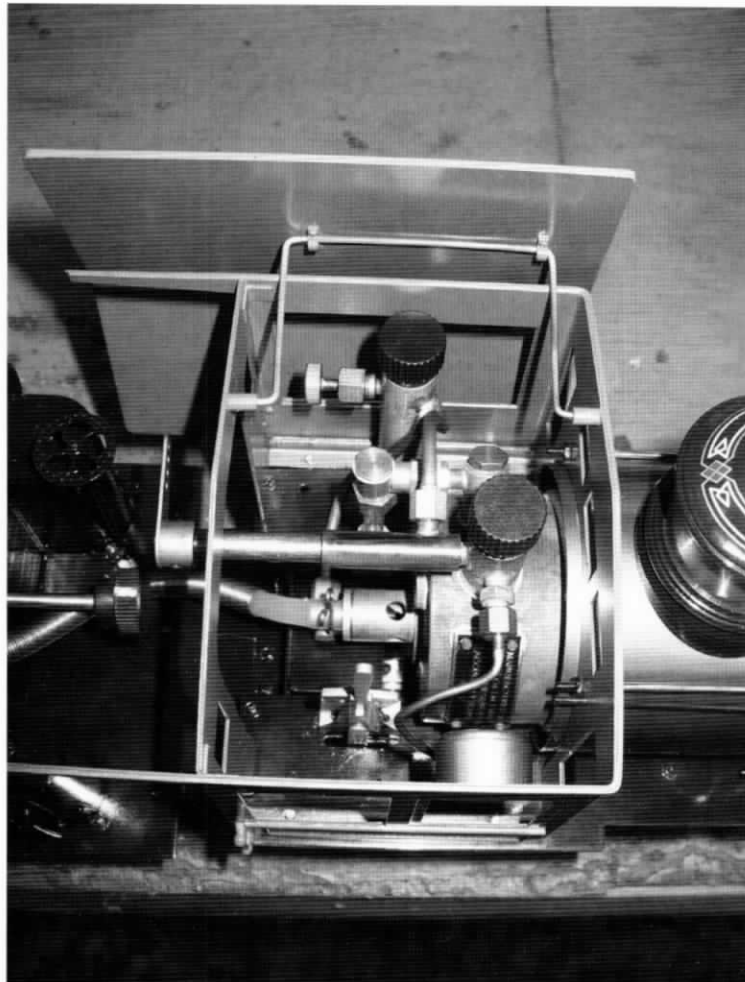
I have only a couple of minor complaints; it may be difficult to R/C this engine as the cab is not conducive to placement of servos. A little larger cab would be nice, however that may throw the esthetics of the engine off. Also, if you don't fill the tender with water, it may wobble a bit while running (at least on my layout). With the rather constant temperatures in my area of the country (Little Rock, Arkansas), there isn't much change in the butane expansion while running without filling the tender with water around the butane tank, at least during the normal running season of the year. When it comes to the winter temps, however (our average winter temp is 42 degrees), it would make a difference with the tender full of water surrounding the butane tank.

If ACCUCRAFT says to run on a minimum of 8 foot diameter, that means 8 foot diameter curves; I tried to run on a friends layout with 5 foot diameter curves and the engine was balking at that small radius.

There have been no running glitches or problems with this wonderful and beautiful locomotive what-so-ever..... I LOVE THIS ENGINE....! As a matter of fact, I am SOOOOOOOO impressed with her, I am going to purchase it....!

As Ron Brown says all the time, "HAPPY STEAM-ING".....!

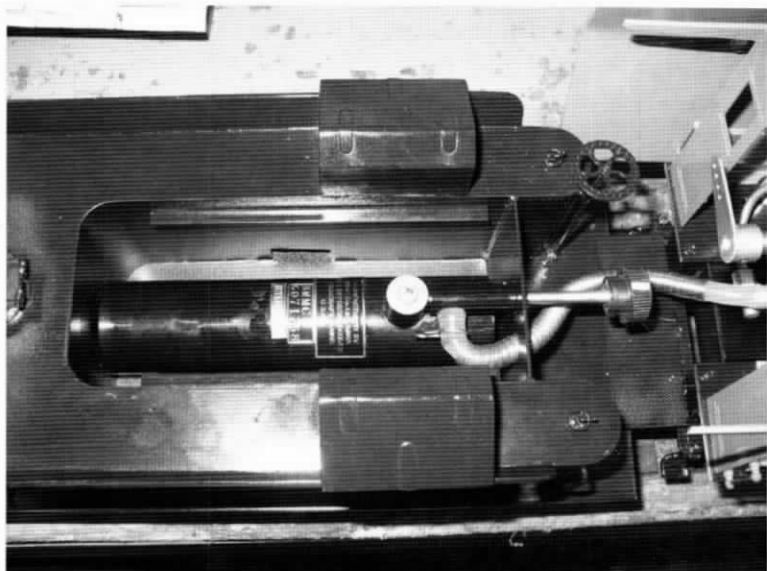




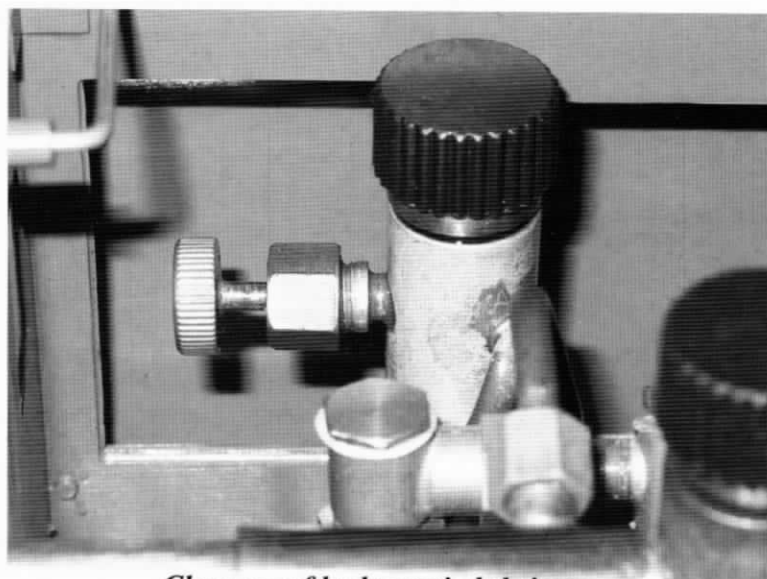
Inside cab.



Rear view of cab and controls.



Butane tank and supply tube in tender.



Close up of hydrostatic lubricator.

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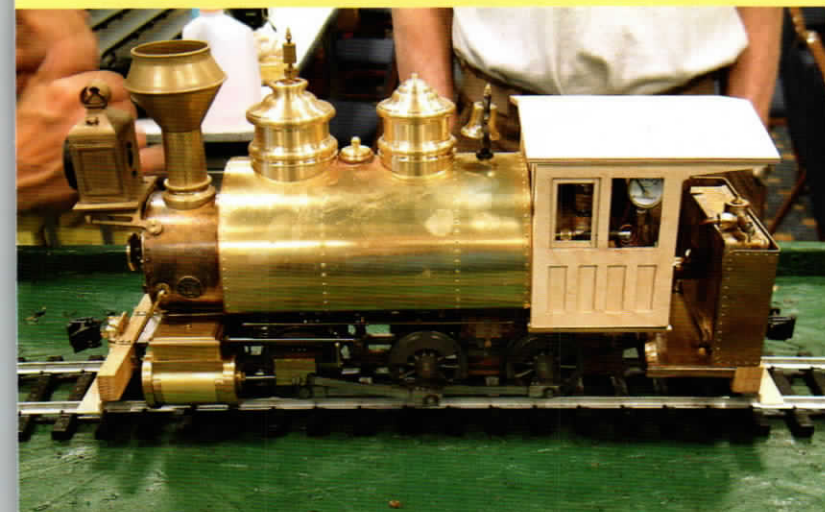
Accucraft 4-4-0 Baldwin
Live Steam AC7720



Scales, eras or sides of the pond don't matter at the Summer Steamup: from left, Rob Lenicheck listens to hear whether the fire has caught in his scratch-built RGS No. 14 as David Leech examines Lenicheck's detailed rolling stock. In the black cap, Geoff Spenceley tweaks the throttle on his Aster Schools, while across the way, Howard Macul-say takes a moment from photographing his heavily modified Ruby to check what's going on under the roof.



Mike O'Rourke's 1:20.3-scale mining diorama was blessed with Kevin O'Connor's teal-blue Berkeley Locomotive Cricket.



A two-year project, Rob Lenicheck's RGS No. 14 0-6-0 switcher is entirely scratch-built, with but a few exceptions: the couplers, the pressure gauge, the filler valve. This is Rob's first scratch-building project.



Rich Threlkel gets up close and personal with his alcohol fired loco.



Nancy Norris and Ron Gies discuss the inner workings of one of their steamers.



Alan Redeker (l.) and an unidentified steamup participant prepare their Accucraft SP Cab Forward locos for a run.

The Nuts and Bolts of Shays

The Mapleton Shay Frame

By Dan Rowe

This article continues the series of articles about building the Mapleton Shay using the original Lima Locomotive Works drawing cards. The design of the Mapleton Shay frame is a typical example of small Shay I-beam construction. The fold out drawing is from the erecting plan 1553 card 16205 and the frame drilling card 16725.

There are a few things I want to mention that are either drafting errors or parts that I do not know about. I believe the hole marked by X on the lower outside flange of the right beam is a drafting error. The hole on the other side of the web is for the middle pit iron that supports the wooden pit floor. I think the draftsman confused the pit iron with a running board bracket because the erecting plan does not show a hole in that location.

The next issue is the two 5/16" holes shown in the front left beam web. I have no idea what they are for. The photographs do not show holes in that location and later frame drawings for engines this size do not show the holes. If anyone ever discovers the purpose of the holes, please share that information.

The vertical distance of the four holes on the frame spreader channels and the male center plate do not match. The later frame channels have the same dimension as the male center plate so the reason might have been a casting change that did not get recorded on the old print.

