

THE

O

# RESOURCE

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NEWS, REVIEWS, INFORMATION TO USE

Vol. 2 No. 2

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2014

SCALE



# Bill Of Lading

Published Bi Monthly

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**November-December**  
**Vol 2 #2**

Welcome to the on line O Scale Resource magazine. The magazine is presented in an easy to use format. The blue bar above the magazine has commands for previewing all the pages, advancing the pages forwards or back, searching to go to a specific page, enlarging pages, printing pages, enlarging the view to full screen, and down loading a copy to your computer.

Front Cover Photo

*A model of the Minneapolis GN depot on the Twin City Model Railroad Museum's O Scale layout*

Rear Cover Photo

Fun for all ages at the *Twin City Model Railroad Museum's O Scale layout*.

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The Model Railroad Resource LLC publishes *THE SCALE RESOURCE* also. Be sure to look at it. There are many articles in our [magazines](#) that are not scale specific and will be of interest to you. Click this announcement to see the magazine online.

# NEWEST ANNOUNCEMENTS 2015

## B&O P-7d Streamlined Great for the Cinci Car Set



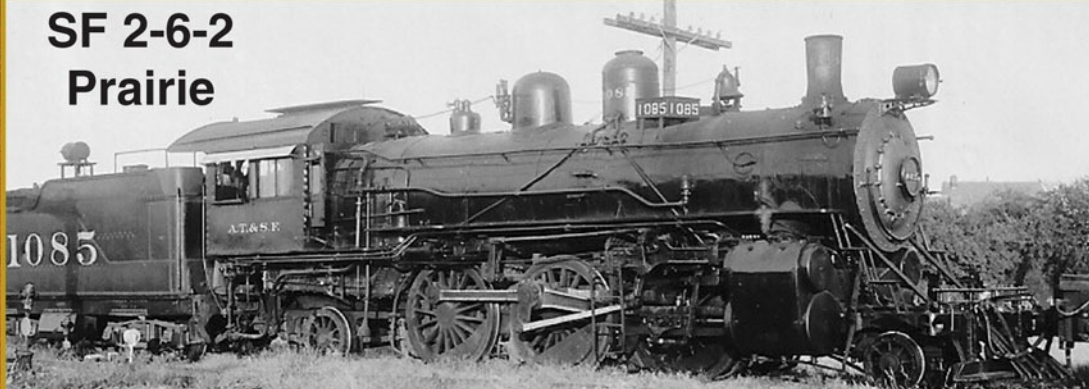
4 B&O P-7s were streamlined to pull the "Cincinnatian". Order the cars too, and have the whole train. Sunset Models is bring you this fine brass masterpiece in 2015. Reserve yours today, only a limited number are being produced.

## CB&Q O-1a Mikado



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## SF 2-6-2 Prairie



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# Editorial Comment



Welcome to the November/December 2014 issue. Before we get to what is in this issue, Dan and I would like to tell you that we have started another magazine for the S Scale modeler. This new magazine is called *THE S SCALE RESOURCE*, and is patterned after *THE O SCALE RESOURCE*. We will be publishing the S Scale magazine on a bi monthly basis like the O Scale magazine, except it will be on the opposite month of the O Scale magazine. In doing so, our readers will have a new magazine to look at each month. By now you are thinking, why should I care about an S Scale magazine? As you have seen with the O Scale magazine, many of the articles are not scale specific. The same will happen in the S Scale magazine. So take a look at it, there may be something of interest in it for you.

With that said, let's get to this issue of *THE O SCALE RESOURCE*. We start by going to Minneapolis, Minnesota to see the Minneapolis O Scale Club. Dan visited them, and worked with Cully Kowal on the article. Cully is a long time member of the club, and was able to help Dan with information about how the club came about and who worked on what portion of the layout. Take a look, I think you will find it interesting. Next, we hear from Roger Peterson in Bloomfield, Ohio. Roger is a model railroader who is interested in local history. He was intrigued by an old factory near his town, and started looking into what it was. He wanted to make a model of it for the annual holiday train layout at the local history center, but knew very little about what the buildings looked like. He did a lot of research, and was able to get some ideas. This is a good example of how to research buildings or areas for your layout. Take a look at the Bloomfield Clay Products Company article. Then, Dan takes us on a tour of the beginning stages of his layout. He goes through the planning, along some of the compromises we all need to make. These are things you will need to consider when starting your own layout. From Dan's layout, we move on to a photo essay on weathering steam locomotives. I talked to Jim Booth and Lee Turner about their work. This is not an article about specific techniques, but rather some ideas about why the dirt goes where it does. We went to the National O Scale Show this year in Indianapolis. The show was well attended, and we have some photos of it. Take a look at the Indianapolis National O Scale Show article for an overview. We have a page about O Scale Kings. You have seen their ad in this magazine, and have probably seen them at the shows. Here is a little about how they came to be and what they do. Be sure to check out at the O Scale Kings article. For our last article in this issue, Fred Oakland shows us how he converted an MTH three rail New Haven EP-3 electric locomotive to two rail operation. This is an in depth article with lots of photos and good ideas. Be sure to look it over.

Well, that's it for articles in this issue; however, there is one last thing to mention. *THE O SCALE RESOURCE* will be sponsoring the model contest at the Chicago March Meet again this year. The contest will be a judged contest, with a popular vote for best of show. See the ad in this issue for more details. So, finish up your models and bring them to the show! We are all inspired by other people's work, and would like to see your models.

Glenn Guerra



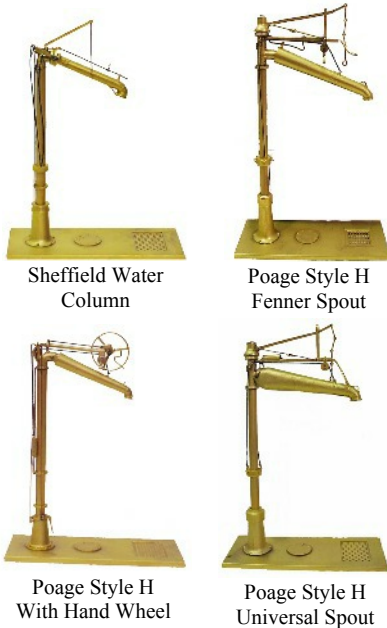
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# NEWS AND REVIEWS



Weaver Models is offering a different version of their Milwaukee Road rib side boxcar. As the cars aged and the lower sides rusted, the railroad welded flat panels on the side of the cars to repair them. The new Weaver car has these extra panels applied to the model. This is a nice modification to the existing model copying the prototype practice. The models come ready to run in 3 rail or 2 rail versions.



We have been corresponding with Rosemarie Quintero (Fischer) about her father, Joe Fischer. Rosemarie and her sisters have an interest in what their father did, and are working on the family history. We are excited to be working with her. Recently, Rosemarie visited Mike Hill to see some of her dad's work. We had a good visit, and Rosemarie and Mike were able to exchange notes and information. She told us her sister has a number of boxes of her dad's files. They are looking through the boxes, and are learning more about the railroads and the models. This will be an interesting project, and will help the owners of the Fischer cars know more about them. We will keep you posted as the project progresses. For now, if you have any information about Joe Fischer you would like to pass along, send it to us at *The O Scale Resource* and we will forward it to Rosemarie.

---

Des Plaines Hobbies tells us they have the brass O Scale hand rail stanchions for the GP-9 and GP-38 models back in stock. They had a new run of the castings made. The cast brass stanchions replace the plastic ones that come with the models and are very durable. These castings, and all the rest of the GP and RS castings, can be found on their website [www.desplaineshobbies.com](http://www.desplaineshobbies.com) or by calling them.

---

Steve Wolcott and his wife, Linda Lindsey, have recently purchased Pre-Size Model Specialties, a line of cast resin scenery items such as tunnel portals, bridge piers, culverts and more. Steve has been adding new O scale items. The latest is a stone bridge abutment. There is now a series of tunnel portals and other items sized for On30 and On3. They are also offering sagebrush tree armatures for O scale. Check out the website at <http://www.presizemodels.com/>





Bruce Grundy normally models the Chesapeake and Ohio, but could not resist putting these two kits together this summer. This is what he told me about them. "The Milwaukee Road car is a Walthers kit, and an older one at that. It came in an orange box. I made end "covers" out of .015 thick styrene, and put those typical Milwaukee Road cross members, also from styrene, across each end cover. Then I glued them over the end casting and roof end. The end castings for this car is flat and almost square, with no rivets and only comes up to the bottom of the roof section. The roof antenna is from Keil-Line, and the other roof details are from the very first car I ever built. It was a Walthers Milwaukee Road Hiawatha coach that I butchered. So, I knocked the castings off the steel roof and used them on this car. The service door on the car side is done with a "Sharpie" fine point marker. The UP Alpine 14 bedroom Pullman is a Boxcar Ken "B-C Models" kit. I had this kit for a long time before I met Lou Cross at a model show and asked him about the sides (small windows along the letterboard) and after doing some research he called and told me it was an Alpine Series UP car kit. I had to cut away the skirting from the bottom of the sides to make the car as correct as possible. However, the windows at each end of both sides are not correct for an Alpine series car (at least I could not find any pictures with the same window pattern). There are several pictures available of "Alpine" cars. So, I did the best I could. All the decals kept separating, especially the stripes. Next time I'll use automotive vinyl stripes."

Bill Davis of [American Scale Models](#) in Waukesha, Wisconsin has added a Cinder Hoist and a small terminal Coal Transfer Hoist to his line. These are limited run brass models. Bill is also adding trucks to his line. He is working on a new website, but you can contact him via email by [clicking this notice](#).

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It is with great sadness that I inform the group of the death of Tom Houle. Tom passed away at his home early today (October 9, 2014) of cancer. He had surgery to remove a tumor in his lung about a year and a half ago, but another tumor was found in the lymphatic system earlier this year. After a very aggressive program of chemo and radiation did not produce any positive results, he went into a home hospice program less than a month ago.

Tom was an avid O scale modeler, a prolific kit basher, scratch builder and author. He had several articles published over the years. In addition, Tom had built several mold masters of various freight cars, buildings and scenic details, some sold by Rails Unlimited and St. Charles Model Works.

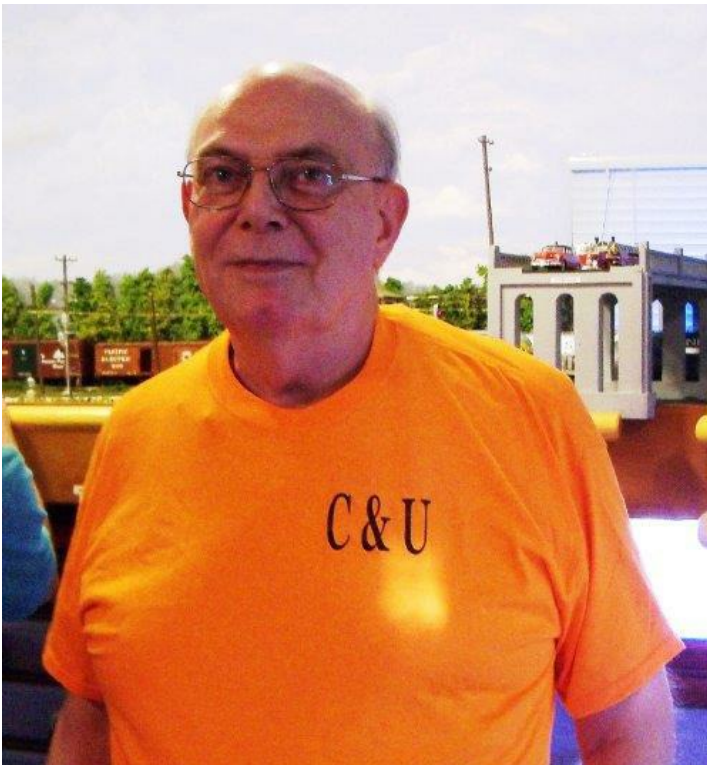
But mostly, Tom was a friend, a good friend, and the kind of person with whom you wanted to be with.

Tom will be missed, but I am certain he is now in a place where O scale is still THE preferred scale for model railroads.

John Hagen



Theo Rehack sent us a photo of a Bob Parri kit from around 1987 that he rebuilt. These were exceptional kits that are sought after by many modelers. Theo used some rebuilt Yoder Keystone/Verona truck sideframes and full brake rigging. He lettered the car to an image found in the "300 Years of Coal Cars" book.



Ed Halstead, pictured above, runs the Chicago and Utopia railroad. He recently had the local area traction fans over. It Looks like everyone had a good time.



Some scenes on Ed Halstead's layout. Photos by Eric Bronsky.



Terry Gaskin shows off his CTA "baldy" body made by 3D printing.



This is the Mark 1 version of Terry Gaskin's 3D printed car bodies. Terry keeps improving the design, and said the Mark 2 version in the photo above is better. This one looks fine to me.



The weather was nice so everyone ate outside. Photo by Terrell Colson.





Bill Basden from [Delta Models](#) sent us some information on new things they have going. The first is DM-506, an underbody set for Golden Gate Depot stream line cars. This is a generic set of parts put together from the existing parts line to replace the molded floor piece that comes on the Golden Gate Depot streamline series of cars. This kit will allow you to detail the underbody of the cars to specific car types. The floor piece is .040" thick styrene with all the mounting holes and an opening for the light switch as well. You will have to mount the new parts to the floor and paint as required. There are 9 parts and the floor for this kit.

They are also putting together a series of parts for you to view and sample, before placing an larger order. They are calling these **Sample Packs**. You will get 3-5 parts per sample – seats, battery boxes, or other items.

Lastly, they have other things in the works and are doing R&D on them at this time. Some of those items are resin roofs for streamline cars, and air conditioning ducts for Heavyweight cars.



Jim Rindt from Rindt's Relics has produced a Chicago North Shore and Milwaukee waiting shelter in O Scale. These are limited run kits. To see his other offerings visit his website. [www.rindtsrelics.com](http://www.rindtsrelics.com)

Rich and Teresa Redmond from [Korber Models](#) have just released some very nice new kits.



#916 General Light & Power Plant (above) has been brought back into production, with new molds, and new smoke stacks.

The Model 700 O Scale Background Apartment Building (shown on the right) is a shallow relief, four story structure, that is ideal for tight spaces where you want more than a flat, but don't have room for a full building.





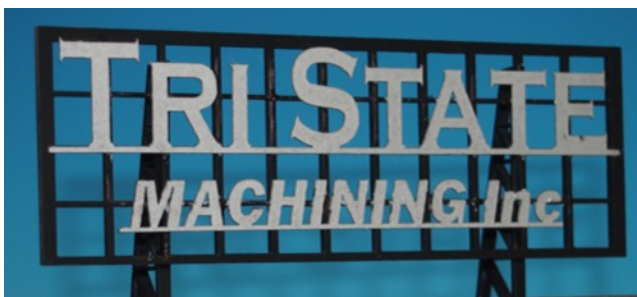
## Manufacturers and Importers

Do you have any O Scale specific news or products in the works or maybe just released? Contact *The O Scale Resource* via email with any pertinent information, including pictures, we'll print them here.

#315 Grain Silo returns to production. The always popular grain silo returns to production complete with new laser cut windows, reengineered silo cap, and detailed simple to follow color instructions.



#707 Background Furniture Factory. Standard furniture is a great factory for that tight place on layouts. Covered loading dock, and lasercut roof top sign, plus more details. Also available are Cut Roof Top Signs. These signs add super detail to any structure



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# TWIN CITY MODEL RAILROAD MUSEUM

**By Dan Dawdy**

**Photos by Dan Dawdy unless noted.**

The Twin City Model Railroad Museum has had a long and storied history in St. Paul, Minnesota. From its beginnings in the home of founding member, Ted Jaassoy, as the St. Paul Home Work Shop Club in 1934 to today's beautiful O Scale layout and museum located at Bandana Square, it's one of the oldest model railroad clubs in the country.

By 1935, the club had grown and moved into a vacant store on Grand Avenue in St. Paul and the name was changed to St. Paul Craftsman Hobby Club. In 1939, the Depression was coming to an end, and the club was given notice to vacate the store on Grand Avenue so that it could be rented. The club was able to secure a 20' x 30' abandoned checkroom in the St. Paul Union Depot, and the ever-growing club began construction on a new model railroad. Several clubs joined together at this time and the club name changed to the "Twin City Model Railroad Club". The layout was very popular with the community, and many Class 1 railroads bought models of their trains to be run on the layout for all to see!

The last operating session at the St. Paul Union Depot was on September 18, 1977 - quite a long run! The club from there bounced around a few places before landing in a newly redeveloped Bandana Square on Energy Park Drive in St Paul in 1984. Bandana Square was the former Great Northern car repair shops.

In 1997, the club became an official museum to better reflect the goals of the group and to lend credibility and added status. Along with the name change came added responsibilities however, to serve the public in an even more benevolent manner. They now host two hobby sales during the year, attend many community activities, donate passes to local charities and host many special events throughout the year



Some 30 years later, they are still at Bandana Square, and in 2009, they opened the "Toy Train Division" in the "Chimney's Building" which is located just behind the main Bandana Square building which features layouts from Z to G scale and covers all years of model railroading.

*In the beginning, a radial arm saw was installed in the center of the museum's space and wings were attached to support the lumber to allow accurate cuts.*

*Cully Kowal photo*

We are not the first magazine to look at this club, that honor goes to Model Railroader in 1936. This past summer, Amy and I traveled to St. Paul for a new look at this great club and museum. We thoroughly enjoyed our visit, and encourage you to do the same if you are ever in the Minneapolis - St. Paul area.



