THE B&O MODELER

Number 45

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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
Attn: Membership
P. O. Box 1608
Sykesville, MD 21784-1608

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, 2 issues) may be downloaded for the time being as well as issues 40, 41, 42, 43 and 44.

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") B&O Modeler Back Issues.

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!) B&O Modeler Index.

UPDATES AND ERRATA

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

UPCOMING EVENTS FOR POTENTIAL B&O MODELS ON DISPLAY OR B&O PRESENTATIONS

We don't receive direct communications from any Prototype Modelers Meets, so the listings below are a function of Scott's and John's "general awareness." Guess we have too low of a profile! Moreover, since we have an indeterminate publication schedule, some of the events below may have already occurred by the time you read this. Nevertheless, the links provided should enable to provide you with necessary information about the group's next event.

In any event, let us know if your "favorite" meet that is likely to have B&O content is omitted and give us details. Have other meet organizers send notices to us at: rmighpr@comcast.net

2017

Tentative: **"The Ilchester Station Project,"** by John Teichmoeller, December 6, 2017, Miller Branch of the Howard County Library, 9421 Frederick Rd. Ellicott City, MD 21042. This is an updated version of the program given at a B&OHS Minicon in Brunswick ca.2005 and in updated forms at both of the Pennsylvania Prototype Modelers meets. Admission is free but they generally like you to male reservatopms to make sure there are enough seats. For definitive scheduling and the reservation link, check with the HCLS website, Howard County Library System.

2018

Prototype Rails –January 4-6, 2018 in Cocoa Beach, FL.

- Photos from the 2017 Prototype Rails

RPM Valley Forge – March 23-25, 2018 in Malvern, PA.

- Photos from previous RPM Valley Forge events

Savannah Prototype Modeler's Meet – April 13-14, 2018 in Savannah, GA.

New England/Northeast RPM – June 1-2, 2018 in Enfield, CT.

- Photos from previous NERPM events

St. Louis Railroad Prototype Modeler's Meet – July 20-21, 2018 in Collinsville, IL.

NEW PRODUCTS

BY CLARK CONE AND THE MODELER STAFF

New Product Notices and Disclaimer

We have left out some B&O-styled items from this issue where we felt they carried modeler's license too far. If we omitted something that should have been included or if our comments in parentheses are off base, let us know. As usual, there is only so much that can be said from product announcements in the enthusiast press and low resolution digital images on manufacturers websites, so if you purchase any of these products and feel motivated to write a review, you're most welcome. And, of course, "a model is a representation of reality." So don't let our critical comments stop you from buying something you "like the looks of but the ends aren't right." At a recent NMRA convention, Hal Miller, editor of Model Railroader, said he is reinstating their old slogan, "Model Railroading is Fun." JT

HO-Scale

EMD GP30

Bachmann carries on the prototype's innovative history is offering a new DCC sound-equipped model. Their exclusive Sound Value SoundTraxx® diesel sound package includes prototypical prime mover, three air horns, and bell—all in polyphonic 16-bit sound. This model also features all-wheel drive, operating headlight, and E-Z Mate® Mark II couplers. (Bachmann's original DC Spectrum offering of the GP30 from 20 or so years ago had an incorrect cab; Life Like Proto 2000 did it right. The product announcement from Bachmann is silent on this so *caveat emptor*. Detailed reviews by the diesel experts invited.) Bachmann Trains.

United States Railroad Administration (USRA) 40-foot Single-Sheathed Boxcar

B&O class M-24. Operating Era: 1918-1970. Now available with an improved One-Piece body casting and both K and AB brakes. Kit now comes with etched bronze corner sill steps and Carmer cut levers. The United States Railway Administration (USRA) took over the railroads in December 1917. Standard freight car designs were developed to ease the car shortage; 25,000 single-sheathed (SS) cars were built between 1918 and 1920 and assigned to 26 roads. Too late for the war, they served as a standard for a decade. Kits do not include trucks or couplers. $41 each (undecorated, $40); flat kit ($38) also available. Westerfield Models LLC, 303-658-9343, Westerfield Models.

Pullman-Standard 40-foot PS-1 Boxcar with 6-Foot Doors.

Kadee is shipping as of October 11, Baltimore & Ohio (built 1956, shopped 2-56 and built 1956, shopped 7-70). One road number per scheme. Two-piece self-centering trucks and no. 2100 scale couplers. $36.95. (These are beautiful cars; the Society sold a run of them some years ago. I have No. 468741, stenciled as an M-67a. These were rebuilt and leased to the B&O by U.S. Railway Equipment Co. [the stencil on the lower left of the door] Anyway, the model looks to be dead on compared to a couple photos of M-67as I have. By 1976, the billboard B&O was chalking.) Kadee Quality Products Co., 541-826-3883, Kadee.

