THE B&O MODELER

Volume 8, Number 1 **First Quarter 2014**

MODELING B&O'S CLASS I-16 - SECOND SECTION • PRODUCT REVIEW - SPRING MILLS DEPOT HO SCALE B&O CANSTOCK CAR • REBUILDING A B&O PFM L-2B LOCOMOTIVE • PHOTO STUDY: CLASS L-2B 0-8-0 • B&O MODEL PHOTOS FROM COCOA BEACH PROTOTYPE MODELERS' MEETS

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Cover Photos – Top, Spring Mills Depot HO scale Canstock Cars (David R. Olsen photo). Bottom, Rebuilt HO scale PFM B&O L-2 Switcher (Jon Vogel photo).

AN INVITATION TO JOIN THE B&O RAILROAD HISTORICAL SOCIETY

The Baltimore and Ohio Railroad Historical Society is an independent non-profit educational corporation. The Society's purpose is to foster interest, research, preservation, and the distribution of information concerning the B&O. Its membership is spread throughout the United States and numerous foreign countries, and its scope includes all facets of the B&O's history. Currently the Society has over 1600 registered members.

Members regularly receive a variety of publications offering news, comments, technical information, and in-depth coverage of the B&O and its related companies. Since 1979, the Society has published a quarterly magazine, *The Sentinel*, dedicated to the publication of articles and news items of historical significance. Other Society publications include monographs, calendars, equipment rosters, and reprints of original B&O source material. Their purpose is to make otherwise unobtainable data available to the membership at reasonable cost.

Membership in the Society is a vote of support and makes all of the Society's work possible. It provides those interested in the B&O with a legitimate, respected voice in the railroad and historical communities. By working together, B&O fans are able to accomplish much more than by individual efforts. No matter how diverse your interests or how arcane your specialty, others share your fascination with America's most historic railroad. We invite your participation. Several classes of annual memberships are available, Regular memberships are only $35.00. If you would like to join, visit the website, http://borhs.org/Membership/membership.html to fill out a membership application, print a copy and mail it to:

B&ORRHS
ATTN: Membership
P.O. Box 24225
Baltimore, MD 21227-0725

FROM THE EDITOR

We're Back!

As all of us have been painfully aware, *The B&O Modeler* has been in hiatus since the July/August 2011 issue. Unfortunately, other responsibilities have overtaken Bruce Griffin as remarked upon in the March/April 2011 issue, and he had to step down as editor. We're resuming production of *The B&O Modeler* with quarterly issues beginning with the one you're "holding" now to better manage content and to align with *The Sentinel* for potential synergy between the two publications, with the first joint articles scheduled to be published in Fall 2014.

We are constantly in search of quality content. Topics that have received little coverage include pre-1920, post-1964, Chessie System, and CSX content, as well as projects in other scales besides HO. If you have a project that you'd like to share with the B&O community, please contact the editorial staff and we'll be happy to help you with turning it into an article for *The B&O Modeler*.

Special thanks to Chris Tilley, who assisted in editing this issue, and Jerry Dembeck, who volunteered to join the staff as Associate Editor.

In Memoriam: Barry Rubin

Dr. Barry Rubin, Editor of *The Sentinel*, passed away in Tel Aviv on February 3, 2014 after a year-and-a-half battle against cancer. He was 64 years old. An authority on Middle East Affairs, he was founder and director of the Global Research in International Affairs (GLORIA) Center at Interdisciplinary Center Herzliya for nearly two decades, authored and edited over a hundred books, penned columns in sixteen newspapers in eight countries, and was a regular guest analyst on network and cable news programs. However, B&O enthusiasts will miss him most for his wonderful friendliness and enthusiasm for the hobby, both through his work through *The Sentinel*, and through coordinating events such as the Georgetown Branch get together ten years ago. He is survived by his wife Judith and his two children.

--Ben Hom

UPDATES AND ERRATA

MODELING B&O'S CLASS I-16 CABOOSE - SECOND SECTION

BY JOHN TEICHMOELLER

ALL PHOTOS BY AUTHOR

Chris Tilley showed us how he scratch-built an I-16 caboose from a plastic boxcar in the July/August 2011 issue of *The B&O Modeler* (Vol. 7, No. 4). As far as I know, this class has never been produced in brass. However, years ago Pro-Custom Hobbies had a wooden kit for this class produced for them by Quality Craft. These kits show up from time to time on the secondary market. I purchased one at the

Timonium train show in April of 2004. I'm not sure whether Quality Craft/Gloor Craft ever issued the kit under their label, but it's possible. *[Gloor Craft did offer this kit for a short time – Ed.]*. I fully intended to build it up one of these days. However, in early 2012, my friend Will Jamison picked up on my behalf a built-up version of this kit at an auction in Sykesville, MD. It had a few minor problems. It had clunky metal coil spring trucks that barely swiveled due to their width over the journal boxes. It was missing one of the steps and the smoke jack, one end of the roofwalk was cracked and one of the Kadee couplers was missing. Also missing was one of the ladder extensions. Otherwise, the car, which consists of a wooden body "box" with metal and wire details and cast metal bay windows, appears to have been decently assembled per the kit instructions. I cannibalized my unbuilt kit for the missing parts, made the other repairs, and replaced the trucks with Tichy leaf spring caboose trucks. These are narrower so they allow more than adequate swivel action between the steps.

The kit instructions do not show the jacking pads that Chris added and neither does my car. It also does not call for some of the other details Chris applied such as stays on the smokejack or "inner upper" grabs on the end verticals. As a side comment, my car weighs 2.4 oz. and although I can't see inside, it does not feel as if it has any additional weight added (nor do the kit instructions call for any). The metal wheels I plan to add will build the weight up a tad but I'm guessing 2.4 oz. is probably OK for a caboose that I don't intend to use in pusher service.

The accompanying photos show my "auction queen." It was only when I compared mine to Chris's model that I noticed the builder had painted the fishbelly underframe red. The kit instructions say to paint the whole car red and say nothing about painting the fishbelly black, so that's what the builder did. I looked through the small collection of published I-16 photos in the books I have and couldn't find any with red underframes so I guess I'll have to re-do this, too, not a problem. The window frames also were not painted green; while green window frames apparently were part of the B&O's painting standards, a lot of cabooses lacked this treatment, so I don't plan to change that. One of the plastic windows came unglued and is rattling around inside the sealed body. I may try to find some of that "plastic bubble spit" in my paint drawer to reglaze this window. The lettering is not correct for my 1967 era, but I have decided not to change that for the time being.

What about my unbuilt kit? Well, right now I still figure on building it up eventually, replacing the stolen smoke jack and step with scratch-built replacements. Would I do a better construction job than my auction orphan? Hard to say. Do I need two? Probably not, but I could always paint it up for scale test car tool car service. At any rate, it certainly isn't one of my priorities.

One minor curiosity - my I-16 has the legend "PURR 8-81" written with what looks a white lettering pen on the black underfloor. Does anyone know the significance of this annotation? Might this car have belonged to the late famous A.E. "Bud" Sima, owner of the Ma and Pa inspired Prospect and Upper Ridge of Catonsville, MD? On the upper left of each side, the paint is thicker as if earlier lettering has been overpainted. If I do ever get around to changing the lettering on the car, I'll go ahead and strip off the paint in this area and see if PURR lettering is underneath. Several articles on Bud's layout appeared in the enthusiast press. When I have time I'll have to pull them and see if he had an I-16 type car on his roster.

As a final footnote to this footnote, I speculated previously that if Joe Luber of Pro Custom Hobbies had lived longer he might have had Quality Craft produce an I-13 kit. It turns out that in 2012 Gary Schlerf was selling items from the estate of deceased Society member Dave Manion. At the June Timonium show Gary was selling a built-up but unpainted I-13 that Dave had nicely kitbashed from the Pro Custom Hobbies I-16 kit. But since I have the brass I-13, I didn't need to do this to my I-16 kit.

Oh, and one more thing: on page 3 of the July/August 2011 issue, I speculate in my commentary on the Oriental Models brass I-13 that the vertical members on the car might have been rolled at the B&O's Cumberland rolling mill. Ed Kirstatter I think rightly disallows this speculation by noting that the vertical members were simply retained from the structure of the I-13's source cars, former CI&W/B&O Class L-6 stock cars.

UPCOMING SOCIETY AND PROTOTYPE MODELERS' MEETS

March 28-30, 2014: Railroad Prototype Modelers Valley Forge, Desmond Great Valley Hotel and Conference Center, Malvern, PA. POC: Paul Backenstose, prrpaul@aol.com
http://www.phillynmra.org/RPMMeet.html

March 28-29, 2014: Savannah Railroad Prototype Modelers Meet, Port Wentworth Recreation Center, Port Wentworth, GA. POC: Denis Blake, dblake7@columbus.rr.com
http://www.savannahrpm.com/

March 29, 2014: Western Prototype Modelers, Santa Fe Depot, San Bernandino, CA. POC: Joe Delia, PO Box 2701, Carlsbad, CA 92018.
http://www.railroadprototypemodelers.com/sbdmeet.htm

April 24-26, 2014: Central Ohio Railroad Prototype Modelers Meet, Marion Union Station, Marion, OH. POC: Denis Blake, dblake7@columbus.rr.com
https://www.facebook.com/groups/438383252883060/

May 17, 2014: B&ORRHS Western Mini-Con, Columbus, OH. POC: ohiominicon@borhs.org
http://www.borhs.org/events/events.html

May 30-31, 2014: New England/Northeast Railroad Prototype Modelers Meet, Canton Community Center, Collinsville, CT. POC: Dave Owens, neprotomeet@gmail.com
http://www.neprototypemeet.com/Welcome.html

August 2, 2014: B&ORRHS Eastern Mini-Con, St. John's Lutheran Church, Martinsburg, WV. POC: eastminicon@borhs.org
http://www.borhs.org/events/events.html

August 28-29: Gateway Convention Center, One Gateway Drive, Collinsville, IL. POC: John Golden, Golden1014@yahoo.com or Lonnie Bathurst at bathurst@litchfieldil.com
http://icg.home.mindspring.com/rpm/stlrpm.htm

September 12-13, 2014: Mid-Atlantic Railroad Prototype Modelers Meet, Wingate by Wyndham Hotel, Fredericksburg, VA. http://www.marpm.org
https://www.facebook.com/groups/MARPM/

September 18-21, 2014: B&ORRHS Annual Convention, Ramada Inn, Cumberland, MD.
http://www.borhs.org/events/events.html

October 9-11, 2014: RPM Conference 2014, Sheraton Lisle-Chicago Hotel and Executive Meeting Center, Lisle, IL. POC: Joe Delia, PO Box 2701, Carlsbad, CA 92018.
http://www.railroadprototypemodelers.com/naper_meet.htm

January 8-10, 2015: Prototype Rails, Cocoa Beach Hilton Waterfront, Cocoa Beach, FL. POC: Mike Brock, brockm@cfl.rr.com
http://prototyperails.com/

TBD 2015: B&ORRHS Annual Convention, Cleveland, OH.