*Although a master plan was drawn for the entire layout, each connecting module had its own drawing to ensure accuracy in its construction no matter who was building a given section.*

*Cully Kowal photo*



*As the sections were built, they were immediately bolted together to form the layout. The structure shown now supports the main Midway yard.*

*Cully Kowal photo*



*The layout was designed by the late Bill Praus, left, who drew the master plan and also each section module.*

*Art Peterson, right, supervised the building of the turnouts and hand laying the rail.*

*Cully Kowal photo.*



*Both passenger and freight mains run parallel along the Mississippi River. The water is a two part mix available at hobby shops. The riverbed was painted a dark color, and the water is only a quarter inch deep. The paddle boat was built by Dick Schrieber.*



*“Tower Hill” offers the required elevation for good communications. Arnie Hochholter scratch built the radio tower complete with FAA required flashing lights.*



*An independent Branch Line has its own depot and now operates with either DC or DCC control. Paul Gruetzman, Ron Esch, and Scott Tobin wired this upgrade.*



Several bridges in the Minneapolis area are represented. The far bridge is the 3<sup>rd</sup> Avenue vehicle bridge which also carries the Twin City Rapid Transit Streetcars across the “Father of Waters.” The GN Stone Arch Bridge carried the GN, NP, CNW, and CB&Q into the Minneapolis GN Depot. The late Bill Praus and Ray Gruetzman, along with others, scratch built and installed this masterpiece with tools they designed especially for this structure.



The old Twin City Rapid Transit power plant (now owned by the U o fM) was scratch built by the late Bill Kloster, Sr. The bridge in the foreground was scratch built by Marv Quinn with thousands of rivets each hand stamped.



*Several buildings from the old St. Paul Union Depot layout were saved and are installed on the current layout. The McCall building (red, far right) still stands in downtown St. Paul next to a modern skyscraper. The Grand View Theater, a neighborhood venue, still shows movies.*



*The late Ray Barton scratch built the many buildings that make up the town of Mattlin, named after a former member. Ray's dad's barber shop is located among the buildings. A push of a button by a youngster (or Adult) starts the train around a loop to stop again at the station.*





*The “OMAHA” freight house in Minneapolis still stands; although today, it is converted condos.*



*Mike Biederman securely mounted the fuel and dump trucks to the layout, and wired the headlights to glow during out Night Trains program.*



*A model of the Minneapolis GN depot was scratch built by Dr. Bob Niederkorn. The depot has lights and a clock that keeps perfect time. (A Federal Reserve building now occupies the former depot site.) The city backdrop, incorporating scenes from downtown Minneapolis, was painted by an artist from the University of Minnesota. The retaining wall was milled by a cabinet craftsman who visited the layout one evening and offered to help. The wall is made of Masonite and was installed by Cully Kowal.*



*The main freight yard on the layout can be worked from both ends. Compare this scene to the one on page xx as it shows the construction.*



*The layout is located in Bandana Square, an office building that was once the Northern Pacific car shops. This view shows the selectively compressed buildings of what was once the car shops.*



*The museum also has some work space on a mezzanine with power tools, a brake, and a shear. Artifacts and artwork, as well as select trains, decorate the walls.*



*Above, Mike Biederman built the drug store in the town of Hamline. An interchange track allows passengers from the steam line to transfer to the trolley line via one of Cully Kowal's RDCs.*

*On the left, tower CK is a Bachman kit bash by Cully Kowal. Cully also scratch built the C&NW train order signal.*

*Both photos courtesy of Cully Kowal*



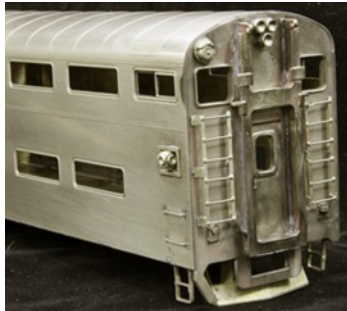
*A variety of trains can be seen running on the layout, and awaiting their next assignment as the next views show.*



Amy and I had a great time visiting the museum, as well as the Toy Train Division and gift shop. Considering we showed up unannounced, the museum personal were very cordial and helpful is allowing us to photograph the massive layout.

I need to thank Brandon Jutz for his help in preparing this article, and a very big thank you to Cully Kowal for providing some of the early pictures, as well as captions for our photographs.

For more information about the Twin City Model Railroad Museum check their Website at <http://www.tcmrm.org/>.



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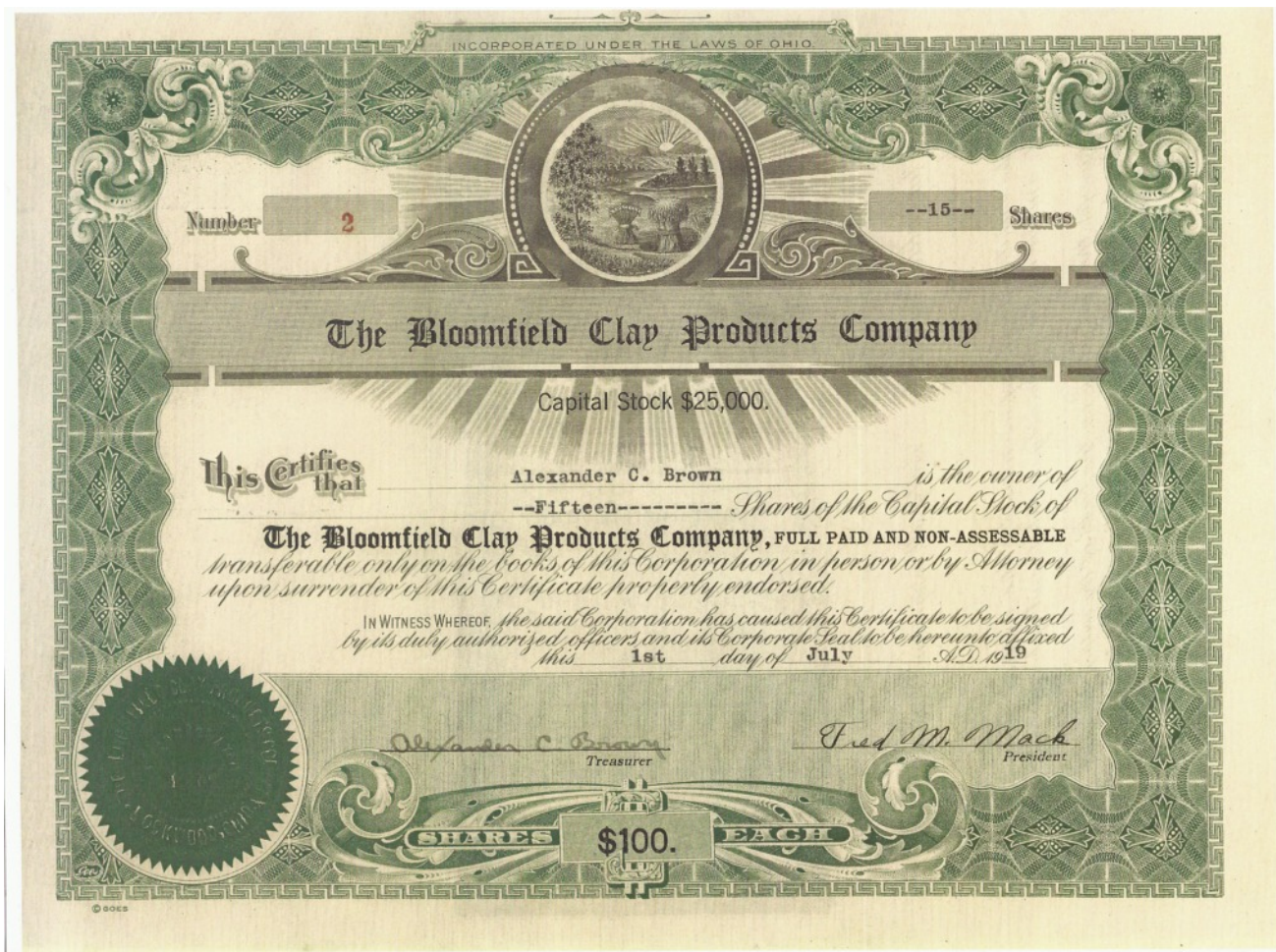


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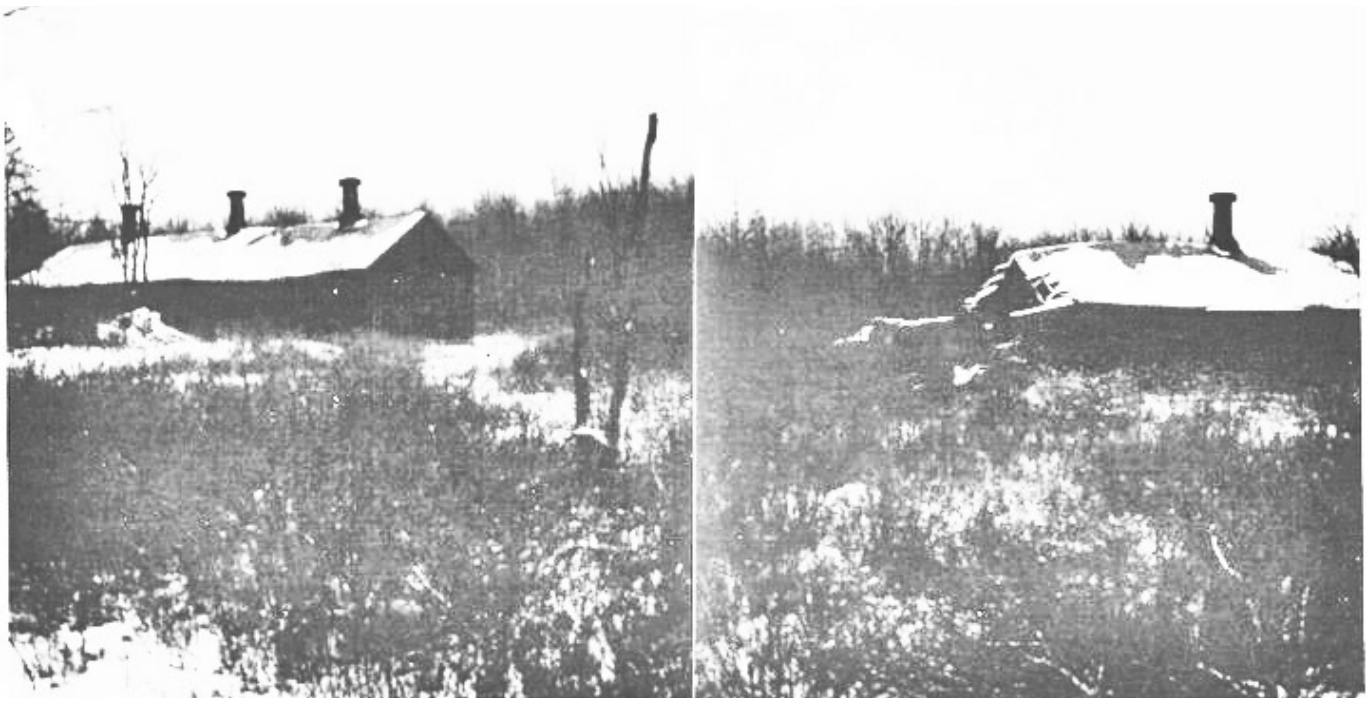
*This stock certificate was signed by Alex Brown. The Brown Family originally settled Bloomfield Township. Alex, who lived at Brownwood in North Bloomfield, moved on to be a successful businessman in Cleveland, Ohio where he went on to the Brown Hoist Machinery Company. The Brown Hoist (or Brown Hoisting) Company was founded in Cleveland in 1885; eventually becoming the largest company in the world dealing exclusively in cranes and materials handling machinery, filling orders for all types of industry.*

### **Introduction by Glenn Guerra**

Roger Peterson contacted us about a building he was making a model of. The building will be used on the annual holiday display layout of the local historical society in Bloomfield, Ohio where Roger lives. He started this building for the upcoming holiday layout. The building complex is not finished yet, but I wanted to show you his progress. Many of us have some theme, era, location, or railroad that we like to model. Many times there are things we would like to model, but information is not available. This article is the story of how Roger found the information and was able to make a model of a long gone industry. So, let's turn this over to Roger, and he can tell you how he researched his model.

### **By Roger M. Peterson Jr.**

I grew up on a farm about three miles north of where my great-grandparents farmed when they settled in North Bloomfield, Ohio back in the 1870's. With great interest, I always focused in on my older relatives remembering stories of how it once was in my hometown. My father and uncles would often speak about the "Tile Mill", which was located less than a half mile from their farm. They told of the big kiln, the big rattlesnakes, and the hobos that would camp out inside the building. They talked about how they would ride their bicycles in the second floor because, growing up on a dirt gravel road, it was the only smooth surface around.



*These two views of the Bloomfield Clay Products Company are the only photos Roger could find. They are not very clear, and date to long after the complex was abandoned, but they do show the general shape of the main building. The photo on the right shows the main building after the smoke stack for the boiler house fell on it. Aerial photos later show that the smoke stack fell some time after 1952, dating this photos to after that.*

My grandfather, known for spinning some real tales, would talk about the size of the rattlesnakes. There was one so long that its head would stick out the top of the Tile Mill smokestack, while its tail would lay across the railroad tracks, stalling the train. The only way the train could move forward was by scalding the snake with boiler water from the steam locomotive!

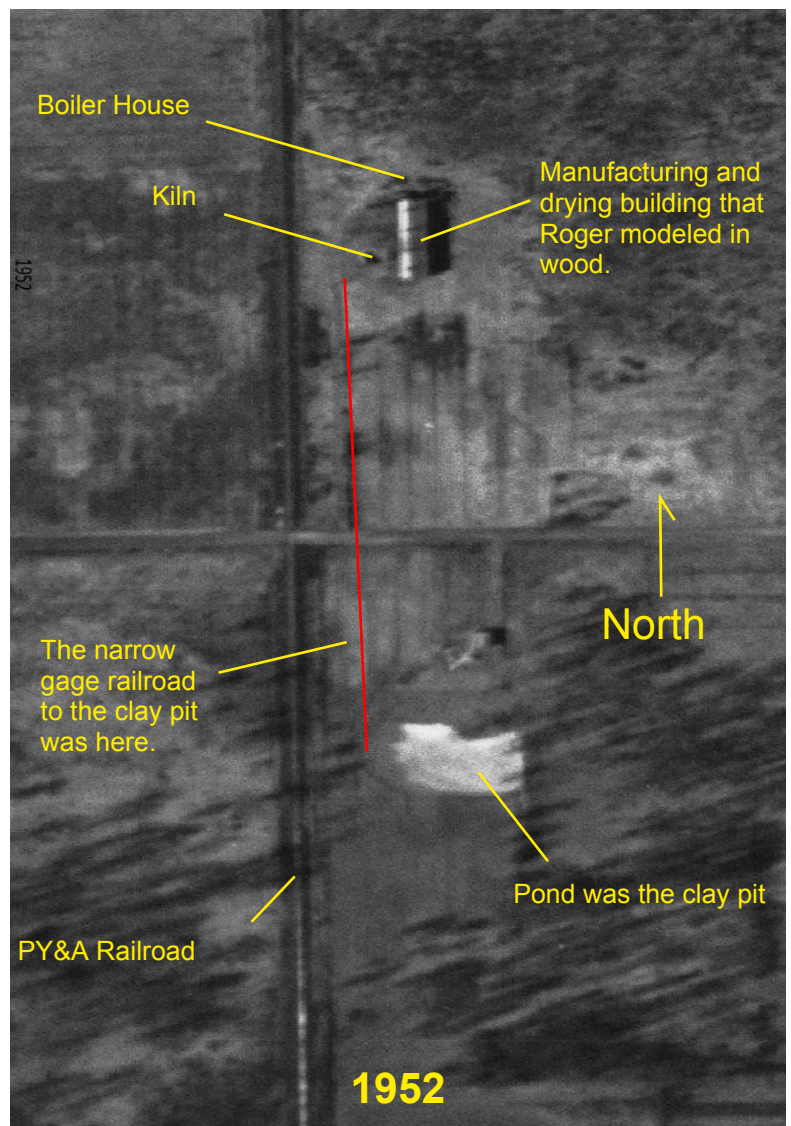
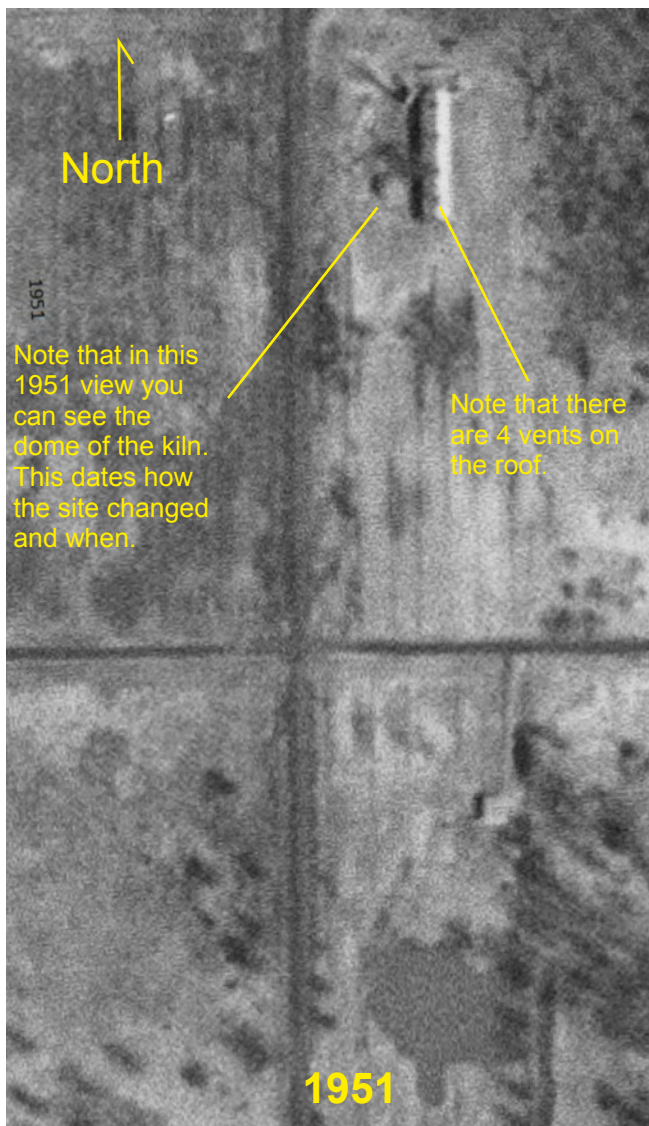
North Bloomfield had a Pittsburgh, Youngstown & Ashtabula line, leased to the Pennsylvania Railroad, running until the 1970's. So, with my interest in local history, my family history, and my love for model railroading, the Bloomfield Clay Products Company seemed an obvious model to scratch build.

