

RPO

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Articles may be submitted as handwritten, typed, plain unformatted text on disk, or plain text via email via johnpcarty@hotmail.com; photo submissions may be made as hi-res digital files, 35mm slides or negatives or as prints.

Submission deadlines:

- Spring: April 1
- Summer: July 1
- Fall: October 1
- Winter: January 1

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On The Cover

photo by John Carty

A couple meets on the steps of Township High School in the Summer of 1955 on the diorama built by John Carty for the Paper Diorama Contest. See the results starting on page 4 of this issue.

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Superintendent's Desk

by Tim Stout

As I write this I can hardly believe it is almost April. Hard to believe spring is here as snow flurries fly during the day – I always thought spring should be warm and green – not just yet. Good news is I still have a decent view of the tracks for another month or so before the leaves hide my view of the UP main.

During the past several meetings Phil has asked for suggestions for clinics and received good feedback from the members present. Look forward to more excellent clinics this year. In just a couple of months it will be May and time for the building contest. August will bring another RPM meet to Collinsville and then it's September and judging of the model contest. Not long after that is the Fall Meet and Holiday Party.

There will also be outside activities like the tour of train stations in Southern Missouri: possibly another joint picnic and maybe an ops session or two.

I know my calendar is filling up with a regional train convention in Chicago May 15- 19th and the Mid Continent regional convention jointly hosted with the Southeast in Memphis June 13-16th. Don't think I'll get the national in Cleveland squeezed in – but you never know. Before you know it August is here and the RPM meet in Collinsville. I plan on attending the RPM again this year as well and look forward to practicing some more weathering.

I also want to take some space here to thank everyone who is working on the website as we speak. Dale Dewitt is spending a great deal of time photographing layouts and editing the photos so they are ready for Richard to add them to the website. Brian Post is collecting facts and information about the layouts being photographed. Hank is writing descriptions of the layouts based on the information Brian has collected. Richard is adding all this new content to the website as it is sent his way. There have been approximately 8 layout photo galleries with descriptions added to the website in the last couple of months with 3-4 more in progress as I write this. That will bring the total of new layout photo galleries to 12 with more to come. Thanks again for all your hard work. The Gateway Division is grateful to have dedicated volunteers to make this happen.

The perfect ops session

Today the mainline was quite busy – not sure what problems UP was having today – but when I can look out my kitchen window and see a UP train stopped at the switch control point and look west out the sliding door and see another headlight stopped behind the first train – something isn't quite right.

No idea what caused the delays I saw today – but it was rather unusual to see trains stopping on the main by my house and waiting for hours before proceeding east on the main line. Hopefully the problem gets corrected soon so things can return to normal.

I mention this because at most ops sessions there are times when one area of a layout gets congested and people have to wait to get clearance or get the switching job finished etc. This happened to me one time hosting an ops session. – My perfect plan wasn't as clear to everyone else as it was to me – so despite my index cards spelling out what trains were to go where, some trains took longer to get around the layout than I anticipated. That led to more trains in the yard and nowhere to pull in so I had a train in a siding waiting to get into the yard. Siding occupied means one less place for a meet. One less place to meet approaching traffic meant a couple of trains backing up on the main (oops). Well you get the idea – quite a cascading effect. Turns out we are just imitating the real thing! So remember the next time your perfectly planned ops session hits a snag – that's prototypical. You can even tell the other members of your ops group that is the plan. I plan to use that reasoning next time my perfectly planned ops session goes bad.

Under the Wire

by John Carty, Editor

Spring is here bringing with it baseball, softball, yard work, dance competitions, fundraising like crazy for Odyssey of the Mind Teams, home repairs, and just maybe some hobby time. This is also a good time of year to consider our comfort zones.

Soon the Division will open a new kit bashing contest. If you have not participated in the past, consider doing so this year. Try not to think of this as stepping out of your comfort zone or even as a competition with other modelers. See it instead chances to share your efforts and measure your growth as a modeler. See the contest opportunities offered by the division as opportunities to expand your comfort zone. At the least, the contest allows you to fill a need on your layout while getting feedback regarding your efforts.

This is also a good time to plan your entries in the Gateway Division Fall Meet Contest. This contest provides a great opportunity to showcase your efforts and pick up an award or two. What better way to get as well as provide inspiration than a venue populated by friends?

An unexpected gift from John Golden has led me to rebuild the car shops for my layout. The shops will occupy a more than a half a square foot. Since the access to the interior is mandatory with a building into which motive power runs, this project requires interior detailing which the aforementioned pictures are greatly assisting. Thank you very much, John. With a little luck, I will be able to share the final results at the Fall Meet.

Once again, I will close with a challenge to all members to make this publication your own by submitting articles, tips, and photos.

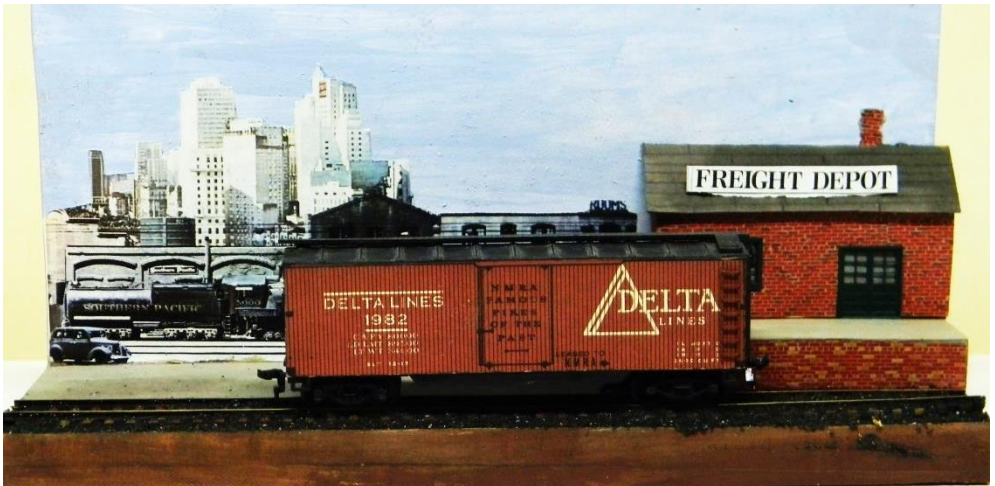
If each member makes one submission during the year, we will continue to have a full magazine and will also provide more opportunity for each of us to get to know each other a little better.

John

Gateway Division Paper Diorama Contest Results

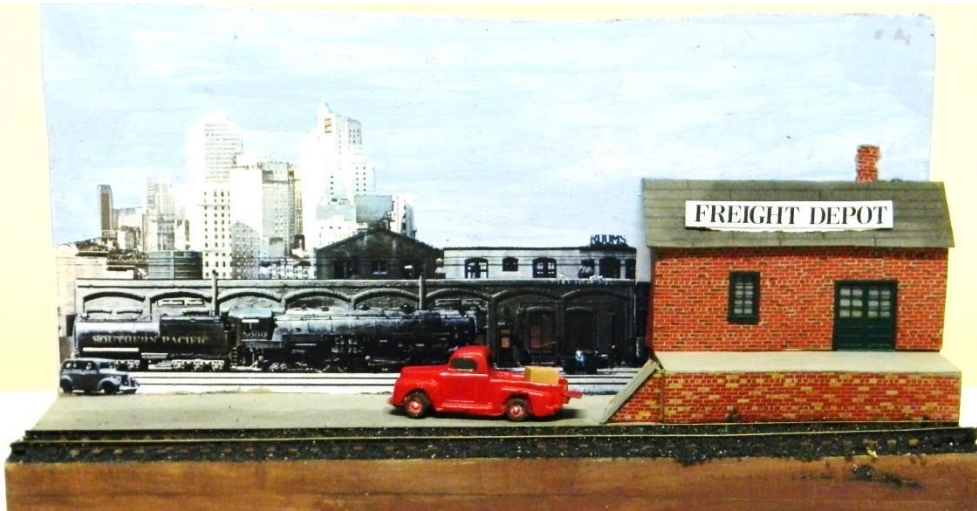
The first annual Gateway Division Paper Diorama Contest concluded at the January 21, meeting.

