

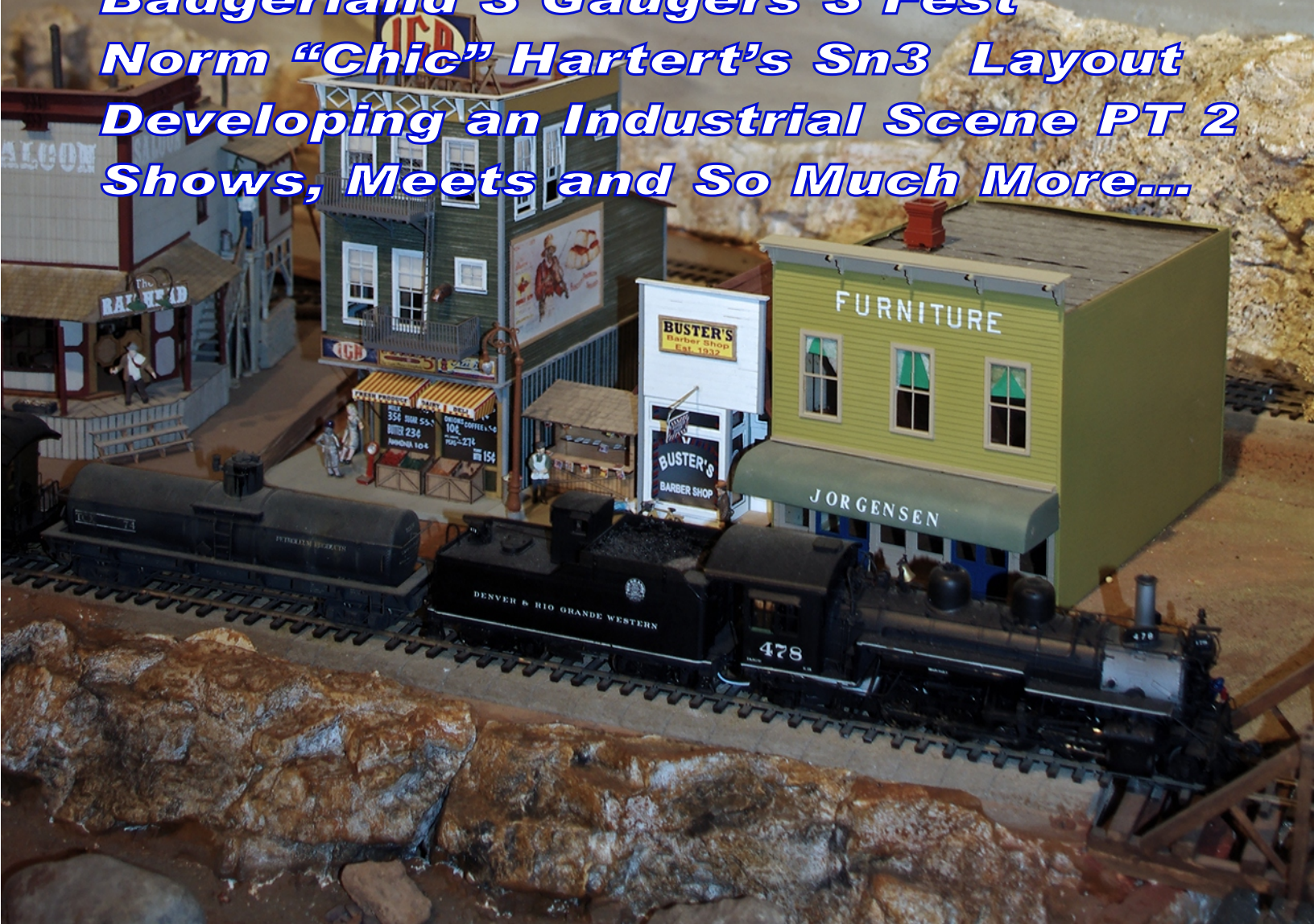
THE **S** **RESOURCE** **SCALE**

NEWS, REVIEWS, INFORMATION TO USE

December/January 2017

Volume 3 No. 2

***Expanded Workbench
“Pogo Stick” Couplers?
Badgerland S Gaugers S Fest
Norm “Chic” Hartert’s Sn3 Layout
Developing an Industrial Scene PT 2
Shows, Meets and So Much More...***



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December/January

Volume 3 No. 2

Welcome to the online *S 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 forward or back, searching to go to a specific page, enlarging pages, printing pages, enlarging the view to full screen, and downloading a copy to your computer.

Front Cover Photo

Small town modeling on Norm “Chic” Hartert’s Sn3 Layout.

Photo by Glenn Guerra

Rear Cover Photo

Another shot of Norm “Chic” Hartert’s Sn3 Layout.

Photo by Glenn Guerra

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The Model Railroad Resource LLC publishes ***THE O SCALE RESOURCE*** and ***THE S SCALE RESOURCE***. Be sure to look at both of our magazines. There are many articles in our magazines that are not scale specific and will be of interest to you. Click the magazine title in this announcement to see the magazine.

From the Publisher's Desk



If you haven't already heard, there's a new name in Indianapolis being associated with a model train show. Yep, you guessed it – that name is the Model Railroad Resource! In the past, there hasn't been a Midwest S scale show, although there are some regional shows held in the Midwest, and Glenn recently attended the Badgerland S Gaugers S Fest in Oconomoc, Wisconsin. Be sure to check out our coverage in this issue.

We felt there should be a larger show for S scale in the Midwest, so we decided to rebrand the Indianapolis O Scale show and include S scale as well. It is now known as the annual Indianapolis O Scale Show and S Scale Midwest Show. This is something that has been done successfully at O Scale West / S West in California. The show will be held at the Wyndham Indianapolis West September 22-23, 2017. This will continue to be an all scale show, and will bring in more people and vendors. The other idea to come out of the Indy show this year was to promote September as National S Scale Month and October as National O Scale Month, both of which will lead up to November and National Railroading Month. We hope to see you there! For more information, see the [ad in this month's magazine](#) or go to the website indyoscaleshows.com.

This time of year always has me thinking of what I can be thankful for. I'm thankful for many things, but I'll limit it to the magazine for now – *The S Scale Resource* couldn't survive without our advertisers and readers, so I am thankful for them and all the great feedback they provide. I'm also thankful for our authors, layout owners and the articles being submitted to us. We are beginning to get articles from more people, allowing us to provide you, the reader, with variety and something new in every issue. Please keep them coming.

That being said, this issue has a great "On the Workbench" article from Jas Milham in the UK. Not only did he submit a picture and a description, he sent us a whole article to go along with it. Thanks Jas! Glenn brings us Part 2 of *Developing an Industrial Scene* and visits Norm "Chic" Hartert's Sn3 layout. We also have a great article by Michael Fox on the "pogo stick effect" of couplers. The end of Michael's article asks for your thoughts, so please send them to either me or Dan so we can publish them:

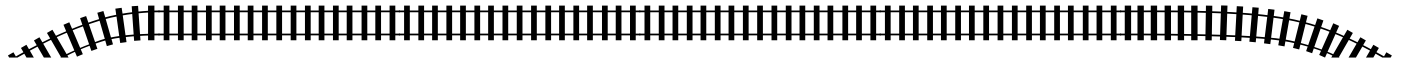
amy@modelrailroadresource.com or daniel@modelrailroadresource.com

I hope you enjoy this issue, and we wish you and yours glad tidings during this festive time of year!

Happy Reading & Happy Modeling,

Amy Dawdy

NEWS YOU CAN USE



Bill Mosteller from greatdecals.com says: Louisville and Nashville lightweight passenger coach decals, in dulux gold, are available in S-scale (set # 136) for \$3.49 each. The sheet includes L&N road names and a dozen pairs of "canned" road numbers from which any valid car number can be assembled. Each sheet does one car. Artwork by Curt Fortenberry. See there web site, www.greatdecals.com



Yard House & Storage is the latest release from Railroad Line is a nifty little yard structure. Available in all four major scales the kit consists of tabbed wall panels, & peel & stick construction techniques. Whether used for rail service, or as a maintenance facility, this kind of structure was commonly found both in and around railroad & industrial areas. This laser-cut kit features simple construction with a special focus on beginning & intermediate modelers. Interlocking walls, and self-adhesive corner posts help to make this offering suitable for modelers of any skill level. It will be available through your local retailer or visit www.railroadlinemodels.com for more information. S Kit #9304 \$37.95 retail.

Dave from [LBR Enterpris, LLC](http://LBR-Enterpris,LLC) has a replacement Box Style headlight for the AF #21088 Franklin engines or for kit bashing the AFL Casey Jones engines. The price is \$17.60 ea. with FREE shipping in CONUS. They are available in RED or BLACK.



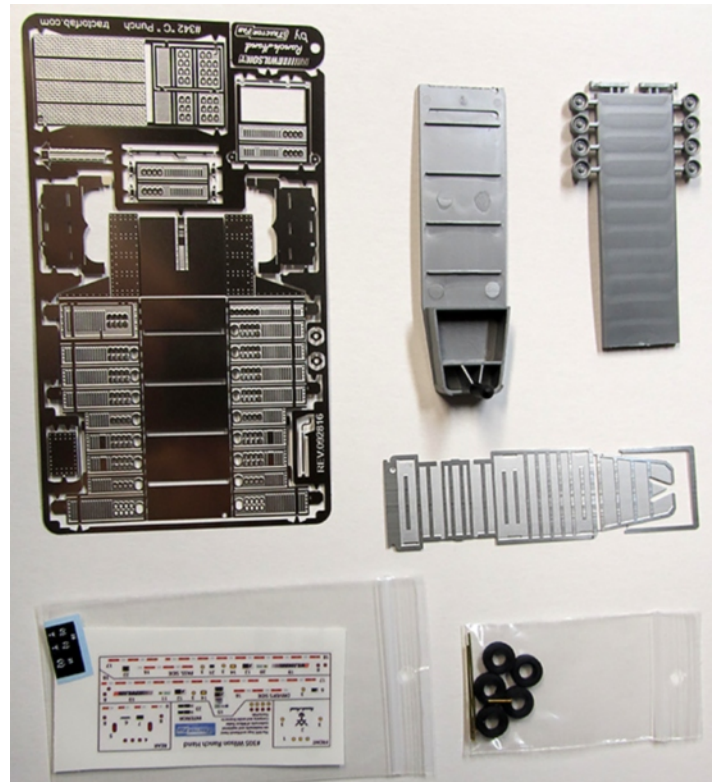
#42613-BX1 "ILLUMINATED"
(AC or DC) Headlight

Jeff Schwank from [TractorFab](http://www.tractorfab.com) announces the Third release in their Livestock Trailer Series, an 18' Wilson Ranch Hand Goose-neck Trailer in 1/64 scale. The trailer is similar in design to previous releases, and is available either assembled or in kit form. For those considering the kit version, several improvements have been made to make the kit easier to build. These include:

- A pre-cut roof molding
- Integrated front center stiffener (no longer a separate piece)
- Integrated mudflaps on the fenders (no longer separate pieces)
- Self locating rear door latch (one of the harder parts in previous kits to place correctly)

Additionally, several other enhancements are included in this kit: spare tire and bracket, a partial interior detail kit, and revised "slotless" fenders are also a visual improvement over previous versions. Full color decals and a 3 paint scheme color guide is also included.

The kit is licensed to TractorFab by Wilson Trailer, and is a companion to two previously released Wilson trailer kits, a 36' tri-axle version released in 2015, and a 24' tandem version released in 2014. TractorFab has been providing photo etched detail items and kits to 1/64 and S scale modelers since 2010, and is based in Illinois. www.tractorfab.com



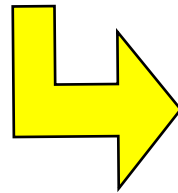
[Tichy Train Group](http://www.tichytrain.com) continues to add to their S Scale decal line. In celebration of reaching 200 decals we are giving 10% off on decals through the end of November. Just use DECAL in the coupon box at checkout.

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- 10176 PIEDMONT & NORTHERN 40' DS BOXCAR
- 10177 PIEDMONT & NORTHERN 40' DS BOXCAR
- 10178 PIEDMONT & NORTHERN 40' SS BOXCAR
- 10179 SP 41' WOOD SIDE GS GONDOLA
- 10180 UP 41' STEEL SIDE GS BEET GONDOLA
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- 10182 UP 41' STEEL SIDE GS GONDOLA
- 10183 20 PAIR RAISED LETTER BUILDERS PLATES ASST
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- 10189 SAL 40' STEEL BOXCAR
- 10190 SAL 40' STEEL BOXCAR SILVER STAR LOGO
- 10191 SAL 40' STEEL BOXCAR SILVER METEOR LOGO
- 10192 ACL 2 BAY WOOD HOPPER
- 10193 ACL 42' STEEL GONDOLA
- 10194 ACL 50' DOUBLE DOOR STEEL BOXCAR

10195 ACL 40' STEEL BOXCAR
10196 ACL 53' 6" GSC FLATCAR
10197 ACL 40' STEEL BOXCAR
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10199 ACL 40' STEEL REA BOXCAR
10200 ACY 40' STEEL BOXCAR

[Click here](#) for the S Scale listing.

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ISSUES?**



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*Die Cast Promotions Peterbilt 379 with Sleeper, and
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Fall S Fest

Oconomowoc, Wisconsin November 4-5 2016



The friendly staff made check in a breeze.

By Glenn Guerra

The Badgerland S Gaugers hosted the Fall S Fest this year in Oconomowoc, Wisconsin. This show is always a very complete show that includes module layouts, model contest, clinics, selling tables, and a banquet. I was at the show holding down the S Scale Resource table. The show was well attended, and everyone seemed to have a good time. I had a chance to visit with a lot of people and heard a lot of good comments about the magazine. We appreciate them a lot and are glad to hear people enjoy the magazine.



Model shows always have a lot to see. People kept coming to show me what they found that I never saw. Shows are a great place to find unusual models, as well as, the common ones.



Matt Gaudinski from Fox Valley Models was there with production samples of this new track. Fox Valley Models is well known in N Scale and HO Scale for producing good quality models. Matt is an S Scale modeler himself, and has decided to enter the S Scale market. He told me he expects to have product ready to sell in the spring of 2017. Look for an ad and announcement in the S Scale Resource.



Dave Balts was at the show with samples of the test tracks he builds. He also custom builds turntables and transfer tables.





Norm “Chic” Hartert from Oconto, Wisconsin was there with some of the scratch built trees he sells. Chick owned the hobby store in Oconto before he retired, and he has an Sn3 layout in his home.