Deciding to build the structure was the easy part. Getting information on it was a two year journey. Even though many of my relatives, and even my father remember the building, it stopped production around 1923, almost 20 years before my dad was born! There were no



*After talking to the landowner, Roger was able to examine the site. Foundations show the locations of buildings and will give you the size. When approaching landowners for permission, it is best to explain in detail what you are doing and what information you expect to get. Most people are sympathetic to what you are doing, and will be interested in what you find out.*

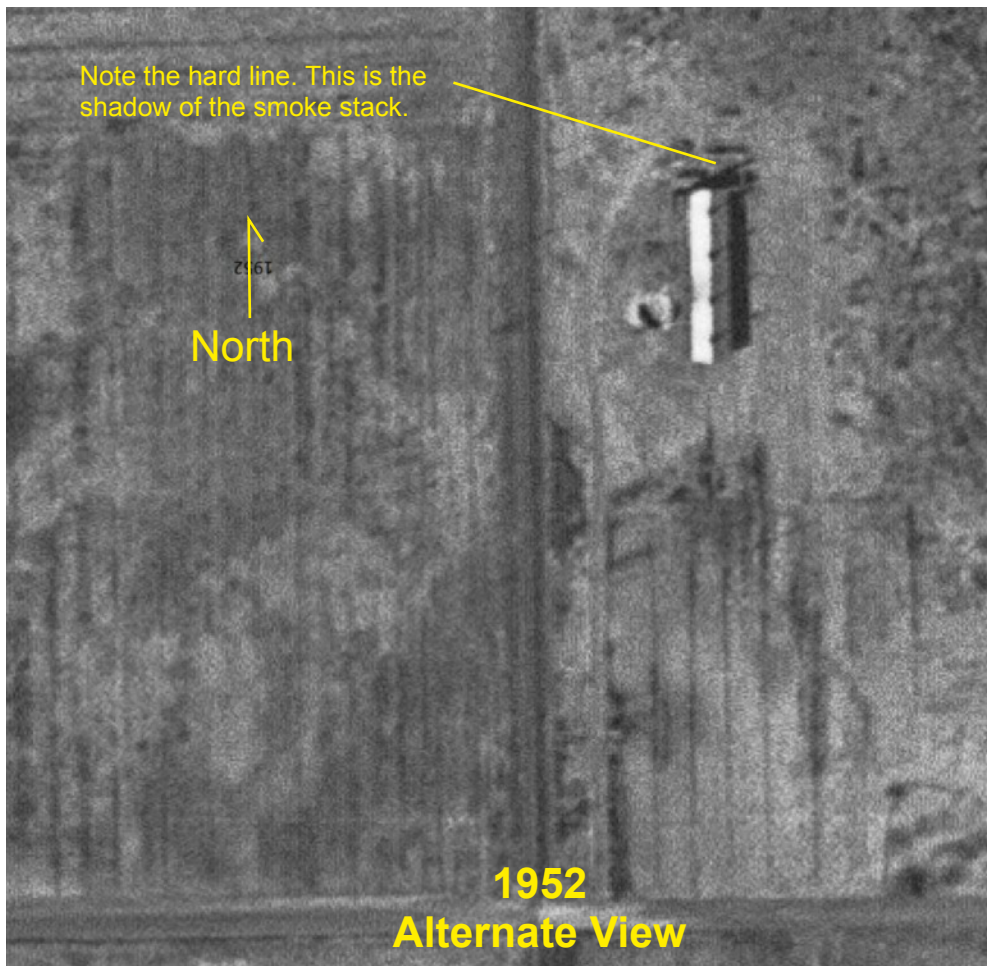




*Roger found some aerial photos online at [www.historicaerials.com](http://www.historicaerials.com), and was able to purchase a copy of them. These photos are enlargements of part of the photos. This type of information should be an early step in your research. Information like this can be obtained from home with little expense. By studying the photos and comparing them, you will start to understand how the site changed. For example, note that in the 1951 photo, we can see the dome top of the kiln. By 1952, the kiln had fallen in. Also note that there are four vents on the main building. When the smoke stack fell on the main building, one of these smoke stacks went down with the building. By looking only at a later photo, you may assume information that is not correct. Looking at these things, you have a better understanding of the site, and when planning your trip to your location, you will know what you are looking for.*

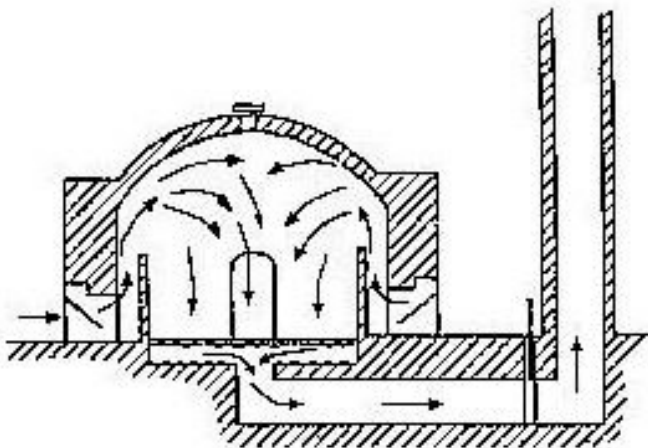
plans or information on the building, there were no drawings, and no one alive really remembered it ever producing anything, except a place for hobos to camp. The building was quite a ways out of town, on a back road in the swamp at the railroad tracks. One very grainy photo surfaced, but it was really nothing more than a silhouette of a black building against a snowy background. Sometime in the 1970's, what was left of the building burned down, from a rumored hobo camp fire. I doubt if half of the community had even seen it during the time that it stood.

I knew there was no information locally since we don't have a "Local History Library", so I checked with the Western Reserve Historical Society in Cleveland Ohio. I was really hoping the WRHS library had some photos, schematics, diagrams or information on the equipment. They have some Bloomfield Archives, but unfortunately, nothing from the Bloomfield Clay Products Company.

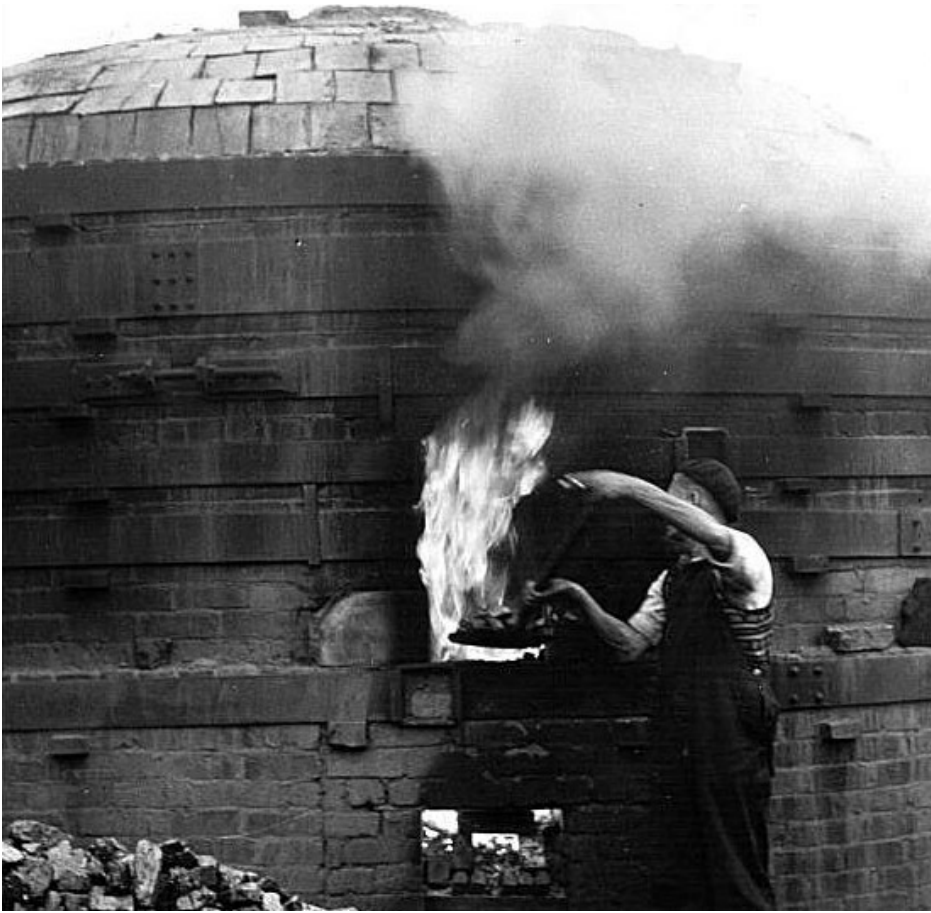


*This is another view from 1952. This photo was a little clearer than the previous 1952 photo. In this photo, you can see the shadow of the smoke stack. Not only can we tell there was a smoke stack, but we know there is was. Also, by comparing the length of the shadow with that of the roof vents, we can approximate the height of the smoke stack. When comparing the length of the shadow, you will see that the distance from the roof vent to the top of its shadow is about 2/3 the length of the shadow cast by the smoke stack.*

I had heard that the company had some local folks who were original organizers, so I started making calls to some of the families that have been in the area for quite some time. I made a discovery from a local resident who had some handwritten notes from a Board of Directors meeting! So now I had some names and a date. I also came across a stock certificate from another family. This then led me to the Secretary of State website, which had articles of incorporation from March 29, 1919. At this point, I went on “Google Books” and searched multiple terms related to Bloomfield Clay Products, and I had a hit! A 1919 article from a trade magazine came up listing the name of one of the incorporators. One more bit of information for the file. But, just when I thought it couldn’t get any better, it did. While talking to someone else in town about my project, they remembered that they had some handwritten notes from a conversation with my deceased great-aunt from 20 years ago. Seems my great-grandfather actually ran the horse pulled dredge that dug the clay at the tile mill. Once the clay was dug, he and my great-uncle hand loaded it into small carts that ran on a small railroad track, much like was found in coal mines. So, my local history project now has family ties.



*While researching how the kilns worked, Roger found this diagram. The hearths are around the edges. The hot gas is drawn into the kiln by the draft created from the exhaust stack. Temperature was controlled by firing the hearths and controlling the draft. The shape of the kiln also told Roger that the dome shape in the photos was the kiln.*



*When Roger found the drawing of how the kiln worked he also found this photo of a worker firing the kiln. The workers had to tend to the kiln 24 hour a day for 3 days to maintain the proper temperature. This worker is using coal to fire the kiln. Roger thinks the Bloomfield kiln was fired with charcoal made from local wood. Photos like this can help you to recreate the buildings for your model.*

At this point I still didn't have any photos, or any idea what that factory looked like. In addition, it was winter, so I couldn't get onto the property with all that northeast Ohio snow on the ground. During some previous research on our local railroad depot, I stumbled across a website that has an online database of many map sources, including the USGS maps. This website has a survey tab on it that allows you to actually measure items on the screen. One night, around 3am, I woke from a sound sleep and the website came to my mind. If they had aerial photos from the 1950's, that meant that they had to have an overhead photo of the Bloomfield Clay Products Company, and they did. By using this website, I was able to determine that the main building was about 26'x160'. I was also



*When Roger had a chance to visit the site, he knew something about the layout from his online research. He found the remains of the kiln, and this is one of the firing arches. Roger now had some actual measurements to work with in creating his model, along with some details of the construction.*

*Here Roger is looking at the air vent in the floor of the kiln. Look at the diagram of the kiln, and you will see there is a platform and the hot air circulates under the floor. Once again, knowing something about how the industry functioned helps you to identify things at the site.*



able to scroll between a couple different years and observe the damage caused to the building after the main 60' chimney fell across the structure, partially collapsing the north end. In the 1952 map, you could see the outline of the building, and a long shadow cast across the north end. In the 1970 photo, the chimney shadow was now gone, as well as, about 25% of the north end of the building. The chimney fell across the building, crushing the roof and walls in the affected area. There was no going back to sleep at this point, I was too excited about this discovery. I remember my great-aunt telling of the second floor of the main building. She said all the floor boards were spaced about 1/2" apart, and you could see down to the first floor. She said they would nail an old hoop from a wooden barrel and play basketball up there. This was the same place my father and uncles would ride their bicycles. My uncle remembered crawling through the underground air tunnel that went from the kiln to the big chimney. Putting all this information down in a specific notebook, along with printing off pages from the internet of other clay tile factories, started a significant file folder.

With each new bit of information, it seemed to open up a more questions. For example, why were their spaces in the floor boards? I discovered that "green clay", which was clay that was just pressed through a pug mill into a specific shape was entirely too wet to put in the kiln. It needed a few weeks to a month to evaporate off the excess moisture. Clay factories would have steam pipes below the floor to warm the building and to aid in drying. The floor board spaces must have increased air flow allowing a faster dry time. Another question was, why was there an air tunnel? Downdraft beehive kilns would have fires built in hearths all the way around

the kiln. There was an open area in the very center of the kiln, where the air tunnel entered. The air tunnel pulled the heat into the kiln from the perimeter hearths, through the clay, through the floor, into the air tunnel, and up a giant chimney. It took three days to get this kind of kiln to temperature, one day at that temperature, and three days to cool off. One straight week monitoring a kiln 24 hours a day, on the edge of a swamp without electric lights must have been quite a job assignment.



*Roger thinks these were the clay building blocks made by the company. Some of these on pallets would make a nice detail for a loading scene.*



*Roger photographed this wall of the boiler house when he was at the site. The concrete foundation and pilaster would seem to indicate an addition. Roger also thinks the clay building blocks were made by the company and used in their own building construction. The concrete pilaster supported part of the line shaft that transmitted the power through the building.*

When the weather improved, I received permission to visit the site from the landowner. I was pretty pleased with what I found. The entire area had grown up into forest and thorn bushes, but I was able to find the original building foundation. I got out my 300' measuring tape and found the main structure to be 26' x 160'. It was great to be able to confirm my initial online measurements. I was also able to uncover and measure an adjoining building foundation to the north, something everyone had forgotten about. Seems that on the north end of the main building, there was another 30' x 72' structure. When I started asking around, folks would come forward saying, "Oh that's right! There was something on that end!". However, no one actually knew what was on the north end since the building was torn down before anyone recalled it. Judging from the cement bases found inside the foundation area, this room may have been an area for a steam boiler and machinery.

*Industry sites are not static. They are evolving to match the needs of the industries. Roger said this is the power house. This wall is built of brick and mortar which is consistent with 1870's power house construction. This would have been built soon after the company was founded. Look close though and you will see a lot of variety in brick. The red brick in the center of the photo appears to be a better quality of brick than used on the outside of the big wall. Perhaps the boiler was changed and new interior walls were made hence different brick.*



THE STATE OF OHIO, COUNTY OF Trumbull, ss.

Personally appeared before me, the undersigned, a Notary Public in and for said county, this 27 day of March, A. D. 19 19, the above named Charles G. Carlson, Fred M. Mack, C. J. Ferry, J. Erich, Nicholas Erich and

who each severally acknowledged the signing of the foregoing articles of incorporation to be his free act and deed for the uses and purposes therein mentioned.

WITNESS my hand and official seal on the day and year last aforesaid.

*[Signature]*

THE STATE OF OHIO, COUNTY OF Trumbull, ss.

I, J. Fred Waldeck, Clerk of the Court of Common Pleas, within and for the county aforesaid, do hereby certify that F. D. Templeton whose name is subscribed to the foregoing acknowledgment as a Notary Public was at the date thereof a Notary Public in and for said county, duly commissioned and qualified, and authorized as such to take said acknowledgment; and further that I am well acquainted with his handwriting, and believe that the signature to said acknowledgment is genuine.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Court, at Warren, Ohio, this 27 day of March, A. D. 19 19.

*[Signature]* Clerk.

NOTE: Clerks are required to use this Certificate and not attach their own.

4255 1895

ARTICLES OF INCORPORATION  
of  
Bloomfield Clay Products Company,  
Ohio, on the 27 day of March, A. D. 1919.  
Recorded in Volume 726, Page 442.  
Notary Public

COPIED

These Articles of Incorporation

OF

The BLOOMFIELD CLAY PRODUCTS Company

WITNESSETH, That we, the undersigned, all of whom are citizens of the State of Ohio, desiring to form a corporation, for profit, under the general corporation laws of said State, do hereby certify:

FIRST. The name of said corporation shall be The Bloomfield Clay Products Company.

SECOND. Said corporation is to be located at Lockwood, Trumbull County, Ohio, and its principal business there transacted.

THIRD. Said corporation is formed for the purpose of manufacturing and selling tile, block, building blocks, and other clay products.

FOURTH. The capital stock of said corporation shall be Twenty-Five Thousand Dollars, (\$ 25000.00), divided into two hundred and fifty (250) shares of One Hundred Dollars, (\$ 100.00) each.

IN WITNESS WHEREOF, We have hereunto set our hands, this 27th day of March, A. D. 1919.

*[Signatures: Charles G. Carlson, C. J. Ferry, Nicholas Erich, Fred M. Mack, J. Erich]*

"all" or "a majority."

As an added bonus, Roger contacted the Secretary of State in Ohio and was able to get a copy of the original incorporation papers for the company.



Once Roger had accumulated his information and made sketches, he was ready to start building. As of the writing of this article, this is how the diorama is progressing. It will be on a separate board for use on a temporary holiday train layout and for history exhibits in town. Roger will be making the kiln, smoke stack, and roof vents on the drying building next.