3rd Place: Tom Trotter



I was the late entry who took Dennis's challenge when he said they were moving the judging of the modules from December to the January meeting and there was still time to enter a module. I had this NMRA commemorative boxcar for Frank Ellison's Delta Lines which came with paper sides. I decided to build my module around this car. The base was built using a 1 x 4 and a Masonite back-drop. The sky was done using blue and white acrylic paints. The background scene was cut from an ad. The building and dock were done with the old time brick paper. The sign on the roof was cut from a box for a plastic building kit. I enjoyed building the module and it was a trip back to my early days in the hobby.

Tom Trotter



2nd Place: Tim Stout

My paper diorama depicts a barn scene typical of farms across the Midwest.



The Kit

The barn is plan 1056 – Sumas Prairie Barn from www.Scale ModelBuildings.com and is available for download for \$4.95. Once I downloaded the file I was able to make as many copies as I liked for practice. I could have combined two printouts into a larger structure. I printed mine on matte photo paper using an HP color laser jet printer.

Starting Out

We cut out the pieces as precisely as possible, first practicing with regular paper and then on the more expensive photo paper. After some trial and error Brenda and I decided that it was better to glue the sides and end pieces together in the flat and then fold them after the glue had dried. This allowed me to line up the sides and ends with a steel rule so I knew the building would sit flat. It also made gluing the pieces together easier and more precise. I used a glue stick from Wal-Mart. Time will tell if the glue holds up.

Assembly

Once the glue was dry I folded all the corners using a steel ruler to keep them straight and make the bends sharp. Of course, Brenda would say that she had never seen an old barn in real life that wasn't leaning a little.

I didn't feel the paper building by itself was strong enough so I reinforced it with thin cardboard. I used a Hot Pockets box – could just as easily have been a shoe box. I cut

the cardboard pieces a bit shorter than the walls to avoid interference at the corners. Once I had the cardboard cut to size I glued it to the barn printout with a glue stick. I repeated the same steps for the roof – cut it out, bend it along the form lines with a steel ruler and then reinforce it. It was some time during this process that Brenda left the



room, again stating that old barns weren't that square.

At this point the building and roof were still separate pieces. To help keep the barn walls square while I attached the first half of the roof I cut a rectangular piece of cardboard to use as a floor. With the floor inserted into the building it was now stable enough to attach the first half of the roof to the fold over tabs along the walls. I removed the floor for access and glued the second half of the roof to the fold over tabs. I then cut a slot in the middle

of the floor so I was able to re-install it and pull down on it with my finger to glue it to the tabs on the bottom of the barn walls. This procedure was a little difficult and Brenda did observe that it was a good thing I was using a children's glue stick instead of crazy glue.

The plan online shows a door along the side of the barn with a fancy looking roof matching the main barn roof. I didn't like how that lined up with the main structure so I altered the original plan and simply made the porch over the door a flat roof with a slight pitch.



Staging

I mounted the finished barn on a piece of cardboard that is brown on top to represent dirt. Livestock have destroyed any grass that was growing by the barn resulting in bare dirt. The fence is white poster board cut into narrow strips and glued together with the glue stick. Various details like feed sacks, hay bales, water barrel, horse, and a skid of

concrete blocks fill out the scene for now. Eventually the white fence will enclose a square area near the barn with a gate for access.

Final Touches

I was proud of my first paper diorama. Even though I used matte photo paper, there was a slight shine to the whole scene. Therefore, the building is lightly weathered using



AIM weathering powders bought at the last RPM meet in Collinsville. I used mostly light browns to simulate dust, based on my experience around our barn.

This is the most inexpensive kit I have ever put together, and it was easy and forgiving, allowing me to print another piece and try again if I made a mistake. And as is true of all models, the results are only limited by your imagination.

Tim Stout

1st Place: John Carty



Modeling a particular location and era demands signature structures. Township High School (Old Belleville West), now Lindenwood University, remains a landmark in Belleville. Fortunately, the Lindenwood website sported a photo from the 1950's. I

modeled only the main building as a low relief structure measuring twelve inches wide, significantly compressed from the nearly eighteen inches required for a full width structure in HO scale. The driveway and sunken garden are also compressed. Next door to the high school on the west stood what was a Pepsi Bottling plant in the 1980's, but had been a meat canning plant which was served by rail of which I found no photos. This required a little engineering based upon common practices as well as switching the dock from the east side of the building to the west side.



Both buildings consist of a cardboard core covered with brick paper and light cardstock details. I cut all openings from the core before applying

the paper using white glue spread very thinly so as to be tacky. After the glue dried, I

wrapped the paper over the top and sides and trimmed it at the window openings folding the flaps to provide brick on each side of the window.

Doors and windows consist of light cardstock with acetate lined with a felt pen for glass shades. Both buildings were braced with $\frac{1}{4}$ " and $\frac{3}{16}$ " basswood secured with yellow carpenter's glue.



Roofs are cardboard painted black after installation. I built the steps using layers of balsa wood.

Masonry details consist of layers of cardstock for the high school and brick paper on the canning plant along with a cardstock foundation. The smoke stack consists of four pieces of card board with $\frac{1}{16}$ " balsa in the corners wrapped in brick paper. The dock is cardstock and brick paper over basswood with the overhang built from balsa wood and

covered in metal roofing printed paper. Signs were printed using a laser printer with the one for the high school printed before construction began.

The water tank on the roof and the brine and vinegar tanks consist of scribed cardboard wrapped around label cores with cardboard roofs, bases, and hatches. Roofing is masking tape. I applied paper bands and hinges which I colored with a permanent marker to the tanks after painting.

I painted Preiser and Model Power figures as well as ladders and fence from Central Valley. I cut a short piece of Atlas flex track to which I added a pair of ties to serve as a bumper. Mini Metal automobiles, Tichy sacks and pallets, balsa sidewalks, baby's breath trees, and Woodland Scenics ground foam and ballast complete the scene. Weathering consists of dry brushed acrylic paint and Bragdon powders.

New Website Update

by Richard Schumacher

We went live with the new website at the end of September.

At that time we had:

366 pages and articles

1,979 unique photos and images

I have continued to work on new and missing site content since then. As of today we have:

408 pages and articles (11.5% increase, 42 added posts)

2,661 unique photos and images (34.5% increase, 682 added photos)

Note that Dale's new layout photos only account for 8 of the added posts and about 150 of the added photos.

We have had a few subscribers unsubscribe, as the latest posts have almost all been layout galleries. The feedback is we need more "how-to" articles in the editorial mix. We currently have 249 subscribers to our RSS feed. In the last month there have been 1,392 clicks back to our site from the RSS and Twitter feeds.

In the past two weeks there have been over 950 hacker attempts to compromise the content or administrative file system of the website. The security system I installed

detected and blocked the activity and blacklisted the IP address of the attackers from directly accessing administrative and system files. There have been a couple of hundred attempts to hack the "admin" account password for the site (Surprise!, we don't have an account named "admin" – I removed it before we went live for just this security reason).

The amount of spam comment content has slowly increased. There were 68 spam or trash comments in the last month. There have been 11 real visitor comments this year.

