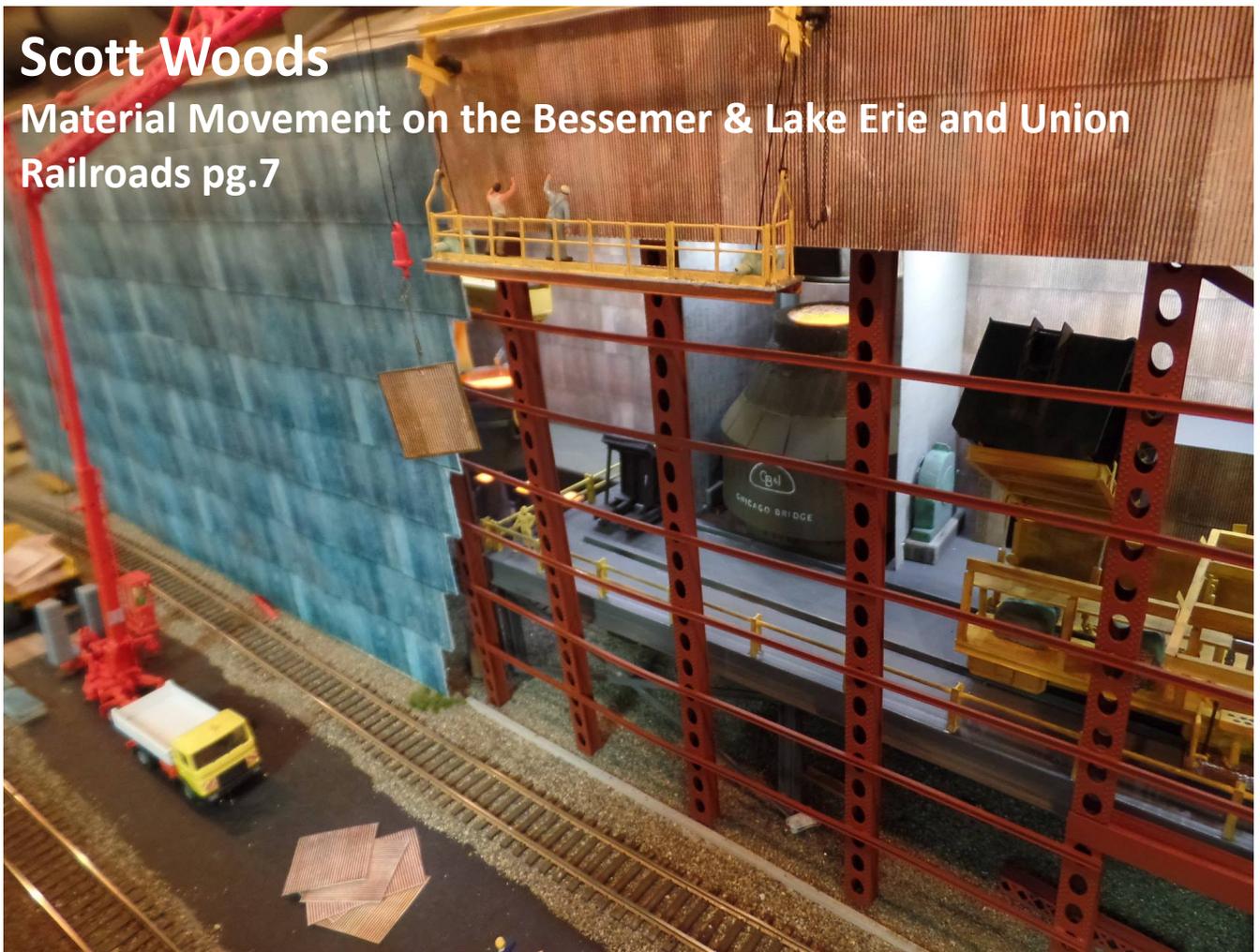


The Mill is an official publication of the Steel Mill Modeling and Steel Mill Pictorial groups

THE MILL

Scott Woods

Material Movement on the Bessemer & Lake Erie and Union Railroads pg.7



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Modeling Photos pg12

The TrainWorld City Works, by Sammy Maida pg16

Around the Mill: Armco Steel by Brad McClelland & Wayne Cole pg28

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The Mill

The Mill is a publication of the Steel Mill Modeling and the Steel Mill Pictorial groups and is sent out to the readers quarterly. The Mill is only available in PDF format and is free to subscribe.

History

The Steel Mill Modeling group was founded on October 21, 2014,

March 31, 2018 1,347 members

<https://www.facebook.com/groups/708840849171343/>

The Steel Mill Pictorial group was founded

July 14, 2017,

March 31, 2018 379 members

<https://www.facebook.com/groups/1561038727264008/>

The Purpose

This newsletter is to recognize the members of the steel mill community that would like to share their modeling ideas, on how-to build steel mills and equipment and the members who like to share their knowledge of the steel industry in general. This also includes industries that support the steel industry including coal, lime stone, slag, coke, etc.

To Sign Up

To sign up to receive the newsletter, send an email to Don Dunn at don_csx@hotmail.com

Thank You

I like to thank all the members of the Steel Mill Modeling Group, Steel Mill Pictorial Group and the Yahoo Steel Mill Group for what you all have done to make this newsletter possible.

As Always, Take Care, Stay Safe, Happy Modeling and God Bless you all.

Don Dunn
Editor

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Cover Photo

Cover photo is from Scott Woods and is of his BOF on his Bessemer & Lake Erie and Union Railroad featured on page 7.

Submission information

Any one who would like to submit pictures, articles, club news, upcoming shows or evens to be placed in future issues of The Mill, please send an email to don_csx@hotmail.com. Pictures used have to be of your own collection or used with permission. When submitting pictures the bigger the better for detail purposes.

All pictures in The Mill are used with permission. If there are any questions concerning pictures used please send them to don_csx@hotmail.com and the question will be forwarded to the contributor of the photo.

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New Website

*Steel Mill Buy & Sells (Facebook) https://www.facebook.com/groups/337587480069043/?hc_location=group

*Steel (Group.io) <https://groups.io/g/STEEL>

*The Mill (Blog) <https://steelindustray.blogspot.com/>

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Groups & Clubs



Steel Mill Modelers Special Interest Group (SMMSIG)

"The mission of the SMMSIG is to share information concerning modeling steel mills and railroads a well as to foster camaraderie among persons with interests in these topics."

<http://www.smmsig.org/>

Upcoming Events



Cincinnati Express

Mid-Central Region Convention

May 17-20, 2018

West Chester, Ohio

Hosted by Cincinnati Division 7, MCR, NMRA

Check out Cincinnati Division 7 Webpage for Additional information.