*Roger used individual boards on the exterior sheathing like the original building probably had. As this type of sheathing ages the boards shrink and warp leaving gaps like an old barn. Roger weathered them with his air brush.*



*On the interior of the drying building Roger added some yellow red LED light to simulate the glow of oil lamps that would have lit the real building.*



*This is another view of the complex showing the N Scale track which was the narrow gage railroad from the clay pit to the boiler house.*

Multiple concrete piers were found, as well as, cast iron pieces that had Babbitt bearings poured. Research of other clay tile mills from the same era showed that you would need a steam boiler to power the mixers and the pug mill presses, along with providing heat to speed the air drying of the clay prior to going into the kiln for the firing. I would have to assume that any machinery that was in that north room was sold off shortly after they stopped production in the early 1920's. I also found some broken slate roof shingles and some square chimney straps, showing that the chimney about was 6' square. That's some serious draft!

So now I had a confirmed size of the boiler room, the two floor main drying buildings, as well as, a rough idea of layout. I also found the foundation from the 28' kiln and the underground air shaft that went from the kiln to the main 60' chimney. I was able to do a rough drawing to scale of the entire layout, and I stress "rough drawing". I am a firefighter, not an artist. However, I was able to find a yardstick and a roll of paper and come up with at least an outline and drawing. Looking back over the past few years, it is humorous that this entire project started with an old wooden yardstick with some political candidate's name and some old butcher paper. No drafting table here. I took this attempt at a drawing to a couple of "old timers" in my community. They said I was as close to being correct as their memory could tell, and we added in some windows they remembered, and called it complete.

Now that I had all of this information, I decided I had to try and build this factory as a 1:48 model. There were no existing kits to modify, so the only option I was left with was to scratch build. I have a small wood shop and the tools, so putting something together was not outside of my reach. I had a stack of poplar from some previous projects; so, I set the rip fence on my table saw at 7/16" and cut all this scrap down. I then set a fence on my sander, and when I was done, I had a stack of sanded 1/4" poplar lumber 36" in length. This would give me scale 12" x 12" lumber to build my model. So, for just an afternoon of work, I had all the wood needed to frame up my latest obsession.



I built a post & beam 26' x 160' scale building, and sided it with coffee stir sticks. Next, I put some dark wood stain in my airbrush and applied some color to the entire building. Once this was dry, I installed windows and doors using my best judgment of where they should go. I purchased some amber LEDs online, and wired them into the building. This was 1919, and being built on the edge of a swamp outside of town, there would not have been any electric lighting. I chose the amber LEDs to give it a bit of a kerosene lantern glow at night. She really is coming together nicely!

Since no one knew anything about the north boiler room, I had to use a lot of liberty in judgment during my construction. I constructed this 30' x 72' scale building out of foam core. Looking at boiler rooms and machine shops from the turn of the century, I placed windows and doors in locations that made sense. I also laid some N gauge flex track across the front of the main building to this boiler room where the machinery would have been located. This was the mini railroad track that my great-grandfather would have used to transport the fresh clay. I am holding out high hopes that someday a photo will surface that shows how this area really looked, but until then, I will need to rely on my imagination.

Researching this project was quite enjoyable. It uncovered some family history I may never had known about, and it put a factory on the layout that has some real meaning. After all, if we don't save our history, who will?

## Dodson Farm's Creamery

Dodson Farm's Creamery dates back to the 1870s and has been family-run since that time. Rail service is brisk at the creamery. In addition to the daily incoming milk cars with cans picked up along the line, there is the daily milk car with internal tanks that takes the daily collection to the bottling plant. Ice is available for the farmers from the ice house (left end) to help keep their milk cold so every couple of weeks a refrigerator car arrives with a load of ice. And coal for the boiler is brought in by rail.


As with all *B.T.S.* kits, this masterpiece is laser cut and engineered for easy construction. The kit includes the detail castings shown, including the three workers, to provide a high level of realism.

This kit consists of laser-cut basswood, plywood, and cardstock. The footprint is about a scale 130' x 65'. Track and scenery are not included. The creamery was inspired by those serviced by the NYO&W Railway.

**#17305 Creamery \$359.95**

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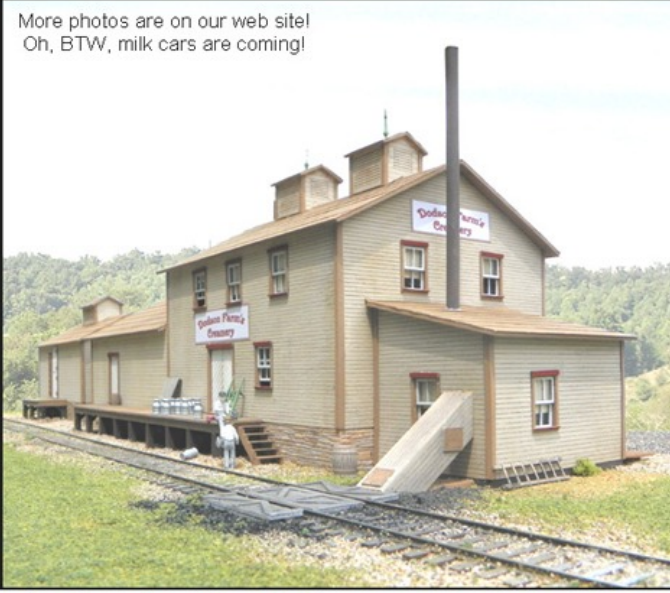
**Dodson Farm's Milk Platform**



The company built platforms along the main line where milk cans could be dropped off for pickup by the local milk train. This kit consists of laser-cut basswood and plywood. Milk cans are included. The footprint is a scale 25' x 11'.

**#17306 Milk Platform \$34.95**

More photos are on our web site!  
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# Anatomy of a Layout

## Reflecting on Planning & Building

By Dan Dawdy

Having many friends over who are not modelers, I get asked a lot of the same questions that many of you have probably heard. “Must have cost a lot.” and “I could never afford anything like this.”. It’s as if they think I bought everything last month, and built the layout last week. That is definitely not the case. It’s been an ongoing process that started back in 1978, but had seeds planted long before.



*Me and my older brother, Dick,  
in front of our Lionel layout circa 1958.*

When I was just a youngster with a head full of mush, my Dad built a large O Gauge layout. It was functional from a “let it just run and we’ll watch it go” standpoint, as well as, having some operations of switching and actually making up trains. I enjoyed those years and was hooked. In the late 1970’s, I grew disenchanted with Lionel and made the switch to two rail O scale. My first engine was a Westside Q4b. I thought it was the most beautiful locomotive I had even seen. I had no layout, just this one engine as a statement piece to prove that I was an O scaler. Next, I began to acquire building kits, and began the process of building. In the early 1980’s, I found comradery through a group called the Southern Wisconsin O Scalers. Now I had a module layout to run

what little equipment I had on. However, life goes on; and after going back to school and finishing my degree in the mid 1980’s, I moved to the western suburbs of Chicago where I started a career as a test engineer for a new company. This is when the collecting started in earnest. Over the next decade, I did not think in terms of era or eventual layout size. I just bought what I liked, and stored it away. Even though I lived in an apartment for twelve years, I knew someday I would have a house and could build a layout. During that period, I went to O Scale shows, bought items and built kits. Many Intermountain kits were built in that apartment and, many (too many) items were purchased and stored. In 2000, it was time to get out of the apartment to look for a house.

My wife, Amy, and I has a list of criteria for this house. The house had to have a basement (no brainier there), had to be brick construction so there would be no exterior painting, have a nice wrap around front porch so I could smoke my pipe in peace, and have four bedrooms. Finally, Amy wanted an older home with

character (as in money pit). Knowing we were not going to find what we could afford in Naperville, Illinois, we looked further south – 50 miles to the small town of Dwight, Illinois. We found just what we were looking for in the first, and only, home we looked at. Built in 1913, the 87 year old brick house had a porch, large yard, nice basement and the four bedrooms we wanted. We knew the issues of the home before we bought it, so there were no surprises other than what things really cost.



*The wall that cut the basement in half and held the other three stories had to go. Note the beautiful green walls, shag carpet and the old fuse box – the joys of an old house.*



*The single large cold air return was an eyesore and took up a lot of usable space. A new flexible pipe was installed. Still ugly, but much less space wasted. The half wall behind was the old cistern from back in the day, but does a nice job of blocking the washer and dryer, paint booth and toilet from the rest of the basement.*

It was now time to concentrate on the future O scale layout. The basement was a poured foundation, (unusual I thought for a house of this age) and then brick up from there. It was all painted a “beautiful” 1950’s green that apparently was all the rage in its day. The basement measured 27 x 30 with more than a few obstacles in the way. The basement was fairly open except for a poured cement support wall smack dab in the middle.

Well, that was definitely a problem that needed to be rectified. The first order of business was to remove that wall. The second order of business was to find someone who could do it without having the other three stories fall in. Finally, two years after moving in, we had the wall removed and a steel beam installed. (Money pit number one.) Although I wanted to start building my dream layout, there were many others things that needed attention first. The fuse box



*The wall gone and beam in place. Of course, we were told that house would again settle so don't do any plaster repairs for a few years. (Like I was going to worry about that.) You can see the actual color of the brick where the old fuse box was.*



*Cleaned up and installing the lighting. You can see where the poured concrete meets the brick. It's this area that drops down three inches.*

was the second thing – it still has a fuse marked stoker. The insurance man was not happy; so, with the help of a friend, we put in a new service entrance and a breaker box outside of the basement. (Money pit number two.) However, we still had a mess in the basement. There was an extremely large cold air return to the furnace. Believe it or not, it was seven feet wide! This was the one and only cold air return for the first floor. That had to go. And, of course, the furnace was old so that had to go. (Money pit number three.) The water heater and softener needed to be re-plumbed out of the way. (Money pit number four.) OK, now I was ready to begin construction of the layout, right? Unfortunately no – I did not have a plan and am not good at planning. I knew that once I built the layout, I did not want to rebuild it just because I forgot about how the layout would be operated. Fortunately for me, I was able to call in a favor from an expert, Ted Schnepf of Rails Unlimited. Amy and I had done a lot of



*Working my way around with the lighting. You can see the “step of death”, as well as, one heck of a mess. Please no comment about the curtains, I’ve heard them all.*



*My brainstorm of attaching the 2 x 4’s to the sill to support the back of the layout.*

work with Ted on his Fox Valley layout and Ted did the layout design. He came over, we measured the basement, and I told him what I wanted in a layout. He did the rest. While all of this was going on, I settled on a geographic location and timeframe for my railroad.

With plans in hand, I was finally ready to tackle the basement. I have been in many beautiful layout environments with drop ceilings, carpeted or hardwood floors and nice paneling on the walls... there was no way I could afford any of that. If I didn’t mention it before, old houses can be money pits, and I did not feel like adding money pits five through eight. Many people who meant well were telling me to do all of that before building the layout. The headroom of the basement would not allow any type of drop ceiling, so the old beams looked fine to me. The floor was poured cement, but there were two levels (uneven to say the least). I could never figure out why



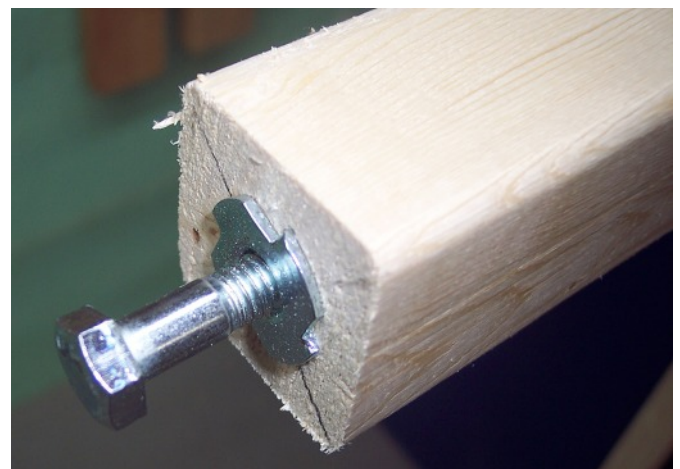
there were two levels, but for some reason, there was a three inch step down near the furnace. (It has only taken me three years to remember it's there and to stop tripping!) I mention this because there just some things you can't do, whether it is a money issue or one of practicality. In my case, both of these issues applied.

The basement was cleaned out, and all the old tables and work benches left by the previous owner had been removed. Now I had a clean slate. The first order of business was lighting. Six bare bulbs were not going to cut it. Because I do a lot of photography, I wanted something as close to daylight as possible. I started buying two bulb T-8 fixtures, added in a new circuit from the breaker panel, and started wiring. I used 6000 Kelvin degree fluorescent tubes which, at the time, I had to special order. Once the lighting was installed, it was time for benchwork. The floor was in good shape; however, nothing in an old house is square, and the basement was no exception. Where the floor met the walls, there was a small separation. There were no water issues or leaking during heavy rains, but it was definitely not level. I thought about this for awhile and came up with an idea. No legs for the rear of the layout! Using the sill that separates the cement from the rafters, I attached 2 x 4's dropping down every 16 inches. Once those were in, I used more 2 x

*Going around the basement with my idea of the 2 x 4 stringers. You can see the floor problem where rear legs would have been problematic.*



*Outlets, you can not have too many of these. They are on a separate circuit from everything else.*



*The standard way of making leveling legs were used on the front of the layout.*



4's to form the base for the layout to sit on. As I moved along, the vertical 2 x 4's were double checked for straightness and the horizontal board was totally level. This also solved the problem of that three inch floor drop. The layout appears taller in that part of the basement as the floor is lower, but the layout itself is level. For the front legs, I used 2 x 2's and installed leveling bolts as many others have done. Next, 1 x 4 stringers were laid and attached to the rear horizontal board and the legs in the front were



*After the legs and horizontal stringers were installed the plywood was attached. Overkill maybe but you can dance on this thing. The Masonite backdrop went in. I really don't like square corners on a backdrop so even*



*My only helper at the time, my wife, Amy.*

set back by 12 inches so people would not bump them when operating. As I was going around, I added some shelving for storage on the legs. This got more stuff off the floor and out of boxes. This style of construction may not be normal, but this was the beginning area was for the yards so normal L-girder benchwork was not used. (Looking back, it probably should have been, but remember, I was new to this so I just kept on building.)

Next came electricity – you can never have enough outlets! I ran another circuit and installed outlets every twelve feet under the layout. I should have thought of that earlier, but better late than never.

The backdrop was installed as I moved around. There are many ideas out there about backdrops, and I went with plain Masonite board screwed to the vertical 2 x 4's. When two sections butted up, I added a 2 x 4 behind





them, using Liquid Nails and screws to secure the boards. I added joint compound and sanded, repeating that process again and again... until smooth. Now, many people told me that it would never work and cracks would begin to appear. It's been seven years so far and, I am happy to report that there are no cracks. I do, however, run a dehumidifier, and the basement is heated.

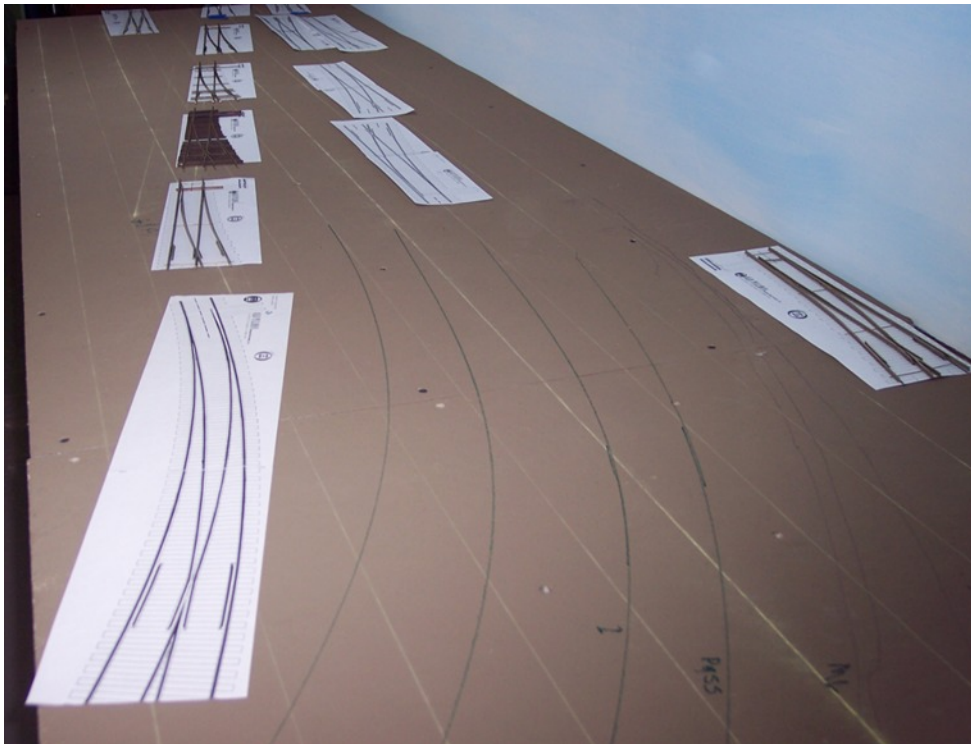


I used  $\frac{3}{4}$  birch plywood as a table top. This is considered overkill for some and a must for others. As I installed the plywood, Amy went around priming the backdrop. Last came the sheets of Homasote. This would finish the benchwork part of the yard area.