The top ten pages on our website for the last month are:

1. (Home Page)
2. Gateway Central Project Railroads | Small Model Railroads You Can Build
3. Model Railroading Downloads | Buildings, Road Signs, Interiors, Details and Backgrounds
4. Model Railroad Layout Tours | Train Layout Photo Galleries
5. Gateway Central XV HO Scale Small Switching Model Railroad
6. Industrial and Warehouse Background Buildings | Photographic Backgrounds
7. Build the Gateway Central XV HO Scale Switching Railroad | Track Plan and Parts List

8. Gateway Central X 4x6-Foot Small HO Scale City Model Railroad Layout

9. Designing Model Railroad Operations | Quick Start Techniques and Examples

10. All About Model Railroad and Toy Train Layouts and Train Sets

Building a Retaining Wall

by Jack Stroker & Ron Gawedzinski

A railroad that our round-robin RR group has been working with is a large 3-rail "O" gauge layout. It has a long grade, about 8 feet long that climbs to cross over a river bridge. This elevated grade was built using plywood supported

by 2x3 risers and it mostly parallels an edge of the layout which leaves a problem for the scenery along the edge. We decided to build a block retaining wall along this grade.

In the winter issue of the 2012 of the



RPO, I talked about making background scenery from packaging Styrofoam.

At the end of the article, we



showed a sample piece of Styrofoam made to simulate a block wall. This could be a solution for scenery along the side of this elevated track. Ron Gawedzinski has taken on this challenge and has done a wall that is much improved over that original sample. We now continue with the building of this wall for the elevated track to the bridge crossing.

A 3/4" thick packaging Styrofoam was



panel. A putty knife and a 1/2" wide wood chisel were used to give a slight indentation to the pencil lines that were used to outline the block pattern.

The Styrofoam sheets were then cut to fit the grade and then glued to each side of the incline.

To finish the top of the walls, 1/2" thick wood strips were painted with the same light gray paint as used on the Styrofoam and cut into 2-1/2" long by 3/4" wide strips. These were glued to the top of the walls to represent a cap stone.

An interesting use of the

chosen for the wall material. It was painted several coats of a light gray with latex exterior house paint. The block pattern was created using a Lego block as a pattern. Yes, it is the same block that kids play with. A

number 2 pencil with a sharp point and a ruler were used to sketch the block



Styrofoam was the round curved pieces were used as bridge supports for crossing over a short spur track that were cut from the round edges of an Omaha Steaks' shipping container.

This was our solution to our problem of a long grade that was on the edge the layout. Again we were able to make use a material that would have ended up as trash. We would be interested in hearing if anyone else would find this material as a way to solve their scenery problems.



Trackside Photo



What used to be a stub yard of ten tracks which had served Ozark since the 1960's, five years later the rebuild is over 90% completed. The area now sports four through tracks, two depots, several new building fronts and a number of eye-catching details to provide more viewing interest for visitors. The 76 year old Big Bend Railroad Club still meets in the 1910 depot in Webster Groves on Tuesdays at 7 PM with public operation on the first Tuesday. For more info: www.bigbendrclub.org, Facebook or e-mail Secretary@BigBendRRClub.org.

Building a Chlorine Car

by John Carty

Photos by author unless noted

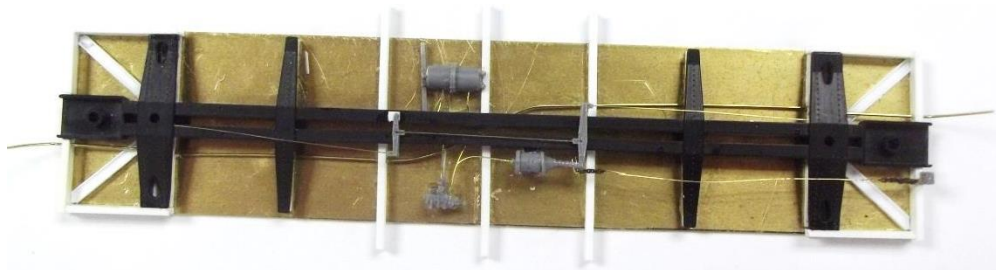
I am a sucker for “interesting” motive power and rolling stock. Several years ago, a good friend loaned me copy of the Kalmbach book Build Your Own Cars & Locos, which was filled with old articles first published in the *Model Railroader Magazine*. Near the end an article detailing the construction of a

chlorine car caught my eye. Since my skills at the time were too primitive the project moved to the back burner. Recent articles in the *NMRA Magazine* and *Model Railroad Craftsman* rekindle interest in this car and I drew plans, drawing from all three sources.

After examining the article, I determined that the X-29 boxcar frame made by Red Caboose that I had on hand would serve as a car frame. I started by cutting a piece of $\frac{1}{32}$ " brass sheet and filed it to size. 0.030x0.060" styrene added to the top of the frame increased its depth leaving gaps in it to receive the train line made from 0.028" wire. The Tichy brake cylinder attached to the frame by its bracket. I

ends of the tubing, I secured them using Testor's liquid cement. I then cut off the protruding axle half from each end of the cylinder.

I made 20 cradles using 0.060" square strip styrene and kept the best 16. I turned over the car and marked guide lines in pencil to locate the cradles and glued them in place with Zap A Gap. Next I added the walk cut from 2x10 strip-wood starting with the ends and



attached the frame assembly to the underside of the floor using Zap A Gap. Next I closed the ends with $\frac{1}{8}$ " styrene channel notching the end piece for the draft gear. I added the additional cross bearers using styrene I-bean and diagonal braces using channel. The Tichy brake components came next with brass wire piping and rigging followed by the end hoses, which were also made of wire. Lastly I added Tichy grab irons and stirrups left over from Intermountain tank car kits.

filing the sides to fit. I cut trapezoidal dogs from styrene channel to secure the tanks. I centered them relative to the cradles, butting them against the walks. I test fitted the chlorine tanks in the cradles with the dogs to ensure fit and then removed the tanks until after painting. I cut and spliced the railings from Central Valley fencing, adding mounting brackets cut from styrene angle. I then cut 4 short and 2 long letter boards from 0.020x0.250" strip styrene.

I made 20 cylinders by cutting and filing $\frac{5}{16}$ " styrene tubing to length and

Per the article I sprayed the cylinders

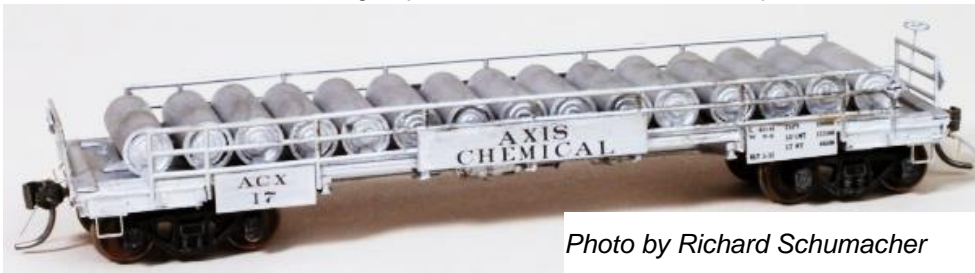


turning Accurail wheel sets, which had the axles cut in half, using a drill and file down to fit inside the cylinder. After inserting the modified wheels into the

and car metallic silver. I again test fitted the cylinders, and then secured them with Zap A Gap to prevent any accidents.

I installed the letter boards using Zap A

added the Hazmat placards and



Gap after using Champ data and Microscale letters and numbers. Axis Chemical, by the way, was the company that Jack Nicholson's Joker took over in the movie *Batman*. I

applied paper copies of the correct labels as well as cut levers. I lightly weathered the relatively new car with washes and dry brushing.

