# THE BEST OF 12160 SINCE 2000

.....

H.

----

Diane Wolfgram • Model a SP Combination Depot Mike Sabia • E-L Lake Cities Russ Kaufman • Making Bricks

### SCALE RAILROADING $\mathbb{N}$ WELCOME!

any folks "in the industry" started out as great modelers. One of my favorites is Russ Kaufman, the N Scale Architect. When he started, one of the best N locomotives was the ConCor PA1. At a convention both Kato and LifeLike announced new PA1 models. Newby Russ stood up and announced that he was tooling a PA1, and would offer schemes like the "Florida Fun Train"... and kept a straight face.

CLUBS HELP N GO TO  $\odot$ AND SEE WHAT HAPPENS

#### $\mathbf{A} \mathbf{D}$

#### BEACH GREAT START YOUR HERE! SURFING

Atlas	05	www.atlasrr.com
Bachmann	13	www.bachmanntrains.com
Blair Line Products	13	www.blairline.com
Bluford Shops	13	www.bluford-shops.com
Digitrax	15	www.digitrax.com
Factory Direct Hobbies	07	factorydirecthobbies.com
Fifer Hobby Supply	15	www.fiferhobby.com
Kato USA	03	www.katousa.com
Lombard Hobbies	13	www.lombardhobby.com
www.modeltrainstuff.com	15	www.modeltrainstuff.com
N Scale Architect	08	www.thenarch.com
N Scale Division	15	www.nscaledivision.com
N Scale Enthusiast	17	www.nscaleenthusiast.com
N Scale Supply	13	www.nscalesupply.com
NTRAK	44	www.ntrak.org
Rapido Trains	11	www.rapidotrains.com
Sid ScupIts	08	www. Sid Scuplts.com

elcome to N Scale *Railroading* #128, the January, 2021 issue.

Page 04. Big announcement from NTRAK. At first I was very surprised but as I read this I realized this is the correct direction for the future.

Page 06. New Products.

Page 10. Diane Wolfgram built a Tehachapi depot for George Hollwedel, and George talked her into writing it up for NSR. Thanks!

Page 23. Over the years I've admired scenes of Mike Sabia's layout and passenger trains. Here Mike shares his Erie-Lackawanna Lake Shore passenger train.

#### Page 28. Russ Kaufman

wrote about the brick industry in the N Scale Enthusiast magazine and I asked him (and Fred Hoxsie of the NSE) if he could do an in-depth article for NSR. Understanding an industry can help us understand other industries.

Page 44. NCalendar and in **Observations** I talk a bit about using Excel to manage one's railroad "Top Down".





PUBLISHER & EDITOR **Kirk Reddie** nscalerailroadn@aol.com Mr. Answering Machine 206•364•1295

ADVERTISING SALES MANAGER (ADVERTISING ONLY) **Denny Hamilton** 262 • 347 • 1068 nsrdennyads@aol.com

PREVENTOR OF GARBALANCHES Elaine R. R.

> SUBSCRIBER #128 Scott Thieben

\*\*\*\*\* Talent Emeritus \*\*\*\*\* ISSUES 001-117 ART DIRECTOR Bill Edgar

PHILOSOPHER KING OF HUE Spencer Rossman

SLAYER OF UNINTENTIONAL GRAMMATICAL ATROCITIES **Dennis Hartnett** 

#### SUBSCRIPTIONS:

N Scale Railroading is a free monthly digital periodical, but it is still copyrighted. Back issues will still be available at nscalerailroadn.com

Contributing to NSR: We welcome your contributions including articles and high resolution photos. For information email us at: nscalerailroadn@aol.com

We assume no responsibility for the safe return of unsolicited materials. We assume unsolicited materials are intended for publishing by N SCALE RAILROADING, and that letters, questions, news releases, and club news are contributed aratis. For details, visit contributing at: nscalerailroadn.com Copyright 2020 North American N Scale Publishing. All rights reserved.



The EMD SDP40F was Amtrak's first, official, built to order locomotive, introduced in 1973 due to Amtrak's need for new and more reliable equipment. Based on the framework of the SD40-2, the SDP40F was geared for speed, with a top operational velocity of 100 mph and a pair of steam generators to supply heat and hot water for the passenger trains it would pull. Later in life, these units were modified with a number of changes to accomodate their use as freight engines.

One unit in particular, BNSF #6976, was pulled from storage in 2002 and repainted into a special "Maersk" paint scheme to commemorate the opening of the shipping company's new container terminal in Los Angeles, where it was paired with Norfolk Southern's SD40-2 #3329.

You can get both of these engines from Kato in N scale, along with their "as built" Amtrak predecessors, thanks to a new run of SDP40F locomotives available in early 2021, available in standard, DC, and DCC + Sound variations! Order yours today!



The Amtrak Phase I SDP40F can be paired with Kato's Phase I Amfleet cars to effectively represent early era Amtrak trains when they were using all of their own new equipment!

\* MAERSK

PRECISION RAILROAD MODELS



Item #	Description	MSRP
#176-9205	N EMD SDP40F Type I Amtrak Phase I #501	\$130
#176-9206	N EMD SDP40F Type I Amtrak Phase I #508	\$130
#176-9241	N EMD SDP40F Type IVb BNSF Maersk #6976	\$125
#176-9205-DCC	N EMD SDP40F Amtrak Phase I #501 w/ DCC	\$210
#176-9206-DCC	N EMD SDP40F Amtrak Phase I #508 w/ DCC	\$210
#176-9241-DCC	N EMD SDP40F BNSF Maersk #6976 w/ DCC	\$205
#176-9205-LS	N EMD SDP40F Amtrak Phase I #501 w/ ESU Sound	\$330
#176-9206-LS	N EMD SDP40F Amtrak Phase I #508 w/ ESU Sound	\$330
#176-9241-LS	N EMD SDP40F BNSF Maersk #6976 w/ ESU Sound	\$325
#106-8011 #106-8012 #106-8013 #106-6198 #106-6199	N Amtrak Amfleet I Phase I 4-Car Bookcase Set N Amtrak Amfleet I Phase I 2-Car Set A N Amtrak Amfleet I Phase I 2-Car Set B N Gunderson MAXI-I MAERSK #100029 N Gunderson MAXI-I MAERSK #100043 <i>w/ Maersk Containers</i>	\$125 \$55 \$55 \$150 \$150

MAERSK SEALAND

# NTRAK Is Now NRail A January 1st Announcement

### Welcome to the new year and the new name:

1973 was an incredibly significant year in model railroading. The first N Scale modules were designed, constructed, and displayed at a public show. That show was the MRIA show — no layout, just modules displayed. The first public NTRAK layout was the NMRA convention in 1974. These were the seminal NTRAK modules, and their debut began the widespread use of modular layouts, not only in N Scale, but in other scales as well. With the definition of NTRAK standards and the founding of the NTRAK Newsletter by Jim FitzGerald the modular concept took off. Today, almost one-half century since their freshman assembly more than an estimated 7,000 NTRAK modules have been built.

Over the years NTRAK has evolved with variations on the basic NTRAK module including oNeTRAK, Ncat, BendTRAK, and Twin-TRAK. Technical advances were made in the form of wireless throttles and Digital Command Control. In 1996, Jim FitzGerald took steps to ensure the ongoing viability of the organization with the formation of the NTRAK Modular Railroading Society, Inc. (NTRAK, Inc.). A Board of Directors was appointed to oversee the organization, which continues to this day.