The back side of the fold out has a single drafting problem. The brace that is all crossed out was not crossed out on the Lima drawing. Many Shays have a brace in that location but not this plan. The draftsman was not fully committed because he left it off the top and front

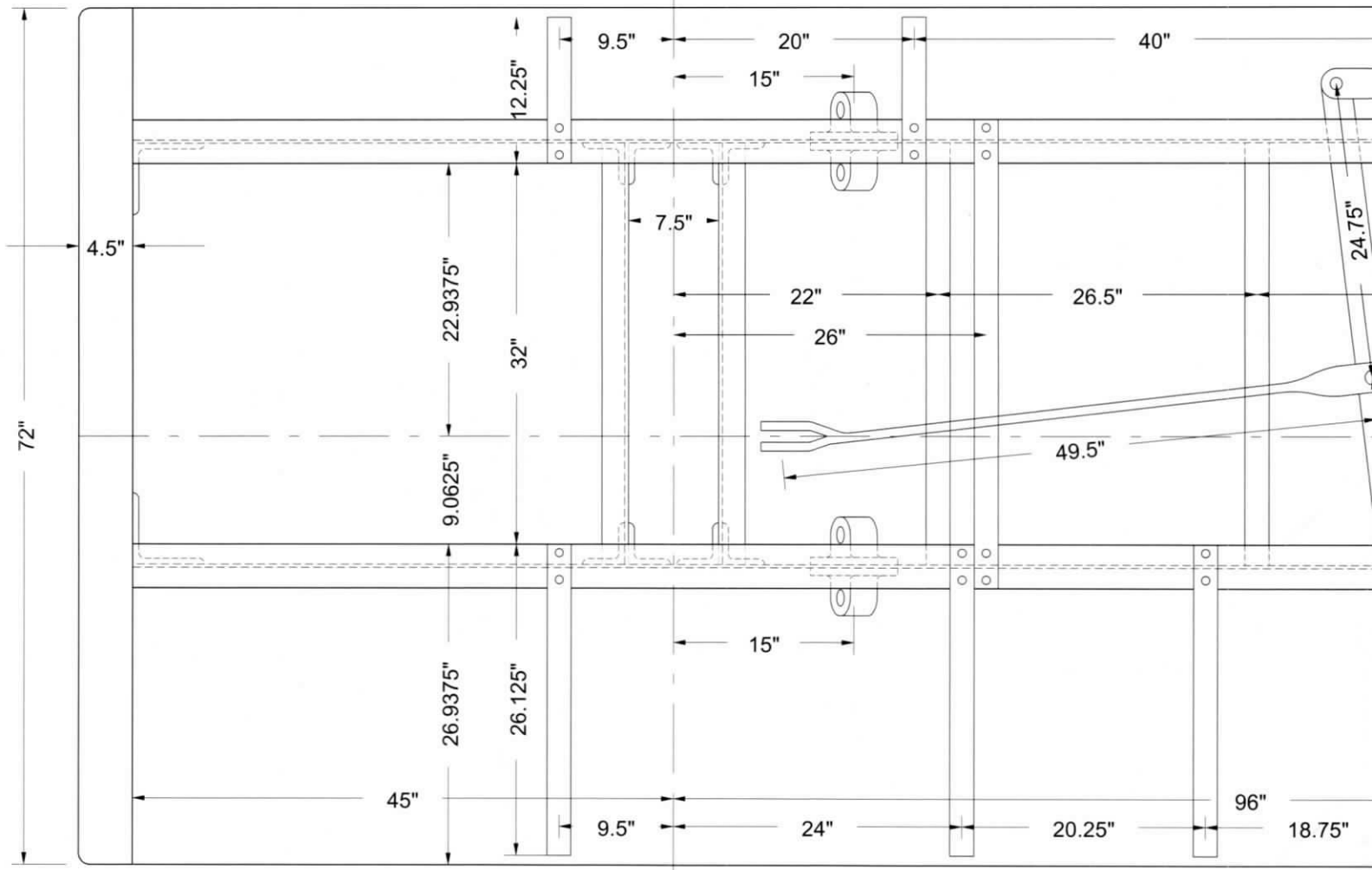
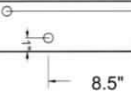
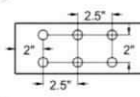
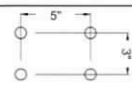
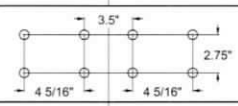
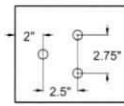
view. This is an obvious error because it is not on the erecting plan and none of the photos show a brace.

I do not want to give the impression that the Lima Locomotive Works drawings are full of errors. I have drawn several locomotives from the drawings and drafting errors are rare but they do exist. I am always amazed at how well things go together and that a locomotive can be assembled from 100 year old drawings.

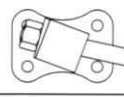
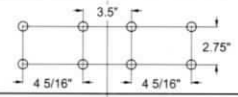
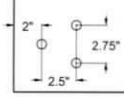
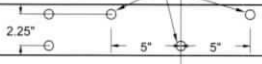
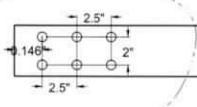
The fixture I made to profile mill the 7/8ths I beams is shown. It is 20" long which is a bit longer than necessary for this frame but the Uniforce stock was 20" long so I used the whole section. I used free-machining 1/2" square steel stock because the cutter is expensive and I know that I am rough on milling bits. Free-machining steel and most cold rolled stock will warp when it is cut lengthwise. I took light cuts and flipped the stock over after 2 or 3 passes and took the equal amount off the other side. This equalized the warp and final beams were as straight as the original stock.

The built up construction method is a way to fabricate beams with less milling or smaller machines that will not make a 20" cut. Slight errors from short cuts will be hidden in the slot and a small silver solder fillet will be much closer to the actual profile.

There are a few parts that will be covered in later articles, such as the boiler pads and the grate shaker bracket. My plan is to rivet the frame like the original. I have made a rivet die set similar to the one shown in "Model Boilers & Boilermaking" by K. N. Harris. I will cover this and the rest of the frame in the next issue.

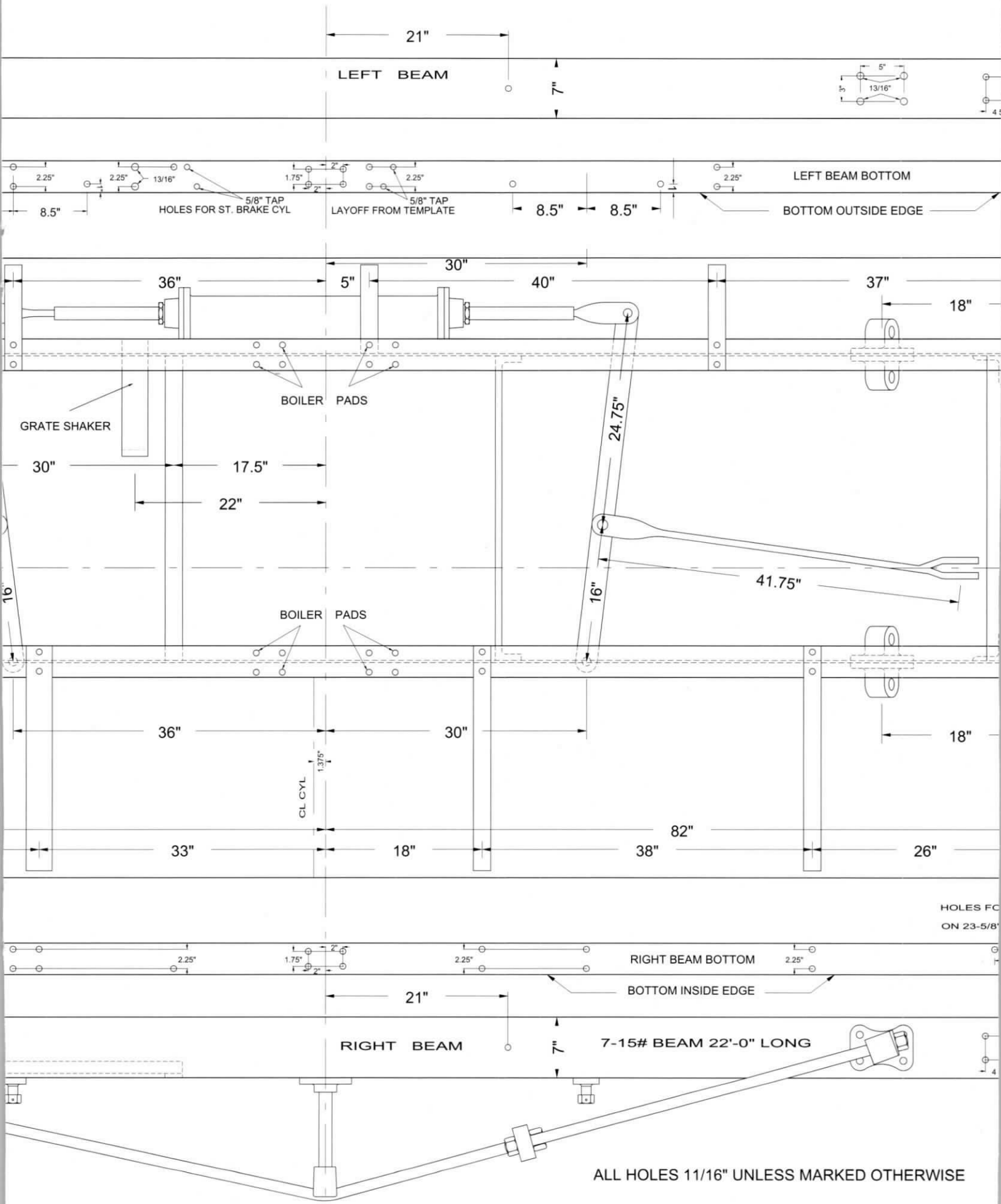


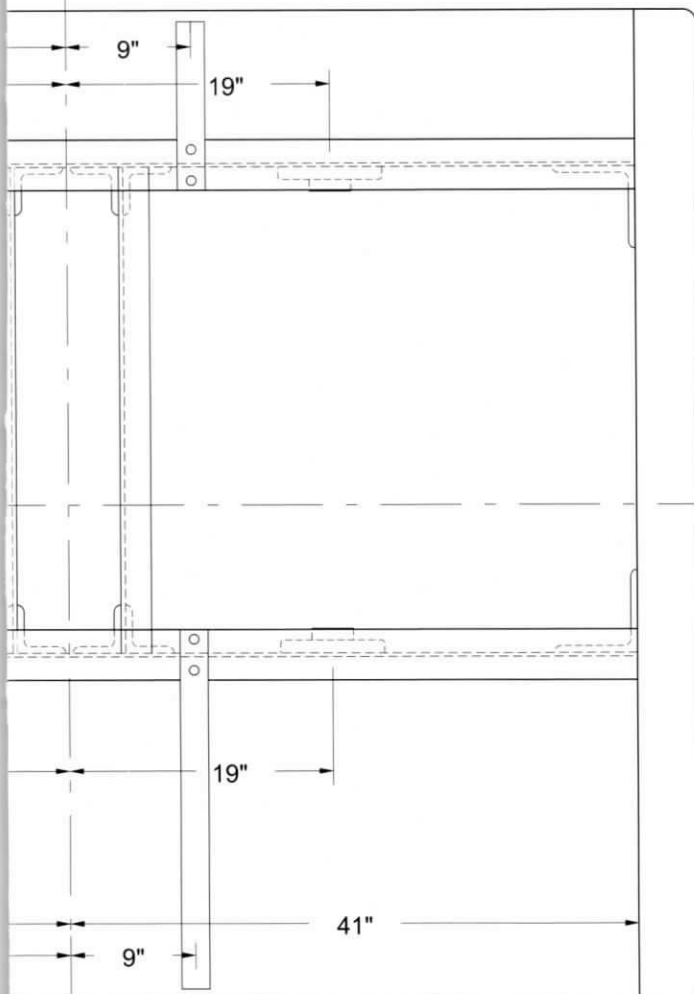
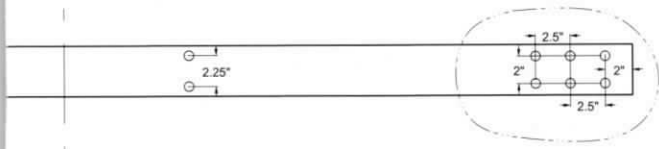
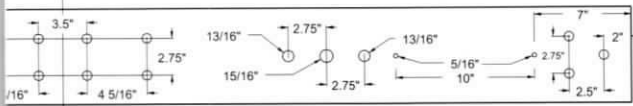
HOLES FOR SIDE BEARING
ON 23-5/8" GAGE & 30" GAGE