Building Award Winning Engines Part 3

by Phil Bonzon, MMR

Photos by author

I am not sure which I like best, prototypical operations or bashing and/or scratch building engines for my Baltimore and Ohio - Buffalo Creek and Gauley Railroad. The BC&G interchanged with the B&O at Dundon, WV and B&O passenger service was pulled by a class P-1d pacific in the 1950's, which is the era that I model. I did not have a P-1d to provide passenger service through Dundon, so I needed one. Yes, the P-1d had been built in brass and occasionally you will find one on Ebay, but at prices that are more than my engine budget, besides building is fun. I had been thinking about a P-1d

for a while, and that was on my mind as I walked through a



Stock Mehano 4-6-2 USRA

train show in

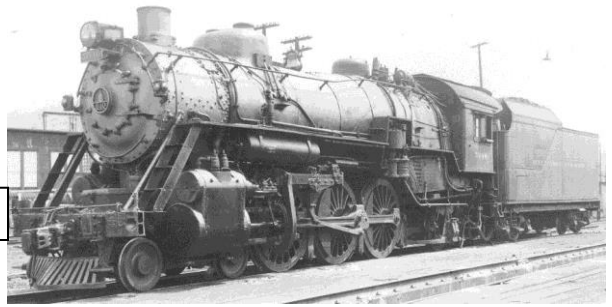
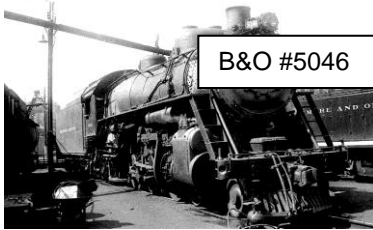
January. And what do I find, but a Mehano HO-scale USRA pacific at a reasonable price, which I thought would make a good model to begin the P-1d project.

Researching the Prototype:

Using the Internet, I went to one of my favorite websites

http://www.northeast.railfan.net/bo_steam1.html and downloaded photos of B&O P-1d engines. From Peter Jehrio's and Terry Sprague's book "Baltimore & Ohio, Steam Locomotives, The Last 30 Years, 1928-1958" I found a drawing, photos and data; also photos and data from Lawrence W. Sagle's book "B&O Power." Another great source of information was Model Railroader's "Steam Locomotives Cyclopedia-Volume One" by

Linn H. Westcott and the “1941 Locomotive Cyclopeda”

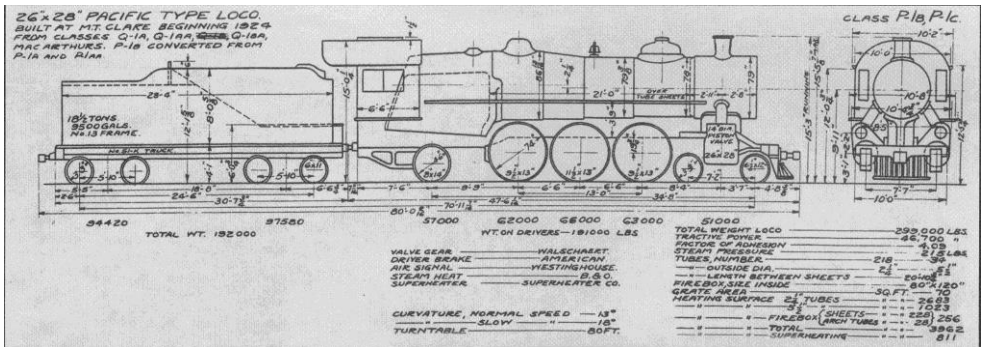


published by Kalmbach. Comparing the Mehano pacific to the prototype photos and data confirmed that I found a good starting point for my P-1d.

Since my engines have DCC and Sound, I decided to replace the old motor with a new can motor and a flywheel, which I ordered from Micro-Mark. Next, I made a list of parts that I would need from Tichy Trains, Cal-Scale, and Precision Scale, which I then ordered from Walthers through my local hobby shop.

The changes needed, besides replacement of all the molded-in detail parts, were new walkways, steps, air-tanks, a new headlight moved from the center of smokebox to the high position, cylinder valves added, all new piping, handrails, lagging straps, brakes, classification lights and rivets. The tender was scrapped and a Bachmann tender, of the

B&O P-1 Drawing from Baltimore & Ohio, Steam Locomotives, The Last 30 Years, 1928 –1958



correct size that I had leftover from another project was substituted. The coalbunker sides would need to be modified to match the prototype and some brake, piping, etc.



details added.

While waiting for the parts to arrive, I disassembled the engine and stripped the boiler of all the molded-in details, rivets and walkways, using a file and sandpaper. I left the smoke stack, sand dome and steam dome in place. Now that the boiler was stripped, I added new lagging straps made from .010"X.020" styrene strips, which I applied with plastic solvent cement.

New walkways were made from .040" styrene sheet and applied with CA adhesive. The holes in the smokebox front were filled with scrap pieces of styrene and bonded in place with plastic solvent cement. Then after drying, sanded smooth along with the removal of the molded-in rivets.

Overlays for the firebox were made from .010" styrene sheet and bonded to the firebox with plastic solvent cement (photo 6). A grid for the two different sizes of rivets was laid out, holes of an appropriate size were drilled and



the Tichy Train Group's .030" and .040" rivets were bonded in place with plastic solvent cement.



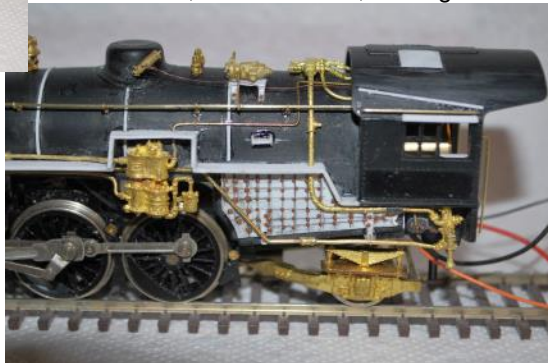
After applying the rivets to the firebox, I installed .030" rivets to the front of the smokebox. A hatch for the top of the smokebox was made from .020" styrene sheet and held in place with plastic solvent

cement and Micro Engineering small spikes were used as latches. The boiler steps were made for the fireman's side from a styrene 5/32" H shape, cut to length, tapered on the bottom and bonded with plastic solvent cement. The walkway steps were made from .020" and .040" styrene. The bottom step has a #0-90 x 3/16" FHMS for fastening through a corresponding hole in the pilot and the top step is bonded to the underside of the walkways with plastic solvent cement.

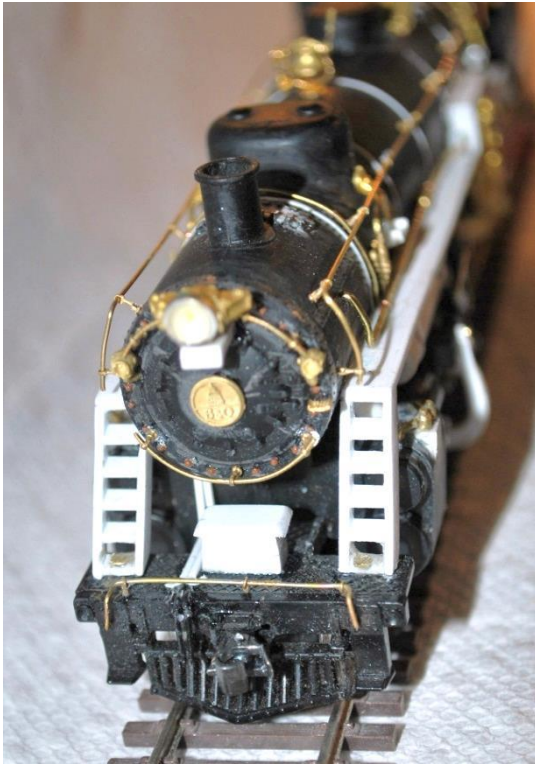


At this point, I laid out the pattern for the handrails and posts, and then I drilled the appropriate size holes for the posts. The generator platform was made from .010" styrene sheet and bonded to the boiler with plastic solvent cement and two .030" rivets through the support legs. The cab roof hatches, wind deflector, awnings and

armrests were made from .010" styrene sheet, and the gutters from scale 1 x 2 styrene strip, all were bonded in place with plastic solvent cement. The window muntins for the rear cab window were removed. The handrails were formed from .020" brass rod, appropriate size holes drilled into cab and handrails bonded with a drop of CA adhesive.