The next major advance in N Scale modular railroading was made with the introduction of T-TRAK in 2000 by Lee Monaco-FitzGerald and Jim FitzGerald. After a slow start, the growth of T-TRAK was rapid and now has more modelers than NTRAK. Standards for T-TRAK were established by Lee and Jim, and they started building T-TRAK modules and module kits. Today, multiple manufacturers are making T-TRAK module kits.

NTRAK, the organization, has continued to be the standard bearer for NTRAK and T-TRAK by maintaining the standards function, as well as providing support to NTRAK and T-TRAK clubs, publishing the newsletter, organizing layouts at major shows, maintaining the web sites and our social media presence. But NTRAK has become more – promoting N scale in all forms including home layouts and supporting N scale activities including Free-moN and giving N Scale clinics at major shows.

As we have expanded our scope over the past few years, it has become evident that we are more than just NTRAK and the newsletter and our show activities have reflected that. But for many N scalers, NTRAK is a specific modular standard.

With that in mind, the Board has considered a new name and approved NRail as a more appropriate name to match our goals and our ongoing evolution as an organization. Legally, our new name is NRail, Inc.



What does this mean for members? NRail will continue to focus primarily on the two most popular standards, NTRAK, and T-TRAK, but we will also continue to expand and increase attention to the other aspects such as Free-moN, Clubs, and Home Layouts. And NRail will continue to expand and enhance our relationship with the various N Scale manufacturers.

Already our efforts have resulted in the following:

- A new, improved web site with a members' only section.
- Monthly ZoomTRAK meetings for members.
- Expansion of the Newsletter and its staff.
- Recognize and promote Super Clubs.
- Expand the use of social media channels.

Other programs are under way and will be announced as they are ready for unveiling.

Although the new website is NRail.org, it will continue to be available using the existing URLs of NTRAK.org and T-TRAK.org. We look forward to continuing the 47-year-old tradition under the new name, NRail.

Regards,

John Wallis









### N SCALE RAILROADING NEW PRODUCTS



Above and Below. RS-1 Amtrak 46 is Atlas 40 004 081.





Above. ACF 5800 Plastics Hopper Wells Fargo Rail (WFRX) 880102 is Atlas 50 005 411.



# FACTORYDIRECTHOBBIES.COM



П

### **N SCALE EMD SD70ACE** ARRIVING JAN 2021 in limited quantities



ER

# N SCALE RAILROADING NEW PRODUCTS

**All New Tooling.** RailSmith's first original tooling is a 1947 56-seat w/lounge caoch Pullman built (plan 7510) for the Northern Pacific. This is a "small window" coach that is also a very good generic car close to other prototypes. Notice the silver window frames, painted grab irons, wired for future lighting, and weld lines on the roof. The cars will be offered with and without skirts. First out will be NP and SP&S as well as Union Pacific and Southern Pacific yellow and gray for City of San Francisco service. Click on the images for hyperlinx to Railsmith.net.



Above. Northern Pacific Coach 516 is RailSmith RS-75108. The is the NP's "Loewy" scheme. As-built this car had skirts but the were removed.



Above. SP&S Coach 303 is RailSmith RS-75101. This is the SP&S "Broad Stripe" scheme.

Unique Details for your layout CONTACT **www.SidScuplts.com** 3D Custom printed N Scale items without the high prices. Ready to go items... -Track Bumper -Street Light Poles -Large Block Walls -Concrete Plant -Airplane C182RG All products come ready to paint, >no dipping in Bestine to solidify >printed in resin for durability >high detail level, look at those rivets!





EMD's diesel-electric road switcher, the GP38-2, began production in 1972 as an upgraded model of the earlier GP38. Looking almost identical to its predecessor thanks to a standard body and cab design, the GP38-2 became widely successful on railroads across the country and can still be found in service today. Equipped with an *Econami*<sup>TM</sup> *SoundTraxx*<sup>®</sup> sound decoder and factory-set for GP38-2 realism, the diesel package offers a choice of 5 prime movers, 16 airhorns, multiple variations of 7 bell types, 2 air compressors, 3 couplers, plus a function-activated grade-crossing signal—all in 16-bit polyphonic sound. The *Econami*<sup>TM</sup> sound system includes adjustable auto-notching sensitivity for prototypical operation, adjustable master volume, and individual sound effect volume levels, advanced consisting, and more.

So, how does that sound? Check out the sound-equipped GP38-2 at your favorite hobby retailer today!

#### Features include:

- DCC sound-equipped with *Econami*™ Sound Value Package
- dual-mode NMRA-compliant decoder
- directional headlights with Rule 17 dimming
- precision motor
- flywheel

- die-cast frame
- fine-scale handrails
- separately applied detail parts
- E-Z Mate® Mark II couplers, front and rear

TY SINCE



Bachmann Industries, Inc. • 1400 East Erie Avenue • Philadelphia, PA 19124 USA • www.bachmanntrains.com



# Building a Southern Pacific Common Standard Type 23 Combination Depot By Diane Wolfgram/ Images by Author

In mid-March, George Hollwedel, a friend of mine who lives in Austin, Texas sent me an email asking me to construct some laser-cut, N scale building kits for him. He had recently retired and was about to embark upon an ambitious layout construction project. The layout that he has planned is focused on the Southern Pacific's line over the Tehachapi Mountains from Mojave, California to Edison, including the famous Tehachapi Loop with an early 1950's time frame. The Santa Fe had trackage rights on the Southern Pacific from Mojave to Bakersfield (Kern Junction), just as BNSF does on the Union Pacific now. I accepted the challenge and a rather large box containing the kits arrived in the mail a few days later. Among the kits was one for a rather small, Southern Pacific Common Standard Type 23 combination depot, which he intended to use as a "stand-in" for the longer one at Tehachapi. There were other differences between the kit and the prototype as well, most noticeably the location of the windows in the waiting room. Although he had limited space for a longer depot, I went ahead and ordered H0-scale plans for the Tehachapi depot from the Goleta Depot Museum in Goleta, CA. Plans for it and other Southern Pacific Lines depots are also available from their creator, Jean-Guy Dubé, at www.etsy.com/shop/depotblueprints. After reducing the plans to N scale, I modified the freight room end and dock slightly and sent the revised version to George: which fit the space that he had for it. The article that follows is how I constructed his depot from scratch. I had already constructed all the Southern Pacific buildings on my own layout from scratch years before, so as Tom Selleck says in his TV advertisement for reverse mortgages, "This isn't my first rodeo".

# COMET OVER THE HORIZON





\*PREPRODUCTION SAMPLES SHOWN, SUBJECT TO CHANGE.

# ORDERS DUE BY: JANUARY 15TH CLICK HERE



#### TOOLS

**Image 01.** I'm what is called a "kitchen table modeler", as was my dad and Bill McClanahan, a sportswriter for one of the Dallas newspapers who had a regular column in Model Railroader magazine. His writing was humorous, as well as instructive, and almost always included something about family members; especially his mother-in-law who he and his wife lived with after WWII. Bill's article on his Texas & Rio Grande Western R.R. can be found in the September 1981 issue of Railroad Model Craftsman and a boxcar decorated for it is frequently seen on my own layout courtesy of the NMRA Heritage Series.