Larry Blank handles the display and contest models. That's him bent over doing paperwork. There were a lot of nice models on display.



Mike Ostertag won the freight car category with this FMC covered hopper. Mike kit bashed it out of the stock American Models car shown on the left. He was telling me he took around 200 photos of the conversion as he was doing it, and he will work up an article for us.



John Mann from Rockford, Illinois scratch built this unique Chicago Burlington & Quincy turntable. That's right this is a through truss turntable that the Burlington liked. John said the family cat mauled it and it sat for many years. He needed something to do so he fixed it and brought it to the show. It's scratch built out of styrene.

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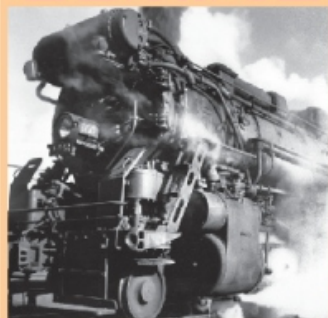


Photo Courtesy of the Bob Hundman Collection

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There Is Always Something New

Norm “Chic” Hartert’s Sn3 Layout



Chic, as he likes to be called, had a complete Sn3 layout. However, a creative mind is never still, and Chic took the left and right sides apart to revise them.

By Glenn Guerra

People who like to create always seem to be moving. They have ideas and visions that keep them moving to new things. Many of us in the model railroad hobby are people who like to create, and the creation itself is the hobby. Think about it for a minute. Modeling is creating an image or representation of some idea we have. While doing this, there is a lot of satisfaction in seeing our ideas come to life. We all like to do this to some extent. Even if we have ready to run models, we tend to add detail or weather them. We buy figures and buildings to populate our model railroads. Just placing them on the layout requires some creation. There was something about the figure that would help convey an image so we purchased it and placed it just so on our layout. We all do this to some degree and model railroads are never static. So what then is the hobby for us? After we have the trains running, and have run a few laps around, the glow is off. What keeps us engaged? It's the creating. For most of us the hobby is about creating and not just having trains.

With this thought in mind, let me show you Norm “Chic” Hartert’s Sn3 layout. I like to do articles about work in progress. I think it is interesting to see what people are doing, how they are doing it, and why they are doing it. This exchange of ideas is not only helpful, but is an inspiration to us all. Chic, as he likes to be called, is an inspiration.

Let's start with Chic himself. He was in grade school during WWII and his father worked for the C&NW railroad as a section foreman. Chic was telling me his father was well known as a good foreman who was valued by the railroad. During the war, traffic on the lines around the iron mines in upper Michigan increased and needed more maintenance. The family moved to Iron Mountain, Michigan for two years and then to Ishpheming, Michigan for two years where his father took over part of the lines.



Chic likes to build kits and does a good job on them. These two truss bridges were built from kits.

Chic told me the older (bigger) kids he played with during this time called him the little Chickadee. That got shortened to Chic, and he did not care to be called Norman. When Chic's family moved back to Oconto, the boys were enrolled in the Catholic school. One day the teacher called him Norman and he corrected her and said his name was Chic. That led to a parent teacher talk, and his parents informed the teacher they always called him Chic around the house. If that's what he wants, call him that. So that's how the nickname stuck. As a side note, Chic told me that was not the last time his parents and teachers had a little talk about his behavior.



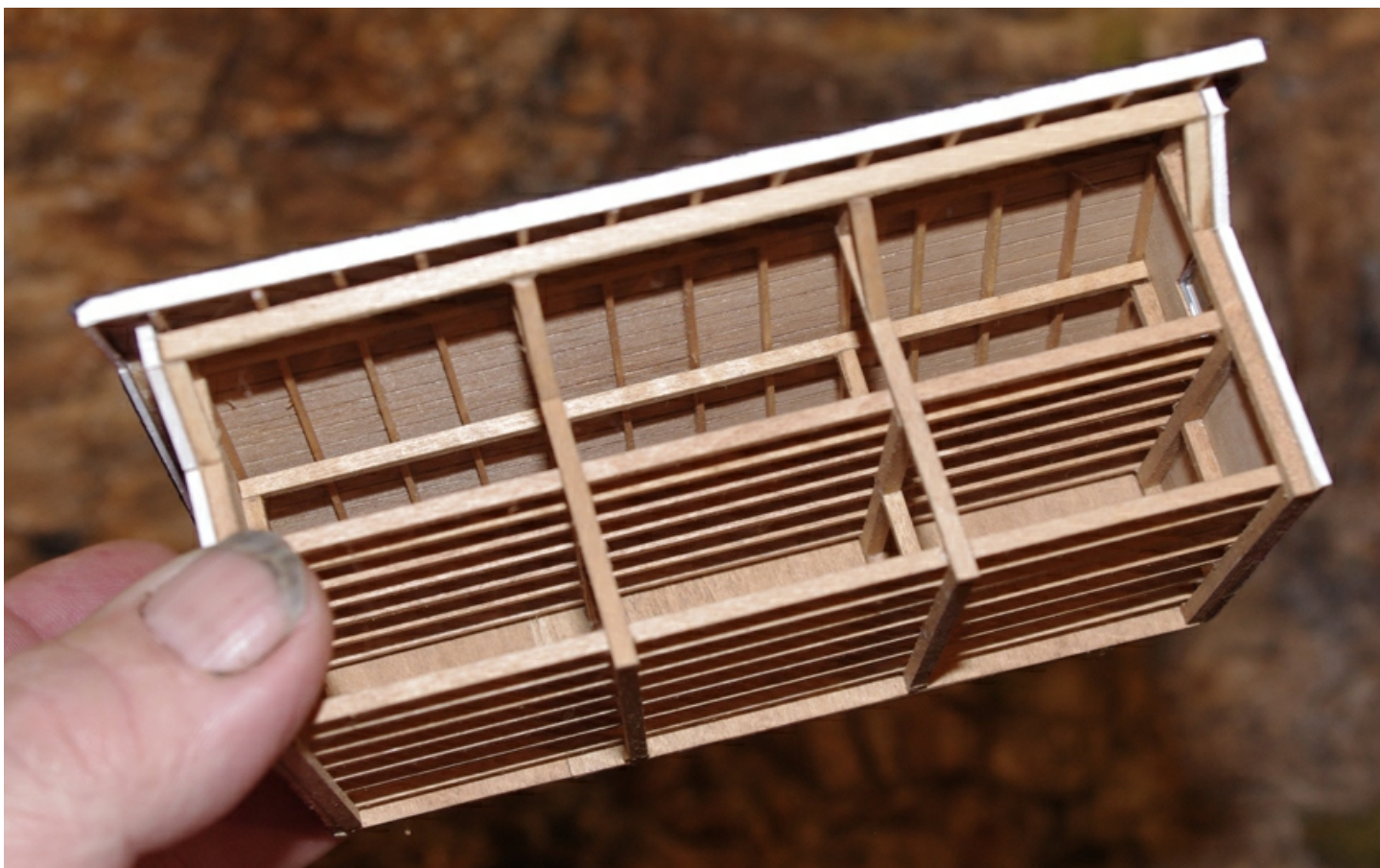
This trestle was scratch built by Chic. When he was with the Wisconsin Michigan module group, they had a round robin group that went around to each other's layouts. The group also helped Chic install another trestle he built,



Some of the rugged high country scenery on Chic's layout. The bridges are built from kits. Chic said he likes to vary the color of his rock because the mountains in Colorado vary in color.

One of the questions I always ask people during these interviews is how they got started in model railroading. Usually, it was a model train set when they were kids. Chic said they had Marx trains as kids, but they were not that interested in it. Chic said they never cared for the three rail track. During the war there were no materials to make model trains. Instead, they built model airplane kits made by Comet. Chic said his dad would get paid on the 15th and 30th of the month and they would all go to get a new kit. Chic would get a 10 cent kit, his brother would get a 25 cent kit, and his father would get a 50 cent kit. When the models were built, they would go to the ski hill in the summer to fly their airplane models down the hill. After the war, they got into gas powered models on a control line. Chic said that was not much fun crashing the model you just built, and he lost interest in that.

In 1950, Chic's older brother graduated from high school and went into the Marines. Chic was heavily involved in sports in school and the modeling took a side track. Chic excelled in baseball, going on to play in the minor leagues. In those days baseball was not the big salary sport it is today. After a few years, Chic decided it was time to get serious about life, so he quit baseball, got married, and went to work. After a few jobs, Chic started working for REA Express. The express job took him to St. Louis. Chic hit it off with one of the vice presidents since they both played sports. Chic was being groomed for higher management positions, and was sent to Danville, Illinois for a management job. Soon after his friend was promoted to the Chicago office, he asked Chic to follow him to Chicago. What happened next made me laugh because I grew up in the Chicago suburbs. Chic was offered a job with REA in Chicago and he said "he would not bury a dog in Chicago, so keep your job". I guess not all people are fascinated by the lights of big city.



This small lumber shed was scratch built by Chic. I had to hold it so you could see the inside and how neat and tidy Chic's work is.

After working at Bordens for a while, Chic and his wife moved back to Oconto, Wisconsin. Chic was from Marinette, Wisconsin and his wife Marilyn was from Oconto, Wisconsin. They had a son and two daughters. Chic would build models with his son and that is how he came into model railroading. Around 1973, they bought a small soda pop bottling business in Oconto. Chic, his wife, and one other employee would run the whole thing. Chic said he and his son never had much of a layout and it was HO scale at the time. It was during this time though that Chic's interest in model railroading was growing, and one of the things that helped was joining the NMRA.

Chic joined the Winnebago Land division of the NMRA. When I moved to Plymouth, I became acquainted with the Winnebago Land division. It covers a lot of territory and the members are quite spread out. The division is what keeps them together. They have long distance friendships, and get to see each other during the meets. Thorough this, Chic got involved with the Wisconsin Michigan module club based around the area. After a while, they got tired of carting the modules around and settled into a place in Marinette, Wisconsin. Around 1986, Chic closed the bottling business and opened a small hobby store in the space so local modelers had a place to go. The club lost the location in Marinette, and about that time Chic helped another guy start a hobby store in Marinette. In 1991, Chic had a fire that closed his hobby shop in Oconto. The building was ok, but he decided to liquidate the store. Chic went to work driving a truck and started thinking about the empty space in his building. He mentioned the space to Marilyn and thought it could be a layout room. She knew this was coming and told him to go ahead.

Let's back up a bit. Around 1988, Chic was at a model show and saw an On3 layout. He was taken in by narrow gauge and has made many trips to ride the narrow gauge tourist lines in Colorado. Chic wanted to make a narrow gauge model railroad. He liked the On3 models, but was concerned about the space he had to work with. He saw an ad for PBL and what they had to offer in Sn3. That was it! He would build an Sn3 layout.



This mountain covered the helix on Chic's layout. He saw a new kit for a smelter that he wanted to build so this mountain and the helix had to go. I'm not sure I would have the nerve to take something this nice down.

If you have been following this story, you will notice this is the first model railroad Chic would build. He had built things with the module club, but never had a permanent layout of his own. He started in 1992 with this layout.

Now to the layout. Chic wanted to model Colorado narrow gauge. By now, Chic knew Ron Fadalo. Ron had dropped into the hobby store one day out of curiosity, and he and Chic hit it off. When Chic started to build the layout, Ron would come and help. Chic said this went slow because he was still driving trucks and was out of town a lot. Ron helped Chic with the bench work and wiring. Chic has met a lot of people through the hobby.



This helix was in the mountain shown above. Chic wanted the space for a Ragg's... To Riches? smelter kit he is building.



This view of the layout today shows how Chic made his scenery base. Chic started with modules and they need to be made light and durable. As a result, he learned this light weight scenery construction. Instead of plaster for a base he uses a two part urethane that is light and strong. Even the rocks were cast in rubber molds using the urethane material.



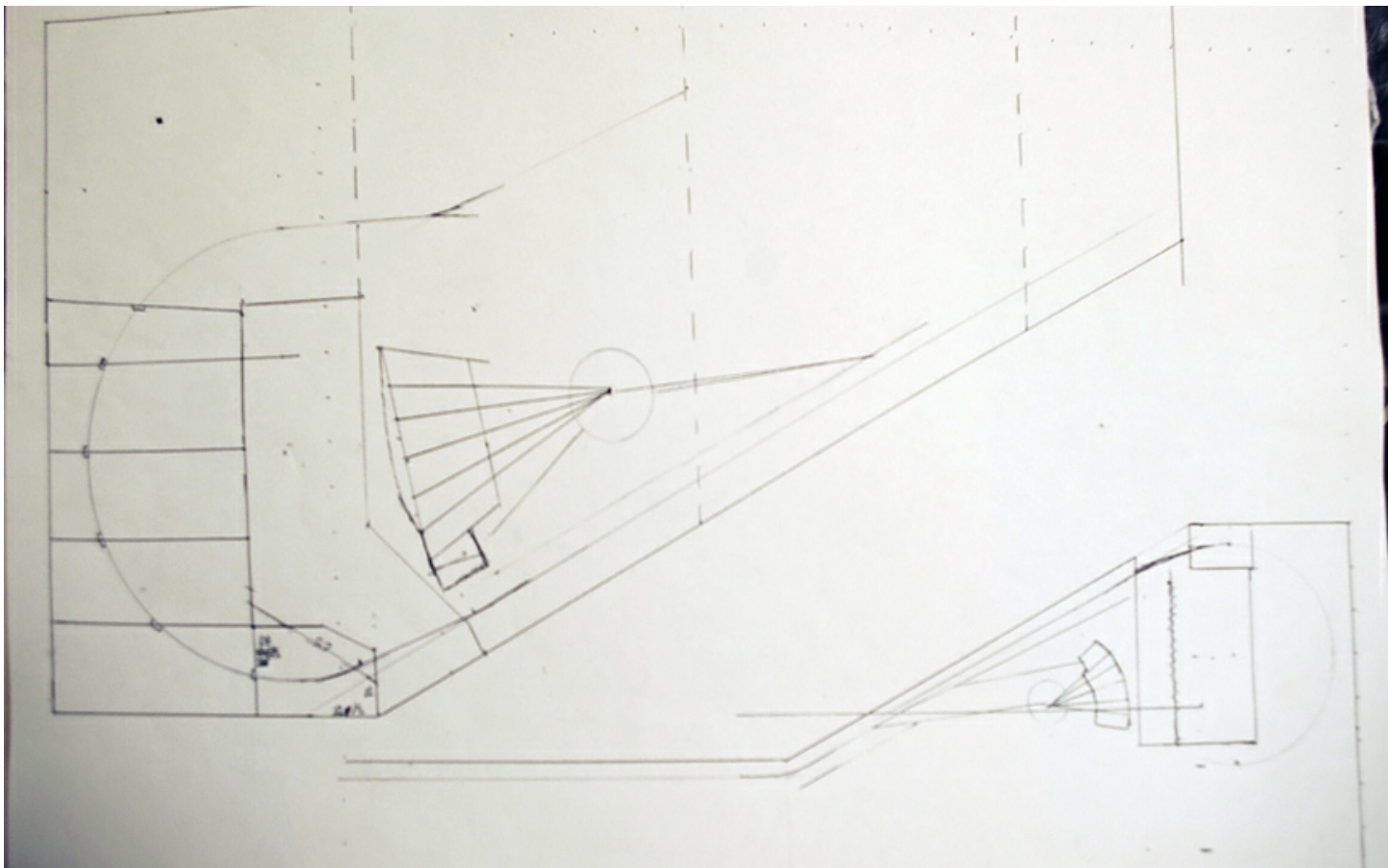
Here is another view of the area where the smelter will go. The lower level used to go up the helix to the upper level, but in the new scheme, the upper and lower level will not be connected here. Instead, the upper level will have a "Y" and disappear behind scenery. Operation will consist of a local turning on the "Y" and going back.