<http://www.cincy-div7.org/convention.html>



2018 Steel Mill Modelers Annual Meet (Kent, OH)

THE OHIO WORKS

July 12-14, 2018

Kent State University Hotel & Conference Center

215 S. Depeyster Street

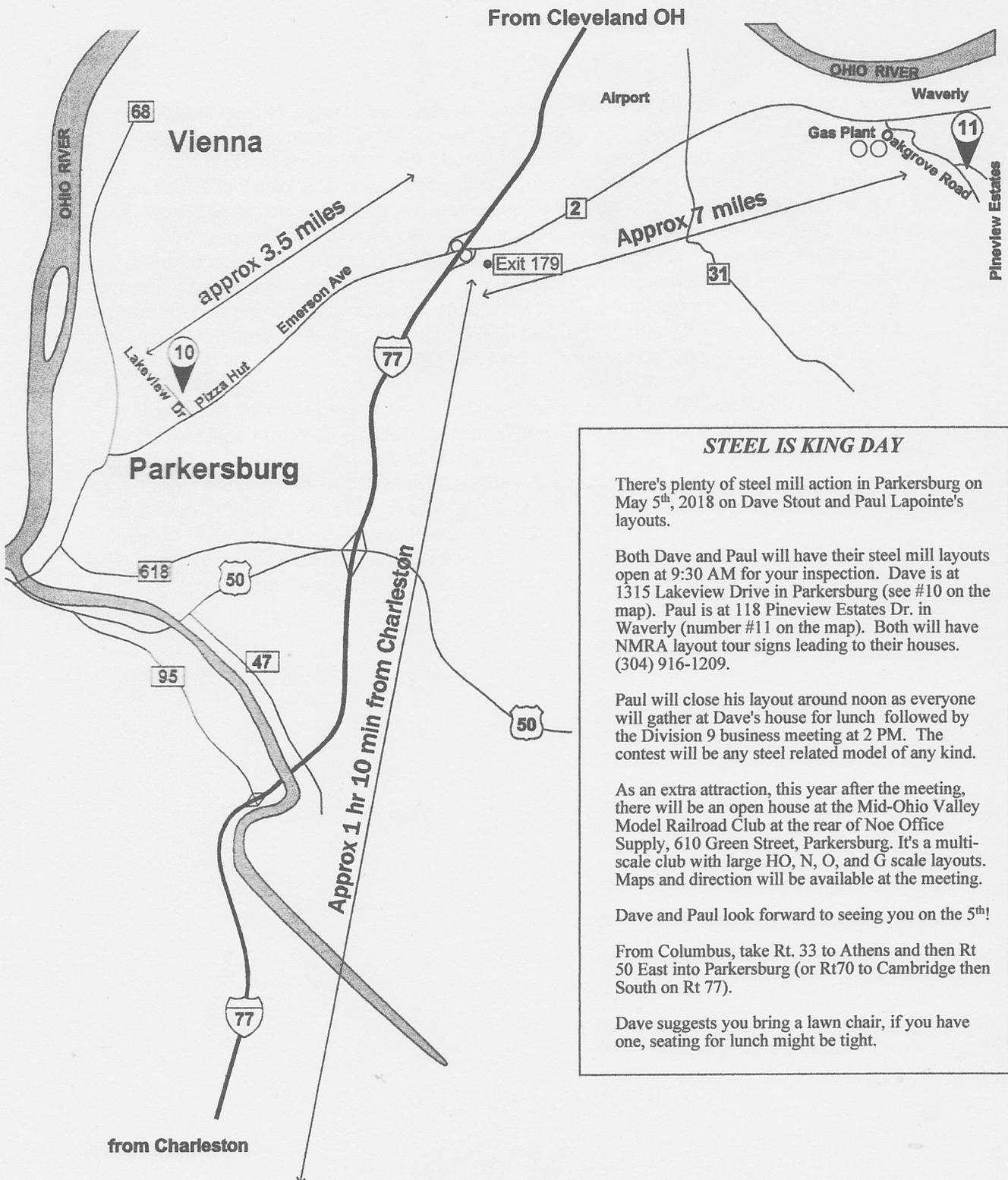
Kent, OH 44240

Additional information

<http://smmsig.org/2018-annual-meet/>

Steel is King Day!

May 5, 2018



STEEL IS KING DAY

There's plenty of steel mill action in Parkersburg on May 5th, 2018 on Dave Stout and Paul Lapointe's layouts.

Both Dave and Paul will have their steel mill layouts open at 9:30 AM for your inspection. Dave is at 1315 Lakeview Drive in Parkersburg (see #10 on the map). Paul is at 118 Pineview Estates Dr. in Waverly (number #11 on the map). Both will have NMRA layout tour signs leading to their houses. (304) 916-1209.

Paul will close his layout around noon as everyone will gather at Dave's house for lunch followed by the Division 9 business meeting at 2 PM. The contest will be any steel related model of any kind.

As an extra attraction, this year after the meeting, there will be an open house at the Mid-Ohio Valley Model Railroad Club at the rear of Noe Office Supply, 610 Green Street, Parkersburg. It's a multi-scale club with large HO, N, O, and G scale layouts. Maps and direction will be available at the meeting.

Dave and Paul look forward to seeing you on the 5th!

From Columbus, take Rt. 33 to Athens and then Rt 50 East into Parkersburg (or Rt70 to Cambridge then South on Rt 77).

Dave suggests you bring a lawn chair, if you have one, seating for lunch might be tight.

The Mill Special Issue Remembering Dean Freytag

There are plans on doing a special issue of The Mill with pictures of Dean Freytag's layout. I'm ask anyone having pictures or know of someone that has pictures of Dean Freytag's layout that is willing to have them shared please have them contact me.

If anyone who has a story they would like to share that they have with Dean and would consider having it put in this issue, please send it.

This issue will also include a list of all articles, other publication, and videos that Dean did and was in.

I'm also looking for any and all suggestion on this issue, release date is yet to be set. This issue will also be free to any one who wants a copy just like the regular issues of The Mill.

My email is don_csx@hotmail.com

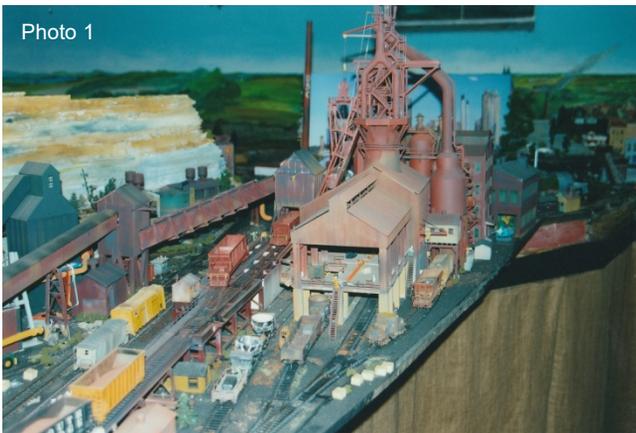
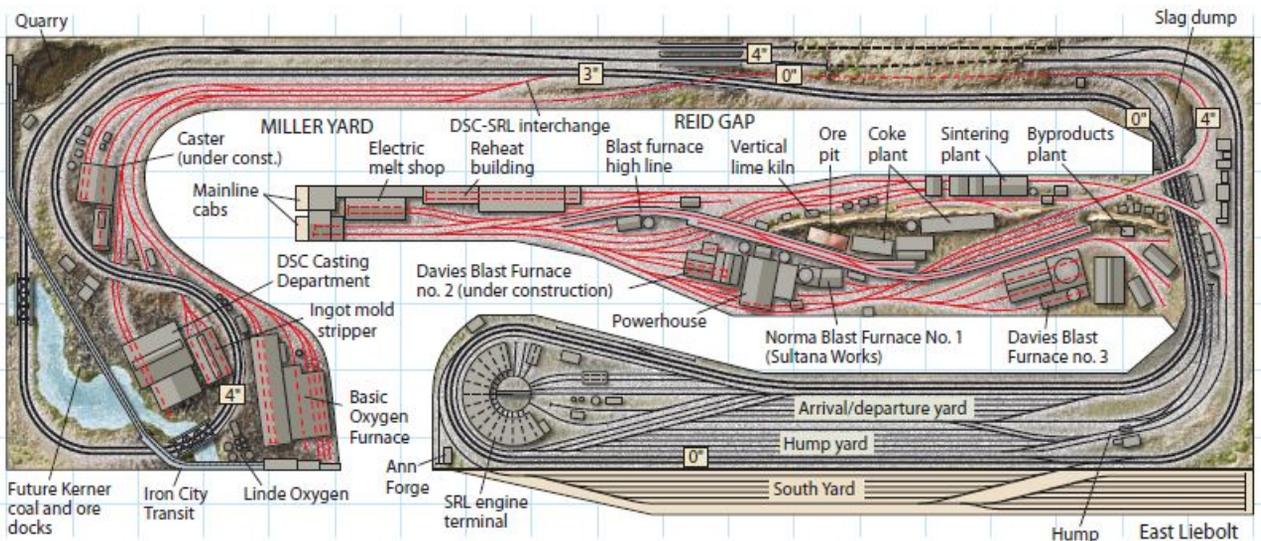


Photo 1



Photo 2

Photo 1 is from John Miller's Collection. Photo 2 is from



SOUTH RIDGE LINES RR

Scale: $\frac{3}{16}'' = 1'-0''$

24" grid

Davies Steel Corp. tracks in color

© 2003 Kalmbach Publishing Co., Model Railroader

Track plan is use with permission from Kalmbach Media

MATERIAL MOVEMENTS ON THE BESSEMER & LAKE ERIE AND UNION RAILROADS

By Scott Woods

Scott Woods models the Bessemer & Lake Erie and Union Railroad on his 32' x 34' double deck layout. The following pictures and description are the movement of material on his layout that serves the steel industries that he models.



Photo 1

(Photo 1) Messabi Ore arrives at Conneaut, Ohio from Duluth, MN aboard US Steel's flagship ore boat William A. Irvin. Hulett's Quickly move the ore to Bessemer Jennies for the journey to North Bessemer and then on to Pittsburgh. Limestone also ships from Conneaut. Northbound coal from West Virginia and Western PA. comes into Conneaut from shipment throughout the Great Lakes. Coal Tonnage nearly equaled ore tonnage.



Photo 2

(Photo 2) Ore and Limestone arrive at the Edgar Thomson blast furnace yard. Hot Metal and Slag are about to depart the furnace.



Photo 3

(Photo 3) The slag is carried to Risher Dump where it is dumped, crushed and hauled away to be processed.



Photo 4

(Photo 4) Hot metal arrives at the Edger Thomson Basic Oxygen Furnace (BOF). Metal is poured into the relading pit, transferred to the BOF, blown and teemed into ingot molds.



Photo 5

(Photo 5) At the scrap yard, scrap is sorted and loaded into scrap buckets to feed the BOF.



Photo 6

(Photo 6) The teeming ingot molds move to the stripper shed where the molds are stripped from the ingots. A leased J&L 45 ton center cab worked the stripper.



Photo 7

(Photo 7) Valley Yard at Edger Thomson is always a busy place.



Photo 8

(Photo 8) Ingots are moved to the soaking pits at the slabs mill and then rolled into slabs.