The tools used in the construction of the model of the Tehachapi depot were all low-cost, small hand tools; a hobby knife with a sharp #11 blade, a multi-scale steel rule, and a longer steel rule with divisions as small as 1/64 of an inch, which equates to 2-1/2" in N scale, and a small T-square. I used a drafting pencil and/or pen to mark the positions of cut lines. I also used a 1/16-inch drill bit and pin vise to drill holes in the roof for the "Patented Flues" favored by the S.P. for frame depots and other structures Other tools shown in the picture include a pair of tweezers. They do not have to be pink, but these by Anastasia of Beverly Hills are of high quality. The round toothpicks are used for applying small amounts of glue. The multi-colored tool is a nail file and finishing tool that has 7 different grits ranging from coarse, to shape things, down to an extra fine one that works well for removing scratches from plastic. I used the finer grits to remove burrs from the strip wood used in constructing the depot without altering their width. The large device is a Northwest Short Lines invention called "The Chopper". Although I do not use it often, it is useful for cutting strip wood into equal lengths and for making angle cuts as well. Finally, a low-cost cutting mat is a must. These are available from a variety of crafts stores or in the crafts section of Walmart, which is where I purchased the one in the photo.

Unless you are near-sighted, you may need to use drug store reading glasses, or something stronger, when constructing your own depot. Some modelers opt for Opti-Visors, but I found some clip-on magnifying lens for a reasonable price at Micro-Mark. One can use them with regular glasses or with

drug store reading glasses like I do.

#### MATERIALS

Although some modelers use styrene, I prefer to use wood to construct models of wooden buildings. There are three manufacturers of scale lumber that I know of, but there may be more. Kappler Mill & Lumber offers both dimensional lumber and scribed siding, as does Northeastern Scale Lumber. Kappler is the only one of the two who markets 1/64" thick dimensional lumber, which is most suitable for trim. Midwest Micro-Cut Quality Woods offers dimensional lumber as small as 2X2 N scale inches, but not scribed siding. All these manufacturers have on-line stores. Most model train stores seem to stock Northeastern Scale Lumber, which is distributed by Walthers.

I used 1/32-inch-thick sheathing scribed at 3/64-inch intervals and 1/64-inch thick strips of various widths when constructing the depot for George. I used styrene strips instead of wood strips on a rather unique Santa Fe depot for myself because some of the trim on it is so narrow that strip wood for it was not available.

Windows and doors are an entirely different story. Not so fortuitously, because all depots made according to a specific set of Southern Pacific Common Standard Plans had the same windows and doors, I was able to use the windows and doors in the kit that George had sent to me and the manufacturer of it supplied the additional ones that I need for the model of the Tehachapi depot at a reasonable cost.

Having N scale windows and doors made for other prototype depots can be very costly. According to Bill Banta of Banta Model Works, one can't simply resize existing manufacturer H0 scale drawings for windows to N scale and produce laser cut versions of them because the dividers between the individual panes would be too thin to survive. The cost of redrawing them in N scale would be prohibitive for most individuals. Having 3-D printed ones made for individual use would be somewhat expensive too.



Open Tuesday thru Saturday - Check our website for hours **Over 150 Product Lines in Stock** 

13



sales@nscalesupply.com www.nscalesupply.com

CALE

STABLISHED 1997

#128 JANUARY 2021

-B





**Image 03.** I just used Microscale decal stripes to create the windows on the little Southern Pacific crossing tower that I scratch built from photos of ones at Redwood City and Tracy, California.

**Image 02.** I used cast metal doors and windows on the first N scale depot that I scratch built for my own small layout. There were not any laser cut ones of any kind back then. The doors are fine, and no one has ever remarked about the number of panes in the windows being wrong. There are any number of styles of windows and doors available from manufacturers of plastic detail parts, such as Tichy Train Group



**Image 04**. Peel-and-Stick paper roofing in a variety of styles ranging from rolled roofing to diamond and hexagonal shingles, as well as the decorative fish-scale style that was used on the sides of some depots, is available from a number of sources. The kit that George sent to me contained Peel-and-Stick tab shingles, like those used on the Tehachapi depot. Since the kit was for a smaller depot, I ordered additional sheets of tab singles from its manufacturer.



#### **CUTTING AND PAINTING**

**Image 05.** Because the depot has gable ends, the ends needed to overlap the sides to avoid complications that would had arisen otherwise.

Drawing the outlines of windows and doors on the scribed siding prior to cutting them out can be a very time-consuming process, even for someone who has taken a course in drafting. Although the distances between these openings did not necessarily coincide with those on the siding in George's kit, the size of the openings for the laser-cut doors and windows was identical, so I was able to use the kit's openings as a template.

As an alternative method, one can create a template by having their depot plans reproduced on cardstock and cutting out the door and window openings on it. Before doing so, one should carefully compare the size of the doors and windows on the cardstock plan with those you intend to use and make any necessary modifications to the plan before cutting them out.

I used the #11 knife, together with the long steel rule pictured with it, to make all the necessary cuts. The biggest "trick" is to keep the knife blade vertical to avoid creating beveled edges.

Once the door and window openings have been created, it's a good idea to check their sizes by inserting doors and windows in them, as shown by the door in the picture. By the way, the door is upside down. Once the sides and ends of the depot with the openings for doors and windows have been cut out, they should be painted before adding doors, windows and trim pieces. Depot colors varied between railroads and over time for any one railroad, so one needs to research those variations before buying and applying paint. One should note that the shades of paint of a given name varied between railroads. For instance, Southern Pacific Colonial Yellow is not the same as Santa Fe Colonial Yellow. My local Ace Hardware store's computer index lists 34 different formulas for Colonial Yellow, so paint names are rather meaningless in and of themselves.

I prefer to brush paint wooden structures and cars, as does Ernest Giese, a professional model train painter who specializes in N scale. Southern Pacific Colonial Yellow, Moss Green (for roofs) and Trim Brown are all available from Tru-Color, but their paint is not brushable. I solved that problem by cutting pieces of styrene that would fit into the mouth of the Tru Color bottles, dipped them into the paint, and after the paint had dried thoroughly took them to Ace Hardware where they were computer matched and reproduced using Benjamin Moore water-based flat enamel. I transferred the paint from the quart cans to one-ounce bottles using a turkey baster and diluted it slightly with distilled water.

The ends of the Tehachapi depot had decorative tab shingles, so it was necessary to add the shingles to the ends before painting them.







Image 07: Painted side with doors and windows.



**Image 08.** I did not prime the sides or ends, and it took three coats, on average, of Colonial Yellow to cover them to my satisfaction. I simply sprayed the windows with a couple of coats of Tamiya Fine White Surface Primer before assembling them. One trick for painting trim strips is to hang them by one end using masking tape and then paint them while steading them with your free hand holding on to the opposite end. I just hung them from the exhaust hood over my kitchen range, which is a convenient height, after putting some foil (or paper) over the top of the range to catch drips.

At this point, the doors and windows can be inserted into their

openings in the sides and ends and glued in place. I used ZAP canopy glue, which is water soluble and easily diluted, for this purpose.

Once the doors and windows are glued in place, most of the brown trim can be added to the depot sides and ends.

If you would like to have shades or venetian blinds in the windows, they should be installed at this point. I cut stripes from a dark green color sample card and installed them in the upper portion of the waiting room and operators bay windows of George's depot to represent dark green window shades.



# Membership has its benefits!

If you are an N Scale Enthusiast, and every Ntrakker is-You should share your passion for your favorite scale by being a member of The N Scale Enthusiast!

Working to preserve the history of N Scale, and grow the scale along with our friends at Ntrak, we offer mega benefits to the membership:

- A very informative magazine 5 times a year!
- Manufacturers and Latest releases in every issue
- Member only Special Runs both prototype and fantasy
- Multi Medium Special Runs that are scratch-built on a grand scale
- Member listings in the Trovestar peer to peer marketplace
- Annual Membership car included at no extra charge
- National N Scale Convention annually
- Free Classified Ads- For Sale and Wanted listings
- Web Resources









### Join up for more N Scale Fun!



The N Scale Enthusiast P.O. Box 30489 Savannah, GA 31410

www.NScaleEnthusiast.com



#### **ASSEMBLING THE DEPOT**

**Image 09.** Before gluing the sides and ends of the depot together, I cut a floor to attach them to as well. As shown in the picture, above, the floor doesn't need to be particularly thick, but care should be taken to ensure that its corners are right (90 degree) angles.



