

THE B&O MODELER



Number 41



Improving Alco Models Diesel Switchers N-12 Hopper – Part Two One Man's Roster – 50-Ton Hoppers 50-Ton Hopper Model Comparison

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Editor—John Teichmoeller rmighpr@comcast.net

Managing Editor—Scott Seders sseders@comcast.net

Supervising Editor and Baker—Kathy Farnsworth dollhouse@gmail.com

Model Products News Editor—Clark Cone cconss@carolina.rr.com

Index Editor—Jim Ford jimford40@sbcglobal.net

Modeling Committee Chairman—Bruce Elliott agelliott88@yahoo.com

Publications Committee Chairman---Harry Meem mhmeem@aol.com

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Cover Photo – Funaro & Camerlengo N-12a Hopper, Bob Chapman 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 annual memberships are only \$45.00. If you would like to join, click [here](#) to fill out our [membership application](#), print a copy and mail it to:

B&ORRHS

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FROM THE EDITOR

Thank You!

After we finished issue No. 40, I began a project that had been on my list for a while, namely printing out all the previous issues of *Modeler*. I have the electronic versions on my computer and in the past had only printed out selected articles of specific interest to me. But now I decided, with Jim Ford's Index at hand, that having hard copies would be convenient, notwithstanding the cost of paper and printer ink. Anyway, in the course of doing this and re-reading the previous issues, it occurred to me that in my editorial comments of the last issue I had neglected to thank the past editors, Bruce Griffin and Ben Hom and all the contributors for paving the way. Oh, and let's not forget Al Buchan of the PRRT&HS who shared his template for *The Keystone Modeler*. So, thank you, all!

Back in the day

In the late 1940s-early 1950s when at least some of us were starting to play with Lionel and American Flyer, the Megow Company was producing HO craftsman kits. One of these was a pretty nicely done N-12 hopper. Body parts were wood including strips of bamboo intended to be glued to the nicely printed cardboard sides as side stakes. It's interesting that Megow chose (correctly) to produce the iconic N-12g rather than the N-17 USRA car. As to the little initials "IC&N" on the car, this refers to a branch off the Old Main Line that eventually went to the Monongahela Railway. Several freight car experts have no definite explanation for the meaning of these initials but speculate that the owners of the IC&N may have provided part of the financing for a batch of the N-12g's and the lettering may represent some sort of security interest. But no more speculation. See photo on the following page.

Alco Models Brass Diesels

On the surface, Ed Kirstatter's piece in this issue on detailing Alco Models brass Alco switchers might seem highly specialized and of limited applicability to our readership. However, I'd bet most of us have one or more versions of the Atlas or Bachman Alco switchers, and there are many upgrade tips within Ed's article.

Malvern Prototype Modelers Meet

There were at least six presentations of B&O content at the Prototype Modelers Meet at Malvern, PA in March. There were also numerous B&O models on display. The folks from Funaro & Camerlengo were there too as vendors and presenters and they have in their line what I am guessing are more B&O cars than any other manufacturer. Due to lighting and crowded tables, Allen Young had a real challenge trying to photograph the models but we will show photos of at least some in a future issue.

I did receive a couple questions/comments about *The Modeler*. One reader asked why we had a page constraint in *The Modeler* and also *The Sentinel*. Well, of course the answer is that there is NO page constraint in *The Modeler* other than the amount of time Scott Seders and I chose to put into it and the amount of material available. As for *The Sentinel*, paper and ink cost money and the Officers and Directors determine the budget. Another reader expressed a "wish" that we would have a piece similar to the definitive article on open hoppers by Ben Hom in the May/June 2006 issue of *Modeler*, with graphical time lines, tabulations of available models, etc., for boxcars, flats, gondolas, covered hoppers, etc. Yes, I'd like to see that too. These prototype modelers' meets are quite interesting and sometimes strange. I really can't explain what went on in Room No. 5.



John Teichmoeller
Editor



Megow B&O N-12g Hopper Kit

FROM THE COMPANY STORE

Past Issues of *The B&O Modeler*:

Issues in Vol. 1-2 (2005-2006, 9 issues), Vol. 3 (2007, 6 issues), Vol. 4 (2008, 6 issues), Vol. 5 (2009, 6 issues), Vol. 6 (2010, 6 issues), Vol. 7 (2011, 4 issues) are available on CDs from the B&ORRHS Company Store. Each CD is \$10.

Vol. 8 (2014, the most recent 2 issues) is not available on CD yet but may be restored for free download for a limited time.

To find these you will need to scroll down to the bottom of the Company Store subject list and click on "Videos and Other Digital Media") <http://borhs.org/Shopping/index.html>

A link to the free comprehensive index of *The Modeler* prepared by Jim Ford is also found in the CD order section. (Note, this is a *true* index, not just a contents listing. You might be amazed at what has been covered over the last 11 years!) http://borhs.org/ModelerMag/BO_Index_Website.pdf

UPCOMING EVENTS

B&O Historical Society Western Mini-Con Saturday, May 14th, 2016;
Lexington Senior Civic Center, 67 E. Main St., Lexington, OH 44904
POC: ohiominicon@borhs.org
<http://borhs.org/Events/Flyers/2016WestMiniConLexington.pdf>

New England/Northeast Prototype Modelers Meet, June 3-4, 2016;
Formerly held in Collinsville, CT, this year will be at a new location, Holiday Inn, Enfield, CT,
combining a place to stay with expanded space for the meet venue. For more information, contact David
Owens, at neprotomeet@gmail.com.

Great Scale Model Train Show Timonium, MD, July 9-10, 2016

B&O Historical Society Eastern Mini-Con Saturday, July 30, 2016;
Lutherville Volunteer Fire Company, 1609 Bellona Avenue, Lutherville, MD
POC: eastminicon@borhs.org
<http://borhs.org/Events/Flyers/2016EastMiniConLutherville.pdf>

B&O Historical Society National Convention September 15-18, 2016, Buffalo, NY
<http://borhs.org/Events/Flyers/2016AnnualBuffalo.pdf>

Mid-Atlantic Railroad Prototype Modelers Meet, September 30-October 1, 2016,
Wingate by Wyndam, Fredericksburg, VA
POC: Norman Wolf, 1600 Pantigo Lane, Apt. 202, Chesapeake, VA 23320 www.marpm.org

Railroad Prototype Modelers Seminar-East, Friday March 24, 2017 and Saturday March 25, 2017
Ramada Hotel, Greensburg, PA
For program and registration form go to www.hansmanns.org/rpm_east

(This is the “western” PA counterpart—odd numbered years—to the Malvern/Valley Forge meet, name notwithstanding)

UPDATES AND ERRATA

Readers are welcome to submit questions about content or information about additions or errors with appropriate documentation.

NEW PRODUCTS

BY CLARK CONE

[SOME LAST MINUTE ITEMS AND EDITORIAL COMMENTS ADDED BY JT]

The following product offering information is taken from published releases and ads without physical inspection of the products unless otherwise noted. Abbreviated editorial commentary is offered where it seems appropriate. However, detailed and comprehensive product reviews are welcome from readers.
Models

Walthers New Products – HO-Scale

40' AAR 1948 Boxcar: Ready to Run (RTR) B&O #466032 (Sentinel Scheme, silver, blue), \$24.98, available 28 Mar 2016, limited run, advanced reservation, item # 910-1763

40' AAR 1948 Boxcar: RTR, B&O #466074 (Sentinel Scheme, silver, blue), \$24.98, available 28 Mar 2016, limited run, advanced reservation, item # 910-1764



40' AAR 1944 Boxcar: RTR, B&O #467109 (LCL Scheme, blue, orange). Features include 4/4 Improved Dreadnaught ends and 6-foot Youngstown sliding doors. \$24.98, available 28 Jun 2016, limited run, advanced reservation, item # 910-1687.

40' AAR 1944 Boxcar: RTR, B&O #467434 (LCL Scheme, blue, orange), \$24.98, available 28 Jun 2016, limited run, advanced reservation, item # 910-1688.

Boxcar Note: As noted in Issue No. 40, the tooling on these cars as described in their advertising and which are decorated for classes M-55c and M55h respectively, may be at variance with prototype details. A prototype photo of the “1948” LCL car appears on page 69 of the *Morning Sun Color Guide*. Having said that, many modelers will be satisfied with these nicely decorated cars since the only correct shell is believed to have been done as the Sunshine resin kit, no longer being produced. The “1948” body style cars were reviewed in the February 2016 *Model Railroad News* but none of the samples reviewed was B&O. JT

EMD GP9M: Standard DC - Chessie System/B&O #5978 (yellow, orange, blue), \$64.98, item #931-452.

32' Trailer 2-pack: Assembled (silver, blue, Tofcee Service Markings), \$21.98, item # 949-2369.

40' Trailer 2-pack: Assembled (silver, blue, white, Trailer Service Markings), \$ 24.98, item # 949-2315. A note on WalthersProto "Capitol Limited" B&O Observation cars.



Following the arrival of the 85' Pullman-Standard 5-Bedroom Buffet-Lounge-Observation cars to complete the "Capitol Limited," a production error was discovered. Both Standard (920-9409), and Deluxe Edition cars (920-9419) should have stainless nameplates with dark blue lettering; the models were delivered with a blue nameplate and yellow decals/lettering.

Replacement decals will be available at no charge through Walthers Customer Service. These will feature a metallic silver background and correct names in blue for both Nappanee and Wawasee, as assigned to the train. If you already purchased either version of the Observation, please contact Walthers at 1-800-487-2467 for your free replacement decals. All remaining inventory (standard cars only) is available for backorder, but will be shipped after being repacked with the decals. This Facebook video of a Walthers B&O Capitol Limited may be interesting to some on this list. Another video shows the HO set in operation and describes the cars. Go to <http://www.walthers.com/exec/page/videos>. This is an ongoing video series on the Walthers website, so by the time you read this, this particular video will not be on the main screen. However you should be able to just scroll down a little and select the box indicating "Episode 43 dated January 25, 2016."



New HO scale Mainline series model of an International bay-window caboose is scheduled for release in late April or early May. Road names for the ready-to-run model will be Chessie System-B&O. The caboose is patterned after a popular prototype used by railroads across the country. It features a detailed body, road name-appropriate bay window style, plus metal wheelsets and knuckle couplers for flawless performance. These superbly painted and lettered models come fully assembled with all handrails and details installed. Walthers Part # 910-8651, \$34.98, (limited run, advance reservation)



N scale Trailer-Train Flat #255795 Chessie System - B&O (yellow, silver, black) Walthers Part # 489-11100180 \$44.95, currently in stock at Walthers.

RR-37080

RE-RELEASE w/ NEW ROAD NUMBERS

BALTIMORE & OHIO
B & O
272552

Baltimore & Ohio M-26D (6 numbers)

- 13 States

Date: COL 8-47

-13 272511	-15 272573	-17 272650
-14 272548	-16 272626	-18 272685

Car Numbers:

In the fall of 2016, InterMountain will release new HO scale boxcars produced from Red Caboose PRR X29 tooling in the B&O 13 states, class M-26d livery. <http://www.intermountain-railway.com/distrib/redcaboose/html/RR-37080.htm>



Digital Fox is releasing an HO scale kit of a Chessie/B&O PS 4750 cu. ft. triple-bay covered hopper in six numbers. This is the Accurail tooling. The kit includes appropriate trucks with Delrin wheelsets and Accumate couplers. For additional information including ordering instructions visit, <http://www.digitalfox.com>.



Alco FA-2 B&O: (1956) Made to order - reserve yours today! Deadline in a May *Railroad Model Craftsman* ad was given as May 24th. The ad claims B&O version has louvers on the front.

Rapido Trains, Inc

USA PO Box 796

Higganum, CT 06441

855-572-6917

<http://rapidotrains.com/ho-alco-mlw-fa2/>

Micro-Trains Line has released a Z scale offering of a group of heavyweight passenger equipment decorated for Baltimore & Ohio. A sleeper, coach, baggage car, and a dome car are all available now. For additional information about Micro-Trains Line contact a dealer or visit <http://www.micro-trainsline.com/>.

DesPlaines Hobbies has just released the [B&O I-10 Caboose kit in S-scale](#). This is a wood kit with a brass underframe (Mullett River).

Bluford Shops has announced an N-scale 50 ton USRA hopper, lettered for Buffalo & Susquehanna: http://www.bluford-shops.com/bluford_93-037.htm [JT]

Bowser: HO scale BR&P 50-ton hoppers, painted red with BR&P black and white logo using PRR GLa shell. These cars, lettered for a build date of 11/1906, are a close stand-in for what became the B&O's N-23 class. Two BR&P road numbers are offered, 14451 and 14454 <http://www.bowser-trains.com/history/gla.html> These cars came over to the B&O in 1932 and don't seem to have lasted too long. For more about these cars, see the 3rd Qtr. 2016 *Sentinel* [JT]

Atlas Model Railroad Co has announced an HO Alco S2 diesel switcher in B&O. They are offering three road numbers in late era B&O scheme (wide yellow stripe) and one in Staten Island, 3091. DCC and sound options. Available late 2016 [JT]



Bachman's HO USRA Light 2-8-2. Available with or without sound and DCC. This would be B&O's class Q-3 which has been out for some months. www.bachmantrains.com. Bachman has produced a B&O lettered version; while I know enough about B&O steam to be dangerous, this model seems to have features of the locomotives as initially built and which were soon altered by the railroad. A nice non-B&O review appeared in the February, 2016 *Model Railroad News*. Based on the review's description of the model, it sounds like it would make a nice starting point for some extensive B&Oization. Does this project have Fred Lass's name on it? [JT]

Books:

Buffalo Rochester and Pittsburgh, Volume 5, The B&O Era by Mike Zolitsch, Morning Sun Books, 128 pages www.morningsun.com [JT]

The Met: The History of the Metropolitan Branch of the B&O Railroad, Its Stations and Towns by Susan Soderberg, 72 pages with 43 illustrations. Based on the description in an e-mail received from Susan, this appears to be an "updated" version of the original book issued in May of 1998. There is no mention of any upgrading of the quality of the images which are claimed to include every original station on the line except Tuscarora. Published by the Germantown, MD Historical Society, this little volume belongs on the bookshelf of every fan of the B&O in the Baltimore-Washington area. Contact author at soderberg@md.net [JT]

IMPROVING ALCO MODELS DIESEL SWITCHERS

HOW TO APPLY STEAM DETAILING LESSONS TO BRASS DIESEL MODELS

BY EDWIN C. KIRSTATTER



Detailed and painted Alco Models S-2 No. 533 on author's layout.