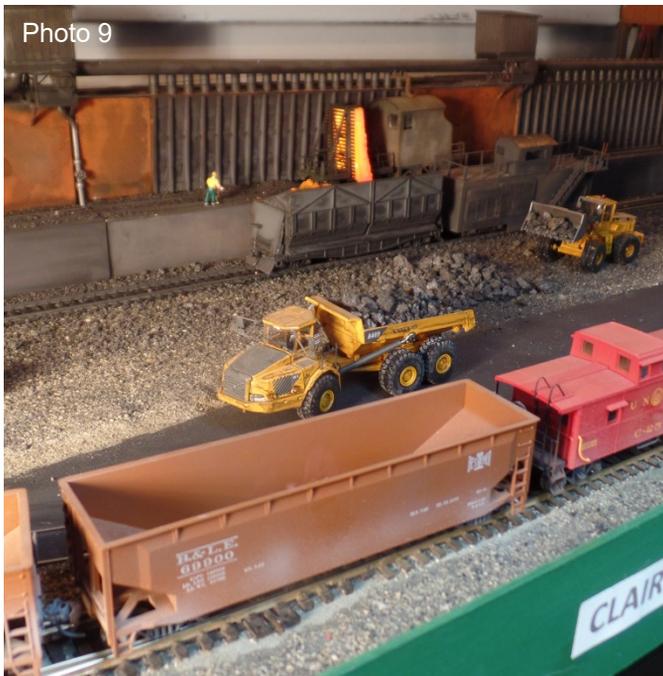


Photo 9

(Photo 9) Glowing coke is being pushed from the coke ovens at the Clairton coke plant. It will move next to the quenching tower, then dumped at the coke wharf, and loaded out on coke racks.

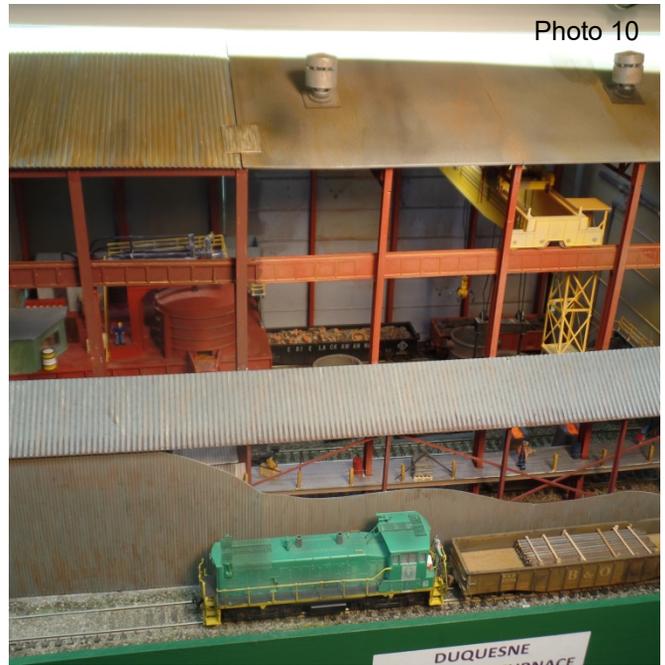
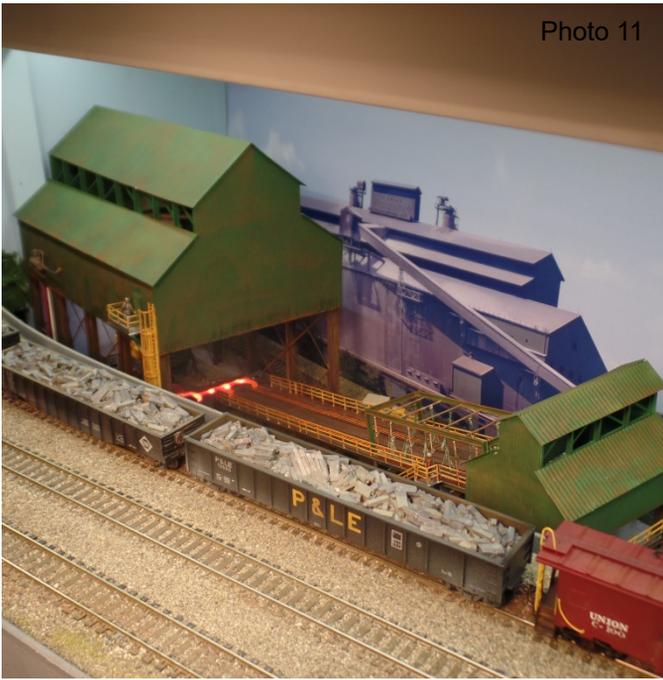


Photo 10

(Photo 10) Scrap feeds into the Duquesne electric arc furnace (EAF). Ladles of Molten steel are pushed to the adjacent bar mill. Finished bars ship out by gondolas

Photo 11



(Photo 11) Lades of molten iron from the blast furnace arrive at the Duquesne pig caster. Pigs of cast iron ship out by gondolas.



Photo 12

(Photo 12) The Duquesne classification yard sorts everything out and keeps things moving.



Photo 13

(Photo 13) At the Duquesne coal wharf on the Monongahela River, coal is transferred from barges to Bessemer hoppers. Much of it was hauled to the coal docks in Conneaut. This Scene will also contain the continuous bucket unloader still in use today.



Photo 14

(Photo 14) A mile north we find Central Wharf. Here steel was moved from rail to barge for shipping on the Mon, Ohio, Mississippi, and other rivers.

Photo 15



(Photo 15)The Duquesne Engine Shop.

Pictures and descriptions by Scott Woods.

DESCRIPTION OF SCOTT WOOD'S LAYOUT

- *The layout is set in the 50s. It is based on the Bessemer & Lake Erie primarily, the Union RR and a LOT of steel mill areas. There are 2300' of track, 740' of which is in the mills.
- *There are 1100+ cars, 110+ engines and 1600+ people on the layout.
- *The layout is all scened except the Duquesne Works currently under construction.
- *The rolling stock and buildings are all weathered.
- *Layout is 32' x 24', 2 full levels

MODELED SCENES INCLUDE:

- *Conneaut docks - 2 Hulets – scratch built 7' ore boat – scratch built rotary coal reclaimer
- *coal unloader, storage and silo , big ore yard - 5 track yard
- *Greenville shops - roundhouse - turntable - erecting hall - transfer table - 6 shop buildings
- *Pardoe mine - 6 tracks - the mine that started the Bessemer in 1867
- *Shenango Yard (9 tracks) - Osgood Yard (6 tracks) - North Bessemer staging (8 tracks)
- *General staging yard (16 tracks) - Valley Yard at ET (9 tracks) - Duquesne Yard (5 tracks)
- *Pittsburgh Union Terminal - 8 tracks
- *Greenville Steel Car - 5 tracks
- *Oil City Refinery - 4 tracks
- *Conneaut Lake Park - 5 operating rides - some scratch built
- *Greenville Railroad Park - expanded future version
- *Universal Atlas Cement - 3 tracks
- *Several town areas, Central Park, a sawmill, a farm, a swimming beach
- *an 8' long Greenville Steel Car building - 5 tracks
- *3 1/2 turn helix

STEEL MILL AREAS MODELED ARE:

- *Homestead Steel - blast furnace - ore yard - rolling mill - office (soon to be rebuilt into ET)
- *Clairton Coke - 60 ovens - coal receiving - coke shipping
- *Edgar Thomson - BOF plant - scrap yard - slab rolling mill - stripper shed - engine shop
- *Duquesne works - pig caster - electric arc furnace - bar rolling mill - engine shop
- *Duquesne coal docks -coal from barges to rail
- *Central Wharf - steel loading docks at Munhall - steel from rail to barges
- *Duquesne engine house
- *Risher slag dump

Modeling Photos

Tom Stewart's scratch built mill equipment



Photo 1

(Photo 1) 6 axle forging ingot car.



Photo 2

(Photo 2) 45 tonner ingot train



Photo 3

(Photo 3) 45 tonner shifts alloy molds

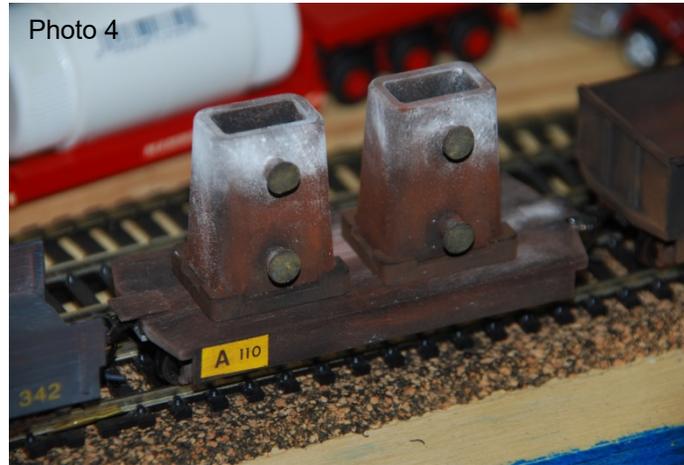


Photo 4

(Photo 4) Alloy ingot car



Photo 5

(Photo 5) BSCX 1009



Photo 6

(Photo 6) BSCO HD 6 axle flatcar

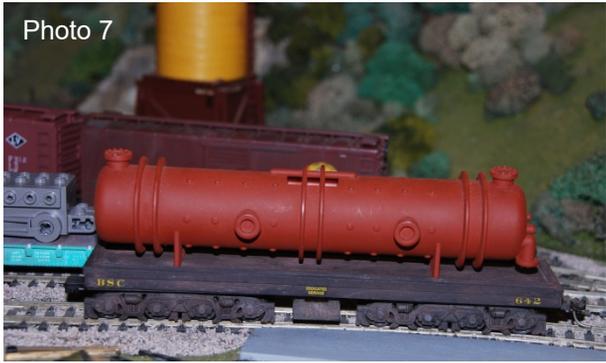


Photo 7

(Photo 7) BSC 8 axle flat with industrial load.