PRODUCT REVIEW
SPRING MILLS DEPOT HO SCALE B&O CANSTOCK CAR

BY: DAVID R. OLSEN

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.

History

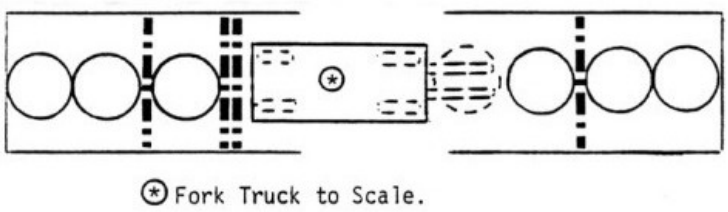
A small manufacturer based in central Maryland, Springs Mills Depot's first HO scale freight car model is a well-known B&O Railroad design – the Canstock Car. Although Spring Mills Depot has previously produced several custom runs of other manufacturers' models, this is the first new freight car designed and produced by them as part of a new line of "signature" models – unique prototypes that have not been offered by other companies, many of which will appeal to B&O and other eastern modelers. Bill Carl and Ken Braden, the two men behind the company, are modelers themselves, and they have banded together to offer models that they have always wanted to see produced, but that most larger manufacturers tend to shy away from because they were only operated by a few railroads.

The Prototype

The B&O Historical Society's magazine *The Sentinel*, Volume 32, Number 2 (Second Quarter 2010), featured an excellent article by Mike Shylanski on the prototype Canstock Car. These box cars were specifically designed to carry coiled steel or aluminum sheet metal used for making cans. Standard box cars with centered doors could not make efficient use of their interior floor space due to the size and weight of the coils and the large fork truck required to load them. In 1971, the B&O selected Pullman-Standard to design the "ultimate" box car that could transport the heavier canstock coils that were coming into use while maximizing the use of floor space inside the car. The new cars were designed with larger 12' 6" wide doors offset towards the "A" (non-brake wheel) end of the car that allowed the fork truck to load eight of the large coils instead of the six that could be carried in a standard box car (see Figure 1). The cars were also equipped with a heavy wood floor and moveable internal bulkheads for securing the heavy coils. An unusual feature of the design was a fiberglass roof panel near the B end to allow light into the car during loading and unloading. Pullman-Standard built 75 of the new Canstock cars in February 1972, numbered B&O 480800-480874 and assigned to class B-105. In 1974, the B&O decided to purchase an additional 75 cars but chose Berwick Forge and Fabricating to build this second order. These cars were numbered B&O 480875-480949 and assigned to class B-105A.[1] While similar in basic design, the Berwick cars have several distinct features, including a peaked diagonal panel roof. The Spring Mills Depot car represents the original 75-car series built by Pullman-Standard. These cars were later inherited by the Chessie System and CSX Transportation, and those paint schemes will be offered as well.

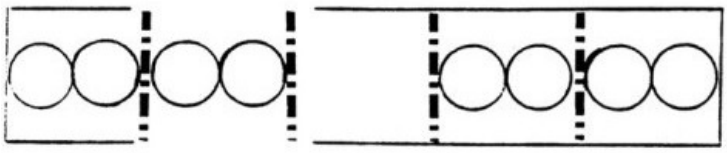
[1] Shylanski, *The Sentinel*, Vol 32 No 2 (Second Qtr 2010), p. 13-21.

Figure 1: Why the End-Door Design?



The Problem

- Coil diameters are becoming larger.
- Over 56 inches requires in-line loading.
- Beyond 6 coils, lift truck can't turn to exit from the car.



The Solution

- Place the doors where the last two coils go.
- Lift truck goes straight in and straight out – no turning.
- Enables car to carry 8 coils

(Figure extracted from B&O Railroad Canstock Brochure)

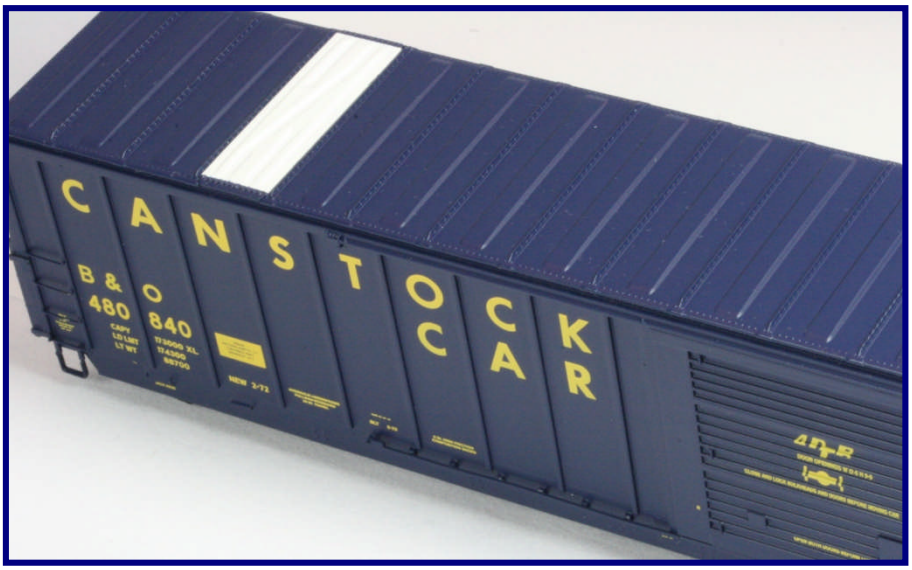
The Model

I had the chance to talk with Bill Carl and Ken Braden at the Great Scale Model Train Show in Timonium, Maryland in June 2011 before the release of the first models and got to handle the first test samples of their Canstock car model. Bill and Ken have taken the almost unprecedented step of having fully assembled and decorated test samples delivered in advance to review for accuracy and to give their customers a preview of the finished models. They displayed samples decorated for B&O, Chessie System, and CSX Transportation, as well as undecorated cars, and they have posted detailed photos of each on their website (http://www.smd.cc). The decorated cars shown in this review are from this first batch of test samples.

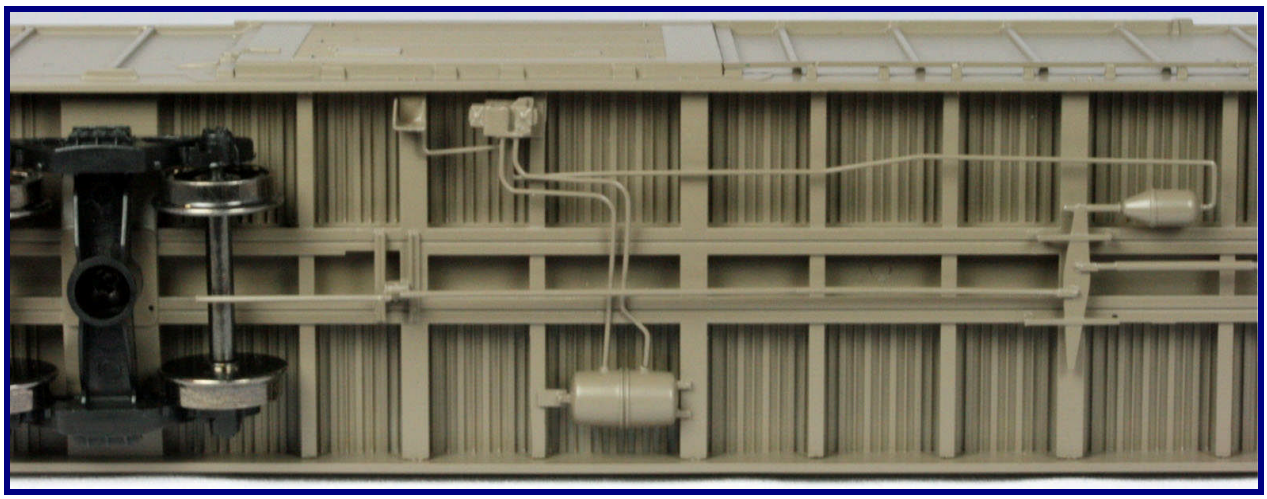
I was really impressed with the amount of research and effort these two guys have put into this project in their own free time just to bring a plastic model of this unique prototype to market. Bill and Ken have regular jobs and started this small company as a side business because they want to produce models of prototypes that they and a lot of other modelers are interested in. This is their first plastic model designed and produced by them, unlike previous custom runs of select paint schemes on other companies' models).

In my opinion, we are not likely to see another model of this prototype so meticulously researched; Bill and Ken have used the original Pullman-Standard blueprints and hundreds of prototype photos to design this car. They have identified discrepancies with the blueprints (things that were not built the way they were drawn) and corrected those details, and they have also matched the paint and lettering for each railroad. One of the details that they included on the model is the very specific arrangement and number of rivets along the eaves, between the top chord and the roof. These rivets follow a precise pattern over the doors, and this is carefully replicated on the model.

The fiberglass roof panel feature is an interesting design - the panel was bolted onto the roof instead of riveted like the rest of the panels, and the model depicts this with 15 large bolt heads along the edge of the panel instead of the smaller rivets on adjacent panels. A solid panel was used to replace the fiberglass panel in the Chessie era using the same 15 bolts. Spring Mills Depot is offering either the fiberglass or solid panel on the Chessie System car to model cars in a specific time period. These panels are separate, interchangeable parts on the model, and on the initial test samples, they did not sit down quite flush. Bill worked with the factory after reviewing the samples and was able to correct this issue. He also felt that the white paint used on the fiberglass panel was too bright on the test cars, and he is having the color toned down on the production model.



There are a lot of small details that I like about the design of this model. They included a separate door track as other manufacturers have offered recently, since that has become the new "standard" for HO models. They used metal screws to secure the weight inside the car so the glue doesn't come loose, and they used wire instead of plastic for the piping between brake components to make it more durable. They correctly modeled the curve of the upper corner of the side sheet at the ends of the eaves - which had to be modified several times with the factory in China. I am particularly impressed that they have tooled both the original and replacement Youngstown doors used by CSX, especially since the CSX doors are slightly different on the two sides.