Pacific Car & Foundry 50-foot Insulated Boxcar

This new Walthers Mainline HO-scale boxcar, cited in *Modeler* No. 43, is decorated for Baltimore & Ohio's "Insulated Cushion Underframe" lettering. The model is offered in two road numbers and is also available undecorated. The boxcar has Proto-Max metal couplers and 33" turned-metal wheelsets. It retails for $24.98. (Number series on car is for M-80b, built at DuBois from Thrall kits. There are numerous differences between the model and prototype including ladders vs. grabs on end of side, roof overhang, depth and shape of side sill and rivets on model in places missing on prototype, *Color Guide* page 83. Perhaps this is a candidate for a detail bash/upgrade?) Wm. K. Walthers Inc., 414-527-0770, Walthers.

N-Scale

Old Time 2-8-0, B&O #1602/#1608 Consolidation Steam Locomotive

Two road numbers available. Separately applied handrails, bell, whistle, and safety valves; coined metal drive rods; split die-cast metal chassis with all-driver electrical pickup. $149.98. Available in February 2018. (We will leave it to 19th century modelers to determine the prototype fidelity of this Baldwin-looking unit and including it in our New Product listing because them colors sure are purty!) Athearn Trains, 800-338-4639, Athearn.

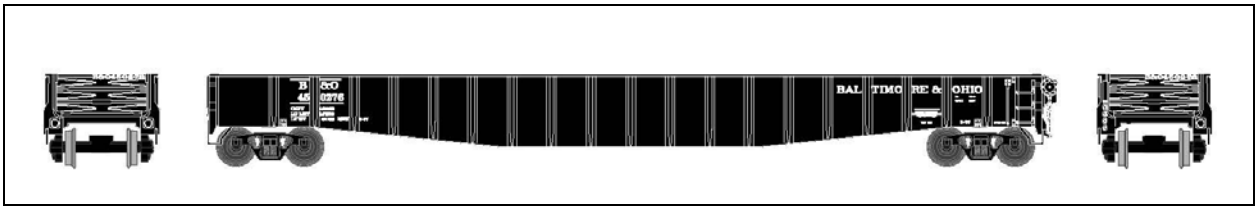
United States Railroad Administration (USRA) 30'-6" Two-Bay Hopper.

Baltimore & Ohio took delivery of these N-17 class hoppers in 1919 and began painting them in this paint scheme as early as 1946 and continued well into the transition era. This paint scheme included the “Linking 13 Great States With The Nation” version of the B&O capitol dome logo. Three to six road numbers available. Die-cast metal slope sheets, hopper bays, and center sill assembly; injection-molded plastic sides, ends, and hopper doors; and Fox Valley Models metal wheelsets. Single car, $24.95; two-pack, $49.90; and three-pack, $74.85. Available in January 2018. Bluford Shops, 618-822-6833, Bluford Shops.

B&O O-59a Gondola

Baltimore & Ohio took delivery of these O-59a class gondolas in February of 1941. As-built, they carried the Kuhler paint scheme with spelled-out side reporting marks and the early capitol dome logo with its unique ampersand. The post-war "13 Great States" paint scheme (with simplified reporting marks) was first applied in mid-1946 and was utilized into 1953. These four cars were re-weighed at Lorain Ohio in 7/52. They are offered as a four-car "Runner Pack" and feature working drop ends (useful for carrying overhung loads, like structural steel, in conjunction with an adjacent idler flat car). Two of the cars come with a load of scrap freight car wheels and the other two come with miscellaneous scrap loads. $89.95. Released September 2017. Still in stock at Micro-Trains as of early November. Micro-Trains Line, (541) 535-1755, Micro-Trains B&O O-59a.

65'-6" Mill Gondola



Available in May 2018 in Baltimore & Ohio black. Three road numbers available. Positionable drop ends, die-cast metal body and underframe, and screw-mounted trucks. $23.98. Due Late May, 2018 [Resolution of the artwork does not permit reading road number or class but number of stakes and location of fishbelly "drop" do not appear to agree with known B&O 65' gons. Prototype is said to be a General American product, while B&O's were Bethlehem.] Athearn Trains, 800-338-4639, Athearn N-scale 65'6" Mill Gondola.

