



Published Bi Monthly

The Model Railroad Resource LLC Dwight, Illinois

Owner / Publisher
Amy Dawdy

Managing Editor / Advertising Executive

Daniel Dawdy

November/December 2015 Vol 3 No. 2

Welcome to the online *O Scale Resource* magazine. The magazine is presented in an easy to use format. The blue bar above the magazine has commands for previewing all the pages, advancing the pages 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

Ed Halstead's Chicago & Utopia layout features an Illinois terminal passenger train. Photo by Eric Bronsky.

Rear Cover Photo

Under the wires on the Chicago & Utopia Railway. Photo by Eric Bronsky.

Bill Of Lading

Page

- 3 From the Publishers Desk
- 4 A Note from Glenn
- 6 News You Can Use
- 11 2015 0 Scale National Convention Roundup Recap of another great show in Indianapolis
- **20 The Chicago & Utopia Railway**Glenn takes a last look at this beautiful layout
- 33 Working With Older Brass Diesel Locomotives
 Or, What a Can of Worms We Have Here Part 1
- 46 Gary Schrader's Improvement Wonderland

 A Look Into the Fascinating and Mysterious World of
 Locomotive & Rolling Stock Restoration
- 54 <u>Eric Bronsky Photos</u> Glenn looks at the photography of Eric Bronsky
- 65 What's On Your Workbench What our readers are working on
- 66 Reader Feedback
 What's on your mind?
- **67 Show Schedule**
- 68 Classified Ads
- **68 Advertisers Index**

The Model Railroad Resource LLC publishes <u>THE O</u>
<u>SCALE RESOURCE</u> and <u>THE S SCALE RESOURCE</u>.

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



Fall is upon us, and at least in Central Illinois, most of the crops have been harvested. Halloween is right around the corner and so is the cold weather. Now is the time to take a look at your modeling projects, do some organizing and make some lists, start a new project, finish an ongoing one, or maybe just relax and enjoy this issue of *The O Scale Resource*. While reading this issue, you will notice a few minor changes.

The first of these is an organizational change. The Model Railroad Resource LLC is now soley owned by me, with Dan continuing on as Managing Editor and Advertising Executive. Glenn has stepped down as editor and co-owner, but you will still see articles from him in both *The O Scale Resource* and *The S Scale Resource*. He has decided to "lighten his load", and in doing so, has closed Mullet River Model Works and is no longer doing design work. This will allow him to concentrate on his health (he's fine, just getting older), his writing, and his models. There is a short note from him following this editorial.

The second change is cosmetic - the "News and Reviews" section has been retitled "News You Can Use". We don't do reviews, mainly because we prefer to be impartial; however, we want to keep our readers informed. If your're a manufacturer, send us a note about any new or upcoming items. Or, if you're a reader and have some newsworthy O scale information you'd like to share with the modeling community, let us know.

The third change is the addition of "On the Workbench". This area will feature modelers' current projects. Send us a picture of what you're working on. Who knows, maybe you'll inspire someone! Or, if you're a modeler and have put together a kit or scratch built something, why not write an article? We are always looking for great projects and experiences by modelers that can be shared with our readers. Not an author, don't worry – we can help with that too. If you've got the basics written down and have some photos, we can work with you, add some polish, and make you and author. Feel free to contact me or Dan via email:

amy@modelrailroadresource.com or daniel@modelrailroadresource.com

We had a great time at the Indiapolis National Show in September reconnecting with old friends and making new ones. Be sure to check out the article – it was a great show to inspire us to get back to our workbenches. Besides the Indy National article, we have several other great articles. Glenn went to Ed Halstead's Chicago & Utopia layout for its final run. There are some great pictures in this article, and be sure to check out the complimentary article on Eric Bronsky's photos. We also have an article from Ed Sokol about Gary Schrader, one of the West Coast's modeling "wizards". This issue also features Part 1 of a 2 Part article about working with older brass locomotives. It's not as hard as you think, and Dan actually makes it look easy. There are some great pictures in this article, along with a link to a "Video Extra".

The season of shows has just started, and Dan and I look forward to seeing everyone in Cleveland at the 2 Rail O-Scale Train Meet being held October 30th from 9:00 am - 2:00 pm at Lakeland Community College in Kirtland, OH. This is always a great show with not only new items, but also classics, and maybe even that one item you've been searching for. Hope to see you there!

Happy Reading & Happy Modeling,

Amy Dawdy

A Note From Glenn

Dan and I started a website called The O Scale Resource about six years ago as an online resource of suppliers to the O Scale hobby. After a few years, we started to post some photos and modeling data on the site to increase traffic. This worked for a while. About three years ago, we decided that we would do an online magazine and started with *THE O SCALE RESOURCE*. The magazine was well received, and after two years, we started to hear from some S Scale modelers about doing a similar publication for S Scale. I went to the S Scale National Show in Oconomowoc, Wisconsin and talked to some of the people at the show. There seemed to be some desire for a magazine like *The O Scale Resource*, but dedicated to S Scale. Dan and I talked it over and decided to give it a go. We would call the new magazine *THE S SCALE RESOURCE* and would publish it on a bi-monthly basis. By staggering the publication months, we are able to give the modelers something to read each month even if it was not their primary scale of modeling. *The S Scale Resource* magazine has been well received also. I went to the S Scale National Show in Kansas City this year, and and had good feedback from the people and a really good time at the show. It was fun to meet some of the people I have been corresponding with. The NASG gave Dan and I an award for being so supportive of the S Scale hobby and we greatly appreciate it.

As I mentioned, Dan and I have been at this for around six years. I just turned 65 in May and want to take a look at the future a bit closer. I have some health issues. No, it's not time to celebrate or panic yet. Our family has a history of enlarged hearts on my dad's side of the family, and I had some problems a few years ago. This is not life threatening right now, but it is a condition that will eventually get me as it did my dad, uncles, and grandfather. Dan and I talked some of this over and what would happen to the business and magazines if something happened to me. Esentially, we did some succession planning and decided to make some changes. You may have noticed that the business address for the magazines has changed from Wisconsin, where I live, to Illinois, where Dan lives. Dan's wife Amy is the youngest of the three of us so we put the business in her name. With this change ownership, of the magazine is in younger hands. Along with this change Dan and Amy are handling more of the administration of the magazine. Amy has a buisness degree in Organizational Leadership, knows bookkeeping and runs a tighter ship than I did, so these chages are for the better. As I mentioned, I turned 65 in May and also want to get rid of some of my other obligations. As my good friend Norm used to tell me, "Moe (he used to call me Moe all the time) you need to lighten the load a little". I have closed my other business, as well as the design work I did on the side, and will just write articles for the magazines. I like the writing, and it will give me time to work on some of my own models. You may be seeing some of that work in future issues of the magazines.

So, all is well at The Model Railroad Resource, LLC now, and for the future. We have taken care of any succession issues, put the business in better organizational hands, and I have less of a load. Yea! In the future, Dan will be doing the editorial pages and telling you what is in each issue on a regular basis. As I said, it's fun for me to write and I will continue to do that. We are also getting more contributions from readers and that is great – keep it coming. I will still attend a few shows each year, and look forward to seeing you at the shows. Thanks for all of your support for the magazines.

Glenn Guerra



ALLEGHENY SCALE MODELS

O SCALE LOCOMOTIVES & ROLLING STOCK

Sales, Collections, Consignments, Appraisals Brass, Custom Built Models, RTR, Kits, Decals

470 Schooley's Mountain Road, Suite 8-117 Hackettstown, New Jersey 07840

www.alleghenyscale.com

PH: 908-684-2070 FAX: 908-684-8911 oscale@alleghenyscale.com



Purchases and Sales of Scale Model Trains

- · Estate and collection liquidations · Consignment sales
- Auction services
- · References gladly furnished
- · Purchases of your new, used, & unwanted equipment

Bill Davis



PO Box 575 · Waukesha, WI 53187-0575 Phone: (262) 560-1619 • E-mail: bdavis148@aol.com Web: americanscalemodels.com







AMERICAN SCALE MODELS

Manufacturing Limited Run Quality Brass Models O and H.O. Scale

Unique Prototype Models Designed and Manufactured

- Structures, Rolling Stock, Trucks -

- Detail Parts and Accessories -

Bill Davis

PO Box 575 · Waukesha, WI 53187-0575 Phone: (262) 560-1619 • E-mail: bdavis148@aol.com Web: americanscalemodels.com



O Scale Traction Headquarters

St. Petersburg Tram Collection * Car Works * MTS * Q Car * Bronze Key Ken Kidder * LaBelle * Clouser * Ashland Parts * Trolley Poles * Power Trucks * Kits * Overhead Wire & Fittings Your source for over 35 years

Everything you need to get started and keep enjoying your hobby

Art Deco building fronts for your urban scenes. CAD Designed Masters. Cast in resin.



The Berkshire Car Shop

505 Morning Dove Road, Audubon, PA 19403-1807 Ph. 610 631 9751 Evenings and Weekends Email berkshirecarshop@comcast.net



PC and Wood Ties - Barrels Poles - Eye Bolts & Rings Blackened Cable & Chain Window Glass - Sheet Metal Nylon & Brass Screen Plastics - Hand Tools Straight & Coiled Wire

DRY TRANSFER LETTERING

Cars & Locomotives - Stripes Numbers - Chalk Marks **Building & Product Signs** Alphabets - Car Names

Shop Online - cloverhouse.com Or Order Catalog #14 - \$6.00



Clover House

Box 215D, Veradale, WA 99037-0215

NEWS YOU CAN USE



New from Model Tech Studios LLC Classic Crossing Guard Complete with either the Stop or RR Crossing sign...both included for you to choose from. William is posed for the important job of watching intersections for trains and vehicles to cross safely – a classic O Scale railroad character. Hal the Fisherman has his fresh crab in his hands. inspecting his fine

catch. How unique! An actual crab in scale being held up by a proud fisherman. Ken has heavy boxes in his arms and is stacking them (pile at his feet)....This is a great freight dock figure or a figure in the back of a truck...also great for a delivery man delivering boxes to a industry or business. Check their Website for more great models.



Rick Galazzo from <u>Tru-Color Paint</u> sent us a new release schedule for their newest colors.

Oct. 1, 2015

TCP-291 Texas & Pacific Swamp Holly Orange

TCP-292 Chesapeake & Ohio Enchantment Blue

TCP-847 Brushable Brass (Non-Flat)

TCP-848 Brushable Copper (Non-Flat)

Nov. 2, 2015

TCP-293 Chicago & Eastern Illinois Late Blue

TCP-295 Central New Jersey Tangerine

Dec. 1, 2015

TCP-305 Chessie Yellow

TCP-306 Chessie Blue

TCP-307 Chessie Red/Orange

TCP-833 Flat Foundation

Check their Website for more details and pricing.

Bill Davis from <u>American Scale Models</u> showed sample models of new brass cars at the Indy National last month which included:

1937 AAR Erie & U.S. Naval Powder Factory Boxcars:

Erie/B&M 1935/37 Greenville Milk Cars;

Erie/EL Express Boxcars (ex-milk);

Erie Dairy-Merchandise Boxcars (ex-express); Erie Boxcars (ex-Milk,Merchandise,Express) 61500 series and 411061,413052,419013. All cars factory painted brass with Kadees installed. Sprung trucks with full brake detail. Painted interiors and working doors. Viking roofs, 6 and 7 panel Buckeye or 4/5 Dreadnaught ends where appropriate. Limited run. Non-binding reservations now being accepted. See our website at <u>americanscalemodels.com</u> for more information and pictures. Due early 2016.



Bill Basden from <u>Delta Models</u> has something new he has been working on. "During the summer I made several locomotive/car carrying cases, and sold a few. So I decided to add them to the website under Other Items.



There are 3 sizes available 24", 30", and 36" lengths (24" x 6" x 6"). These are hand made using poplar wood glued and brad nailed with a foam interior and 3 coats of clear poly. The 36" x 6" x 6" will take a UP Big Boy model. They are a special order item and will take 2-3 week delivery. People who have purchased these have been real happy with them."



Yes, we now have a Facebook page to help keep you up to date on new products and ideas. And, even in an on-line magazine, we sometimes have more pictures than we can use so we'll post them on Facebook.