**Image 10**. I used 1/16" square strip wood to reinforce the corners on the freight room end of the depot, but could only do so above the windows on the waiting room end because the reinforcing would be visible through the windows, otherwise. Stripwood was also used to reinforce the joint between the floor, sides, and ends, except where there were door openings.

I also used stripwood to vertically reinforce the ends of the depot in order to prevent the gables from curling outwards, which they would do otherwise, and vertically and horizontally along the sides as well. Stripwood was used to provide a wider surface to attach the roof to on the gable ends, too.



#### MAKING THE ROOF

**Image 11.** While kit manufacturers typically include laser-cut, plain sheathing for roofs and recommend ruling parallel guidelines at some set spacing to aid in the application of shingle strips, doing so well really requires that use of a drafting T-square as well as precise spacing of the lines to complete that task. It is much simpler to use sheathing scribed as closely as possible to the recommended spacing for the basic roof, keeping in mind that 1-inch is only 1/160" in N scale. Some manufacturers recommend installing the roof before shingling it, but it's easier to shingle the roof prior to installing it.

#### **N SCALE RAILROADING**



**Image 12.** Shingling the depot's roof is a tedious process, but as one gains practice it takes less time to do it well. Although I didn't record the actual time spent, it took approximately half as long to shingle the second side of the roof as it did the first.



**Image 13**. After the roof is shingled, it should be painted before installing it. If the roof is a long one, such as that of the Tehachapi depot, its underside should be reinforced with longitudinal strips like the sides were. Check to be sure that the reinforcing strips are entirely hidden from view and do not rest on the top of the sides and their reinforcing strips. Also make sure that they do not interfere with each other along the roof line. At this point the sides of the roof may be glued in place.

![](_page_18_Picture_4.jpeg)

**Image 14.** If the depot has a roof that wraps around the ends of it, like the Tehachapi depot does, it is necessary to create trapezoidal-shaped pieces to complete it. I measured the base and top of the trapezoid on the plans, as well as on the model, and obtained the slope distance between them from the plans. After cutting the pieces out, I insured that they fit snugly without deforming the eaves of the main roof and shingled and painted them before installing them.

#### **N SCALE RAILROADING**

![](_page_19_Picture_0.jpeg)

**Image 15.** The roof's ridge and the seams between the four roof sections need to be covered. Laser-cut shingles usually include plain strips for this purpose, but they are wider than those used on the prototype. One can trim the width of the laser-cut strips, but I elected to use the shingle strips themselves instead; orienting them so that the shingle half was on the side of the roof closest to the observer.

**Image 16.** At this point, the roof braces (corbels) should be installed per the depot plans.

**Image 17.** Finally, check to make sure that all the raw edges of the roof are painted and install the verge boards on the gable ends, if there are any.

![](_page_19_Picture_4.jpeg)

### CONSTRUCTING THE FREIGHT DOCKS

**Image 18.** The Tehachpi depot has a wraparound freight dock that originally had a 16-foot wide ramp leading from the drayage side to the deck. The Southern Pacific graciously removed the ramp and repainted the depot around the time frame that George's layout is set in, so the structure not only fit well in the limited space

![](_page_20_Picture_2.jpeg)

he had for it, but it didn't need to be weathered either.

The docks along the drayage (street) and track sides of the depot were constructed separately and once in place joined across the ends. The height of the docks was critical because the top of the decks had to coincide with the bottom of the freight room doorways. I confess that it took me three tries to accomplish this, but since the basic dock structure consists of a floor, two sides and an end it took less than 30 minutes per try. There are steps leading up to the dock's deck from the depot's platform, which I made by cutting 1/16" (10-scale inches) square stripwood to length using "The Chopper" and stacking them to form the steps. "The Chopper" was also used to cut the trim strips on the dock sides to equal length.

Because it was essential for the ends of the docks along the side of the building to protrude the same distance from the end of the depot, I constructed and installed the drayage side dock first because it will be the one that visitors see on George's layout.

![](_page_20_Picture_6.jpeg)

Note that in the photograph the deck has yet to be installed. The unpainted board along the side of the dock is a buffer/bumper to keep vehicles backing into the dock from hitting the less substantial side of it.

**Image 19.** Once the drayage side dock was installed, I used a piece of graph paper to align it and the side of the track side dock and marked the track side dock side for cutting (after measuring three times). The gap at the end of the drayage side dock is to accommodate the side of the end dock, to be installed later.

![](_page_20_Picture_9.jpeg)

21

Image 20. Once the track side dock side was cut to length, the dock was assembled in the same manner as the drayage side dock and attached to the depot. Once that was done, it was relatively simple to join the two docks with the end dock.

#128 JANUARY 2021

![](_page_21_Picture_0.jpeg)

#### DETAILS

![](_page_21_Picture_2.jpeg)

**Image 21.** Details make a difference because they add life to what otherwise would look like an abandoned structure. Typical depot details include signs providing travelers with a place name and a tall ladder to access the roof to inspect it for sources of leaks and in case of fire. It took some time, but George found a photo of a Tehachapi depot sign that he liked and I had the sign reduced to N scale for the depot. Note that the lettering for TEHACHAPI is a scale 7-1/2" high and that for SOUTHERN PACIFIC and for SANTA FE is only a scale 2" high, per Southern Pacific Lines Common Standards that govern such things.

While it's possible to construct N scale ladders using 1/64" square stripwood, I came upon a set of old Micron Art etched brass ones while searching for something else on Ebay and purchased it in the hopes that the tapered ones would be long enough. As it turned out, they were so all I need to do was paint and glue it in place on the freight room end of the depot.

**Image 22.** The last item that I scratch built for the depot was the Train Order Signal, which conforms to Southern Pacifc Lines Common Standard plans and photographs of prototypes at various locations. The mast is 3/64" brass tubing and the ladder and ladder supports are left-overs from old Sunrise Enterprises target signal kits. Southern Pacific Lines Common Standard Plans, Volume 1, published by Bruce Petty's Steam Age Equipment Company in 1992, contains plans for these "Station Signals" which I reproduced in N scale on heavy photo paper and cut out and colored for use on the model. Note that the base of the mast will be inserted into a hole drilled into the deck of the freight dock and glued to the floor of the dock beneath it by George, as it will be shipped as a separate part.

Details that need to be added after the depot is installed on George's layout include some figures and baggage wagons and carts. REA wagons were painted REA Green, but those owned and used by the Southern Pacific were painted Daylight Orange with Daylight Red Wheels.

#### POSTSCRIPT

I hope that this article inspires some readers to scratch build depots and other structures for their own layouts so that it doesn't look like a manufacturer's or vendor's display at a train show. Steve Allen Goen's series of color pictorials of major railroads in Texas contain a section devoted to photos of depots and Jean-Guy Tanner Dubé's book "Railroad Depots: A Southern Pacific Collection" is a great reference for depots in Arizona, California, and Texas. Some readers may be particularly interested in the plans for the depots at Saugus, CA and Sanderson, Texas which contained "Eating Houses", as did the one at Sierra Blanca, Texas. The Sierra Blanca and Saugus depots have been restored, although now closed to the public because of COVID 19. as well as a number of others documented by the page-size plans in the 9 X 12-inch book **)**.