Introduction

The B&O started to dieselize their yard switchers early. The first one was No.1 class DE a 300 HP boxcab used on Manhattan Island at the 26th Street yard in 1925. The next diesel switcher did not arrive until 1936 when one 600 HP EMC switcher came that was numbered 2 and placed on the B&OCT Co. line in Chicago. It was followed in 1940 by more EMD 600 HP and 1000 HP switchers. Starting in 1943 American Locomotive Co. was delivering 660 HP model S-1 and 1000 HP S-2 models yard switchers. At the same time Baldwin-Westinghouse was building for the B&O 1000 HP V-O models. After the war was over EMD delivered more 1000 HP NW-2 model switchers for the B&O. More diesels came from Alco, Baldwin, Fairbanks-Morse and Lima-Hamilton. The accompanying table on page 29 summarizes B&O's diesel switcher efforts.

Non-brass Alco Switcher Offerings

Years ago, the Atlas Model Co. made models of the Alco S-2 and S-4 switchers in HO scale using a plastic molding over a heavy metal drive. These were modeled after the early riveted type hoods and cabs. The details are very sharp and accurate, but all grab irons were cast in place, not separately applied parts that we expect nowadays. The B&O S-2 model that I have seen is painted in the post war scheme numbered 524. The handrails at sides and ends are molded in plastic but seem durable. These are good runners and can pull very well. They come with the proper truck side frames and number boards and headlights that are illuminated. An S-1 model has also been made by Life-Like in the Proto 2000 series. This is a plastic model with many separately applied parts. The B&O model is numbered 255 and classed DS-9a. Along the way, AHM even offered an S-2 with some dimensional problems. Bachman offers a

DCC/sound equipped S-2 that has been well reviewed but it has no wire grab detail. In early 2016 Atlas has announced a run of their “state of the art” S-2 lettered for the final era B&O as well as Staten Island. This version will offer sound and DCC.

The presence of a variety of Alco switchers with styrene superstructures notwithstanding, the focus of this model detailing lesson will be on brass models imported from Japan by Alco Models of the American Locomotive Companies models S-1, S-2 and S-4 of which the B&O had some of each. I have one of each to work on here. So, you don't have one of these golden oldies? Read on and you can probably pick up some light or heavy detail enhancement projects for your styrene units. Oh, and just to let you know, when this article was written I had not

finished upgrades on all three of my Alco Models brass units.

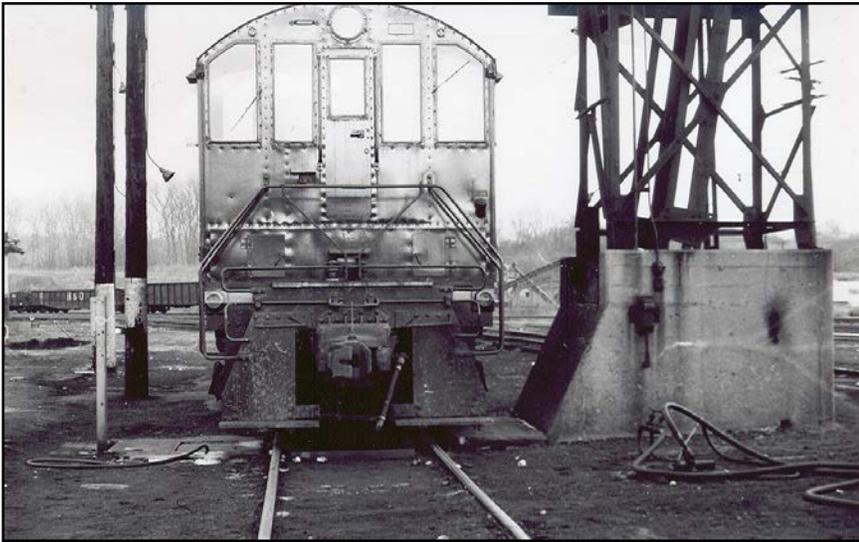
Prototype Photos

As they always say, ideally you should detail models from prototypes. The reference list at the end has a number of sources of prototype photos of these switchers, but in the following pages is a small album I have compiled. In addition to the B&O's diagrams of their diesels, there are two published scale drawings of Alco S-2s that I know of: *Model Railroader's Cyclopedia Vol. 2, Diesel and Loco 1, the Diesel*, published by *Railroad Model Craftsman*. We aren't going to the trouble to attempt to obtain permission to reproduce these because we won't be talking about structural/dimensional changes. Moreover, the drawings don't even show all the details we will discuss.

#539, Class DS-5ac, Alco-GE 1953
#80959 Model S-4 1000H.P. at
Cumberland, Md. March 29, 1954.
Credit Paul W. Prescott. This had
MU attachments, notice no rivets on
body of a late production engine.
The small 'c' was placed after class
designation that appeared on sides of
cabs to show these were capable of
being coupled as multiple units.



#9072, Class SA-3, Ex #528 Class
DS-5a, Built Alco-GE 1943 Model
S-2 1000H.P. Left side at Akron,
Ohio, 1960 by Edwin C. Kirstatter.
These shots were taken specifically
to aid in detailing models. But, alas,
I should have taken some up close
shots of details, too late now.



#9072 Class SA-3 etc. same as above cab end, beside the ash hoist.

#9072 Class SA-3 etc. same as above $\frac{3}{4}$ right side view. This engine has classification lamps so this one could have been used on some of the Turns out of Akron. Being out on the mainline and no longer in yard service it would be required to display these lamps, as it would be an extra train then. It is on the inspection pit at Akron Junction engine facility at this moment.



#9072 Class SA-3 etc. same as above front. On the inspection pit. Akron Junction engine house is visible at right and new ash hoist at left.

#9072 Class SA-3 etc. same as above, right side. On the inspection pit.



#533 Class DS-5a, built Alco-GE 1943, Model S-2 1000 H.P., at DeForest Junction, Ohio undated. Credit Paul B. Dunn. Smoke is coming from EM-1 steamer behind.

#252 Class DS-9a, built Alco-GE 1944 Model S-1 660 H.P. at unknown location and time. This is an early paint scheme--note no stripes. Credit La Mar M. Kelly. Location unknown but you might be able to find the company in a Form 6 (photo had Mr. Kelly's Elkhart, IN address on the back which is not on the B&O). There is a good chance this photo was taken on the eastern parts of the B&O as these locos were first used there before more engines were acquired and the Western regions finally got them before final dieselization happened in 1958.





B&O 9096 at Mad River & NKP Museum, Bellevue, Ohio, Aug. 2009, by Edwin C. Kirstatter. Taken with Panasonic-Lumix digital camera. Central Soya Corp. an elevator company of Bellevue, Ohio formerly owned this engine. They donated it to Mad River and NKP Railroad Museum in July of 1997. It had been B&O #9096 Class SA-3 built in 1956 by Alco Products and it never had a previous number in the November 1, 1956 renumbering and reclassification. This is one of the late production engines that had all welded construction. This also shows the type of exhaust stack used on the late production models. Preserved here but not in its original paint and lettering scheme. They have three other B&O items at this museum. Things are a bit confined here at this museum it is hard to get full length shots here but you could take lots of detail shots.

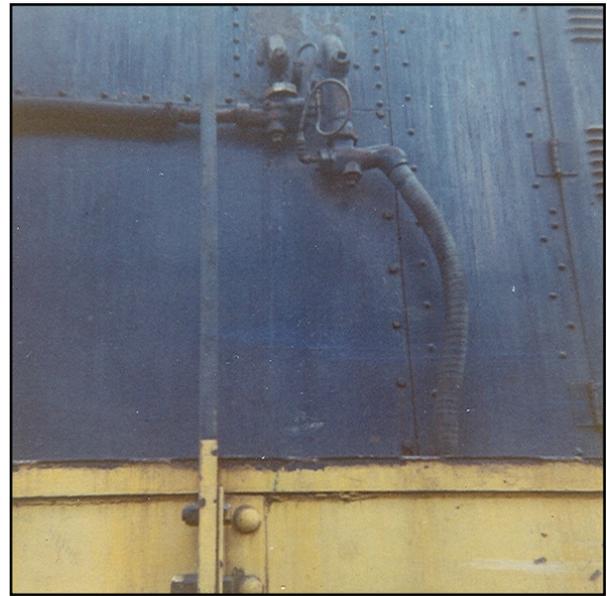
B&O 9096 etc. Same as above by ECK. This shows the vertical orientation of the sealed beam headlamps on this late production model. And notice also that the end rail supports are different from early models. That untypical 'Y' shape is no longer here.



B&O 9096 etc. Same as above by ECK. Our models do not have this massive look to them of the coupler mounting but it probably could be achieved by beefing up the plastic Kadee coupler pocket with some styrene. This has a different shape to the cut levers, and those short grab irons that are below it are details missing from our models.



Detail view of stack; notice angle irons at base.

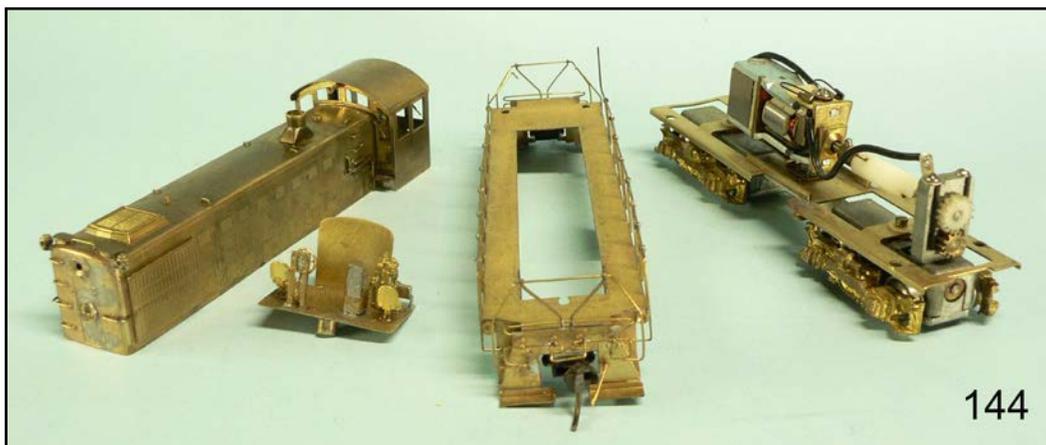


Detail view of sanding valve.

These models were pretty good in their day. The hoods, cabs and battery boxes were photo-etched brass with good door and rivet detail. There are coined jacking pads, radiator grills, fan covers and truck side frames. A few turned parts include headlight bezels, horn, poling pockets, sand filler hatch at back of hood on top and fuel filler at back of cab. The running boards have a diamond pattern tread. The two sand hatches at top front of hood may be brass castings

The drive train consists of an open frame motor connected to a tower of spur gears on front end of front truck. The back truck is driven from front truck's worm shaft. There is a ball & socket universal coupling between these. Gearboxes are zamac moldings made by KMT of Japan. (144). Many of these manufacturer's plastic gears

have been found to crack and break off the driver axles. Northwest Short Line has made a repair kit for these. In the kit are new polished worms (4), new worm gears (4) of metal and bronze thrust washers. The part number was 100-04. This set will give you improved operation and lower speed by 15%. Some modelers may want to further improve operation by replacing the open frame motor with a flat can motor to fit inside that narrow hood and find room for a small DCC decoder in there. The decoder could control lights. Only light bulbs were furnished with these models, with no directional control. The commercial magazines have run several articles in the last couple years on installing DCC and sound in these older brass locomotives, and this activity is beyond the scope of this present article.



Detailing

Detailing a brass diesel model is much like what I have done in the past on my B-18ca, E-60 and T-3 brass steam locos and have written about in past *Sentinel* magazines. But I think a diesel is easier because it is not as complicated as a steamer. As I did with the steamers, I compare the diesel models to good sharp black and white photos and drawings of prototype to find many little details left off or placed incorrectly.

All three of these models, the S-1, S-2 and S-4, had similar or same defects, so I will discuss them here as if it were only one model unless there is a big difference. Most of the model photos are of the S-2, but there are a few of the S-4.

The very first thing I found wrong with the S-1 and S-2 models was that the nice coined truck side frames were all the same. When looking at photos and drawings you will see that on the front truck the brake cylinder moves to the front and the rear truck cylinder moves to the rear. (132, 133) I corrected this by replacing truck side frames with lost wax castings made by Kemtron, now still made by Precision Scale Co. as #390025 trucks with wheels. It is simply a matter of unsoldering one and soldering on the replacements.