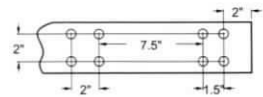
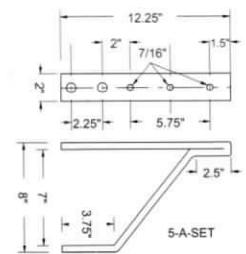
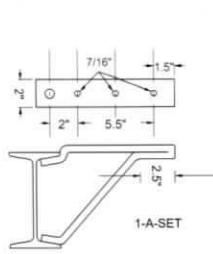
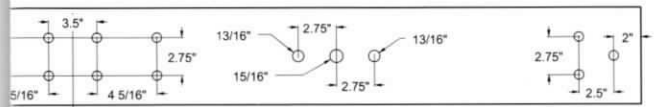
TO END OF PIT FLOOR

21"

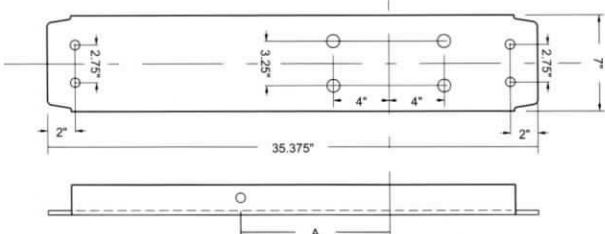
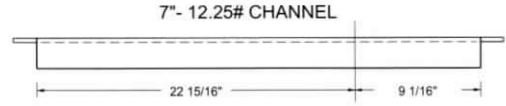




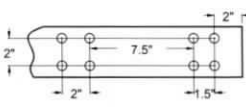
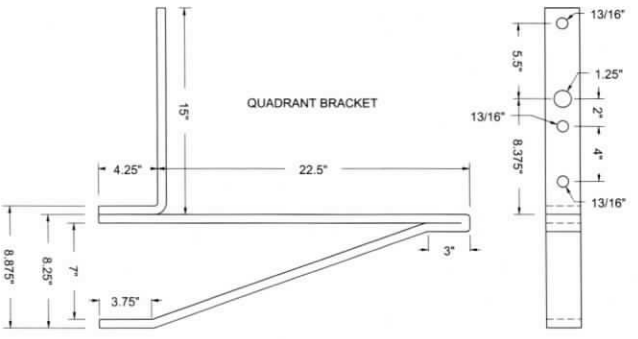
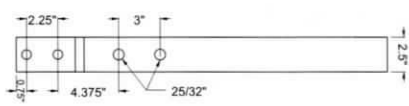
OR SIDE BEARING
GAGE & 30" GAGE



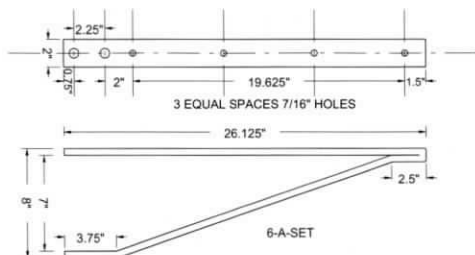
OLD LAYOUT FOR LOCOS 1553-2136
BOTH ENDS

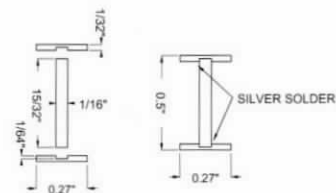
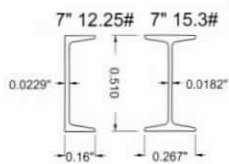


LINE	A
1	16"
2	10 3/4"
3	12"



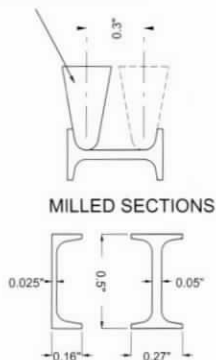
OLD LAYOUT FOR LOCOS 1553-2136
BOTH ENDS





BUILT UP CONSTRUCTION

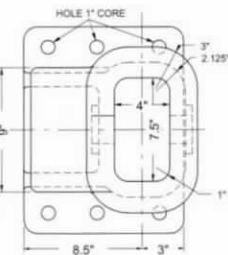
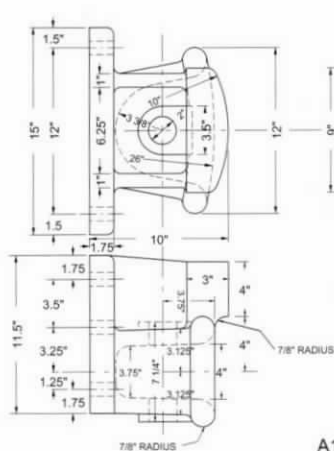
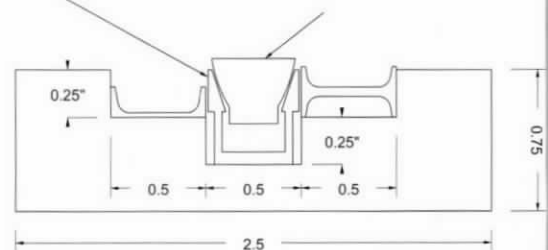
10 DEGREE 1/16" RADIUS MILLING CUTTER



7/8" SCALE BEAM CONSTRUCTION

MITTEE BITE UNIFORM ALUMINIUM STOCK MFG # 62120

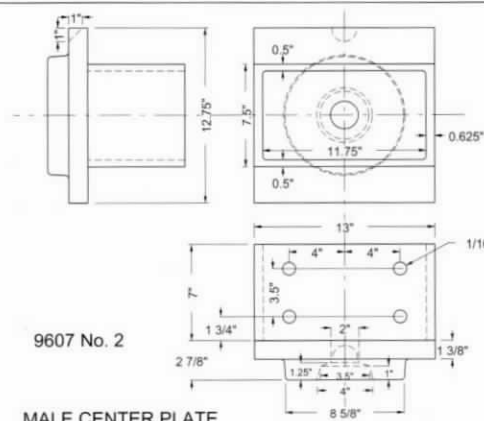
MITTEE BITE UNIFORM STEEL WEDGE MFG # 631



CAST IRON PAT. No. 9630

A10463 DRAWHEAD

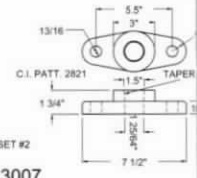
LOCO 2800



9607 No. 2

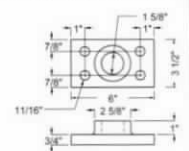
MALE CENTER PLATE

FRAME BRACE PAD



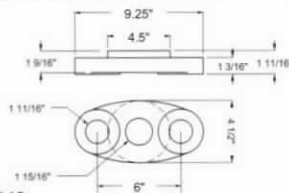
13007

TRUSS POST SOCKET



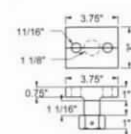
12442

TRUSS HEADS L6 PATT. 1538

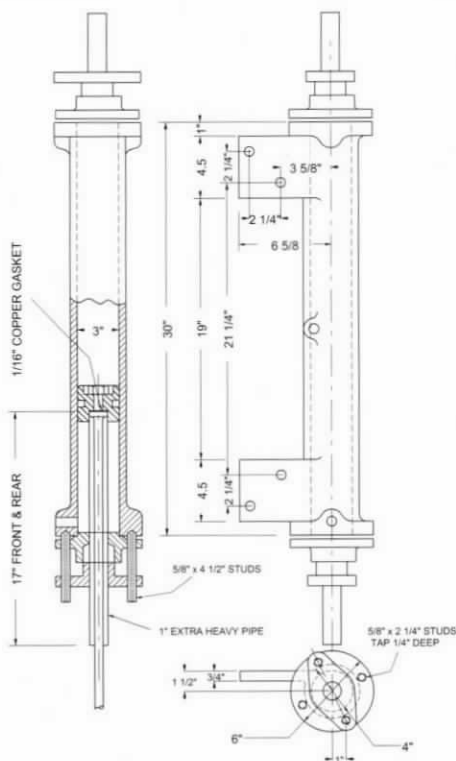


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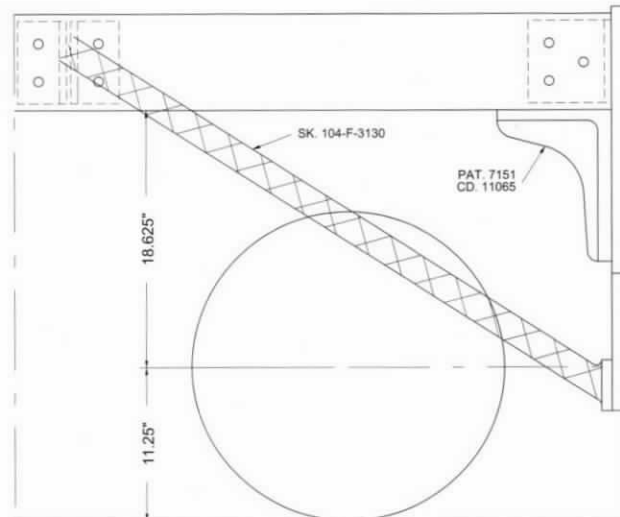
BRAKE LEVER FULCRUM