*The top picture shows the plywood sheets for the decking with the storage underneath. Next, the Homasote was glued and screwed to the top, being careful to overlap the plywood seams.*

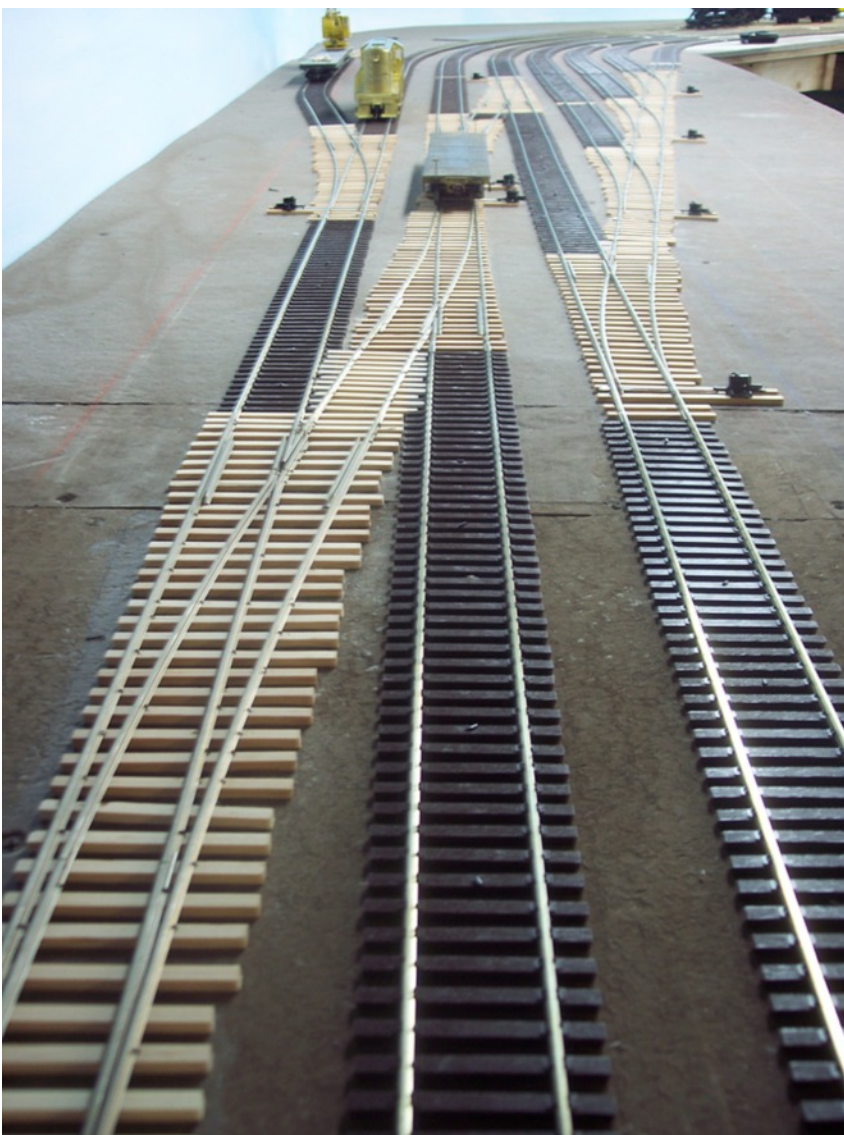
Why start with the yards and not build out everything? Well, expertise for one, and by building the yards, I could lay track as per the plan and get something running. I have many friends who just did

benchwork for many months and got tired of it. They pressed on, but I thought if I could get trains running, even in a limited area, my interest would not wane. The yard measures 10' x 30' in an L shape. It worked and I was able to begin track laying, building turnouts, and wiring in the DCC. If I got bored, I could play, albeit running and switching, within the yards.



Now, you may be asking, “What is the point of this article, bragging?”. No, the point is to do what makes sense for you and your situation. I made plenty of mistakes. I was working on my own; and yes, Amy was big help, plus it was my first (and probably last) layout. Money was tight, so it had to be allocated where I thought the most good would come of it. Superior wood, lighting and DCC costs took precedent over a drop ceiling (not practical here anyway), hardwood floors, TV, refrigerator and/or bar.

Epilogue: We all have a set amount of resources to allocate towards our hobby. Only you can make the decision of how to best allocate those resources. In any hobby, as in life, you have to play the hand you’re dealt. Do your best and learn along the way.



Many people who have been to our open houses and have seen pictures always remark on the beautiful benchwork. It ain’t my work they’re looking at! After the yards were finished, my friend, Glenn Guerra, started dropping in on his way back to Wisconsin from a trolley car restoration job in Southern Illinois. Once he came on board, the real carpentry began, as well as, the learning curve. Let’s just say that I am not a carpenter, but that’s an article for another time.

*By building the yards first, I was able to get some tracks down and at least play a bit. This gave me time to get the basic DCC installed and practice laying turnouts and also realizing that too much track is not a good thing. The rest of the layout was going to be a challenge and, at the time, I was not sure how to proceed.*

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# Weathering Steam Locomotives



*Jim Booth painted this model. The weathering is applied over the factory paint job. I liked the tone variation on the smoke box.*

**By Glenn Guerra**

I wanted to do an article on steam locomotive weathering after seeing some of these photos. As you will see, the paint jobs are very well done. There are a lot of steps in these paint jobs, and different techniques were used to get the effects. It would not work to do a step by step type of article for this type of work because each model you do has a different outcome, and different techniques are used to get that outcome. What I want to do here is give you an overview of what the painter of these models did to them and why. The models were painted by Jim Booth and Lee Turner. I called each of them with some questions about their work. What I will do here is start each paragraph with the question and then discuss their answers.

When I look at work like this, the first thing that comes to mind is, where do you get ideas and inspiration from? It's one thing to look at a black and white photo, but how do you get a feel for where the dirt is and what color it is? Lee told me that he is always on the lookout for any color photos of steam locomotives. He studies them to see how dirt accumulates, and tries to understand why. There are many factors that influence dirt accumulation. Parts are moving, wind is blowing, fluids are leaking, and corrosion is occurring. All of these things contribute to the look of the locomotive. Jim does the same, but works a lot from firsthand experience. Jim has had a chance to run the locomotive at Chama, New Mexico, and currently works in California for a steam operated tourist railroad. He told me he observes how the dirt is occurring as the locomotive is running. Jim said there is a lot of air and dust moving around the engine when it is running. By observing this, he understands how dirt and corrosion happen where they do.



*The fireman's side of the Chicago and Northwestern R-1 by Jim Booth. The model was painted as an engine that ran in Minnesota. The soil is a light tan color, and Jim picked that up on the running gear. The streaking on the smoke box was something that caught my eye. Some of the Midwestern coal has a lot of sulphur in it. This tends to make a corrosive exhaust steam by forming sulphuric acid. What does not form acid makes the smoke a yellow green color. The saturated steam belching from the stack is loaded with this acid and starts to eat at the firebox. As it eats into the iron, it forms iron paint pigments like yellow ochre and raw sienna. This gives the margins of the accumulations a yellow cast. Jim has captured that effect in this paint job.*

Along the same lines as the paragraph above, was the next question. Locomotives operated in different areas with different color dirt around. Do you take this in to account when weathering a model? Lee said he most definitely does. Even locomotives in the same terminal will have different jobs and that affects what dirt they accumulate. Jim said the same thing. Jim also said that the ballast changed from local to local on the railroads, and that affects the color of the dirt on the machinery. Jim told me he noticed that the valve oil he was putting on the locomotives he ran was not black, so he took a sample home and mixed up some paint to match. He said this was important to him as it formed the base color that the dirt was adhering to.

The next question was, what techniques do you use? Lee said he uses a variety of techniques that range from washes, filters, dry brushing, and air brush work. Washes can be diluted paint that is brushed on and bleeds or it can be paint that is applied and then brushed with a solvent to streak or bleed it. Filters are very thin coats of paint used to change the overall tone of the base paint. Lee gave me an example. When weathering a gloss black paint job, you may want to give it a filter coat to tone it more gray. Filters can also be used to change the gloss of the base paint. For example, you may want to highlight some areas that would receive regular cleaning as a glossier finish than other parts of the model. Most of the paint Lee uses is acrylic, and he uses isopropyl alcohol or Mean Green household cleaner for a solvent. Lee said that you need to be careful when applying washes over other washes. The solvents can affect the previously applied paint. Go slow and



*The engineer's side of the Chicago and Northwestern R-1 that Jim Booth painted. Note the streaking on the tender sides. The tenders sweat in the humid summer air when you put cold water in them. The condensation runs down the side of the tender and streaks it. Jim captured this effect in this paint job.*



*The fireman's side of this Union Pacific Challenger shows how careful and light coats of paint will not cover the detail. This job was done by Lee Turner. There is a lot of work on just the trailing truck, and the washes have brought out a lot of detail.*



*Lee Turner painted this Southern Pacific AC-9 and photographed it outdoors. These engines ran in the New Mexico and Arizona area and burned coal. The location and the fuel influenced how Lee decided to weather the model. The soil in the area is light and a tan color. The hot sun has taken the shine off the black paint and it is gray. The coal smoke is not as dark as the oil smoke, and as a result, Lee uses softer tones of black.*



*Here is a close up of the Southern Pacific AC-9 that Lee Turner painted. It looks like the air pumps have been overhauled recently and are a bit blacker and glossier than the rest of the locomotive. Note the accumulation of that light tan color dirt around the cross head. There is oil, steam, and dirt mixed in here. The streaking, from the leak at the throttle and on the side of the cylinder, are made with the washing technique. Look close at the colors in the streaking and you will see that there are multiple coats of paint.*



*Lee Turner painted this Union Pacific 4-12-2. It looks like the local water has a lot of lime in it as evidenced by the white streaking coming from the pop off valves.*



*The fireman's side of the Union Pacific 4-12-2. These engines burned a very light low heat coal and needed huge fireboxes to get heat. The coal was so poor that many people said it was like burning dirt. The sides of the track on these lines are full of cinders and ash spewed out by these and other Union Pacific monsters. Lee has captured that in the colors he used around the machinery on this model. The graphite paint used on the fire box and smoke box was not very good and this locomotive is starting to show some uniform rust coming through the paint.*

allow the paint to set between applications. Dry brushing is a technique that uses a brush that has been wiped clean on a towel. There is still some paint on the brush, but it will not flow off the brush. Instead, what you do is stipple the surface with the brush. Lastly, there can be some air brush work. I asked Lee about weathering chinks. He said that he does not use them very much. The problem with using them on a locomotive is the locomotive gets handled a lot, and that will affect the chink. On structures or display models, chink works well. If you do want to use chink, consider applying a filter over it to bind it to the model better. Lee said for some washes and filters, he mixes paint and clear coat together to disperse the pigment more. The use of a clear coat, instead of just thinner, maintains the binding power of the paint. Since we are talking about clear coats, Lee said there are many varieties of clear coats and, in addition, the solvent you use and application will affect the gloss. Lee told me he also uses artist markers to apply fine detail. He softens the edge with a wash of solvent to bleed the paint a little. Jim uses a variety of paint types when he weathers. He will use washes, filters, dry brushing,





*Here is a close up of the Union Pacific 4-12-2 monster that Lee Turner painted. Compare the cross head area to the Southern Pacific AC-9. This engine burned a low grade coal and the line had a lot of ash and cinders on it. Dirt picked up from the road bed would be a dark color like Lee has here. These are some of the things to consider when planning your paint job. The streaking on the smoke box was made with the washing technique. Look close and you will start to see the different colors used in successive washes.*



*The engineer's side of a Chesapeake and Ohio Allegheny by Lee Turner. Think about how you would paint the side of the firebox and all the piping over it. These are some of the things to consider when planing your job.*

and air brushing. Jim uses a variety of different paint types. He said that different paints work different ways for him, and he likes the different effects. Jim said he will use weathering powder occasionally, but tends to stay away for the same reasons Lee has. When you handle the model with powder on it, you run the risk of finger prints and smudges. Jim cautioned me that ground up chalk and weathering powders are not the same. He said the weathering powders do have some binder in them. Both agreed that if you use powders, you need to over coat the model. Jim said he thought that dry brushing paint on gives a very similar effect to dry powder, but with much more durability. Jim also said that, most of the time, you start with a factory paint job as a base.

The next question was about planning the job. Lee said that he likes to study the model and lays out a plan in his head. Once he starts, he generally starts with the running gear. He gives it some coats of weathering. I was cautioned to go slow. Put it on a little at a time, and don't finish one area and then move on. As the job progresses, you will see the overall effect develop. If you think you over did it, Lee said you can wash the area with thinner, and then remove some of the wash with dry brushes. This will tone it down. When you are going to use multiple washes, start with the light colors first. Another tip Lee told me was to do the backgrounds first. For example, work on the side of the fire box before you consider doing the piping that is over it. Jim said that he also studies the model, sometimes for a few days, before he starts. He also lays the job out in his head before starting. When he does start, Jim said he usually starts with the smoke box. His feeling is that much of the weathering is coming from what comes out of the stack.

Another thing I noticed on these paint jobs was how thin the paint was, and how sharp the detail was. Lee said that you need to go slow with light coats. Jim said the same thing. These jobs take many hours to do. How many times have I said to go slow so far? In my personal experience, that is the biggest problem for me. If you put too much paint on too fast, it will pool up around the details, and your job will look like it was dipped. Both Lee and Jim said you need to think about the layers of color you are putting on. Jim told me to think about the final color you want, and how you would mix it. Each layer you apply will not entirely cover the previous one, and the resulting color will be some combination of both. Jim said an artist told him one time that a color is only as good as the color next to it. In the series on painting railroad cars in the previous issues of *The O Scale Resource*, we talked a little about color mixing. If you did not see those articles, go back and take a look.

So, there you have it. Some really nice paint jobs from two different people. They both agree that you need to think the project through, and how you want to do it. Remember, the model will be handled and that will mean the paint job must be durable. There are a lot of techniques to try. If it seems intimidating, let me tell you what both of them said to keep in mind. "If you don't like it, you can wash it off right away to fix it." As you do more of it, you will start to develop techniques you will feel comfortable with. Also, you will get a better understanding of the effects each technique will produce. Thanks Jim and Lee for sending us some photos, and taking the time to tell us some of what you do.



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# 2014 O Scale National Indianapolis, Indiana



**By Glenn Guerra**

The fall show in Indianapolis, Indiana was held as the National O Scale Meet this year. The show was held on Friday and Saturday. There were over 200 tables in the trading hall, along with two portable layouts set up and running. The Central Ohio O Scale Engineers were one of the layouts that was set up. They have a large standard gauge layout with a three track main line, and there are always plenty of trains running. The group is



from Columbus, Ohio and sets their layout up at train shows around the Midwest. The second layout was a local informal group from Indianapolis. Jim Canter, the show promoter, models to P:48 track standards. In addition, John Pautz from American Switch and Signal lives in the Indianapolis area and supplies P:48 track components like switch points and frogs. Along with some other local modelers, they built a portable layout to P:48 track standards. The layout is set up to run by itself with three locomotives running at once. In addition to the two layouts set up at the show, Jeff Lang and Warner Clark both had their home layouts open for layout tours. Jeff has a large heavy main line layout that features long trains and a lot of them. Warner models to P:48 track standards, and models an imaginary line in the Midwest.

Besides all the pre-owned equipment available at the show, there were some interesting new products around. There is a lot of product available in O Scale, and going to a show will allow you to see it and talk to the manufacturers. So, with that I will quit writing and let you see some of what was at the show.



*Some of the P:48 track components that John Pautz produces. These components are critical to good P:48 operation because the flangeways are spaced correctly for the narrow wheels and smaller flange that is used in P:48*

*Bill McConnell of O Scale Turnouts sells components and ready to lay turnouts for regular O Scale. These turnouts are made to NMRA O Scale clearances.*





*Ron Sebastian from Des Plaines Hobbies was there. He is now carrying a line of small 3D printers. You can get a feel for the size of the machine sitting on the table next to Ron. Contact them for details.*

*[www.desplaineshobbies.com](http://www.desplaineshobbies.com)*

*Des Plaines Hobbies also had two of their new kits for the Chicago & Northwestern Pullman built bi-level commuter cars. They have both the coach and the cab car as shown. The kits come with fully sprung and equalized brass trucks.*



*Harold Storm from from Gaylord, Minnesota was there with some of his custom made display cases and carrying cases. Harold has standard sizes, but will also make you a custom size case if you would like.*



*Lights 4 Models was there with an extensive display of lighting accessories. Products like these can really enhance your layout. They are modern LED lighting that requires very little power and emits low heat so they won't damage your structures by getting too hot.*



*Bill Davis of American Scale Models was there with new additions to his engine terminal accessories. Last year, he had water standpipes, and this year, he has added a cinder hoist and a small terminal coal transfer hoist. They are brass models that are ready to install.*



*Bob Spaulding from Altoona Model Works was there with many of the building kits and products he offers. Bob builds architectural models full time and builds an O Scale line of kits on the side. His expertise in designing and building architectural models shows in his line of O Scale kits. For an extra fee, he can add to the kits for variety on your layout.*



*Here, Bob Stevenson from Stevenson Preservation Lines, is showing the frame from his new kit. Bob is working on a New York Central 0-6-0 class B-11 switcher. The frame, eccentric hangers, cross head hangers, valve hangers, and cylinders are all new parts developed using rapid prototype processes.*



*Pat Mucci from P&D Hobby contemplates what's for dinner. Pat has an extensive inventory of diesel detail parts and decals. They also carry many parts from other manufacturers.*



*There is always lots of interesting models at Norm's tables.*





*The model contest was sparse, but the models that were there were good. We would encourage people to bring models to the model contests. We all like to see what you are working on. For the upcoming March Meet in Chicago, the O Scale Resource will be sponsoring the model contest again so bring your models.*



*Here are a couple of shots of the Central Ohio O Scale Engineers layout that was at the show. The layout is in the background of the next photo and you can see the size of the layout. One of the members had a string of modern auto rack cars running. It takes a good size layout to run long cars like that.*



*Some scenes on the Indianapolis group's P:48 layout. The layout has three engines running at any one time. The loop has the switch engine pulling a few cars. In the foreground, the Alco road engine shuttles back and forth automatically. In addition, a switch engine can work the industry tracks while the loop is running. John Pautz from American Switch and signal supplied the parts and built the #10 crossover in the foreground.*



## By Glenn Guerra

O Scale Kings had a display at the Indianapolis National O Scale Show. In the 1960's when Bob Colson ran the All Nation line, he and some other manufacturers started a trade association and developed a logo with the crown on the letter O. The idea was similar to manufacturers using the NMRA logo on their product to signify that it complied with their standards. The O Scale manufacturers association used the slogan "King of Scales" with their logo. The original trade association withered away and disappeared. In the 1980's, Bob Smith of Pecos River Brass revived the idea as an organization devoted to promoting the O Scale hobby. The new organization called itself O Scale Kings. Since that time, they have been actively promoting the O Scale hobby. They attend O Scale shows, as well as, non O Scale shows. The O Scale Kings introduce many people who are not O Scalars to the hobby. The organization is run by the members who pay yearly dues to belong. There are no paid employees. The dues go towards the display you see here and the shipping costs to get the display to the shows. When the booth is at a show, it is manned by volunteers who pay their own way to the show. In the photo above, the current president of O Scale Kings, Bob Lavezzi, talks to someone about O Scale Kings. If you would like to help promote the O Scale hobby, consider joining the group. Even if you don't want to work any shows, being a member will introduce you to other like minded people and your dues will help support their efforts. To get involved, contact them at [www.oscalekings.org](http://www.oscalekings.org) for more information.