The next thing I found only on the S-2 model was that the location of the bell was wrong. It was on left side of frame in front of battery box. I moved it to other side and filled in other hole with solder. (137, 145)



The stack on the S-2 model was not correct or at least not the type I had seen on all B&O engines. There is no part like that available at this time that I know about for these models. I scratch built one using a turned brass steam loco stack from Mantua and fabricated the base from brass bar stock. This was made to fasten with a screw from below. (132, 137, 141, 142) Other brass

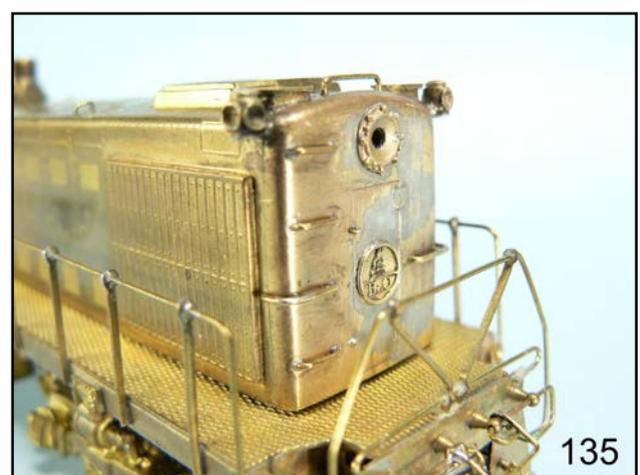
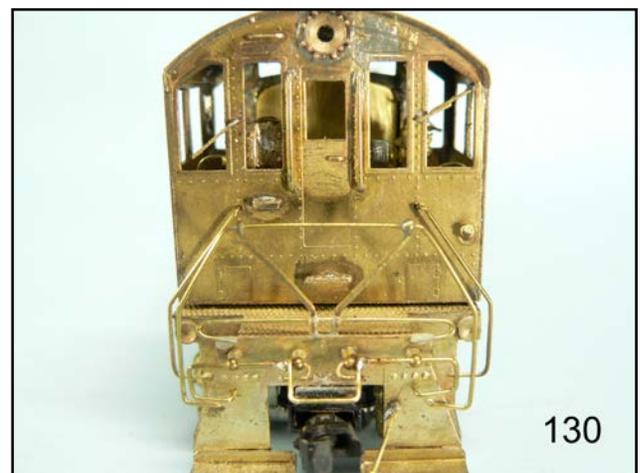
parts might be adapted. A piece of brass tubing might be a starting point now.



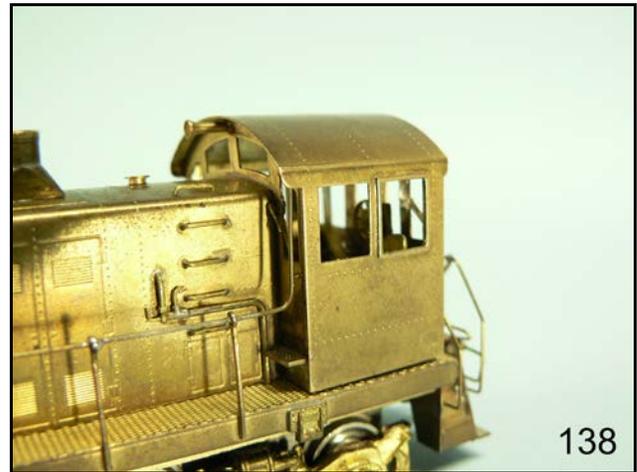
I found a grab iron missing from top of hood at front between sand filler hatches, also another missing from top of hood over ladder on left side near cab. (130, 135) These were formed from .020" brass wire to match existing grab irons on model. Holes were drilled and new parts soldered in place. While we are talking about grab irons, there is a small one missing at back of cab up there to left of the headlight. (129) This is not very big but still a missing detail that you can see in photos and drawings.

Some more grab irons that need to be worked on are at front of hood. (135) The second grab iron up that ladder is supposed to also curve around to side of hood. It did not on these models. [Ever wonder why that middle grab curves around? Try dismounting from the running board of an Alco S- or RS- and you'll see you need

something to grab onto as you turn to go down the steps. JT] I replaced that one and made it look like the photos show. A like type of grab iron is missing from other side of this hood's front at same level. It also curves around to the side as well. It is hard to see these on a drawing as they are behind other railings. Look for these in photos and in books to see what I mean. At least these curved grabs are cast-on in the styrene switchers.

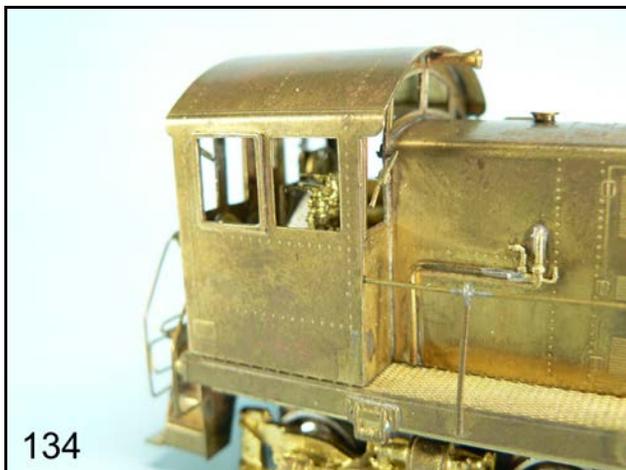
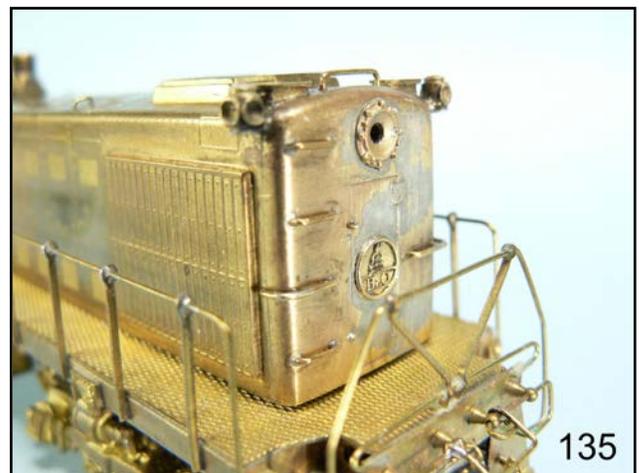


While we are looking at front of hood I can see hinges and latches missing from door here. They didn't photoengrave this part, it looks like a stamping. Some bits of .011" wire was used for the latches and .002" shim brass was used to make hinges that makes this area look better (135). Holes were drilled for the latches and loops of wire were pressed through twisted together inside then soldered there. The simulated hinges were tinned and the surface where they go then sweat soldered in places as shown on the drawing. I did not try to make hinge pins in this small scale.



The sander pipes of the S-2 model on both sides of hood back there near the cab did not have sand traps in them. I was working on some steam locos at that time and had some leftover parts for these. (132, 134, 138) They give this a more complete look. Bowser sander valves #90111 should work for these.

I added classification lamps to upper front corners of the hood. (135, 136) When a switcher was used in road service it needed these. All locomotives have brackets to mount these and electrical sockets to plug into at all four corners. I used a Kemtron drum type of lamp for these. The PSC number now is 31336.



I found a small step missing at front of cab on left below the door. This I made from some PSC etched brass diamond tread # 48260. This does not show on the two published drawings.

In photos I see oblong openings in the frame just below the end platforms at all four corners, and you can see these on the published drawings, too. These were missing so I drilled them out and finished with a small round file. (133) Use a Dremel tool and a small dental burr if you have a steady hand. You may need something behind these to block the light from showing through now. But maybe not, as I honestly never checked that on a real one.



There are no lift rings on the top of these hoods. They are 'U' shaped so you can't use those lift rings you can buy already bent. Make these from .016" brass wire. (135, 139, 142) Drill holes and solder them into the places where you found them in photographs. These are also not on the drawing.



On my S-4 model I replaced the horn that is at front of cab under roof overhang with a two-trumpet type mounted on roof at front center. Use a Cal-Scale No. 400, a 3-chime type, and cut off the rearward-pointing trumpet. (146, 147)

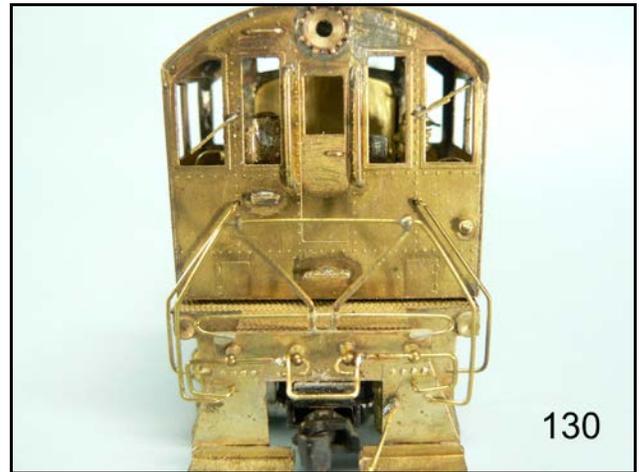




On the S-1 and S-2 models they stopped that left handrail along the walkway at front of cab. Pictures show this rail curves up and goes to roof overhang. I added these but went back a few stanchions to get a stronger joint. (138) The S-4 model was OK here.

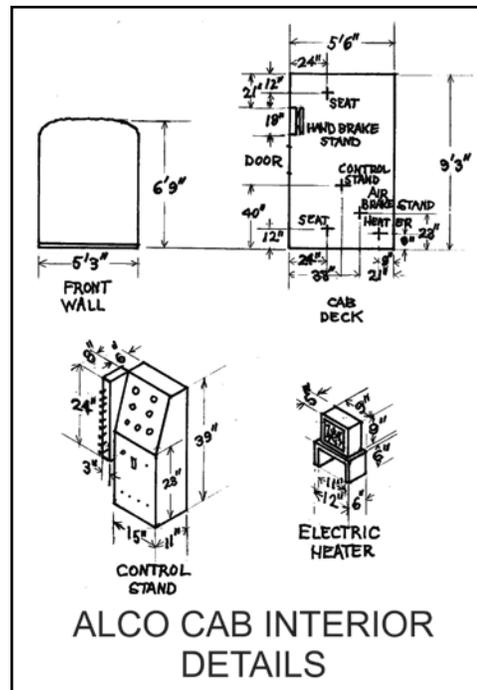


Last but not least you need handles on those doors so that your little HO men can get into cab to run your engines for you. (129, 130) Use .012" brass wire for these. These are at the cab back and front door at the left front of cab.



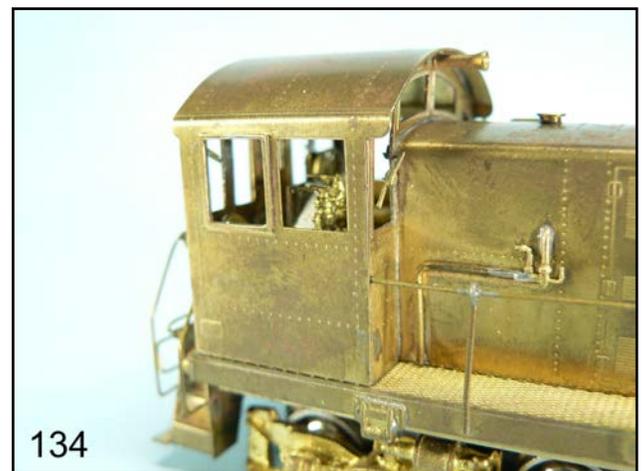
When I did detailing on these years ago I was satisfied with the oversize .020" handrails and grab irons. If I were to do these over now I would use .016" or smaller wire for these and make those ladder steps up the nose with drop type grabs as I now see in the photos. And the ladder up left side of hood should also be made with drop type grab irons. A real grab iron measures about 3/4" so that would convert to around .010".

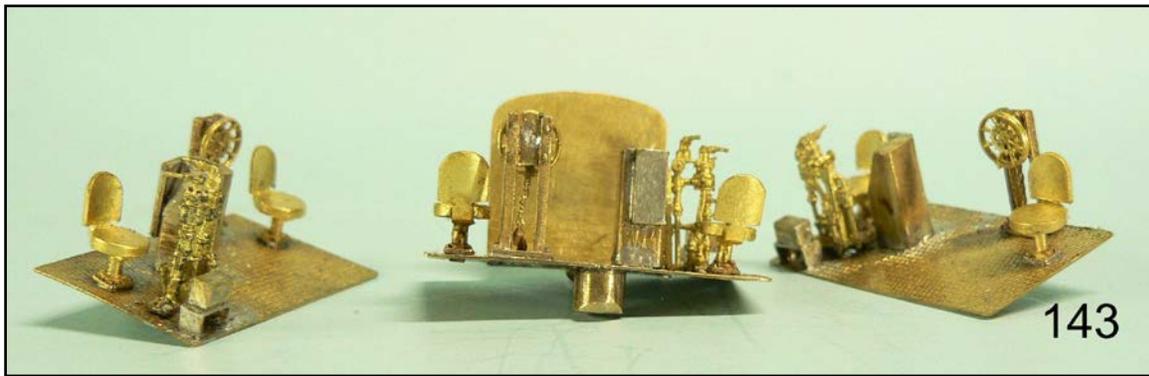
Since these Alco cabs are so open we should make up an interior for them. I know we need two seats, air brake stand, controller, a water cooler, electric space heater and a hand brake too. See drawing below.