Now to the smokebox front: The holes for the handrail posts were laid out and drilled.

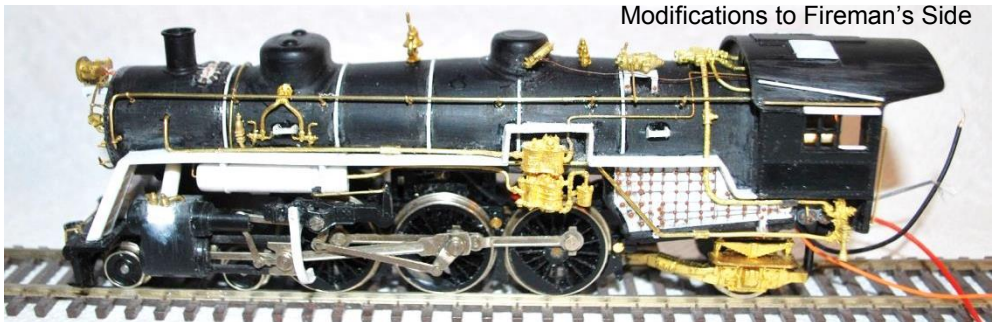


.020" brass rod was formed to required shape and installed with the cast brass posts, which were cemented in place with a drop of CA adhesive. A .035" hole was drilled into the headlight casting and the smokebox front to accept a surface-mounted LED and its wire leads. The head light bracket was made from .020" styrene sheet and bonded to the smokebox with plastic solvent cement. The headlight casting was cemented to its bracket with CA adhesive, as was the cast step, the classification lights and the B&O Capital Plate to the smokebox front.

The air tanks under the walkways were made from 3/16" styrene tubing with the ends capped with .010" styrene sheet, brackets from .020" styrene and the straps from scale 1 x 2 styrene strips, all bonded together with plastic solvent cement.

The walkway over where the compound air pump was to be installed, was cut with a razor saw

and raised to clear the air pump. A bracket to support the air pump was made from .040" styrene, cemented to the boiler and the air pump casting cemented to the bracket, all with CA adhesive. The air piping was formed from .020" brass rod; the steam supply to the pump was formed from .016" brass rod and the steam exhaust pipe .030" brass rod, all piping cemented with CA adhesive.



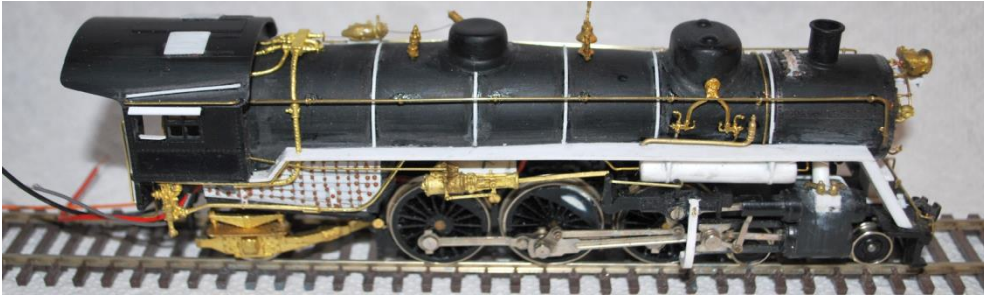
Modifications to Fireman's Side

The injectors were mounted on brackets made from .040" styrene and cemented to the underside of the cab with CA adhesive. The feedwater piping was formed from .032" brass rod with brass tubing couplers, at the firebox, it was fastened, with .005" copper wire, to the support brackets made from 1 x 2 scale styrene strips, which were attached to the firebox with rivets and plastic solvent cement. The feedwater pipes were bonded

to the underside of the walkways with CA adhesive and connected to cast brass vertical check valves and piping, which are above the walkways. Appropriate size hole were drilled into the boiler and walkways for the vertical check valves and piping, then they were bonded with a drop of CA adhesive. The boiler, walkways and cab front were drilled with appropriate size holes for the brass cast sand pipes, bell whistle, pop valves, generator and steam turret. A whistle lanyard was made from .005" copper wire. All were cemented in place with CA adhesive. The steam turret piping was formed and coupled to the injector pipes with CA adhesive and a coupler was made from heat-shrink 1/16" rubber tubing. The .005" copper wire is one strand from stranded lamp cord wire.

A single row of Archer decal rivets were applied to the sides of the smoke box around the front and back of it and a double row on each side, just below the handrails (page 27).

Modifications to Engineer's Side



The boiler handrails were formed from .020" brass rod and the cast brass posts were slipped onto the handrail and installed in the predrilled holes with a drop of CA adhesive. The boiler was now completed except for wiring, and was set it aside.

The air tanks under the walkways were made from 3/16" styrene tubing with the ends capped with .010" styrene sheet, brackets from .020" styrene and the straps from scale 1 x 2 styrene strips, all bonded together with plastic solvent cement.

The walkway over where the compound air pump was to be installed, was cut with a razor saw and raised to clear the air pump. A bracket to support the air pump was made from .040" styrene, cemented to the boiler and the air pump casting cemented to the bracket, all with CA adhesive. The air piping was formed from .020" brass rod; the steam supply to the pump was formed from .016" brass rod and the steam exhaust pipe .030" brass rod, all piping cemented with CA adhesive.

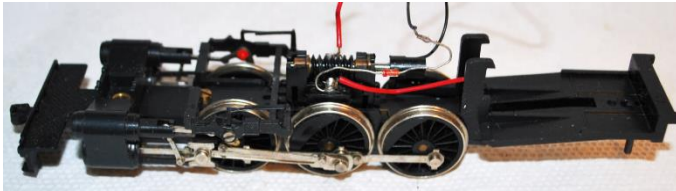
The injectors were mounted on brackets made from .040" styrene and cemented to the underside of the cab with CA adhesive. The feedwater piping was formed from .032" brass rod with brass tubing couplers, at the firebox, it was fastened, with .005" copper wire, to the support brackets made from 1 x 2 scale styrene strips, which were attached to the firebox with rivets and plastic solvent cement. The feedwater pipes were bonded to the underside of the walkways with CA adhesive and connected to cast brass vertical check valves and piping, which are above the walkways. Appropriate size hole were drilled into the boiler and walkways for the vertical check valves and piping, then they were bonded with a drop of CA adhesive. The boiler, walkways and cab front were drilled with appropriate size holes for the brass cast sand pipes, bell whistle, pop valves, generator and steam turret. A whistle lanyard was made from .005" copper wire. All

were cemented in place with CA adhesive. The steam turret piping was formed and coupled to the injector pipes with CA adhesive and a coupler was made from heat-shrink 1/16" rubber tubing. The .005" copper wire is one strand from stranded lamp cord wire.

A single row of Archer decal rivets were applied to the sides of the smoke box around the front and back of it and a double row on each side, just below the handrails (page 27).