Photo 8

(Photo 8) BSC 8 axle HD flat car empty



Photo 9

(Photo 9) Youngstown 661 with mill gondola

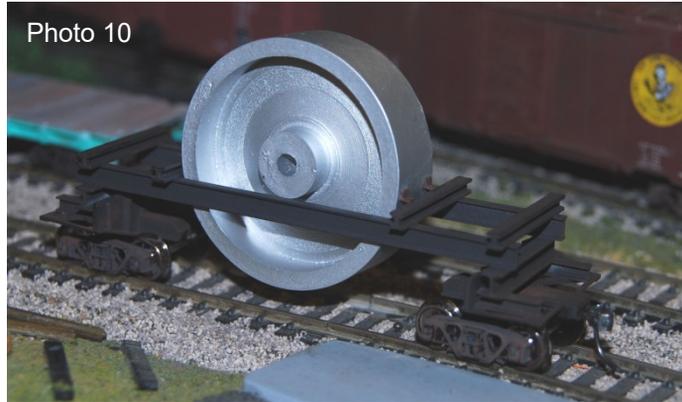


Photo 10

(Photo 10) BSC inplant transit car with load



Photo 11

(Photo 11) Bethlehem controlled cooling cars

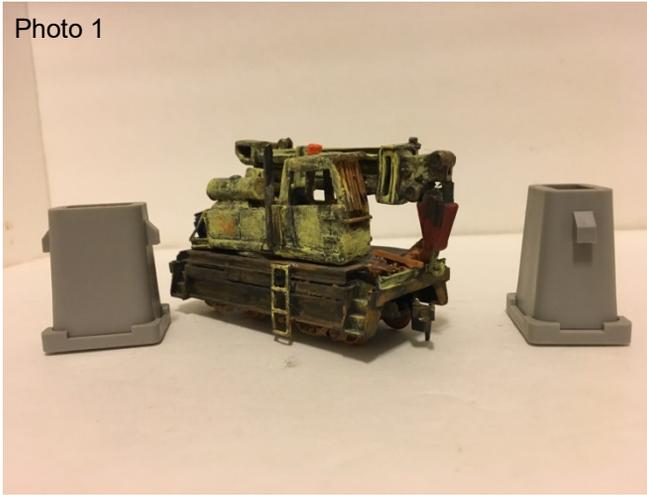


Photo 12

(Photo 12) BSCO 1903 HD transport car

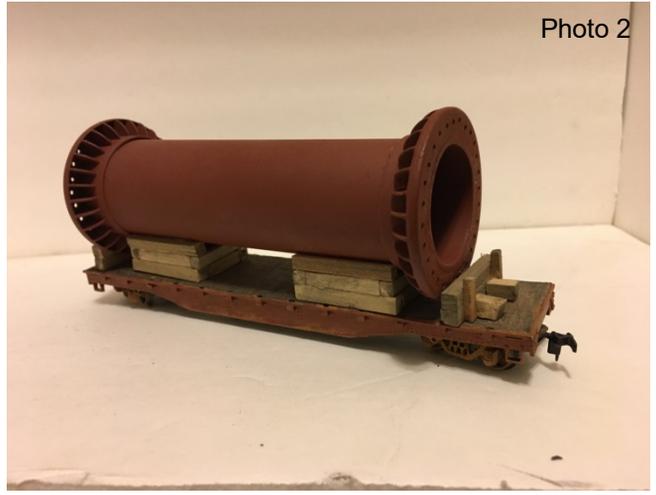
Franklin Forge & Gear's scratch built mill equipment

Photo 1



(Photo 1) Close Clearance Pocket Crane – used in heavy lifting inside mill buildings.

Photo 2



(Photo 2) Flat car with load made from pipe and milk caps lids

Photo 3



(Photo 3) Locomotive Crane w Electro-Magnet used to clean up mill trackage. 4 ton capacity.

Photo 4



(Photo 4) Based on Santa Fe Locomotive Shop Goat 2298. Scrapped in 1935.

Photo 5



(Photo 5) Based on USS Geneva Locomotive 25. Ore Dock Locomotive.

Photo 6



(Photo 6) *Flying Ingot* Open Hearth Ingot Locomotive. Used for Ingot Trains.

Photo 7



(Photo 7) Atlas Ore Transfer Car. Scratch built shell on an Athearn GP 9 chassis.

Photo 8



(Photo 8) Re-purposed Matchbox firetruck redone to be a Heavy Equipment Service Truck

Photo 9



(Photo 9) Gondola Rack – used to carry large sheet plates or rings made from milk caps.

Photo 10



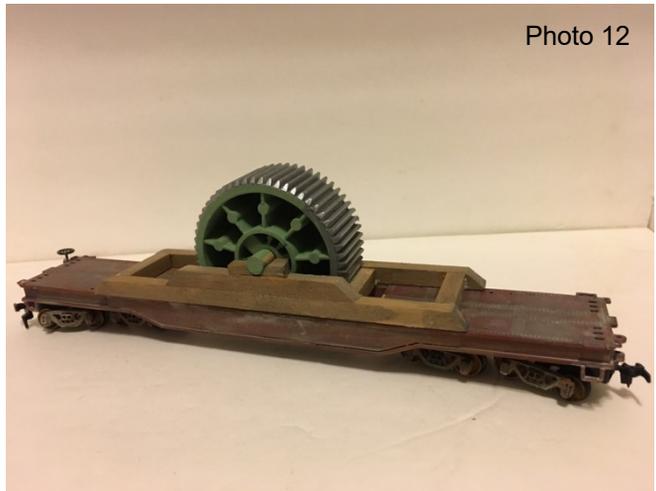
(Photo 10) Scrap Bins – Inexpensive dump truck beds with thumb tack heads for trunnions. Pencil shavings Used for scrap.

Photo 11



(Photo 11) Large Ingot constructed from PVC pipe and plastic half rounds for fluting. Represents an ingot being transported between mills.

Photo 12



(Photo 12) 50 ft. well car made from 2 Athearn heavy duty flat cars transporting a large gear.

The Trainworld City Steel Works

By Sammy Maida

The Trainworld City Steel Works is an HO scale, seasonal, outdoor and static steel mill model based on the former Duluth Works of U.S Steel. The model is a large part of the Republic of Trainworld layout, which is a fictional island nation in the Eastern basin of Lake Superior near the U.P of Michigan during the early 1950's.

Being that the model is outside, modeling an integrated steel mill this large anywhere is hard, at best. It's even more difficult when it's Northern Minnesota. Winds play havoc with many of the structures, and it's prone to sudden severe weather shifts which can force me to abandon

a photo shoot in a hurry. It is this reason that the model is not permanently outside, but it is taken out when I have sufficient time to display it...AND the weather is favorable for a sufficient amount of time. (Think of displaying the model like you would launch the Space Shuttle and you'll get where I'm at) Taking the model from it's storage space in the nearby Escape Pod - which is where I create, repair and store all of the models for the layout, and setting it up in conjunction with the city, takes a few hours. Placing figures and train cars and etc. takes about another hour. A photo shoot usually lasts all day and is quite an exhausting endeavor, but it is all I can do given the circumstances.

The short story of why this model has to be displayed outdoors is simple. In 2012, my fiance and I lived in a fairly modest house in Cloquet, MN with a large unfinished basement. I had intended to use this for my model layout - to include a model of a large integrated steel plant. After having talked with the late Dean Freytag a few years before, he convinced me to do it. We began sharing notes, letters and ideas - which I still have to this day in a giant binder called the "Dean Bible". So I began accumulating trains and buildings and such with the intent on building my city and steel mill. My fiance developed medical problems and we had to sell our house. We, fortunately, had another house directly across the street (she is a homeschool teacher - the second "house" she used for her school.) So we moved in 2013 across the street. The new, smaller, house didn't have a basement and no room to model anything, let alone a large steel mill. The backyard was large though, and it did have a sauna shed with a barrel stove. So I made the decision to turn this into the "Escape Pod" model shed and plotted a chunk of the yard to move my layout outside. The result is the Republic of Trainworld, or simply known as Trainworld City.



Trainworld City Steel Works May 2016.