Leo & Randi from Crow River Products sent us information on a new building the "Open Sided Shed". This structure came about by request for a building that would show off our power plant kits. This structure will work well for a sawmill, open warehouse, machine shop, maintenance shop or what have you. It has a one piece cast resin base with locaters for the columns, pre-cut columns and cast pewter roof trusses along with sheet and strip wood. It's a quick build. The footprint is 6 ½" x 9"



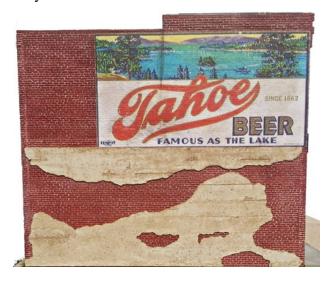
<u>Tichy Train Group Inc.</u> Announces a new O Scale window – 42" x 45" 2/2 double hung window. Opening .925" x 1.0" molded in gray styrene. Includes precut glazing & shades. 6 pieces per package.



Jimmy Simmons from Monster Modelworks has a few new items to share. First is Dry Stacked Stone Retaining Wall Kit. This kit contains almost 24" of Dry Stacked Stone pre-cut retaining walls with concrete top. This kit also comes with almost 12" of Dry Stacked Stone Corners. Cut them to any length to fit your scenes needs. Also makes great foundations for structures. These retaining walls will work for both S and O scales. The retaining wall strips are 5 O scale feet tall and can be shortened by cutting them down or cutting them into your scenery.



Next is Concrete Wall Overlays. They look great the way they come, but you should also try cutting them into different shapes creating your own look. You can use a scissor or a single edge razor blade. Includes: 3 Different Size and Shape Concrete Overlays.



St. Charles Model Works announces their latest kit for O scalers. The "Arnold" Car Crusher kit is based off of those units that first started to show up in scrap yards during the early 1970's.

The metals industry requires a constant influx of raw material. Obtaining previously processed metal in the form of recycling provides the best of both worlds. It is far easier to remelt and reform recycled steel than it is to create new steel in a blast furnace with ore, coke, and limestone. Thus automobile recycling and metal scrap yards play an important role in resupplying steel mills with the materials that they need to make new steel.

Car crushers help scrap yards in processing junked cars for easy transport via rail and truck to the steel mills. The first popular media use of a car crusher was in the 1964 James Bond film, Goldfinger. The Arnold Car Crusher kit is a 23 piece resin kit which is fun to assemble and will be a great start, or addition, to a scrap yard on an O scale layout. The kit comes with complete assembly instructions, painting guide and instructions on creating simulated crushed cars and trucks to enhance the scene. The introductory price on the kit is \$64.95. This reduced price is good through November 30, 2015. The regular price for the kit is \$72.95.

There are plans to also offer a crushed car load for O scale gondolas. This load will consist of a set of separate crushed cars to be stacked inside any 52' gon or on any flat car. The Arnold kit can be purchased by visiting www.scmodelworks.com



Korber Models announces new models. MRS2000 Ted's Textiles Background Building. Ted's Textiles is a versatile building designed to hug the wall and go over the track. This building can be built in either the brick face, or the concrete face. \$140





There is also a new line of TT Modular concrete structures. See all the new models as well as rereleases at www.korbermodels.com



Keil Line Purchase

Marty Milner, Sr. and Marty Milner, Jr., of Scale City Designs, a father and son operation based in Lordstown, Ohio currently producing laser and resin building kits/detail items, are pleased to announce that they have purchased Keil Line Products from Martha and the late John Keil. This product line carries over 1,000 finely detailed products for locomotives, passenger cars, freight, and scenery detail. They have no plans of discontinuing anything in this product line, but in fact will be growing the line with new

products. The other big news is that per Mr. Keil's wishes that his name not be used by anyone carrying on his products, Keil Line will be transitioned into Scale City Designs.

Marty also pointed out that the entire product line of formerly Keil Line Products will be cataloged and available on their website with detailed pictures and descriptions for easy identification and ordering. Marty says, "Don't worry, we won't become another faceless internet company, we plan on attending several shows so you can see and buy the products in person as previously done. We will be at the Chicago March Meet and just received confirmation that we will be in the same location as Keil Line was. Make sure you stop by and see us at the March Meet 2016, weather/health permitting, Martha Keil will be at the booth with us. I know we have huge shoes to fill, but I know we can do it with the continued support from everyone in the hobby just as you have done all these years supporting Keil Line. It's going to take a few months to get everything moved and back operating, so please bear with us during the transition. you can continue to check our website scalecitydesigns.com or right here at The O Scale Resource where we will keep everyone posted. If you're attending the Cleveland 2015 show, make sure you stop by our tables!"



Doug Kearney announces his new product, The O Scale Hauler. These lightweight, durable covered



boxes allow you to not only transport your engines and cars, but also protect them while doing so. Made of heavy duty 275 pound test, double wall, corrugated white cardboard, they include ½" military grade, medium density, charcoal grey, polyurethane foam



that has been precut to fit inside the trays on all 4 sides. Each tray also comes with 2 removable dividers that are interchangeable with the single and double base. Other options/add-ons are also available. The inside dimensions of a single compartment is 28" L x 4" W x 5 ½" D. For more information, visit http://oscalehauler.com/.





2015 O SCALE NATIONAL CONVENTION ROUNDUP

By Dan Dawdy

The O Scale National Convention was held this past September 11 and 12th at the Wyndham Indianapolis Airport hotel. Normally I drive down Friday morning, but this year Amy and I went on Thursday afternoon so we could set up our table and see the lay of the land Thursday night. We arrived about 7:30 PM and there were already many dealers and table holders setting up their wares. For us, it's a nice time to just walk around and talk to others we know and meet new people without the crowds of customers and "Looky Lous".

As often speculated on many forums, I did not see a lot of dealer to dealer selling going on like I do at railroadiana shows. There may have been some, but the majority of the new collections did not appear until Friday morning. There were some new faces and older items I had not seen at shows before which was a good thing. Some familiar faces were missing, and new ones took their place. All in all, we had a great time and the dealers I talked with were happy with sales. As one put it, "I would rather have some people with a lot of money than a lot of people with no money."

So sit back and look over some of the sights from this year's convention.



If you are going to sell, you might as well sell it all.





There were many first time sellers here this year. And, while some signs said one thing, their prices said something else.

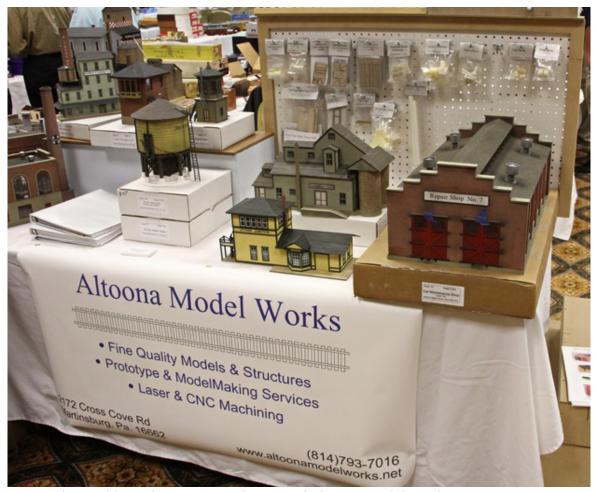
This is not to say that prices were not good. They were, and many people were looking for those hard to find specific items that had not been seen at shows in the past.



Items were being looked over Friday morning as they rolled in. As the old saying goes, You snooze you lose!



There were some "oldies but goodies" available at the show. There was definitely something for just about everyone.



Bob Spaulding, the creator and owner of Altoona Model Works, was once again displaying his beautiful creations.

I believe this was Rusty Stumps first time at Indy. Walt and Mary Gillespie had a nice array of buildings and fantastic castings.







Top Left: It's always great to see John Pautz of American Switch & Signal (left) and Bill McConnell of Oscale Turnouts (right).

Upper Right: Jim Kehrein's daughter, Lauren, headed up their booth. Jim continues to manufacture Monarch couplers, a company started by his father.

Left: Ron and Sue Sebastian from Des Plaines Hobbies appear very happy, another sign of a good show.



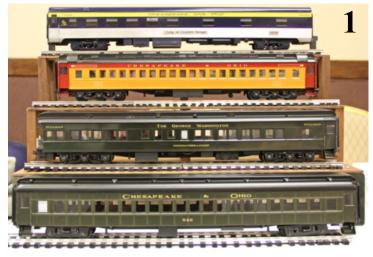
David Thompson of Harbor Belt Lines had a large display. Dave just completed training at an ESU Loksound seminar in Scranton, PA and was demonstrating the programing of their decoders.







Karen Lavezzi from All About Trains and my wife, Amy, happily sit and swap stories that neither Bob or I care about.















- 1. Beautiful cars built and painted by Bruce Grundy.
- 2. Passenger car kits coming from Union Station Products.
- 3. Bill Davis had all his new samples cars on display and was taking reservations.
- 4. Ted Schnepf of Rails Unlimited and Bob Spaulding of Altoona Model Works discussing events of the day.
- Alto 5, 6 & 7. Sales were good Friday morning and early afternoon.

No show can go on without dedicated people working many hours with no pay. Yes, sometimes "things happen", but most times everything runs smoothly.



Left to right, David Vaughn, co-chair, Kimberly Ryker, co-chair, Jim Canter, co chair and Bob Canter, security.



Good friends having a great time. Left to right, Sam Shumaker, Mike Hill, David Vaughn and Jim Canter



Future O scaler, Thomas Wall, and his father, Dennis, stop by the O Scale Kings display to chat with Jim Canter and Bob Lavezzi. This was Thomas' first O scale show. He said he wants to become an O scaler for the realism.



Mike Hill gets some advice on this new fangled DCC stuff from Nicholas Ryker.

Congratulations to all the contest winners. Unfortunately, the contest models were not conducive to good picture taking, and I admit, mine were a hodge podge at best. For that I apologize. Of course, we still want to give credit to the winners and they are listed below along with the special awards.

Contest Winners:

Bob Leverknight- 1st place (tie) Diesel category
John Russell- 1st place (tie) Diesel category
Sam Shumaker- 1st place Caboose category
Dave Clendnin- 1st place Freight Car category
Tom Thorpe- 1st place (tie) Track Work category
Brad Strong- 1st place (tie) Track Work category
Bob Leverknight- 1st place Passenger Car category
Bill Heaton- 1st place in the Locomotive category

Martin Brechbiel- 1st place Trolley and Interurban category
Bill Heaton- Best of Show

Special Awards:

Vendor of the Year- Ted Schnepf, Rails Unlimited Manufacturer of the Year- Bill Davis, American O Scale Member of the Year- Mike Crosby Proto 48, Modeler of the Year- Jim Lincoln

The Chicago & Utopia Railway



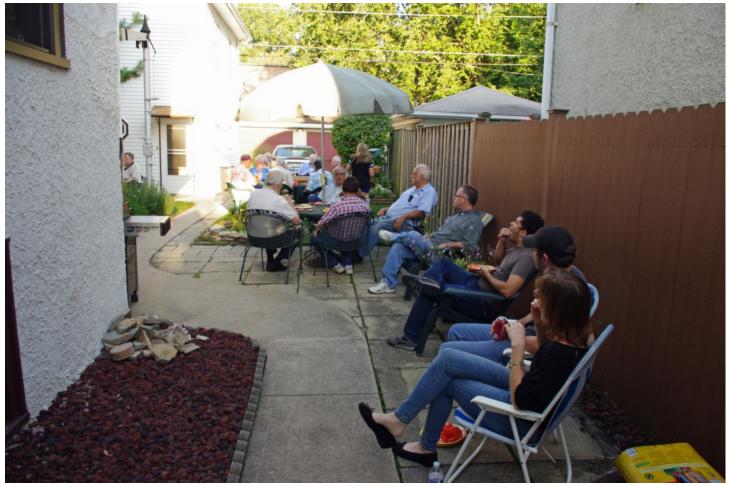


Guests for the last run of the Chicago and Utopia Railway run some of their models on the railway for the last time. Photo by Glenn Guerra.

By Glenn Guerra

This September 26th Ed Halstead's Chicago & Utopia (C&U) O scale layout suspended operation after Ed's annual Fall Trolley Meet. The Fall Trolley Meet included O scale traction model operation, a chance to see and talk with other modelers about what they were doing in the way of models, visiting with good friends, lots of general model railroad talk, and a back yard cook out. I was invited to attend, and had a great time.