S-Scale

The Baltimore Area American Flyer Club sponsored this year's National Association of S Gaugers (NASG) Convention and this year's convention car was either a B&O or Western Maryland TOFC flatcar with a scale 45-ft. trailer. While the B&O Hi-Rail car #2017 is sold out, there are 7 of the B&O 2017 scale cars left. However, there are plenty of the B&O #9523, the WM #1889, and the WM #2411 cars in both Hi-Rail and Scale. Also, there are plenty of the extra trailers that complement the different cars. According to *Model Railroader's* recent book on intermodal service, the trailer fits the exact dimensions of the first 45-ft. trailers used in intermodal service, at 45-ft. long, 8-ft. wide and 13-ft. from road to top of trailer. Extra trailers are also available. (But you won't find a photo of this car in the *Color Guide*.) To order, use this form: 2017 NASG Convention Car Order Form.

O-Scale

In 1923, the ARA (American Railway Association) proposed a standard design all-steel boxcar for the railroads. While the design was certainly a good one, the car never became a recommended practice due to questions of the selected inside width. Nonetheless, quite a few railroads opted for the design and rostered sizeable fleets. The largest group of cars, by far, was class X-29 of the Pennsylvania Railroad. The B&O's similar cars were M-26. Atlas O, 908-687-9590, Atlas O-scale.

Features Include:

- Highly detailed ABS body
- Die-cast chassis
- Flat or corrugated ends are per the prototype
- Detail variations as appropriate for each version
- Different door styles
- All metal separately-applied grab irons, ladders and stirrups
- Accurate painting and lettering – Four road numbers available
- Minimum diameter curve: O-31 (3-Rail)
- Minimum radius curve: 24" (2-Rail)

Late Breaking Blurb Notices [JT]

Product Delay--Funaro & Camerlengo did not release kits for the **HO-scale Class N-13 and N-10 hopper cars** by the October Timonium Show as hoped. They were probably too busy producing 150 kits of a slag car for the Steel Mill Modeling SIG, paid for up front. Stay tuned for the early 2018 shows. As we said before, when you run into Steve at train shows and other historical society meets, be sure to tell him how you are looking forward to these cars.

Athearn Trains will be releasing an **EMD GP40-2** in their Roundhouse Line with B&O and C&O reporting marks, two road numbers each. The engine will have a five-pole motor with dual flywheels, 8- and 9-pin plugs for a DCC decoder, and Celcon handrails. Expected January 2018 release at $99.98 per unit. More details are available here.

Rapido **HO Mid-Train Dome car**—this car is being reissued in numerous road names including B&O. Too bad, the B&O had corrugated-side cars and dome cars but none with both. From the advertisement, this looks like a wonderful model and would certainly look marvelous if you build a layout representing an expansion through the Rockies.

Miller Engineering B&O sign—Any scale; electronic animated **B&O Capitol Dome billboard**. No exact prototype reference but pretty neat. Didn't there used to be something like this at Camden? See Miller Engineering for color flashing image and more information: milleren@microstru.com.

Pullman Plan 4090 8-1-3 "Tower" Sleeper, HO. Cited in *Modeler* No. 43, they're here, from Bethlehem Car Works. Class S-5, Gothic Tower and Hill Tower. BCW released other Tower cars earlier but this one is differentiated from others due to York air conditioning. Cars operated on Shenandoah, Cleveland Night Express and the Washington Express. Kit has cast resin sides with Branchline heavyweight core. Bruce Elliott took delivery of his at the Eastern Minicon in July. Bethlehem Car Works.

Bachmann HO-scale **PS-2 covered hopper** cited in *Modeler* No. 43 is on the shelves. A broadside photo of the car appeared in the August *NMRA Magazine*. Based on the photo, while detail is not up to the Kadee level, the cast on ladder/grabs appear to be reasonably fine. Moreover, there is a nice outside air line and roping staples at each bolster. The roof walk looks to be about scale thickness and may even be "see through." Not sure how they are going to handle that retail price of $49, however.