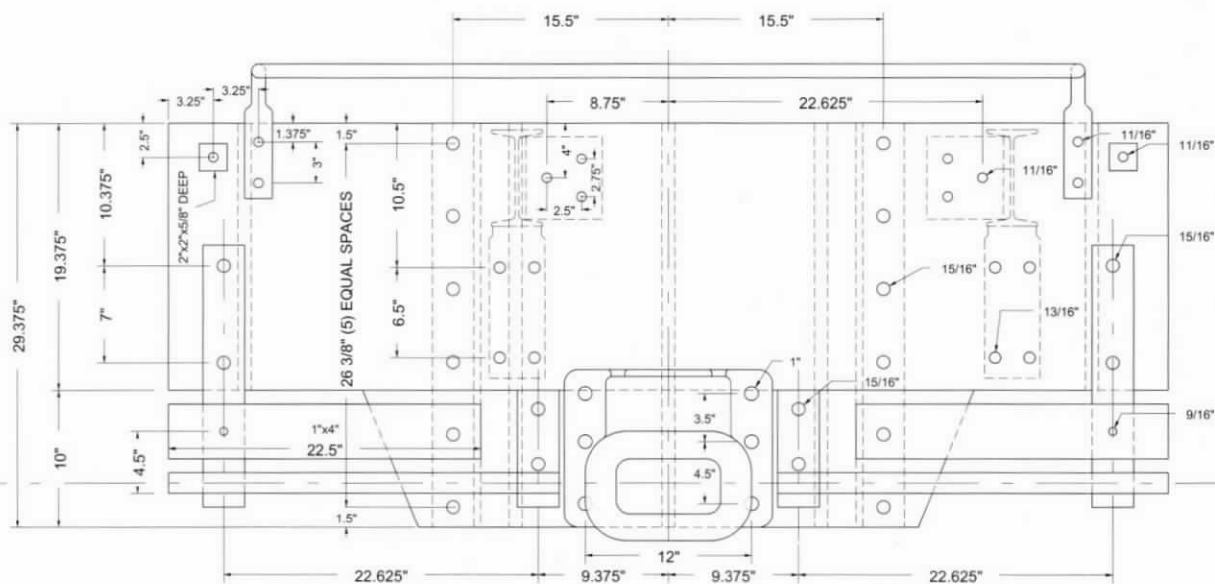
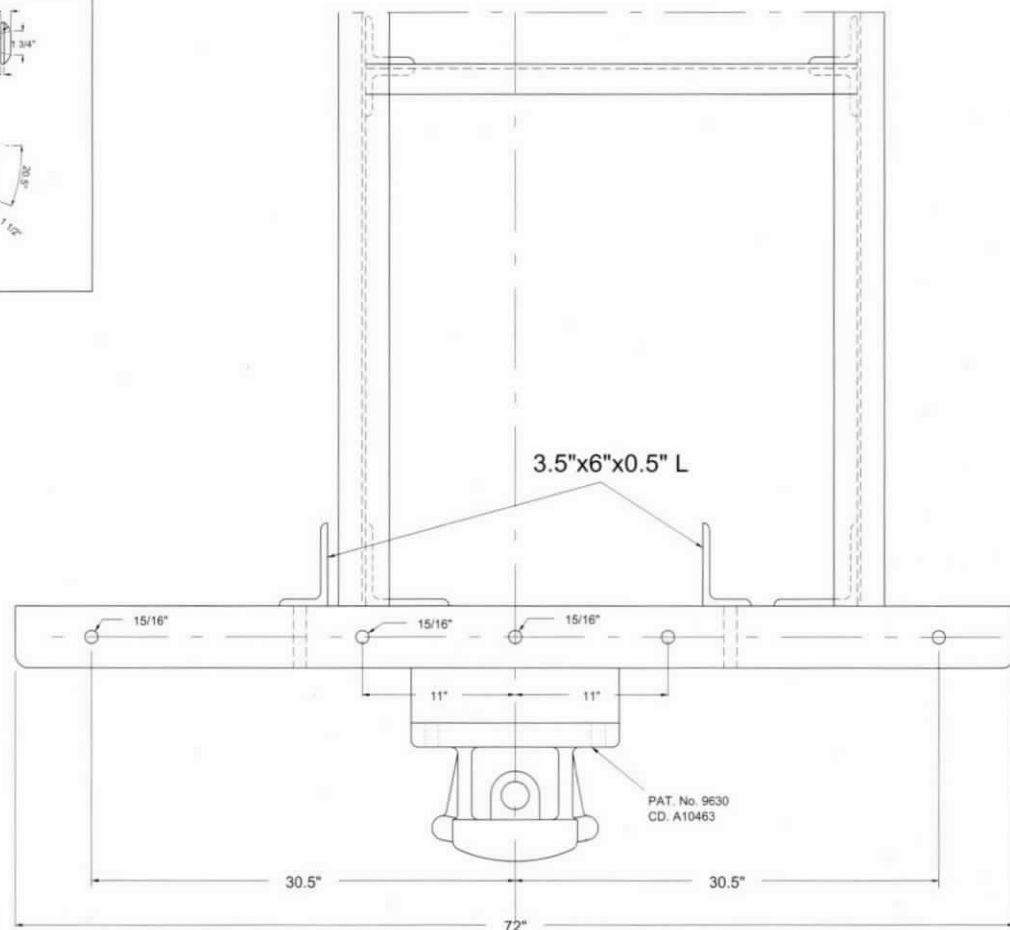
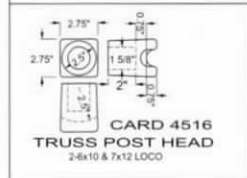


13417



13508	3" STEAM BRAKE CYLINDER	DRAWN R.S.	TRACED R.S.	CHECKED A.C.	APPROVED	LIMA LOCOMOTIVE WORKS INCORPORATED DATED 5-23-01





B10317 FRONT END TIMBER



The Nevada County narrow gauge 4-4-0 approaching the station in Mayberry on Mitch Mitchell's scenic layout in Heber Springs Arkansas.



MBV SCHUG
Large Scale Model Railways & Accessories

SAXONIAN IIIK
0-6-2 Articulated
Live Steam



Length - 443,3 mm
Width - 97,8 mm
Height - 147,8 mm
Weight - 4,1 kg
Scale / Gauge - 1:20.3 / 32 and 45 mm

After my first saxonian project, the saxonian IK, I'm proud to present you my new project, the saxonian IIIK with Klose valve gear. Some of the features are isolated and adjustable wheels for 32 and 45 mm gauge, check valve, pressure and water gauge. Also available with Radio Control.

Exclusive build for us in a limited edition of 100 units by Accucraft Trains. Please contact us for further details. Special pre-sale price. Available Summer 2008.

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MUSEUM QUALITY BRASS MODELS

SOUTHERN PACIFIC 2-10-2 ELECTRIC & LIVE STEAM



1:32 Scale, 45mm Gauge, Brass & Stainless Steel Construction

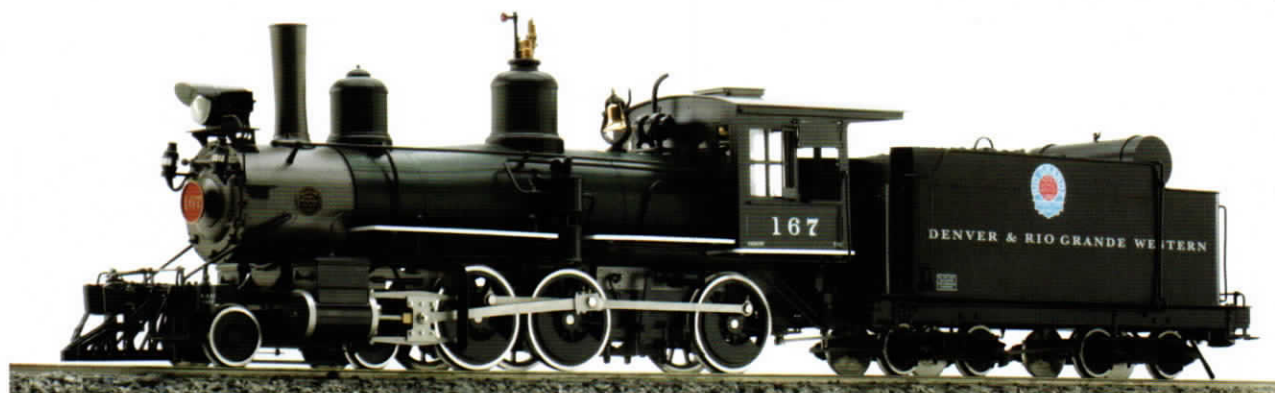
ELECTRIC: 0~24V Pittman Motor, 11.5:1 Ratio, Working Lights, Knuckle Couplers

LIVE STEAM: Butane Fired, Two Cylinders w/ D-valve, Walschaerts Valve, 60 PSI Boiler Pressure

Water Level Glass, Pressure Gauge, Throttle, Axle pump, Hand pump,

\$3,675.00 Electric, Available Now, \$3,975.00 Live Steam, Delivery Winter 2008

D&RGW T-12 4-6-0 ELECTRIC & LIVE STEAM



1:20.3 Scale, 45mm Gauge, Brass & Stainless Steel Construction

ELECTRIC: 0~24V Pittman Motor, Working Lights, Knuckle Couplers

LIVE STEAM: Butane Fired, Two Cylinders w/ D-valve, Simulated Stephenson Valve Gear, Throttle, Water Level Glass, Pressure Gauge, Adjustable Hydrostatic Lubricator, Water Hand Pump In Tender

\$2,500.00 Electric, \$3,000.00 Live Steam, Delivery Summer 2009

OPEN ENDED GONDOLA



IDLER FLAT CAR



1:20.3 Scale, 45mm Gauge, Plastic Construction with Brass Casting

Available in Data Only and Denver & Rio Grande Western

Open Ended Gondola \$119.50, Idler Flat Car \$67.50, Delivery Winter 2008

Reserve from an Authorized Accucraft Dealer

Summertime — and the Steamers' is Easy National Summer Steamup in Sacramento attracts record 127 steamers

By Dave Cole

Like most projects designed by hobbyists, the National Summer Steamup was somewhat over-engineered in its early days, which has led to its easy growth, manifested this past July 16-20 with a record-breaking 127 in attendance.

Held at the Lions Gate Hotel in suburban Sacramento, Calif., the event sported four large portable railroad layouts — two with dual-gauge 32mm and 45mm track — totaling nine loops. The over-engineering part comes from the use of the Lions Gate's Garden Pavilion, which has 6400 square feet of space. This massive room allows the organizers of the event to get in a lot of trackage, virtually guaranteeing their slogan that "everybody gets track time."