While this may have seemed like a melancholy event to witness the suspension of operation of a beautiful O scale layout, it was not. Ed and his wife Lois plan to downsize and purchase a townhouse in a neighboring suburb where operation of the C&U will start-up again in a smaller version. They decided it was time to simplify their lives and have less house to take care of. The existing layout has been sold; and most of Ed's interurban models and the "L" models were sold by the time of the Trolley Meet. But, Ed already has plans in mind for more modeling.



After running trains for a few hours, the guests for the last run took some time out for hamburgers and other snacks. Following this, they all headed back up stairs for more running. Photo by Glenn Guerra.

Since the C&U layout is coming down, *The O Scale Resource* thought we should show you some photos of the layout. We will also show some models other individuals attending the Trolley Meet brought from home to operate on the layout. But, there is more to this story than the layout and models. There is also a lot about the comradery of the hobby.

To start, let's go back to the beginning to see how Ed became interested in making models, model railroading, and in particular, traction modeling. Like most of us Ed, has liked trains as long as he could remember. He grew up in the Logan Square neighborhood of Chicago on the Northwest side of the city. Like most people who grew up in a large city, Ed's family rode public transportation to get to where they wanted to go. Ed said when growing up in the 1940's and 1950's, he remembered the "L", the Chicago Rapid Transit elevated railroads and later the Chicago Transit Authority with open ended wooden gate cars that were painted brown and orange. He told me that it was often hard to see the orange because the cars were not washed very often.

A common trip he would make with his mother was to the Marshal Field's department store on State Street in downtown Chicago. Even though the Logan Square "L" was closer to their home, to get to Marshall Field's, they would ride a bus east from their home to the North-South "L" line of the rapid transit. They did this because the North-South line provided a direct entrance from the Washington Street station, in the subway, into Marshall Field's.

Sometimes, while waiting for their train on the North-South "L" line, a young Ed noticed big green and red cars which were larger than the "L" cars going by. Later, he learned these cars were the Chicago North Shore and Milwaukee cars coming into Chicago over the "L" tracks.



These three models above are a Lake St. Express train sitting at one of the ground level stations on the Chicago and Utopia Railway. Note the small safety glass window and windshield wiper on the left of the car. The Lake St. "L" originally operated on the wrong side. Photo by Eric Bronsky.

Like many of us, Ed got started by being fascinated with trains at an early age. Ed's home was near the mainline of the Milwaukee Road with the Healey station and yard. Several blocks south of his home was the junction where the mainline coming out of downtown Chicago split with a mainline going west and a mainline continuing northwest. Part of this junction included "Y"'s for turning the complete Hiawatha passenger trains between runs and the Bloomingdale St. freight line to the east. This freight line is now the Bloomingdale Trail or better known as "The 606 Trail" today.

In the later 1940's and 1950's, there wasn't much for a kid to do during the summer on weekends with good weather. Computers were a long way off in the future. Ed and his friends spent many days during each summer of grammar school watching the Hiawatha's main line passenger and freight trains, as well as, freight cars being switched at the Healey station team tracks.

It wasn't uncommon for Ed and one or two of his neighborhood or school buddies to scrape up enough money to ride the "L" all day. They would ride from one terminal to another just to entertain themselves for the day. At the end of the line all one had to do was to walk across the platform to the next train going in the opposite direction or walk downstairs and then upstairs to the other platform. In those days, it wasn't uncommon to see kids traveling by themselves right up until a couple of terrible crimes involving young teenagers were committed.

By the time Ed started high school in 1955, most of Chicago's streetcar lines had been replaced by bus lines. When Ed turned 16 in June, 1957, he was eligible to work for pay that summer. His first job was as an usher at the Balaban & Katz (B&K) Century movie theater on North Clark Street. There, he worked most weekends plus one or two days during the week. B&K was a movie empire in Chicago having movie theaters all over Chicago. Ed could have been placed whereever there was a need for an usher. What was so unique was that streetcars were still running weekdays on Clark Street, the Clark-Wentworth line. On weekends, buses were substituted for streetcars. The streetcars running on Clark were PCC's.



When Ed was younger, he saw what had to be non-"L" cars operating on the "L" structure in Chicago. Ed later discovered these cars were those of the Chicago North Shore & Milwaukee Ry. (CNS&M). The color scheme of those cars were mostly green with red trim and ends. This color scheme followed the paint scheme of the models shown above. Note the operational block signal in the photo. Photo by Eric Bronsky.

During the week, Ed's workday ended in time for him to change clothing (uniform) and get out of the theater just in time to catch the PCC which stopped almost directly in front of the theater. The Clark-Wentworth line was abandoned on September 7, 1957. Ed had already quit his job at the theater, and had started back to school before the abandonment date.

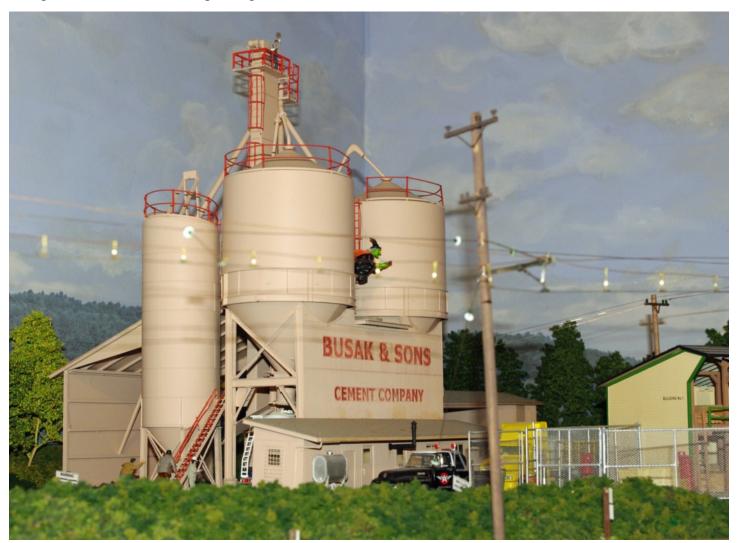
Many families similar to Ed's did not have much money. Most of Ed's neighborhood and school buddies were the children of first and second generation immigrants. The closest busy east-west street, Fullerton Ave., had a number of small shopping areas. It wasn't uncommon for the kids, including Ed, to walk from store to store looking at the stores' merchandise. One such store near Ed's home was a hobby shop, probably the only hobby shop on Fullerton Ave. The hobby shop had boats, airplanes, trains, and other hobby related items.

As Ed was able to save up some money, he purchased simple wood and plastic boat and airplanes kits. Train kits were out of the picture because they required more things like track, power supply, etc. to be able to operate. More importantly, Ed was interested in building something he could then play with. Ed's buddies were much the same. It wasn't because it was a boat or a plane, but instead the idea of making something with your hands. Back then employment was a job that involved with the use of the hands, body, tools, and machines. Whereas today, employment is a job involving the use of the brain and a computor.

During his high school years, 1955 to 1959, Ed met a couple of fellow students who were interested in model railroading. He, like the others, were mainly interested in HO and S gauge. Yes, S gauge. During this time, advertisements appeared in model railroading magazines mainly for traction model kits and power trucks. The reason for the interest in HO and S gauges was the cost and space requirements. Both HO and S, like today, took up less space than O scale.

Today, reflecting back on his childhood and growing up, Ed thinks that many of us modelers have been exposed to trains and railroading much the same as he was. Because of our exposures to railroads as we grew up, we tend to model those railroads we had experienced from the ages of 5-6 years to about the age of 18 or so. Maybe our modeling reminds us of the carefree times in our lives, a time when the world was ours, but we did not have to pay for it yet. The railroads took us, real or imaginary, to places far from our homes. Growing up, it was our dream to be operating the train(s) going to another part of the city or to another city.

It wasn't until his college years, 1959 to 1963, that Ed was able to get a better paying part time jobs. During these years, Ed switched to O scale and started making traction/trolley models. He was heavily influenced by the Interurban Specials booklets on the Sacramento Northern (SN) railway in California. Oddly enough, the SN abandoned all passenger service when Ed was about 2 weeks old.



One of Ed's longtime friends was the late Pete Busak. Pete was a salesman at Chicagoland Hobbies and a big traction fan. Pete is remembered on Ed's layout with this cement dealer in one of the corners of the layout. Photo by Glenn Guerra.

During this time, Ed met a couple of guys who would become his fellow modelers. One of them would remain a life-long friend interested in trains as well as automobiles. Perhaps he was more interested in autos and auto racing than trains. The other friend was more eccentric. He enjoyed the challenge of building things. He built a harpsichord from a kit in his parent's basement and then discovered the harpsicord could not be taken out of the basement. He started to scratch build a Chicago North Shore and Milwaukee express motor in 1-1/2" scale utilizing Northeastern Scale Lumber Co. strip wood. The model was to be built out of wood just like the prototype. Ed's second friend is now deceased, having passed away a couple of years ago.





Some side on views of Ed's Sacramento Northern inspired interurban cars he built by modifying La Belle kits. Photos by Ed Halstead.

Ed obtained a couple of LaBelle 60' closed vestibule coach kits. These kits best fit the Sacramento Northern south end passenger cars which were almost 10' wide and as high as regular railroad passenger cars, while still being as short as the interurban cars of the time. One kit was built as a combination baggage-coach with windows in the ends of the car and a short baggage section immediately in back of the vestibule. The other coach was built as an observation-coach. At one end, the vestibule was made into an observation end. Wagner power and trail trucks were installed in the cars.

Once Ed graduated from college in 1963, he was able to find work in the profession of his choice. However, model railroading was now in the back of his mind. Both full and part time work occupied his time. Also taking up his time were a 1964 Porsche 356C blue coupe plus a 1953 Porsche German racing silver convertible, the 172nd convertible built by Porsche. Along with the Porsches was a small sail boat plus the girls he was dating. As Ed would say, "The Porsches, the small sail boat, and the girls are best left for another time when you and he have a couple of hours to spend at a bar of your choosing!".

Ed married one of the girls he was dating. After their wedding, Ed and Lois took a honeymoon. When they returned, Ed found a letter from the government telling him to report for Army induction. After spending two years in the Army, Ed and Lois lived in a small apartment in the Broadway, Clark and Diversey area of Chicago. The apartment was too small to make models or build a layout. Also, the apartment and a parking space were expensive. Soon, a plan was developed to buy a house. But, in order to do this, Ed and Lois would have to move to a less expensive apartment.



These two models are the first O Scale traction models Ed built. They are heavily modified La Belle kits. Ed was influenced by the heavy interurban cars used on the Sacramento Northern in California. Photo by Ed Halstead.

They moved to a new apartment which was on the third floor and had a wall safe in one of the bedrooms. Walking up the high three floors was a "test" for Ed and Lois, plus any guests they may have had. The saving grace for the apartment, besides the lower rent, was a second bedroom about 12' square. In this bedroom, Ed was able to build his first trolley layout. It was a point to a loop and return layout. This layout was built on top of Sears' kitchen base cabinet kits which Ed still has almost 50 years later. During this time (late 1960's and early 1970's), Ed concentrated on building more trolley models. The layout provided Ed with the experience of building a layout including handmade turnouts and track in the street.

By 1972, Ed and Lois had saved up enough money to be able to buy a home in Oak Park, Illinois, a near suburb of Chicago. To keep the train hobby in perspective, the house is between the CTA's Green (Lake St.) and the Blue (Congress now called Eisenhower) "L" lines. They have lived the past 43 years in the same house. As Lois would tell it: She has lived her entire life - her growing-up years, going to grammar and high school and then college to include all of her college degrees, plus her working career along the CTA Blue Line and before it was called the Blue Line. That turns out to be 69 years living and working near one rapid transit line! Ed has a different way of looking at things: He would say their home is in the heart of the Chicago and West Towns Street Railway territory with the Madison, Lake, Chicago, Harlem, Roosevelt, Laramie, Cermak and other streetcar routes. The Lake St. car barn was about a half mile from their home.

The house was originally built in 1923 with hot water heat. The house has a full basement with a 7' ceiling at the back of the house where the laundry, coal storage (before the heat was changed to natural gas), hot water heater and boiler are located. At the front of the basement, the head room is about 5'9" depending upon where you stand due to some of the hot water pipes to heat the house. Not very conducive for making a layout. However, layouts have been built in basements like this and worse. More about layouts coming up!

Ed worked at a nearby hospital as a pharmacist, and eventually in hospital pharmacy management. His job started to occupy more and more of his time. When he was home, he concentrated on building freight car kits and very soon had more freight cars than track to put them on. Sound familiar?