Corrected Brake Details on Second Test Sample

The B&O cars were painted a different shade of blue than the Chessie and CSX cars, and the Spring Mills Depot models are matched to the "as delivered" B&O blue used on a previous box car model based on the advice of several B&O experts. The Chessie / CSX blue is likewise matched to the correct blue as recommended by the Chessie System Historical Society. The lettering was developed from both lettering diagrams and prototype photos - to be expected, but I was impressed by the small details that they captured. The wording of the trust information for each scheme is different, as per the

prototype, and there are micro printed "KEEP OFF" labels on the coupler pocket of all cars, a lettering detail that has never been offered before, to my knowledge. They also identified a few abnormal lettering variations based on photos, such as the yellow outline around the lube stencils in the B&O prototype photo on the flyer on the Spring Mills Depot website, so that they could avoid producing any car numbers that did not match the standard lettering schemes.

As far as test vs. production models go, Bill and Ken have made a number of changes based on the review of the samples. They noticed in prototype photos that the original B&O cars had Apex-pattern crossover platforms (with rectangular holes), while the Chessie and CSX cars appear to have replacement Morton-pattern platforms (with round holes), so the factory has made that change on the B&O cars. On the underbody, the factory flipped the retaining valve around to the wrong side of the car during a drawing revision, but they were able to fix the brake arrangement and also add vertical brake levers as part of the revisions. They are also correcting a few lettering errors that were noted on the samples. The B&O test sample was stenciled with builder information listed “Butler, PA” and “LOT 1027.” This has been changed to “Bessemer, AL” and “LOT 9585,” the correct information for the Pullman-Standard plant that built these cars. Lastly, they have changed the coupler cut levers to more closely replicate the design of the prototype. A few modelers who examined the photos on their website have commented that upper “sine wave” corrugations on the ends of the car are too flat and not rounded enough, and that the door corrugations are too square in profile. These details may be noticeable under close magnification, but I feel that they look fine at normal viewing conditions.

The guys at Spring Mills Depot have put an incredible amount of work into researching and producing this model. I never thought that we would see a model of this unique prototype produced in plastic, and I’m glad that these two dedicated individuals were willing to put forth the effort to do it justice. B&O, Chessie, and CSX modelers will undoubtedly appreciate these box cars, but they will also be useful for modelers of other railroads across the country, as the prototype Canstock cars were occasionally see as far west as Colorado and California. I look forward to seeing what Spring Mills Depot will produce next.

The Spring Mills Depot Canstock Cars are available direct by following the ordering instructions listed on their website at http://www.smd.cc. The B&O, Chessie System, and CSX cars are available in six numbers each and cost $49.95 per car. The model is also available as an undecorated kit for $39.95 and includes both styles of roof panels and doors.

Reference:

Shylanski, Mike, "Building a Better Mousetrap: The B&O Canstock Boxcar Story," *The Sentinel*, Volume 32, Number 2, p. 13-23. Baltimore & Ohio Railroad Historical Society, Baltimore, MD, Second Quarter 2010.

REBUILDING A PACIFIC FAST MAIL B&O 0-8-0 CLASS L-2B SWITCHER IN HO SCALE

BY JON VOGEL

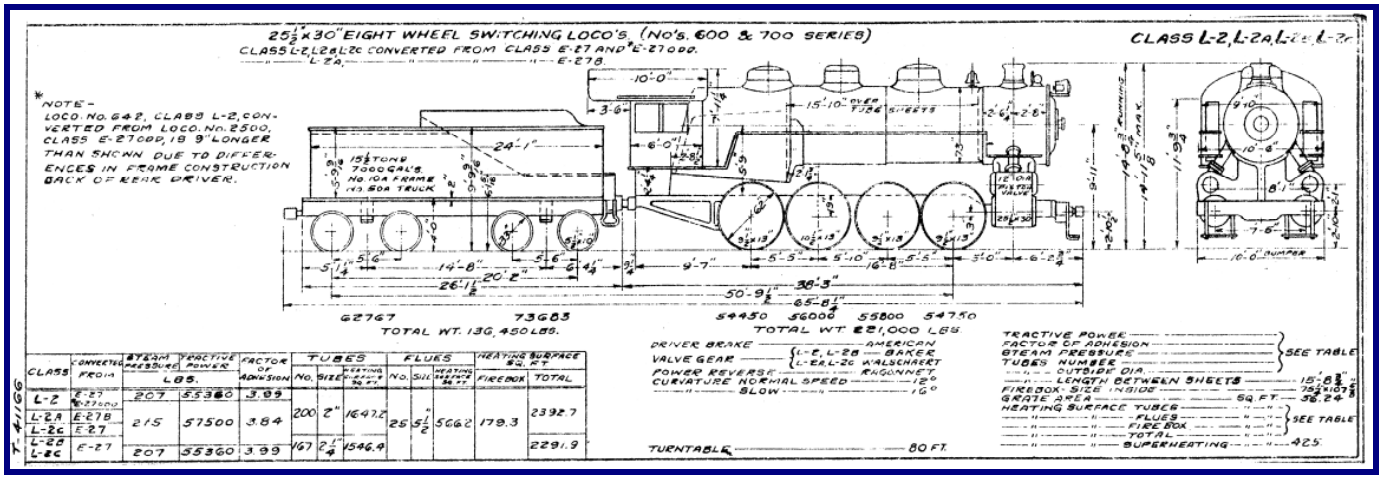
PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.

History

The Baltimore and Ohio converted all of its eight wheel switchers from 2-8-0 Consolidation type locomotives at their own shops beginning as early as the 1870s. The 64 Class L-2B locomotives came from 1900's vintage Class E-27 Consolidations between 1926 and 1929. The pilots were removed along with the front wheels, the deck shortened and front steps added. A headlight was added to the tender we well for backing movements. They occupied number series from 646 through 711 except 692 and 696. They were renumbered in the 1600 series in 1954 and again in 1956 when all steam locomotives were numbered below 1000. Eleven Class L-2B switchers survived until 1959.

Prototype Information

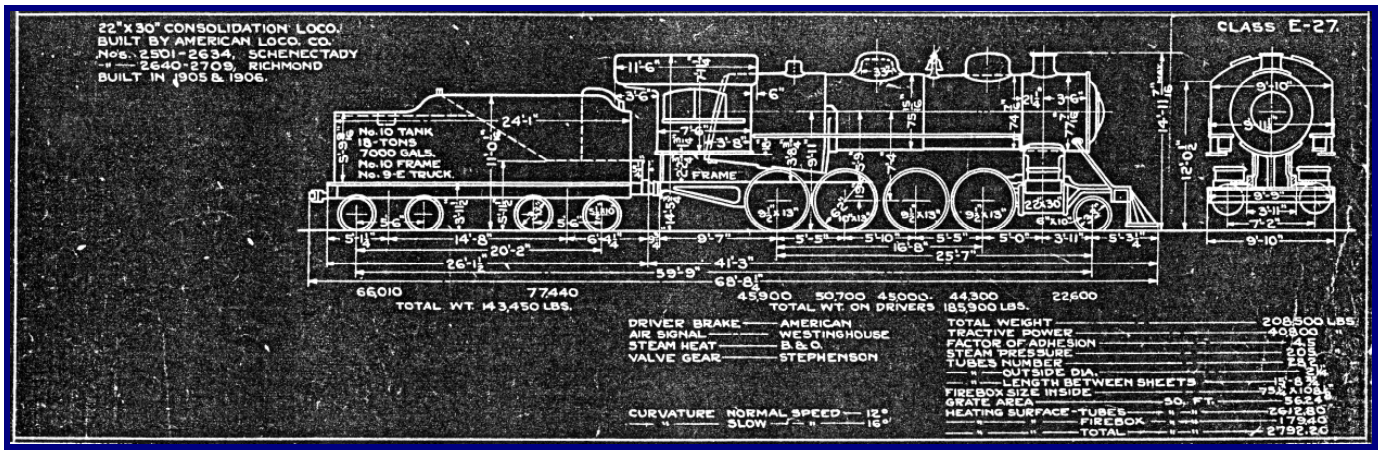
This article is about Class L-2B number 680 which began life at ALCo Richmond as Class E-27 Consolidation number 2708 in 1906 and converted to Class L-2B in 1928. It had 62 inch drivers, 57,500 pounds tractive power and weighed 221,000 pounds.



Class L-2 and subclasses Clearance Diagram T-41166 Revision H dated 10-2-53 (B&ORRHS collection).

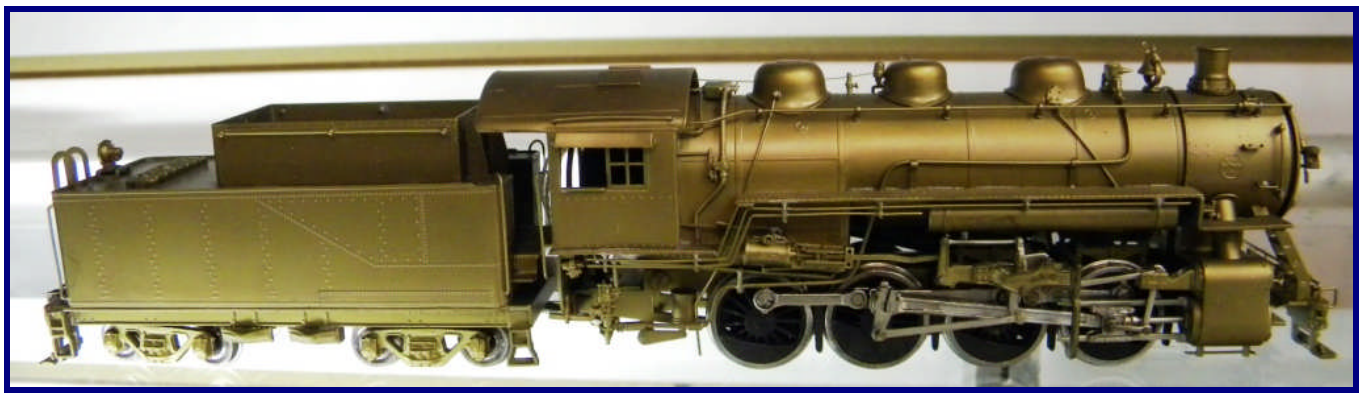
The Model

I found a 1967 PFM/United L-2 at a Local Hobby Store. It was reasonably priced because there was no original box; the headlight and steam generator were missing and a few pipes were loose and needed resoldering. The sales box was incorrectly marked as a USRA switcher…a lucky find indeed. On the plus side, the locomotive had not



Class E-27 Clearance Diagram T-44721 Rev B dated 6-16-1926 (B&ORRHS collection).

much running time (no wheel wear detected) and it ran very well in its original condition. There were no binds in the mechanism, and no shorts that could be detected. It did have the typical coffee grinder noise associated with older brass locos. However, I deemed it worth the purchase and effort to perform a rebuild and decorating project. Thus, began a four-month intimate relationship with my first brass locomotive. Three months of the relationship was planning and learning.