The entire layout is shaped like an “L”, the city portion at one end, the steel plant at the other end, and a railyard connecting them together, known as Railton Yard. The steel mill portion is about 20 feet in length, by 6 feet wide. The integrated mill consists of a materials yard with 3 bridge cranes, a boat slip, rolling mills, a soaking pit furnace and ingot stripping building, a simulated 10 furnace open hearth melt shop, pig caster, ladle repair shop, skull cracker crane, a lab, two boiler houses, a powerhouse/blowing engine house, two blast furnaces and a coke plant. Various other smaller shops and structures dot the layout as well.



The scratch built BF during the 2016 exhibit from the tap side. This side of the BF is purposely open as part of the cast house hasn't been built yet to create an "enclosure". Note one of the bottle cars is unintentionally derailed and a cast house leg support is crooked from being broken and reglued a few times. Duluth didn't use bottle cars at any time during its operation, but the Trainworld City Steel Works has two of them.

The Republic of Trainworld, as stated earlier, is a fictional island country located in the Southeastern basin of Lake Superior near the U.P. during the 1950's. The also fictional parent company, USTS - which stands for the United States of Trainworld Steel Corporation, owns its own railroads, ships, and etc. - much like U.S Steel did. So the fictional railroad, the Trainworld and Chippewa Range Railroad - is painted much like the Duluth Missabe and Iron Range, but is a tad different. The TCR has a tomahawk in place of the DMIR's famous arrowhead. The TCR can be seen quite a bit on the layout, and there is a touch of the DMIR in that a few ore cars still bear the DMIR logo as well as a few cabooses. The TCR hauls iron ore and other materials from the mines located on the Western side of the island to the mill and other locations.



The S.S. *Karl Uthaug* unloading at the Trainworld City Steel Works during the 2016 exhibit. This scratch built ore boat is far from finished, and not to true scale. Rather it was built to fit the slip on the layout and is much smaller than a typical Great Lakes boat for that era.

The yet to be finished model ore boat, the *Karl Uthaug*, is a scratch built model designed to fit the Trainworld City Steel Works, which is why it is the length it is. It is not a scale ore boat. The ship itself was named after my great grandfather who was a Great Lakes mariner and died on the vessel *A.D MacBeth*. His character lives on in my model railroad though, as he is the CEO of the Chippewa Transportation Company - a bit of a play on the Columbia Transportation Company that sailed the famed *Edmund Fitzgerald* and the colors of the ship reflect the homage. The Chippewa Star Transportation Company is also owned by the steel company.

The Island does have its own sources of raw materials, but the steel mill does receive regular shipments of coal, ore and limestone from other ports to augment its own domestic shipments. Most of these come from boat. But some domestic (from the Island) shipments come from the various mines and such on the Island itself, and USTS controls and delivers these materials via its own lines.

The Mehina Coal and Chemical Company (which has its basis in the far Western coal and gas producing city of Trainville) is a subsidiary of USTS and hauls most of the coal to the mill. Some arrives by boat, but most comes from the Mesquite Range in that area. The name of the company came from my sister who termed it as the "ultimate word for anything" and I decided to use it here on my layout. Mehina, also known as MCC, delivers primarily

coal but also gas and oil in its tank car fleet. Its engines can be seen paired, sometimes, with sister fleet engines such as the TCR and so on.

Other smaller subsidiaries also make their way to the mill, such as the Mallet Mining and Mineral Company, which primarily hauls limestone. The Soo Line also makes shipments of limestone to the mill.

The steel mill has its own fleet of locomotives. They are mostly Porter Hustlers and are modeled in the colors of the American Steel and Wire Division of U.S Steel at Duluth - black and lemon yellow. Other engines and various equipment make their way in and out of the mill, most are the property of the TCR. Depending on the customer, several different flags may arrive at the rolling mills to ship out their products.

The Duluth Works used open top Kling styled hot metal cars, which are also primarily used at the Trainworld City Steel Works - in addition to two Lima torpedo cars that I bought second hand on ebay. Other vehicles and equipment include several ingot trains and molds from State Tool and Die, and slag cars from Walthers. The plant has its own maintenance crane and wrecker car as well and both are painted to match the former American Steel and Wire colors at Duluth.



Overview of the plant during the 2016 exhibit showing most of the “business side” of the works. In reality, Duluth Works did not have a boat slip by the ore yard, even though one was proposed. I made one for the Trainworld City Steel Works model to illustrate how it may have looked. The materials yard and cranes sit on the model approximately where the wire mill and machine shops would have been at Duluth - much closer to the open hearth than they were in reality. The bridge cranes and yard are unfinished. The raw materials seen during the exhibit were made using ground up grill charcoal briquettes for coal, flour for limestone, and various grades of coffee grounds for ore.

To create the mill in the image of the prototype, we have to go back to 2007 when I was first introduced to Dean Freytag, and he told me it was possible. Since then, I gave my every effort to creating this. It hasn't been easy by any means. Those who have a layout and model workshop or bench in your basement, I envy you. I have to create and store my models in a sauna shed in a backyard in Northern MN. It takes forever to heat the shed in the winter just to thaw it out to begin modeling, and once you start, you have limited time to complete anything. Modeling goes better in the spring, summer and fall, but not much gets done in the winter - but a few things do.



2016 view of part of the coke works. The stock Walthers quench tower will eventually be replaced with a custom built tower to match the prototype. The smokestacks have also been painted to match those at Duluth. The coal crushing towers have yet to be modified and the coke conveyors and towers (not seen in this photo) are still a long ways off.

I started building the mill with the blast furnaces and open hearth in 2012. Because the Duluth steel plant is such an oddity in terms of steelmen I decided to build one original Duluth blast furnace (built 1915) and one of the replacement furnaces, built 1942 for the War effort from Joliet (known as the Joliet furnace). Scratch built, it was made with primarily a milk jug and PVC toilet parts and augmented later with styrene, Evergreen and Plastruct beams and such. Making an original Duluth BF is a modeling nightmare, while the Joliet furnace can be done somewhat easier with a Walthers furnace, which is what I purchased later. The original Duluth BF was a 500 ton stack, but with 5 hot stoves - and all offtakes were combined into ONE GIANT stack. The bends for a modeler are hard to do, so I decided to use flexible tubing, but this model still isn't finished. Work still in progress.

As for the “Joliet Furnace”, I had to take the Walthers model and cut the cast house OFF, then reposition it to fit the hot metal tracks of the prototype. Not as drastic as building a scratch built BF from a 1 quart milk jug and PVC toilet parts, but cutting an “out of production” expensive Walthers model has it’s scary moments. It so far has worked out, but the model isn’t finished. As like the other BF, work still in progress.

The open hearth was made from two second hand Heljan O scale engine houses and the rest was fabricated to fit the prototype. Building the open hearth wasn’t easy as well. Because of size constraints, I was forced to model the ten 75 ton furnaces in 2D, instead of 3D. In the end, it didn’t turn out that bad but I wish I could have done it better. Size constraints limited the detail of an actual open hearth, which also created problems with the roof and other areas. It is still the most flawed building on the layout and one that I constantly try to fix to get better.

The open hearth model is really a set of a few structures, almost all of them scratch built or heavily fabricated. While it appears in finished form as a whole structure, it is really two buildings put together and then built around. The charging ramp is one separate structure, mated to the main building, as is the stockhouse. The main OH itself is almost 4 feet long itself. There are problems making the roof line up properly, but these are things that will be corrected later. The stacks reflect a 10 furnace shop, yet inside the interior doesn’t match the prototype perfectly. It still resembles an OH of that era. The hot metal mixer was scratch built, as were most of the cranes. A charging machine was made by cutting off the top of a Tyco crate moving crane and modifying it. It works for now, but I wish to build a real scratch built one. The entire model was heavily modified to have a “functional” interior, but I’ve only gotten so far as of recently.



Don Jago, former Duluth steelworker, came all the way from St. Joseph, Missouri to visit the 2016 exhibit, despite being in ill health. It was rewarding to listen to him describe the details and inner workings of the plant from a first person perspective and give the model “life” while it was display. Sadly, he passed away a mere month later in July 2016.



Overview of the Trainworld City Steel Works, aka the Duluth Works, during the 2016 exhibit. As the Duluth Works, the TCSW's Railton Yard becomes Duluth's Steelton Yard (seen at bottom) and rotated sideways. In Trainworld City, the yard is lengthwise.

The coke plant is made from two Walthers kits, and then fabricated to create the image of the prototype at Duluth (which was identical to the Gary Works coke ovens, since they were built at the same time.) The Walthers kits were modified from square bunkers and crushers, which came with the kit, to some modified units to reflect the prototype. Both Gary Works and Duluth Works originally used a round coal bunker directly above the coke ovens, and I decided to use a G scale water tank to modify my plant to match this. The modifications are still on going. Also, Walthers quench tower didn't match Duluth's so I plan to swap it out eventually with a scratch built one.

I created a scratch built quench locomotive based on the Duluth Works loco (1 of 2 to be built) and a scratch built pusher machine, also one of two to be built. A makeshift coke guide engine made from a Tyco box crane mover, is a stand in right now for a unit to be built later.