This is the interior of the O scale streetcar patterned after a Chicago style PCC car. The floor, sides, and ends were soldered together. The roof made from wood was removable. Electrical connections were made with dress snaps. Ed purchased it at a garage sale and has kept it for the sentimental value. As a model, it is remarkable in that it was built from an old oil can. By today's standards it's rather crude, but shows what modelers of the past had to work with and what they were capable of. Photo by Ed Halstead.

I will get to layouts and models, but first, an interesting happening. Perhaps 60 years ago and more there was an old, well known O scale club in Berwyn called "The Little 'Q". The club and its layout had been written up in model railroading magazines of the time – 1950 or so. The layout was located in the basement of a funeral home. Unfortunately, the club lost its location and had to take the layout apart. Parts of the layout and models were taken by the members of the club. As the name implied, most of the models were CB&Q steam and early diesel locomotives plus freight and passenger cars. Part of the layout was a city with an operating streetcar line. The prototype of the streetcars operated on "The Little 'Q" was unknown to Ed.



This is the power truck from the PCC model on the previous page. These were made by the Robert L. Miller Labritory in Valparaiso, Indiana for S Scale models. In the early 1950's, they were used by traction modelers in O Scale because they were the only under floor power trucks available. Note that the wheel treads are the armature commutator bars. See the breaks in the wheel tread. One motor is covered with masking tape. Photo by Ed Halstead.

One day 20-30 years ago in a local newspaper, Lois noticed a garage sale in Berwyn. Part of the advertisement listed model trains for sale. Lois suggested to Ed they should go to the garage sale and go early to get there before everything was picked over. They got to the garage sale as early as they could, but everything was picked over and there was not much left. Even so, Ed found a treasure that he still has. As I mentioned, there was a lot of S scale traction at one time. Ed found a not too good model of an O scale PCC streetcar painted in a Chicago style paint scheme with an under floor S scale power and trail truck. After purchasing the model, he talked with the individual running the garage sale. Ed was told the train models for sale were at one time part of a large O scale club which had a layout in the basement of a funeral home in Berwyn. Was this "The Little 'Q'"?

Apparently the city streetcar line had been built with S gauge track and power trucks in the models. Ed bought the model more for having something from "The Little 'Q'" and the S gauge power and trail truck. If self-contained power trucks the size of which fit into an S gauge truck, why couldn't an O scale power truck be made? The strange thing is, the S gauge power truck looks like it was machine made – a machine bent some of the metal holding the motor and wheels. The model itself looks like it was made from tin cans flattened out and soldered together.

Throughout the years of living in Oak Park, Ed tried to build three different layouts in the basement of the house. Besides the obvious environmental problems of a basement in an old building - the uneven floor and low ceiling (Ed is tall), he kept hitting his head on water pipes and the floor joists. Ed also ran into problems of a different sort. What he really learned was about thinking ahead. In the first layout, he tried to cram in too many things. Ed's track plan called for an over and under layout with too steep of a grade. Also, too many things were going on with the track and routing of trains. That layout was torn up.



Some visiting models on the final day of operation on Ed's railway. A Chicago Aurora and Elgin car sits on a siding with a Chicago Transit Authority 4000 series "L" car, better known as a "Baldie", under some North Shore Line overhead towers. Well, after all, modeling is a utopian world. The "L" car was made from a rapid prototype kit developed by Terry Gaskin. Terry also built the model. Photo by Glenn Guerra.

The next layout involved both a short amount of trolley wire for a terminal, while the balance of the layout was to have outside third rail. Modelers have written about having an outside third rail layout as though it's a snap. An outside third rail layout requires planning for gaps in the third rail, as well as, potential problems involving gaps at turnouts, especially crossovers and crossings. Third rail layouts can have problems with changes in temperature. The third rail expands and contracts breaking solder joints holding the third rail to its chairs. For this reason Quentin of Q-Car Company suggested to Ed that outside third rail be no longer than 3 feet. To be most correct, the ends of the third rail are called inclines not ramps. Ramps are pieces of conductive sheet metal (on a layout sheet brass is used) installed on the inside of the third rail at about a 45 degree angle at crossovers where gaps may appear.

The other problem was more of a social one. To operate on the layout, models needed outside third rail pick-ups. What about inviting friends over? Their models would need outside third rail pick-ups to operate on the layout. Probably Ed would have been called on to install and maintain third rail pick-ups on his friends' models.

Although the layout with the third rail operated well, the question of scenery raised its hand. None had been planned. With scenery, or really no scenery, plus the nagging problems with keeping the third rail running during changes in seasons in the Chicago area, and the potential lack of third rail pick-ups on friends' models, this layout was scrapped (torn-up).



Time for one last trip on the Chicago and Utopia. We board our Chicago Rapid Transit car at a street level station and get into the old brown and orange cars that Ed remembers from his youth. Photo by Eric Bronsky.

Finally Ed thought he had a sure fire way to design a layout. Whenever Ed found a track plan he liked he photocopied the track plan and then enlarged or reduced the track plan to a common size, for example $\frac{1}{4}$ " = 1' or $\frac{1}{2}$ " = 1'. Then, the plan would be cut-up to fit into the available space in the front of the basement.

This worked! Track plans with things Ed may have liked had to be eliminated. Cutting the plan up to fit into the available space immediately showed any potential problems. Although Ed wanted an over and under, folded figure 8 layout; the grades would be too steep. The number and size of yards had to be reduced. And, there was more which had to be left out of the layout.

The third layout was built. It worked as planned. However, there still was a problem. Scenery had not been planned for. Even though the layout was a narrow, along the wall design, it was difficult to reach the back wall to paint and add scenery. The walls of the basement were a rough finish exterior paneling. Masonite had to be placed between the layout and the walls. The Masonite was hard to install and keep in place. So much for that!

Ed knew a few other model railroaders at the time, but like most of us, work and family took up a lot of time. The main hobby shops in Chicago for both O scale and traction modeling were All Nation Hobby Shop owned by Bob Colson and Downtown Hobby Shop owned by Rich Bosak. One of the employees of Downtown Hobby Shop was Pete Busak. By going to both stores, Ed got to know Bob, Rich, and Pete as well as the other employees of the stores. Over time All Nation Hobby Shop closed and Downtown Hobby moved to the northwestern part of Chicago. Downtown Hobby became Chicagoland Hobby and is located in the Norridge Park area of the northwest side of Chicago.

Over time, Ed learned that Pete lived about 1.5 miles west of him. Ed and Pete's friendship grew in time. Pete's home was smaller than Ed's. Pete had both O scale steam locomotives and trolley models. Ed had O scale diesel and trolley models. Both had O scale freight cars. Ed had models of the Chicago South Shore and South Bend stretched 75' passenger cars which required 72" or larger curves. By now, Ed was starting to think of a new layout that would have larger radius curves so he could run his passenger cars and Pete could run his steam locomotives.

At the same time Ed and Pete became close friends, Ed's son, Jon, turned 18 and graduated from high school. He was interested in carpentry, general contracting, and home repair. Jon kept telling his parents the old, one story 2-car garage built at the same time as the house was in bad shape. Ed and Lois were skeptical. The old garage, like many garages in Oak Park had weathered the 77-78 winter of record breaking low temperatures and amounts of snow, was having problems. It had an ever so slight lean. The old garage was built with 2 x 4's containing loose knots. Some of the cross bracing had not been tied (nailed) into the side walls.

Ed and Lois's son made a deal with his parents. He would draw-up plans for a new 2-car garage, get them approved by an architect and the Village, obtain all the necessary permits, tear down the old garage, get rid of the material from the old garage, and build the new garage <u>IF</u> his parents would pay for everything. Getting free labor to get a new garage sounded like a good deal! Ed and Lois agreed to have the garage replaced.

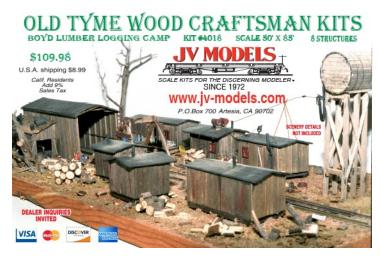
Once the approval was given for the new garage, the old garage and rubbish disappeared quickly. The concrete for the foundation and floor along with an open parking space next to the garage came just as quickly. Then one Saturday as Lois and Ed looked out the back window of the house, they saw their son and his friend raise one of the walls of what was to be the second floor of the garage. The single floor garage had become a two floor garage!

When they asked their son what was going on, his reply was, "It's in the plans!" What Ed and Lois didn't know was there were two sets of approved plans. When asked what was to be the use of the second floor, their son said something to the effect of his using the area for an office etc.

The two story garage was built. Jon had designed and built for himself a space for his office and his own use. A few years later when their son married, he moved his office out of the garage and into a home of his own. The second floor of the garage was empty. Ed asked Lois what was to become of the empty space. Lois responded she was planning on moving some of the home decorations up to garage. Ed's response was, "No, I'm going to build a trolley layout up there." And so, the Chicago and Utopia Railway got under way.

This brings us full circle. The layout was started, and as you can see in some of the photos, not quite finished, like many layouts. Ed and his friends have had many hours of fun and enjoyment. Modelers who had traction models too large (long) to operate on their own layouts have had a chance to see their models run. Now is the time to stop, pull down the trolley poles or pans, turn off the lights, and power.

However, one wonders what plans Ed has for the unsuspended, moved Chicago & Utopia Railway.









East Gary Car Co.

Dept OSR
3828 St. Joseph Ct.
Lake Station IN 46405

Ph 219-614-7165





Working With Older Brass Diesel Locomotives

DIESEL LOCOMOTIVES
PART 1 - WORKING ON WEAVER DRIVES
OR, WHAT A CAN OF WORMS WE HAVE HERE

By Daniel Dawdy

This article started out to be a simple how at add DCC into an older brass diesel locomotive. There are many are out there, and I just chose the next diesel that I was ready to do. I not only wanted to add DCC, but also fix up the drives and paint it. My locomotive of choice was a Fairbanks-Morse model, H-20-44 imported by The Car Works back in the 1990's. Now before any one says, "why do such an old model that is no longer available", it's because there are a lot of older locomotives out there just waiting to be updated. I think they imported different "phases" and other models like the H-16-44 and others. The specific model is not as important as the process. Having said that, this locomotive had more than one "gotcha!", so I decided to plow on and fully explore the problems and fixes that I went through to finish this locomotive. If all you care about is adding DCC, it's going to be easy. If you want to upgrade the drive, it gets a bit more involved; and if you want





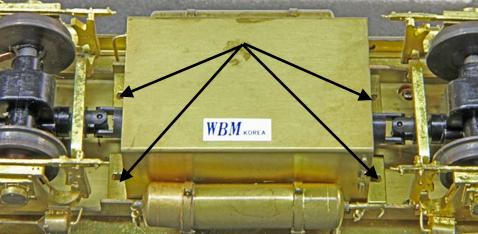


to paint it, hang on! (Note that in the pictures above I had already removed the fuel tanks which I will detail on the following page.)

The Car Works engines use the standard Weaver drive. The detail is good for a brass import listing at under \$500.00. You can go crazy with extra detail parts to exactly match the prototype you are modeling. In my case, it good enough as I model my own road. I have two of these, and a few years ago added an NCE D408 decoder in each just so I could consist them and play a bit. They seemed to run well together so now I thought it was time to update these and bring them fully into the Richmond, Danville & Southern fold.

The first item on the agenda is taking the locomotive apart. How far apart depends on what you want your end results to be. Since this was going to be painted, I went as far as I could.





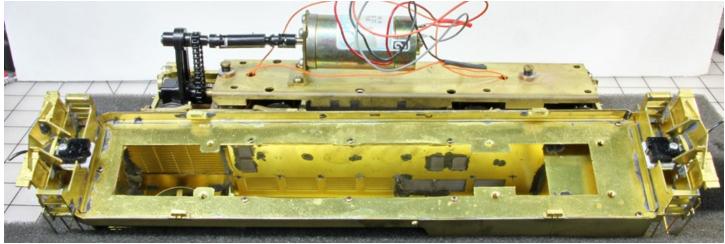
First off is the fuel tank. There are four small screws, two on each end as shown on left. Remove these and bag the screws or, like me, put the screws back in the frame so you don't lose them.

To remove the motor frame from the shell there are six larger screws located just inside the truck side frames. See the red arrow below.