The brass model as purchased.


Segregate and label all parts for ease in reassembly. Draw a diagram of especially difficult assemblies.

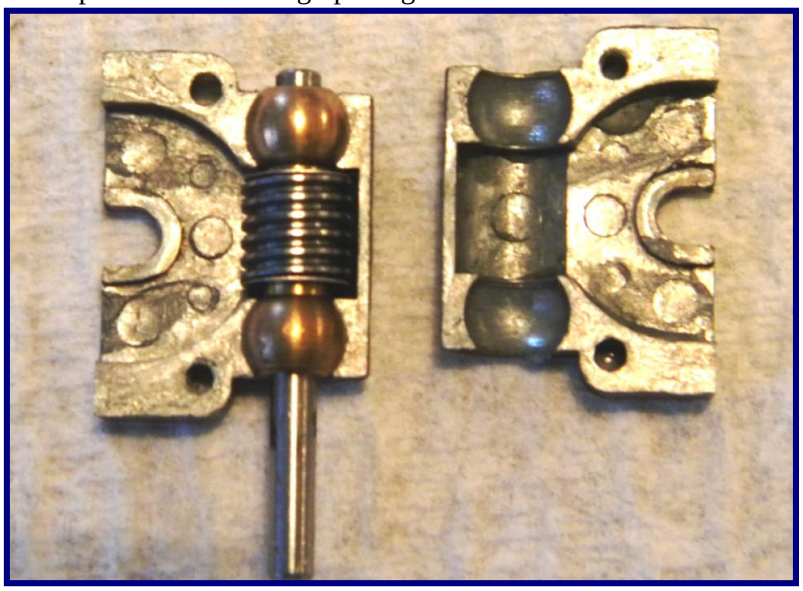
I started out disassembling the model, carefully labeling and storing all the parts with their associated screws. The shell came off by removing the two screws at the rear of the cab and removing the boiler screw under the steam chest. There is an inner and outer screw here. The outer screw releases the steam chest and pilot.

With the shell removed, it is pretty easy to remove the motor (mounting screw and one wire to the drawbar). I kept all the drawbar parts in one receptacle. I'm sure the plastic washers and screw are hard to replace. I replaced the open frame motor, but I kept it, just in case.

Gearbox

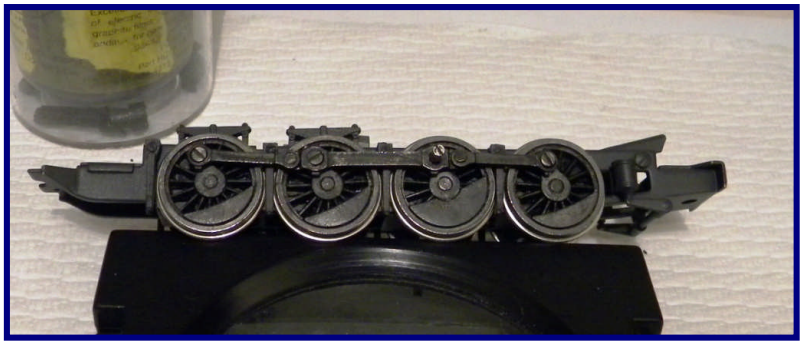
This is a critical component. I originally intended to replace the gearbox, which means needing a gear puller and quartering tool. However, I was able to tweak the original gearbox to near perfect running.

Remove the two cover plate screws, which release the whole assembly from the main axle. Remove the two screws which hold the box together. Be mindful of the tiny thrust washers. Scrub all the parts with hot soapy water. There is a little lateral movement (back and forth) in the PFM gearbox. I added two, very thin, thrust washers left over from some Athearn drive train parts. If you've been modeling for a while, you probably have a few of these lying around. Initially, I fit the Athearn washers between the worm and the original thrust washers. This worked pretty well, but I finally put the new washers on the outside of the original thrust washers. I put a little conductalube on these parts before closing up the gearbox. This removed the lateral movement, placed the worm in exactly the right position, and best of all, the gearbox now runs silent as the grave!



Gearbox cleaned and additional thrust washers installed. In this photo the thrust washers are added on either side of the worm. The new washers were ultimately mounted outside the stock thrust washers.

Painted frame and wheel cover plate.



Wheels painted and remounted in frame.

Undercarriage

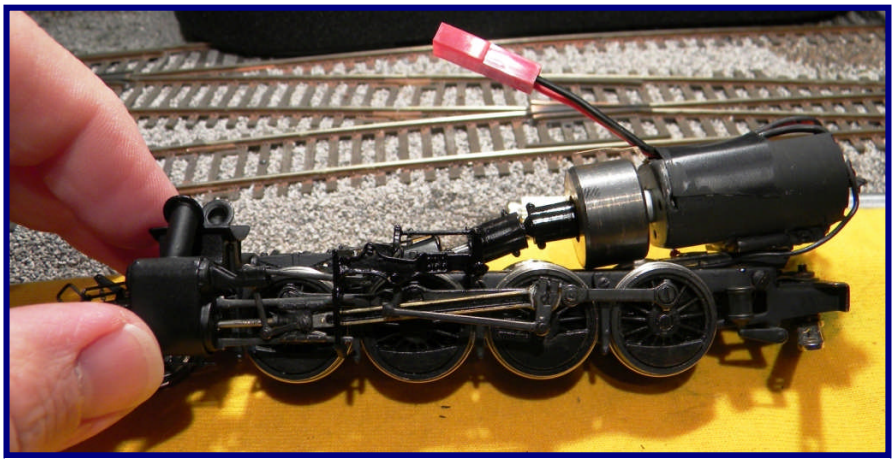
I removed the wheels, valve gear hanger, pilot and steam chest from the frame such that the only parts attached were the motor mount saddle and the brakes. Again, tiny parts, like the springs and screws were all carefully washed and stored for later. Also, it helps to keep track of right and left sides of the wheels (current pick up). Have a voltmeter ready in case a driver gets installed backwards. After a thorough wash and dry, I spray painted the frame Floquil Grimy Black, using two coats, and sealed it with Testors Dullcote. It helps to leave the wheel mounting plate attached while painting. I then gently filed the paint off from the wheel wells, so current could flow from the wheels to the frame.

Next, I remounted the drivers. I put a tiny drop of heavy gear oil in the bearing receptacle that holds the springs. This gave the area just enough stickem' to hold the springs while seating the wheel assemblies. I painted the wheel hubs and outside tread with Neolube; two coats. I was concerned with shorting issues, because Neolube is a conductor, but it posed no problem at all. Likewise I painted the drive rods with Neolube and reattached them to the wheels. The gearbox went back on, with two drops of gear oil, before closing up the cover plate. The mechanism was thoroughly tested on the bench to ensure no binding.

The pilot deck coupler mounting screws were missing from the model, so some old crank pins were used after tapping the holes 0-80. Then this piece was prepared for painting. Before painting the locomotive, I decided to do some test painting on the tender to figure out what worked best.

I painted the pilot, steam chest, tender shell and tender trucks (wheels removed) with one coat of primer, two coats of Floquil Engine Black and two coats of Testors Dullcote. No need to remove the original lacquer (more about lacquer later), as the paint adhered to the lacquer quite well. The tender under frame was painted with Floquil Grimy Black, followed by fine sanding the truck bolsters and tops of trucks, for the current flow. All parts were scrubbed in hot soapy water and allowed to dry, before painting.

I installed an NWSL 2032 motor and universal connector parts. On the plus side, the motor is very strong, smooth and quiet. The flywheel is positioned in front of the motor, hidden by the firebox. On the minus side, the motor is oversized for this model, and almost didn't fit. It took some effort, and experimentation to get the motor assembly to fit inside the shell. In the final photos, you can see the motor in the cab…the whole cab. I barely had room for the engineer and fireman. I painted the motor black to hide it as best as possible. I read somewhere it's best to overpower a locomotive when performing a rebuild. This motor is definitely overpowering! I had hopes of adding a brass backhead to this model. The only way to make that work would have been leaving off the flywheel and installing a smaller motor. A strong, smooth running locomotive was more important to me.



Locomotive frame with NWSL motor and connector parts. This assembly was bench tested several times for 30 minutes each, in forward and reverse, to ensure no surprises when the locomotive is complete.

I made a small motor mounting plate that could be screwed to the original motor saddle. In this way I can attach the positive wire to the frame, at the same time, mounting the motor with clear silicone gel. This worked out well. I soldered a micro-plug to the motor, in order to connect the headlight wires. This makes future shell removal less difficult. Those of you who have moved to the dark side (DCC) will do this differently.

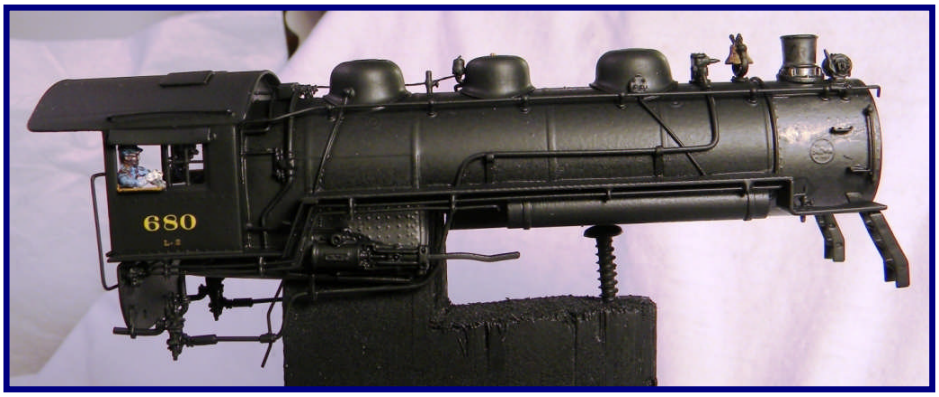
Using the cup and horned ball connectors requires one to stabilize the gearbox. Due to lack of space, I made a bronze clip which touches the back of the gearbox and front of the valve gear hanger. My research revealed the correct way to do this is to build a clip from the motor to the gearbox. I couldn't make the motor assembly fit using this method. So, I improvised. I put a little insulating tape under the clip, just in case. Again, this worked well. The clip does a have a little springiness to allow for a bit of movement of the gearbox, for rough track.