The slogan works because the Pacific Coast Live Steamers — the club without rules, officers or dues — owns two large tracks, which are combined with the generosity of two area steamers: Dwight Ennis of Milpitas, Calif., brings his dual-tracked layout and Paul Brink of Rancho Cordova, Calif., this year brought his new, three-tracked 22x34 portable layout.

In its 11th anniversary, the National Summer Steamup has taken on a pleasant pace, with steamers strolling into the event at their leisure, running trains, chatting with friends or visiting a clinic.

In train-running, the trend this year continued to veer toward lash-ups: the now mandatory "Shay-Up" — held late Saturday afternoon just before the traditional alfresco BBQ, which itself is followed by a door-prize drawing — had more than 20 participants, who coupled their various models of the Shay locomotives together and ran them around the event's largest track for three continuous circuits.

In addition, there was a "Ruby-Up" or two and a number of "double-header" situations with a variety of

locomotives. GS-4s — with and without the Daylight livery — ran together with Daylight coaches and there were a number of occasions where three or four AC12s (the legendary Southern Pacific Cab Forward) were run in tandem with multiple cars.

Throughout the event, the Redeker family ran three AC12s along with 50 1/32-scale freight cars at least three different times, creating a massive consist that took up most of the largest track, the so-called San Luis Obispo layout.

The Redeker retinue — who hail from the San Francisco Bay Area as well as points east, including Ohio, Pennsylvania and upper New York State — brought not only their various AC12s, but also family friend Justin Koch of Philadelphia, who ran his K-27 — which he converted from an electric locomotive to a gas-fired machine and then onward to a coal-fired engine — numerous times.

And while there were quite literally more than 100 commercially made locomotives on display or run during the event, there were also dozens and dozens of hand-



Steam links:

The National Summer Steamup will be held July 22-26, 2009, once again at the Lions Gate in McClellan, Calif. You can get up-to-date details on the web site at <http://www.summersteamup.com/> or send e-mail to steamup@summersteamup.com.

A full set of photos from the 2008 event are available at Dave Cole's site at <http://www.45mm.com/events/>.

Dean Seavers of Sacramento made a nice video of the 2008 event; you can see it at <http://www.youtube.com/watch?v=MYJPiPcKziY>.

crafted machines as well. Though the aforementioned Dwight Ennis' North Pacific Coast No. 21, the "Thomas Stetson," continues to attract a lot of attention in its second year of operation, probably the most admired new scratch-build locomotive was Rob Lenicheck's 0-6-0. The Palo Alto resident found the prototype plans for a small switcher in the back of Silver San Juan: The Rio Grande Southern Railroad by Mallory Hope Ferrell. Rob created a "relatively simple design" using a butane burner eccentric valve gear to machine up RGS No. 14, which appeared at the Summer Steamup working but without paint.

David Wegmuller, also of Palo Alto, always brings interesting live-steam goodies to the Summer Steamup. For a second year in a row he brought along his dual-gauge 45mm/3 1/2-inch track and riding car — you set up your locomotive on the 45mm track and couple it to the riding car that's on the 3 1/2-inch track, climb aboard the riding car and have your engine pull you the 50 feet of the outdoor layout.

Wegmuller also brought his steam-turbine locomotive this year. Additionally, he and his friends Eric Maschwitz of Foster City, Calif., and Henner Meinhold of Fremont, Calif., demonstrated their scale logging diorama that has live-steam donkeys that pull logs out of the tree-line and onto railroad cars.

Speaking of working machines, a number of Summer Steamup attendees got to see Jim Hadden's scale steam shovel in action, picking up rock and dropping it into a gondola car. The Park City, Utah resident is famous for his quality workmanship building live-steam engines, but he may have outdone himself with the steam shovel.

Quality workmanship was the key phrase at a number of clinics held at the steamup as well. Dave Hottmann of Evening Shade, Ark., gave another of his patented locomotive tuning sessions which really demystify the workings of steam valves and cylinders. Similarly, Tom King of San Martin, Calif., gave a session on building track and turnouts that made an intimidating process seem much more attainable.

Another clinic focused on workmanship was Howard Maculsky's session on how he built a 1/32-scale live steam Model-T rail truck. The Claremont, Calif., resident took great pains to make his truck as functional as possible and shared each and every detail with his audience. Mike Martin of Santa Clara, Calif., also focused on craftsmanship, with his introduction to building the Basic Project Engine.

Slightly different in the clinics this year were sessions by the aforementioned Lenicheck, another by Steve Heselton and a third by Marc Horovitz.

Lenicheck told his session's audience about his experiences volunteering on the Cumbres & Toltec Rail-

road over the last few years, where he's spent time on the Colorado-New Mexico railroad helping restore various artifacts, including a caboose and, most recently, his work on a coal tippie.

Heselton, of Los Altos, Calif., gave a presentation on how he has retraced the route of the South Pacific Coast Railroad as of 1883, while Horovitz — the editor of Garden Railways magazine and resident of Denver — gave a presentation on the history of garden railroad-ing.

The lecture hall where the clinics are held serves a dual purpose: along its backside are the tables of the dealers of live-steam equipment and supplies who support the event by renting space. This year's dealers included Accucraft Co. of Union City, Calif., Brandbright Ltd. of the United Kingdom, California & Oregon Coast Railway of Rogue River, Ore., Custom Model Products of Concord, Calif., St. Aubin Junction of Las Vegas, Staver Locomotive of Portland, Ore. and Sunset Valley of Lake Tapps, Wash.

In the just-so-you-know category, the National Summer Steamup is run by the Seven Samurai — Sonny Wizelman, Bill Turkel, Bob Trabucco, Jim McDavid, Clark Lord, Tony Dixon and your humble scribe, under the rubric Steam Events LLC — who have volunteered since 2002 to make sure the event continues apace. There are also many other people who support the event, too numerous to mention. Nonetheless, the seven of us thank them, as well as the 127 steamers who attended last July.



In memoriam: Don Puccini

Don Puccini, long-time Bay Area small-scale live steamer, passed away Aug. 7.

A third-generation Oakland native — his grandfather helped found Jack London Square — Don had a 26-year career in the U.S. Navy, retiring in 1995 as a captain. He returned to Oakland to run his family business, Puccini Properties LLC.

Don ran 1/32-scale Aster locomotives. His last live-steam activity was attending the 2008 Summer Steamup. He will be missed.



Richard Murray switches his log-hauling Shay out onto the mainline of the San Luis Obispo track; in the background, his wife Melinda watches.



Darryl 'Stretch' Manley adds a little water to his antique Mamod steamer.



Gary White does some last-minute fiddling on his Aster Schools just before firing.



Chris Ranieri adjusts the throttle on her Ruby that has a consist of all-red boxcars.



Dwight Ennis discusses his scratch-built North Pacific Coast No. 21, the 'Thomas Stetson' while leaning on his portable layout.



Working on the AC12s are, left to right, Matt Abreu, Ryan Bednarik and Jeff Redeker..



Phil Huntingdale works the throttle with one hand while holding a towel over the stack of his Accucraft AC12 S.P. Cab Forward with the other hand.



A late Saturday afternoon ad-hoc lash-up of Accucraft Ruby locomotives takes place on the San Luis Obispo track.



Glen Ward supervises the run of his LGB/Aster Frank S on the PCLS track.



William Wilbanks works on his Shay locomotive at one of the many work-tables spread throughout the hotel ballroom.



Even when you discount the scale, Debi Smith's squash are big, making a big squash train.



Steam guru Kevin O'Connor starts a run.

Accucraft's SP Cab Forward

by Charles and Ryan Bednarik

Observations and suggestions for improvement

AC-11/12 Cab Forward

TECHNICAL SPECIFICATIONS:

Scale: 1:32 Scale, 45mm Gauge

Wheel Arrangement: 4-8-8-2

Minimum Radius: 3 Meters (10 Ft.)

Length: 1270 mm (50 in.)

Width: 120 mm (4.75 in.)

Height: 171.5 mm (6.75 in.)

Shipping weight: 77 lbs.

Fuel: Butane gas, Located in tender

Valve Gears: Walschaert's with screw reverser

Boiler Type: Dual Flue

Lubricator: Roscoe displacement type

Engine: 4 X cylinders, Cylinders with "D" valves

Water Feed: Hand pump located in tender, Axle driven pump

Fittings: Water level gauge, blow down valve, throttle valve, 2 X safety valves, Super heated tube, and pressure gauge, drain cocks



Some rail fans view the Southern Pacific Cab Forward locomotive as a very innovative engine while others find it to be an unconventional and ugly design. Historically, the Cab Forward had an excellent service record performing the duties of both passenger and freight along very challenging routes and weather conditions. The crews initially complained about concerns that if they hit an obstacle at a grade crossing they would be in great danger. During the forty six years of running Cab Forwards, this never proved to be a factor as to safety. Most crews found the unobstructed view from the cab to be much safer than traditional arrangements.

The advantage in visibility was tremendous. The Sacramento division of the Southern Pacific had close to 150 miles of grades of up to two and a half percent. On the Roseville - Sparks line over the Sierra Nevada mountains, there were also almost 30 miles of snow sheds and tunnels.

Over the years, as trains grew in length, more powerful locomotives were required. Cab Forwards were a distinct trademark of the Southern Pacific. They were sometimes also called "Cab-in-Fronts" or "Backup Mallets" (even though, technically, only some of the first classes were true mallets). The AC-11/12 were unique with many interesting aspects such as; the obvious of the cab arrangements, a platform was called the "monkey deck," a stack light to determine correct fuel mix, pressurized water and oil tanks, and a great view of the tracks ahead.

The AC-11/12 introduction by Accucraft on its website was unintentional through its listing for the Cab Forward (electric version) with a very interesting photograph. In the photo one could see drain cocks and in the cab there was a lubricator. Shortly thereafter the photo was modified, preventing a view into the cab. Of course, the "spy shot" made the rounds of the steam community regarding the future of a live



A crowd gathers as Alan Redeker and Jim Stapleton put the Accucraft SP Cab Forward through its paces at the Cabin Fever meet in Pennsylvania.



Both versions (AC-11 and AC-12) posed side by side.