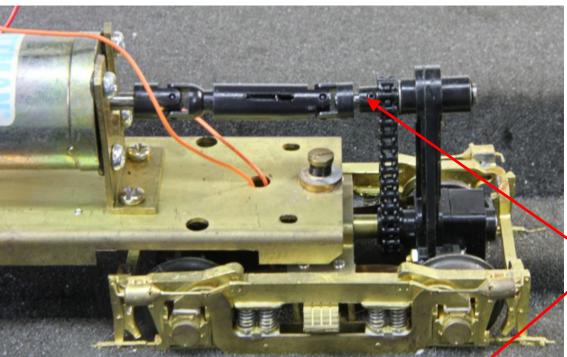
of

With those six screws removed, gently remove the shell. It's a very tight fit with the motor, so if any wire is run along the motor it will hang up. Simply push the wire up over the top of the motor to keep it out of the way. Remember this is where you run all your lighting and decoder wires. They must all be above or below the motor.



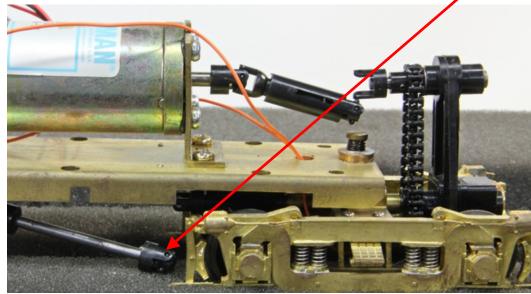


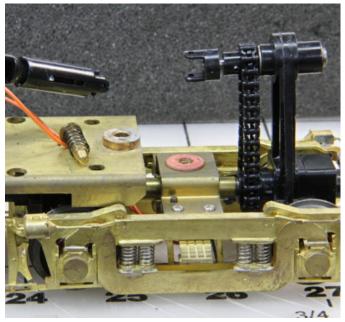
Now you have the main shell removed from the drive frame. At this point, if all you want to do is add a decoder, you can stop reading and wait for the next installment. If, however, you want to upgrade the drive, read on. The drive upgrade was described by Brian Scace in an article called Replacement Diesel Drive Components which was in Issue #38 of *O Scale Trains Magazine*. (That issue is available for free download from here.) Brian's article tells you what you need and where to order parts for this Weaver drive upgrade. As every application is different, he could not go into detail for every install. I ordered the gears and chain a few years ago knowing that someday I would want to do this modification. That day is now.



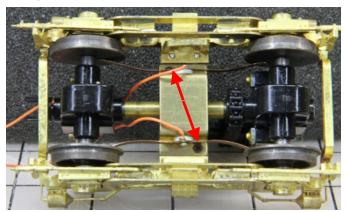
Here is our chassis with the shell removed. First thing we need to do is remove the drive shafts, both upper and lower. With a small screwdriver, you can pop off the Delrin spider/universal joint.

Remove the spider/universal joint from the top and lower drive shafts.

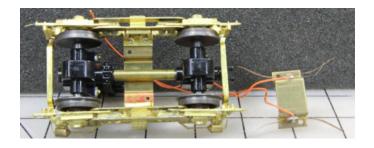


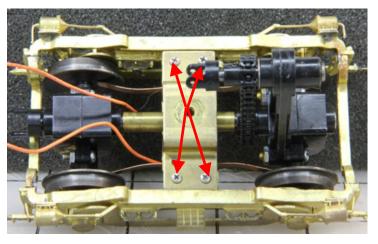


Now we have to remove the truck from the frame. One screw with a spring, as shown in the figure above, is removed. Notice the fiber washer that sits on the bolster. Set these aside (as in bag them).

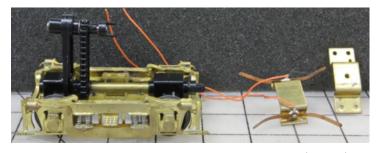


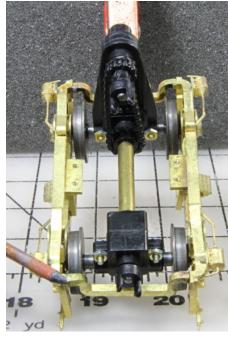
Flipping the truck upside down, you will see two black screws kitty corner from each other as shown by the red arrows in figure above. Remove these and the plate holding wipers will fall away as shown in the picture below.





Flip the truck back over and you will see the four small screws holding the bolster to the side frames as seen above. Remove these and pop out the bolster assembly. You now have both the upper bolster assembly and the lower bolster assembly with the wipers attached as shown below.





Now the real fun begins. The only way to remove the side frames is to unsolder one side to allow the wheel set to come out. A small torch or soldering gun/iron will work. I used a resistance soldering outfit. The ends and the side frames are notched, so getting it back together is easy. Only remove one side frame.

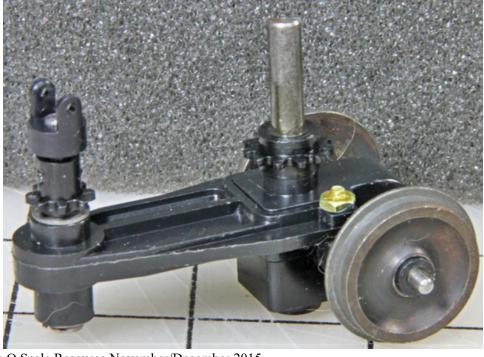


Now we have the truck assembly apart. Note that one sideframe has plastic inserts for the axles, while the other has fiber washers.



With the sideframes off, you can simply pull the two wheel assemblies apart.

Using a very small screwdriver or pointy thing, pop the chain apart. It's very tough so you will not damage it.



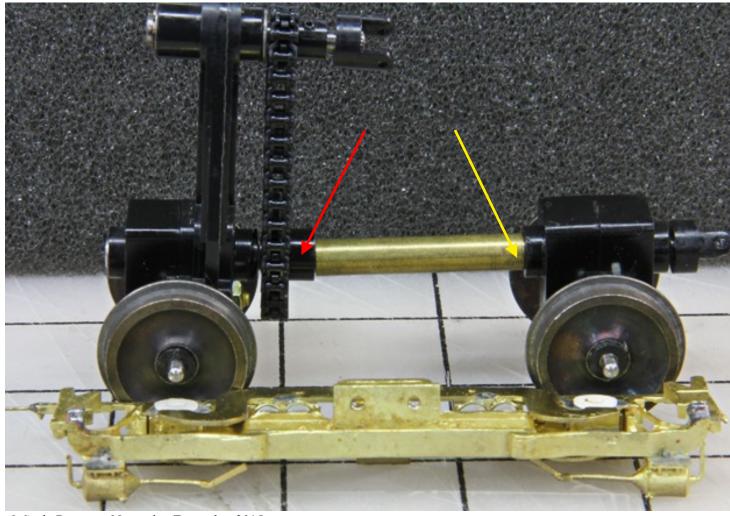
Carefully pry (or use a puller if you have one) the lower gear off the shaft.

The O Scale Resource November/December 2015



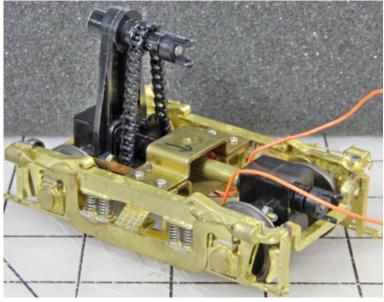
Push the new gear on the shaft and eyeball the alignment so that the chain will be lined up with the upper gear. You can make a minor adjustment after the chain is back on.

Notice the first problem in the image below. The axles no longer fit the sideframe holes. That's because, on this assembly, the gear shaft is a bit longer than the original. I simply cut a bit of the brass shaft (yellow arrow) to bring the wheels closer. You could shave/sand the end of the gear (red arrow), but cutting the brass is easier. It's not really important if you cut too much as it will still work.



The O Scale Resource November/December 2015

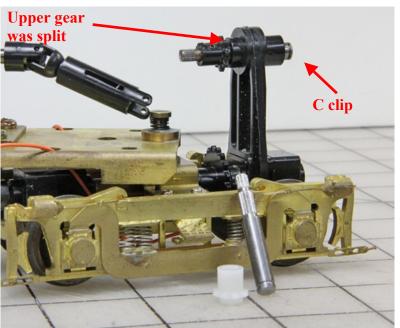




I used three link extensions, but that was to much slop, so I used two and it was a nice fit. The number of link extensions will very depending on your locomotive.

Now we can reassemble the sideframes and make sure everything works. I would recommend this even though you will have to undo it for painting. Reassemble on the frame and test on DC, or temporarily wire a decoder and test on DCC. The video extra at then end of the article is a test on DCC. Simply attach the decoder's orange and gray wires to the motor and the black and red wires to the pickups. If using a sound decoder, you must wire in a speaker. All the other wires can be ignored for this test. At this, point we don't even care to fine tune the decoder. In fact, it does not even have to be the the final decoder you want to use. All we are trying to see is that there is no binding. Having replaced the gear in both H-20-44's, I did a test run. One worked beautifully while the other one, well let's say the fun had just begun. It lurched, ran, then lurched again.

Great, that is a symptom of a cracked gear. I could not see the crack, but after talking with Jay Criswell, he assured me there was no other option. The upper gear was indeed split. Just a hairline, but the damage was done. Luckily for all of us, <u>P&D Hobbies</u> has all of these parts in stock, part number PDD05297. Carefully remove the "C" Clip from the end of the shaft and watch it fly away never to be found again (part number

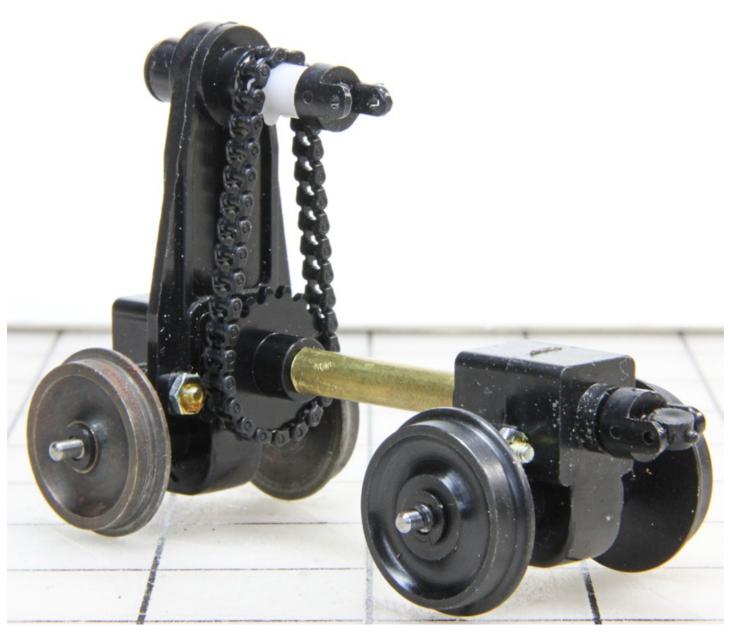


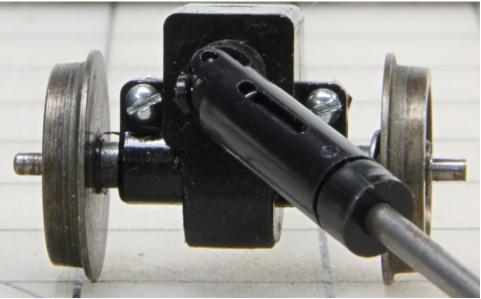
PDD10010). Now you can remove the shaft and the gear. The picture shows the new gear and I also ordered a new shaft "just in case".

OK, that was not so hard. P&D shipped within a few days and I was ready to test again. They also included a nice four page document with diagrams of all the parts and numbers.

Ready for test two! Run, lurch, run lurch... great! Now I am getting very aggravated. There has to be a problem with the lower gear. Time to unsolder the sideframes again and take a look-see. By turning the shaft, I could feel the resistance on every rotation. There are two small screws with nuts holding the black transmissions boxes together. Opening both, the bad gear was apparent. Well, back to P&D. You can purchase just that gear (part number

PDD10021) for \$3.00, or the whole wheel set, 40" geared, complete for \$10.00. To me in my state of



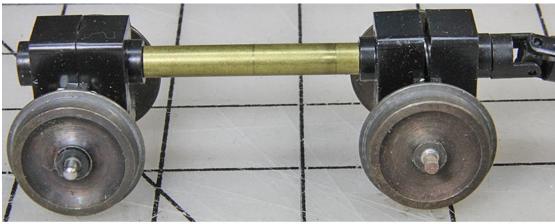


Above is the finished drive assembly with new lower gear and new axle assembly in the front. You can see the difference with the new wheels that make up the whole axle set from P&D.