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# Two Railing A New Haven EP-3 Electric



**By Fred Oakland**

Modelers recently had the luxury of several New Haven two rail offerings including: Weaver Osgood Bradley passenger cars, converted troop sleeper express cars and the K-Line streamline passenger cars. However, “Juice Jack” fans have not had much in the way of passenger motive power to choose from to pull this equipment. In the 1950’s, Parmalee & Sturgis offered a New Haven EP-3 kit which tested the abilities of a skilled modeler to both complete and lift the model on to the rails. (DSCN4506) In 2005, Mike’s Train House (MTH) offered a three rail EP-3 locomotive in three paint schemes for the New Haven Railroad. This is great as the locomotive is historically significant, and offered the potential to pull some exciting two rail passenger trains from several eras. (DSCN6251)

*Fred also owns one of the Parmalee & Sturgis models of the New Haven EP-3. The models are well proportioned, but lack the fine detail of the MTH model.*





*Fred converted two of the MTH engines so he would have one in each of these two paint schemes.*

The New Haven Railroad purchased ten 2-C+C-2 EP-3 locomotives in 1931 for passenger service. (NH080) Because of their long platforms on each end, they were named “Flat Bottoms”. The locomotives, built by General Electric, utilized the same wheel arrangement successfully employed by the Cleveland Union Terminal locomotives built in 1929. The AC powered New Haven locomotives employed DC 3rd rail pick up to enable through passenger service to Grand Central Station. Several of the locomotives were loaned to the Pennsylvania Railroad to evaluate the wear and impact of the wheel arrangement on their rails. The wheel arrangement proved successful on Pennsy rails, and became the basis of the chassis for the GG1. The last of the EP-3 locomotives were retired in 1961.

This article covers the conversion of the MTH EP-3 locomotive mechanism from three rail to two rail. The article includes a diagram for DC two rail wiring and directional lighting. For the more adventurous, pictures and diagrams are included for the installation of Digital Command Control (DCC) to enable operation of the pantographs and directional lighting. The project employs custom tooling to assure square and true assembly of scale drivers. If this process is too challenging, there are firms that specialize in three rail to two rail conversion. A recommendation is made at the end of the article.

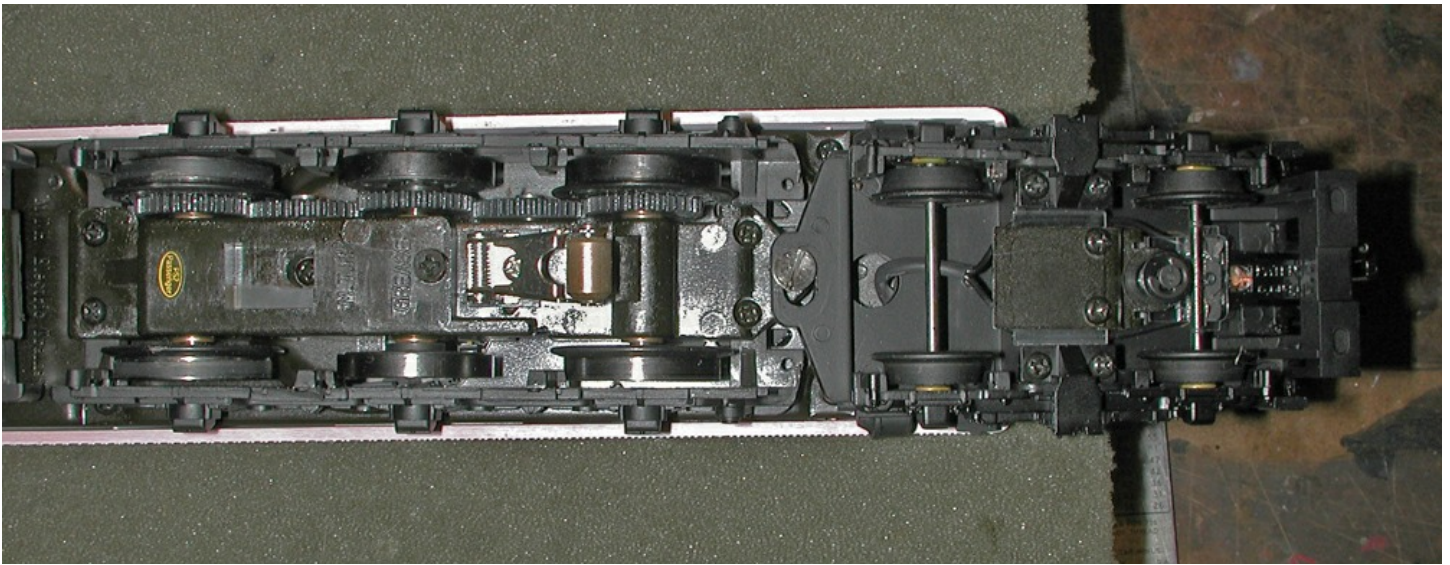
The experience of wobbly wheels in a three rail to two rail conversion, using a conventional vice, was sufficient to have some “not quite” universal tooling produced and purchased. The tooling aids in the wheel removal, side gear removal, side-gear installation and scale wheel assembly. Seven tools are required to have repeatable success in producing square wheel assemblies.

- 1) NWSL Wheel Puller
- 2) Arbor Press
- 3) ¼ inch Jacobs Chuck
- 4) Wheel Cup – Fixture A
- 5) Wheel/Gear Mounting – Fixture B
- 6) Wheel Mounting Support - Fixture C
- 7) Arbor Ram to Chuck Stud – Fixture D

Drawings of the cup, plate and support follow the article, as well as, the sources/part numbers for the wheel puller, arbor press and chuck. The use of a controlled means to assemble the wheels is essential. The following section will illustrate the use of the tools to disassemble the three rail trucks and assemble the two rail wheels to the truck castings.

While this wheel fixture/assembly tooling is being fabricated, order from NWSL the pilot truck wheels and main driver axles, and from the House of Duddy the GG-1 scale drivers. (These are no longer available, but do show up at train shows. We are trying to find out who has these now. If you have any information, [please let us know.](#))

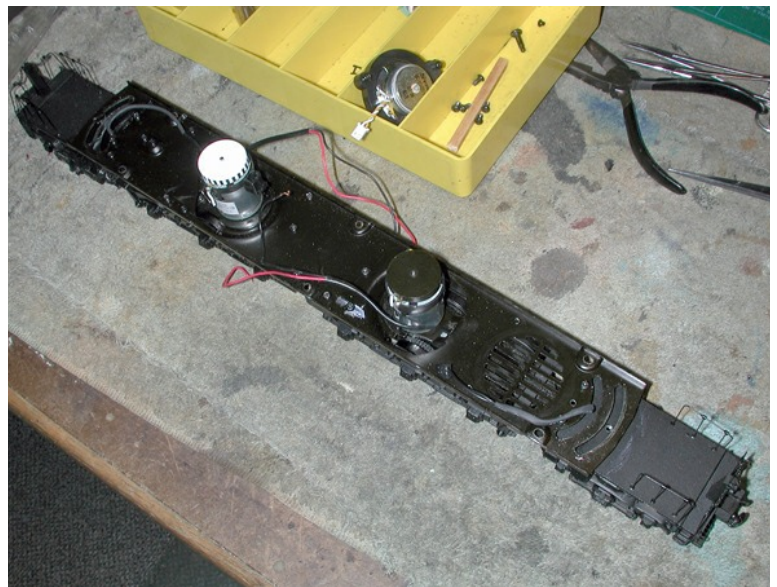
See parts list for details.



*Fred recommends that you place your model in a cradle, as shown, when you disassemble it.*

### Chassis Disassembly

The process may appear daunting; however, each step in itself is straightforward. Place the locomotive in a soft cradle upside down. It is helpful to have a tray with small compartments to place your parts in as you remove them. Remove the six screws that attach the chassis to the locomotive cab housing. Label the bottom of the trucks with a felt tip marker “front” and “rear”, as well as, the chassis. The inside of the cab housing already has a large molded “R” to indicate rear cab. Lift the chassis straight up. Through the neat design of MTH, there are no wires to disconnect between the cab and chassis. As hard as this is to do, remove the three main electronic circuit boards, battery, brackets and smoke unit. At each end of the chassis, remove and retain the circuit board with eight solder pads with eight leads radiating toward



*Your chassis should look like this once you have the circuit boards removed.*

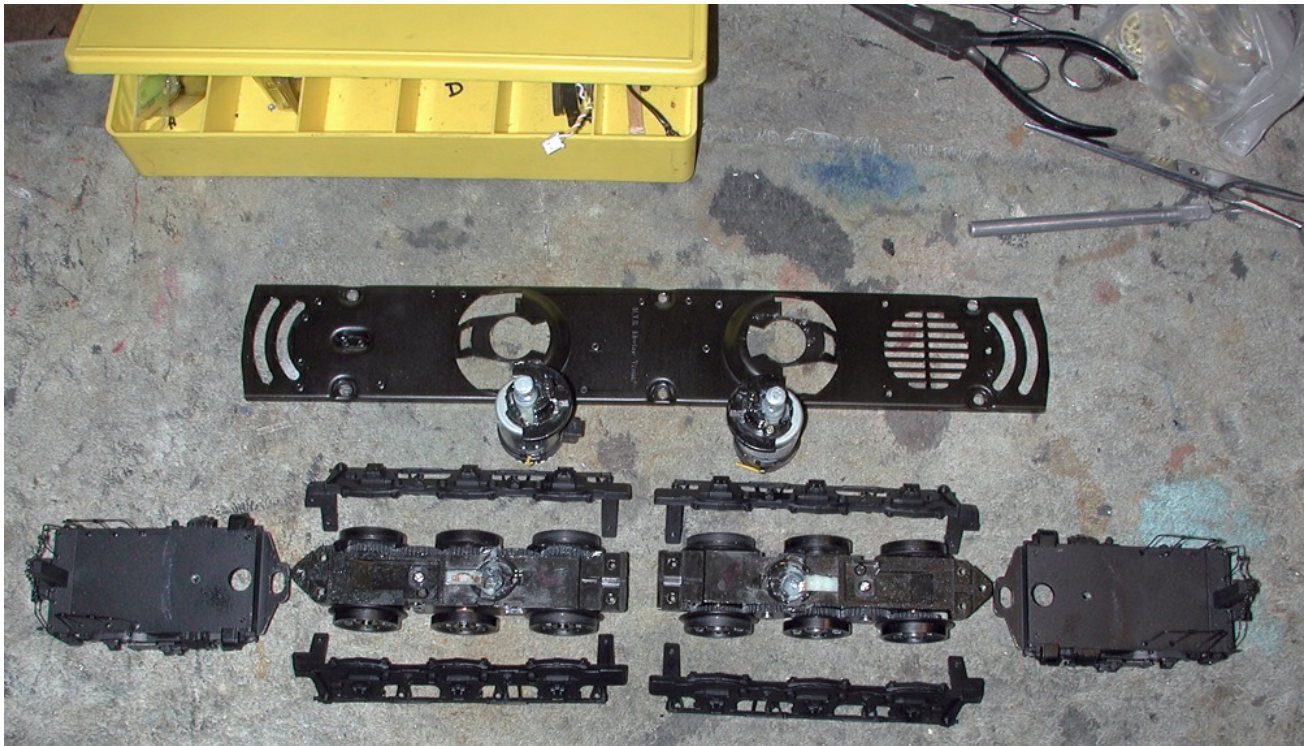


the center of the chassis. Preserve as much as possible of the lead length for each wire from the circuit boards. Remove the two screws holding the “cab” assemblies to expose the truck pivot screws. Mark the platforms on the bottom to denote front and rear. Remove the two pivot screws and set aside the platforms. Unsolder the wires going to the motor terminals. Remove the motor wires, insulators and 3rd rail roller assemblies. Save the wires and parts, except for the rollers. Remove the Phillips head screw, and retain each motor from the truck assemblies.

*A detail of the chassis showing the front platform flat head slotted pivot screw.*



Rotate the flywheels to “unscrew” the motors from the trucks. Make sure you mark the frame and the truck assemblies with “front” and “rear”, as it will be critical for proper installation of insulated and un-insulated wheels. At this point, you will have a bare chassis, two platforms with pilot trucks, two motors, two main

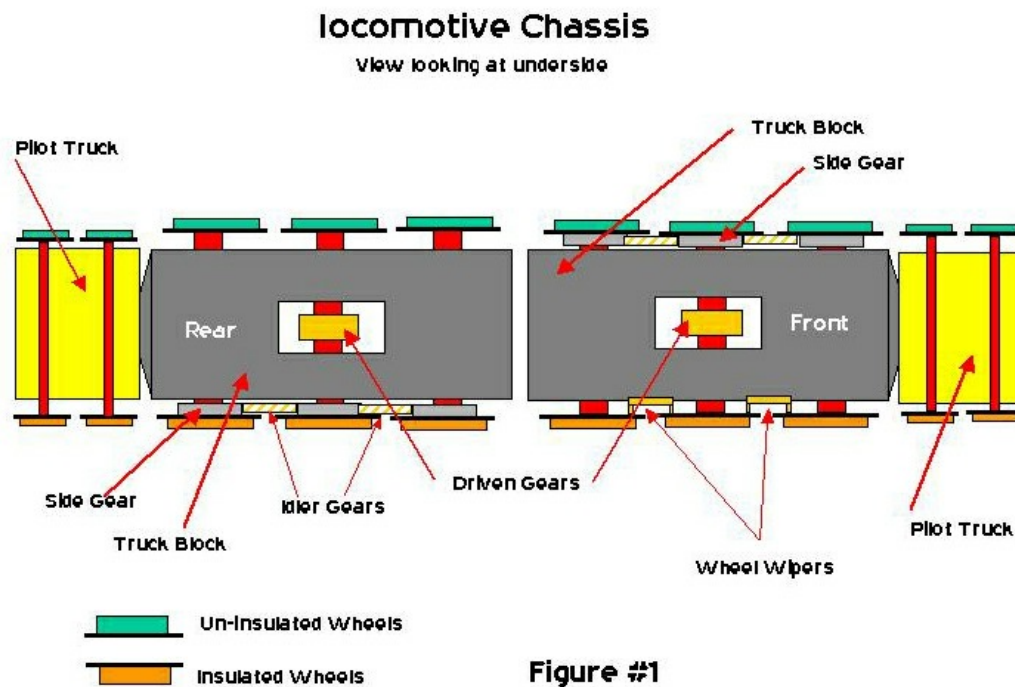


*This is what your chassis will look like when it is disassembled. Be sure to mark all the parts so you can put them back in the right order.*

trucks, two cabs and two circuit boards. Do not despair, let the fun begin!

**The Goal**

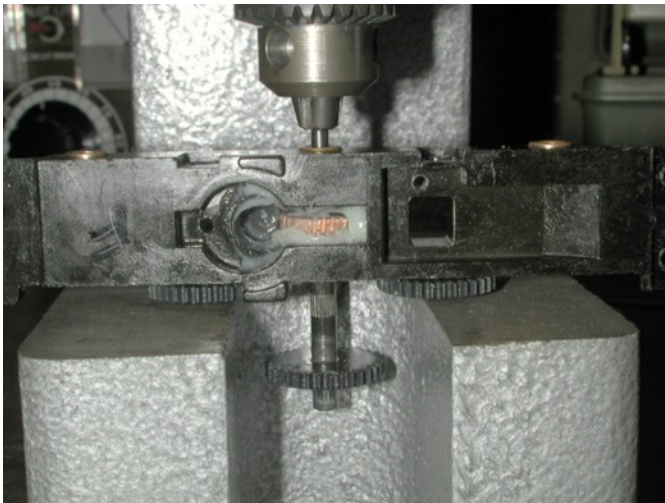
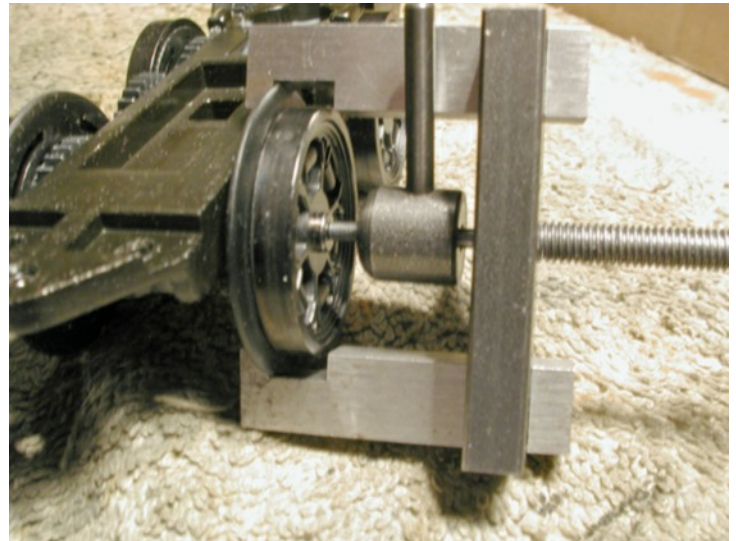
It is very important to keep all the parts in their correct relationship to the truck “block” from which they



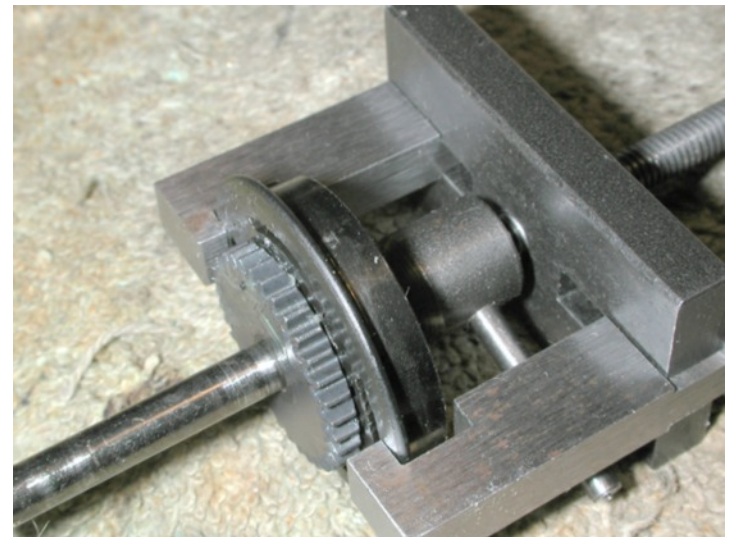
were removed. The following figure #1 illustrates the location of the insulated and un-insulated wheels.