#### **N SCALE RAILROADING**

#128 JANUARY 2021

![](_page_22_Picture_0.jpeg)

Image 01E-L 814 The E8s are Kato models that Mike painted and lettered, and then Jerry DeBene super detailed them. The motel in the backgroumd was built by H0 pal Jack Meneker. The Paulinskill Viaduct was scratch built by the incredible modeler Scott Lupia.

![](_page_22_Picture_2.jpeg)

23

Image 02 E-L 820 is another Kato E8 that I painted and lettered.

#128 JANUARY 2021

![](_page_23_Picture_0.jpeg)

Image 03 Santa Fe 652 is a stock Kato Santa Fe Hi Level coach. I have a picture of a similar car dead heading on the Lake Cities to deliver from Budd to the Santa Fe at Deerborn Station in Chicago.

![](_page_23_Picture_2.jpeg)

Image 04. ACL/ REA 3042 is a stock Micro-Trains release.

![](_page_23_Picture_4.jpeg)

Image 05 REX 4083 is a stock Micro-Trains release.

![](_page_24_Picture_0.jpeg)

Image 06 REX 7215 is a stock Micro-Trains release.

![](_page_24_Picture_2.jpeg)

Image 07 E-L 3425606 50' express boxcar started life as an undecorated Atlas car that I painted and lettered with a random reporting number. I later found out that these cars actually existed on the E-L.

![](_page_24_Picture_4.jpeg)

Image 08 E-L 1813 is an RPO/Express car from ConCor car with MTL trucks and couplers.

![](_page_25_Picture_0.jpeg)

Image 09 E-L 101 started life as a Kato prewar Budd car.

![](_page_25_Picture_2.jpeg)

Image 10 E-L 1314 is a ConCor coach with MTL trucks and couplers.

![](_page_25_Picture_4.jpeg)

Image 11 E-L 1324 is a ConCor car with MTL trucks and couplers in the same series as E-L 1314.

![](_page_26_Picture_0.jpeg)

Image 12 Erie 1014 is a coach by Rapido.

![](_page_26_Figure_2.jpeg)

Image 13. E-L 7122 started as a Kato diner I painted and lettered. Then I painted and floor, walls, seats, and white table cloth as well as adding LED lighting.

![](_page_26_Picture_4.jpeg)

Image 14 and 15. E-L Knickerbocker is a Kato observation car that I painted, lettered, and added the drumhead.

# **Brick Making**

### By Russ Kaufman/ Images As Listed

he impetus of this article was a series of 'Spotlight' columns that I wrote for the N-Scale Enthusiast 'Member Magazine' earlier this year. With the encouragement of the Enthusiast and Kirk, I've expanded beyond these columns in this article to share the experience and potential insight as to how this research becomes a product. Hopefully it will delight and entertain in the process... but first a brief introduction. It all began when my brother and I were gifted an Atlas 'Postage Stamp' set around 1972. Over the years we built several progressively larger layouts. His forte' was (and still is) electronics and track work while I focused on the scenery and structures (as you would expect). The hobby turned into a part-time business in 1991 and now, as full time venture, it will celebrate 30 years of continuous operation in 2021. How's that for brief!

![](_page_27_Picture_4.jpeg)

#### History

The oldest bricks discovered in what is now Syria date back to 7500 BC. Bricks from this period were typically formed from a claymud mixture, sometimes mixed with straw and dried in the sun until they were strong enough for use. The earliest 'fired' bricks first appeared in China around 4400 BC and were heated in crude kilns to temperatures above 1100°F degrees. Subsequently, bricks were used by every major civilization ranging from the Egyptians to the Roman Empire. Image 01: Indian Brick Maker - British Library Collection 1825. With the onset of the Industrial Revolution in the early 1800's. bricks became the preferred 'fire-proof' material to build factory and high density housing complexes as they were cheaper and more plentiful than stone.

![](_page_28_Picture_0.jpeg)

To keep up with this rapidly increasing demand, mechanized forms of brick making began to replace the traditional handmolding process. Richard A. VerValen of New York was granted a patent in 1852 for one of the first high-volume brick making machines. This invention and many more to follow fostered the ubiquitous brick making industry in the United States. Massive brickyards and refractories were found in nearly every State and typically located near the source of their raw materials such as the Hudson River here in New York. At the turn of the 20th century, the Hudson River was lined with 120 brickyards producing over a billion bricks a year to satisfy the insatiable appetite of the burgeoning metropolis to the south **Image 02**: Hutton Brickyard, New York – HAER Study 1979.

Note: Caption for Image 03 on next page.

![](_page_28_Picture_4.jpeg)

#128 JANUARY 2021

#### **The Process**

Most modern bricks are composed of 50-60% silica (sand), 20-30% alumina (clay), 2-5% lime and varying amounts of metallic oxides. The metallic oxides influence the color of the fired brick (ie., iron fires red, calcium fires orange, magnesium fires yellow, etc.). In general, the brick making process starts with the mining of the sand, clay and other minerals which are then cleaned, dried, pulverized, sifted and often stored. When needed for production, they are mixed with water (known as 'pugging') until this mixture reaches the desired consistency. This mixture is then forced into static molds or extruded through a die into rectangular columns which are then cut to size with a series of wires or blades. **Images 03 & 04**: Pug Mill Interior, D'Hanis Brick & Tile Company, Texas - HAER Study 1981.

![](_page_29_Picture_3.jpeg)

![](_page_29_Figure_4.jpeg)

Image 05: Setting/Drying

Shed Composite Drawing, Jenkins Brick Company, Alabama– HAER Study 1999.

![](_page_30_Picture_0.jpeg)

These 'green' bricks are then stacked on a kiln cart in a way to promote air flow (known as 'hacking') and moved to a setting/ drying shed where hot dry air is forced through them until most of the water added during the pugging process has been removed. Once dry, these kiln carts of hacked bricks are rolled

into wood, coal, gas or later electric fired kilns where they are heated at temperatures ranging from 300F to 2400F for 10 to 40 hours. **Images 06 & 07**: Setting/Drying Shed, Jenkins Brick Company, Alabama– HAER Study 1999.

![](_page_30_Picture_3.jpeg)

![](_page_31_Figure_0.jpeg)

#### Kilns

The first kilns, commonly known as 'scove kilns' or 'brick clamps', were temporary structures created from 'green' (unfired) bricks stacked over a fuel source and typically covered with mud. Wood or straw was the fuel of choice in these early kilns to be followed by coal, natural gas and electric power over the subsequent millennia. The designs of brick and ceramic kilns changed over the centuries usually with the objectives of more consistent airflow, better temperature control, reduced fuel consumption, and, more recently, less environmental impact. There were several experimental designs such as 'Hoffmann Continuous Kiln' which was invented in Germany by Freidrich Hoffmann in 1858. This complex oblong design allowed for the constant feeding and firing of bricks but it never overtook the more prevalent 'intermittent' (batch) approach still used today. **Image 08**: Hoffman Continuous Kiln - Patent Drawing 1858.

![](_page_32_Picture_0.jpeg)

Probably the most recognized kiln shape is the classic 'bottle', which was popular in the United Kingdom especially for production of porcelain dishware, and the 'beehive' which was pervasive in the United States. These domed roof beehive kilns were usually constructed from bricks bound by metal bands with arched fuel (wood or coal) ports spaced around the perimeter and were often later retrofitted with piping to be used with natural gas. **Image 09**: Beehive Kilns, D'Hanis Brick & Tile Company, Texas - HAER Study 1981.