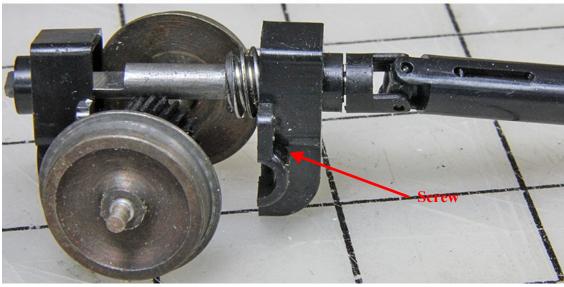
The image on the left shows the screws to remove the drive housing.

"unhappiness", the \$10.00 option sounding just fine! Another few days and I had a new geared axle assembly with wheels. I dropped it in, replaced the two small screws/nuts in the transmissions boxes, resoldered the sideframes, reattached the chain, mounted the truck assembly on the chassis and tried again.

While it did run smoother, I noticed the wheels on the other truck were binding. Really!!! I never thought to check that after the first two broken gears. Yep, there was another split gear in the rear truck. Note to self, next time I have everything taken apart check all the wheels sets for binding of any kind. Even though I was in the



basement, I am sure the neighbors heard me cursing as I went back the the P&D website and ordered another complete axle assembly. After all that, she ran just fine. It better have – I was running out of things to fix!



There is a lesson here, but I am sure you have already figured it out. Since I have four other locomotives that use this same drive. I stocked up on gears and other parts from P&D at the Indy National in September. From what I have read on the modeltrainjournal.com forum, these P&D gears do not have the splitting problem. Time will tell.



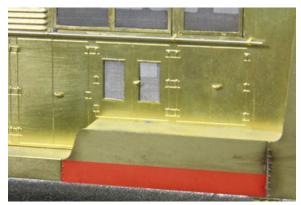
While this article started out as a DCC article, we quickly switched gears, pardon the pun, and fixed the drive problems and by using Brian Scace's re-gearing idea, making this unit a better slow speed runner. And remember, this is a Weaver drive. It does not matter if it's a Car Works, Weaver, P&D or any of the other fine kits like Gilmaur, everything we covered will apply. So many engines, so many gears!

Continuing the "tear down"...

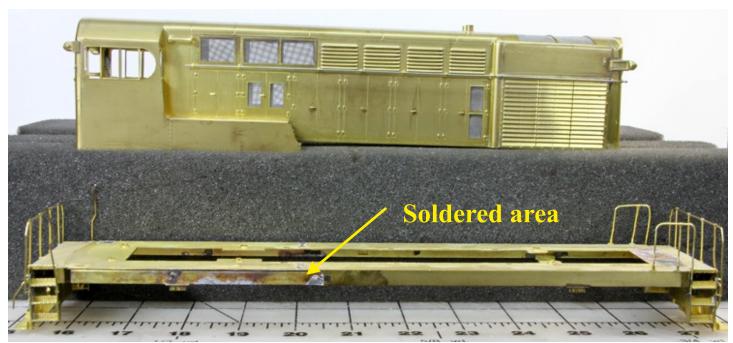
If you want to separate the shell from the frame, you will need to do a bit of work. Remember, we removed the frame with shell from the motor chassis. The frame and shell are still connected. Depending on your color scheme or masking ability, you may not need to remove these pieces from each other. There are no screws. This was soldered at the factory. The red area in the image (next page) shows there the shell was tack soldered to the frame. You will need to heat this area with a torch or soldering gun. One of

mine was just tacked on, while the other one was soldered the whole length of the red area. It's not as hard as it sounds and you really can't hurt it. Below, you can see the two pieces removed and where the solder was. Now that you have the two pieces, go back with a good file and remove any built up solder to make both the outside of the frame and the inside of the shell smooth. It's easier to to this now before painting.





Now, the cab area... it's soldered in as a unit. There is no way to remove the interior without major un-soldering, and I am not that good. What I did do was heat the floor where the two chairs and control stand were soldered. That allowed me to fish these out through the window. Clean up the holes and the pins on the bottom of the castings so they will fall easily back into place after painting. If you are careful and very accomplished with a torch, you may be able to remove the inside of the cab, but it's going to be tough getting everything back in place. The other problem is the fan and radiator screen. Again, removing these, although somewhat easier, was not something I wanted to do.

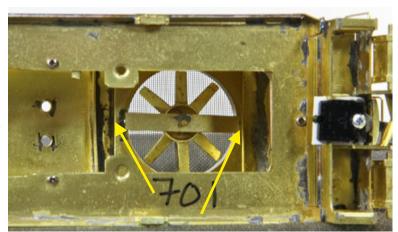


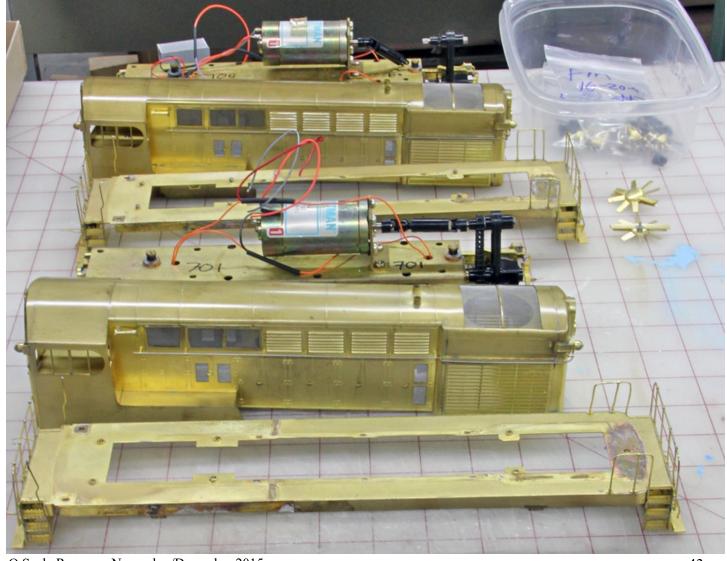


What I was able to do was remove the fan itself for better access to the inside and making it easier to paint. The yellow arrows show where it was soldered on, and it was very easy to remove.

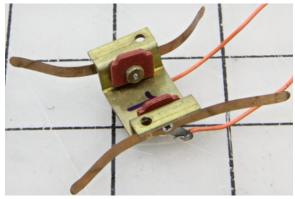
Below are both units apart and all small pieces bagged and labeled ready for the next step in the process.

The trucks were again un-soldered for painting. I removed the springs and bagged them. I'll use Blacken-It or some other similar type product for those.







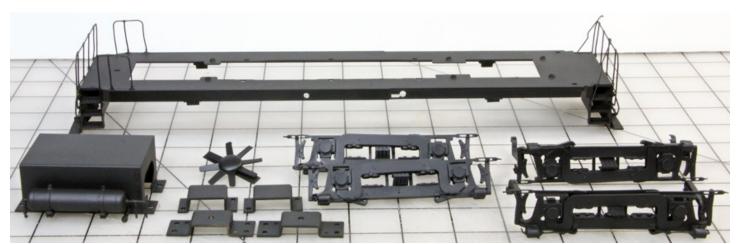


Because the bolsters will be seen, they also have to be painted so I took the picture at the left more for my own use to remind me how the pickups go back together. With cheap digital cameras and camera phones, there is no excuse for not taking many pictures as you go. Something will pull you away from the project for a few days, or even weeks, and you need that reference, or at least I do.

OK, now the discussion can begin. I have painted many brass cars and engines. I am NOT a professional, but I learn with each model I do. The nice thing about brass, if you make a mistake, it's easy to strip and start over. Way back in the day I had an All Nation F7 A and B. They were my first attempt at painting an

engine. While not brass, they were metal and easy to strip. As I remember, it took me four times of painting and stripping until I was happy with the results. Just recently, I painted an brass NJ RS-1 with a striping pattern. My first attempt looked like was drunk, so back in the tank it went and I simply started over. My point here is just try, you can always fix it.

I have never before removed the protective lacquer that must brass manufacturers/importers put on. It makes a nice base coat, and I never had a problem shooting over it. These units, however, had small dust "thingys" embedded in the lacquer, so I thought this would be a good time to remove it. I used Pine Sol and submerged all the parts overnight. The next day I thoroughly washed the parts in Dawn dishwashing liquid wearing gloves and removing as much of the sticky and stringy lacquerer as I could. Once it dried, I could still see some lacquerer that did not get fully removed. The next step took are of that. Again, a new experience for me. I have always painted with Scalecoat Model Railroad Paint and never soaked in vinegar. Many people say it gives "tooth" for the paint, so this time I tried it. I submerged the parts for a few hours, and again wearing gloves, washed with water and Dawn. Because I wanted to make sure the the cab and up inside the fan was dry and ready for paint, rather than air drying I put everything except the sideframes with the plastic insets into the oven at 180 degrees Fahrenheit (82 degrees Celsius) for an hour.



The O Scale Resource November/December 2015



My freight units are a simple color scheme as were many freight units were back in the day. My color choice is Scalecoat's Erie Lackawanna Maroon with a Scalecoat black underframe. I normally dilute 50% paint to 50% thinner and shoot at 20 PSI. Using a smaller tip and carefully shooting through the windows of the cab, I was able to cover all of the inside. I also shot the fan screen from the inside first and then continued to the outside of the shell. Everything received two coats of paint and then went back into the oven at 180 degrees Fahrenheit (82 Celsius) for an hour.

Looking back at the pictures I took along the way, I started the reassembly. Trucks and wipers first and then the motor platform. Once I got that far, I temporarily wired a DCC decoder again as before and tested the movement. I wanted to be sure I did not do something really stupid like put the axles in backward and cause a direct short. I reinstalled the frame and shot a quick video of the unit with a stock Tsunami TSU-AT1000 and



TSU-1000. Using JMRI, both units were speed matched and adjusted for slow speed. The sounds have not been tweaked as of yet.

Now you are asking why two different Tsunami packages? I have no idea. I bought these a few years ago from two different sources without realizing they were not the same package. It actually makes no difference as both are rated at one amp and have the same sound set. At this

point, I will stop and rest a month or so. Next issue we will add the lighting, interior and couplers, as well as go through the steps for adding a DCC decoder to control everything.

GARY SCHRADER'S IMPROVEMENT WONDERLAND

A Look Into the Fascinating and Mysterious World of Locomotive & Rolling Stock Restoration

By Larry Sokol Photos By Gary Schrader unless noted



A photo of Gary Schrader in the cab of 3751 in Los Angeles Union Station during a Santa Fe Modelers Convention. Obviously, this is fun.

There is a not so well kept O scale secret out here on the West Coast. His name is Gary Schrader, and he is the O scale wizard who has for years been able to answer just about any question and fix any problem relating to O scale cars and locomotives. Into his modest shop limp damaged steamers, electronic nightmares which defy understanding – wheels out of alignment, missing, not to scale, or wobbly, and a zillion other dilemmas that would stump even Stephen Hawking. (No apologies to this world class genius who has explained a lot of the universe, he's just spent his life unravelling the cosmos instead of playing with trains.) Once Gary has finished his magic, chugging from the shop steam or glide former nightmares which are now dreams coming true.

After a modest stint on Gary's workbench, (unless you are on the waiting side of the interaction) out rolls whatever had to be carried in working just perfectly. As the photos show, if the original engine had a pipe going somewhere or a lighted number board, Gary makes sure that the model has the same. The Smithsonian is thinking about adding a small wing to their transportation museum to eventually house his efforts. (Small joke there folks.)

Gary is the "go to guy" for Key models. He does testing, fixing, painting, designing of electronic lighting and other systems. The devotion of Key models to get things right, and keep them right, has found an able partner to maintain the integrity of the finest model manufacturer in the hobby today. Key keeps their promises, and when a model or individual loco has a problem, Gary corrects it.

What a beneficial and fortunate decision for O scale. His trains, detailing and electronics have set the standard. Gary's work is out there and, in the next section, there's a roadmap outlining how he accomplishes some of these wonderful achievements.