Since the motor is mounted forward of the cab I think we can do this. Get these parts to do this: Cal-Scale 367 Air Brake stand, the Standard type. From Trackage Specialties I got TS460 brake wheel & staff assembly and TS946 cab seats. The controller, water cooler and space heater will have to be scratch built. (132, 134, 143) I'll make these from brass stock and solder them on along with other parts. You can try making them from plastic. Look at my sketches as a guide to what they should look like and where they are located. Dimensions are approximate you may have to make slight adjustments. To do this you also need to blank off the opening into the hood at front of cab. Use some .010" brass sheet for this and fit it to the inside of hood, long enough to go to bottom of hood, put this aside for now as we will attach it to floor later. Use PSC 48260 Diamond tread for the floor. If you soldered these parts on you may have filled some of the diamond tread in with excess solder. This can be cleaned out with metal picks. After you get the parts mounted on this, you will have to file it to get it to fit inside of cab. You will be able to make this a lift out with all of the cabs furniture on it. This will make it easier to install window glazing later after painting. And you can put two crewmen figures on those seats just before putting this in the cab after painting. To do this you need a spacer between the cab floor and the brace across back end of cab that the screws go into that holds back of cab to under frame deck. I made this from a 3/16" brass round rod cut to 5/32" length. This could be made from 3/16" square stock also. This spacer needs to be drilled through its center #53 and tapped with a #1-72 tap. My brass rod was very hard and I had to anneal it with a torch flame to drill and tap it. Solder this spacer under floor at back center. You may have to file this a little to get this new floor to lay level and fuel filler at back of cab was protruding inside preventing floor from dropping down in place. I had to grind this smooth using a Dremel tool and ball cutter. While you have that tool in your hand use it to clean off rough spots inside of cab that will make it hard for glazing to lay flat inside that cab. A clearance hole was drilled for this size of screw in that cab brace at center. I then

countersunk it for a #1-72 flathead screw that is only 1/8" long to hold this cab interior snugly in the cab. There won't be enough space for a round head screw here. Now with this done take the blanking bulkhead and place it up in the hood next to the floor and mark a line on it at bottom of the floor with a marker pen. Put this in a vise with this scribed line showing at top of jaws. Now bend this over to make a tab that we can attach to bottom of floor with another #1-72 screw. Drill and tap for this, cut off excess screw flush with top of floor and file smooth with top of floor. I soldered this under the floor while drilling and tapping then unsolder this as you can't get this floor out with furniture attached up in cab with this as part of it. These were out of the cab when I did this work. Photo 143 shows the various cab interior components.





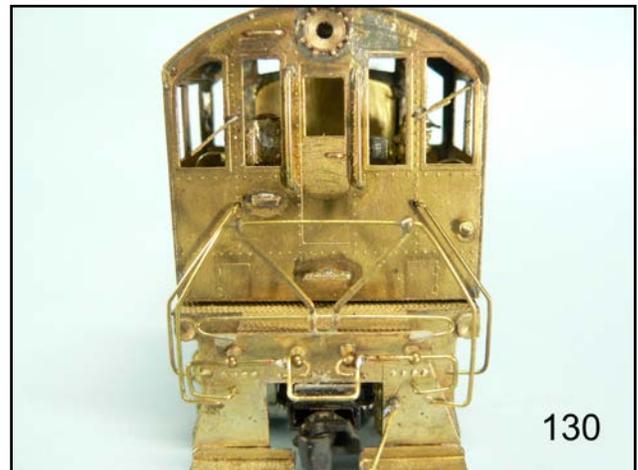
The looks of the headlights could be improved by using Cal-Scale No. 395 Dual Lens sealed beam headlights to replace the simple turned ones that came with these models. Or if you want only the single lens to improve the early S-1 and S-2 models detailing use a Cal-Scale No. 396 part. Place a little flux around inside of those tubes then put a hot clean soldering tip to it from inside and they pop right out. I put these new casting in the holes where the above were removed from with a hot soldering iron. Clean and pre tin the new parts at back and place them in the headlight holes and sweat solder them in place being careful to center them, as they are smaller at back than what you removed. If you are using the dual lens type you have two choices of orientation, vertical or horizontal. (130, 143, 149)

Photos of the engine you are modeling will tell which to use. The number boards on hood at sides near top edge could be opened if you want to illuminate them.

Find some white Plexiglas and file it to fit from inside. These you would put in place after hood is painted.

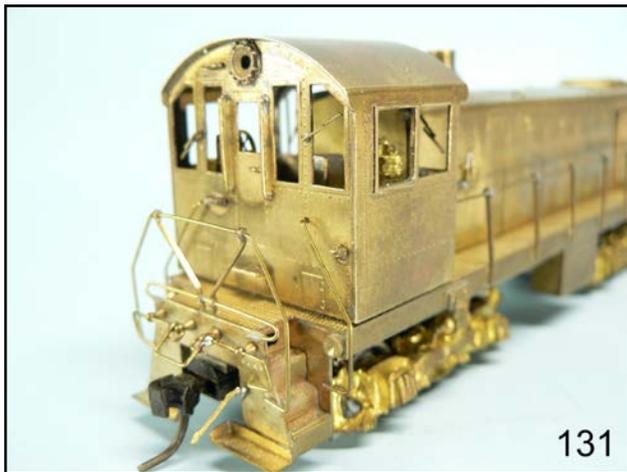
All of my photos show white numerals on a black background. So I'll paint it black and find white roman decal numbers for mine.

All of these brass models except the S-1 lack air reservoirs under the frame located between the central battery boxes. They show on the published drawings, but we can't add these because they would interfere with the drive shaft from front truck gearbox to rear. On the S-1 model they cut these tanks in halves lengthwise and recessed these parts into the backside of battery boxes. I plan to have some turned from brass rod then split to do the same thing for my S-2 and S-4 models. Or build them up from brass tubing. However, I might not do it at all as they are hardly noticeable under there because it is so dark.



All three of these models have simulated air brake hoses made from a wire with a smaller wire wrapped around it with no glad hand or angle cock. I am replacing these with Cal-Scale 277 Air hoses for freight cars. (131, 139) Make sure you get the brass ones so that they can be soldered in place and they are less likely to get broken when handling your model.

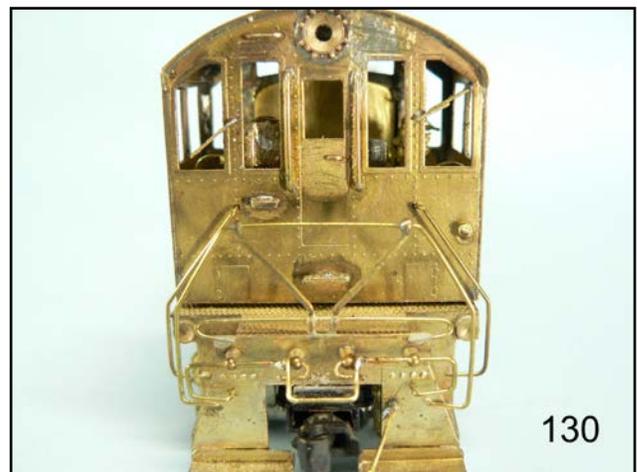
The S-2 and S-4 models had air hoses which I deem incorrectly mounted to left of couplers at front only. I changed this. However some photos do show it there.



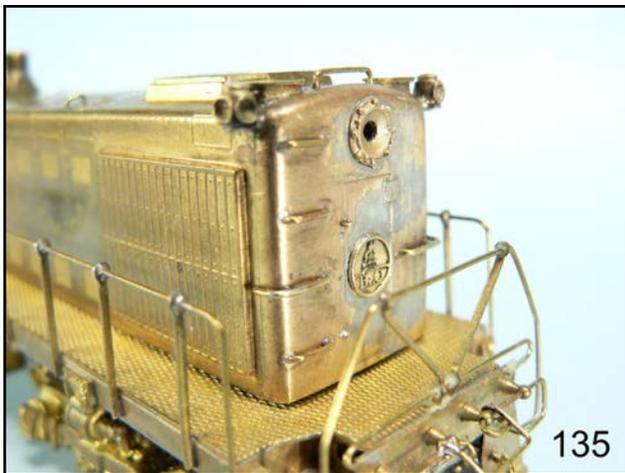
Photos show windshield wipers at hood side of front windows and at center of two back outside windows. (130) The model drawing does not show these. Use Cal-Scale No. 419 for these. Drill holes and solder in place. Look at pictures to see how they are positioned when at rest. Some of these engines had multiple unit controls added. Study the photos of the engine you want

to model and find brass parts to modify the end platform rails to represent these. This addition on B&O engines changed their classification by adding a small 'c' suffix letter to it at sides of cab.

On steam locomotives the uncoupling bars go all the way across the end beams. On diesels when you lift a cut lever at one side the other side does not go up. These models are not made that way but you can correct this with a little work. I cut that loop at center between the two center support stanchions. Bend these out towards the sides, left and right. Now make up new loops that the couplers lifting link would slide on. These new loops will have to wrap over and around the uncoupling bars at outside of the two center support stanchions. It will now lie on top of the outward bent bars. Trim off excess. Now you can uncouple from either side and not have to lift that whole heavy bar, only one half of it just like on the prototype (129, 130).



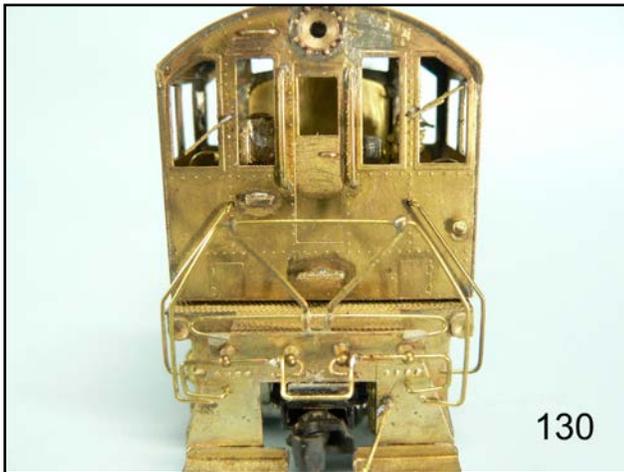
You can see in some photos of these engines a few had the cast Capitol Dome plates put on the door at front of hood. This was not a standard thing on the B&O. Local shops must have removed these plates from retired or scrapped steam locomotives to be put on an engine assigned to that area. (135, 141) If you want to do this on your model you need only to get a Cal-Scale No. 244 B&O Capitol plate. I would suggest that you reduce its thickness by filing until most of the back disappears. Then it will look like the castings taken from those steamers. To do this, cement this brass part face down on end of a 1/4" wooden dowel to use as a handle. Use Goodyear's Pliobond or Walthers Goo as glue. It will hold the part well enough while you hand file but can be readily removed afterwards. Solder this onto the center of hood's front door. Tin the back of plate and door surface then sweat solder this in place and scrape off excess.



After painting model you can buff off the paint to reveal the natural brass, which should be good enough to represent the Dulux- gold painted plates on the prototype. A clear coating should keep it bright for a long time. You might find some decals to use instead or find these as part of Free State Systems No. 8029 B&O Sign Set, which is a very thin, etched brass part. If you want to model one of the last S-4s that were delivered to the B&O in 1956 numbered in the 9000 series, you will need to change the stack and remove all of the rivets from hood and cab to represent these all welded models. The steps were different too, and I have noticed that some had inspection lights also under the running boards. I don't know of anybody that makes this stack--you will have to scratch build it.

When looking at many photos of these engines in *B&O Diesel Locos Volume 1* by Liljestrang and Sweetland, there are many good views, and I notice that all three of these models have the grab irons missing from the end beams at either side of the couplers. These may be very hard to add, as you will have to relocate the cut levers. I may just overlook them, as did the builders in Japan of these models. Some photos show these were not used.

Mounting Kadee #5 Magne-matic couplers on these is very easy using the already tapped holes and metric screws provided. I did have to add a 3/64" thick brass plate to bring these couplers down to correct height on the S-2 model but only an extra Kadee coupler box lid to correct the S-4 and about the same on the S-1. (130, 139) The screws were long enough to do this. You may find that the back of these coupler boxes touch the end of the truck gearbox. File or snip a little off end of coupler box if this happens. I have not tried to mount any of the new scale size couplers to these.



Painting and Lettering Tips

Now that we are done adding and correcting details, let's get it ready for paint. Scrape off any excess solder and pick at every joint to see that they are all secure and re-solder if needed. We don't want anything showing up broken after your nicely detailed model is painted. Get it running as well as you can before disassembling it to paint. Putting a good finish on these diesel models should be much easier than painting a model steam locomotive. There are many fewer parts to disassemble, clean and mask before painting.

After disassembly I will bead blast or sand blast the truck side frames, under frame assembly and hood and cab. You need to remove any clear coating. Since I will be painting the inside of cab, I'll blast it too. Mask off anything you don't want blasted like wheels and gears. This gives a good tooth to the brass to make the paint adhere better. Some people use white vinegar to etch

brass. This and other cleaning with mild soap will remove all oil, grease and soldering flux. If you used a primer, that will be your first coat. I'll use a gray primer, and this will be my cab interior color as well. When this is dry, mask the cab interior. At this stage of painting you could add the missing rivets at each end of the grab irons by using Archer Surface Details #1. These are real- looking black resin rivets that you can add just like decals and then paint over. In this set they come in sizes of .008", .011" and .014". The only things you will want to paint black are the under frame that the drive train is mounted onto, truck side frames a glossy black, and gearboxes and white propeller shaft between them a dull black. This will help hide them. Paint the wheels a dirty oily color with some rust. I was successful at blacking the out sides of my wheels with a metal blackening chemical. I had to scrape off some residual clear coat from the rims to get them black. Any blackening of the tires was easily scrapped off and there may have been a clear coating there also that would make for poor running until it wore off. Now the wheels, axles with gears need to be masked for painting.