![](_page_32_Picture_3.jpeg)

As with most industries, the success of a brick manufacturing facility relied on its workers. The stacking of bricks inside a kiln is truly an art form as they need to be arranged in a way to promote airflow while maximizing floor space. Prior to large scale mechanization, once the firing process was completed, these bricks were removed and restacked by hand. Of course, when the bricks were ready to be shipped, this process was reversed and the stacking started all over again! **Image 10**: Interior Brick Stacks, Hutton Brickyard, New York – HAER Study 1979.

![](_page_33_Picture_0.jpeg)

#### **Research & Design**

This brief introduction of the brick making industry was part of the research for our latest 'C & H Brick & Block Company' kit. This research was derived from numerous on-line sources as well as the photos, books and other publications in my collection that stretches back nearly 50 years. Image 11: A Sample of the Research Resources - Author's Photo 2020. Finding specific

information in this vast accumulation of material (stuff) is made easier by this collection being organized by location, industry and/or subject matter. I would not suggest that this approach will work for everyone reading this article. The current 23 book shelves, 6 file cabinets and 14 banker boxes of stuff are not always viewed favorably...especially during one of our household moves!

![](_page_33_Picture_4.jpeg)

34

Though we have created many kits based on specific prototypes, our roots are in designing kits which are composites of large industrial complexes. Our very first kit, the 'Elkton Creek Smelter' started this trend for us nearly 30 years ago. As we did with that kit, we use the advantage of N's scale to present an

entire industry or industrial process. This hold true with 'C & H Brick & Block Company' kit in which we were able to model the entire brick making process from mining the clay to shipping the finished bricks, blocks and tiles. Image 12: Overall View of C&H Brick & Block Company Model - Author's Photo 2020.

![](_page_34_Figure_0.jpeg)

#### **Our Approach**

Once the research has been digested, I then draw a series of semi-scale pencil sketches that highlight the basic elements (structures) of the industry, their proportions to each other

and the general arrangement of the complex based on prototypical operations. Image 13: Initial Pencil Sketches of C&H Brick & Block Company – Author's Photo 2020.

![](_page_34_Picture_4.jpeg)

These sketches are then scaled and converted into CAD elevation & plan drawings. These drawings, along with detailed break-outs of the more complex assemblies, are separated into the individual pieces which are laid out on the laser plates for each material. Additional drawings are created for any architectural details that need to be cast, 3D printed or photo-etched. Image 14: Beehive Kiln & Chimney Resin Casting Masters - Author's Photo 2020.

#128 JANUARY 2021

![](_page_35_Picture_0.jpeg)

Developing a large complex kit like the 'C & H Brick & Block Company' can take months. There are dozens of photos to be taken, hundreds of words to be written, countless drawings to be created and several rounds of test builds and revisions to be endured. Image 15: Marked-up Drawings & Revisions -Author's Photo 2020.

![](_page_35_Picture_2.jpeg)

The photos, words and drawings are all part of our extensive instruction package while the test builds are not only used check the fit of the parts but also to identify the most logical construction sequence. This sequence accounts for drying times, the interconnection of the sub-assemblies and is an attempt to divide this assembly process into manageable time slots (evenings). **Image 16**: Sampling of the Instruction Package – Author's Photo 2020.

![](_page_36_Picture_0.jpeg)

#### The Kit

The 'C & H Brick & Block Company' is what some like to call a 'mixed media' kit (apparently something that we first made in 1991). There are over 350 laser-cut pieces, a dozen newly mastered castings, aluminum sheets, bonze rods and numerous plastic components in this kit. The laser-cut parts include various thicknesses of microplywood, wood fiber board and our own vacuum-formed styrene building sheets. Images 17, 18 & **19**: Painted Laser-Cut Pieces & Castings - Author's Photo 2020.

![](_page_36_Picture_3.jpeg)

19

#128 JANUARY 2021

![](_page_37_Picture_0.jpeg)

Captioms for oimage 20 and 21 are on the next page.

![](_page_38_Picture_0.jpeg)

Using micro-plywood rather than pre-scribed basswood sheets for a majority of the laser-cut pieces increases the cost two ways. The first is the material itself (which is imported from Finland) and the second is the additional laser time require to engrave details that would already be present on pre-scribed basswood sheets. Why you ask? It's because the 3-ply solid birch micro-plywood that we use is much less likely to warp and is more durable than basswood especially when used for open frame structures. Images 20, 21, 22 & 23: Setting/Drying Shed Assembly Sequence - Author's Photo 2020.

![](_page_38_Picture_2.jpeg)

![](_page_39_Figure_0.jpeg)

![](_page_39_Picture_1.jpeg)

We also do ourselves a 'disfavor' from a cost perspective by lasercutting the internal support systems for our structures rather than providing a bundle of strip wood. This support system helps to ensure that the finished model is consistently solid and square regardless of builder's skill level. Images 24, 25, 26 & 27: Mixing & Molding Mill Assembly Sequence - Author's Photo 2020.

#128 JANUARY 2021

![](_page_40_Picture_0.jpeg)

Captioms for image 25 and 26 are on the previous page.

![](_page_40_Picture_2.jpeg)

#128 JANUARY 2021

![](_page_41_Picture_0.jpeg)

![](_page_41_Picture_1.jpeg)

As with many of our other large kits, the 'C & H Brick & Block Company' utilizes our unique MTRAK Nn30 industrial track system and vehicles to transport materials within this sprawling industrial complex. **Images 28 & 29**: MTRAK Track System & Vehicles – Author's Photo 2020.

![](_page_42_Picture_0.jpeg)

One of these days, we may run a contest to see if someone can actually run an operating train on these tracks! For this kit we have also created highly detailed bee hive kilns and assorted brick, block and tile stacks including laser-cut 'triple stacks'. These easy-to-assemble brick and block stacks allow the modeler to quickly and economically populate their setting/drying shed and storage yards. **Images 30, 31 & 32**: Triple Brick/Block Stacks & Beehive Kilns – Author's Photo 2020.

![](_page_42_Picture_2.jpeg)

#### In Conclusion

So that's it in a nut shell... from kit inception to the fine details in less than 100 pages! As to our future plans, like many manufacturers we have modified them to account for the current pandemic which has created some new opportunities while postponing others. There are several new products in the pipeline including possibly another large industrial complex. Thank you for taking the time to read this article and, as always, feel free to contact us with any suggestions via our website THENARCH.COM. In the meantime, stay safe and keep modeling fun!

### TRAVEL GUIDE N EVENTS

**2021 MAY 15-16 OH** Hilliard/ Columbus area. 12th Annual Ohio N-scale Weekend at the Franklin County Fairgrounds, 4100 Columbia St., Hilliard, OH http://www.centralohiontrak.org/

2021 JUN 22/23-27 NV Sparks/ Reno area. Postponed to 2023.

#### Expected:

**2022 JUN ??-?? TN** Nashville. 28th Annual National N Scale Convention

**2023 JUN ??-?? NV** Sparks/ Reno area. 29th Annual National N Scale Convention. **●** 

### N-Scale Modular Railroading **I-DRAK** Serving N Scale for over 40 years. Membership \$5 per year in-

Membership, \$5 per year, includes 6 issues of the NTRAK Newsletter.

![](_page_43_Picture_8.jpeg)

NTRAK.ORG

![](_page_43_Picture_10.jpeg)

### **DBSERVATIONS** Thoughts by Kirk Reddie

#### **Top Down Modeling**

I'm pretty sure most of us start in the hobby with buying or building things we think look neat. Looking neat might be the only thing common among things that do not share time or space. And that is fine.