How to get where you'd like to go

On one particularly challenging day, Gary dropped one of his locomotives. This was decades ago. It looked like a caboose had punched it in the chin hard. Only a couple of options, right? Toss it, look at it, put it in a box and try to forget about it, or fix it. The concrete floor was still there, waiting for another victim, so Gary decided that he better to learn how to "fish" so when it happened again, he'd be ready. Fear, he mentions, is completely normal. You just have to be willing to experiment, to try and maybe fail, to over or under bend something. Why worry? If you should screw something up, hey, it can be fixed.

Pick any activity – golf, bowling, growing bonsai trees, becoming a neurosurgeon, or better yet, a trial lawyer. No one starts out where they would like to go. We begin and fail, make mistakes and learn from them. I used to tell my little leaguers that we learned a lot more from losing than we would have from winning. (Most

years our teams were by far the smartest in the city). Think about it, you really don't learn much when you do it right. You already know how to do whatever it is. It's only when you screw up in some way that learning takes place. Next time, you won't use such thick paint, or a dull knife or a torch which melts the smokestack. Gary said he had heard about a "10,000 hour" rule. That's how long it takes to fully master many skills. Of course, you should think of this as a continuum. You do not need to become a Kimpei Sofue. It might well be enough to just be able to use a soldering iron to stick a part back on. Your second boxcar paint job will look better than the first, and if it doesn't, it would be fun to try and figure out why not.

Gary started in earnest when his brass hit the cement. Don't be afraid to jump in and try. What have you got to lose? There's plenty to gain. Just look at the photos in this article and imagine yourself turning out something you are proud of for yourself. Good enough for you is always good enough if you tried your best. So, don't delay, get started.

One last note. Gary is friendly and available to consult and talk you through a problem. Give him a call or send him an email when the solder seems bigger than the sand dome. Or, better yet, before it gets to that point.



An extensively super detailed PSC Southern Pacific AC-6 cabforward crosses the curved timber trestle. The PSC model was imported "as built" in detailing. A lot of re-piping was necessary to bring it up to the late 1940's appearance.



This is a Sofue ATSF 3460 class Hudson *super-detailed to exactly* match ATSF 3461 around 1950. The original model was exquisite, but some things could be upgraded including the engine to tender connections you see here. New castings from PSC and some piping changes were done before painting, lettering, and weathering.



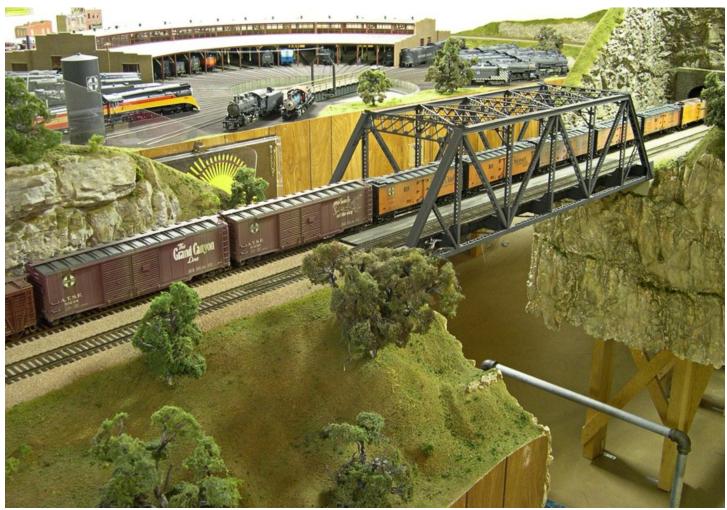
No one has ever imported a Santa Fe 5001 class model in O scale. This is what one might term a "hyperdetailed" model of ATSF 5006. It started life as a USH ATSF 2-10-4. All the detailing was changed along with the wheels and drive train. If something appeared on the real 5006, it is on this model.



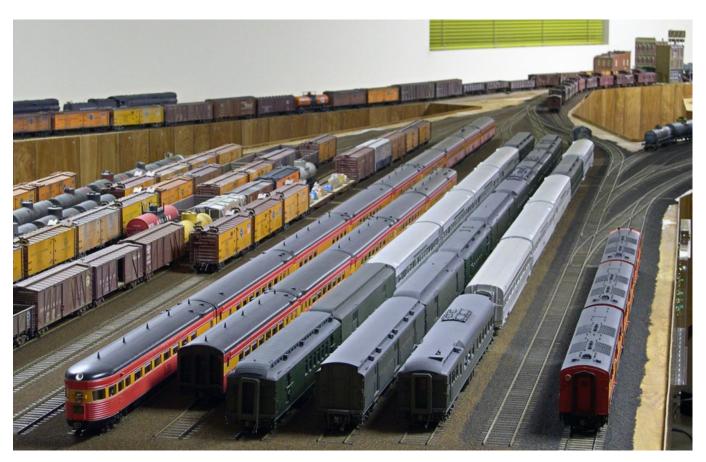
Two of these "hyperdetailed" 2-10-4s were done at the same time. Each is detailed to exactly match the engine number, so a few details are different from 5006. Both are sound and DCC equipped.

This engine was done for Jim Williams. It started as a fabulous Lionel Smithsonian 2rail model. It was upgraded with a superb Kohs PT-4 tender, and the skirts were cut back as the NYC did in later years. Other details were also upgraded. Even the decals are custom, as no one makes the correct NYC decals. The engine has sound and DCC.





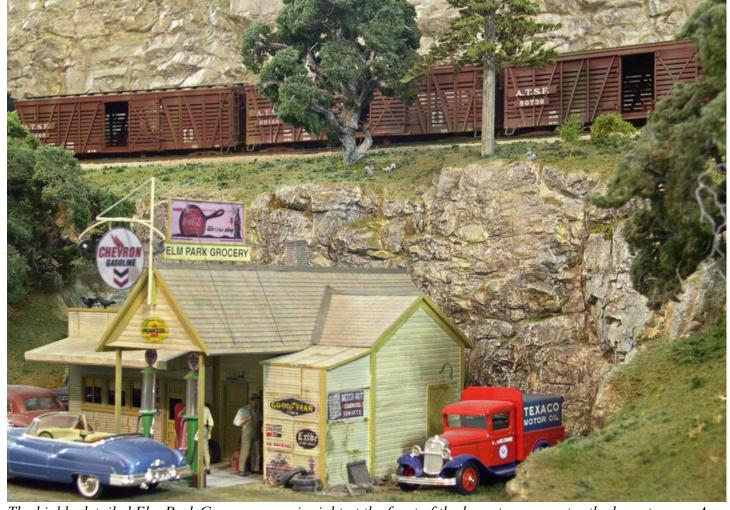
This is the view as you enter Gary's train room. The Atlas truss bridge has been extensively modified. The roundhouse is scratch built using Santa Fe plans. All engines and cars are super detailed, painted, and weathered by Gary.



The freight and passenger yards are generally crowded with many super detailed cars. A 14 car Daylight train by PRB, complete with full interior detailing, is in the center of the photo.



A heavily super detailed and re-worked PRB ATSF 1800 class Prairie helps a highly modified Sunset ATSF 3751 class Northern across the curved double track timber trestle. There are thousands of nut-boltwasher castings by Grandt Line in the trestle.



The highly detailed Elm Park Grocery scene is right at the front of the layout as you enter the layout room. A string of PRB ATSF reefers is passing on the mainline above.



A favorite railfanning spot is the tunnel just off the steel truss bridge. Watching trains like the Daylight enter and exit the tunnel and cross the bridge is a real treat.



The engine leads to the turntable are always busy. The Diamond Scale turntable has been considerably upgraded, the oil tank is by Pecos River Brass, the water tank by PSC, and the sand house is scratch built.



C&O Section Car Houses

These new laser-cut kits includes internal wall framing, floor, and positionable doors. Drum castings are included. Footprint of each is a scale 12' x 20'. More C&O kits are in stock, and several more will be available soon including three more for Quinnimont, WV. More photos and details are on our web site at www.btsrr.com!!



Standard Section Car House #17658 \$ 69.95



Quinnimont Section Car House #17657 \$ 69.95



1782 Trinity Rd Belington, WV 26250 304-823-3729
Call in your order today.
Kits are in stock!

www.btsrr.com Shipping - \$5.00/order in the US

Eric Bronsky Photos



Some old wood cars from the Chicago Aurora and Elgin painted in the early paint scheme. The #314 is a scratch built brass body that Ed purchased from Bob Colson of All Nation Hobby shop. The Florence is a scratch built styrene body built by Jim Osborn. Ed finished and painted the cars.

By Glenn Guerra

All photos by Eric Bronsky

While working on the Chicago and Utopia Railway article, I was looking at some photos that Eric Bronsky took. I asked Eric if I could use some in an article about Ed's Chicago and Utopia Railway and he agreed. Eric sent me a lot of photos to look through; and I was having trouble picking which ones to use because they were all so good. I talked to Dan Dawdy, our editor, to see if we had room in this issue because I thought we could use more of Eric's photos. Dan had another article which has been getting pushed back for a while and he decided to push it back one more time so we could see some of Eric's photos.

As you may have guessed, there are a lot of traction modelers around Chicago and Milwaukee who get together quite often. There was a lot of traction in the area, and there are three traction museums in the area. Eric is one of the local traction modelers. He models mostly in HO scale, but comes to all the traction events around the area even if they are not HO scale and enjoys taking photos of the models. Lately, he has been doing movies of the various layouts and posting them on You Tube. His movies on You Tube are listed under the name of Electropickle Productions. You should take some time and look at some of them.

The photos in this article were all taken on Ed Halstead's Chicago and Utopia Electric Railway. Eric said he has many more photos of other layouts and models. One thing you will notice in these photos is the depth of field Eric gets in his photos. I have been talking with him, and we may do an article on model photography in the future. Eric has good technical skills and nice composition in his photos. For now let's take a look at some wonderful photography work by Eric and some nice models all posed on Ed Halstead's layout.



This model of a Chicago Surface Lines street car belongs to Rich Nielsen. One of the things that most impresses me about Eric Bronsky's photos is the depth of field attained. The power plant is over two feet behind the street car in this photo, and it is still in focus.



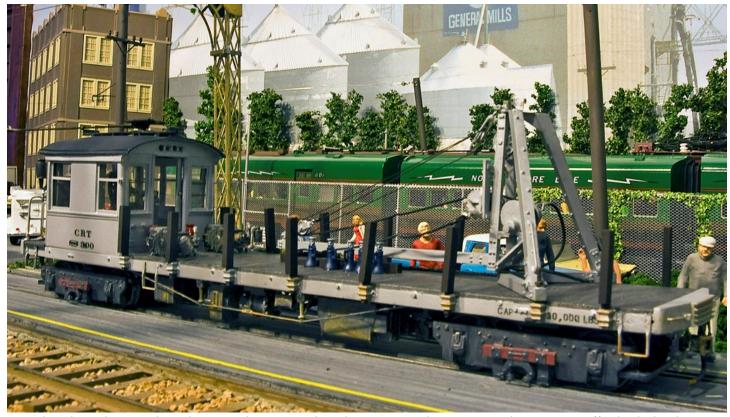
This Chicago Aurora and DeKalb box motor was built using Pitman cast white metal car parts. Ralph Nelson built the car and painted it. It now belongs to Bruce Moffat.



In the late 1960's, Bill Clouser from St. Louis started making some of the first commercial resin bodies. He cast them in epoxy at that time. When Bill passed away, Eric Bronsky acquired some of the tooling. Eric and some other modelers expanded the line with new patterns. After the All Nation Hobby Shop closed, the models were sold through Chicagoland Hobby. Phil Markus currently owns this car.



The Chicago Aurora and Elgin #700 is a scratch built styrene body that Jim Osborn made. Ed Halstead finished and painted the model.



Ed Halstead remembered seeing this car in the Chicago Rapid Transit yards. Bruce Moffat had also been looking at the car and made drawings of it. From those drawings, Ed scratch built this model. The main body is brass. The boom and house are styrene. Note the unusual fabricated trucks. Ed made these by making a brass overlay that would slide over a commercially available truck side.



This model of a Chicago Surface Lines street car was made by Ron Hastie.



The photo above, along with the next two, are of the same Illinois Terminal train. The models were imported many years ago by GHB. Ed said the windows are lost wax castings which is why they have such good relief. The models were originally owned by Ron Hastie. Ed acquired them from Ron and reworked them. When he had the details right and the models ran well, he gave them to Dan Pantera to paint. Dan painted them and installed the interior details.