This BTS saw mill kit occupied a corner of Chic's layout. He took the scene out and sold the buildings to another modeler so he could gain access to the center of the layout.



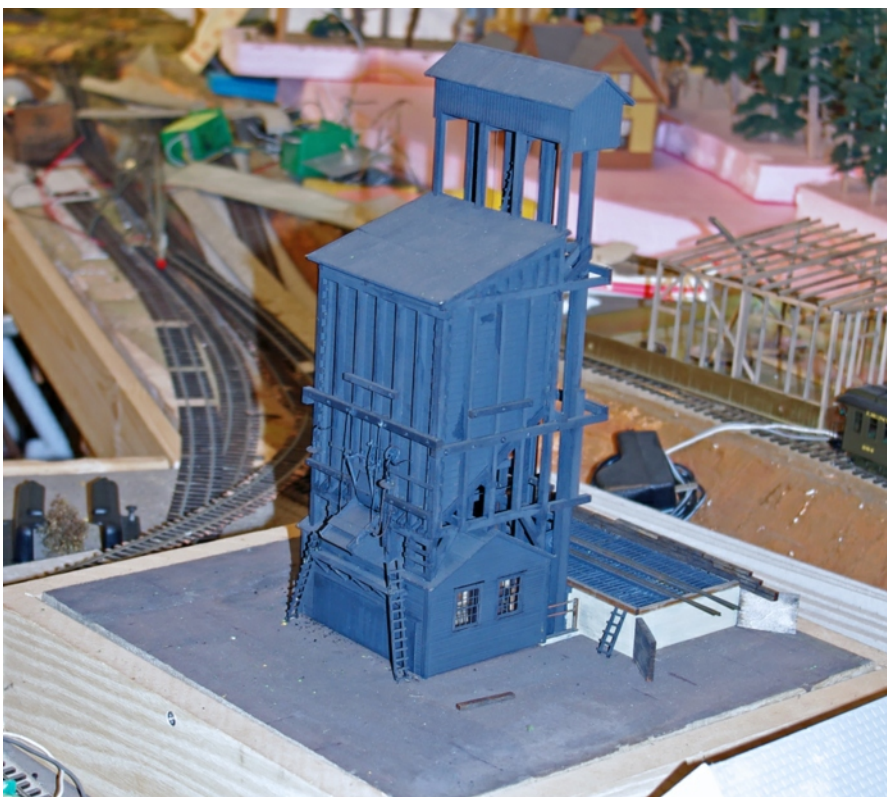
This was the location of the BTS saw mill. Chic was showing me how his new roundhouse and turntable will fit in. Behind the roundhouse you can see an aisle for access to the center of the return loop. Chic built the coal tower from a kit and made a display out of it. It will be included in this new scene.



Chic made this sketch of the new roundhouse area to see how it would all fit. He already has a good start on the roundhouse.

In 1999, Chic retired and was able to devote more time to the layout. Ron had moved to Green Bay, Wisconsin and they did not get together as much. Chic built the scenery and we will get into more of that in a bit. When DCC became available, Paul Pasowicz, who owns the hobby store in Green Bay, would come by Chic and helped him rewire the layout for DCC control.

For the layout, Chic decided on loops in the corners by the door where you enter the room. By doing this, he had room in the middle for a peninsula. Remember all the wood model airplane kits Chic built? He knows how to build a wood kit and really likes them. When I was looking at his layout and around the workshop, it was filled with wood building kits. I also mentioned that Chic is involved with the NMRA, and he always takes a model to the shows. He has many awards for his buildings.



Chic built this coal dock from a Ragg's... To Riches? kit and put it on a temporary base to take to a show. He won a few awards for this model. It will be part of the new roundhouse scene.



This stamp mill was one of the first large kits Chic built for his railroad. The kit was produced by FinestKind Kit.

I asked Chic if he kit bashed his buildings or just built them as they came. He said he generally builds them as they come because he liked the look of them and that is why he bought them. Chic's workmanship is neat and tidy, which I envy, since mine is not. One thing you will notice are semaphore signals on the layout. This is a little out of place for a Colorado narrow gauge, but Chic remembers them from when he would help his father on the railroad, so he decided to put them on his railroad.

I talked about creating in the first paragraph of this article. Chic has a very active mind and some of this went on to his son and two daughters. His youngest daughter does artwork and so does one the wife of one of Chic's friends. The daughter and friend's wife talked it over and the friend's wife got the job of painting the backdrop. The layout was complete and trains were running. Chic said he likes operation and they would make up operating scenarios and switch cars around. Sounds like the end right?

As you look at the photos, you are probably thinking the place looks like a wreck. Well it is. Remember Chic's hobby is about creating. A few years ago, Chic had a knee replaced and he is not supposed to crawl around on his knees anymore. The loop on the layout had a pop up in the middle that he would crawl under the layout to get to. Since he can't do that anymore, he decided to change the layout. There was a complete BTS saw mill complex in this location that Chic had built and is on the BTS website. How many of us would have the courage to take a scene like that out? Chic took it out and sold it to another modeler. By doing so, he made a space where he could walk into the layout, and it will have a small lift out section to get in. The rest of the area will be taken up by a new roundhouse and turntable. I get the feeling when talking with Chic that the real enjoyment for him is building the kits. He built a Ragg's... To Riches? coaling tower kit and won some prizes with it at the model shows. The coal tower will become part of the new scene.

In the other corner of the room was the helix with a big mountain covering it. Ragg's... To Riches? came out with a new smelter complex that will take up a 5' x 5' space on a layout. Chic really liked the kit and wanted to build it, but where would it go? Out came the helix.

While I was looking at this and listening to Chic, I looked at how he constructed the scenery. Since he had taken the mountain out, I was able to get a good look at the construction. Chic uses pink foam board for supports and drapes cardboard strips over them to get the contours. I asked if he uses plaster and paper towels for the base. He said he did that at first, but it was heavy. This comes from his days of building modules where weight is a concern. Chic uses latex rock molds and expanding foam. Joel Bragdon Enterprises sells the rock molds and casting materials. Expanding foam can be had with different expansion and curing times. Chic uses a foam with not very much expansion and a slow cure time. He pours it into the rock molds and keeps moving them around to get even coverage. When the foam starts to set but is still flexible, he drapes the whole thing over the scenery base to set. Once set, he removes the latex mold. In some cases he glues the rock in place with hot glue. It was quite ridged and light. Painting is done in the usual way.

To sum this up, let's look back at the timeframe this all takes place in. As I write this article, Chic is 82 years old. He is willing to tear out sections of a complete layout to install new scenes he wants to create, is always moving and still creating. He makes trees by the dozens while he is watching TV and sells them at local train shows. While we were talking, he showed me the trusses and walls of the new roundhouse, and as usual, the work is first rate. The smelter will be coming along soon. To me this is an inspiration and also an indication of how much fun the hobby can provide.

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**Bob Nicholson's
Shabbona Layout**



Developing an Industrial Scene...

Plastic Pellet Storage

Part 2



This is the storage tank complex I want to make a model of. In [Part 1](#) of this series, we looked at how I wanted to develop a scene. In this article, I will make the tanks and legs.

By Glenn Guerra

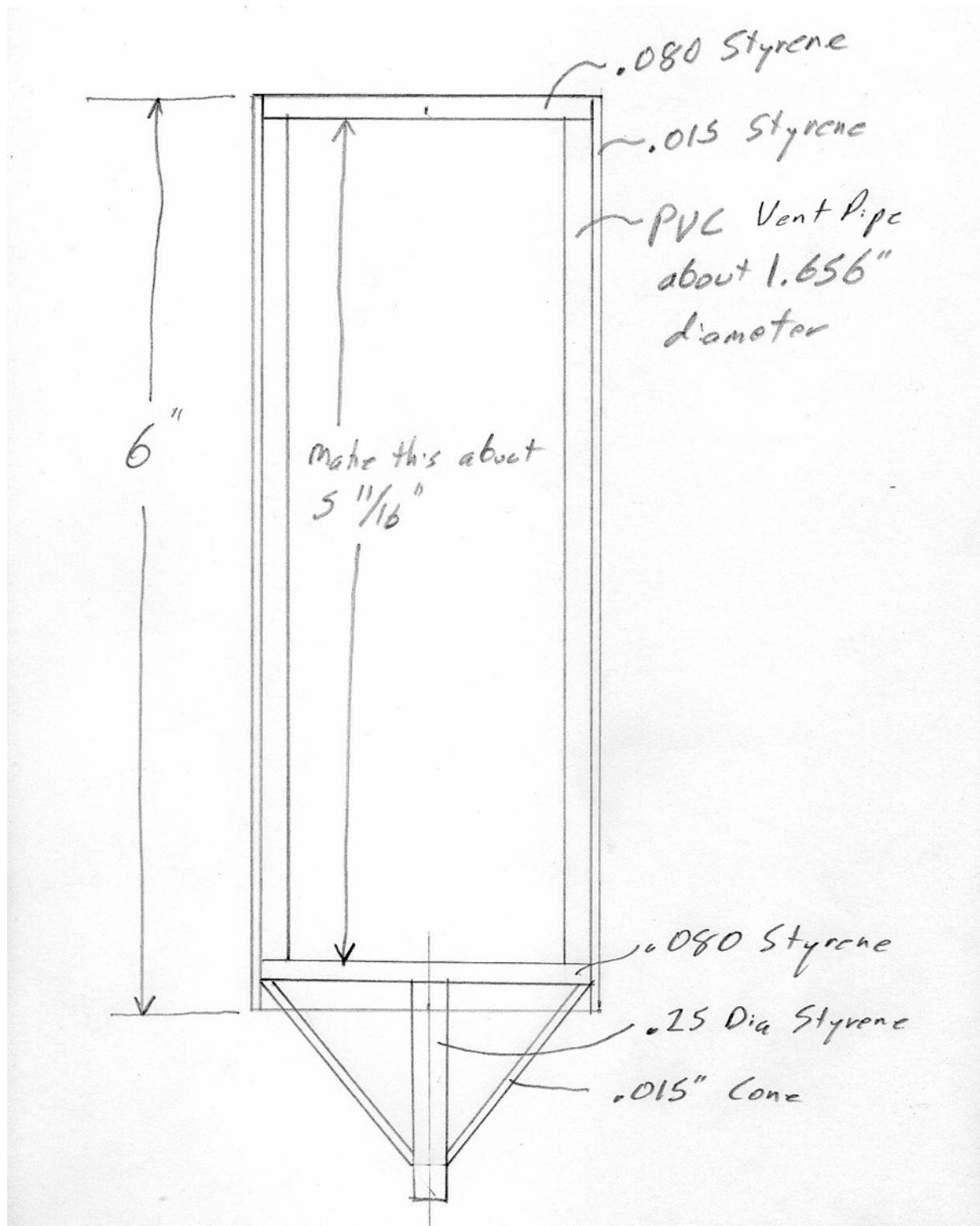
In the October/November 2016 issue of [The S Scale Resource](#) we started a series on modeling a modern plastic pellet storage and transfer facility. In that article I talked about how I planned to layout the whole scene. I determined what size I wanted everything to be in that article. We talked about how we would capture the feel of an industrial site and have it fit our layout. In this article I will start the construction of the pellet storage tanks.

The tanks will be scratch built, and in this article I want to go through some of the design thought process, as well as, the techniques I used. Each of us develops techniques that work for us and this is by no means the only way to make these tanks. The thought process, as to why I did it this way, may help with your projects. The drawings will be sketches on paper again. I use computers for drafting a lot, but this can be done on scratch paper and that is what I am trying to show. What is important is thinking the steps through and having a plan. This will be a photo article again with explanations of each photo.

Before we start, there was some discussion recently on laying out a conical roof as you would have on a water tank or the “witches hat” depot roofs. I will show how to develop and layout the cone in this article. So, let’s get started.



In this view, notice that the sides of the tank come down past where the discharge cone is welded to the sides. I wanted to model this the way it is. What I decided to do was start with a piece of PVC vent pipe that you can get from a home or hardware store. Then, I would wrap the pipe with styrene and leave an overhang on the bottom. This would make a ledge for me to locate the discharge cone on. I experimented with .010” styrene for the wrapper and that worked well on a cardboard tube with 3M 90 spray adhesive. The cardboard tube was not the diameter I wanted, and the .010” styrene seemed a little to thin. That is when I decided on the PVC vent pipe and I used .015” styrene. I would use .015” styrene for the cone also, and that would present some other concerns. I found I could use Plaststruct Plastic Weld in the orange bottle to bond the styrene to the PVC.



After I experimented a bit and decided to use the PVC vent pipe as my core, it was time to make a sketch to get some dimensions. If you go back to [Part 1](#), you will notice I wanted around 1-7/8" or 1.875" diameter for the small tanks. What I ended up with was slightly smaller since I could not get the exact size PVC pipe I needed. These are some compromises you need to make. The styrene sheet I was using was 6" wide so I decided to make that the height of my tank. Why make an extra cut? Next, I needed a top on the tank and I wanted it thick because there was a lot of detail to put on it. I decided to cap the tube first and then wrap it. The .015" discharge cone seemed fragile, and I needed to add some details to the base of it later. I decided to glue a .25" diameter styrene tube to a base as shown. After that, I would wrap the .015" styrene around it.