B&O specification calls for engine black below the skirting. Everything else will be painted BandO Blue. I have been using Floquil Dark blue for this for years. Enchantment Blue is too dark for this era. I hand paint the stack and the horn silver as well as the windshield wiper blades. Since the demise of the Floquil paint line I have not had occasion to locate a substitute for BandO Blue so I leave it to readers' resourcefulness. I have read numerous suggestions but offer no opinion. For decals use the Champion Decal Companies' set EH-106 Dulux Gold for hood diesels. This will take care of the lettering for hood and numbers for cab sides, back and front of hood. (A similar disclaimer is offered here regarding the demise of the Champion Decal line! Seriously, though, most "out of print" still is eventually available somewhere.) You will need to get their S-3 1 1/2" Dulux Gold stripes for cab and hood and S-11 3" Duluxe Gold stripes for the frame sides. When putting on that narrow stripe near top of hood,

extra care must be taken on its placement. It starts near the cab and goes around front of hood stopping at edges of the headlight. It does not go over the number boards. When it is at about its center it will go over top of topmost ladder grab iron. The engine number at front of hood goes at top of door. The numbers for the illuminated number boards on sides of hood you will have to scrounge some white numbers that fit. You can find these in a Champ Steam Loco set EH-6D. The 'F' at front ends of frame should be 3" Dulux Gold also. I know of no "Safety First, Watch Your Step" decals to put on at end steps. Not every engine had these. Pick a correct number and class from my roster sheet for the model that you have. I picked a number of an engine that I know had worked in the Akron yards for the era (1956) that I like to model. The class letter and number if made by a decal maker in the correct size would not be readable so we leave it off. If you put the brass Capitol plate on nose of your model now is the time to scrape off the paint to show the highlighted plate in natural brass. Carefully use a sharp tool to avoid nicking other parts of this freshly painted hood. You may also be able to superimpose a decal over top of this instead.

After decals are properly set with a setting solution and dry, spray over everything with a gloss coat. This gives you a uniform gloss finish that helps hide the decal film. Insert window glazing now and the illuminated number boards if you made them or after a dulling spray if you used it. You can find engineer & fireman figures to use in cab made by Bowser-Selley, Weston

and others. It can be difficult to put figures in locomotive cabs at times and especially into automobiles and trucks. Some adjusting of arms, legs and feet, *i.e.* major surgery, is required to make them fit in a confined space. I did paint up an engineer and fireman and cemented them onto the seats with Goo to only find that I could no longer get this cab interior assembly back up into the cab, their arms and heads were in the way. I don't like empty locomotive cabs running around my layout, but this will have to do until I can find a way to get them to fit in there. Perhaps a way could be found to make the cab a removable part?

If you haven't electrified your headlights and class lamps or are not going to, try filling them with a clear two-part epoxy cement to represent lenses as I have done many times. Paint the insides of the cavities first with silver or white paint. When this is dry mix up your epoxy and fill these cavities to just about over filling and you will end up with a convex lens like the prototype had. This is better than leaving them empty.

Weather to suit your taste. Mine gets weathered naturally just sitting on my layout and accumulating dust from the air. It is very hard to get it off after a while.

Reassemble your engine, lubricate it and get it running as good as it can. Now enjoy switching your layout with this and viewing your highly detailed B&O model.







B&O Diesel Switcher Roster 1925 - 1955

NUMBERS	CLASS	YEAR BUILT	H.P.	STARING TRACTIVE EFFORT	DRIVER SIZE	MODEL	BUILDER	NOTES
1	DE	1925	300	36000	36"		Alco-GE-Ingersoll Rand Co.	1
25	CG	1926	142	9000	33"	HL 18 Ton.	Plymouth Locomotive Company	
B&OCT 2	DE-3	1936	600	50650	40"	SW	Electro Motive Corp.	2, 3
200-221	DS-3	1940	600	49500	40"	SW1	Electro Motive Corp.	4
400-411	DS-4	1940	1000	62100	40"	NW2	Electro Motive Corp.	5
475-533	DS-5a	1943-48	1000	57500	40"	S2	American Locomotive Company	6
468-474	DS-5ac	1953	1000	67500	40"	S4	Alco	6
490-533	DS-5a	1944	1000	57500	40"	S2	Alco	6
534-545	DS-5ac	1955	1000	57500	40"	S4	Alco	6, 9
413-437	DS-6b	1943-45	1000	60000	40"	VO1000	Baldwin Locomotive Works	
SIRT 184	DS-7g	1943	400	32775	34"	65-Ton	General Electric Company	7
190	DS-8g	1943	500	40235	38"	80-Ton	General Electric Company	8
250-255	DS-9a	1944	660	49750	40"	S1	American Locomotive Company	6
509-538	DS-10e	1948	1000	62325	40"	NW2	Electro Motive Division of GMC	11
550-559	DS-10e	1948	1000	62325	40"	NW2	Electro Motive Division of GMC	10
560-589	DS-11e	1949	1000	62100	40"	NW2	Electro Motive Division of GMC	
438-462	DS-12b	1948	1000	60000	40"	DS-4-4-1000	Baldwin Locomotive Works	
376-381	DS-12ba	1950	1000	60000	40"	DS-4-4-1000	Baldwin Locomotive Works	
382-399	DS-12bc	1950	1000	60000	40"	DS-4-4-1000	Baldwin Locomotive Works	
300-309	DS-13f	1948	1000	61750	40"	H10-44	Fairbanks-Morse & Company	
330-339	DS-14L	1949-50	1000	60250	40"		Lima-Hamilton Company	
320-329	DS-14Lc	1950-51	1200	61500	40"		Lima-Hamilton Company	
340-353	DS-14Lc	1950-51	1200	61500	40"		Lima-Hamilton Company	
19-20	DS-15g	1950	400	22000	33"	44-Ton	General Electric Company	
310-319	DS-16fc	1951	1200	61750	40"	H12-44	Fairbanks-Morse & Company	
590-603	DS-17ec	1952-54	1200	61625	40"	SW9	Electro Motive Division of GMC	
196-197	DS-18fc	1953	1200	61500	40"	H12-44	Fairbanks-Morse & Company	
463-467	DS-19bc	1953	1200	60000	40"	S12	Baldwin Lima Hamilton Corp.	
625-653	DS-20e	1955	900	57500	40"	SW900	Electro Motive Division of GMC	
9614-9621	SE-6	1957	1200	62000	40"	SW1200	Electro Motive Division of GMC	
9722-9726	SF-4	1957	1200	61500	40"	H12-44	Fairbanks-Morse & Company	

NUMBERS	CLASS	YEAR BUILT	H.P.	STARTING TRACTIVE EFFORT	DRIVER SIZE	MODEL	BUILDER	NOTES
9078-9114	SA-3/DS5a	1956-57	1000	57500	40"	S4	Alco	
NOTES Note 1: Renumbered to 195 and reclassified DS-1A in 1944. Note 2: Assigned to Baltimore & Ohio Chicago Terminal Railroad. Note 3: Renumbered to 199 in 1942, reclassified DS-2. Note 4: Reclassified to DS-3E in 1943. Note 5: Reclassified to DS-4E in 1948. Note 6: The name was changed from American Locomotive Co. to Alco Products in 1956. Note 7: Renumbered to 194 in 1948. Note 8: Assigned to Staten Island Rapid Transit Co. 80 Ton, renumbered 198 in 1948. Note 9: Alco switchers built in 1954 and later had welded hoods and cabs. Note 10: Reclassified to DS-11EC in 1951. Note 11: Several equipped with rear MU, reclassified DS-6bc.								

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B&OHS Sentinel magazine V.27, No.4, B&O Cast Capitol Emblems article by Jones.

Images of Rail, Akron Railroads, Sanders, 2007, Arcadia Pub. P. 37 No. 518.

Funaro & Camerlengo (www.fandckits.com) offers a wide variety of cast resin kits in HO scale, including several B&O freight car classes. Their initial version of the N-12 was the N-12G subclass; they then followed this release with a model labeled "Class N-12a, b, and d". B&O's N-12 subclasses N-12, N-12a, N-12b, and N-12c were identical for practical purposes, featuring individual grabs rather than the ladders exhibited on all the later N-12 subclasses, and staff handbrakes rather than the lever handbrake shown on the B&ORR diagram for the N-12g's. Thus F&C's latest release might be more properly labeled "Class N-12 – N-12c". Either way, F&C allows B&O modelers to add some welcome diversity to their coal train consists most likely inappropriately dominated by USRA hoppers

General Kit Description

In the past, various cast resin kits have earned a deserved reputation for being complex and sometimes less-than-fun to assemble. F&C has worked hard to make assembly of this kit easy and enjoyable.

First, F&C provides a one-piece carbody, eliminating the need to assure that sides, ends, slope sheets, and hoppers are square and properly aligned. This rubber-molded casting is simply amazing, with fine detail cast into all surfaces *including* the interior, all surfaces square and aligned, and minimal flash. The resin material is soft, not brittle, and easily worked. Dimples are cast adjacent to the grab bolthead detail, making it easy to locate where to drill for the wire grabs.

While I'm unaware of any scale drawing of this prototype, a check of the carbody against photos reveals excellent prototype fidelity; I was unable to spot a single flaw.

A trio of cast parts sheets contains the underframe and numerous detail parts, joined together by thin and easily removed flash. Extras are provided for some of the smaller pieces – a nice touch. A parts bag contains wire grabs. Bulk wire is supplied for the brake system levers and

pipings. The kit provides multiple options for such things as AB brake system vs. Type K brake system, power handbrake vs. staff handbrake, and door lock mechanisms.

A fine custom decal sheet has been prepared, with multiple lettering options covering B&O lettering schemes through 1954, as well as car numbers and dimensional data specific to the N-12 series. A minor gripe – the lettering is not properly spaced for the "Mid 1945 - Mid 1946 Early 13 Great States" lettering scheme, requiring the modeler to patch in the white stripe overline above the "E &" and "OHIO" segments of the name. Not supplied are trucks, couplers, and weights, which the modeler must provide.

On many cast resin models, the instruction sheet is often a poor afterthought once the finely detailed resin components have been designed and cast. Less so with this kit.

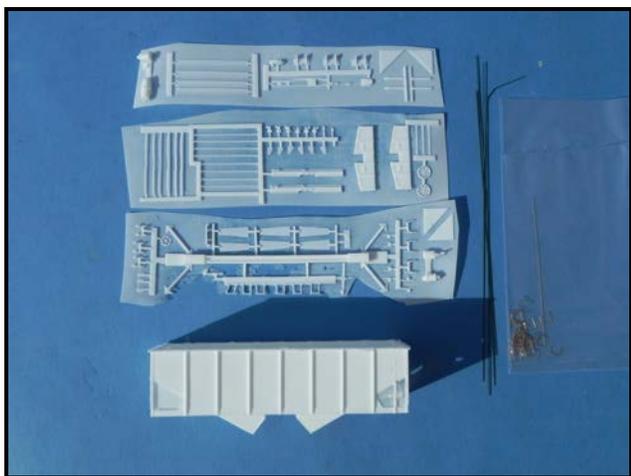
The positives -- F&C has prepared a six-page set of instructions featuring four prototype photos, 29 photos of the model's assembly at various stages, a parts diagram, and 23 assembly steps which are logically sequenced. The model photos are cross-referenced to instruction steps – a nice touch. A few negatives – the instructions for the "N-12A/B/D" kit are written for F&C's similar but not identical B&O class N-12g kit; the modeler is on his own for steps unique to the N-12a/b/d kit. The parts diagram sometimes uses different names for the parts than the instructions, and in a few cases neglects to label the part. The K-D and AB brake cylinder/reservoir assemblies are nicely done (don't look for Tichy brake parts in this kit) and there on the parts sheet but only show as unrecognizable blobs on the reproduction of the parts spread in the instructions. The instructions are sometimes overly terse for some of the more complicated operations, leaving it to the modeler to research or guess what is intended. Missing are instructions for the stirrups.

Single kits are pricey, but at this writing attractive discounts are available for multiple purchases of the same kit.

A call to F&C at 570-224-4989 during business hours will provide you the pricing specifics of your purchase, and facilitate processing of a credit card order.

Building the Model

In the following write-up, we'll focus on areas which can benefit from further elaboration, and add a few tips to make the modeling process a bit easier. We'll key our added comments to the numbering of F&C's steps. [Ed Kirstatter did an independent "audit" of the instructions and his comments, as well as those of "ye ed" are offered in brackets as EK and JT].



Step 1 - Deflash the Carbody

Follow F&C's instructions, with the following additions. F&C recommends using a fingernail sanding board – a wise choice for F&C's resin. Most nailboards are too wide for use on this model; splitting one lengthwise with a single-edge razor blade results in a useful modeling tool. Also useful for touchup are small needle files, especially a square file and a knife-edge file. After cleaning flash from the various carbody openings, I sanded the top of the carbody level with 180 grit wet-dry paper placed on a flat surface such as a surface plate or a plate of glass. When finished deflashing the carbody, wash it with a non-oily detergent such as Ivory Liquid to remove mold-release oil and promote glue adhesion as we add detail parts.

Steps 2 and 3

Follow as written. [The train line hanger brackets I have always found vexatious to make—metal strips properly or eyebolts as a compromise—so having them cast in on this kit is a most welcome step. However, I chose to drill them later in the assembly phase—about step 13-- because I was afraid that they might be prone to breakage until the wire was inserted. JT]

Step 4 – Add End Sills

End beam in instructions = end sill in parts diagram. Glue the end sill flush with the bottom of the carbody; for precise alignment while the glue dries, rest the end sill on a scale rule placed against the bottom of the carbody. When dry, file opening for the coupler boxes in the carbody behind the endsills.

Step 5 – Add Bolsters

Follow F&C's instructions, with the following additions. Underframe in instructions = frame in parts diagram. The bolsters are centered behind the first exterior rib, and are slightly lower than the bottom of the sides to allow space for the bolster caps which will be added in step 14. For good vertical alignment, glue one side of the bolster, let the glue dry, and then glue the other side. Run a bead of glue behind the bolster where it joins the slopesheet.