The O Scale Resource November/December 2015





None of the people who helped with this article could identify the owner of this car. The photo again shows the depth of field that Eric is able to get in his model photos. A wide angle lens allows Eric to get close in to the model, exaggerating the perspective.



This model belongs to Carl Lantz and was photographed during one of Ed Halstead's open house events. The model is a Q Car Company epoxy body. Peter Witt designed this type of car with the center entrance and front exit while he was the commissioner of the Cleveland Railway Lines. The idea was to get people on and off the cars rapidly, and the design became popular with other transit companies. Carl has it painted to represent a Brooklyn Peter Witt type of car.



We were not able to identify the owner of this model. When Ed has open houses, many people bring models to run which is part of the reason for the open house. Eric would photograph these models because they were unusual.



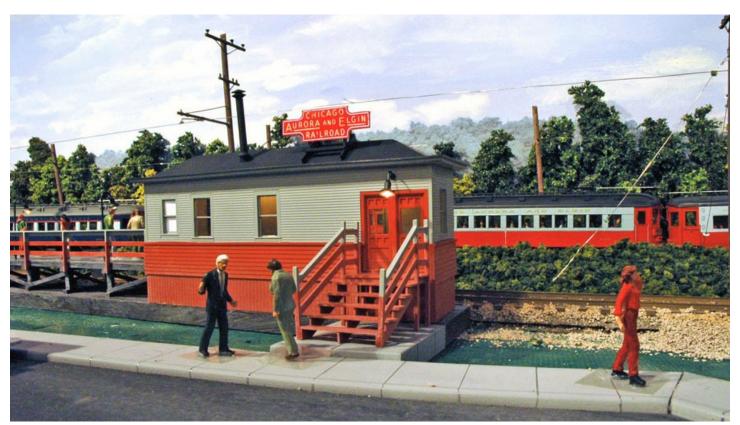
These models of Metropolitan West Side elevated cars belong to Ed Halstead. The car behind the police car is an epoxy body made by Q Car Company. These were the first steel cars acquired by the MET. The open platform cars are known as gate cars because of the big gates on the platforms. These cars were originally pulled by small steam engines on the elevated. Ed scratch built the car out of styrene, and painted and detailed both models.



Rich Nielson scratch built this car using ICC styrene car parts. These parts are available today through East Gary Car Company. Rich used a wood roof on this car.



This Illinois Terminal streamliner was a kit developed by Eric Bronsky. The bodies are cast epoxy. Ed Miller assembled them and finished the models. Ed Halstead owns the models. As a side note, Carnicelli Square is named after Quentin Carnicelli, owner, Q-Car Company, a large supplier to traction modelers.



Ed Halstead built this small station from styrene. He used a pattern that the elevated railroads around Chicago used when they came down to street level, An original of one of these stations is preserved at the Illinois Railway Museum.



The Chicago & West Towns Railway operated street car lines in the western suburbs of Chicago to connect with the Chicago Rapid Transit lines. The West Towns holds a warm place in the hearts of many Chicago area transit fans. Many people in the suburbs would take the West Towns to connect with Chicago lines to continue their trip. At the ends of the West Towns lines, the line voltage would drop so much when the cars started that the lights would almost go out. The lines had few sub stations to supply enough electric to the overhead wire. There is a car preserved at the Illinois Railway Museum and it has a coal stove for heat. Jim Osborn scratch built this body out of wood; and Ed Halstead finished this model of the line car owned and operated by the Chicago & West Towns.



These two models of South Shore Line freight motors are Overland imports that Ed Halstead painted and detailed.



This photo shows the skill that Eric Bronsky has in taking model photos. From the front of this photo to the rear is eight feet, and Eric has it all in focus. This depth of field in photography is hard to get. The car coming at us is a Max Gray import of a Chicago, South Shore and South Bend Railroad 60 ft steel car. These cars were later lengthened to 80 feet by the railroad.

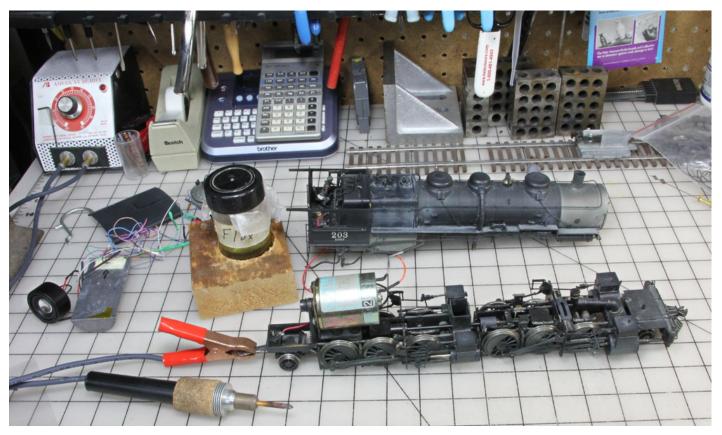


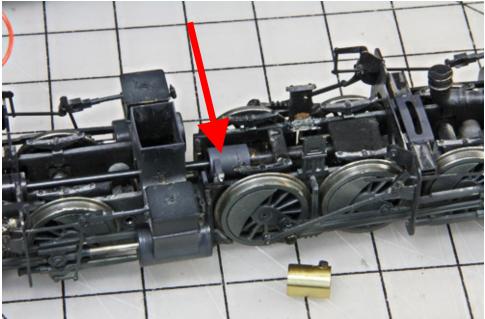
This model is another visiting model on Ed Halstead's layout. The car is a model of a Milwaukee street car.

WHAT'S ON YOUR WORKBENCH TODAY?

We are starting a new series to show 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@oscaleresource.com.

I'll even start out with my mess below!





I had my Z1 apart working on DCC which I'll cover in a future article. I noticed a split bushing. Asking on the forum, it was Jay Criswell to the rescue as he made me two new parts. The one installed and now painted black (red arrow) and the brass sleeved one in the foreground. ~ Daniel Dawdy

The O Scale Resource November/December 2015

READER Feedback

Comments, something you liked, something you didn't like? Email us here: daniel@oscaleresource.com

Rod Miller sent us a note about our article on Mike Hill in the September/October 2015 issue. He had the following information to add:

At that time brass was starting to get discounted. Larry (Muir) didn't want that to happen so he restricted the dealer list to 4. Mike was the dealer for the Upper Midwest, Bill Truscott was the dealer for the East, Larry was the dealer for the South, and Michael Stimac and I, in business as partners importing the Lenz DCC system, were dealers for the West. Bill McClung did the research, I think, and managed the project with the Korean builder.

If I recall, the reefers were AC&F Type IIa cars. Bob Anson did masterful painting and decaling of many of them. I greatly regret selling the Ralston Purina car I had. Curiously the GN used the same car in LCL service. I painted two Freight Car Red and lettered them for GN, and sold them right away.

There were 4 versions of the tank cars imported, two tank capacities and two types of domes. There were 8000 and 10000 gallon tanks, and "standard" and acid domes. All four combinations of tank size and dome type were produced.

None of the boxes for either the reefers or tank cars had end labels, it was up to the dealers to make their own. I've often wondered how many boxes were never labeled and later ended up at swap meets to sell at a bargain because the model was unknown. Since there were 4 different kinds of tank car models, the boxes were marked by hand A, B, C or D on the end to identify the model.

Larry died about the time the tank car models came into the country. Forty were allocated to each dealer. I took less than that, I don't know how many Bill took. Mike ended up with the rest and labeled them for Hill's Hobbies.

~Rod Miller

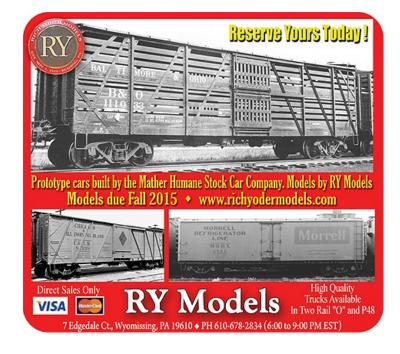


Norm's O Scale Trains

P.O. Box 147 Casco Mane 04077

We carry many lines of products
WE BUY Single Brass items OR Collections
Please call

www.normsoscale.com/ norm@normsoscaletrains.com



O SCALE SHOWS & MEETS

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

Cleveland 2 Rail O Scale Meet
October 31st, 2015
Lakeland Community College Auxiliary Gym 7700
Clocktower Drive Kirtland, Ohio
Email: J1d464@yahoo.com



Rockford O Scaler's Annual Fall Open House 2015

Date: Saturday, November 7, 2015

Time: 1:00 pm to 5:00pm

Where: 3886 Lookout Drive, Rockford, IL 61109

The Rockford O Scalers: John Handlogten, Frank McCabe,

Greg Anderson, Bruce Morrall

For Directions / Information call: 815-874-7036 (fsm1019@aol.com) (Frank) or 815-207-3603 (John)



Rockford O Scaler's layout



Chicago March Meet (Note new later dates this year only) April 1st, 2nd and 3rd, 2016

Weston Lombard Hotel

Lombard, Illinois

9:00 AM-2:00 PM each day Email : <u>info@marchmeet.net</u> Web Address: <u>marchmeet.net</u> Strasburg Train Show April 9 - Strasburg, PA

2 -rail swap meet at the Strasburg Fire Co, 203 W. Franklin St, 9 AM - 1 PM. Admission \$5 (Wives/children/military w/ID free). Tables are \$25 for first table, additional tables \$20 each. Great food, modular layout, clinics. Contact John Dunn 609.432.2871 or jdunn8888@hotmail.com or Rich Yoder at oscale48@comcast.net.



O Scale West May 5 through 7th, 2016 Santa Clara, California 9:00 AM to 5:00 PM each day Email: <u>info@oscalewest.com</u> Web Address: <u>oscalewest.com</u>



Have an upcoming O Scale event? We would like to help publicize it. Send us the information up to one year in advance, and we'll place it here, along with a direct link to your Website and/or Email.

Click here to send us your information.



CLASSIFIED LISTINGS

MANUFACTURERS













13732 Lakeside Dr. Clarksville, MD 21029 Phone: 301-854-3200 Email: NKP48@aol.com

3_{rd}

Third Rail Division Sunset Models Inc.

16 Beta Court, Sam Ramon, Ca. 94583 Ph 925-820-7701 www.3rdrail.com

BOATS A

www.seaportmodelworks.com

603-498-3849 sales@seaportmodelworks.com



www.choochenterprises.com

Freight Car Loads Retaining Walls Tunnel Portals Detail Parts

CUSTOM WORK

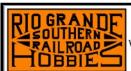
CUSTOM ETCHING

BY railway enthusiasts FOR railway enthusiasts
ETCHING in many materials and thicknesses
ALL work carried out in house; drawings, masks, etc.
NO minimum sheet sizes; Order what you want
(custom decals also available) sales@stea

sales@steamandthings.com www.steamandthings.com

SaT

DEALERS



RGSRR Hobbies 1102 Dyer Rd Whitewater, CO 81527 PH 970-245-5100

www.rgsrrhobbies.com

Ркото 48

AMERICAN SWITCH & SIGNAL 13052 Batliff Run, Fishers, IN, 46037-6266

Phone: 317-774-5755 Email: jfpautz@comcast.net

PROTOCRAFT™

18498 Half Moon Street, Unit 203 Sonoma, CA 95476-4835 Phone: 707-935-7011 Email: protocraft48@yahoo.com Web: www.protocraft48.com

PRE OWNED

Jim Hackworth

MODEL TRAINS

2631 Edgevale Rd Columbus, OH 43221-1113 PH : 614-451-4517 Fax : 614-451-4557

Email: jhmtrains@columbus.rr.com.com Web: www.jhmtrains.com

Advertisers Index

Allegheny Scale Models	Pg 5
Altoona Model Works	Pg 32
American Scale Models	Pg 5
B.T.S.	Pg 53
Berkshire Car Shop	Pg 5
Clover House	Pg 5
Crow River Products	Pg 32
Delta Models	Pg 10
Des Plaines Hobbies	Pg 53
East Gary Car Co.	Pg 32
Harbor Belt Lines	Pg 10

JV Models	Pg	32
Korber Models	Pg	5
Norm's O Scale Trains	Pg	66
O Scale Kings	Pg	32
P&D Hobbies	Pg	10
Protocraft	Pg	5
Rich Yoder Models	Pg	66
SMR Trains	Pg	32
Stevenson Preservation Lines	Pg	10
Streamlined Backshop	Pg	10