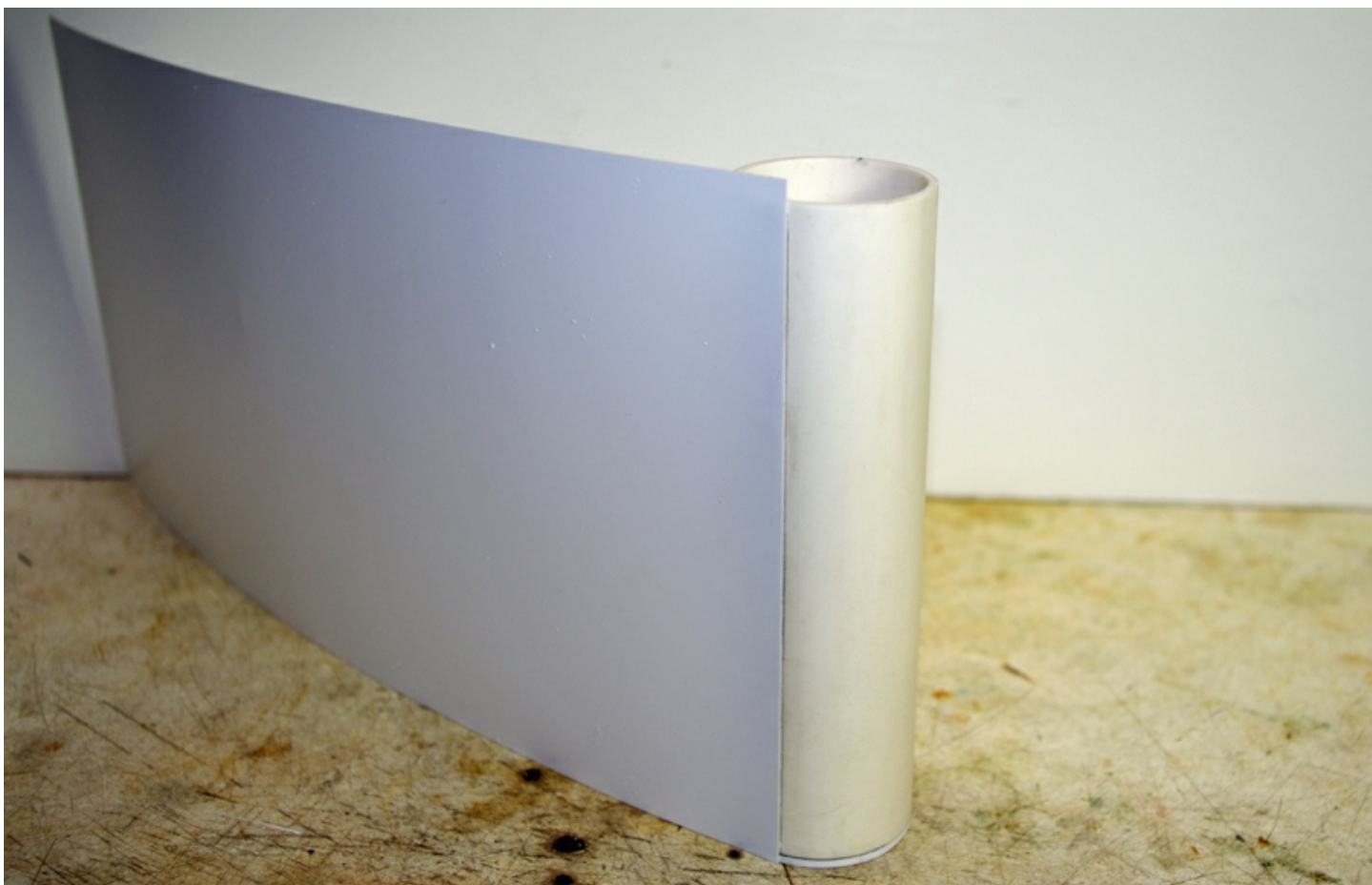
Once I had my tubes cut, I cemented the .080" styrene on one end. I rough cut these out with a metal cutting scissors. I will sand them flush later. To cut the tubing I used my table saw. If you do not have a table saw, here is how you can mark and cut it. Take some thin styrene or heavy paper and wrap it around the tube. If the edges of the wrapper line up you will have concentric tubes. Use a pencil to mark the PVC using the edge of the wrapper. Your line will be a square edge all around the PVC tube. Just cut on that line with a hand saw and you will have a square end.



Once the cement dried, I sanded the .080" cap flush with the tube as shown here. I used some 320 grit wet dry sand paper. Pull and rotate the tube toward you until the styrene cap is flush with the PVC tube. Notice the lines on the sand paper? I am only touching the styrene cap at this point. When those lines grow into a wide area, you are flush.



I needed a reference line to start cementing the wrapper to. By having a line parallel to the center line I could glue the wrapper on this line first. Then, when I wrapped it around, it would be flush with the top and the two bottom edges would meet. To make that line, I placed a pencil on a block as shown. Make a pencil line along the tube without rotating the tube. When finished, you will have a pencil line parallel to the tube center line.



Here I have cemented about one quarter of an inch of the wrapper to the PVC tube along my line. Notice how the wrapper is taller than the PVC tube. This will give me the overhang I want at the bottom. Also notice the styrene sheet is still the full length.



This photo shows how the bottom edges of the wrapper line up. The reference line I made helped me with this. The wrapper is not cemented anywhere except on the starting edge yet. At this point, I marked where the overlap would be. Then I let the wrapper loose and cut it to length. I wrapped it around one more time to check the fit before cementing it.



After I had the wrapper cut and fitted, I cemented it by rolling it around and applying cement as I went. I held it all with rubber bands and a small clamp as shown. The .015 was about as thick as I think you could go on this small of a diameter. When working with styrene, I always have a problem getting too little or too much cement on. On both of my tanks, I had some problems with too much cement and that melted some areas on the wrapper. I will show that later in this article.

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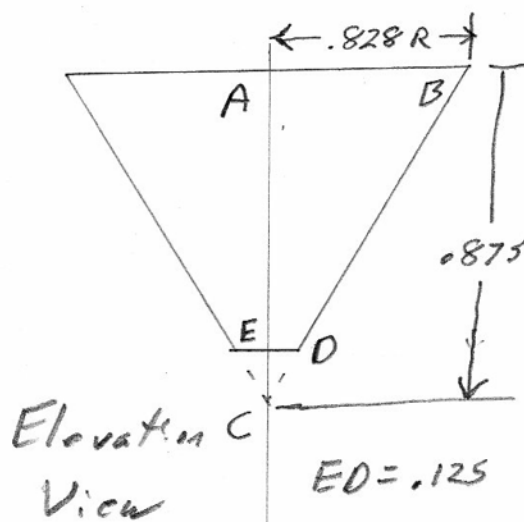
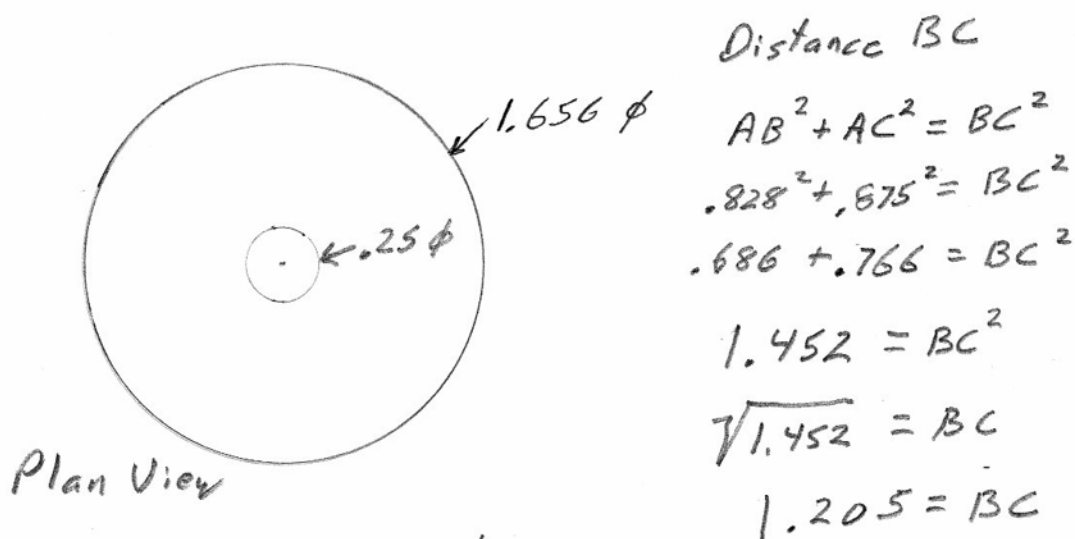
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Distance EC

$$\frac{EC}{ED} = \frac{AC}{AB}$$

$$\frac{EC}{.125} = \frac{.875}{.828}$$

$$EC = .132$$

Distance CD

$$ED^2 + EC^2 = CD^2$$

$$.125^2 + .132^2 = CD^2$$

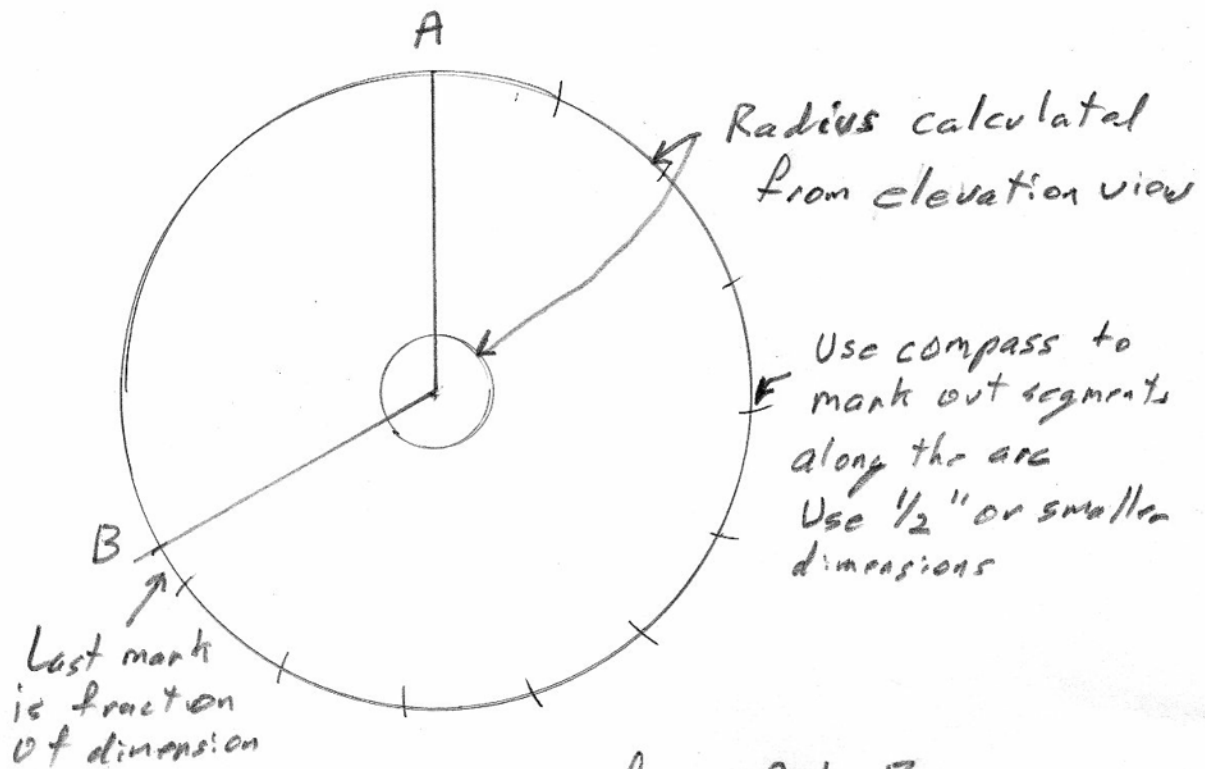
$$.016 + .017 = CD^2$$

$$.033 = CD^2$$

$$\sqrt{.033} = CD$$

$$.182 = CD$$

Here is how to start laying out your cone. What we know is the diameter of the cone and the height of the cone. We want to know the distance from B to C so we can layout a flat sheet to cut. On the elevation view, the distance from B to C is the correct distance, but we need to calculate it. The side BC is the hypotenuse of a right triangle with AB as one side and AC as the other. We can calculate the distance BC because we know the other two distances. The square of the hypotenuse is equal to the sum of the squares of the sides, as shown in the top right set of calculations. We also need to know the distance CD. Before we can calculate that as we did BC, we need to know what EC is. The triangles ABC and EDC are proportional so $EC/ED = AC/AB$ as I have shown above. Once I know EC, I can calculate CD as I did BC. The next sketch shows how we will use this dimension, and some explanation of why we need distance CD.