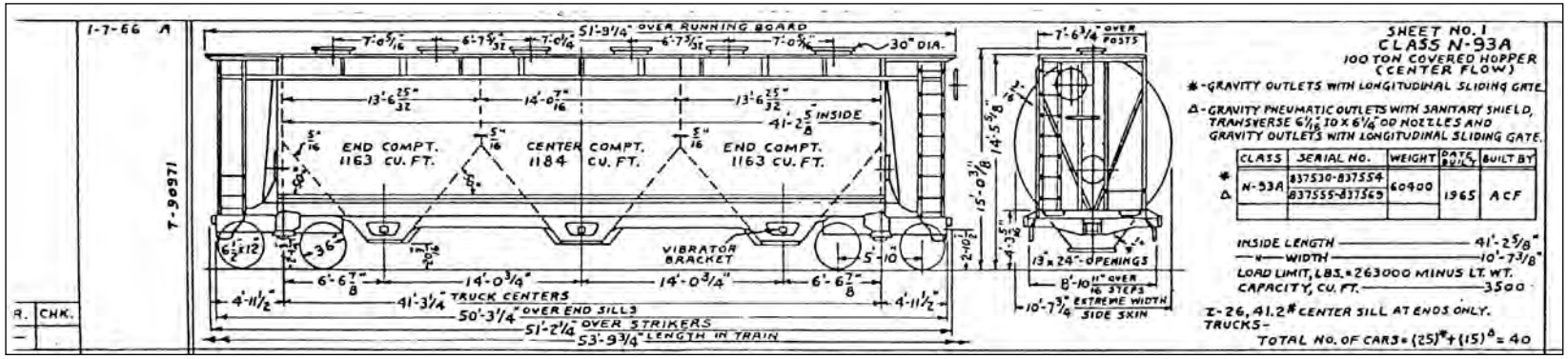
COORDINATION
N93A COVERED HOPPER
BY JOHN TEICHMOELLER

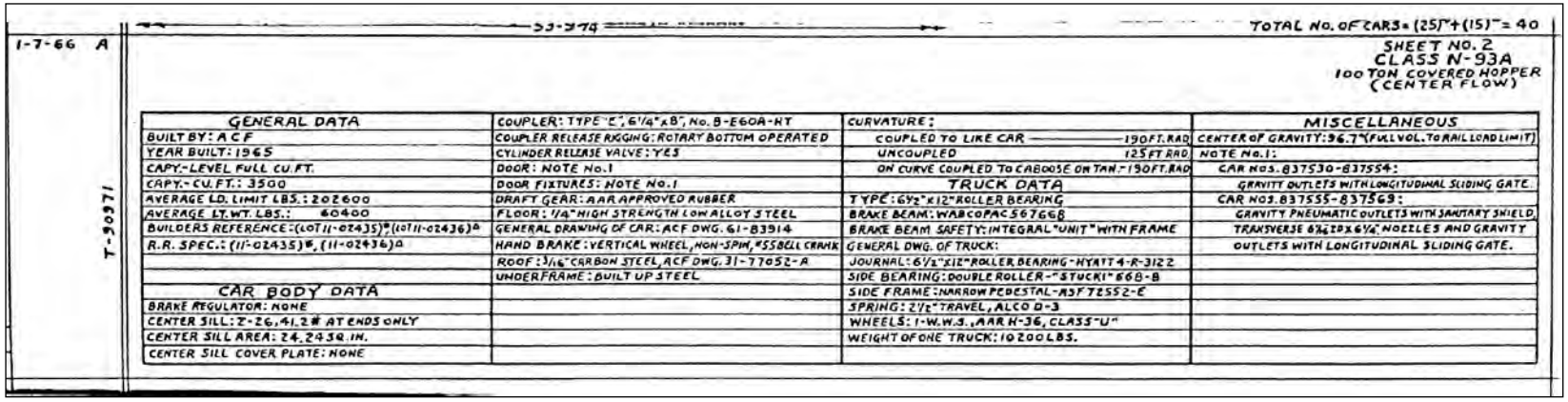
Harry Meem recently expressed a wish that where possible we try to coordinate information appearing in *The Sentinel* with material in *The Modeler*. By the very nature of the publications, the opportunity to do this might seem rare but it isn't impossible.

Specifically, the Third Quarter 2017 *Sentinel* contained Jim Rogers' article "B&O Center Flow Covered Hoppers". There were numerous classes described but the only one I happen to have a model of is class N-93a. So, there follows diagrams of the class and several photos of the model.