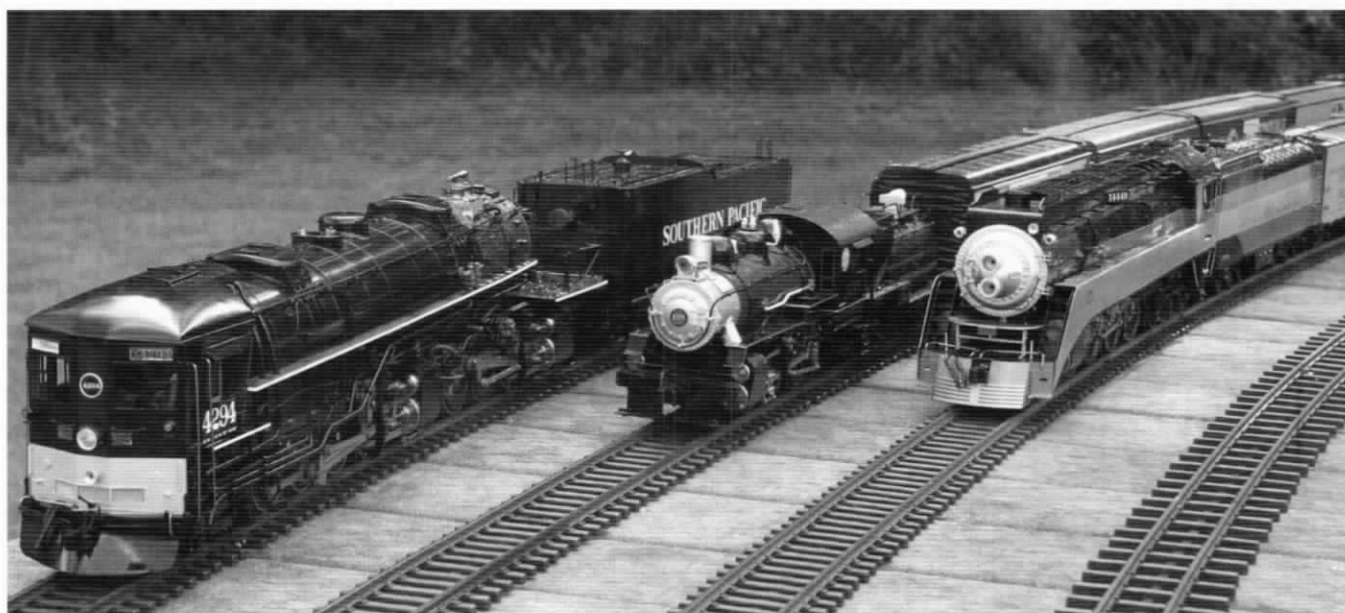
steam version of the cab forward. Such attention is both good and bad depending on one's view point.

Accucraft has graced the rails of gauge one with their third 1:32 model, the AC -11/AC-12. The production run was limited and sold out prior to shipping, which was bad for those who like to "wait and see" if there any production flaws that need correction before purchasing.

The prototype made several rounds giving us opportunity to preview the offering throughout its development. The first time an opportunity was presented for us was at Diamondhead 2007. The size and details on the prototype was very impressive.

The locomotive pulled a set of the Accucraft Daylight passenger cars despite some struggles. The run attracted the attention of many in attendance with a good bark, the characteristic "V" split of the exhaust plume along with the operating dual engines. At this time the engine did not have an axle pump installed. The balancing valve for steam to engines was not installed in the cab as the final model. This version had the non-prototypical turret with two safeties that has since been changed to a round turret and one safety for the production model. A second safety valve is located in the cab.

The second run that gave the opportunity for a

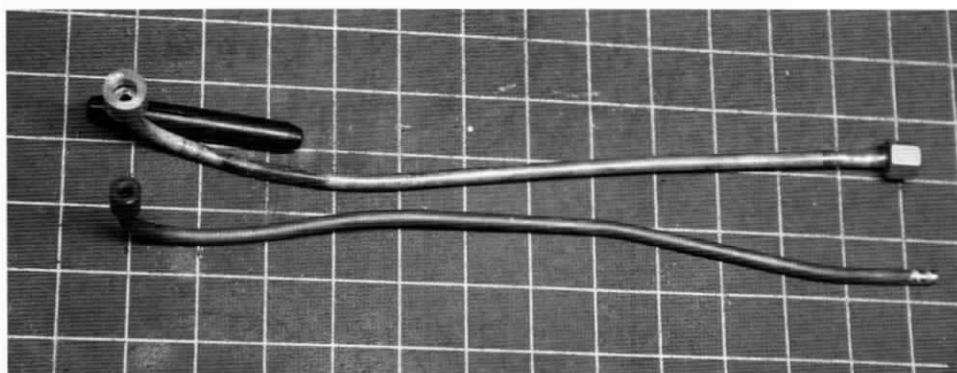


Comparing the Cab Forward (l.), the S-12 Switcher (center) and the SP Daylight (r.).

review of the engine was at Dr. Rivet's meet. The prototype now had the balancing valve in the cab and the axle pump fitted. The locomotive was given several runs allowing those who operated it to learn the

controls in determining the best setting for the axle pump and balancing valve (allowing steam cut off to the rear engine- nearest stack) in order to obtain a decent running time. Another skill learned was clearing the clogged gas jets. Once the system was set, the AC-12 gave a good showing pulling a freight train of 32 reefer cars for 40 minutes. These test runs along with others out at The Big Show and National Summer Steam Up gave the interested hobbyists a good first impression and the locomotive positive PR.

Ryan and I were fortunate to receive a Cab Forward early in the first shipment. Accucraft did an excellent job of packing and shipping the locomotive



New vs. Old exhaust lines.

Top: new 1/8" ID exhaust...

Bottom: OEM exhaust pipe (nominally 3/32" OD)

and its tender. There were two boxes utilized, one for locomotive and one for the tender. The only downside to the configuration of packing is the weight of the cradle for the locomotive, which changes rival that of the engine itself. The removal of the locomotive requires quite a few steps in the unpacking process. I would have recommended that the small detail parts on the turret should have been packaged off the body of the locomotive. The quality of the paint and overall finish (details, etc.) was excellent.

The first public run of the final product was done at the Cabin Fever meet. There were three cab forwards available to assess the functional ability of the 4-8-8-2 arrangement. The first situation that had to be dealt with (common problem to all by design) was a broken pilot truck pin or stripped threads on the frame (two of the three engines). This was followed by a



New steam and exhaust piping going towards the front engine (note the absence of the second pipe coming through the cheater hole in the smokebox), which will be insulated for heat conservation.

burner issue that required several cleanings of the jets to allow for the burners to stay lit. Our engine had undergone a thorough cleaning of the tank (as per Kevin O'Connor's article) and jets, allowing it to fire with no problems.

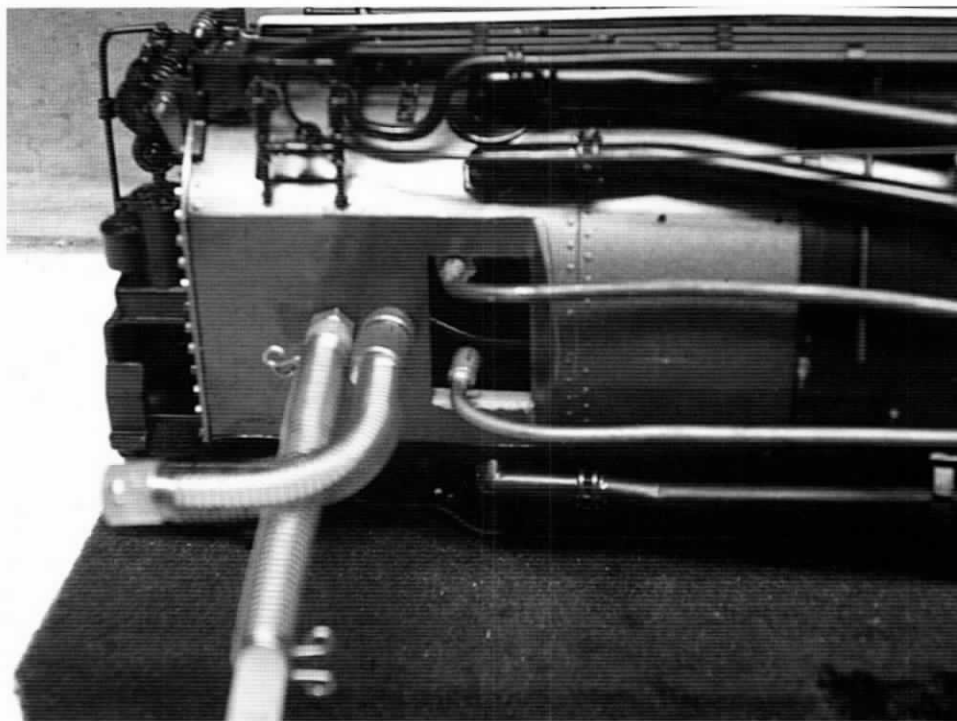
The next issue was the firing process which can be quite awkward given

the difficulty of opening and closing the smokebox door, combined with the inability to see the burners. The easiest way to see if the burners are lit is to use a mirror located on the monkey deck for a check.

The final major obstacle was the tracking problem caused by the suspension on the lead engine. Once the problems that could be resolved were corrected, the engines were able to run with 20 car reefer sets according to the track board schedule.

At the East Coast Large Scale Train Show there were again three cab forwards available for track time. And again two of the three engines had mechanical problems. One locomotive had a steam line to front engine break. The second problem on another cab forward was a timing issue. The single AC-12 that ran well had several changes; the biggest were the piston rings having been changed to a "bull ring" using Teflon material. With that change one can push the engine with one finger and it rolls along with very little resistance in comparison to a stock engine.

A more recent run was an outing of Accucraft engines. This was the second run on a "normal" track design in the outdoors environment. We had available C-16, a Daylight and the Cab Forward. The Daylight and Cab Forward were pulling a set of Daylight cars (10 David Leech). The Cab forward at full throttle managed a top speed of 60 smph with this relatively light load. At one point we put a bit of weight behind



OEM steam and exhaust lines going to the front engine (nearest cab)
Compared to the previous photo, this shows the omission of the lower steam line (superheater) to the front engine.

the 4-8-8-2 with the Daylight dead in tow resulting in the limit for its pulling power though giving her all she had.

While that Cab Forward's speed is representative of a prototypical run, perception is everything when it is running along side a narrow gauge engine. To have a C-16 running laps around it

is discouraging. On this particular track there was a slight raised portion of track that the other engines navigated, but AC-12 had difficulty due to the rigid front engine unit.

Accucraft AC-12: Potential to succeed or fail....

The Accucraft production process seems to have made a matched pair of main line engines that share a common need for necessary improvements. The following are some initial areas that need to be improved for a better performing Cab Forward:

- **Cylinder area:** A major contributor to holding the cab forward back is the lack of operating combination levers. This is a priority for setting proper timing and therefore the efficiency of the engine. Also, similar to the GS-4 improvements, increased cylinder port size would improve the AC-11/12 performance.
- **Suspension and running gear:** Along with the suspension and booster pin designs; there are some major issues with the poor tolerances and applications in and around the cross head guide, along with expansion link, valve gear and rod as well as the main rods. As delivered, failure to correct these issues could result in premature wear of these critical mechanical parts.
- **Lubricators:** Next would be a change of lubricator located in the cab to two separate deadleg lu-



Lights on for a run at dusk, the Cab Forward blasts around the Pennsylvania Live Steamers club track.

bricators, one per engine. Otherwise, the locomotive will utilize most of the oil early in the run with most going to the first engine (nearest the smokebox).