The bronze clip stabilizes the gearbox.

A test of the assembly went well; i.e., the wheels turned and nothing fell apart. I bench tested the motor assembly for a number of hours, both forward and reverse. This is another critical step. The mechanism must be reliable. There is a small whirring noise from the connector pieces, but they operate smoothly. I can live with that for now. For my first time, I was tickled that it really works! There is a very tiny amount of plastic compatible lubrication in the connector parts. I've read Delrin does not wear out easily. The bit of lube was for my own peace of mind.


Boiler weight is filed down to allow plugs and wires to pass to the headlight. Locomotive still has plenty of weight for pulling.

I resoldered the loose piping, soldered on the steam generator and headlight bracket (Cal Scale parts), but left the headlight press fit. I did this to aid in replacing the bulb if necessary. Soldering to brass is not easy. I'm glad I don't have to do that on a regular basis. Brass moves heat around quickly. It's hard to get the metal up to a temperature that will bond the solder to the brass. Being new to brass, I can only recommend moving quickly and accurately with the soldering iron. A good flux helped this effort. [*Editor's Note: One method is to put a gob of flux on the surfaces to be joined and hold them in place. Then with a hot iron, melt a blob of solder on the end and touch the blob to the joint. As the flux evaporates, the solder is drawn in quickly and solidifies almost instantly. Make sure to take appropriate safety precautions when soldering. Practice with some non-critical parts first. Some filing will be required to clean up any overflow.*]



Painted shell ready for assembly onto the frame.

Painting and Decals

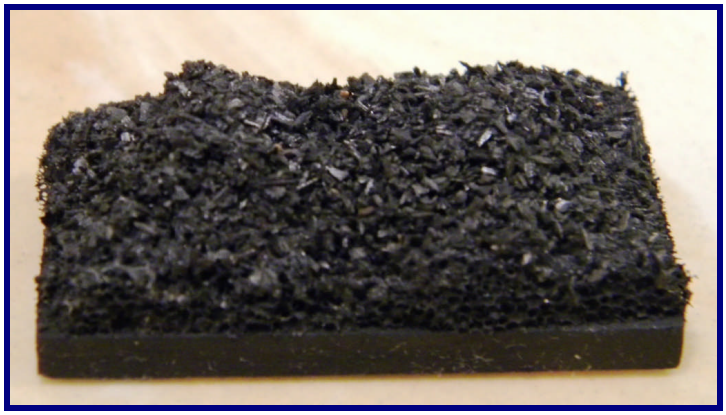
I had intended to paint over the shell's lacquer, like the other parts, but I noticed some of the lacquer had chipped off, probably from all my manipulations. Time to strip off the lacquer. Whenever possible, I prefer not to have a lot of hazardous chemicals lying around. There are children in my home. So, I used the safest stripping method I could find. I hardboiled the shell in a mixture of water and baking soda, for 30 minutes, twice. I picked out the remaining gooey bits of lacquer with a sharpened toothpick. When all remnants of the lacquer appeared to be gone, I bathed the shell in vinegar for another 24 hours. I didn't try to shine up the brass as I knew I was going to paint it. Finally, the shell was clean and prepped from all my machinations. Don't forget to wash and dry one last time in hot soapy water. I wore latex gloves when moving the clean parts to the paint stand. Don't touch the piece with bare hands prior to painting. The shell was painted with one coat of dark grey primer, one coat of Testors Gloss Black, decaled, and two coats of Testors Dullcote added. I kept all the coats as thin as possible, to avoid losing any detail. I use spray cans, as I don't have room, or the inclination, for an airbrush system. A good trick is to pre-warm the spray cans in a bowl of hot water, for about

ten minutes. This allows the paint the best possible chance to mist and flow well around the piece to be painted. The paint job is good enough for my layout. For a journeyman modeler, I was quite happy with the results.

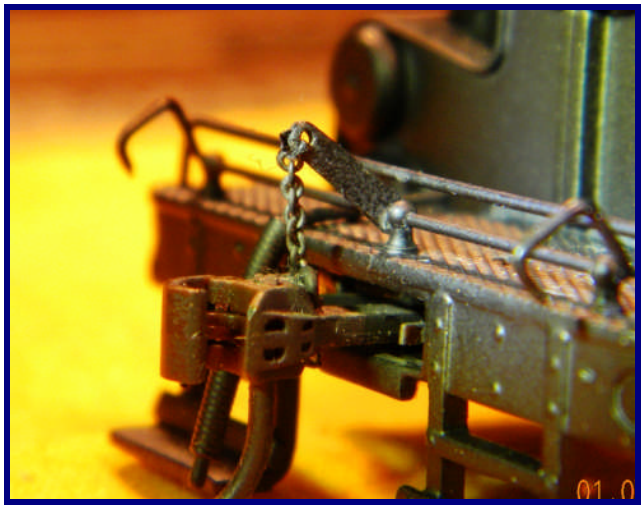
The smokebox area was painted with Neolube, like the wheels. I haven't learned how to weather, yet. So the locomotive is going to look freshly shopped for now. I brushed painted the valve gear hanger, in order to leave some of the valve gear parts connected. I have a fear of losing irreplaceable, tiny metric screws. I did not paint Neolube on the main rod. There's a coat of black enamel in the well area. I wanted a little contrast around the drivers. After all, the true beauty of a steam engine is in the motion of the mechanism. It can be hypnotizing.

There's a scale head coupler in the front, for appearances, and a full size, Kadee #5 on the tender, for pulling purposes.

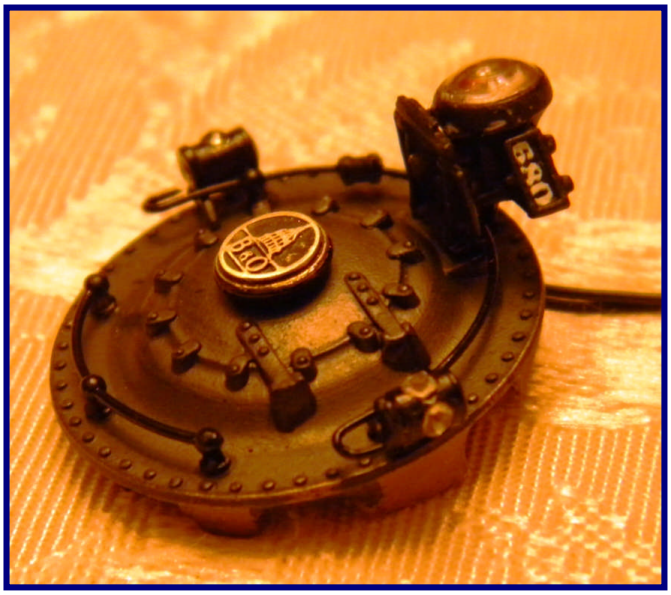
Superdetails



I drilled out the engineer's shoulder so his right arm could be posed in a position of my choice. I made a coal load by carving some packing foam, glued to soft wood. I sprinkled and glued some coal on top of that.



The lift bar and coupler head are connected with fine blackened chain. The windows are glazed, with the "glass" held in place with white glue. Someday I want to try using microscope cover glass (slide covers).



Cal Scale herald on the smokebox front and jewels in the markers. This part was detailed separately and installed during final assembly.

Why number '680'? In my research, I found records of Class L-2 locomotives up to #677, a gap, then continuing on with #684. *[Editor's Note: There is no gap between #677 and #684. A review of both Edson and Sagle confirm the existence of Class L-2B #678-#683. Photos of #680 are on page 22 of this issue.]* I must confess decaling the Pyle headlight was a challenge. I happened to have small, white decals for 680. I found it too difficult to add those tiny decals one number at a time. So the number is based on my inability to manipulate tiny decals. There is a lens in the reverse light, but no bulb.

The headlight bulb is a Miniatronics 1.5 volt microbulb. I put in a resistor, and the bulb becomes visible at about 5 volts on the rails. Again, my home layout is DC. I only play with decoders for running on my club's modular layout. The L-2 stays home.

Final Assembly

Assembling painted brass parts, without scratching them, will add wrinkles and gray hair to anyone. I was glad when that part was over. Model Railroading is fun… 99% of the time! The added plug for the headlight wires turned out to be a good plan. I had to disassemble, adjust, and reassemble the locomotive no less than three times to get everything lined up just right. The plug allowed me to keep the parts completely separated during adjustment. There are many moving parts attached to the frame that must be lined up just right for the mechanism to run smoothly. The steam chest must be perfectly perpendicular to the frame, so the valve gear and crossheads won't bind. The motor, connectors and gearbox must sit at just the right angles to ensure smooth running at all speeds. The valve gear hanger must be square and flat so the rods and eccentrics turn freely. All these things require time and patience to be aligned correctly. Go slowly and methodically and you will be rewarded with a fine running mechanism.


Three main parts now ready for final assembly.

The locomotive runs well. It is smooth, powerful, and a joy to look at. The only drawback is the small whirring noise from the universal connector. It is amplified because it sits in that dead space in the boiler. I was not aware that hollow brass makes a good amplifier! I can't complain. It's a small noise, and for my first brass project, it turned out quite satisfactory. One day, I will have to try a different connector configuration. For now, it works great.

After 5 years of modeling, I finally have an accurate representation of a B&O Steam Locomotive on my roster, without kitbashing. What a treat!

Bill of Materials

Manufacturer	Part Number	Description
Pacific Fast Mail/United		B&O Class L-2 0-8-0 Locomotive
Cal Scale http://www.bowser-trains.com/history/hocalscale.html	211 205 241	Steam Generator Pyle Headlight Headlight Bracket
Detail Associates	1171	14.5" headlight lenses
Floquil Paints	110020 110010 110119 110013	Caboose Red (for valve handles) Engine Black Graphite Grimy Black
Kadee http://www.kadee.com	5 58	Coupler Set #5 Coupler Set #58
K&S http://www.ksmetals.com	251	Brass Sheet, .010
Micro-Mark http://www.micromark.com	83181	Neolube
MicroScale http://www.microscale.com	87-83	B&O Steam Locomotive Decals
Northwest Shortline http://www.nwsl.com	2032	Can Motor Universal Connector Kit
Precision Scale	31281	Crew Figures
Testors http://www.testors.com	1260T 1247T 2982	Dullcote Gloss Black Model Master Super Fine Gray Lacquer Primer
Various		Clear Window Glazing Lubricants Metal Bar Stock for Motor Mount Miniatronics 1.5V Bulb Resistor Packing Foam Scale Coal Small Screws

References

Edson, Willam D., *Steam Locomotives of the Baltimore & Ohio – An All-Time Roster*, Self-Published, Potomac MD, 1992.