### Truck Disassembly

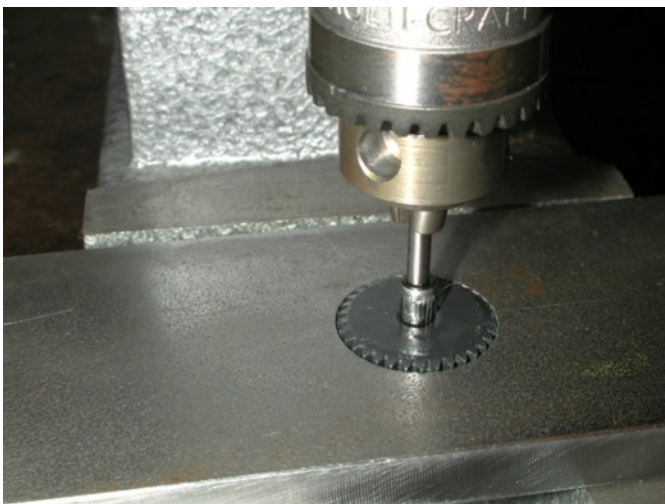
On the side opposite the gears, put in place the wheel puller on one of the outside wheels. The wheel puller makes easy work of removal of the main drivers on the non-gear side. Next, slide the two geared wheel - axle assemblies from the outside ends of the truck "block". Remove the wheels from geared axles using the wheel puller. Using an arbor press, drive the center axle out from the driven gear in the truck block. Note the orientation of the gear, and remove it from the truck block. Press the gears off from the MTH axles using the arbor press.



*This view shows how Fred pressed the driver axle out of the drive gear. The chuck was a modification to Fred's arbor press and he describes this in the article.*



*These two views show removal of the wheels from the axles. The top view shows removal of the first wheel. In the bottom view, the remaining wheel and axle have been removed from the chassis block.*



*Fred made a plate with a hole in it to restrain the drive gear and keep it perpendicular to the axle when pressing it on and off the axle.*

Repeat the disassembly process for the second truck assembly.



### Constraining the Idler Gears

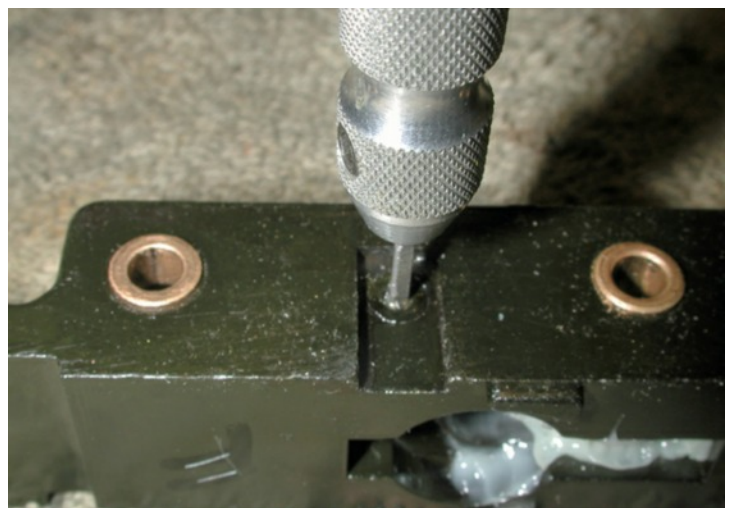
To prevent the idler gear from coming in contact with the insulated wheel rim, the side play in the idler gear needs to be removed. Remove the shouldered pin retaining each of the idler gears mounted *rear* truck block using a vice grips. This is the side where the insulated drivers are to be installed. A slight twist will loosen the pin. Place a NWSL .010" thrust washer under the head of the shouldered pin, and gently tap the pin back in place so that the gear can freely rotate, but not have any lateral movement on the shaft.

*This view (left) shows Fred removing the idler gear pin to place a washer under it.*

### Wheel Wiper Preparation

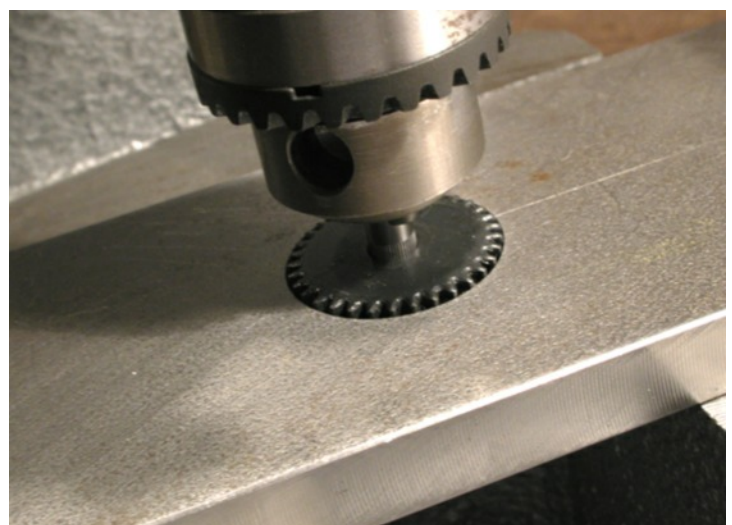
The *front* truck block has a rectangular recess between each driver. The two recesses are located on the side where the insulated drivers are to be installed, and will be the mounting location for an electrical wiper pickup. There is a pilot hole already cored in each rectangular recess. Tap each of the cored holes with a 1-72 tap.

*This view (right) shows Fred tapping an existing hole so he could mount an electric pickup for a wiper on the insulated drivers.*

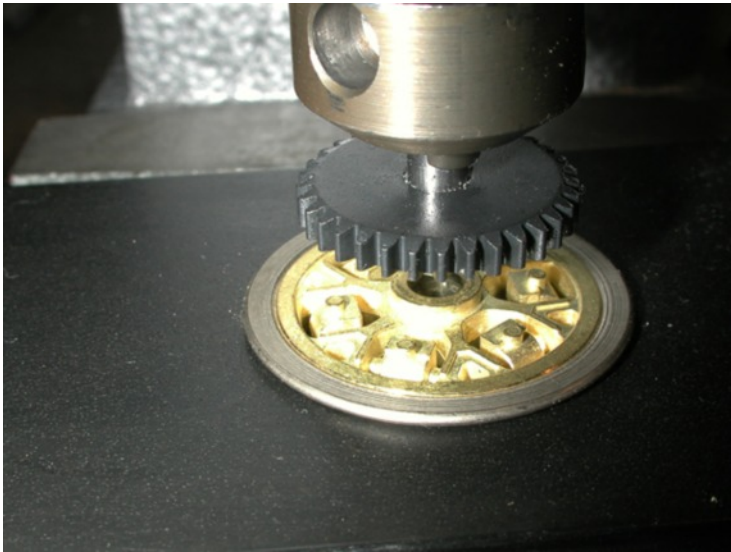


### Wheel Installation

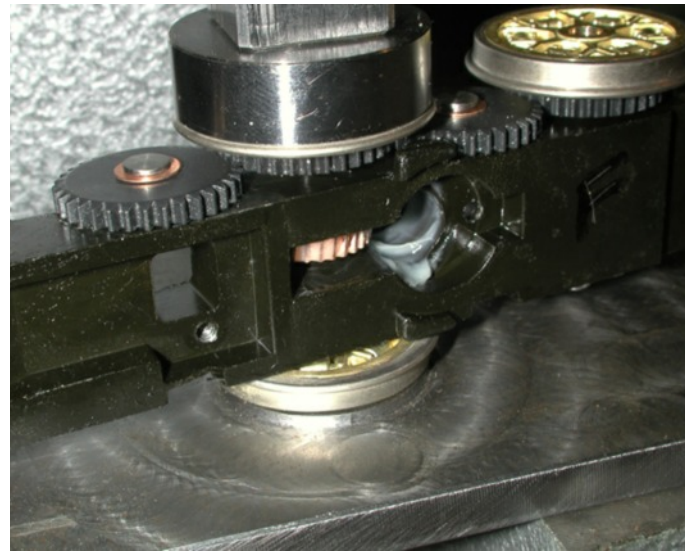
Mark the rims of drivers that are insulated with a felt tip marker to assure all the insulated drivers are mounted on one side as shown in Figure #1. Reassemble one truck at a time. Install the idler gear on the NWSL axle. Using the arbor press, chuck up the NWSL axle such that the axle end with the two knurled bands points toward the gear, which is resting in the mounting fixture. Press the axle into the gear making sure that the axle protrudes from the other side .198". Take your time, and measure often. Repeat the process for the other two axles. For the *rear* truck, press on the insulated driver on the gear side of the previously assembled gear/axle assembly using the arbor press and fixture. Repeat the process for the remaining two gear/axle assemblies. Slide the center driver/gear/axle assembly back into the center truck block axle hole. The assembly will be pressed through the driver gear using the wheel cup, fixture A, and arbor press. In order to center the driven gear in its opening, put a slotted .040" thick washer underneath the driver gear on the side opposite from the applied



*Pressing the NWSL axle into the drive gear. By using the chuck to hold the axle, you are assured that the axle will be pressed into the gear perpendicular to the gear. This will eliminate any gear wobble, and make a smooth running engine.*



*Above, Fred presses the new axle-gear assembly into a driver.*



*The photo above shows Fred pressing the new axle - wheel assembly through the center drive gear and through the other wheel. Fred made a cup that fits the wheel and assures the arbor press will press evenly on the wheel.*

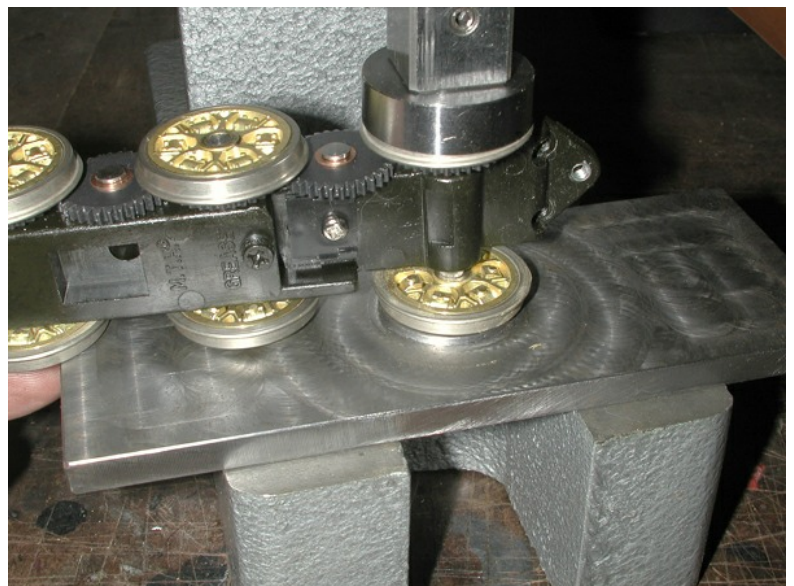


*The photo on the left is the slotted washer Fred made to act as a spacer when pressing the new axle assembly into the drive gear. Place the spacer and the drive gear into the truck block and press the axle in. Remove the spacer and you will have the proper clearance on each side of the drive gear.*

pressure. Press the assembly in place, being careful to properly mesh with the adjacent idler gears. Remove the gear spacer washer. The next step will be to press on the conductive driver on the opposite side. Press the backside of the House of Duddy driver such that the overall driver thickness is .200". Place the driver on fixture C, and press the truck block/wheel/gear/axle assembly to achieve the spacing per the NMRA track gauge. Repeat the above process for the other two axles. Using the fixtures is essential for wobble free wheels. The procedure to assemble the **front** truck is identical **except** the insulated wheels are on the non-gear side of the truck. See Figure #1.

Now is the time to make sure there are no electrical shorts, and all the wheels are on the proper side. Put the assemblies on a powered track, roll them and turn them laterally within the rails. An ohmmeter can do the same, but is not as much fun.

*Here is the final assembly of one of the truck blocks. Making some fixtures will help in keeping the wheels and axles perpendicular and keep them from wobbling.*



## Fitting the Wheel Wipers

Trim two pieces of single sided copper clad circuit board from Radio Shack per Figure #7. Fabricate two wipers per Figure #8. Install the two pieces in the rectangular depressions on the rear truck, and fasten with 1-72 screws. Make sure the cladding is cut such that surface where the wiper mounts is isolated electrically from the mounting screw. Trial fit the wipers to achieve contact with the insulated rim. The wipers should have a slight bend at each end to maximize contact area and force. Once the fitting is done, tin the back of the wiper and solder it to the circuit board. Test for continuity to the tire, verifying its insulation from the truck block. Temporarily remove the wiper assemblies, noting their location. Mask the truck block, and paint the wheels engine black. Clean the overspray on the treads and the backside of the tires where the wipers contact the wheels. Reassemble the wipers and solder flexible wire to each of the wipers. Mount the side frames to each of the truck assemblies, sit back and have a beer.



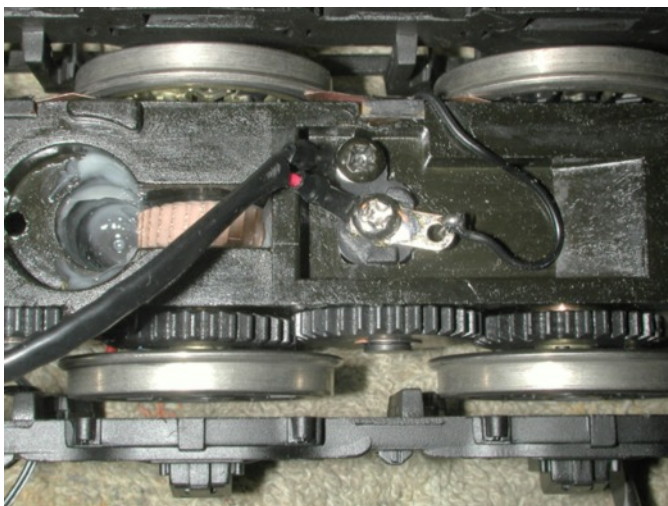
*We can see the wipers Fred made for electrical pick up on the insulated side of the truck block. Note that part of the copper cladding on the circuit board has been removed to prevent shorting through the mounting screws.*



*With scale diameter drivers, you will need to make some clearance on the motor mount as shown in this photo.*

## Mounting the Motor and Trucks onto the Frame

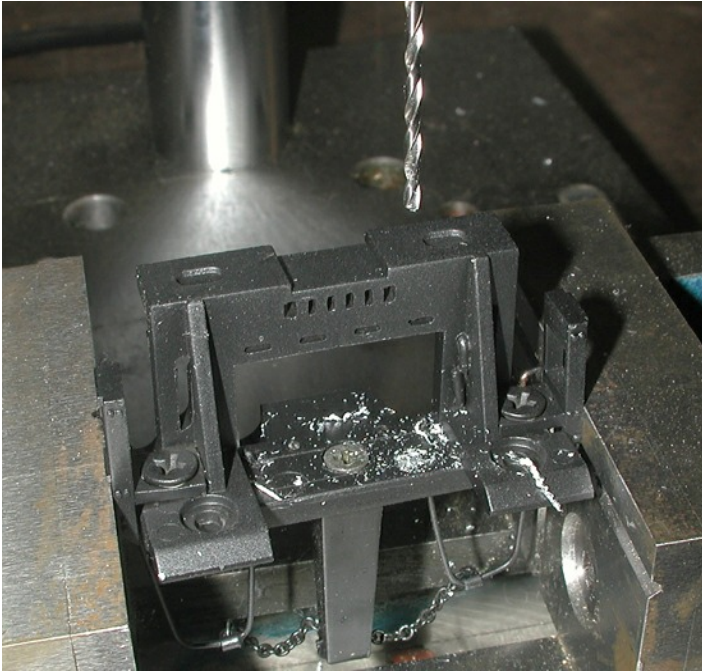
Modify the lower motor mount to clear the driver flanges. (DSCN7401) Remove the mounting from the motor, and cut the mounting ears sufficient to clear the driver flanges. After cutting, remove any metallic particles from the motor mount that will cling to the lubricant. Remount the truck to the motor, and check for clearances. Repeat the process for the other motor. Drill out one of the unused frame holes to route one of the wiper pick up wires to be routed to the topside of the frame. The other wiper wire is connected to the screw that used to pick up power from the center rail roller assembly. Making sure of the previously made markings of front and rear on the trucks and the frame, insert the wiper wire from the **rear** truck through the frame hole; slide one of the motors through the frame and “thread” the motor gear into the truck and secure with the truck/motor screw. Repeat the process for the **front** truck. Connect the motor leads temporarily, and give the frame a spin on the layout.