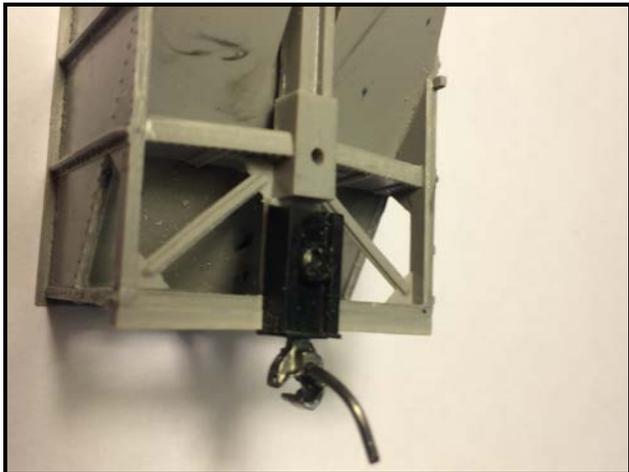
Step 6 – Test Fit the Underframe

If bolsters are correctly spaced, the underframe should drop into place; if not, a bit of filing may be needed on the underframe. The bottom surface of the underframe coupler pads should be flush with the bottom of the coupler box openings in the endsill. Be sure the coupler pads are not angled up or down. The diagonal braces need to fit inside the corners of the carbody, and will likely need minor trimming.

Step 7 – Trucks and Couplers

The prototype used a variety of trucks, including "Bettendorf"- style and Andrews. I used a set of Kadee #500 trucks that were in my stash. Drill (#50) and tap mounting holes for them centered in the bolsters. I used Kadee #178 scale-size couplers, which are compatible with Kadee's

traditional design but have a better appearance. Kadee #5s will work nicely as an alternative. For the #178s, remove the lip from the top of the coupler box, place them on the coupler pad snug against the end of the centersill, mark the location of the mounting hole with a map pin, and drill (#55).



F&C photo

Step 8 – Add the Underframe

Be sure the underframe is properly seated in the bolsters, and touching the inside of the endsills at each end. Glue the coupler pad inside the endsill at each end, making sure the bottom of the pad is flush with the bottom of the coupler box opening and not angled up or down. If the coupler pad is angled, it may be necessary to increase the depth of the coupler box opening in the endsill. Make sure the diagonal braces are seated inside the corners of the carbody, and parallel to the bottom of the carbody; when correct, they will be inset a bit below the bottom of the carbody. Glue them in place, then glue the bolsters to the centersill.

Step 9 – Type K Brake System

If going with the Type K brake system, follow F&C's instructions. Note that Type K brakes were outlawed for interchange on 1/1/54, and many railroads had programs to replace Type K's with AB systems well in advance of this date. In many cases both the brake system and the handbrake were replaced at the same time, but in some cases the brake system was replaced while leaving the original staff handbrake intact. I wanted my N-12A to have the updated AB

system correct for my era, but to look older than the other cars in my coal train consist by keeping its original staff handbrake. Thus I skipped step 9.



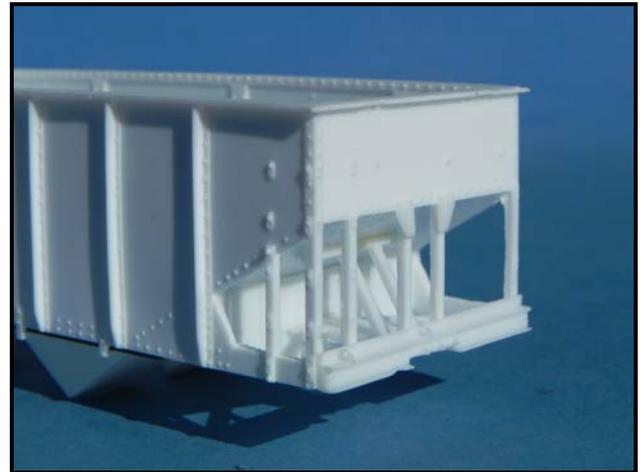
K-D brake cylinder and reservoir assembly.
F&C photo

Step 10 – AB Brake System

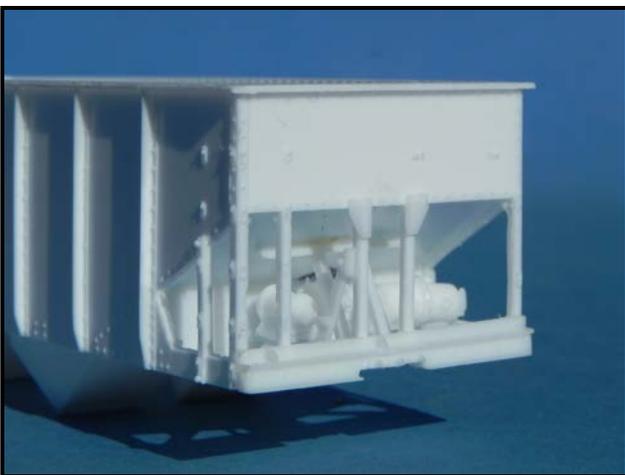
Cut out the AB brake reservoir/cylinder assembly (not shown on the parts diagram) and the brake valve (also not shown). Glue the brake valve to its pad on the AB assembly. I elected not to add piping between the AB system components, since they are largely hidden underneath the slope sheet. Drill (#66) into the end of the brake cylinder for the brake piston. Using the photos as a guide, glue the assembly to the carbody's B-end, with the reservoir atop the sidesill (be sure you completely filed away the flash under the reservoir, resulting in a notch that will rest on the sidesill). Cut out the Type K brake lever (part #5), glue its piston into the brake cylinder, and its lever pivot bracket to the left side of the left centerpost on the carbody end. Snip off the bottom of the lever so that it will not interfere with the trucks. If going with the modern power handbrake instead of the staff brake, follow F&C's further instructions.



AB brake cylinder and reservoir assembly and Ajax equipment. F&C photo



Step 12
Already completed.



Step 13 – Add Train Line

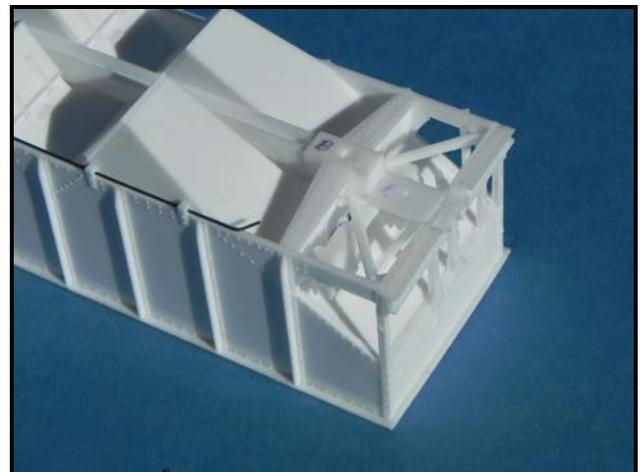
I opted to go with the partial train line, modeling only the visible part. Thread a length of green-coated wire through the brackets drilled in step 3. Bend the wire inward at each end at about the center of the panel between ribs #1 and #2. Secure the wire with a dab of glue.

Step 14 – Add Endpost Gussets and Bolster Caps

Follow as written. Trim the ends of the bolster caps to fit snugly between the centersill and the inside of the sides.

Step 11 – Add Slope Sheet Braces

The slope sheet braces are located about halfway up the slopesheet, angle pointed inward; the ends of the two braces terminate atop the coupler pad. I found it helpful to place a small dab of contact cement centered halfway up the slopesheet to tack the angle while I positioned it; once correctly positioned, secure the angle and the braces with CA.



Step 15 – Add Grabs

Our kit differs from the N-12g covered in the instructions by having grabs rather than ladders. F&C has cast a locator dimple next to each grab rivet to guide drilling (thanks!). All grabs are straight grabs except for a drop grab at the bottom of each side ladder. The 24” straight grab goes near the top left of the side. Begin with the side ladder grabs – drilling then installing. Snip the grab legs so they won’t extend past the inside of the body, then secure the grabs by dipping each leg in a drop of CA and installing into its hole. We learned in school that two objects cannot occupy the same space at the same time; such is the case with the left leg of the end ladders, which will interfere with the legs of the side ladders already installed. The solution is to snip the left leg of the end ladders to a very short stub, just long enough to seat in the hole without interference. A small dab of CA on each left leg after installation will secure the joint. Grab iron brackets (part 12) are needed at the left end of each side. It’s easiest to drill the two holes in each before removing them from their parts sheet. Use one of the 24” grabs to space the bracket from the end (see photo), glue the bracket top and bottom, and trim the bottom flush. Drill through the top hole of the bracket into the carbody, and install the 24” grab. The lower grab in the bracket is L-shaped, running through the corner post and terminating in a hole in the side of the end post. I bent the green coated wire for these grabs and the 30” grabs near the top of the ends; from hindsight, .012” brass wire would have been closer to the size of the other grabs.



Step 16 -- Ladders

Not applicable to our model.

Step 17 – Staff Brake Platform

Follow as written (not applicable if modeling power handbrake). It’s easiest to glue one end of the platform, then the other.



Step 17a – Stirrups

The kit provides stirrups, but the instructions ignore them. In my experience, cast stirrups are often fragile in operation, so I elected to substitute A-Line #29000 stirrups. If using them, drill #74, install them, then bend them slightly outward. [Clearly a matter of builder's choice. I agree with Bob to a point. However, I have never been entirely satisfied with the A-Line and similar formed metal stirrups because I don't think the bends are sharp enough and my Xuron tweezer pliers only go part of the way towards fixing the problem. At the same time I have also had miserable experiences with the Delrin parts. In the case of this kit, however, I decided to go with the cast resin parts provided because 1) they seemed very springy and resilient and 2) they have nice big "feet" to provide plenty of adhesion space. I haven't been able to give it a layout operating session field test yet, though. If going with the resin part, Ed Kirstatter suggested attaching it later, say around step 19, due to its fragility. JT]

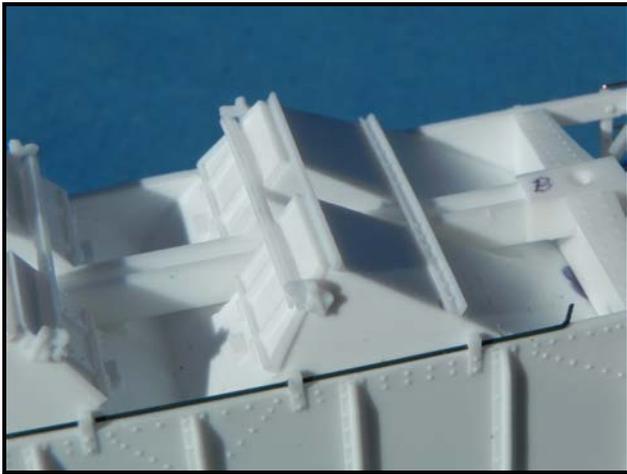
Step 18 – Interior Bracing

The extra rivets on the center sidestake indicate that the car is intended to have triangular gussets inside atop the center ridge; first glue them to the center ridge, make sure the sides are perfectly vertical, then glue the gusset top with a small dab of CA. The prototype has an additional channel crosstie brace halfway between the center and the end, its flanges facing the carbody end. It's important to trim these to the exact length needed – too long and the soft resin will easily bow, and too short they will not glue properly. Install them so that the end of the channel wraps around the locator bracket cast on the side's interior.



Step 19 – Hopper Detail

F&C offers three choices for door mechanisms, but for the most part the modeler is left to his own devices to figure out what goes where. The Miner and Enterprise installations tend to be early vintage, and even cars which had them installed often had them replaced with the newer and more popular Wine mechanism. [Since the kit provides nice door hardware options, Ed Kirstatter wished there had been a table showing car subclass number series vs. hardware type. You're just going to have to go from photos. JT] Since I was doing a more modern car, I opted for Wine. Lacking instructions, but working from photos of other cars with the Wine system, I came up with the following installation instructions. Glue a short angle (part #20) across the back of the hoppers just behind the back edge of the door. For the second longer angle (part #19), draw a pencil line across the hoppers 3'0" behind the back edge of the door. Glue the long brace next to the line, first one end then the other. Note that the legs of the short angle and long angle face each other. Cut out two channels (part #21), and glue them to the hopper doors butting against the ends of the hinges. Their ends will project slightly beyond the sides of the hoppers. Cut out Wine door latch mechanisms (part #18), and glue them to the sides of the hopper, hooks pointed upward and wrapped around the ends of the channels.



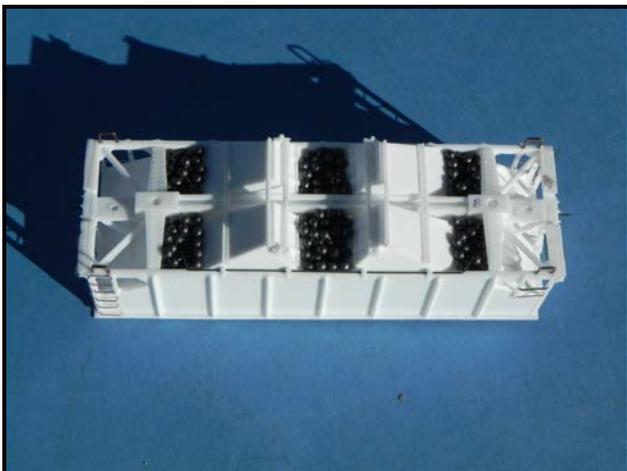
Step 20 – Final Details

Follow as written. The brake stem bracket was missing from my kit; I substituted a similar Tichy part from my scrapbox. For the brake staff, I used hard .016” brass wire for operational durability; cut the brake staff so that it extends 9” above the top of the carbody.

Step 20a – Add Weight

With the metal Kadee trucks, the car weighs about two ounces, about one ounce below the NMRA recommended weight for a car this length. Running the car with a load will solve this problem. Since I wanted reliable operation with an empty car, I added lead shot in the underbody cavities adjacent to the hoppers. Avoid using your fingers in handling lead, and drench the shot with CA to secure it.

[Don’t forget to add a .015” wire brake operating rod below the center sill between bolsters. This almost always shows in side views of the car. JT]



Step 21 – Wash the Model

Follow as written. I used Ivory Liquid.