The rolling mill buildings are, as of now, empty shells - to be either scratch built, or modified later. But as of now, the rolling mill buildings are empty. The lone exception is the soaking pit and stripper building, which is in its infancy of construction and sits at the end of the rolling mill - nearest the open hearth. Eventually, some of these buildings, will be detailed with interiors. Again, a lot to be done.



Rear view of the Trainworld City Steel Works on display, 2016

While the model steel mill is intended for use on the Republic of Trainworld layout, because of its design and close resemblance to the Duluth Works, it was put on public display for the very first time on June 25th, 2016 in conjunction with a historical presentation and exhibit, despite being in unfinished form. This is also the last time the model, on either the layout or elsewhere, has been displayed. 2018, though, looks to be a promising year for continued modeling improvements to both the mill and the layout itself.

The Republic of Trainworld is certainly among the most odd layouts in the HO scale model railroading circuit and the Trainworld City Steel Works is no exception to that oddity. As modeling progresses in the future, I hope to add as much detail as possible that can be allowed with such a unique layout.

For further information on the layout, please view <https://www.facebook.com/RepublicofTrainworld/> for the facebook site, and <http://trainworldcity.webs.com/> for the official site which has more detailed information.

For more information and history on the prototype, the Duluth Works, please see https://en.wikipedia.org/wiki/Duluth_Works

What's on the bench!

ST&D Kling Double Pot hot metal cars by Don Dunn

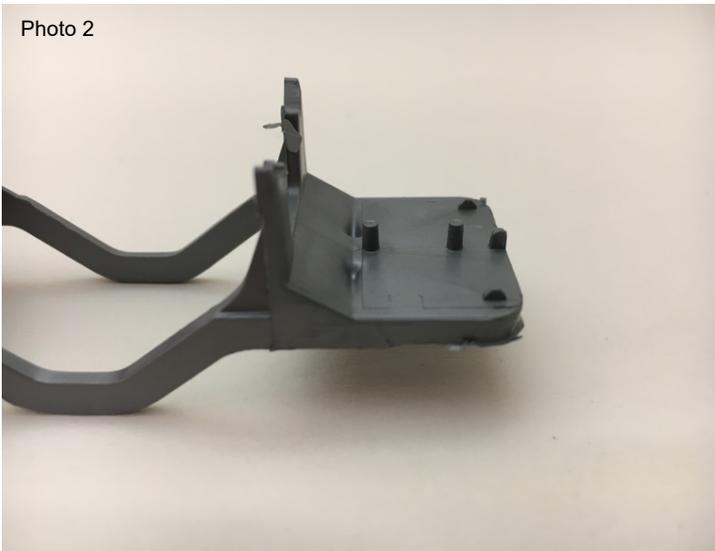
Photo 1



In this month installment of What's on the bench we are taking two ST&D 75 ton Kling hot metal cars and making a double pot hot metal car. The idea came from looking at the Bethlehem Steel's unique double pot slag car.

Photo 1 shows two ST&D kits that are going to be use along with a completed double pot car. One thing to keep in mind is most of this build will be built per instructions provided by ST&D. The only modification that will be done is to the frames of both of the kits.

Photo 2

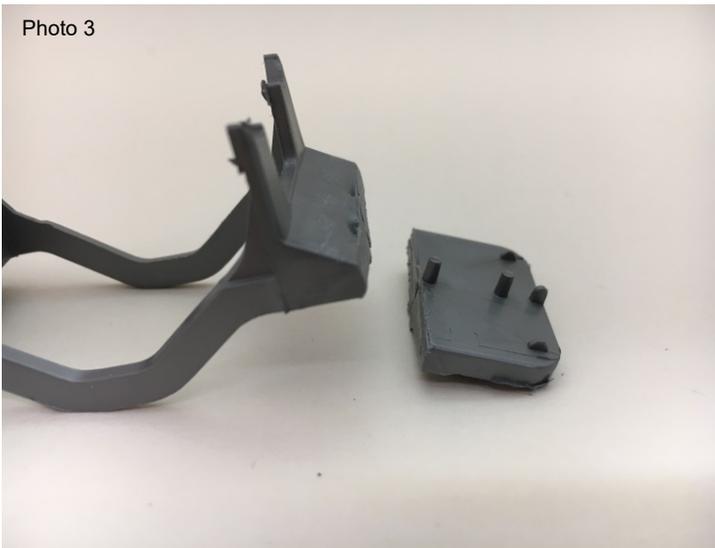


The tools used are Atlas Snap saw, modeling glue (your choice), philips head screwdriver, fine grit sandpaper, drill bits, pin vice, and sprue cutters.

The project is started by cutting one end off each of the hot metal cars. Each end of the Kling cars are different. So the opposite end is cut off of each car.

The cuts on the cars ends was made where the end platforms for the brake rigging, and the angle areas going to the supports to ladles meet (photo 2 & photo 3).

Photo 3



At this point the car is sanded, all mold flashing is removed and holes drilled per the ST&D instructions for steps, grab irons and other detail parts are done before gluing the two frames together. (Only step I omitted from the ST&D instructions was the part for the air lines)

Photo 4

Photo 4 shows both cars with the ends cut off each car.



Photo 5

Photo 5 the car is glued together.

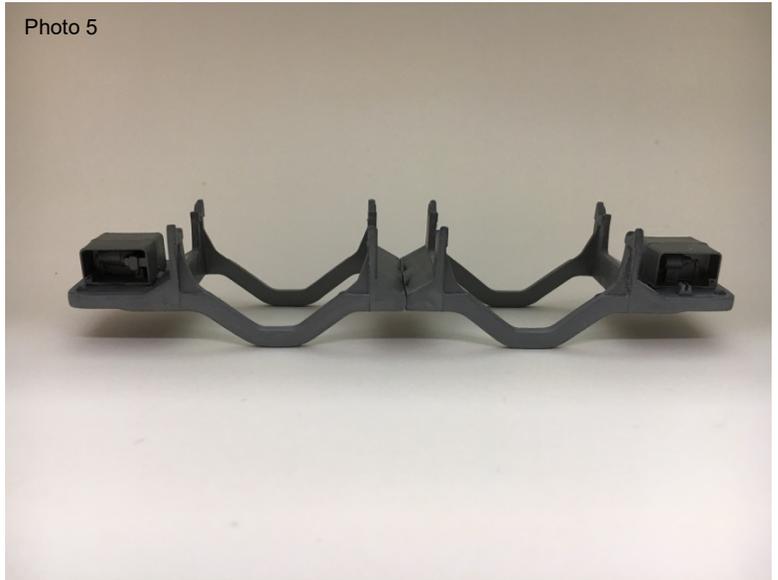


Photo 6

Photo 6, The seam on the side of the car is braced by using strip styrene cut to length. Each end of the strip is cut at an angle to match the angle of the car.



Photo 7

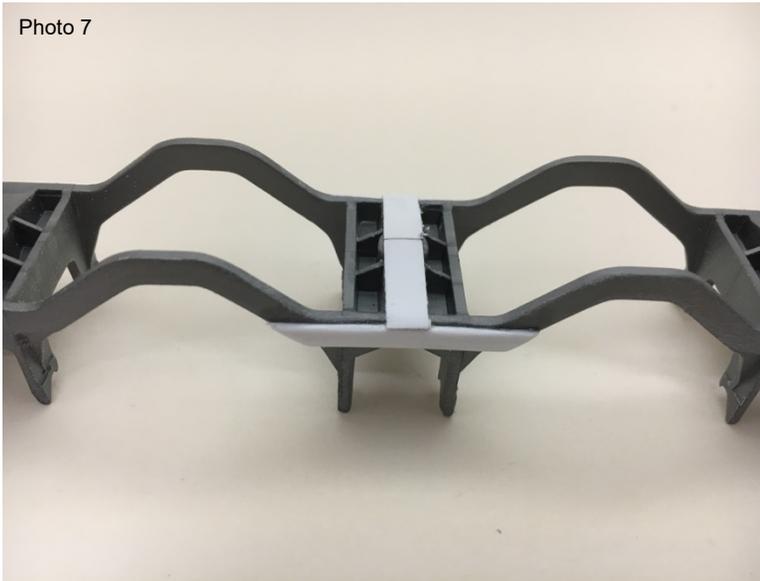


Photo 7 The car is then flipped over and scrap pieces of styrene is used to brace the seam on the bottom of the car.

Photo 8

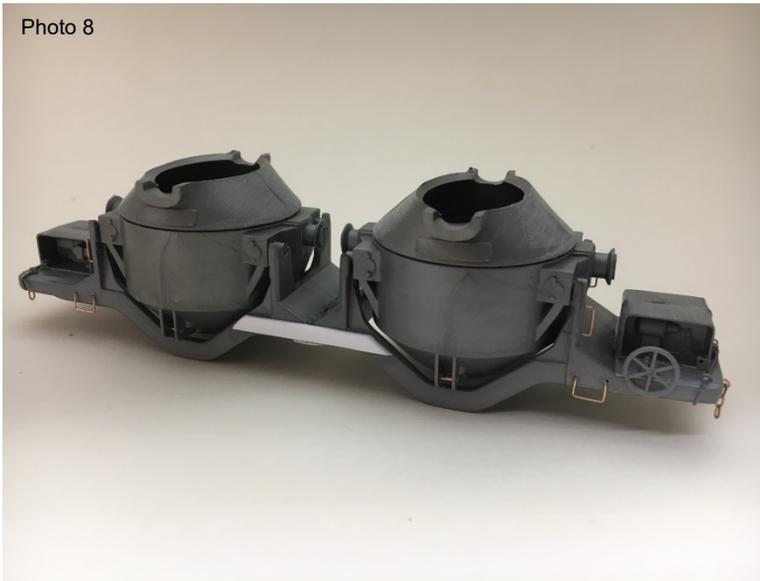


Photo 8 Shows the car with the details applied. The next step is to paint and then add the couplers and wheels sets.