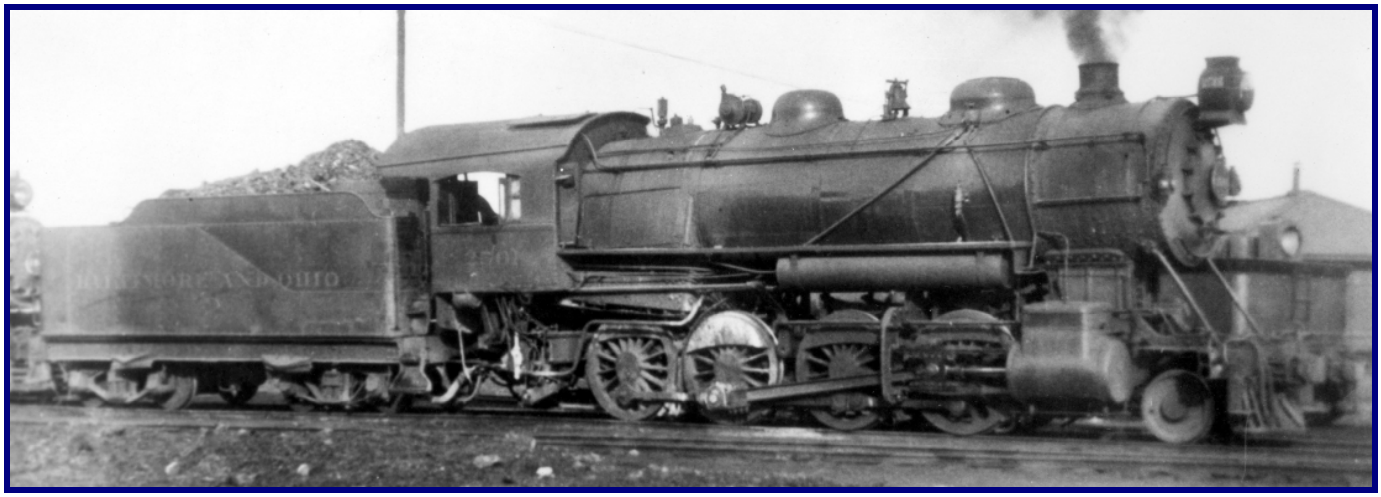
Sagle, Larry (Staufer, Alvin, Editor), *B&O Power*, Alvin F. Staufer Publishing, 1964.

PHOTO STUDY: CLASS L-2B 0-8-0

FROM THE B&O RAILROAD HISTORICAL SOCIETY ARCHIVES

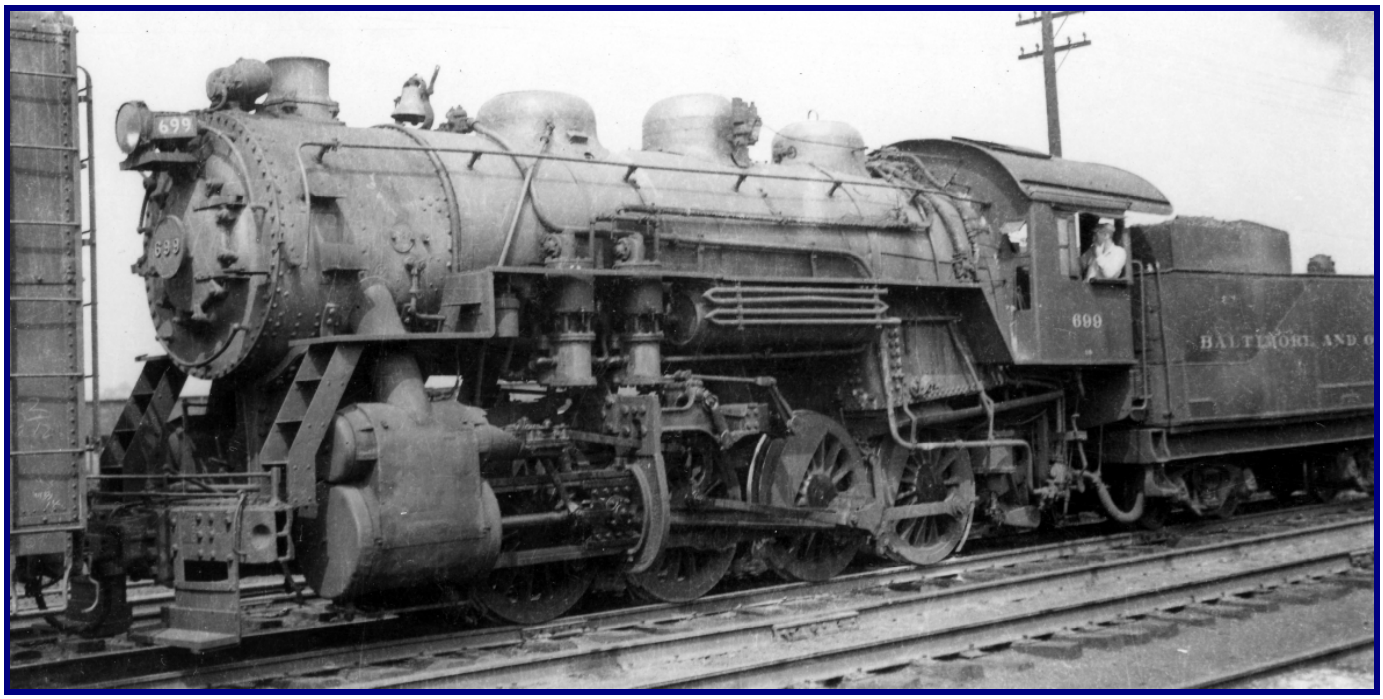
Historically, all Baltimore & Ohio 0-8-0 switchers were converted 2-8-0 Consolidations, with the first locomotives being rebuilt in 1873. To address a shortage of switchers during the early 1920s, the B&O converted 45 Class L-2, 3 Class L-2A, and 64 Class L-2B switchers from Class E-27 and E-27B Consolidations between 1924 and 1929. Three Class L-2B switchers and three additional Class E-27 Consolidations were converted to Class L-2C in 1930. Six L-2, six L-2A, eleven L-2B, and one L-2C survived until 1959.

B&O 2700, Class E-27, built by ALCo (Richmond) in 1905-06. Converted to B&O 710, Class L-2C at Mt. Clare, May, 1931. Renumbered to B&O 1623 in 1954, B&O 839 in 1956, retired in 1957.

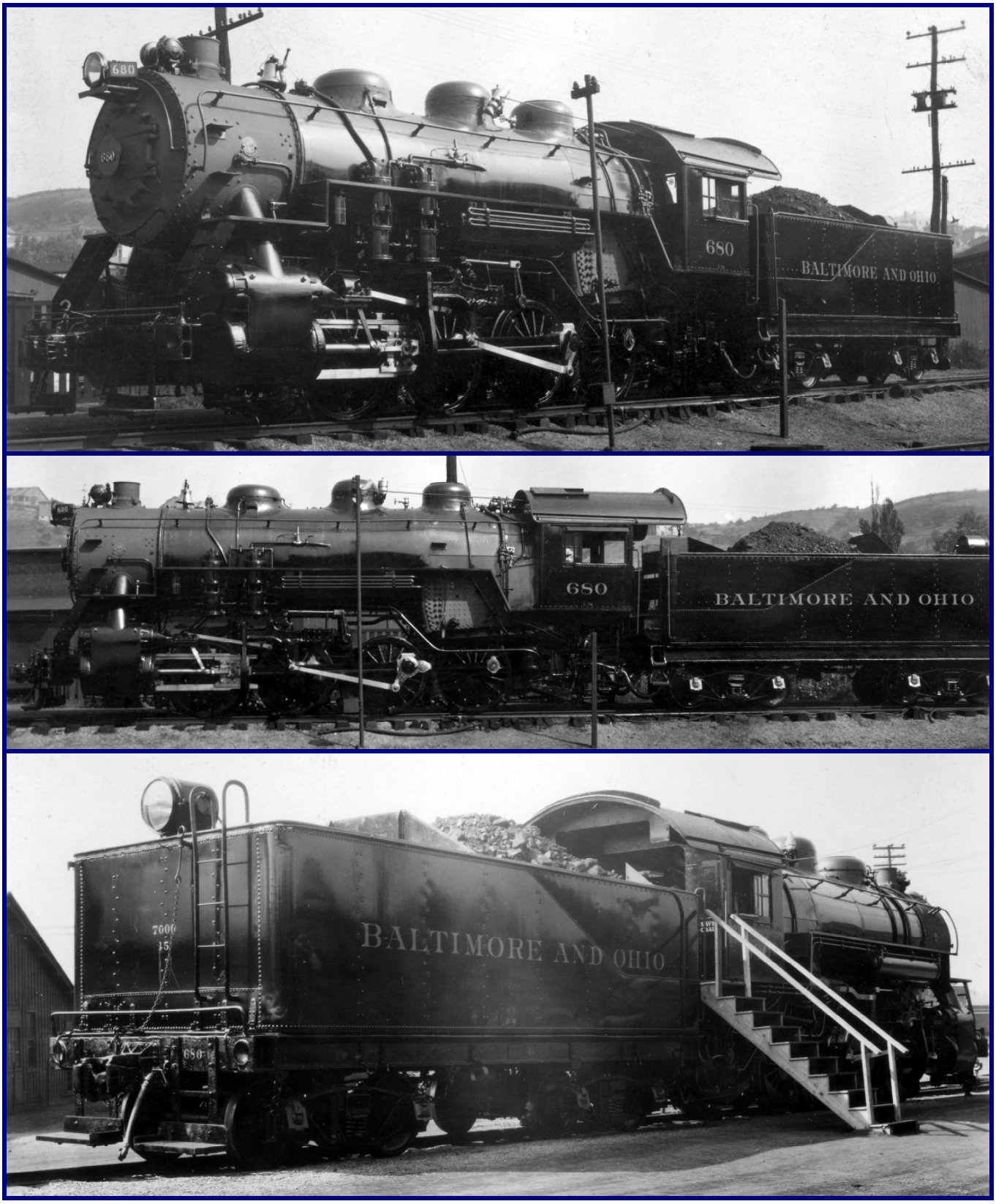


B&O 2501, Class E-27, built by ALCo (Schenectady) in 1905-06. Converted to B&O 605, Class L-2 in April 1925. Renumbered to B&O 1605 in 1954, retired in 1955. Baltimore MD, date unknown (Max Miller photo).