Step 22 – Painting and Lettering

Follow as written. I strongly agree with using a lightened black to show off detail and for better appearance under our darker-than-outdoors layout lighting. I substituted my favorite Floquil mix of three parts Engine Black and one part Reefer Gray, followed by a gloss coat for decaling. Given my early-50s era, I opted to letter my model in the “Mid 1945 – Mid 1946 Early 13 Great States” lettering scheme, since freight cars often evaded the paint shop for years after a lettering scheme was discontinued. Seal the decals and dull the entire car with Dullcote.

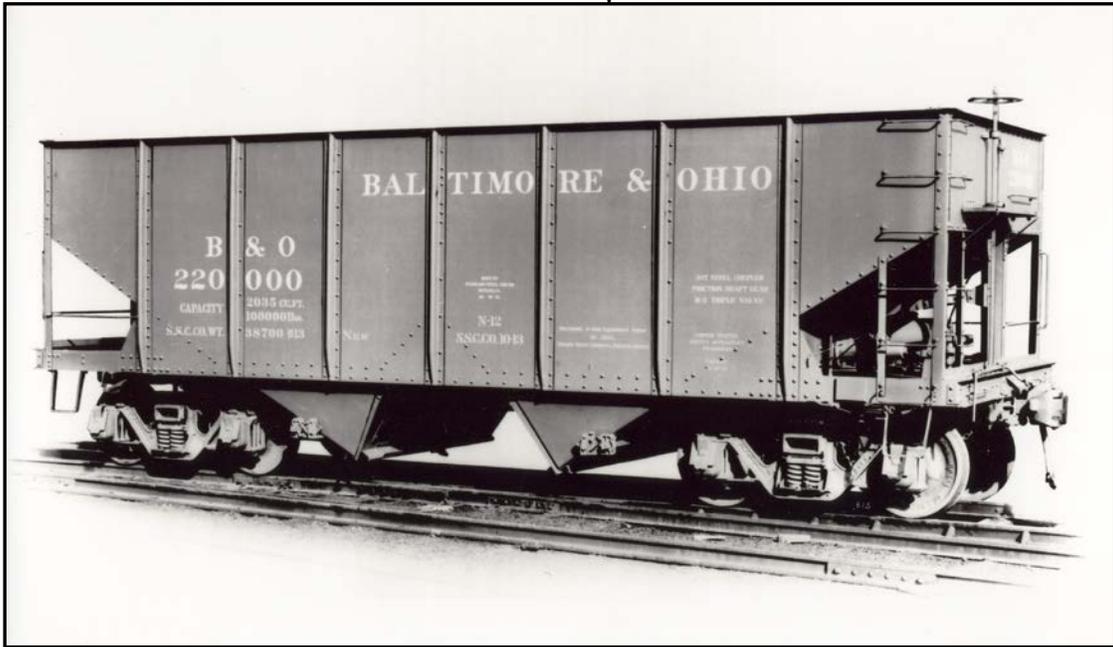




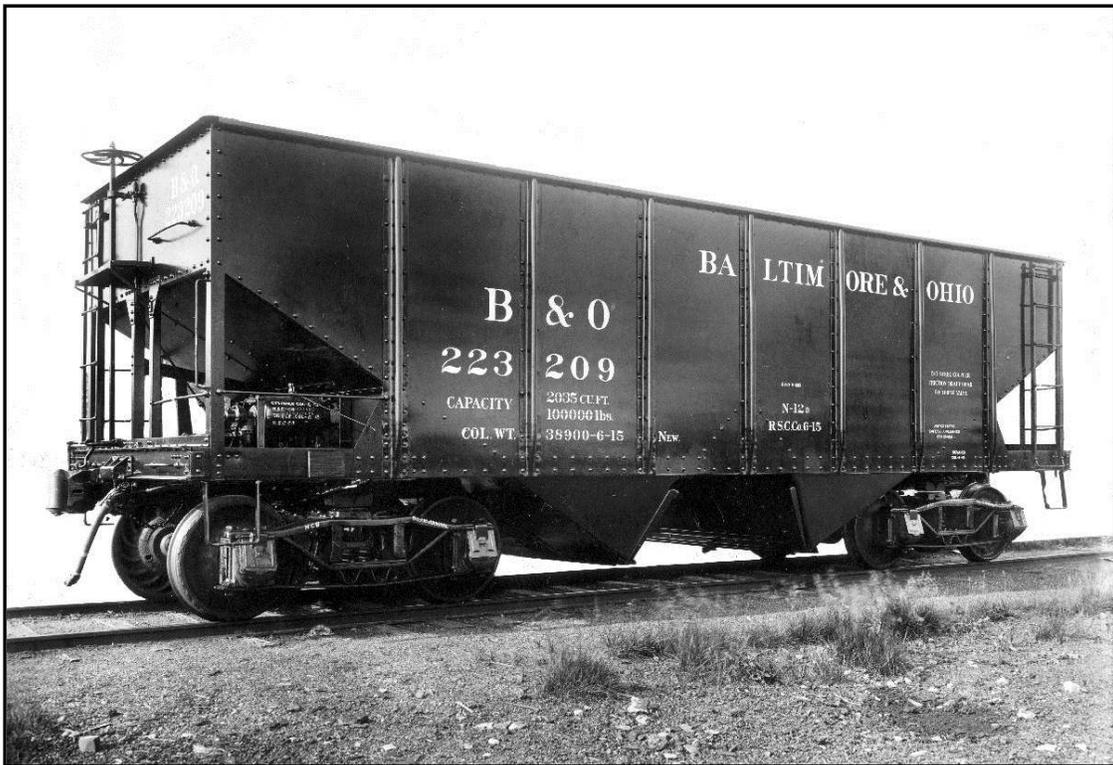
Step 23 – Weathering and Assembly

A grungy rust color is realistic for the interior and trucks – neither was typically painted. A very dilute overspray of lightened black atop the

white lettering works well to represent a light coating of coal dust. Attach the trucks and couplers, and she’s ready to add some fun diversity to your coal train consist.



N-12 220000 Builder's Photo, 10/1913, Standard Steel Car, courtesy B&O Historical Society.



N-12d 223209 Builder's Photo, 6/1915, Ralston Steel Car, courtesy Jim Mischke Collection.



N-12d 224585 Washington, DC, 4/48, Charles Wales photo, courtesy Jim Mischke Collection.



FUNARO & CAMERLENGO'S N-12G HO-SCALE KIT

REVIEW BY BRUCE ELLIOTT

MODEL PHOTOS COURTESY OF FUNARO & CAMERLENGO



Introduction and Overview

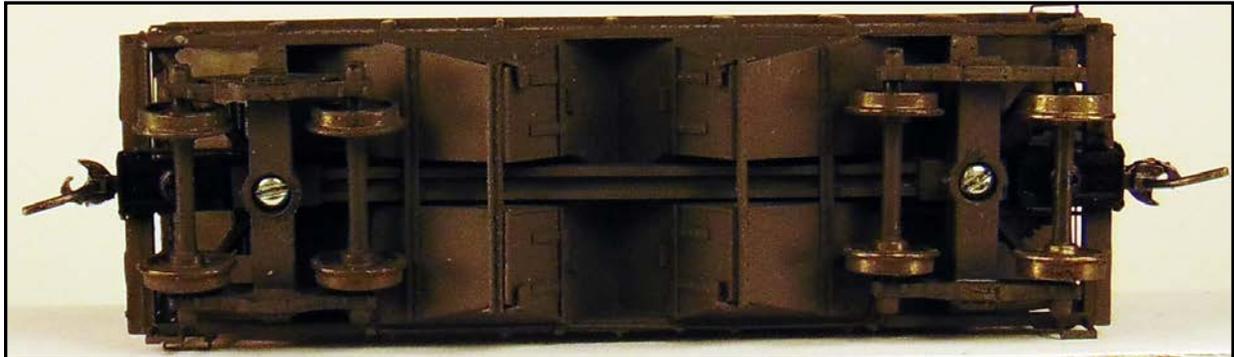
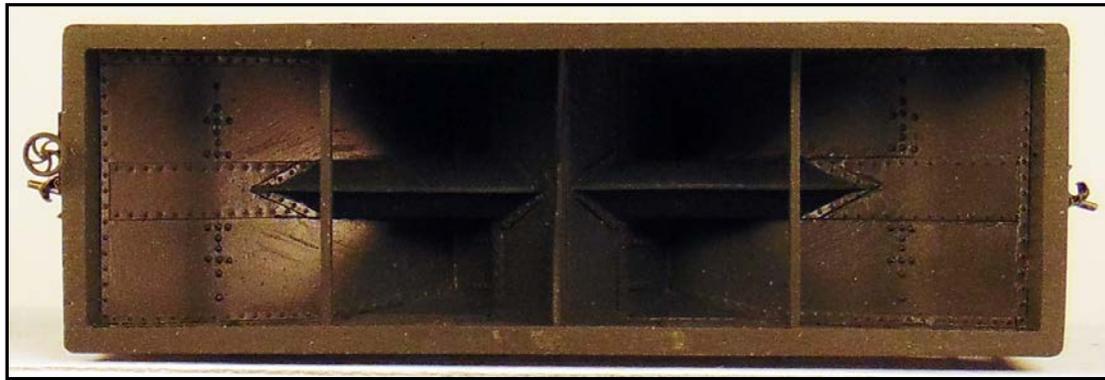
The N-12 hopper and subclasses represented the lion's share of hopper cars in the B&O fleet during the transition era. Al Westerfield claimed that a kit for the N-12 was on his "list," but he hadn't gotten around to it by the time he sold his business. In early 2015, Funaro & Camerlengo finally filled in a long overdue void with the introduction of the N-12g. F&C have since introduced some other variations of the class group.

Some Construction Comments

This may not be a kit for the first time kit builder. This kit has a resin one-piece body, but to its credit and as a test of your patience, there are a lot of delicate and small parts to assemble. A No.11 X-Acto blade works well removing the parts from the resin sheets, with little cleanup necessary before assembly. [Ed. note 1]

This kit went together well, and the instructions were for the most part clearly written, with

plenty of photos. Bob Chapman's accompanying review gets into some of the finer points of the construction. The kit can be built as many as nine different ways, depending on whether you want K or AB brakes, and you have three different types of door locks and two different styles of hand brakes. I chose to go with the early stem winder hand brake as it is a visual departure from the Ajax style seen on so many models even in the '50s. While there is a brake wheel supplied with this kit, I chose to go with one from my own inventory that is cast metal to minimize possible damage in the future. If you are a full-blooded prototype modeler, you will want to pick a photo of a particular prototype car from your era and render the details (trucks, brake gear and door locks) based on that photo. Your editors have included a small album of photos here to get you started, but you may want to spend some time at the show photo vendors' tables.



Actual construction time for the car itself might be just over 8 hrs. I consider myself experienced at building resin cars, so your time may vary. I did not build it all at one time but rather in stages of an hour or two at a time over several days. Tedious work can and is tiring and taking a break keeps one from going crazy

This kit does not come with trucks or couplers. I chose to use an old set of Athearn sprung Bettendorf trucks that had a set of Silver Streak wheel sets in them and I chose to use Kadee No. 5s. [Ed. Note 2]. Like the car itself, these were old parts, but I knew these would add weight to the car. As built, these cars had Archbar, then Andrews then AAR "Bettendorf" trucks. When built, this car weighs in at a whopping 1.4oz., most of which is trucks, screws and couplers. Well, resin doesn't have that much weight. Most modelers will want to add weight to bring the car up to NMRA standards. I would recommend a load of coal, coke, limestone or iron ore. [Ed note 3] Grab iron locations, train air line and truck mounting holes needed to be drilled out. Most modelers drill out for the truck mounting

screw and use a self-tapping screw to mount the truck. I chose to drill and tap the hole for a 2-56 screw. This required a hole with a #50 drill. Brass and steel wire are provided for the train air line, grab irons and the brake stem. Three different types of door locks are supplied with the kit; they include early Enterprise, early Miner and Wine door locks.

Lettering and Painting Considerations

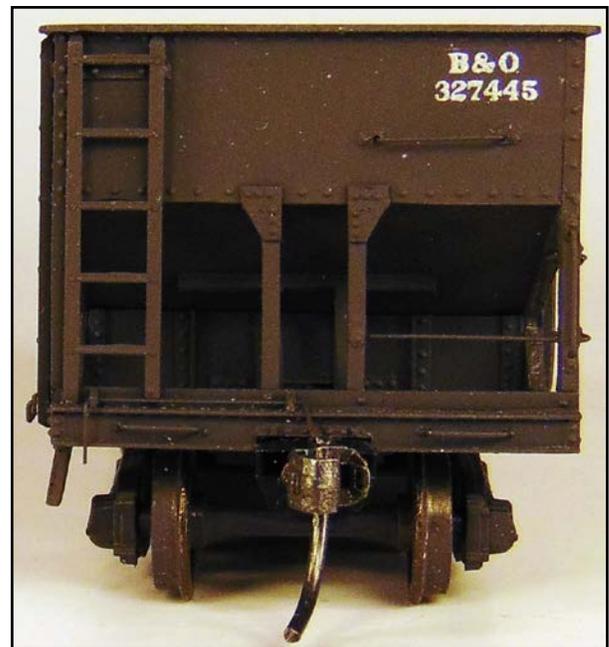
Just because so many of my hopper car fleet is relatively modern and lettered in either "13 Great States" or "Billboard," I chose to do this car more or less as built; thus, I chose to do the K brake version with the vertical stem winder. I've decided to letter the car in the "Wartime Kuhler" scheme. This is a lettering scheme that tends to be seen only by those of us who do our own lettering. In a train, this really stands out. For good, bad or indifferent, the trend in model railroading has been towards rolling stock that is R-T-R. The advantage of this is taking a model out of the box and running it. On the bad side, if a part breaks or comes up missing, you simply have to live with it. Kits are far more rewarding,

in that you have the satisfaction of building it and know how to repair a problem, should a problem arise. This kit has dozens of delicate parts and as such, the manufacturer provides extra parts, just in case you break a part during construction.