Distance along arc from A to B

Diameter is 1.656 from Plan View

$$1.656 \times \pi = \text{Circumference}$$

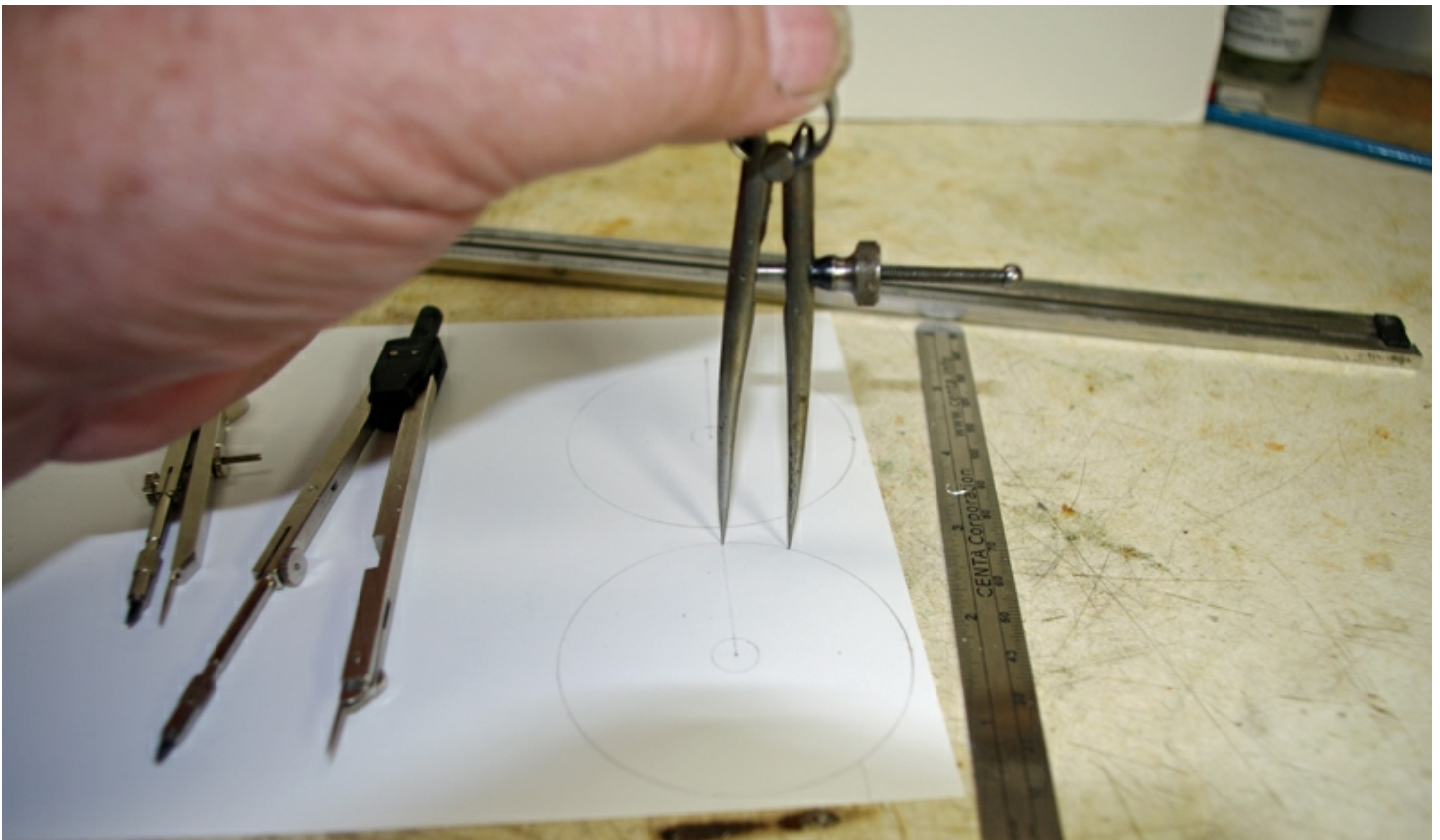
$$1.656 \times 3.14 = \text{Circumference}$$

$$5.199 = \text{Circumference} = \text{Distance A to B}$$

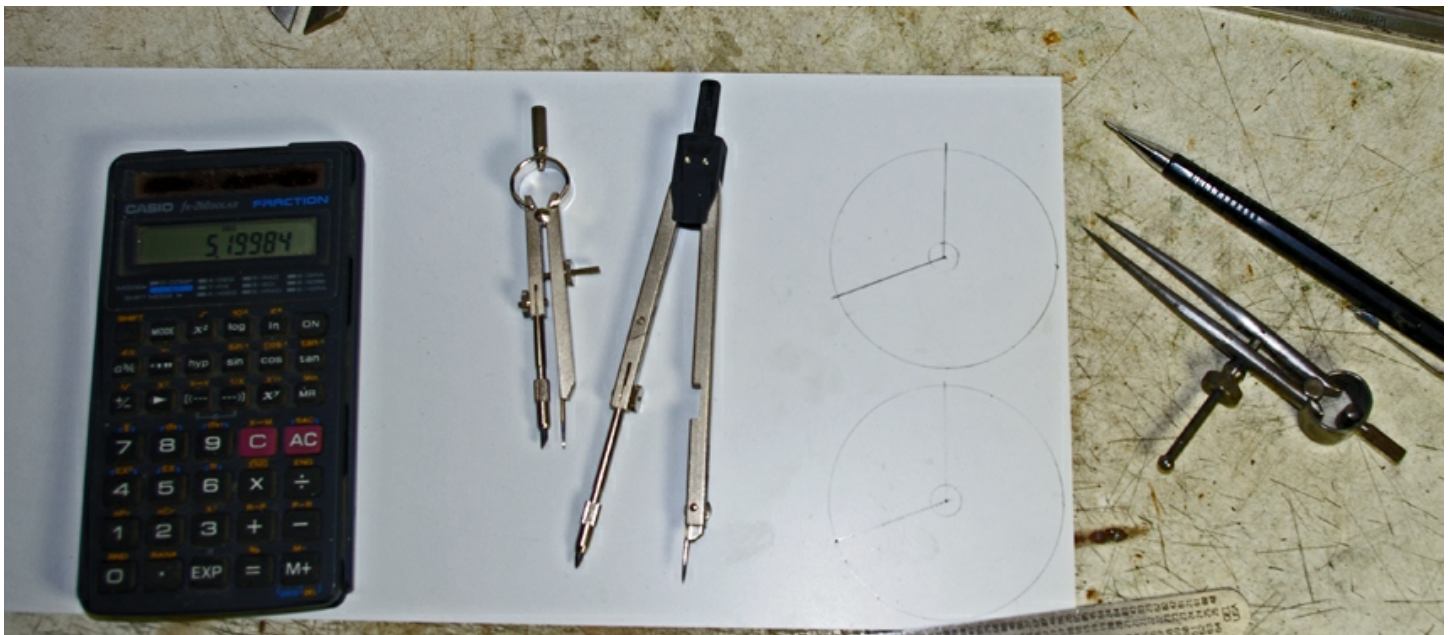
When making calculations like these, it is always a good idea to write down each step as I have been doing. It keeps your thoughts clear, and allows you to go back and check if you get a result you did not expect. In the previous sketch, we found the distance BC and determined it was 1.205". This now becomes the radius of a circle we want to draw. In the previous sketch, we also found the dimension CD. We need this to make the hole in the bottom of our cone, and that dimension is the radius of the small circle shown above. Now we need to take a pie shaped section out of this circle. On the previous sketch, the Plan View shows us the diameter of the top of our cone. When we cut our pie section out of this circle and roll the rest around we want this cone to be the diameter of the cone as shown in the Plan View. On this sketch, I used the diameter of the cone on the Plan View to find the circumference of the cone at the wide end. We need to mark off that distance on the circumference of the circle drawn on this sketch. I set my compass at 1/2" to start. From the line, I started marking off distance on the large circle. This is only an approximation of the distance along this circle. The smaller you set your compass, the more accurate your final dimension will be. Since I needed 5.119", I marked off ten of the 1/2" segments. This gave me a distance of approximately 5" around the cord of the large circle on my sketch. Next, I reset the compass for the .199 dimension and marked off the last segment. I drew a line from there to the center of the circle. Now I have marked off the pie section I need to cut out of my layout to make this cone.



Here is how all the theory works in practice. You can barely see it, but I have drawn two circles on the styrene sheet. The circles are more visible in the photo below.



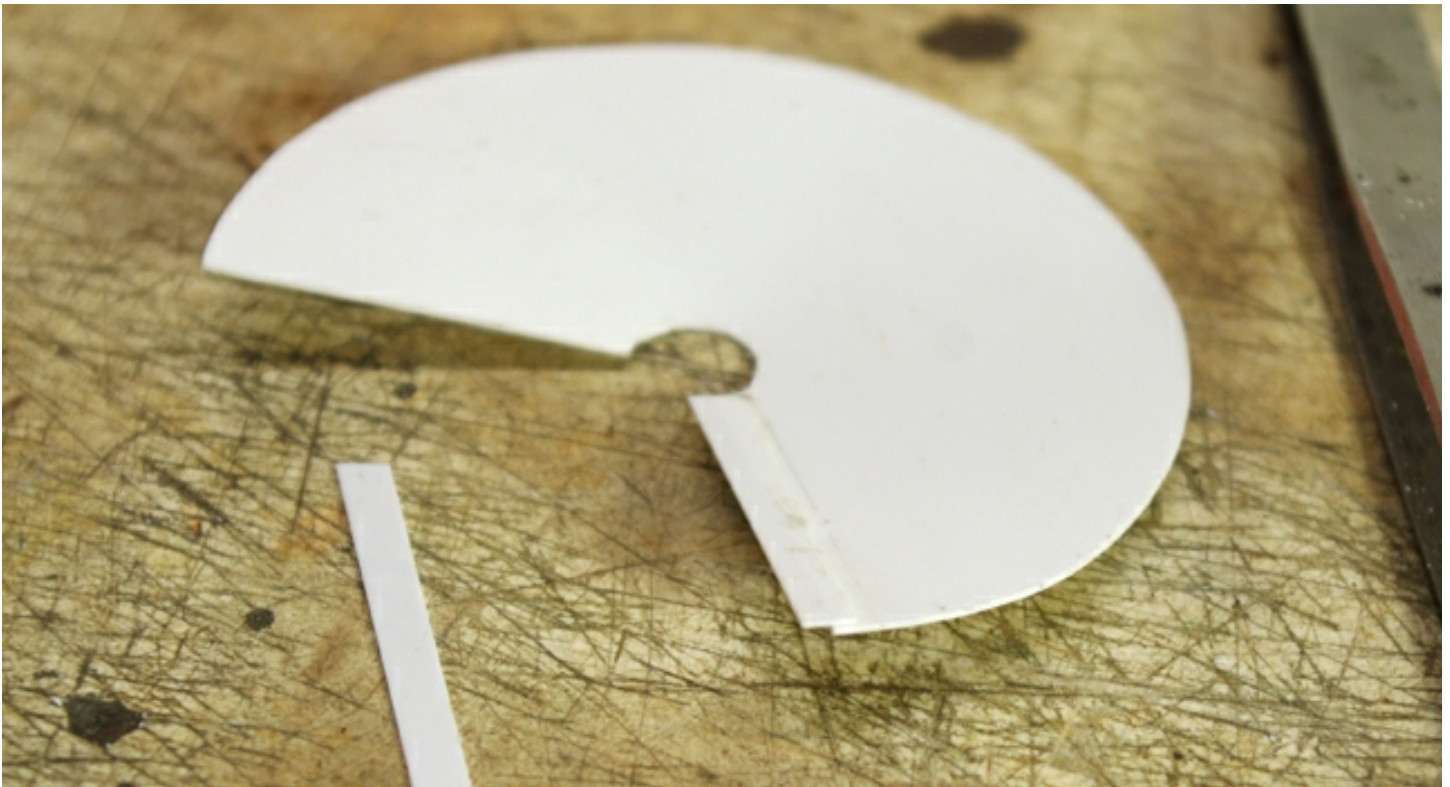
This is how I walked off the segments around the circumference of the circle. I had the dividers set at $\frac{1}{2}$ " for this, and I started at the junction of the line from the center of the circle.



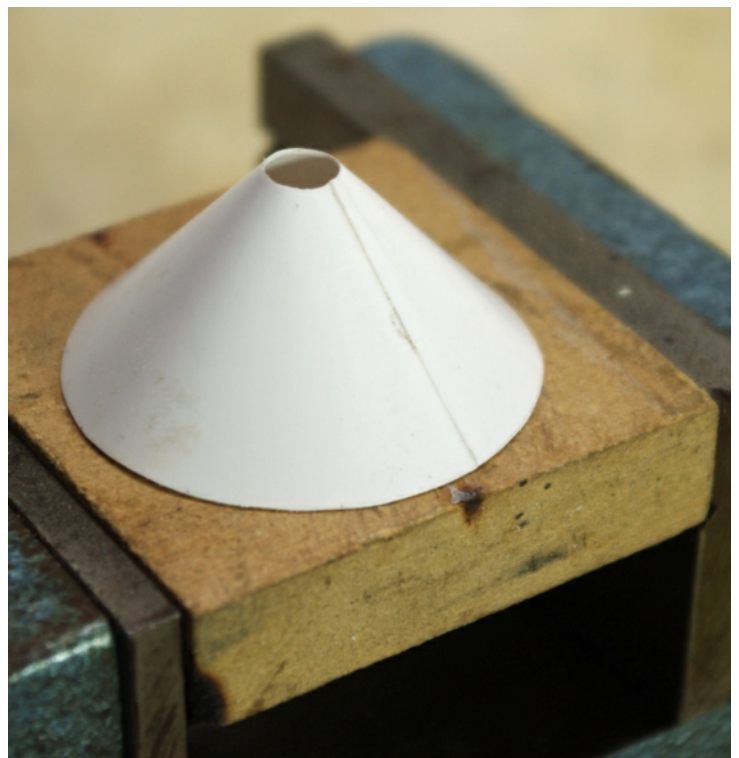
Here is the final layout. You can see the two cones drawn on the styrene. Now I need to cut them out.



These are the two blanks for my cones. The .015" styrene cut well with the scissors. I rough cut them first and then trimmed to the line. The small circle in the middle was cut with the knife. You need to make a few cuts with the knife to go through. When making a cone like this out of styrene or cardboard, you will need to gently work it into shape. Don't go too fast or you will kink it, and that kink will be hard to work out.



I have made many cones like this before, and the joint is always the weak spot. There is always a kink at this joint, and unless you are gluing this to a ridged form, you need to strengthen this joint. I glued a piece of .010" styrene on one side first as shown. I have started working the styrene into the cone shape and you can see that here. I let this sit for a while until the cement had set really well.