Sooner or later many of us may decide to specialize in a particular location, era, and geography. This is easier with a Fallen Flag railroad that ended at some point... as opposed to the Union Pacific that has been around since the 1860s. Fallen Flags have an end point. There are lists of locomotives (the ones I've seen were probably typed out with a manual typewriter!) and often rolling stock are listed in Freight Equipment Registers. If one is lucky one can find a hopefully complete rolling stock diagram book where rolling stock are drawn in roughly 1:96 and list information of starting and ending numbers of series of rolling stock, what year they were built, by who, etc. If you are really fortunate somebody has already done most of this work and published it in a book. But the books usually cover a much longer span than we are interested in. Keeping track of renumbering can be quite a chore.

In 1982 I bought an Osborne 1, my first computer. Its bundled software included SuperCalc, a spreadsheet. I learned the software by inputting my N inventory off handwritten pages and 3x5 cards. When SuperCalc2 came out I could easily sort information. Eventually I switched to Mac and MicroSoft Excel. I think of this as a game. I finally figured out how to efficiently transfer prototype information to spreadsheets to figure out "The Universe" that defined the boundaries of what I am modeling. It can inform me what not to buy/build as much as what to look for. On the next pages I will give some examples.

## SEE YOU NEXT ISSUE!

lore good stuff! More Industry! Another Passenger Train. More! ▶

**N SCALE RAILROADING** 

#128 JANUARY 2021

#### MILWAUKEE ROAD Diesel Passemger Power ~1950 Roster

MILW #	Туре	Builder	<b>BLT DATE</b>	HP	Model	Notes
14A 14B	DL 109	ALCO	1941 OCT	2 x 2000	LL 7716,LL 7	·
15A 15B	E6 A	EMD	1941 DEC	2 x 2000	LL	
16A 16B	E7A	EMD	1946 JUN	2 x 2000	LL	
19A 19B	E7A	EMD	1946 JUN	2 x 2000	LL	
17A 17B	E7A	EMD	1946 JUN	2 x 2000	LL	
18A 18B	E7A	EMD	1946 JUN	2 x 2000	LL	
20A 20B	E7A	EMD	1946 JUN	2 x 2000	LL	
05 AB	EB AB	FM	1946 OCT	2 X 2000	LL AB	Chrome
06 AB	EB AB	FM	1946 NOV	2 X 2000	LL AB	Chrome
07 AB	EB AB	FM	1946 DEC	2 X 2000	LL AB	Chrome
08 AB	EB AB	FM	1947 JAN	2 X 2000	V Line AB	Chrome
09 AB	EB AB	FM	1947 MAR	2 X 2000	V Line AB	Chrome
10 AB	EB AB	FM	1946, 1948	2 X 2000	V Line AB	Chrome
11 AB	EB AA	FM	1946	2 X 2000	LL AA	Chrome
12 AB	EB AA	FM	1947	2 X 2000	V Line AA	Chrome
13 AB	EB AA	FM	1947 AUG	2 X 2000	V Line AA	No Chrome
14 AB	EB AA	FM	1947 AUG	2 X 2000	V Line AA	No Chrome
90 ABA	FP7 ABA	EMD	1950 JUN	3 X 1500	Kato 106-230	
91 ABA	FP7 ABA	EMD	1950 JUN	3 X 1500	Kato	
92 ABA	FP7 ABA	EMD	1950 JUN	3 X 1500	Kato	
93 ABA	FP7 ABA	EMD	1950 JUN	3 X 1500	Kato	
94 ABA	FP7 ABA	EMD	1950 JUN	3 X 1500	Kato	
95 ABA	FP7 ABA	EMD	1950 JUL	3 X 1500	Kato 106-043	
96 -105	FP7 ABA	EMD	1951+	-	Kato	

#### **Diesel Passenger Power**

This is perhaps the easiest. I want to cut off in 1950 . The FP7s were the first passenger diesels that were in the orange, black, and maroon scheme. Inputting information off an all-time roster lets me sort and see that my universe of FP7s is six sets and they are numbered 90 ABA to 95 ABA.

More difficult are the Erie Builts. They were originally numbered into ABA sets but by 1950 they were reorganized into AA or AB sets. The early A units had chrome wings on the nose, the later ones did not. I thought this was a mess but I think I finally figured it out. I'm not going to worry about the variations and stick with the LifeLike and V-Line models.

Not shown are freight FTs 40 and 41 that were often broken into AB sets and pulled a steam generator car with passenger trains between Avery, ID and Othello, WA. And when the Olympian Hiawatha was pulled by AB sets of Erie-Builts, at least sometimes an NW2 switcher pulled the train backwards between Seattle and Tacoma.

I sorted this list by date.

I used red to notate limits.

#### MILWAUKEE ROAD Diesel Freight Power ~1950 Roster

MILW #	Туре	Builder	<b>BLT DATE</b>	HP	Model	Notes
80 ABCD	F3 ABBA	EMD	1949 JAN	4 x 1500	Kato	F7 Custom
81 ABCD	F3 ABBA	EMD	1949 JAN	4 x 1500		Extra custom
82 ABCD	F3 ABBA	EMD	1949 FEB	4 x 1500		
83 ABCD	F3 ABBA	EMD	1949 FEB	4 x 1500		
35 ABCD	FT ABBA	EMD	1945 JUL	4 x 1350	IM 69017-0	)1
36 ABCD	FT ABBA	EMD	1945 JUL	4 x 1350	MT or IM R	Renumber
37 ABCD	FT ABBA	EMD	1945 JUL	4 x 1350	MT or IM R	Renumber
38 ABCD	FT ABBA	EMD	1945 JUL	4 x 1350	IM 69017-0	)2
39 ABCD	FT ABBA	EMD	1945 JUL	4 x 1350	IM 69017-0	01
40 ABCD	FT ABBA	EMD	1941 OCT	4 x 1350	MT 992000	91
41 ABCD	FT ABBA	EMD	1943 JUL	4 x 1350	MT 992000	92
42 ABCD	FT ABBA	EMD	1944 JUL	4 x 1350	IM 69017-0	)3
43 ABCD	FT ABBA	EMD	1944 JUL	4 x 1350	MT or IM R	Renumber
44 ABCD	FT ABBA	EMD	1944 JUL	4 x 1350	MT or IM R	Renumber
45 ABCD	FT ABBA	EMD	1944 JUL	4 x 1350	MT or IM R	Renumber
46 ABCD	FT ABBA	EMD	1944 JUL	4 x 1350	MT or IM R	Renumber
47 ABCD	FT ABBA	EMD	1944 JUL	4 x 1350	IM 69017-0	)4
84 ABC	F7 ABA	EMD	1949 MAY	3 x 1500		
85 ABC	F7 ABA	EMD	1949 MAY	3 x 1500		
86 ABC	F7 ABA	EMD	1949 NOV	3 x 1500		
87 ABC	F7 ABA	EMD	1949 OCT	3 x 1500	Kato Custo	m
88 ABC	F7 ABA	EMD	1949 OCT	3 x 1500	Kato Custo	m
89 ABC	F7 ABA	EMD	1949 OCT	3 x 1500		
74 ABC	F7 ABA	EMD	1949 OCT	3 x 1500		
75 ABC	F7 ABA	EMD	1949 OCT	3 x 1500		
76 ABC	F7 ABA	EMD	1949 OCT	3 x 1500		
77 ABC	F7 ABA	EMD	1949 OCT	3 x 1500		
78 ABC	F7 ABA	EMD	1949 OCT	3 x 1500		
79 ABC	F7 ABA	EMD	1949 OCT	3 x 1500		
68 ABC	F7 ABA	EMD	1950 JUL	3 x 1500	Kato Custo	m
69 ABC	F7 ABA	EMD	1950 JUL	3 x 1500		
70 ABC	F7 ABA	EMD	1950 JUL	3 x 1500		
71 ABC	F7 ABA	EMD	1950 JUL	3 x 1500		
72 ABC	F7 ABA	EMD	1950 JUL	3 x 1500		
73 ABC	F7 ABA	EMD	1950 JUL	3 x 1500		
48 ABC	F7 ABA	EMD	1950 DEC	3 x 1500		
49 ABC	F7 ABA	EMD	1950 DEC	3 x 1500		
50 ABC	F7 ABA	EMD	1950 DEC	3 x 1500		

#### **Diesel Freight Power**

The hard part here is keeping track of FTs that have to be renumbered and what F units were built when. At some point they switched from the silver wing scheme to orange, black, and maroon. Again I sorted by date. Notice the F unit numbers were not linear.