Experienced craftsman kit builders really make out with extra parts that can be used on other earlier models that didn't offer the level of detail that this kit has. Thus, using the "left over" parts, I was able to detail out two other cars with the optional door locks, hopper braces and cross ties.

Looking to the future

At this time the car still needs paint and lettering. At this time, I'm not set up for air brush painting, so the model stops here for the time being. Hopefully adequate decals are supplied with the kit for the lettering scheme that I wish to do. One really nice aspect is that the kit also comes with a decal set for N-10 hopper cars. At this time, no model for an N-10 exists, and an N-10 and N-12 are different. Does this mean that F&C plan to build an N-10 in the future? Even as the Modeling Committee Chairman, I'm not aware of such a move on their part at this time.



Editorial Notes

Note 1: Tools—After building a number of resin kits over the years but always feeling I was fumbling around, when I went to assemble the F&C N-12 in early 2015 I finally went to the trouble of making the “tools” showing in the accompanying photo. Cost was basically zero.



From left to right:

1. Sandpaper glued to both sides of sticks from the woodshop scrap pile, ca. 7/8” wide x 3/8” thick, No. 100, 150 and 220.
2. Sandpaper glued to scrap Masonite rectangles, 9”x5 1/2”, No. 150, 240, 400 and 600.
3. On top of the 150 grit board is a tapered “file” made from gluing No. 400 to both sides of a piece of .030 styrene and a trimmed nail file. Don’t steal your wife’s new one but her used ones are probably good enough, maybe even better, for our use. Or buy a whole pack from Dollar Tree for.....\$1.
4. Don’t forget the art gum eraser to clean off the sandpaper. These, I’m sure, will last the rest of my life and will probably be good enough to go to my estate sale. JT

Note No. 2: The instructions recommend the Kadee No. 78 “scale size” coupler that comes with small and elegant self-tapping 0-48 mounting screws. As for trucks, I felt the detail on these cars was so nice they deserved Tahoe Model Works Double Truss with semi-scale wheelsets. .JT

Note 3: Bob Chapman shows how he used lead shot. Another option is the Pinewood Derby display at

your local Hobby Lobby, Michaels or JoAnn store. There you will find 1 ounce packages of tungsten weight putty. You should be able to pack an ounce or maybe more in the underbody crevices. Ah, yes, list price is about \$11 and I never see this part on sale. But you can reduce the pain level if you download (or clip from your newspaper) the weekly 40% off coupon from any of the above retailers. Bring two coupons and bring your spouse or kid with you to the store and get two packages.

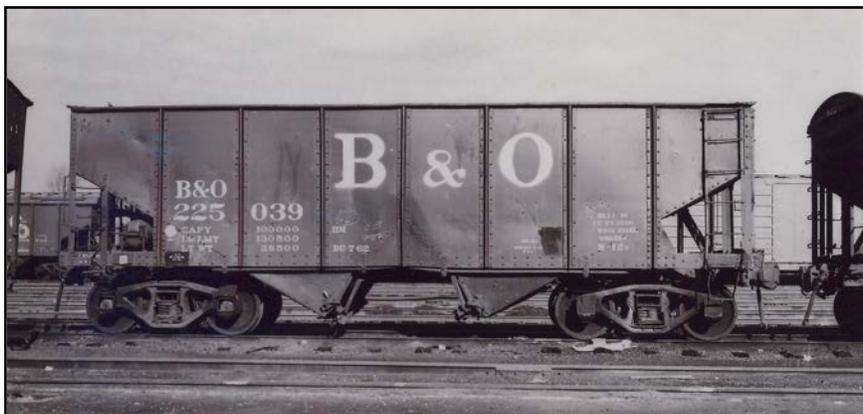
Now, how well does this work? My unweighted but built-up and ready to roll car weighs 1.3oz. I put as much bird shot in the triangular cavities underneath and got it up to 1.7 oz. As Bruce Elliott watched me, thinking that I was a little balmy, I cut up the tungsten putty into about 1/8” sized pieces and stuffed it in gently with a small Phillips screwdriver, then smoothed off the top with a flat screwdriver blade. I got total car weight up to 2 oz. I could probably muster an extra .1 or .2 oz. by filling the groove in the center sill. Now, the best engineered system for twin hopper weights is on the Tichy USRA car that comes up to....2.0 oz. “NMRA recommended weight” for these cars is about 3.1 oz. Actually I think what was disturbing Bruce was the cost of the weight, which, after the coupon was a little over \$7. I told Bruce, “After all, the exquisite Tahoe trucks were \$8.25.” JT

N-12g Prototype Photos

On the following pages are a small collection of prototype photos of N-12g’s. We have given our best efforts to cite the date and sources of photos. Due to the size and longevity of the class, there are likely many more shots available from show photo dealers. As you study the variety of lettering, trucks, door hardware and air brake appliance combinations, you will agree there are immense modeling opportunities. The various photo books are another source, even non-B&O titles. For example, in his “N-12” road show, Steve Funaro shows a sampling of N-12 photos he found in books and magazines. My favorite is the undated Bill Price color shot of two dudes standing on the coal pile in 225370 on page 81 of *B&O Steam Finale Vol. 1*.



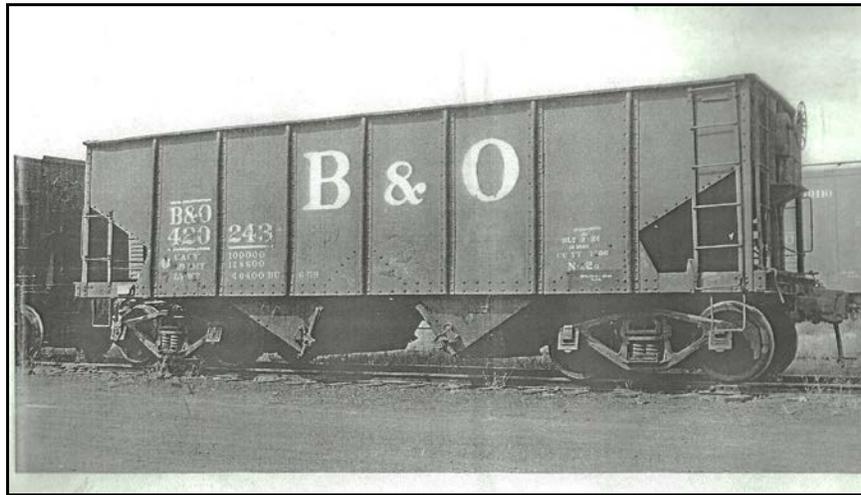
328140 Willard, OH left side, January 30, 1965 Julian W. Barnard Coll., B&ORRHS Built 5/23, Pressed Steel Car. Note brake reservoir bracket and location of slope sheet braces. Ajax power hand brake visible on right side. I believe the white dot means the car is suitable for carrying powdered coal.



225039, Willard, OH right side, December 14, 1964 Julian W. Barnard Coll., B&ORRHS. Note outside air line and damaged left sill step. Wine door locks



327441 Location and photographer not indicated, September 19, 1951, Bob's Photos. Right side and A end; good view of outside air line and coupler cut lever. Built 3/1923, American Car & Foundry



420243 Part of last lot of N-12g's built 2/1924, Pressed Steel Car. Photographer, location, date unknown, F&C Collection. Note Ajax power hand brake.



331457 Built 1923, Ralston Steel Car. 9/26/54, Paul Dunn photo, probably Zanesville, OH. Note Andrews trucks.

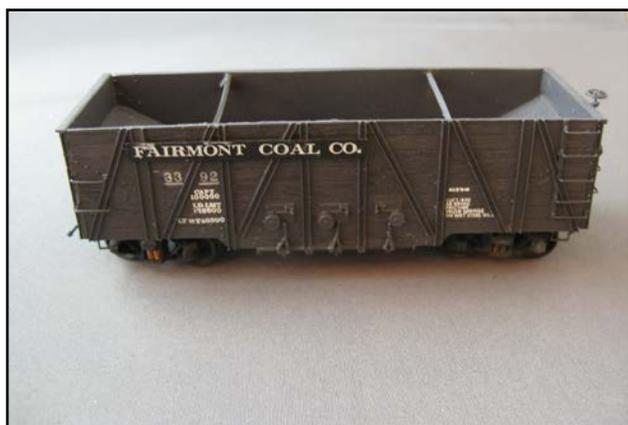
ONE MAN'S ROSTER - 50-TON HOPPERS

PHOTOS AND COMMENTARY BY JOHN TEICHMOELLER
DATA FROM JOHN SCHLETZER'S DATA CARDS

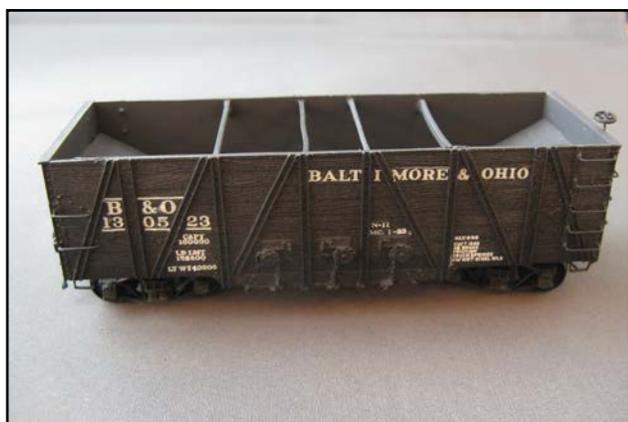
To add some perspective to our coverage of the N-12 hopper class, here are photos of 50-ton hopper models John Schletzer brought to the Prototype Modelers Meet in Greensburg, PA in March of 2013. Again, John's inspiration was Julian Barnard's "One Man's Roster" feature in 1962 and 1964 *Model Railroader*. The roster in the June, 1964 issue listed some hoppers but didn't show any models because, well, back then there weren't many commercial choices and pretty much none were correct. Some of John's models here are also stand-ins to a greater or

lesser degree, but we've definitely made progress. Notice the presence of "platform" end sills in most cases. Many of the cars illustrated below were relegated to cinder service in the 1920s and gone by the '40s and '50s. For time lines and more technical information, see Ben Hom's definitive article on B&O open hoppers in *B&O Modeler*, Vol. 2, No. 3.

For all cars, Scalecoat black paint, decals as noted.



Fairmont Coal Co. No. 3392 Funaro & Camerlengo kit, Seley design composite hopper. F&C decals. Built 1906 for FC&C, transferred to B&O as N-11 for cinder service. Model is a stand-in, looks good from the side but the purist will rework the ends, probably not a big job—good article for *The Modeler*.



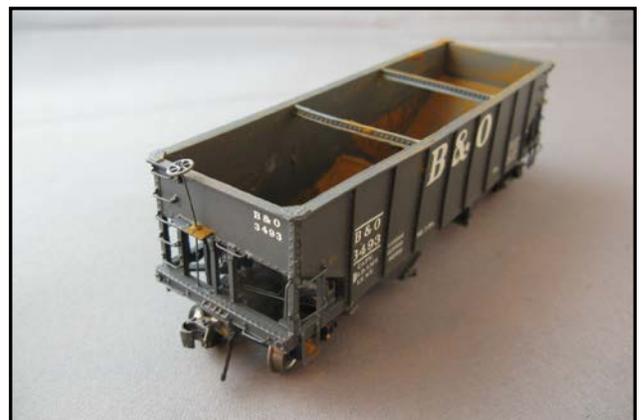
B&O 130523; Funaro & Camerlengo Seley composite hopper kit in B&O lettering, for cinder service. N-11 stand-in. Hopefully they quenched the cinders. F&C decals.



B&O 233088; N-14 Westernfield PRR GLb kit. Built 1903 for Jamison Coal Co. Very close to PRR GLb design (structural steel as opposed to pressed steel components). To B&O in 1906. Cinder service by 1929. Westernfield decals.



Jamison Coal & Coke 742; Bowser PRR GLa design. Bought by B&O in 1917, became N-15. Westernfield decals.



B&O 3493 "CNJ" Funaro & Camerlengo kit; F&C decals. One of numerous groups leased over the years from CNJ. Note unusual 9 panel/8 posts vs. more typical 8/7 arrangement.



B&O 20503 N-39 Tichy USRA kit, Champ Decals. Ex Buffalo Creek & Gauley, Close stand-in.

50-TON HOPPER MODEL COMPARISON

BY JOHN TEICHMOELLER



For some modelers, differences between various styles of 50-ton HO hoppers are of little concern. They all look alike, right? For others, it's a big deal. Now that the N-12 subclasses are available for HO modelers, why maybe some are even shredding their excess USRA cars. Well, probably not that extreme. For many years we were satisfied with lettering the Athearn and Life-Like cars B&O. Things improved with Tichy's USRA cars and elegant internal weight and wire grab irons. To some, the Accurail USRA car with the molded on hardware was a step backwards, but at least the panel widths are correct. Of course a number of classes PRR 50-ton cars came along from Westerfield, Bowser and most recently Funaro & Camerlengo. So now we have choices. But for those who are still "uncertain" whether it makes a difference, here is a side-by-side view of the Westerfield PRR GLa, the F&C N-12g and the Tichy USRA car.

Now, how about the difference between those Walthers 10' 6" inside height cars lettered for B&O 10' 0" cars?

COMING FUTURE ISSUES

We have material in hand for articles on the following subjects which we plan to publish in future issues. Meanwhile, if you have any material to contribute to these subjects, you are encouraged to contact the editors.

B-8 Steam Engines
Concrete Phone Booths
J.J. Tatum's Hopper Ends
Lidgerwood Photos—Model & Prototype
M-15L Boxcar Kit Review
Painting B&O Structures
Wagon Top Caboose
Wagon Top Boxcars
Wagon Top Covered Hopper
York Locomotive Models
B&O Steam Locomotives in Service 1940 to 1956
in HO-Scale