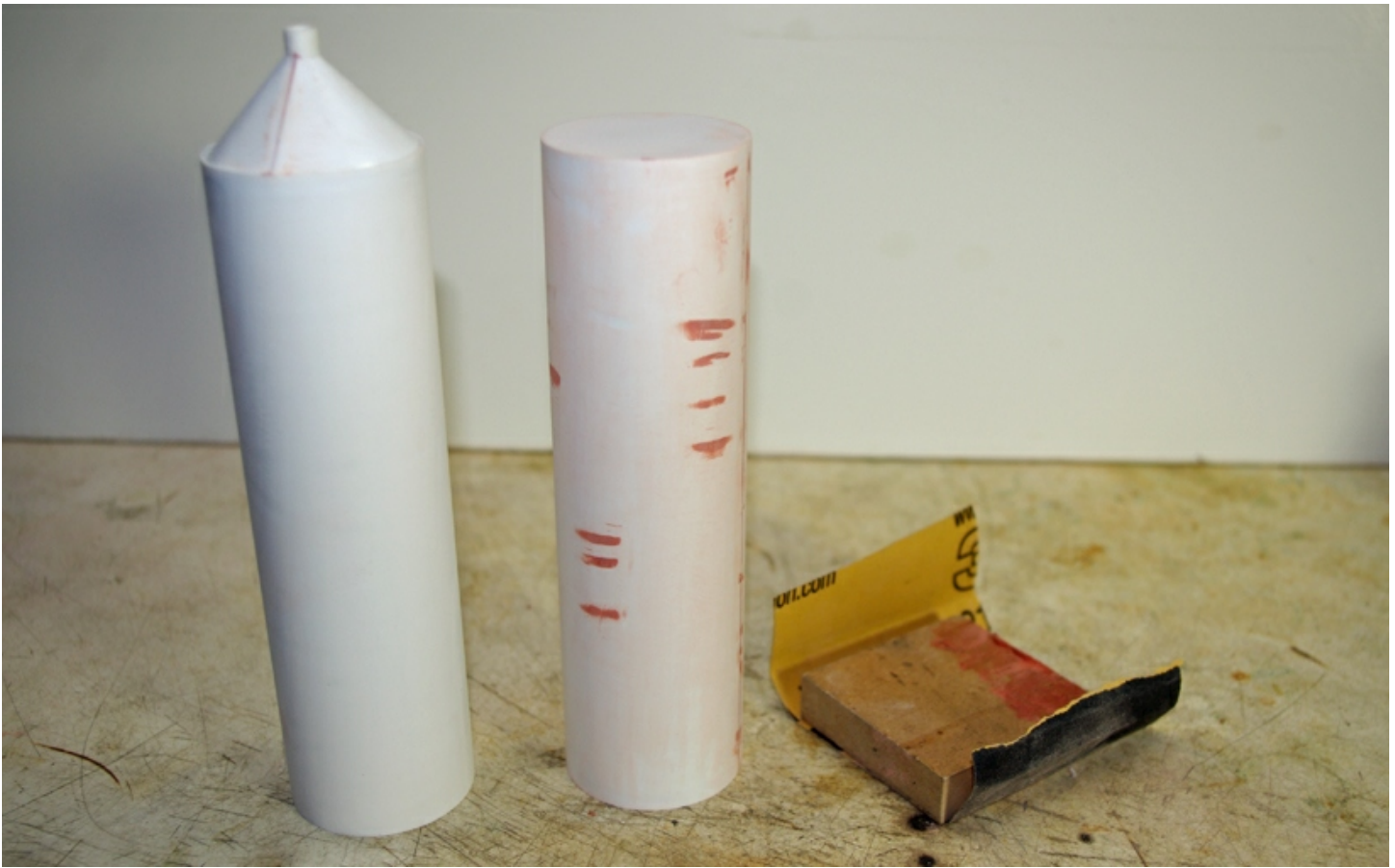
When the .010" joint was set to one side of the cone, I formed it and glued the final joint. I clamped it as shown on the left with a scrap of wood. This held the joint tight in the correct position. Let this set a while until the joint is hard. On the right is a photo of what you will get. A nicely shaped cone just the size you wanted.



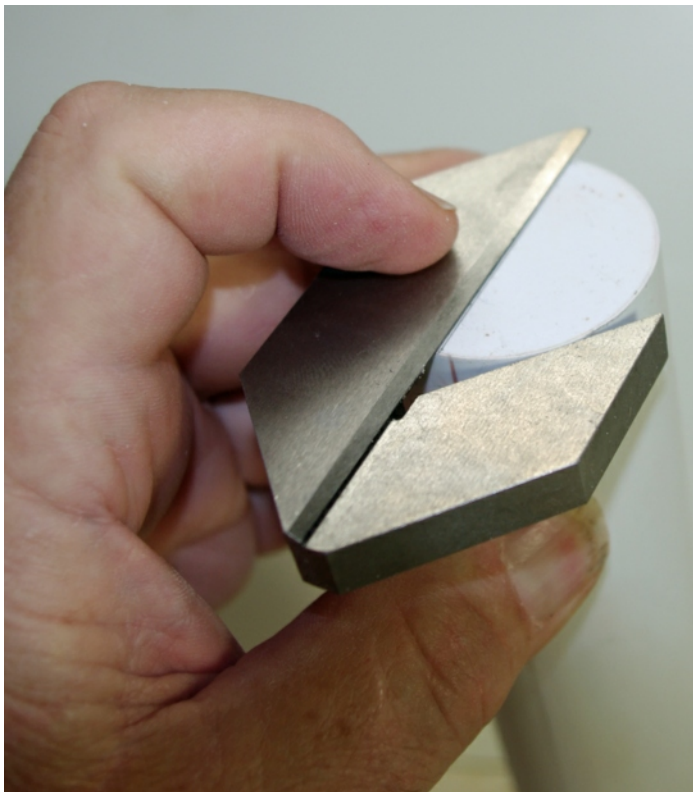
Look at the bottom of the discharge cone. There is a box there with hoses coming out. I needed a way of attaching this box to the cone and I was afraid the .015" thick cone would be too delicate. I also needed something to glue the cone to for strength. I decided to do it this way. I first drew the diameter of my PVC tube on some .080" styrene. Then, I drew a small circle that is .25" diameter. Next I cut some .25" diameter styrene tube about 1.125" long. I rough cut out the circle with the metal scissors. Then I glued the tube to the center as shown. I held this in the lathe by the .25" tube and cut the .080" to the diameter I needed. If you don't have a lathe, trim to the line by sanding or filing and keep checking your fit.

The photo on the right shows my final discharge cone assembly. I had to use a round file on the small end of the cone to get a good fit on the .25" diameter styrene tube. Then, I glued the whole thing together. It made a ridged assembly, and I now have a place to attach other details. The next step is to clean up any fit on the large diameter and then glue this to my tube assembly.



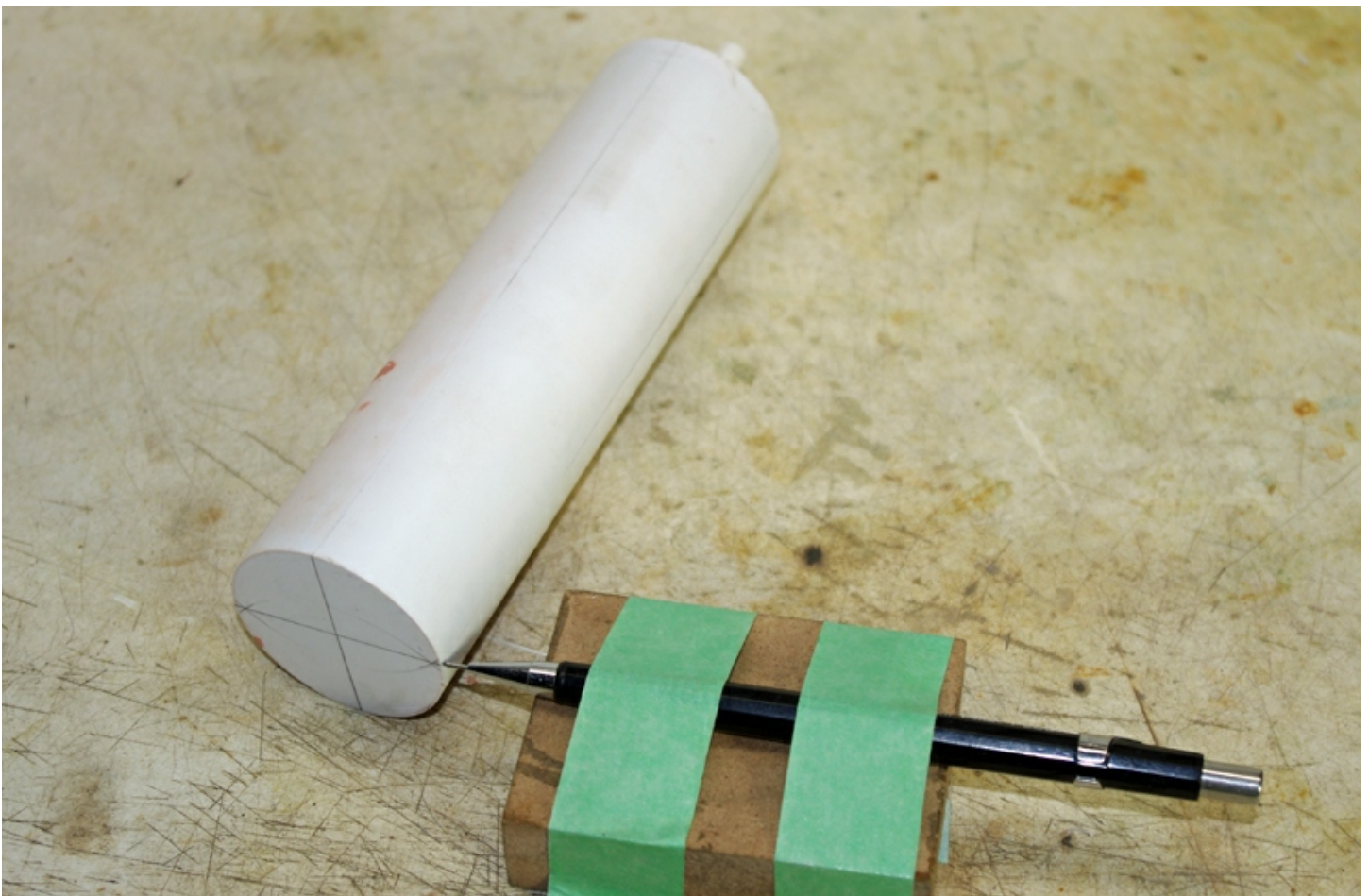
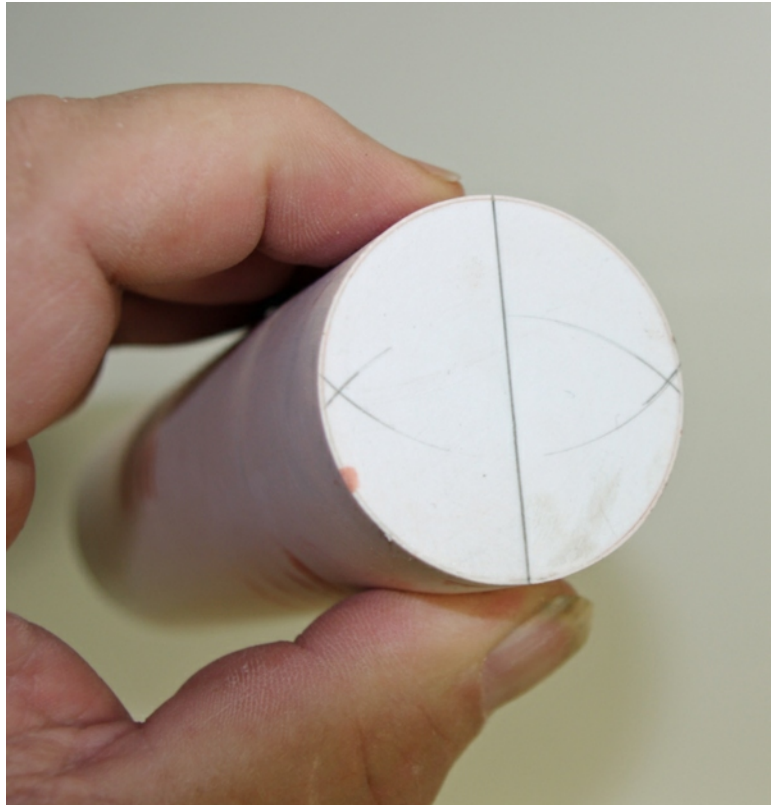


I wanted to show this photo. I left the tubes overnight to set, and the next day, I noticed I had some wrinkles due to too much cement. I have always had problems with styrene and cement. Either not enough or too much, and too much melts the styrene like it did here. I was going to make this over and thought, "I can't be the only guy who has this problem". So, I just filled in the low spots with putty and sanded them flush. When it's all painted, it will look fine. If you are a slob like me don't fret, that's what they make putty for.

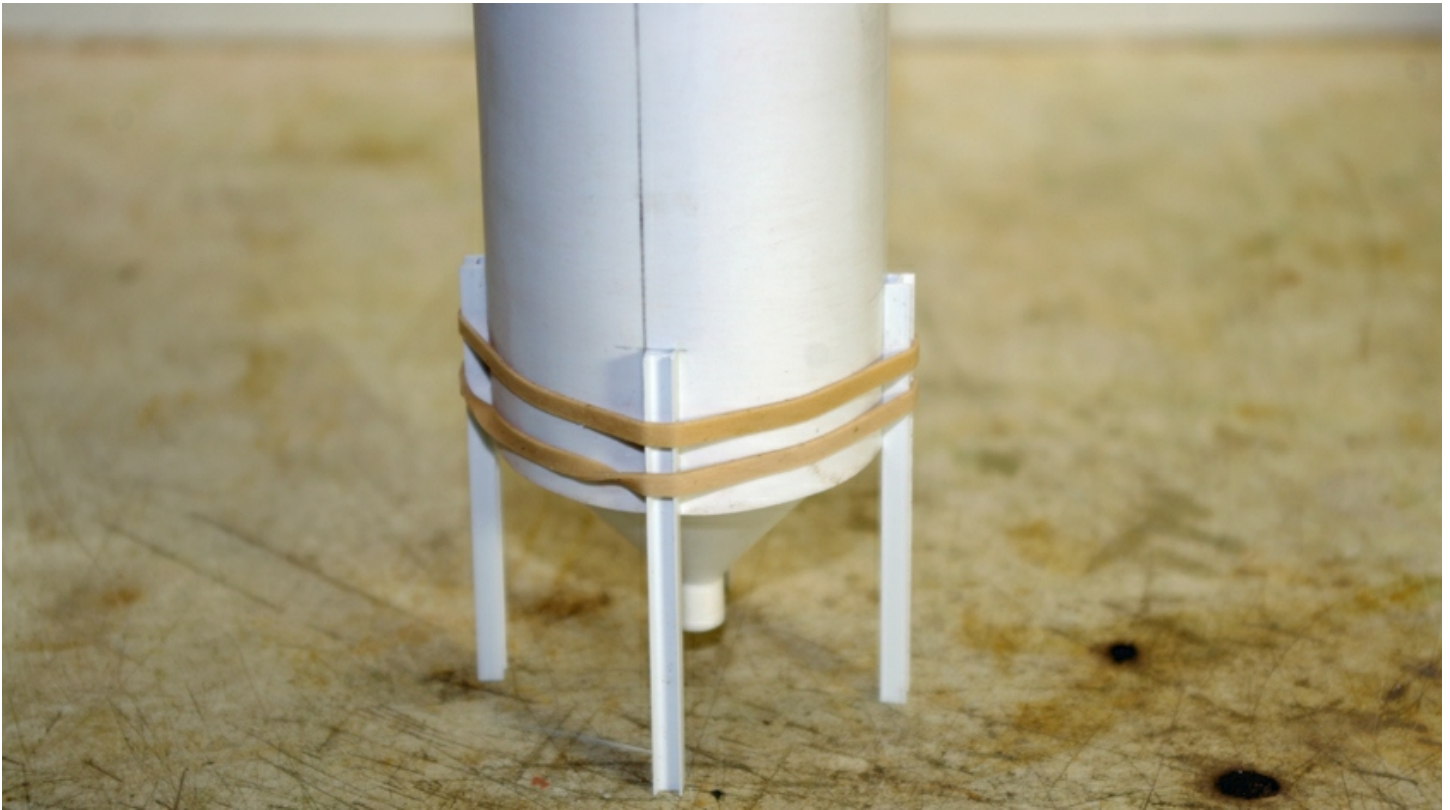


The next step was to locate the legs. I started at the top. I am using a tool for finding the center of a round shape like this. This tool is called a center finding square. Sometimes they are made like this one, and other times they come as an attachment for an adjustable square. If you make two lines using this tool they will intersect at the center. These are used in lathe work. If you find the center like this, you can then use this for a location of a center in the tailstock of your lathe..