- Fuel system: A third area for improvement would be the fuel system. The lack of quality control allowing debris from the tank to enter into the jets has to be addressed. The fuel tank pickup needs to be changed to prevent liquid gas from having to be bled off in order to fire the jets. The problem of the jet getting clogged can also be caused by the usage of Teflon tape on the threads (there was a spider like web of material lodged in the jets). Finally, the efficiency of the fuel utilization can improve with a radiant burner design.

- Control location-: On the list would be a better location of the bypass valve and limit valve out of the cab. This allows for more cab space and for better access of the jets for maintenance.

- Other areas: Longer bypass line in the tender, quick disconnects for the fuel/water lines, lighting the headlight and number plates (easy at a very minimal cost).

- Fit and finish: Correct the slope issue of the running boards, better fit of the smokebox door, placement of the second safety outside the cab (box just in front of the cab back wall) I believe that the present placement is a "safety" hazard. A nice touch of detail would have been glass in the windows and lights on the boards.

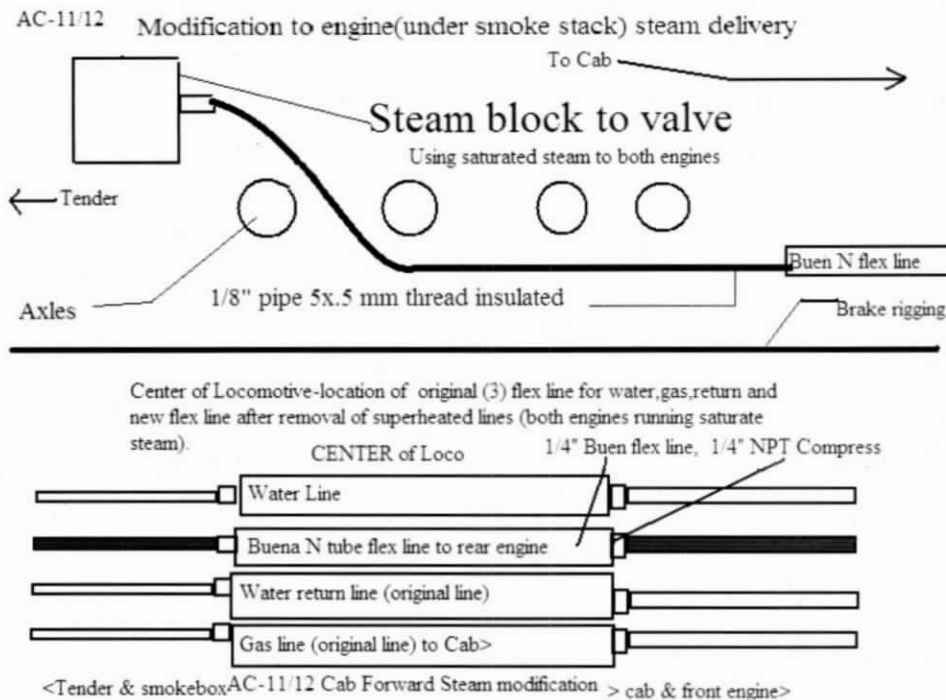
Presently, we have been doing a Stage One upgrade to the Cab Forward.:

- Solder Side Rods
- Steam pipe work
- Pilot truck modifications
- Rings
- Gas and oil modifications

The ongoing works during this first round of retrofits are to correct some base problems and increase steam delivery to the engine under the smokebox. We found that changing the piston rings (graphite Teflon) got rid of a lot of the resistance in the cylinders to the point that we could push this

big locomotive with one finger rolling quite freely. The modifications of the pivot pin on the pilot with a new pin give it the correct strength and durability. The application of solder to the rods prevents premature wearing of the bearing. The steam lines and exhaust lines to be opened (steam line start at 1/8" ID with a reduction to 1/16"). The superheater tube to be removed on the engine nearest the cab, allowing steam to get to it sooner. Interesting that this engine has a 1/16" exhaust opening but the other engine has 1/8" opening. Speaking of the "other engine" (under smokebox) we have had to replace the flex steam line 3 times in 20 hours of running. The problem of extreme heat transfer from the superheat tube combined with the "cheater hole" dumping heat down under onto the area where the original design had the flexible tubing connected to a fitting are the causes of tube failures.

Here is the proposed short term fix (see diagram on page 7); remove superheater tube to the front engine. Replace with a straight pipe with flexible rubber



tube (Buna N) at the center between both engines where all the other flex lines are located. The long term fit is reinstall the superheater tube along with a mechanical pivot combined with a telescoping tube.

The next phase, Stage Two; corrections would be more involved to ensure efficiency and years of durability on one's favorite layout(s):

- Combination levers
- New slide valves
- Expansion link
- Valve box and rod work
- Port cylinders
- Expansion link work
- Crosshead modifications
- Timing

In closing, this Accucraft big engine offered the live steam enthusiast the opportunity for "king size" steam at one-third to one half the price of the Aster big locomotives. This is probably the main factor in why the offering of the Cab Forward sold out prior to delivery (I've placed my money where my mouth is). The majority of the running opportunities thus far have been very limited in time as well as type of consist available due to the season and tracks available. The Accucraft Cab Forward has the potential but needs the corrective modifications to fine tune and shore up moving parts making it a proper running standard gauge engine. The running characteristics of the stock AC-11/12 as delivered has the capacity to run a prototypical speed (throttle wide open) of 60-70 smph while pulling about 20-40 cars, making an impression to all. Just don't have it on

the tracks at the same time as an Allegheny or Big Boy! This scenario was duly noted at a recent meet on June 7, 2008. A retrofitted cab forward with the short term steam line modifications utilizing saturated steam did pull 40 cars at a top speed of 70 smph for an hour (as an Aster Allegheny ran circles around it). Overall, the AC-11 performance was as good as one could expect given its inherent flaws. The cab forward with nearly 30 hours of running time is showing "witness marks" and slop in the areas of rod bearings, wheel bearings, cross head play and gland O-ring retainers that one would see in an "old iron horse" with hundreds of hours of running time.

The AC-12 as purchased requires the customer to either overlook the manufacturing flaws or invest a significant amount of money to correct the imperfections. An earnest effort to get it correct off the assembly line would have resulted in a faithful following singing the praises of an outstanding product with high standards able to compete with its main rival in 1:32 scale - Aster.

Special thanks and recognition goes to Gordon Watson for his insights relative to the Accucraft Cab Forward. His years of experience and knowledge offered an alternative to out of the box performance whether it is baseline corrections or advanced enhancements.



Color Catalog \$3.50

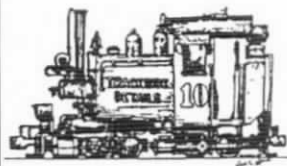
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Product review—East Gary Car Co. D&RG Narrow Gauge Truck Kit ***by Dave Conroy***

The earliest eight wheel railroad freight cars used arch bar trucks. They were made mostly from flat bars of wrought iron and a few castings.

When railroads joined together and established standards for gauge and couplers so that cars could be interchanged from one road to another, the arch bar truck was not approved for interchange at that time or shortly after. They can still be found on locomotive tenders, M.O.W. equipment and on narrow gauge cars that stay on their home road. Arch bar trucks can still be found by the hundreds in Cuba on the narrow gauge sugar plantation lines. Some sugar cane trains have brakes, but the narrow gauge ones often rely on the engine brakes.

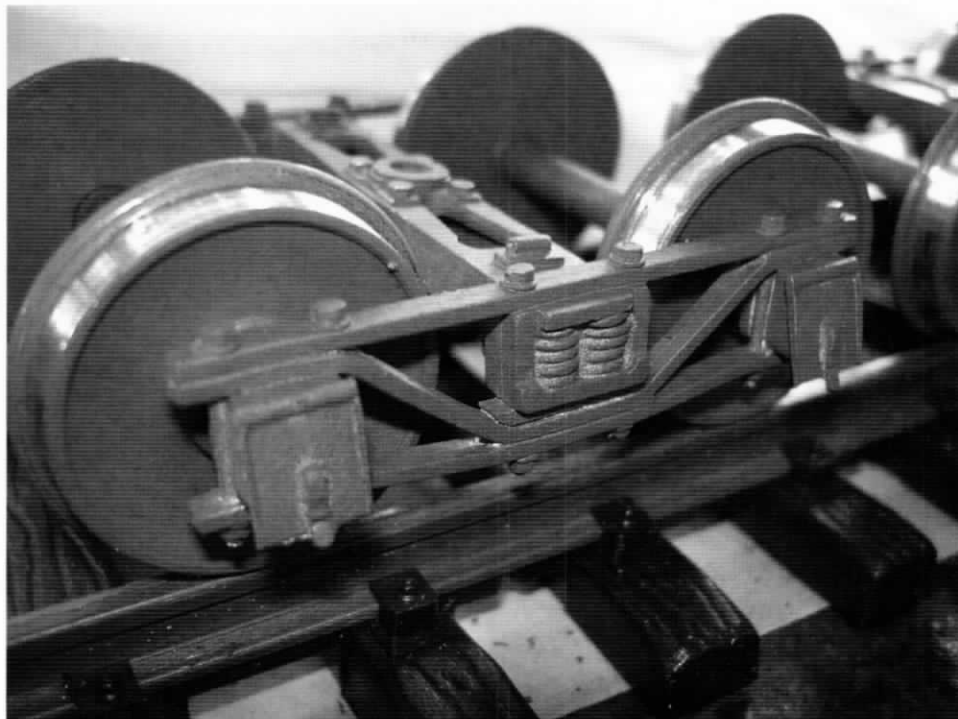
This kit consists of die-cast side pieces, bolsters, bearing cover lids, and Sierra Valley wheel sets. The castings are excellent. The springs are not real but cast in. Nut and bolt details are fine, and the flash and sprues are easy to clean up. The sides each have thru

holes cast in, one for each axle and another for a small screw to attach the bolster. The screw is screwed into the threadless hole to make threads. I recommend that you don't turn it in very far so that you can leave some wiggle room for the bolster when final assembly is done. The bolsters have a slot cast which is supposed to fit over the screw. This is too narrow and needs to be filed out. Rather than file out the slot, I chose to file only the bottom of it into a round hole, so that it shouldn't come apart in service. The holes for the axles are too large and not deep enough. This can be corrected by drilling them CAREFULLY a little deeper and making bushings, or you can just put them together as I did. The axle box lids are meant to be glued on. Spray the whole assembly with brown primer and you have a nice pair of free rolling metal trucks that look good from a fairly short distance. Missing to me is any brake rigging. I prob-

ably wouldn't make the brakes but if they were included, I would install them. If the brakes were a low-cost extra, I would buy and install them.