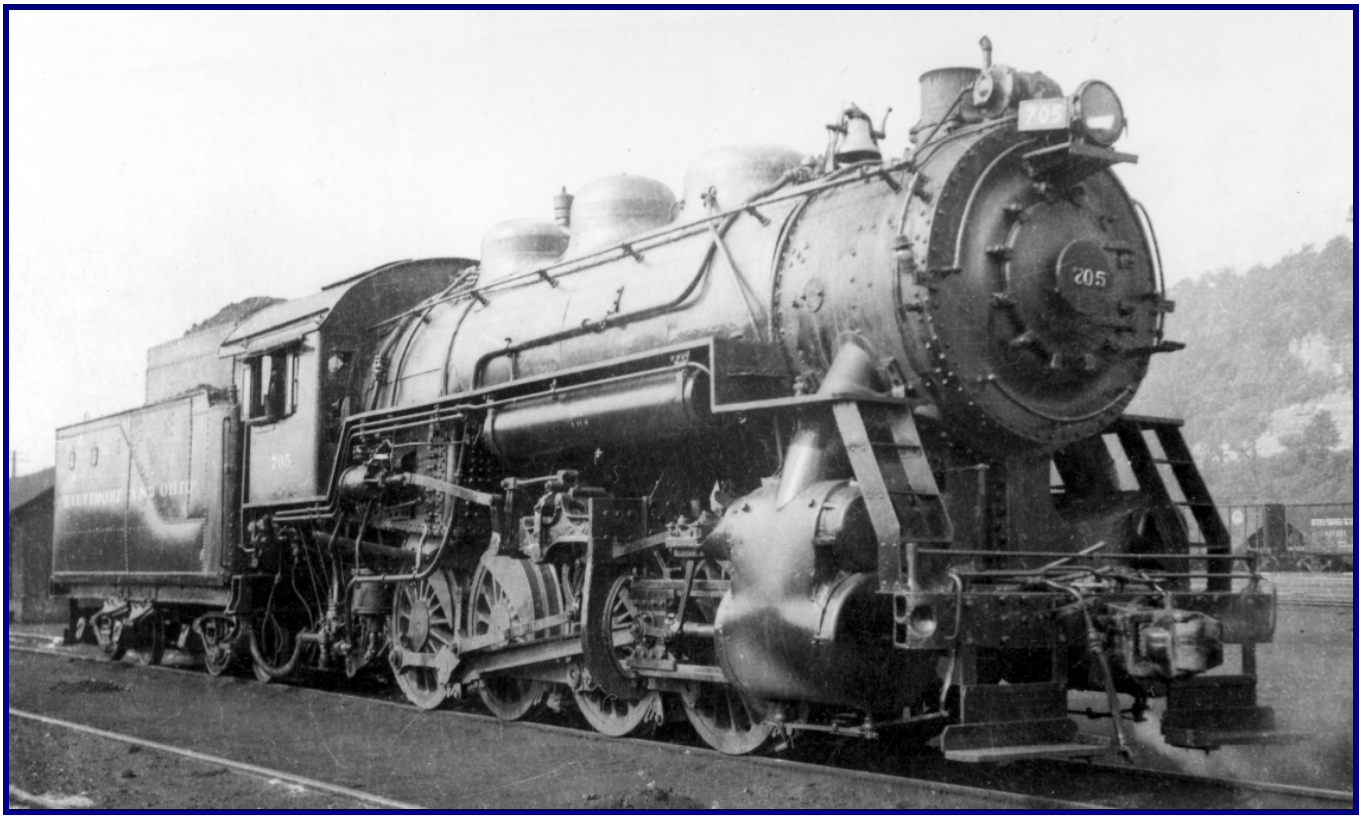
B&O 2583, Class E-27, built by ALCo (Schenectady) in 1905-06, scrapped July, 1948. Cumberland MD, September 7, 1947 (Fred M. Biggs photo).



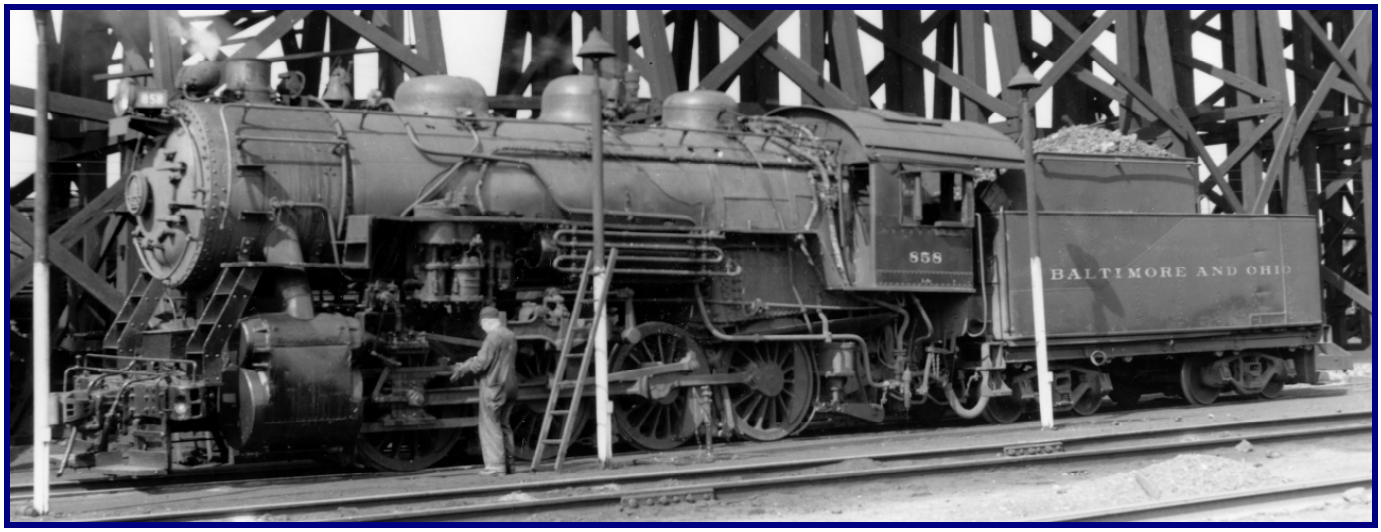
B&O 699, Class L-2B, converted from B&O 2599, Class E-27 at Cumberland June, 1929, scrapped December, 1952. Connellsville PA, August 24, 1948 (Max Miller photo).



B&O 680, Class L-2B, converted from B&O 2679, Class E-27 at Cumberland, September, 1928. Renumbered to B&O 1680 in 1954, B&O 884 in 1956, retired 1957. On public display, date and place unknown.

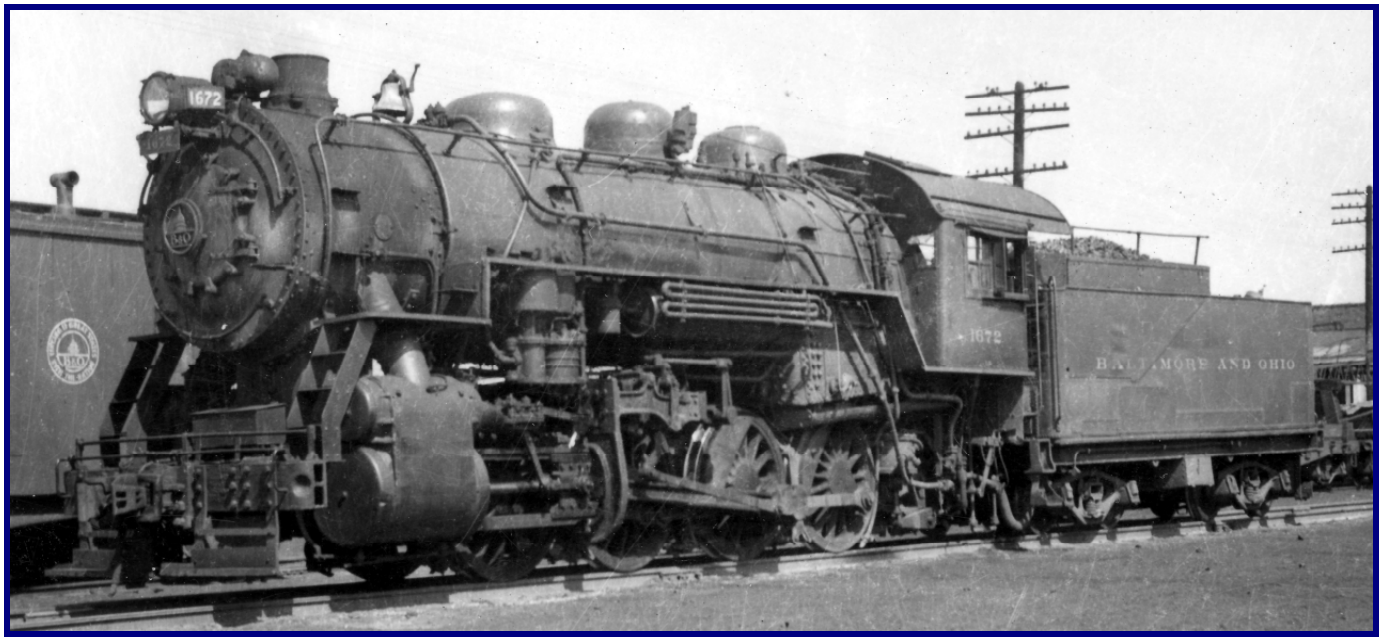


B&O 705, Class L-2B, converted from B&O 2538, Class E-27 at Cumberland, December, 1929. Renumbered to B&O 1606 in 1954, B&O 826 in 1956, retired 1957. Connellsville PA, August 5, 1948 (Max Miller photo).



B&O 858, Class L-2B, converted from B&O 2664, Class E-27 to B&O 647 at Ivory, March, 1926. Renumbered to B&O 1647 in 1954, B&O 858 in 1956, scrapped 1958. Willard OH, September 1, 1957 (Howard Ameling photo).