I wanted to find the locations of the four legs. After I had a center line, I wanted to make a line perpendicular to that and going through the center of the tube. I used the compass and from each end of the line I drew some arcs as shown. By connecting the intersections of these arcs with a line, I will have a line perpendicular to my first line and through the center of that line. The center of the line I have is also the center of the tube. Where my lines intersect the edge of the tube will be the locations of the legs. I did this on the top of the tank because it was a nice flat place to draw.



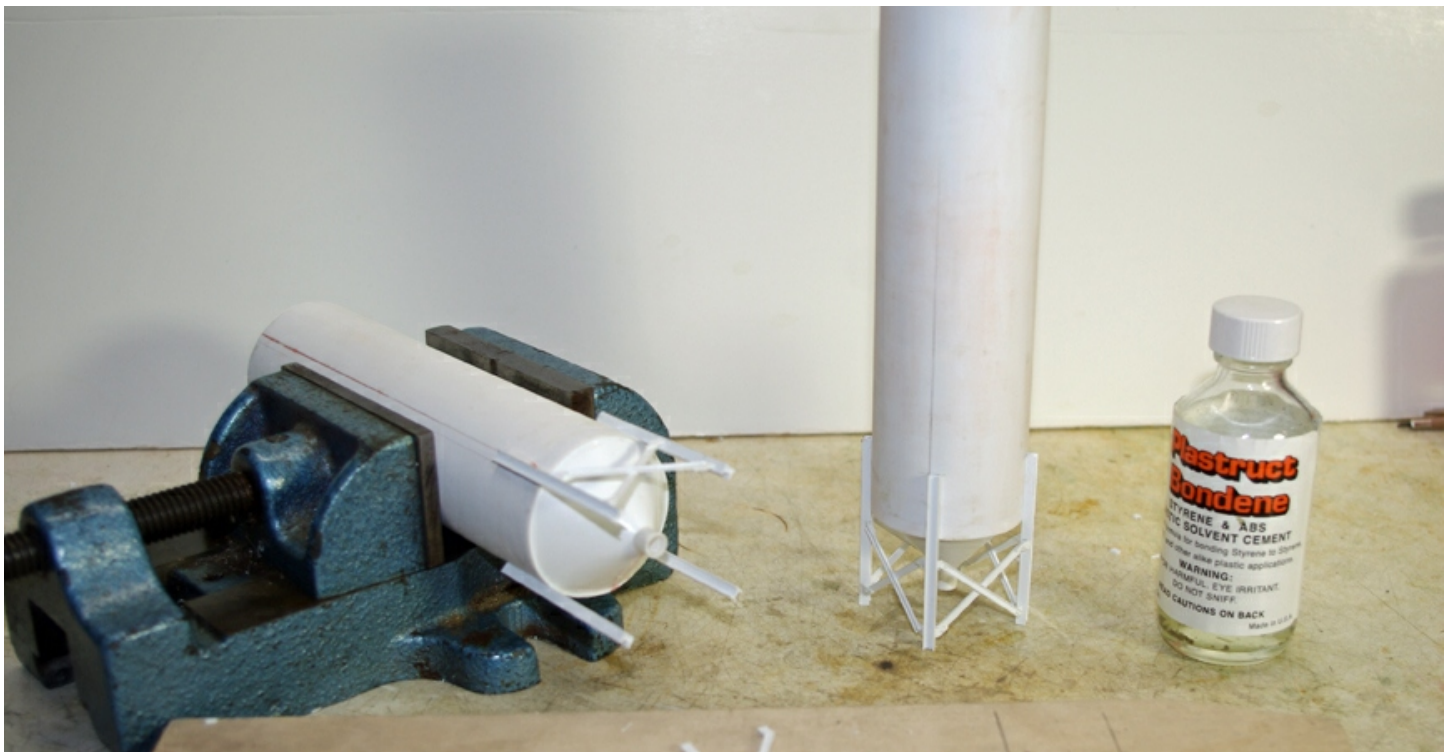
Since I drew my layout on the top of the tank I needed to transfer it to the bottom. I used the same method as before. This time I taped the pencil to the block. That worked better. Then, I drew lines down the tank.



Once I had drawn lines on the side of the tank, I had the location of the four legs. Next, I used the compass and made four marks from the bottom of the tank. Those would be the tops of the legs. I cut the legs in the chopper. Now, all I had to do was cement them all to the same side of the vertical lines. The rubber bands worked well to hold the legs in place while I applied the cement.



To make the braces on the legs, I made a quick fixture. The locating pins are small brads pushed into a piece of wood. I used some .080" styrene channel. In retrospect, this may have been a little big and .060" may have looked better. I left the channel long and cemented them at the crossing. Then, I trimmed them to length in the fixture using the chisel blade in the hobby knife. I cemented small pieces of .015" styrene to the ends. When the cement set, I removed the piece from the fixture and started another one. While that one was setting, I trimmed the first one and drilled .024" holes through the gussets. Then I glued .020" styrene rod in the holes to look like bolts.



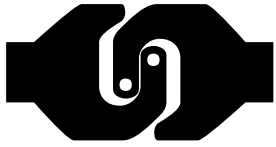
I trimmed each brace to fit between a set of legs. This was done by trial and error. I switched to the styrene cement shown, and it seemed to work better for this application. There are differences in styrene cement, so don't be afraid to try something different if you are not happy with what is going on. The vice helped hold things while I did the fitting.



This is what I have so far. The .020" rods for bolts look good. I think the .060" channel would look better but it would be delicate. I will try that next time.



This is what my pellet storage tanks look like so far. I made the tall ones with PVC pipe and an 080" styrene cap like the small ones. While I was filing and sanding the caps on the big tanks, I sanded off the writing on them. I have a feeling that could cause problems when painting them. In the next issue, I will figure out how I want to mount these, and start on the details. See you next issue.



COUPLERS AND THE “POGO STICK” EFFECT



By Michael Fox

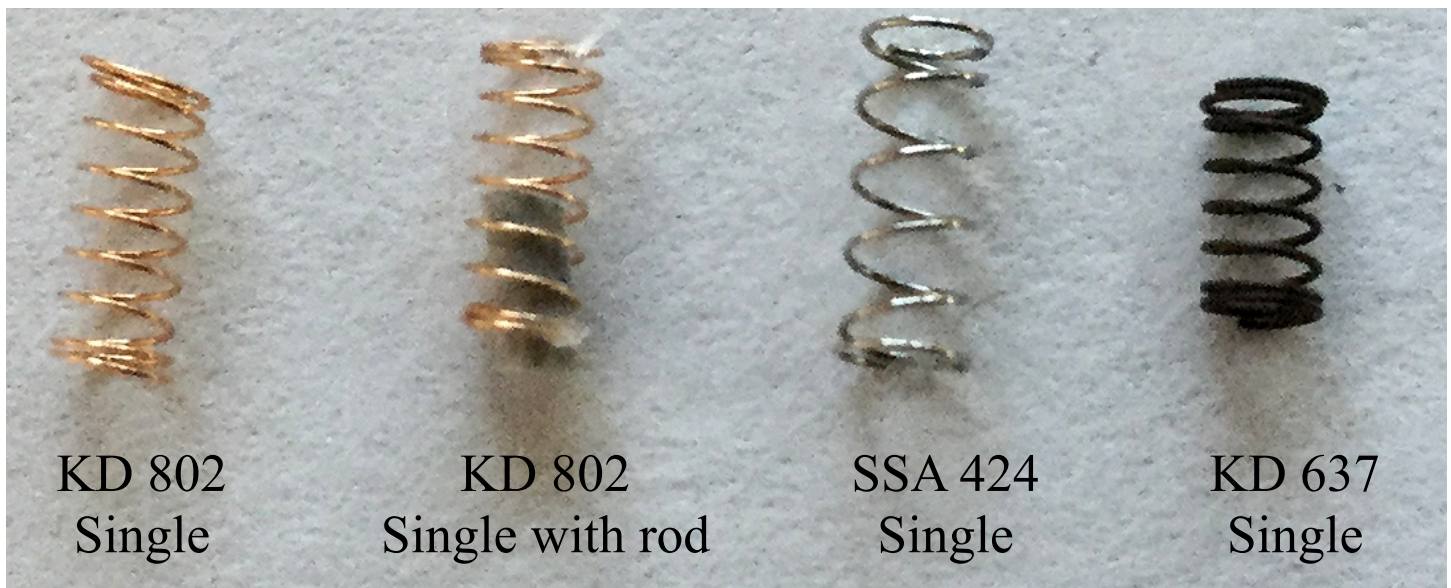
We have all witnessed what happens when an engine begins to pull a string of cars equipped Kadее 802 couplers. First, the slack is taken up within adjacent coupler heads and in the longitudinal centering spring. A more or less prototypical clank, shudder, and shake follows. Unfortunately, this initial extension of the couplers is followed by a recoil back and forth that moves adjacent cars in and out in an accordion or pogo stick effect for some distance. This is especially noticeable in the switching environment of my re-creation of the Milwaukee Road's 29th Street Patrol with repeated couplings and uncouplings, frequent stops, starts and changes of direction. As a newcomer to S scale, I have pondered how to minimize this unprototypical and visually distracting phenomenon.

While we probably can't change the weight of our cars to a materially significant degree, perhaps there might be a remedy to be found with the spring before searching for solutions farther afield. So, I set off to evaluate seven different combinations of three different springs: the one Kadее supplies with the 802, the stiffer S Scale America's Coupler Spring For Kadее 802 Draft Gear (part SSA424), and Kadее 637 truck springs. (Thanks to Ken Zieska and Jim King for alerting me to the latter two.) The experiment began by installing couplers first with one and then with two of each spring type in Kadее draft boxes. The two springs were intertwined so as to occupy the space of a single spring with the thought, probably the result of my having read the idea somewhere, that this would create a stiffer response and limit travel. Finally, taking Kadее's advice, the last couplers were given an 802 spring with a short length of rod inside thereby limiting travel while retaining the centering function. This approach brought problems. The first was Kadее's direction to cut the rod 0.156 inches long. Not possible. The opening for the spring within the shank when inserted in the draft box is closer to 0.130 inches by my measurement. Despite my aging eyes and unsteady hands, springs with a length of styrene rod 0.110 inches long eventually were wrangled into the draft boxes with much aggravation. All the couplers were then mounted on a mix of SHS and PRS cars.

The first test of the rebound-limiting effectiveness of the seven spring combinations was visual. By manually moving the cars back and forth on track in various permutations, a group of other members of the Pines and Prairie S Scale Workshop came to consensus on the relative performance of each package. The next step was to go back to the workbench and measure the actual length of travel with a calipers to see if those numbers correlated with the visual assessment. Here are the results.

Spring Measurement

Spring Model	Spring Setup	Travel in Inches
KD 802	Single	0.06
KD 802	Double	0.05
KD 802	Single with rod	0.02
SSA 424	Single	0.05
SSA 424	Double	0.04
KD 637	Single	0.03
KD 637	Single	0.02



From the measurements (your results may vary, we're dealing with hundredths of an inch after all), the double Kadee 637 and the Kadee 802 with a rod offer the least travel. My measurements of the length of travel correlated exactly with the Pines and Prairies guys' visual conclusions about the amount of rebound. Stiffer spring, shorter travel, less recoil. But the numbers do not tell the entire story. I found the rods needed to be cut very precisely (too short and extra play, too long and no centering) and were difficult for me to insert. Doubling the Kadee 637 truck springs made the lateral movement of the coupler noticeably stiffer. Whether or not this would lead to performance issues remains to be seen.

For the final test, a mix of couplers with Kadee 802 springs with a rod and single Kadee 637 springs found their way onto the same set of cars to see how they would react when actually moved by a locomotive over longer distances. All cars were weighted to conform to the NMRA Recommendation. After a series of movements – back and forth, stop and start, extended running – on Ken Zieska's Minnesota Heartland, the conclusion was unanimous. Both options completely eliminated the pogo-stick effect, and neither seemed to be more effective than the other.

So which choice should I go with, realizing that my decision also may effect both the draft gear and the uncoupling method I use?

1. A single longitudinal spring, probably the Kadee 637. I've rejected the idea of inserting rods as too problematic at my age, though others may have no trouble. Sergeant EC64K couplers, with a short centering spring, were not considered from the outset for the same reason, though they have many merits. Jim King's new centering draft gear for this coupler will be another plus.

2. A coupler that uses a different centering method: the SHS/MTS Kadee compatible or the Kadee 5 with their known characteristics; another HO coupler such as Walther's Proto Max; or the San Juan Car Company's Evolution coupler. Designed for the On3 market, the latter uses springy whiskers to center, has no longitudinal travel, has no external brass spring for the knuckle, fits the Kadee draft gear, and appears to mate well with the 802. It's slightly larger than the 802 and so also oversized for S, but with a more realistic rendering of the profile of the AAR Type E coupler at least to my eye.

3. Replace the spring altogether with a longer length of rod. This would eliminate longitudinal travel, but also centering, and I would prefer to minimize the number of five-fingered interventions on the layout.