The wheel sets are top shelf and have been reviewed elsewhere. The wheels measure 1.278 on the tread and the back to back dimension is 1.573.

Testing was done on our 8' outdoor circle. The trucks were put on a homemade flat car of the Slam Bang Construction Company. Yep—there was a Slam Bang Construction Company. I don't guess they had a railroad but they do now.



Assembled and painted kit, as described in this article.

The East Gary trucks caused the car to ride about .030 lower than it does with its Accucraft trucks. This didn't pose a problem however, and the flat was coupled between our trusty battery powered NW-2 and a brass Accucraft caboose. As this is written hurricane "Ike" is nearby causing heavy showers or I would have run an Accucraft C-21. The car derailed twice on a large size

LGB switch then didn't derail the third time. This may have been caused by the body mounted couplers or maybe one of the side screws being too tight.

East Gary's D&RG kit looks good at first glance, is easy to put together and rolls well. The finished trucks fall between the plastic trucks such as Bachman or LGB and the museum quality of Accucraft. The price is quite reasonable at \$24.95/pr., and the trucks are available in both 1:20.3 and 1:24 scales.

Source:

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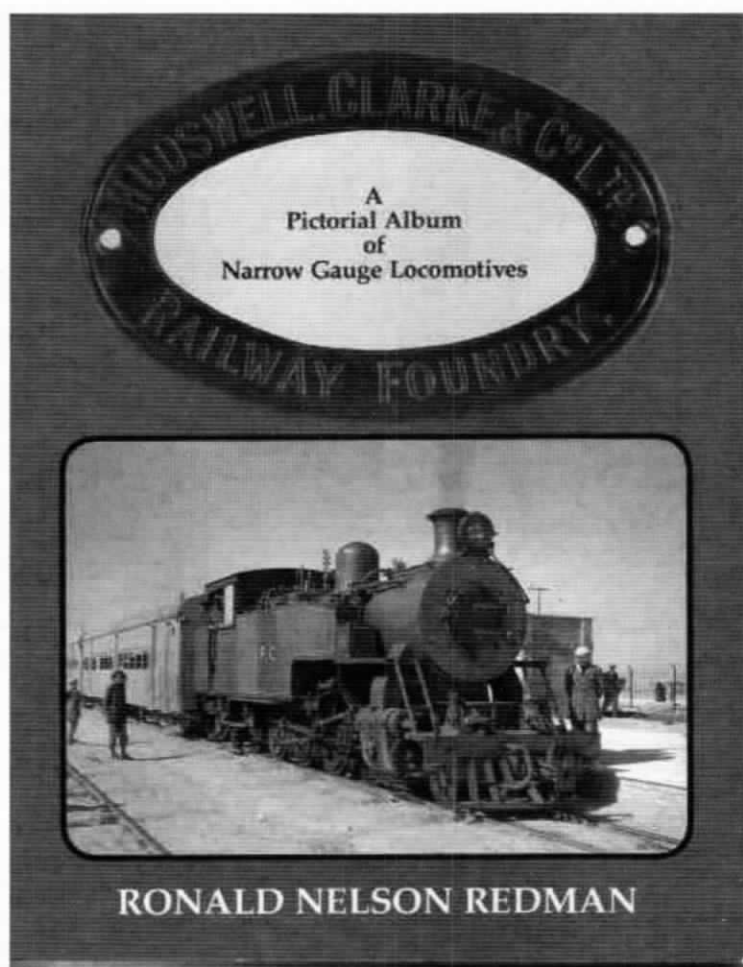
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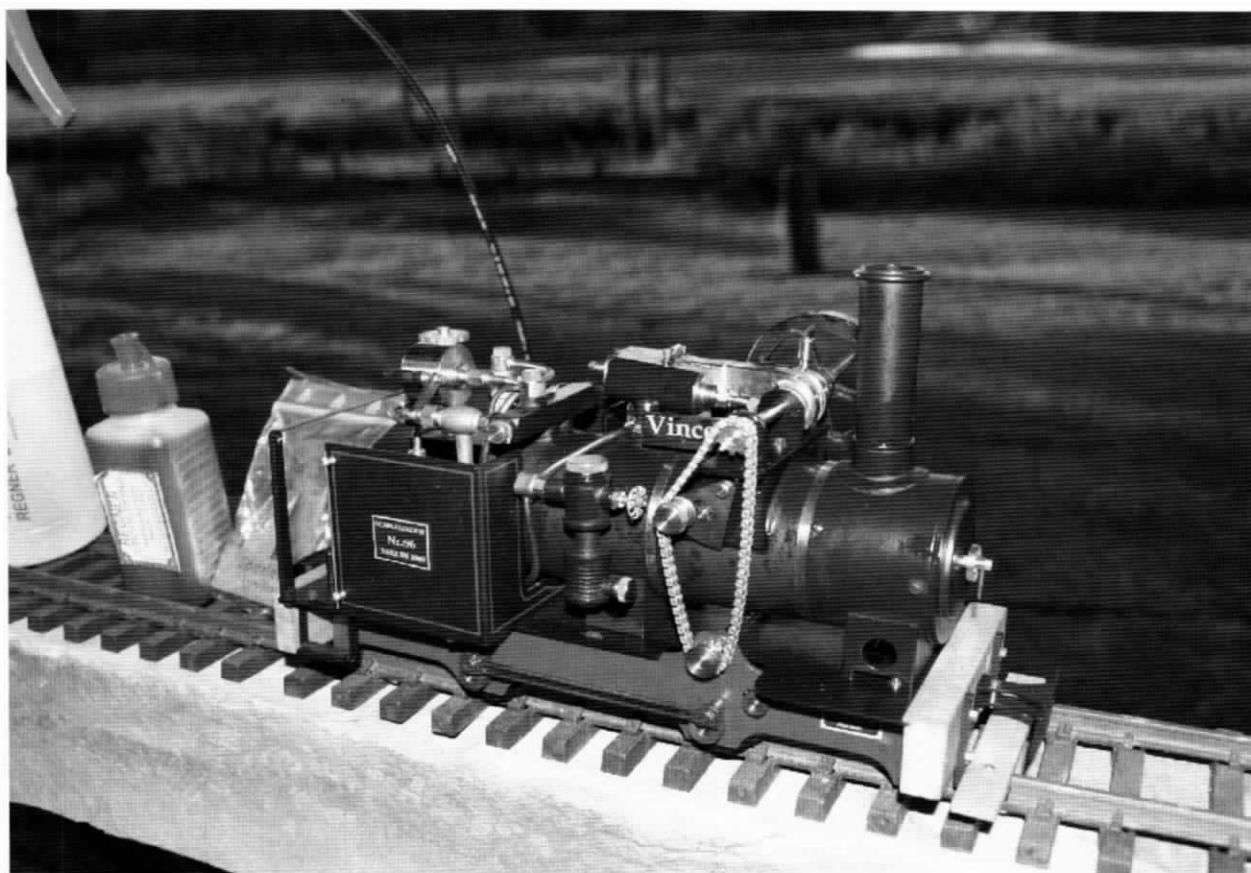
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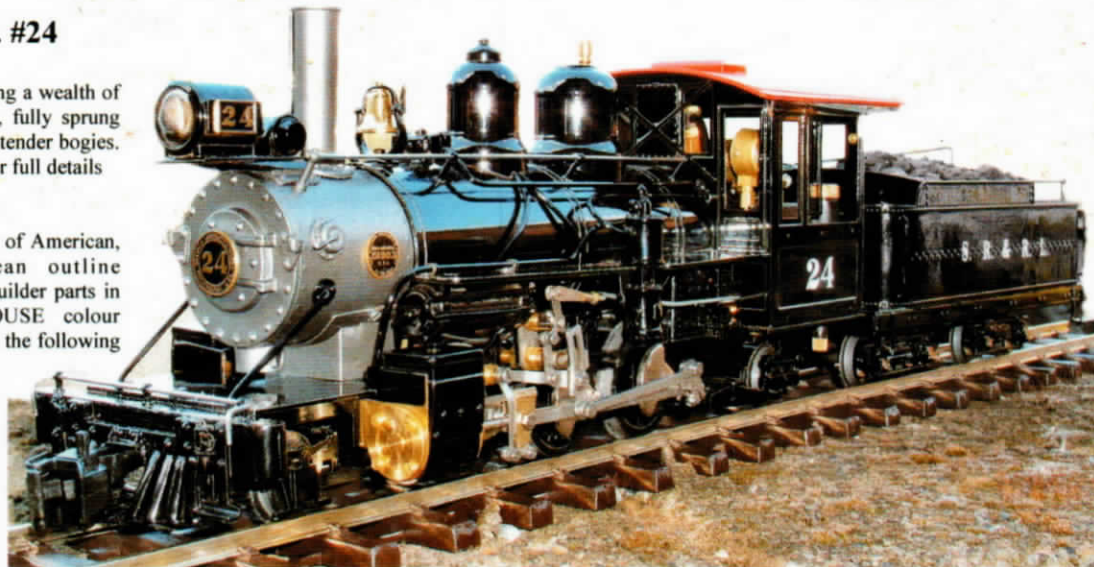
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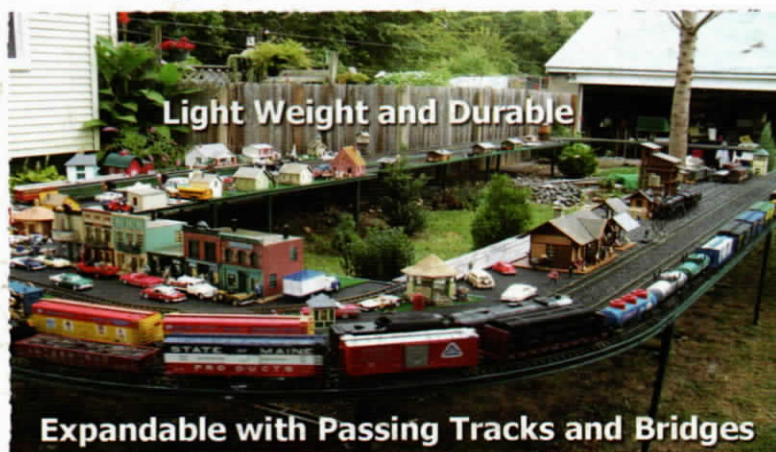
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