MILW #	Туре	Builder	Assigned	HP	Model	Notes
E 01	EP-2	GE	Coast Div	4440	NJI/ Nowka	1 of a kind
E 02	EP-2	GE	Coast Div	4440	NJI/ Nowka	Silver Wings
E 03	EP-2	GE	Coast Div	4440	NJI/ Nowka	Silver Wings
E 04	EP-2	GE	Coast Div	4440	NJI/ Nowka	Silver Wings
E 05	EP-2	GE	Coast Div	4440	NJI/ Nowka	Silver Wings
E 10	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Black
E 11	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Silver
E 12	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Black
E 13	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Black
E 14	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Black
E 15	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Black
E 16	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Black
E 17	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Black
E 18	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Black
E 19	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Black
E 20	EP-3	Westinghouse	RM Div	3396/ 4680	Kato EF 58	Black
E 21	EP-4	GE	RM Div	3340/ 4100		Orange Black Maroon
E 22	EP-4	GE	RM Div	3340/ 4100		Orange Black Maroon
E 23	EP-1A	GE	Coast Div		Euro Look	
E 24	EP-1A	GE	Coast Div		Euro Look	
E 25	EF-3	GE	ABA Coast	5010/ 6150		Black (some with red roofs)
E 26	EF-3	GE	ABA RM	5010/ 6150		Black (some with red roofs)
E 27	EF-3	GE	ABA RM	5010/ 6150		Black (some with red roofs)
E 28	EF-3	GE	ABA Coast	5010/ 6150		Black (some with red roofs)
E 29	EF-3	GE	ABA RM	5010/ 6150		Black (some with red roofs)
E 30	EF-3	GE	ABA Coast	5010/ 6150		Black (some with red roofs)
E 31	EF-3	GE	ABA Coast	5010/ 6150		Black (some with red roofs)
E 32	EF-3	GE	ABA Coast	5010/ 6150		Black (some with red roofs)
E 33	EF-3	GE	ABA Coast	5010/ 6150		Black (some with red roofs)
E 34	EF-3	GE	ABA RM	5010/ 6150		Black (some with red roofs)
E 35	EF-3	GE	ABA RM	5010/ 6150		Black (some with red roofs)
E 36	EF-3	GE	ABA RM	5010/ 6150		Black (some with red roofs)
E 37	EF-2	GE	AAA RM	5010/ 6150		Black (some with red roofs)
E 38	EF-2	GE	AAA RM	5010/ 6150		Black (some with red roofs)
E 39	EF-2	GE	AAA Coast	5010/ 6150		Black (some with red roofs)
E 40	EF-2	GE	AAA Coast	5010/ 6150		Black (some with red roofs)
E 41	EF-2	GE	AAA Coast	5010/ 6150		Black (some with red roofs)
E 42	EF-2	GE	AAA Coast	5010/ 6150		Black (some with red roofs)
E 45	EF-2	GE	AAA RM	5010/ 6150		Black (some with red roofs)
E 47	EF-2	GE	AAA RM	5010/ 6150		Black (some with red roofs)
E 49	EF-2	GE	AAA RM	5010/ 6150		Black (some with red roofs)
E 50	EF-1	GE	AA Coast	3340/ 4100	Kato EH-10	Black (some with red roofs)

Continued on next page.

E 51	EF-1	GE	AA Coast	3340/ 4100	Kato EH-10	Black (some with red roofs)
E 52	EF-2	GE	AAA RM	5010/ 6150		Black (some with red roofs)
E 55	EF-1	GE	AA RMD	3340/ 4100	Kato EH-10	Black (some with red roofs)
E 56	EF-1	GE	AA RMD	3340/ 4100	Kato EH-10	Black (some with red roofs)
E 57	EF-1	GE	AA RMD	3340/ 4100	Kato EH-10	Black (some with red roofs)
E 59	EF-1	GE	AA Coast	3340/ 4100	Kato EH-10	Black (some with red roofs)
E 64	EF-1	GE	AA Coast	3340/ 4100	Kato EH-10	Black (some with red roofs)
E 68	EF-1	GE	AA Coast	3340/ 4100	Kato EH-10	Black (some with red roofs)
E 69	EF-1	GE	AA Coast	3340/ 4100	Kato EH-10	Black (some with red roofs)
E 70	EF-4	GE	RM Div	5110/ 5530		Orange Black Maroon
E 71	EF-4	GE	RM Div	5110/ 5530		Orange Black Maroon
E 72	EF-4	GE	RM Div	5110/ 5530		Orange Black Maroon
E 73	EF-4	GE	RM Div	5110/ 5530		Orange Black Maroon
E 74	EF-4	GE	RM Div	5110/ 5530		Orange Black Maroon
E 75	EF-4	GE	RM Div	5110/ 5530		Orange Black Maroon
E 76	EF-4	GE	RM Div	5110/ 5530		Orange Black Maroon
E 77	EF-4	GE	RM Div	5110/ 5530		Orange Black Maroon
E 78	EF-4	GE	RM Div	5110/ 5530		Orange Black Maroon
E 79	EF-4	GE	RM Div	5110/ 5530		Orange Black Maroon
E 80	ES-1	GE	Butte	475/ 670		Black
E 81	ES-1	GE	Deer Lodge	475/ 670		Black
E 82	ES-1	GE	Deer Lodge	475/ 670		Black
E 83	ES-1	GE	Othello?	475/ 670		Black
			Floctr	C Dowor		

**Electric Power** 

I really needed Excel to figure out what the situation was in 1950.

E22 and E23 are marked in red because they were created after 1950.

I sorted by date as all but the 12 Little Joes had been built decades earlier.

When I have it figured out, such as which units had red lead roofs, I will probably sort by division and focus on Coast Division power.

The main problem with trying to model in 1950 here is the GE EF boxcabs. Fortunately Noel Holley gives source information in his "The Milwaukee Electrics" that one can (eventually) figure it out. Originally there were 42 AA sets. Then they broke some up to create 12 ABA sets. These were called EF2. Then by 1950 I figured that there were 10 AAA sets.

I'm not sure about the EP-3 Westinghouse motors, but the GE boxcabs were still in black in 1950. The EP-2 BiPolars were in their most colorful schemes in 1950. The Little Joes were in the orange, black, and maroon scheme.

This will seem pointless to many people as I think about some things others love. Part of this is a challenge. If the records were destroyed I wouldn't waste any time thinking about it. But if the information is available and one can sort cells.... it is like a video game.

My diesel switcher list is four pages and I'm not sure how accurate it is. Modeling the Milwaukee in 1970 would be a lot more fuzzy, as I suspect keeping track of all the modern locomotives on the major trunk lines. But with Excel one can sort, cut'n'paste, and easily update each locomotives as one gets new information.

BTW I thought about this for a long time before actually doing. It probably took 12 hours. Most of that time was trying to figure out the diesel switchers... and then finding and correcting errors.