This was a fun and entertaining experiment. It's easy to find your own fixes to problems, and I learned some things along the way. I've made my decision based on what I discovered. What would you do?

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WHAT'S ON YOUR WORKBENCH TODAY?

This series shows our readers what other modelers are working on, and we need your help to make it successful. All that's needed is a simple snapshot of what your workbench looks like and the project on it. Send us a picture or two along with a short description of what you are working on so we can share it here. If it's a project under construction, send it in. Repair job, send it in. Completed project, send it in. Send your pictures and descriptions to daniel@modelrailroadresource.com

Jas Millham sent us a series of pictures of his latest project,

The Derelict Stable

The subject of this "S" scale model once stood near the entrance to the goods yard at Kelvedon Essex UK. Kelvedon is on the old Great Eastern Railway line from London (Liverpool Street) to Norwich about 40 miles from London. I photographed it in the '70's, by which time it was probably 25 years since it had last housed a horse. As it was near the yard entrance, I was able to get my picture without trespassing on railway property.



This is the original building that inspired the construction of the model.

Due to fuel shortages during WWII horses, iron as well flesh and blood, remained in service longer than might otherwise have been the case. Round about 1950, Scammell introduced an updated version of their 3 wheel mechanical horse, the Scammell Scarab (Sca from Scammell, arab as in horse) with detachable semi-trailers and horse drawn deliveries rapidly disappeared.

I have no details of the interior, but I suspect it housed two, possibly three horses, a light horse which would have been used with a two wheeled covered cart for parcel deliveries, and a heavy one which would have been used for switching in the absence of a locomotive and also with a 4 wheel dray for heavier deliveries.

I knew I'd taken the photo, but could I find the print? On searching my negative files I found the 120 negative, so I laid it on a piece of white plastic card with a light under it and photographed it with a Macro lens on my digital camera. After downloading the file onto the laptop, I used Photoshop Elements to produce a positive image and improve the levels and contrast plus a bit of sharpening up in places. I then ran off two prints on different grades of paper.

Dimensions were estimated by counting bricks. For over a century, the standard size of a brick in the UK has been 9" x 4 1/2" x 2 1/2". The end wall had been re-pointed at some time which helped, but the herbage round the base complicated matters. I had to count downwards from the gable to the top of the doorway, then assume that the latter was 7' high. The building is long gone so no one is likely to contradict me! The brickwork courses on the front of the building are none too clear, so some guesstimation was involved. I ended up with the width as 13', the depth as 14' 3", (15' 9" over the fancy projections) and 14' 6" from ground to peak of the gable.

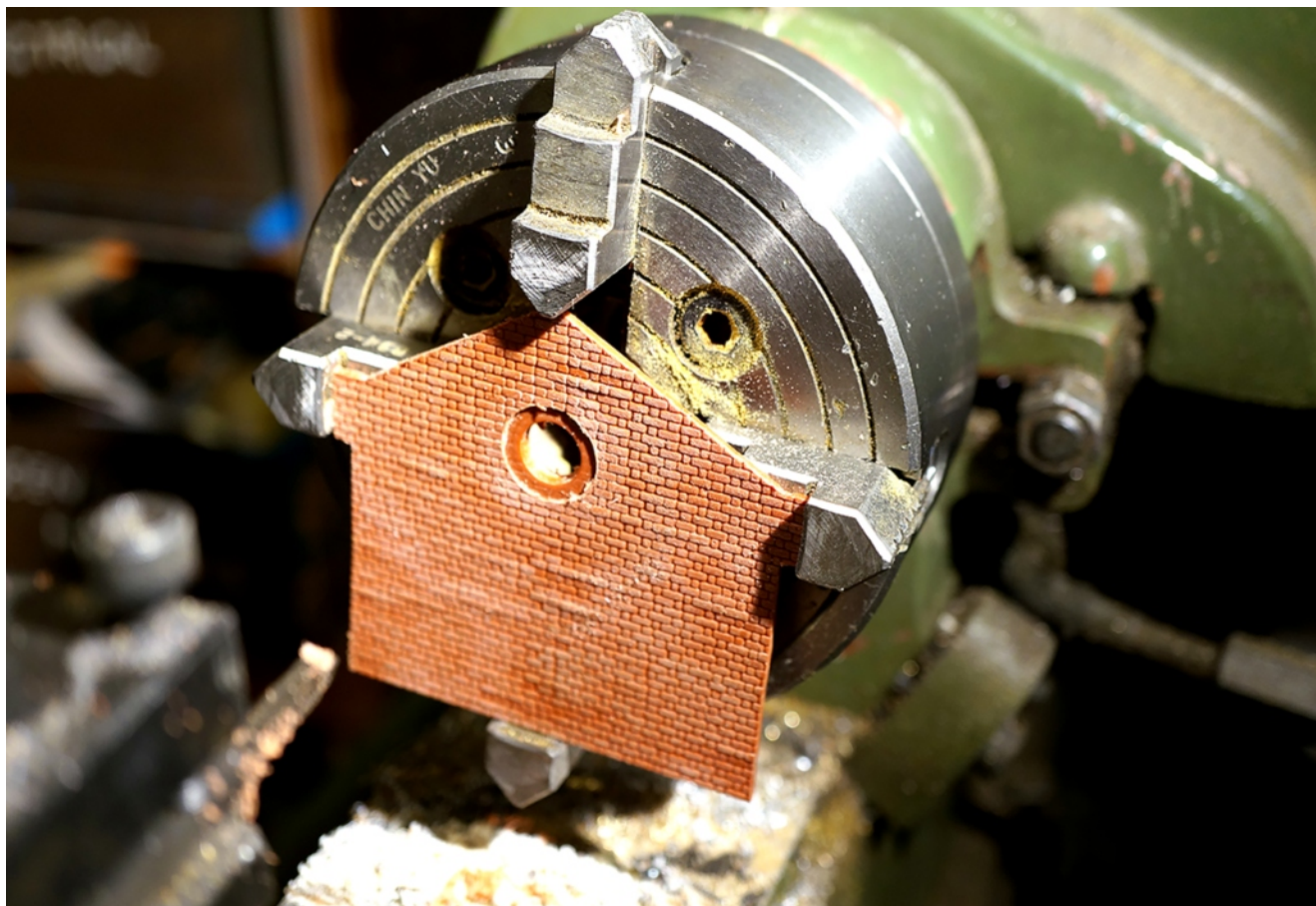
The walls were laid out on WILLS Flemish bond brickwork panels. I don't know if these are available in the US, they come in packs of four, 5 1/4" x 3" x 1/16th " thick. They are marketed for British 00 (4mm to the ft), but in reality the bricks are slightly over scale for S. English Bond and plain bond panels are also produced, again slightly over scale for S. When cutting out the end walls, I followed the brick courses for the fancy projections which means they are marginally over scale. A pilot hole was drilled for the round ventilator, then the wall was placed in a 4-jaw chuck on the lathe. A centre was placed in the tailstock which located in the pilot hole, then the chuck jaws were adjusted to fit. A few spins allowed final adjustments before opening up the hole and counter-boring the recess for the ring of bricks. If you are an S scale worker in the UK, you are de-facto a scratch builder, nothing has ever been produced commercially so there's nothing to collect. Hence when I put together my workshop, a lathe with milling attachments was high on the list of priorities. I have served a 5 year engineering apprenticeship so I know how to, and how not to, use one. The ring of bricks round the hole was made from 30thou x 10thou microstrip. The end of the strip was placed against the shoulder of the counter-bore adjusting its position so that an equal amount of hole was on each side of the strip. That way, the inserted bricks were truly radial. After fixing with solvent, the bricks were trimmed to length and painted burnt sienna which is a reasonable match for the WILLS brickwork. After cutting out the window and door apertures in the front wall, I added the arched overlays from the sprue seen in the workbench photo in front of the building. You can see where I've cut a section out of the largest arch to form the flatter arch over the window.

One end wall was fitted with a boarded up vent as on the original building made from planked plastic card, the other end, the one not visible in the photo of the original building, was fitted with a slatted ventilator. This was made by cementing three pieces of 3/32" plastic channel to a disc of plastic card. The hole in the wall was lined with 15 x 50thou microstrip to make the frame, and the disc with the channels was cemented in. After adding a windowsill below the window, the space between it and the window frame was filled with epoxy putty. The walls were assembled around a floor made from a piece of WILLS granite setts sheet. I then mixed up about a teaspoon full of DIY store own brand cellulose filler and rubbed it into the mortar grooves in the brickwork. When it was dry I rubbed the walls over with a large fiberglass scratch stick to remove the surplus. I was a bit too heavy handed round the painted bricks in the end wall's round vents and had to do some retouching. The walls were then given a dilute wash of black acrylic paint to tone down the filler.



Here we see the partly assembled model with the photo of the original building and some of the materials used in its construction. You can see where I've cut a section from the largest arch to form the flatter arch over the window. The arch used over the door can be seen on the other side of the sprue. Also visible is the use of office desk tidies to hold needle files, tweezers, pliers, rules, squares, scribes, paint brushes, etc. The Iron Horse Wine bottle only contains paint thinner. Not to worry, there's another 17 imperial gallons where that came from!

I have some off cuts of KAPAFix foam board, an Alcan product. These have a peel off layer on one side with an adhesive surface underneath. I inserted a putty knife between the card layer and the foam and discarded the latter. That left me with a piece of 1/32" card with an adhesive surface under a peel off layer. This was used to make the roof. Slates were produced from a strip of postcard 5/16th" wide with cuts half way across at intervals equal to the width of the slates. A strip 5/16th" wide was cut off the peel off covering at the base of the roof and the strip of slates pressed onto the adhesive surface. The process was repeated, each new strip of slates overlapping the previous one until the roof ridge was reached. Some slates were cut out cutting right through the card base to leave holes in the roof. A piece of 1/8th" x 1/32nd" strip was glued edge on across two of the holes to represent rafters showing through the holes. Dilute PVA glue was brushed over the roof to bond it all together. After the roof had been added to the building, the lead ridge was simulated by wrapping a self-adhesive label half round a length of plastic rod and pressing the flaps down onto the slates. More epoxy putty formed the cement flashing between the end walls and the slates. The capping to the end walls was made from the peaked ridge tiles in WILLS building pack A. Why A? I don't know, there has only ever been the one pack. I added drain pipes from the same pack. I couldn't see from the photo if the gutters were still there or had fallen off, I left them off, I'd already used up all the gutters in the pack anyway. The doors were the last items to be added, the bottom door being 4' tall and the top one 3' tall. I set the doors at different angles to make it obvious it was a stable.



One of the end walls mounted in the lathe to produce the counter-bore around the round hole to take the ring of radial bricks.



These pictures (left and top of next page) show the different treatments of the end walls, the distressed roof and the addition of the stable doors.



The slates were painted dark grey, the weathered lead ridge dove grey, the capping as concrete. The woodwork would have originally been painted green, but the paint used had a tendency to fade to a blueish green and eventually to a pale turquoise. I find Ocean Blue a fair match for what was after all a variable colour. When placing it on the layout, the herbage was made of fluffed up Scotchbrite pan scouring pad sprayed with hair-spray then Woodland Scenics fine turf sprinkled on top followed by some static grass. The base of the building was drilled and tapped so that it could be fixed with a machine screw enabling it to be reclaimed at a later date if the present layout is scrapped.



The building has now been set in place. It was probably used as a store until the roof needed expensive repairs, then a condemned box wagon was parked at the end of the track to replace it. The silver pipe up the wall of the iron works is a drinking straw from McDonalds, while the stylised lion on the iron works name board came from the lid of a hair cream tub. Those who know me will realise that must have been in the scrap box for a very long time. Silicone polish would be more appropriate today! The Ford 7V truck is a Lledo Days Gone diecast. These are to no consistent scale or period, it was purely fortuitous the this one is almost exactly "S" and was offered in railway livery of the period I model.

S SCALE SHOWS & MEETS

The *S 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.

Greater Houston Train Show
February 18th, 2017
Stafford Centre, Stafford Texas (Houston), 10505 Cash Road, Stafford, Tx 77
All scales model train show, 20,000 square ft. layouts, vendors, contests education clinics
<http://sanjacmodeltrains.org>



32nd Sn3 Symposium
April 6-8th, 2017
St. Louis Airport Marriott, 10700 Pear Tree Lane, St. Louis, MO Tel: 1.314.423.9700
The Symposium is an annual event that includes layout visits, a model contest, clinics and manufacturer and vendor booths. The cost is \$45 before February 15, 2017.
Email: smithpb@sbcglobal.net
Web: 2017sn3symposium.com



[Spring S Spree](#)
May 4-6th, 2017
Veteran's Memorial Coliseum
Marion County Fairgrounds
220 E Fairground Street
Marion, OH 43302
Over 37,600 Square feet of Exhibit Space
Over 135 Dealer Tables
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Pizza Party Friday Night
Flying Pancake Breakfast Saturday Morning
Join the tour of the unique Age of Steam Roundhouse in Sugarcreek Ohio
For further information, please contact COSG Member John Myers at email JohnFMyers@cs.com or call (614) 766-9033.

2017 O Scale West / S West 12
May 25-27, 2017
The Hyatt Regency Santa Clara (San Francisco area).
Family registration for the entire meet is \$35.
This includes you, your spouse/SO, and all children under 18, related or not. |Un-registered attendees can walk up on Saturday and get in for \$25.
<http://www.oscalewest.com/>



[2017 NASG Convention](#)
August 8-12th, 2017
Co-hosted by The Baltimore Area American Flyer Club and the Washington and Old Dominion Club
North Baltimore Radisson Hotel, 2004 Greenspring Drive, Timonium, Maryland 410/252-7373
(Be sure to use the "NASG17" code to get a reduced room rate).
[Click here](#) to visit the website, which includes the registration and car-order forms, and the tours.



[Indianapolis O Scale Show / S Scale Midwest Show](#)
September 21-23
Wyndham Indianapolis West
The Indianapolis O Scale Show has been in place for over 48 years. For the past 15 years, it has been chaired by James Canter, and he has decided it is time to "pass the torch" We, at The Model Railroad Resource LLC, publishers of The O Scale Resource and The S Scale Resource, are proud to have been selected to carry on the tradition for the 49th year, and include S Scale.
Website: indyoscaleshows.com
Email: info@indyoscaleshows.com



October 27-29th, 2017
Fall S Fest
Holiday Inn Express
3100 Wellington Place
Janesville, WI 53546
More Details to follow...

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