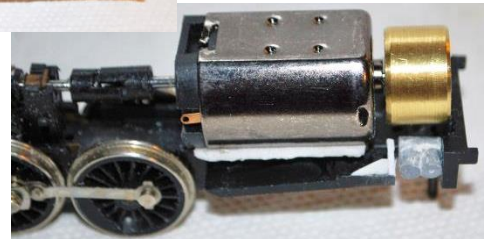
The boiler handrails were formed from .020" brass rod and the cast brass posts were slipped onto the handrail and installed in the predrilled holes with a drop of CA adhesive. The boiler was now completed except for wiring, and was set it aside.

Modifications to the frame were now started. First the old motor was removed as was



the motor brackets. The new can motor with its flywheel was checked for fit and location in relation to the gearbox. The U-

joint coupling from the old motor was removed and pressed onto the new motor shaft. Foam double-side tape was applied to the bottom of the motor and installed on to the frame. The motor was hooked up to a DC transformer to check everything and it ran smoothly.



A flat spot was created from scrap styrene on the top of the cylinders for the cylinder valves. Cylinder valves castings were not available, so I made my own valves from .032" brass rod and .062" OD brass tubing. One end of the tubing was rounded with a file using a Dremel motor tool as a lathe. The tubing was cut to length; appropriate size holes drilled into the top of the cylinders; the brass rod was inserted into the tube and then into the cylinder with a drop of CA adhesive; the pipes were formed from the .032" rods, inserted into the holes with a drop of CA adhesive. The cylinder steam pipes were made from 1/8" styrene rod, the ends shaped with a file to match the boiler and the top of the cylinder, and then cemented with CA adhesive to the top of the cylinders. A dummy stoker motor was made from 1/8" styrene rod cemented together with plastic solvent cement, .020" brass rod piping and .030" rivets added and cemented to the frame, under the cab on the fireman's side, with CA adhesive.

To match the prototype, crosshead guide supports were made from .040" styrene, cut and filed to shape, and then .010" x .060" styrene strips were cemented to it with plastic solvent cement to form a "T" section. The guides were attached to the valve gear brackets with .016" brass rod pins that were left to protrude slightly, and CA adhesive as well as a drop of CA adhesive to the crosshead guides. The frame was drilled and tapped for #0-90 x 3/16" FHMS and the plastic brakes were attached.

Modifications to the pilot:

A train control box was made from scrap styrene; air/signal hoses and pipes made from .030" styrene rod were added; a cut-lever made from .020" brass rod was added and a Kadee # 5 coupler replaced the dummy coupler in the pilot. Holes for the boiler braces and the steps FHMS were drilled.

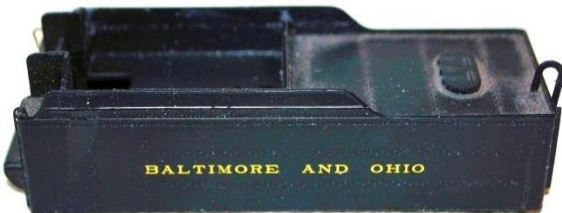


The pilot truck was

reused, but the trailing truck was replaced with a brass USRA trailing truck that I left over from another engine project. The engine was basically completed except for wiring, assembly, cab glazing, engineer, fireman, cab deck plate and painting. Pilot/boiler braces were formed from .032" brass rod.

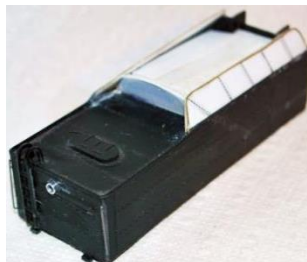
Tender Construction:

The Bachmann tender was disassembled and the road name removed with alcohol. The PC board and the coal load were discarded and the tops of the coalbunker sides were scribed, cut and removed for the new angled coalbunker sides.



A new top for the coalbunker was made from .020" styrene sheet, cut to size and the edge that would rest on the tender sides was beveled to set at an angle matching the prototype instead of being straight. A rolled lip was formed around the coalbunker sides by annealing .020" brass rod,

forming it to the edge profile, bonding in place with CA adhesive and finally filing the ends to blend in with the remaining molded-in lip. A new coalbunker bottom was made from .020" styrene. Archer rivet decals were applied to the sides of the coalbunker. A back-up light was made from a piece of 1/8" aluminum tubing, for later insertion of an LED, and inserted into a drilled hole in the back of the tender. Handrails were formed from .020" brass rod, inserted into drilled holes with a drop of CA adhesive.



Air, signal and steam piping, made from .030" styrene rod, was added the underside of

the tender. Complete brake details were added from another discarded tender. .020" brass rod was formed to connect the air tank to the train airline and the brake cylinder. Marker lights, grab irons, a cut lever, air/signal hoses and steam hoses were added to the back of the tender. A Kadee #5 coupler was installed. The Bachman bolsters required some modification to accept the Mehano trucks and provide the correct ride height. The trucks and electrical pick-ups from the Mehano tender were reused.

Electronics and Assembly:

Using the NMRA recommended practice for color coded wiring, I hard-wired the engine and tender together, installed a NCE DCC motor decoder, a MRC sound decoder, MRC speaker and surface mounted LEDs, with resistors, for the headlight and backup light. Testors' "Clear Parts Cement & Window maker" was used to fasten the LEDs into the lights and form lens. I retained the Mehano electrical pickups for the drivers and the tender wheels. The engine was assembled, with the Mehano lead weight, and so was the tender. A new drawbar was made from styrene and installed.

Details:

The following details were added to the engine and tender (*see modification photos on pages 26 & 27*): To the engine the correct steps and walkways; air and signal hoses, cut lever; train control box; pilot braces; headlight and bracket; smoke box and boiler handrails; smoke box rivets; B&O Capital Plate; smoke box step; classification lights; smoke box hatch; pipe connecting air tanks; exhaust steam pipe; feedwater check valves and piping; injectors; sand pipes; boiler steps; bell; whistle and lanyard; pop valves; generator and platform; steam turret piping; steam pipe to air pump; compound air pump; air tanks and piping; lagging straps; cylinder valves; crosshead guide supports; brakes; stoker motor; stay bolts (rivets) to firebox; power reverse and reversing lever; USRA trailing truck; cab hatches; cab roof gutters; roof wind deflector; cab awnings; cab arm rests; cab handrails and a cab deck plate; an engineer and fireman in the cab. To the tender the coal bunker sides were extended with a lip added at the top edges and rivets added to the sides; steam, brake and signal pipe/ hoses added; full brake details; cut lever; handrails; ladder; marker lights; backup light; coal and water spillage on deck.

Conformity:

The model captures the character and appearance of the prototype #5046, when you compare it to the prototype photos and drawing. All the dimensions closely follow the prototype and all of the components



are the correct type and location as to the prototype. The engine has the same walkways, air tanks, piping, cylinder valves, sand pipes, crosshead guide supports and the tender the coalbunker extensions of the prototype #5046.

Finish & Lettering:

All of the components to be painted were washed with warm water and a little detergent, left to dry, airbrushed with Floquil enamel "Gray Primer", when dry, airbrushed with Floquil's "Weathered Black" enamel, the smokebox and firebox were airbrushed with a Floquil enamel that I custom mixed. After drying, Floquil's "Clear Gloss" enamel was airbrushed over the area to be decaled. After drying, Microscales' decals were applied and airbrushed with Floquil's "Clear Flat" enamel. The engine numbers for the headlight were developed on the computer, printed and attached to the headlight with Elmer's white glue.