Photo 9



Photo 9 I used rust gray primer rattle can paint that I found at Wal-Mart. When using Rattle can paint read to make sure it is compatible with plastics.

Photo 10

Photo 10 After the primer is dried. I used acrylic paints to paint the steps and grab irons.



Photo 11

Photo 11 Over all shot of the completed car, and is ready for many years of service.



Photo 12

Photo 12 Another shot of the completed car on the layout.



Armco Steel by Brad McClelland

Photo 1



Photo 1. One loaded bottle car for Middletown Works. January 20, 1985

Photo 2. Southbound Armco 703 near New Miami, Ohio on November 22, 1984



Photo 2

Photo 3



Photo 3. Two empties heading back to Armco's Hamilton Works. Number 703 passing by Le Sourdesville Amusement Park south of Middletown, Ohio on B&O's Middletown Subdivision back on November 22, 1984

Photo 4

Photo 4. Two empty bottle cars heading back to Armco's Hamilton Works. September 11, 1982 in Middletown, Ohio.



Photo 5



Photo 5. Armco 702 with 2 load's pass over Conrail's Cincinnati Line at CP-Armco in Middletown, Ohio. November 1, 1986

Photo 6. One of the most interesting moves on Armco's hot iron trains back in July 19, 1984. I'm thinking that 704 heading back to Armco's locomotive shop in Middletown. This image was located east of New Miami, Ohio at Jackson Road Crossing on the Middletown Subdivision (New Miami-Middletown)

Photo 6



Photo 7



Photo 7. Armco 701 with 2 loads of hot iron departing New Miami, Ohio for the Middletown Works. The plant in the background was Koppers Coke, the 2 Armco blast furnaces are south of the coke plant. July 20, 1987

Photo 8



Photo 8. Armco 702 pulling 2 loaded bottle cars from Armco's Hamilton Works to the Middletown Works. Northbound 702 is traveling on the B&O that crosses over Conrail's Cincinnati Line in Middletown, Ohio. November 1, 1986

Photo 9



Photo 9. Two loads departing Armco's Hamilton Works in New Miami, Ohio. The signal to the left protects the crossing of the line from the furnaces to the slag dump. July 20, 1987

Photo 10. Two empties for Armco's Hamilton Works. July 3, 1988



Photo 10

Photo 11



Photo 11. East of New Miami, Ohio is the tiny village of Woodsdale. Here is where CSX's Middletown Subdivision (B&O) crosses the Great Miami River. The photo was taken on January 22, 1989, very near the end for the Blast Furnaces in New Miami.

Photo 12. Armco 703 north at the south end of North Excello Yard in Middletown, Ohio May 11, 1985



Photo 12

Aliquippa J&L steel operation, Aliquippa and Southern Railroad by Wayne Cole



Photo 1

Photo 1. 1969 BOF scrap Yard



Photo 2

Photo 2. #2 ingot buggy, soaking pits to the new 45 Inch Blooming Mill. #2 was automatic.



Photo 3

Photo 3. 1974, replacing Ore Bridge #1. A bulldozer finally pulled the structure down.

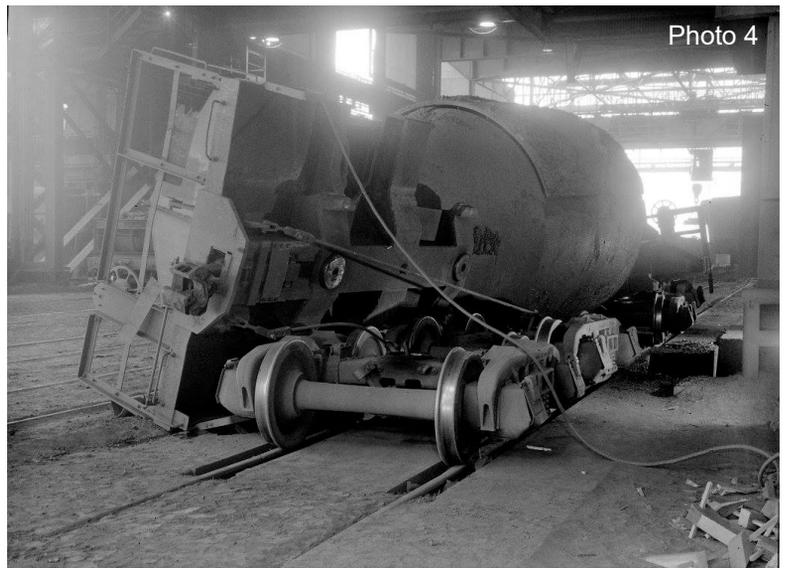


Photo 4

Photo 4. 1977, BOF #2, ladle "torpedo" hot metal shifted in pouring.



Photo 5

Photo 5. 1972, derailment of empties west of iron alley.

Photo 6. Iron Alley 200 ton ladle mixers



Photo 6



Photo 7

Photo 7. March 1970 ladle car accident near West Aliquippa. Windows were broken on the far hillside.



Photo 8

Photo 8. Slag train returning to cinder car prep track. New digital scale being installed. 1979, new Blacks Run Yard, now CSX territory.



Photo 9

Photo 9. Stripper Shed corrugated ingots to the soaking pits and adjacent empty molds.

Photo 10



Photo 10. View of Iron Alley and blast furnaces from ore pile

Photo 11



Photo 11. Fogg painting done for A&S Superintendent Lou Smith..

Photo 12

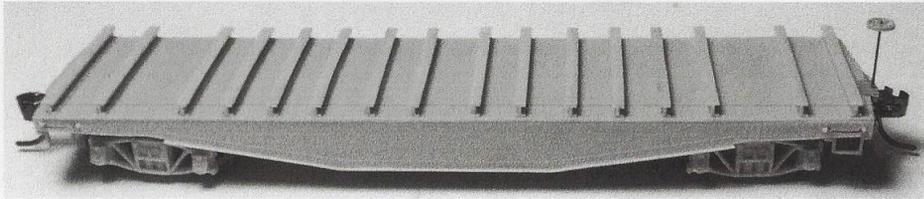


Photo 12. Slag raking at the BOF.

New Products

The Schuylkill Ironworks is offering several steel mill cars for purchase, and they are made exclusively for us by Funaro and Camerlengo. The first car is a Treadwell slag car for \$29.00. Next are three versions of the Pacific Car and Foundry flat car, the riveted deck, the rail deck and the I beam deck cars, and they are \$24 each. Mix and match for shipping, one to three cars for \$7.12 and four to ten cars for \$9.50. You can paypal us at eacraig@gmail.com or send a check to: Eric Craig, PO Box 3678, Reading PA 19606

Schuylkill Iron Works



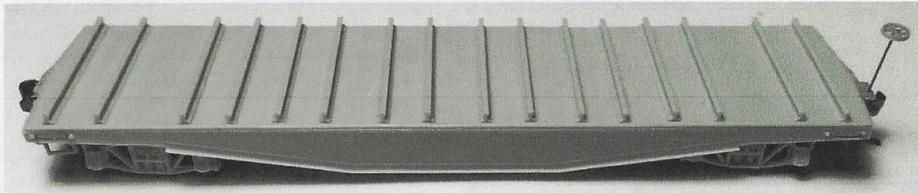
Kit # 2002 Pacific Car & Foundry I-Beam Deck Flatcar Trucks Less Wheels

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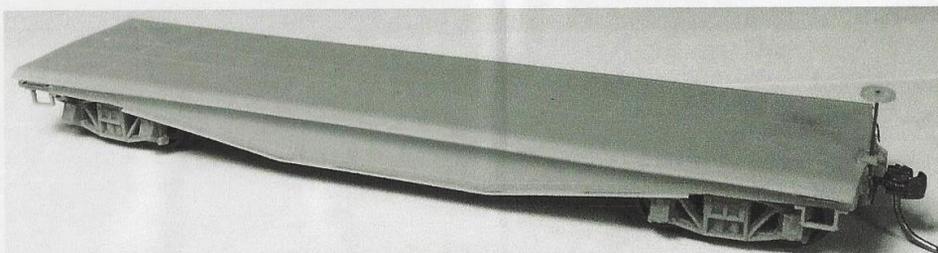
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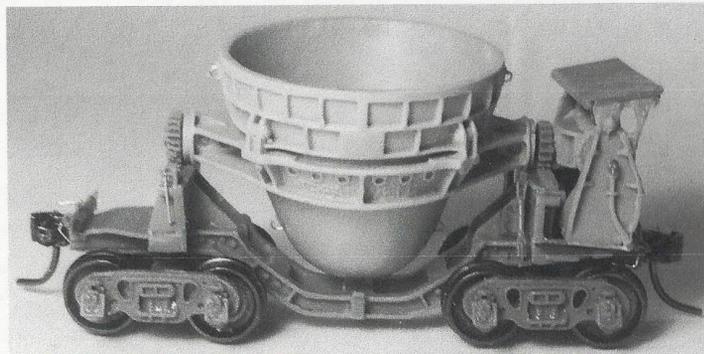