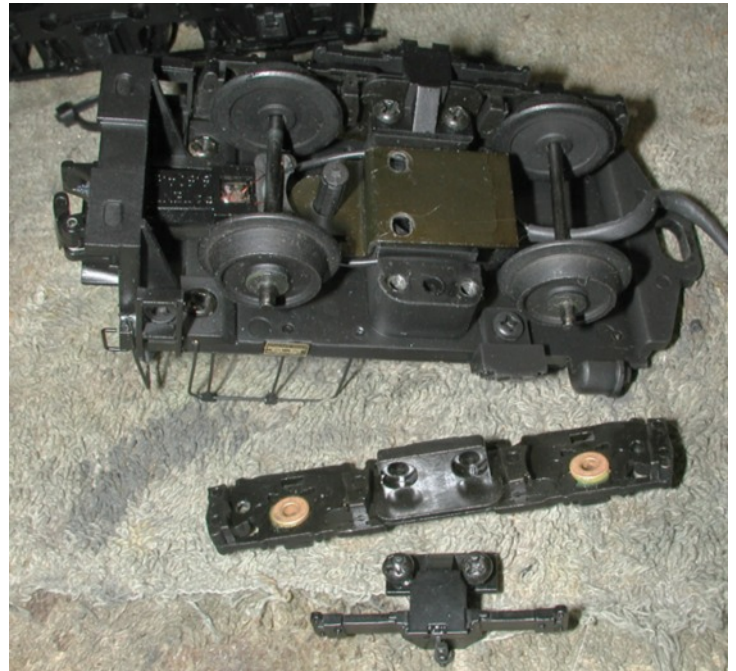
*Fred has a small wire coming from the wipers he made to the mounting screw for the center rail electrical pick up. Since this hole is insulated from the truck block it made an ideal mounting for the wiper contact wire. The wires going into the chasses are from the original wiring harness.*

## Modifying Pilot Trucks

Referring to Figure #1, note the placement of the insulated side of the wheels in the front or rear pilot truck. Remove the side frames from a pilot truck, and remove the tinplate wheels and the coupler assembly. Remove the two flat head Phillips screws holding the front buffer and steps to the pilot truck assembly. Drill two #50 mounting holes in the buffer/step and tap with a 2-56 tap. Remount the buffer/step assembly. Place three .025" coupler shims between the platform and the coupler. Secure the coupler assembly and shims to the platform with two # 2-56 x .412" screws. Install NWSL 36" pilot truck wheels, noting the location of the insulated wheels. Repeat the process for the second pilot truck. Remount the pilot trucks, observing the location of insulated wheels in Figure #1. Again, test the chassis.



*Drilling the pilot beam for the coupler mounts. These holes will be tapped 2-56 for the mounting screws.*



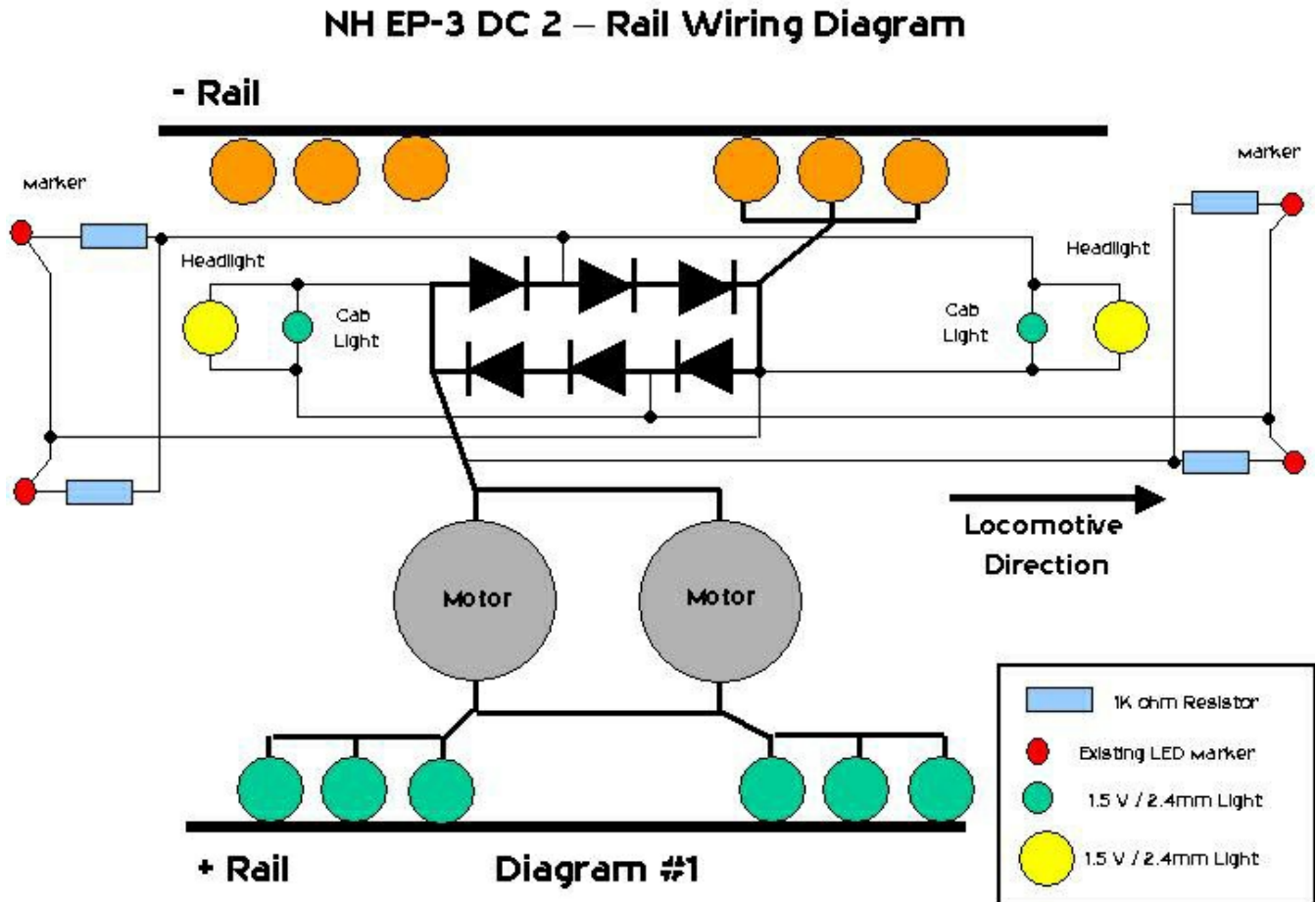
*Disassembling the trucks. Make sure the insulated wheels you put in are on the correct side.*



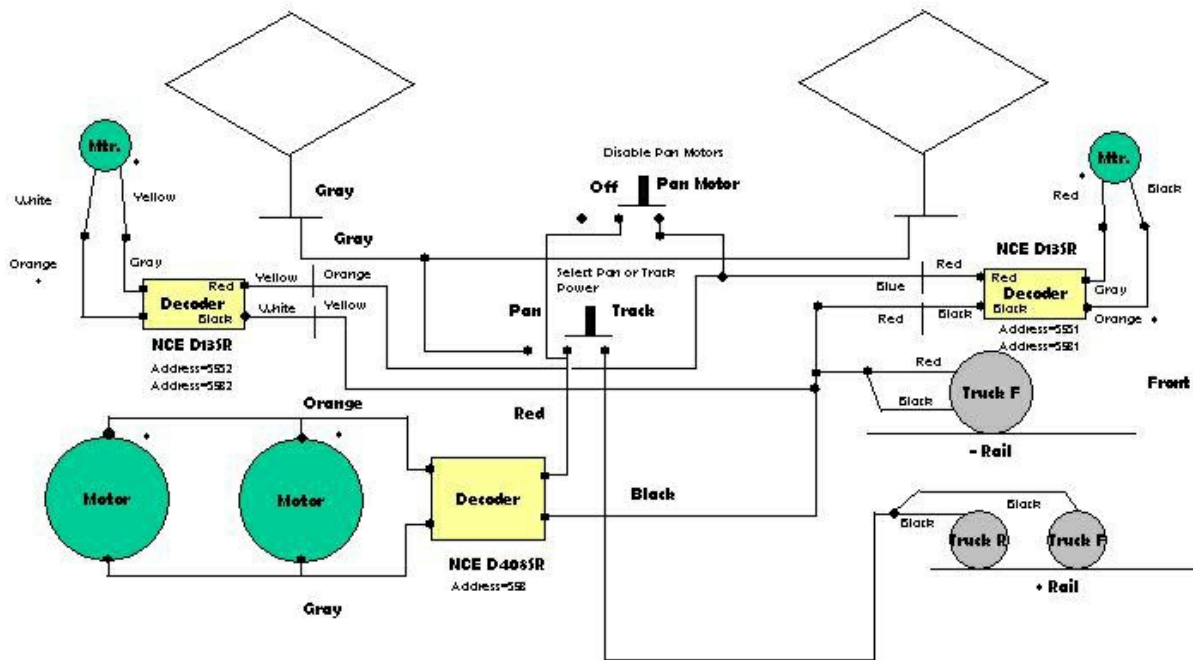
*The completed chassis ready for final wiring. It is a good idea to test the locomotive in this state to see if there are any changes that need to be made.*

## Locomotive Wiring DC & DCC

The choice of how to rewire the locomotive almost borders on religion. The following is a diagram (Diagram #1) for wiring the locomotive for conventional two rail DC with directional lighting, along with a series of diagrams of DCC installation to allow operation of the locomotive, pantographs and lighting. (DSCN7416), (DSCN7425) **Note:** The tables for the decoder CV's and wiring are dependent on the manufacturer and type of the decoder.



*Fred made this wiring diagram for straight DC two rail operation. You will need to discard the wiring that comes with the locomotive.*



**Note: Decoder Lock**  
 Set CV 15 = 1 Set CV 16 = 2 Decoder Locked  
 Set CV 15 = 2 CV 16 = 2 Decoder Unlocked  
 and programmable  
 CV 15 Programmable when Locked

**Pan Motor Voltage set to 1 V Max**  
 CV 5 = 17 = 15V/128 Max. Voltage  
 CV 6 = 8 Mid. Voltage

**Note • on Pan Motor • Terminal Lower Pan**  
 Pan Motor Operates Pan = 6V & 60 MA  
 Decoder • Lead Connected to Motor - Terminal  
 so Pan Raises when Forward mode selected

Above is a basic wiring diagram for a DCC installation. With this installation, the pantographs can be raised and lowered from your hand held control. Also, the power can be picked up (or not) through the pantograph. Below are the CV values Fred assigned to his two locomotives. It is a good idea to write these down for trouble shooting any problems.

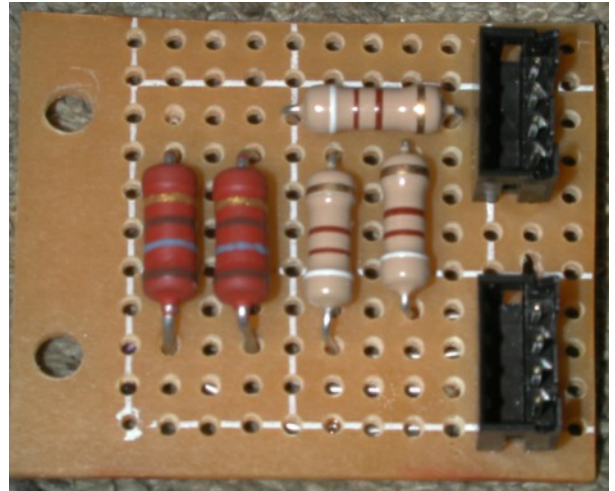
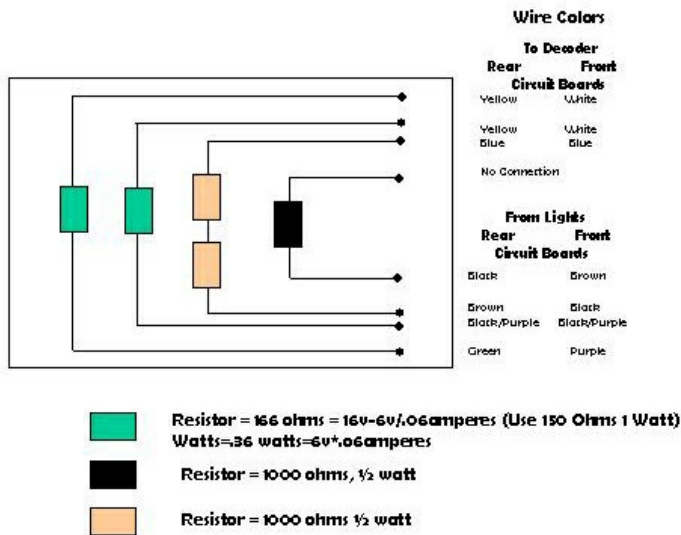
### CV Values for Locomotives 353 and 358

FOF*	Color	Item	CV	Value	State
Output 1 CV 33 = 1	White	Front HL Front Cab	120	dec/hex 1/x01	On Forward
FOR* Output 7 CV 34 = 64	Yellow	Rear HL Rear Cab	126	2/x02	On Reverse
F1 Output 2	Green	Reserved Horn	121	00/x00	On For/Rev
F2 Output 3	Violet	Reserved Bell	122	00/x00	On For/Rev
F3 Output 4 CV 37 = 8	Brown	Marker Red Rear	123	130/x	On Forward
F4 Output 5 CV = 2	White/ Yellow	Marker Red Rear	124	129/x	On Reverse
F5 Output 6	White/ Green				
F6	White/ Blue				

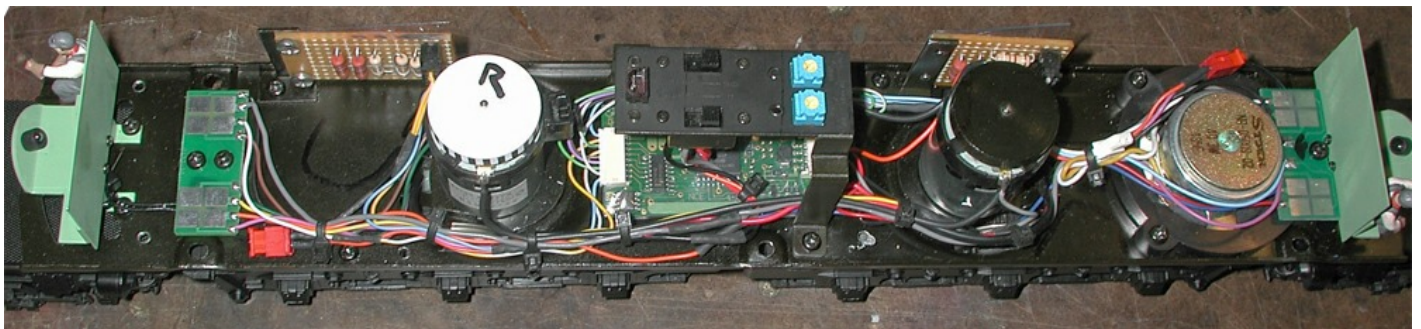
Loco Motor Decoder Address = 353  
 Loco Motor Decoder Address = 358



## Lighting Resistor Circuit Boards For Locomotive 353



*Fred made the drawing on the left to help layout a small circuit board to hold the resistors. Mounting them on a board made the installation of the wiring in the models much cleaner. On the right is a view of the final board.*



*Taking the time to make wiring diagrams, and think the problem through, pays off with a neat and tidy installation.*

## Observations

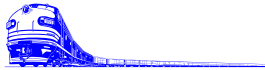
This was the second effort by the author to two-rail a three rail model. The tooling has enabled the author to take on projects of higher difficulty and complexity. The project has resulted in a smooth and quiet operating locomotive with several distinctive features not seen in 2 rail locomotives of this price range.

# O SCALE SHOWS & MEETS

*The O Scale Resource Magazine* will now be providing a free listing of upcoming events. This small, text only listing will include the Event, Date, Location, Type of Event, and Contact Information. [Click here](#) to go to the sign up form. This form will take your information, and we will publish it in our next issue. If it is an annual event, you will need to submit your information every year.

Cleveland 2-Rail O Scale Train Meet  
[November 1<sup>st</sup>, 20014](#)  
Lakeland Community College 7700 Clocktower Dr.  
Kirtland, Ohio 44094  
9:00AM-2:00PM  
Email: [jl464@yahoo.com](mailto:jl464@yahoo.com)  
Web Address: [www.cleveshows.com](http://www.cleveshows.com)

Gadsden Pacific Division Toy Train Museum - Toy Train Show  
November 14<sup>th</sup> and 15<sup>th</sup>, 2014  
January 9<sup>th</sup> and 10<sup>th</sup>, 2015  
Tucson Expo Center - 3750 E Irvington Road  
Tucson Arizona  
Email: [TrainShow@gpdToyTrainMuseum.com](mailto:TrainShow@gpdToyTrainMuseum.com)  
Web Address: [www.gpdToyTrainMuseum.com](http://www.gpdToyTrainMuseum.com)



Eastern Pennsylvania O Scale Show  
November 15<sup>th</sup>, 2014  
Strasburg Fire Department  
Strasburg, Pennsylvania  
Email: [jdunn8888@hotmail.com](mailto:jdunn8888@hotmail.com)  
Web Address: [www.scaletworail.com](http://www.scaletworail.com)



Chicago March Meet  
March 13, 14 & 15, 2015  
Weston Lombard Hotel  
Lombard, Illinois  
9:00 AM-2:00 PM each day  
Email : [info@marchmeet.net](mailto:info@marchmeet.net)  
Web Address: [marchmeet.net](http://marchmeet.net)




O Scale West  
February 5-7, 2015  
Hyatt Regency  
Santa Clara, California  
9:00 AM to 5:00 PM each day  
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Martinsburg, West Virginia  
 Old B&O shop complex dating to the 1860's  
 Lincoln stood on the platform of the depot that is now the Amtrak station  
 and looked across the tracks at this building.