I decided to have my P-1d heavily weathered representing an engine at the end of service. A little thinned Floquil's "Grimy Black" enamel was lightly airbrushed over the top of the engine and tender representing an accumulation of soot. A little thinned Floquil's "Grime" was airbrushed to the drivers, wheels, trucks and undersides to represent the dust and grime picked up. Floquil's "Rust" was applied with a brush to appropriate areas. A wash of Rustall's "Rust" was applied to all surfaces, and then washes of India ink, in different strengths, were applied. And, last "Doc O'Brien's Weathering Powders" from Micro-Mark were applied. Some "Clear Gloss" enamel was brushed on to the tender deck to represent water spillage. The engineer, fireman and window glazing (clear styrene) were cemented in to the cab, as was the deck plate to the cab with CA adhesive. The coalbunker was coated with Elmer's white glue; coal added, alcohol and diluted white glue applied to hold the coal in place.

Scratch Built:

The following are scratch built: Lagging straps (5); walkways (13); air tanks (14); generator bracket (1); cab hatches (2); cab gutters (2); wind deflector (1); awnings (2); arm rests (2); boiler steps (2); cylinder valves (12); crosshead guide supports (4); train control (2); pilot steps (14); cut levers (2); pilot air & signal hoses (2); Pilot braces (2); piping (16); handrails (13); whistle lanyard (1); power reverse lever (1); deck plate (1); coalbunker extensions (4); tender steam, signal & air piping (3); Tender backup light (1). A total of 122 parts scratch built.

2012 NMRA National at Grand Rapids

3rd Place with 103 points

2012 NMRA MCoR Regional, 1st Place with 101 points

2011 Gateway Fall Meet, 1st Place with 104 points



Remember the following:

Research – Winning, it starts here.

Building – You win here.

Photograph each step of construction to show how it was built.

If you make a drawing or build a fixture to make a part, include them in your submittal.

Document everything, prototype photos/drawings, how you constructed it, detailed, finished, how it conforms to the prototype and list everything that you scratch built.

If something is not up to par, redo it. Remember the highest merit score wins in a merit judged contest. If you are building only for the Achievement Program then you only need an 87.5 merit score.

Finally, approach building engines as a series of small projects, not as a large complicated project; because you could be overwhelmed.

Division Meeting Minutes

by Jimmy Ables, Clerk

Meeting Minutes for December 16, 2013

Officers in attendance:

Timothy Stout, Superintendent

Phil Bonzon, Assistant Superintendent

Richard Velton, Paymaster

Jimmy Ables, Clerk

Hank Kraichley, MCoR Director

Ron Gawedzinski, Activity Coordinator

Clinic: John Carty gave a presentation on building of paper dioramas.

Business Meeting: Superintendent Tim Stout called the meeting to order. 15 members attended. Tim welcomed our newest member John Golden

Minutes of Previous Month's Meeting:

Minutes from the October 2013 meeting were available for review prior to the meeting start. The minutes were approved.

Treasurers Report: Rich Velten presented the paymasters report for November and December 2013. Rich noted the profit for the Fall Meet was \$580.

Merchandise Report: Rich Velten reported we've received 33" wheel sets and the costs are \$7 per package. Also on hand we have 11 NMRA N-gauge standards, 3 NMRA HO gauge standards, and 2 NMRA OO-On3 gauge standards.

RPO Report: John Carty reported the

deadline for the Winter 2014 RPO is 1 Jan. As always he requested members send articles. John is also working with Richard Schumacher to obtain pictures of the winning entries at the Fall Meet.

Directors Report: Hank reported he's going to the MCoR Board of Directors meeting December 20, 2013. He also reminded members he has registration forms for the Joint Regional Convention in Memphis.

Hank reminded members we're in the process of obtaining permission from members to publish their contact information in the Division's Directory publication. Those that regularly attend meetings have signed up for the most part. We are preparing to mail members who don't regularly attend letters asking they allow publication of their contact information.

Achievement Program (AP) Report: Phil had no report for this month.

Publicity Chair Report: Don solicited for volunteers to work the Great Train expo in St Charles 1-2 Feb. We have a table and Don is looking for volunteers to help man it. We also discussed attending the St Charles Model Railroad Club show on 18 Jan however no decision was reached.

Outside Activities Report: Ron didn't make the meeting but sent Tim a note on the Joint NHRS/Gateway Division annual joint picnic. There were about 100 people from the two organizations and outside of the rain everyone had a good time.

Old Business:

- Website: We received a number of positive comments from folks outside the Division on the website. Brian Post continues to collect and update layout descriptions for the website. Dale Dewitt is taking pictures of layouts for the website. Hank's reports Dale's pictures are great.
- Fall Meet. John Carty reported several of the contest entries were ruled ineligible as the models had been previously entered and won. John reiterated the police that models which had previously won are ineligible. John also solicited member to start working their models for next year's contest.

New Business:

- 2014 Elections. The Elections Committee chair, Don Ayres, reported the Elections Committee consisting of himself, John Carty and Ron Krauss meet and tabulated ballots. There were a total of 60 ballots received out 195 sent out. One ballot was received late and was not counted. Results area as follows:
 - o Superintendent: Tim Stout (59 votes)
 - o Assistant Superintendent: Phil Bonzon (59 votes)
 - o Paymaster: Rich Velten (59 votes)
 - o Clerk: Jimmy Ables (58 votes)Don made a motion that ballots be destroyed. The motion passed.

Announcements:

- John Golden and Lonnie Bathurst, organizers of the St Louis Railroad Prototype (RPM) convention discussed this year's convention. The convention is the second largest of the RPM conventions held around the country. John thanked the Division for their support to include arranging for the NMRA to provide insurance for the convention. Lonnie discussed plans for next year's event to include bringing in national level vendors. In thanks for the Division's support John and Lonnie presented the Division a check for \$100.

Drawings:

50/50 winner: George Spriggs

Gift Card winner: Tim Stout

Meeting adjourned.

Meeting Minutes for January 20, 2014

Officers in attendance:

Timothy Stout, Superintendent

Phil Bonzon, Assistant Superintendent

Richard Velton, Paymaster

Jimmy Ables, Clerk

Hank Kraichley, MCoR Director

Ron Gawedzinski, Activity Coordinator

Don Ayres, Publicity Chairman

Clinic: Dave Roeder gave a presentation on developing plans for prototype structures and the paper diorama contest was held. Winners were John Carty, Tim Stout, and Jack Stroker.

Business Meeting: Superintendent Tim Stout called the meeting to order. 23 members were in attendance.

Minutes of Previous Month's Meeting: Minutes from the December 2013 meeting were available for review prior to the meeting start. The minutes were approved.

Treasurers Report: Rich Velten presented the paymasters report for November and December 2013. Rich also provided a summary report for 2013. Rich noted we had a total income of \$4,600.30 while expenditures totaled \$8,728.77 this left us with net loss of \$4,128.47 for 2013.

Merchandise Report: Rich Velten reported we've have 33" wheel sets for \$7 per package. Also on hand are 11 NMRA N-gauge standards, 3 NMRA HO gauge standards, and 2 NMRA OO-On3 gauge standards. Rich asked if there was any interest in having new Division shirts made up.

RPO Report: Tim Stout reported the deadline for the spring 2014 RPO is 1 April. As always he requested members send articles.

Directors Report: Hank Kraichley reported on the January 5, 2014 MCoR directors meeting. National will now remit dues to local divisions annually vice semi-annually. The 2014 Regional convention is a joint event sponsored by the Southeastern and Mid Continent Regions and will be held in Memphis, TN 13-15 June. The 2015 MCoR convention is in Central Missouri (Jefferson City/Columbia), and the 2016 convention is in Omaha.

MCoR and National are having problems with their master email list. We have shared the Gateway Division email list with MCoR to aid in resolving the issue. Also discussed was membership, the region has total membership of 892 with a loss of 68 members last year. In 2012 the region gained 57 members, so the question is what happened in 2013 to participate the loss. A decision was made to form a committee to approach other regions and examine how they attract new members while retaining current members.