B&O 1648, Class L-2B, converted from B&O 2560, Class E-27 to B&O 648 at Washington, January, 1926. Renumbered to B&O 1648 in 1954, B&O 859 in 1956, scrapped in 1958. Toledo OH, July 7, 1956.



B&O 1672, Class L-2B, converted from B&O 2669, Class E-27 to B&O 672 at Mt. Clare, June, 1927. Renumbered to B&O 1672 in 1954, B&O 876 in 1956, scrapped 1958. Garrett IN, March 31, 1957 (Max Miller photo).

Acknowledgements
Al McEvoy, Nick Fry.

References

Edson, Willam D., *Steam Locomotives of the Baltimore & Ohio – An All-Time Roster*, Self-Published, Potomac MD, 1992.

Sagle, Larry (Staufer, Alvin, Editor), *B&O Power*, Alvin F. Staufer Publishing, 1964.

COCOA BEACH RAILROAD PROTOTYPE MODELERS MEET B&O (AND RELATED COMPANIES) MODEL PHOTOS

BY BEN HOM
PHOTOS BY DAVID HUSSEY

Since 2001, the Prototype Rails modelers meet has been held at the Cocoa Beach Hilton Oceanfront on the first weekend in January following the New Year's holiday. The next meet will be held on January 8-10, 2015; details will be posted at http://prototyperails.com/ as they become available. One of the great attractions of any prototype modelers meet is the model display, where attendees are welcome to display completed models and works in progress without the competitive pressure of a contest. The following photos by David Hussey are a sample of the B&O (and related companies) models at Cocoa Beach over the past few years. Enjoy!

B&O 6969, EMD GP30, HO scale model by Greg Davis, Cocoa Beach 2010.

B&O 272789, Class M-26D, Red Caboose HO scale model modified with Speedwitch Media Duryea cushion underframe by Bruce Smith, Cocoa Beach 2010. This model was done as part of a group build by the Virtual Modelers internet group. http://groups.yahoo.com/group/neo/virtualmodelers

BREX 75352, Accurail HO scale model by Bruce Smith with many added details including separate grab irons and ladders, revised truck position, detailed underbody and wood running board, including replaced board effect at the B end of the car, Cocoa Beach 2010. For an explanation of why photos of Fruit Growers Express, Burlington Refrigerator Express, Western Fruit Express, and National Car Company models are in *The B&O Modeler*, see "The Wood Sheathed Cars of the FGEX/WFEX/BREX Freight Refrigerator Fleet: 1940-1953", *The B&O Modeler/The Keystone Modeler/The Seaboard – Coast Line Modeler* Special Issue, February 2008 or "Why are Burlington and Great Northern Reefer Models in *The B&O Modeler*?" in the January/February 2011 issue.

NX 2043, Accurail HO scale model kitbashed by Bruce Smith into a 37 ft meat reefer, Cocoa Beach 2010.

NX 2427, Accurail HO scale model modified by Bruce Smith to represent a 1921 Fruit Growers Express reefer that has been transferred to National Car Company, Cocoa Beach 2010.

WFEX 63603, Sunshine Models HO scale model by Al Brown, Cocoa Beach 2010.

BREX 75792, Accurail HO scale model by Mont Switzer, Cocoa Beach 2011.

B&O 367100, Class M-50, Funaro & Camerlengo HO scale model by Steven Funaro II, Cocoa Beach 2011.

B&O 381452, Class M-53, WrightTrak HO scale model by Al Brown, Cocoa Beach 2011.

B&O 111036, Sunshine Models HO scale model by Al Brown, Cocoa Beach 2011.

EKSX 3709, Accurail HO scale model modified by Greg Martin, Cocoa Beach 2011. A popular clinic at Cocoa Beach is "Shake 'n Take", which details rolling stock kitbashes that can be done from a given kit. Kits are donated from manufacturers, and aftermarket conversion parts and decals are made available to participants. Details on these projects are available to subscribers at http://groups.yahoo.com/group/neo/shake_n_take. A construction article detailing this conversion was featured in the March/April 2007 issue of *The B&O Modeler*.

EKSX 3714, Accurail HO scale model and Shake ‘n Take project modified by Bruce Smith, Cocoa Beach 2011.

NX 3012, Accurail HO scale model by Greg Martin, Cocoa Beach 2011.

B&O 274945, Class M-26D, HO scale model by David Orr, Cocoa Beach 2012.

B&O 379027, Class M-15L, Funaro & Camerlengo HO scale model with Speedwitch Media decals by Craig Zeni, Cocoa Beach 2012.

B&O C2492, Class I-12, HO scale model by Eric Thur, Cocoa Beach 2012.

B&O 267019, Class M-26B, HO scale model by Bill Hanley, Cocoa Beach 2014.

B&O 274190, Class M-26D, HO scale model by Bill Hanley, Cocoa Beach 2014.

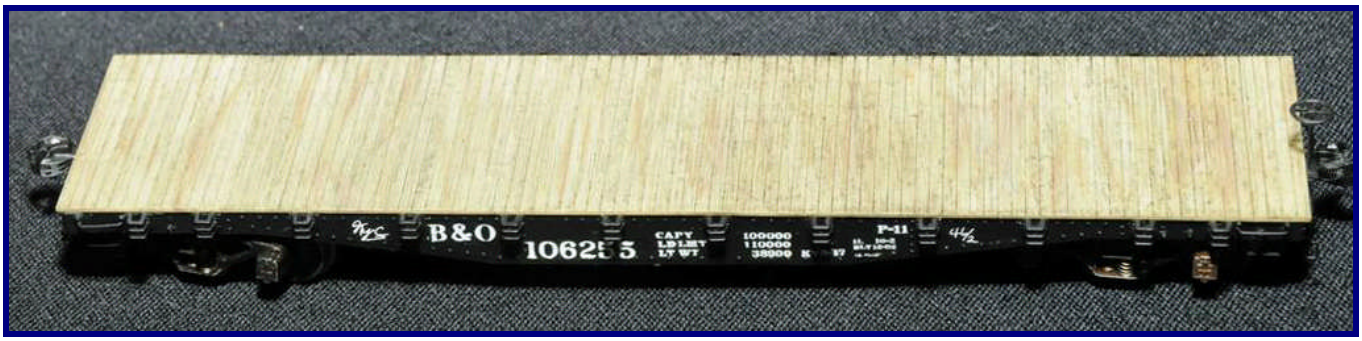
B&O 281029, Class M-27D, HO scale model by Bill Hanley, Cocoa Beach 2014.

B&O 298112, Class M-59, HO scale model by Bill Hanley, Cocoa Beach 2014.

B&O 367100, Class M-50, Funaro & Camerlengo HO scale model by Eric Thur, Cocoa Beach 2014.

B&O 385604, Class M-53A, HO scale model by Bill Hanley, Cocoa Beach 2014.

B&O 466146, Class M-55C, HO scale model by Bill Hanley, Cocoa Beach 2014.

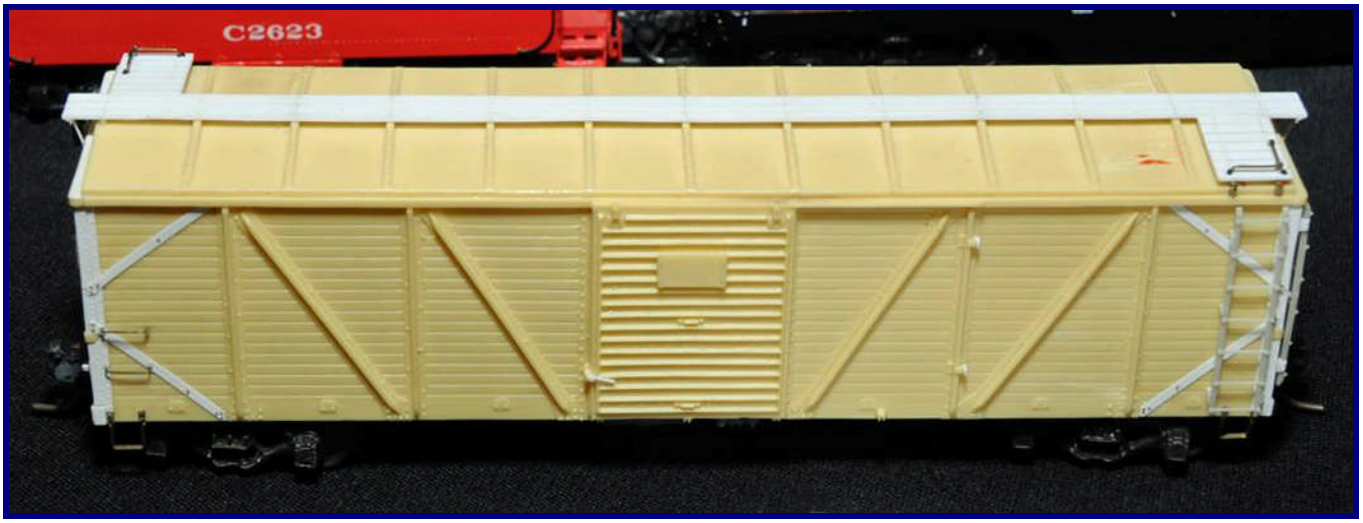


B&O 106255, Class P-11, HO scale model by Bill Hanley, Cocoa Beach 2014.

B&O 630431, Class N-34, HO scale model by Bill Hanley, Cocoa Beach 2014.

NX 2552, HO scale model by Fenton Wells, Cocoa Beach 2014.

Another view of NX 2043, Accurail HO scale model kitbashed by Bruce Smith into a 37 ft meat reefer, Cocoa Beach 2014 (David Hussey photo).



WAG (ex-B&M) XM-1 single sheathed boxcar, upgraded Yankee Clipper (Funaro & Camerlengo) HO scale model by Byron Rose, Cocoa Beach 2014.

Acknowledgments
Mike Brock, Al Brown, Mike Schleigh, Bruce Smith, Craig Zeni.

COMING NEXT ISSUE

BACHMANN CLASS EM-1 2-8-8-4 REVIEW • CLASS D-14AB COFFEE-SHOPPE – LOUNGE – DORMITORY – BAGGAGE CAR • PHIL BONZON'S STEAM LOCOMOTIVE KITBASHES • B&O MODEL PHOTOS FROM RPM EAST PROTOTYPE MODELERS' MEETS

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