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HO Scale Resin Kit

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**Kit #1000
Treadwell Slag
Car with ONE
PIECE Resin
Trucks Less
Wheels**

Books in Reprint

Ghost Rails X Iron Phantoms

Ghost Rails X Iron Phantoms
Aliquippa and Southern Railroad
Jones and Laughlin Steel Operations
Their Private Streetcar Line, Woodlawn and Southern
1902 to 2013
Wayne A. Cole



Blast Furnace A-2 Iron Alley A&S #1205
August, 1981

Wayne Cole is getting a second release of Ghost Rails X printed. Wayne is now taking orders!! Just print out this form and mail it (USPS) with a check or money order. Also, please note the VERY generous offer at the bottom of a joint purchase of Ghost Rails X and XII for just \$100!!

There are only 100 copies of the reprint available.

Click on this link to download the order form.

[http://
www.smm.stahlbahn.de/Ghostrails.jpg](http://www.smm.stahlbahn.de/Ghostrails.jpg)

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*Styrene The Ideals, Tips and Techniques of Dean Freytag.

PCN Tours

*Joy Mining Machinery

*ArcelorMittal Steel

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*C&NWs Iron Ore Route

*Duluth, Missabe & Iron Range Vol 1

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*Lake Superior & Ishpeming Vol 2

*Bessemer & Lake Erie

*LTV Ore Lines

*Missabe T-Birds

*Missabe Rails

*Missabe Winter Vol 1

*Missabe Winter Vol 2

*NorthShore Mining Railroad

*Ohio Rails and the Wheeling & Lake Erie

*Railroads & Ships of U.S. Steel

*Taconite Trains of Minnesota Vol 1

*Taconite Trains of Minnesota Vol 2

*Birmingham Southern

*Elgin Joliet & Eastern

*Tribute to the Erie Mining Ore Lines

*Twin Ports Trackside Vol 1 Duluth Minnesota

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Prairie Works

*Hot Metal

* Union Railroad

* On the Great Lakes

* Lake Superior Iron

* Missabe Retrospective

* Duluth, Missabe & Iron Range Steam Power

* Duluth, Missabe & Iron Range Depots & Structures

* Taconite Haulers

*USS Duluth Works - Photo Video

*Super detailing a Walthers Blast Furnace Part 1

*Super detailing a Walthers Blast Furnace Part 2

Model Railroader's Dream - Plan - Build

* Railroads and Steel

Videotrain.com

*The Union Railroad

Steel Mill Related Books

*Morning Sun Books

By Stephen Timko

Steel Mill Railroads in Color Vol #1

Steel Mill Railroads in Color Vol #2

Steel Mill Railroads in Color Vol #3

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Appalachian Coal Mines and Railroad Vol#1

Appalachian Coal Mines and Railroad Vol#2

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Steel Mill Railroad Facilities and Equipment (eBook)

By Robert Wilt

Bethlehem Steel Company Vol #1, Obtaining – Transporting Raw Material, and Making Iron

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Union Railroad In Color

By Kurt Reisweber & Brad Esposito

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*Model Railroader

By Bernard Kempinski

The Model Railroader's Guild to Steel Mill

*The Railroad Press

By Nevin Sterling Yeakel

Bethlehem Steel

*Plastruct

By Dean Freytag

The Cyclopedia of Industrial Modeling

*Walthers

By Dean Freytag

The History of Making and Modeling of Steel

Steel Mill Related Websites

Groups

*Steel Mill Modelers Special Interest Group
<http://www.smmsig.org/>

Facebook:

*Bessemer Subdivision

<https://www.facebook.com/groups/787429424621662/?fref=nf>

*Bessemer and Lake Erie Railroad Sightings Page

<https://www.facebook.com/groups/1029716723816394/>

*Birmingham Southern-Fairfield Southern

<https://www.facebook.com/groups/337021349697833/>

*BSRR/FSRR

<https://www.facebook.com/groups/471524686212350/>

*Coal Critter of Kentucky

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*Harrisburg Terminal Railroad

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*Iron Ore Modeling

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*J&L Narrow Gauge Railroad

<https://www.facebook.com/groups/rolling.ingot/>

*Munhall, Bessemer and Port Perry

<https://www.facebook.com/munhallbessemerandportperry/>

New Boston Steel Mill and Coke Plant

<https://www.facebook.com/groups/349284928484151/>

*The Splitrock Mining Company layout

<https://www.facebook.com/The-Splitrock-Mining-Company-layout-326394957565987/>

*Steel Mill Modelers

<https://www.facebook.com/SteelMillModelers/>

*Steel Mill Modeling

<https://www.facebook.com/groups/708840849171343/>

*Steel Mill Pictorial

<https://www.facebook.com/groups/1561038727264008/>

Steel Mill Buy & Sell (Facebook)

https://www.facebook.com/groups/337587480069043/?hc_location=group

*U.S. Steel Duluth Works

<https://www.facebook.com/groups/101591233225098/>

*Youngstown Steel Heritage

<https://www.facebook.com/SteelHeritage/>

Photographs

*2007 Steel Mill Modelers meet

http://www.pbase.com/jtunnel/2007_steel_modelers_meet&page=1

*Arthur's Albums and Images

<http://www.rmweb.co.uk/community/index.php?/gallery/member/6861-arthur/>

*Birmingham Rails

<http://www.bhamrails.info/>

*Rick Rowlands

<https://www.flickr.com/photos/33523379@N03/sets/>

*The Rust Jungle

<http://www.therustjungle.com/>

Layouts:

*Acme Steel Riverdale BOF & Chicago BF Modeled in HO scale(1/87)

<http://www.trainweb.org/chicagosteel/index.htm>

*Bethlehem Steel Layout

<http://www.brokenbushandroundtop.com/bethlehemsteel/>

*Columbia River Steel Corporation

<http://www.prairie-works.com/crsc.html>

*Dave Scale Modeling

<http://daveayers.com/Modeling/>

*DK Recycling

<http://www.frankshuette.de/>

*Forsten Online

<http://www.stahlbahn.de/index.php>

*Harrisburg Terminal Railroad

<https://www.facebook.com/Harrisburg-Terminal-Railroad-271356453384157/>

*Pittsburgh and Western Railroad - Paul Lapointe

http://www.coaldivision.org/pittsburgh_and_western.html

*Pittsburgh, Youngstown & Ashtabula RR

<http://www.pyamodelrailroad.com/>

*Stahlbahn

<http://www.stahlbahn.de/index.php>

*Republic of Train World

<http://trainworldcity.webs.com/apps/blog/show/43914314-the-trainworld-city-steel-works-and-duluth-works->

Blogs

*KV&O and D&D Mining & Steel

<http://doncsx.blogspot.com/>

*Musser Steel Mill

<http://musersteelmill.blogspot.com/>

*The Mill (Blog)

<https://steelindustray.blogspot.com/>

Hobby Shops

*Industrial Model Shop

<http://industrialmodelshop.com/>

*Joswood

<http://lasercut-shop.de/Joswood-Ltd>

*KenRay Models

<https://kenraymodels.com/>

*State Tool & Die

<http://www.statetoolanddie.com/>

Yahoo Groups

*Harrisburg Terminal Railroad

<https://groups.yahoo.com/neo/groups/htrrco/info>

*Steel

<https://groups.yahoo.com/neo/groups/steel/info>

Podcast

*A Modelers Life

<https://www.amodelerslife.com/>

*Model Railroad Hobbyist podcast

<http://model-railroad-hobbyist.com/podcast/episodes>

*The Roundhouse

<http://theroundhousepodcast.com/>

Manufactures

*Adair Shops

<http://adairshops.net/index.php>

*FireCat Designs

<http://www.firecatdesigns.com/home.html>

*Plastruct

<https://plastruct.com/>

*State Tool & Die

<http://www.statetoolanddie.com/>

*Steel Mill Modelers Supply

<https://www.facebook.com/steelmodelerssupply/>

Museums

*Youngstown Steel Heritage

<http://www.todengine.org/>

Groups.io

*Steel (Group.io)

<https://groups.io/g/STEEL>

Steel Mill Related Picture CDs

Prairie Works

* Minnesota Iron & Steel

* Heavy Industry Postcards

* Coper & Nickel

* Tod Engine Project

Happy Easter to all. I hope you and your family have a blessed day this Easter.

Keep the steel flowing and the materials rolling across the rails.

Take care, Stay Safe, Happy Modeling, and God Bless

Editor

Don Dunn