In other news MCoR has a new web master and updates will be occurring on a more regular basis. The website is updated to include a link to the Southeastern Region for the Joint Regional Convention. Several members complained there is very little information on the Southeastern Region convention website. Members are requesting more information.

National is incorporating in Missouri and will be obtaining 501c status for all regions and divisions. While the Gateway Division already has 501c status, many Divisions do not and this action is intended to provide the entire NMRA with 501c tax exempt status.

Achievement Program (AP) Report: Phil reported John Carty's paperwork for Author was lost in the mail. Phil and John have re-accomplished paperwork and it was resubmitted.

Publicity Chair Report: Don Ayres reported we have a table at the St Charles, Great Train Expo and asked for volunteers to help man. Don also announced we'll be attending the Boeing show on 8 March and requested volunteers. A signup sheet was passed around.

Outside Activities Report: Ron discussed an upcoming joint group tour of Southern Missouri railroad depots on Saturday, March 29th. A bus will depart the parking lot at Reavis Barracks and I-55 at 7:30 am. More details to follow at the February meeting.

Old Business

- Membership Directory. Discussed mailing letters to members who haven't signed up already. Phil Bonzon made a motion to fund mailing letters to membership requesting their participation in the directory and asking them to provide information on railroading interests, layout, etc. Bill Linson seconded the motion. The motion was approved. Jim Ables will begin working on letters and has requested in

putting mailers together.

New Business

- None

Announcements

- Ken Rimmel of the Big Bend Model Railroad Club solicited volunteers to assist with the clubs 4 and 5 July open house.
- Rich Velten announced Krikwood Model Railroad Associations upcoming open house on Feb 15th.

Drawings:

50/50 winner: Chris Oestereich

Gift Card Winner: John Stoker

Meeting adjourned.

Meeting Minutes for February 17, 2014

Officers in attendance:

Timothy Stout, Superintendent

Phil Bonzon, Assistant Superintendent

Richard Velton, Paymaster

Jimmy Ables, Clerk

Hank Kraichley, MCoR Director

Ron Gawedzinski, Activity Coordinator

Don Ayres, Publicity Chairman

Clinic: The February clinic was a video presentation on "Easy Backdrop Painting".

The video discussed and demonstrated techniques for painting realistic backdrops and clouds.

Business Meeting: Superintendent Tim Stout called the meeting to order. 16 members and two guest in attendance. Tim welcomed our guest Brenda Stout and Loren Caley.

Minutes of Previous Month's Meeting:

Minutes from the January 2014 meeting were available for review prior to the meeting start. The minutes were approved as submitted.

Treasurers Report: Rich Velten presented the paymasters report for January 2014. Rich noted we had a small profit last month. Total receipts were \$197.62, expenses came to \$78.22, leaving us with a balance of \$17,672.20. Most of the receipts resulted from the sale of wheel sets.

Merchandise Report: Rich Velten reported we've have lots of 33" wheel sets and two packages of 36" wheel sets. Also on hand are 11 NMRA N-gauge standards, 3 NMRA HO

gauge standards, and 2 NMRA OO-On3 gauge standards.

RPO Report: The winter edition of the RPO was published two weeks prior to the meeting. Don Ayres reported that John Carty is requesting articles for the spring edition, deadline is 1 April.

Directors Report: Hank Kraichely had nothing new to report.

Achievement Program (AP) Report: Phil Bonzon had nothing new to report.

Publicity Chair Report: Don Ayres reported we have a table at the Boeing on 8 March. Don requested volunteers to help man the table.

Outside Activities Report: Ron discussed several upcoming events. The 2nd Annual Southern Missouri Depot tour is on 29 March. The NRHS is sponsoring a trip to the Capital via railcar 2-9 June.

Old Business

- Richard Schumacher, Dale DeWitt, and Hank Karichely have been taking and editing pictures of layouts, writing layout descriptions, and posting to our website. In total 17 updates were made over the last month.
- Membership Directory. Discussed progress on putting together a mailer to obtain permission to include individual members in the Gateway Division directory and obtain info on their modeling interests. Jim Ables is still working the letter and hopes to have it finished and reviewed by officers and legal counsel by March.

New Business

- St Louis Railroad Prototype Modelers meet is coming up this summer and they have offered the Gateway Division a table. Tim accepted the offer. Don Ayres and Tim Stout will coordinate volunteers.
- Phil Bonzon requested suggestions for clinics. Tim Stout threw out some suggestions: weathering cars; making trees; installing decoders, etc. Another suggestion was made to see what the NMRA might have for clinics. Phil requested members send him emails with recommendations.

Announcements

- Layout Opsig meeting coming up in Tulsa
- 13-15 June, Regional Meet in Memphis
- 14 June, the American Heritage Railroad

Show in Greenville, IL

- 22 April, Dreamland Place train show

Meeting adjourned.

Timetable of Events

Do you know of an event of interest to other Gateway Division members? Send the information to the editor so it can be listed in future *RPOs* and on the www.gatewaynmra.org website.

NMRA Divisions or St. Louis area clubs may have their event listed here by sending a description of the event, in the format shown here, to the Editor (johnpcarty@hotmail.com).

Mon., April 21, 2014

Gateway meeting at O'Fallon, IL.

Mon., May 19, 2014

Gateway meeting at Trinity Church.

Fri., June 13, thru Sun. June 15, 2014

2014 Regional Convention with the Southeastern Region in Memphis, TN.

Mon., June 16, 2014

Gateway meeting at Trinity Church.

Sun., July 13, Sat., July 19, 2014

NMRA National Convention in Cleveland, OH.

Mon., July 21, 2014

Gateway meeting at Trinity Church.

NMRA MCoR Region & Gateway Division

The National Model Railroad Association (NMRA) is a world-wide organization dedicated

to all aspects of model railroading. In order to bring the most benefit to its members, the association is subdivided into Regions, and each Region has a number of local Divisions. National dues are \$66 per year, and all members of the NMRA are automatically members of the Region and Division in which they live. The Gateway Division is part of the Mid-Continent Region, which represents Missouri, Kansas, Arkansas, Oklahoma, Nebraska, and parts of Iowa and Illinois.

The Mid-Continent Region publishes a quarterly bulletin, *The Caboose Kibitzer*, and holds an annual convention meeting that usually includes modeling clinics, local tours of layouts or prototype facilities, and model contests. Annual subscription to the Mid-Continent Region *Caboose Kibitzer* is included with membership at the National level and runs concurrently.

The Gateway Division is well represented on the regional and national levels of the NMRA. Its members actively promote the modeling hobby through local monthly meetings, this quarterly newsletter, an annual train meet in the fall, participation in area train shows and other events, and a comprehensive website. Annual subscription to the Gateway Division *RPO* is \$10, running from July 1 through June 30. Members who subscribe mid-year are given extended memberships. In addition to the quarterly newsletter, a member directory is published listing names, addresses, and information about individual modeling interests. New members also receive a Division membership pin.

Membership is open to anyone from the beginner to the most advanced modeler, of all ages, so that everyone can share questions and knowledge of the hobby. Visitors are welcome at the monthly Division meetings listed on our website, www.gatewaynmra.org

To join, visit our website and complete the form at <http://gatewaynmra.org/membership.htm>

Division Officers

Superintendent

Timothy (Tim) A. Stout
timothy.stout@ymail.com

Assistant Superintendent

Philip (Phil) G. Bonzon MMR #427
pbonzon@aol.com

Clerk (Secretary)

Jimmy D. Ables
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Paymaster (Treasurer)

Richard (Rich) M. Velten (Marilyn)
rmveltenatswbell.net

Division Director

Henry (Hank) W. Kraichely
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