Some commentary about the model:

- This was Atlas No. 1931-02, purchased for $12 in October of 2001 at Timonium. The box had a price tag for $15.95.
- The model's principal dimensions agreed with those of the prototype within a fraction of an inch (my measurement error): running board length, truck center distance, height above rails, truck wheelbase.
- The model has the gravity outlets with longitudinal sliding gates which are proper for the road number.
- The molded-on sill steps have the proper weird twist to them
- There is an outside air line on the car's right side facing the B end, and there is air brake piping connecting the AB valve with the reservoir.
- Grab irons are cast on but they are very fine, close to the level of individual wire grabs. Almost to the Kadee level of detail.
- The running board is solid, not see-through or photo-etched, but is finely detailed, and its thickness is probably more effective relative to the prototype's metal grid than a photoetched part would be.
- The trucks have metal wheels; my car has Kadee metal couplers: I don't recall but I probably changed them from Atlas's normal plastic couplers.
- The only enhancement I plan to make is to add cut levers (and suitable weathering).
- The gray color of the model seems correct in certain light in my house and a bit darkish in other areas. I find this to be typical for gray model covered hoppers. Maybe it's just my eyes.
- I don't know if there is a later model of this car with improved details. If so, readers are invited to submit photos as well as model photos of the other classes covered in Jim's article.


1-7-66 A
T-90971
51'-9¼" OVER RUNNING BOARD
30" DIA.
END COMPT. 1163 CU. FT.
CENTER COMPT. 1184 CU. FT.
END COMPT. 1163 CU. FT.
41'-2⅝" INSIDE
VIBRATOR BRACKET
14'-0¾" TRUCK CENTERS
50'-3¼" OVER END SILLS
51'-2¼" OVER STRIKERS
53'-9¾" LENGTH IN TRAIN
7'-6¾" OVER POSTS
13'x24" OPENINGS
8'-10 11/16" OVER STEPS
10'-7¾" EXTREME WIDTH SIDE SKIN
SHEET NO. 1
CLASS N-93A
100 TON COVERED HOPPER (CENTER FLOW)
*-GRAVITY OUTLETS WITH LONGITUDINAL SLIDING GATE.
Δ-GRAVITY PNEUMATIC OUTLETS WITH SANITARY SHIELD, TRANSVERSE 6½" ID X 6¼" OD NOZZLES AND GRAVITY OUTLETS WITH LONGITUDINAL SLIDING GATE.
CLASS | SERIAL NO. | WEIGHT | DATE BUILT | BUILT BY
* Δ N-93A | 837530-837554 837555-837569 | 60400 | 1965 | ACF
INSIDE LENGTH 41'-2⅝"
WIDTH 10'-7⅜"
LOAD LIMIT, LBS. = 263000 MINUS LT. WT.
CAPACITY, CU. FT. 3500
Σ-26, 41.2# CENTER SILL AT ENDS ONLY.
TRUCKS-
TOTAL NO. OF CARS = (25)* + (15)Δ = 40


1-7-66 A
T-90971
TOTAL NO. OF CARS = (25)* + (15)Δ = 40
SHEET NO. 2
CLASS N-93A
100 TON COVERED HOPPER (CENTER FLOW)
GENERAL DATA
BUILT BY: ACF
YEAR BUILT: 1965
CAPY.-LEVEL FULL CU.FT.
CAPY.-CU.FT.: 3500
AVERAGE LD. LIMIT LBS.: 202600
AVERAGE LT.WT. LBS.: 60400
BUILDERS REFERENCE: (LOT 11-02435)*, (LOT 11-02436)Δ
R.R. SPEC.: (11-02435)*, (11-02436)Δ
CAR BODY DATA
BRAKE REGULATOR: NONE
CENTER SILL: Σ-26, 41.2# AT ENDS ONLY
CENTER SILL AREA: 24.2458 IN.
CENTER SILL COVER PLATE: NONE
COUPLER: TYPE "E", 6¼"x8", No. B-E60A-HT
COUPLER RELEASE RIGGING: ROTARY BOTTOM OPERATED
CYLINDER RELEASE VALVE: YES
DOOR: NOTE No.1
DOOR FIXTURES: NOTE No.1
DRAFT GEAR: AAR APPROVED RUBBER
FLOOR: 1/4" HIGH STRENGTH LOW ALLOY STEEL
GENERAL DRAWING OF CAR: ACF DWG. 61-83914
HAND BRAKE: VERTICAL WHEEL, NON-SPIN, "SSBELL CRANK
ROOF: 3/16" CARBON STEEL, ACF DWG. 31-77052-A
UNDERFRAME: BUILT UP STEEL
CURVATURE:
COUPLED TO LIKE CAR 190 FT. RAD
UNCOUPLED 125 FT RAD
ON CURVE COUPLED TO CABOOSE OR TANK 190 FT. RAD
TRUCK DATA
TYPE: 6½"x12" ROLLER BEARING
BRAKE BEAM: WABCO PAC 567668
BRAKE BEAM SAFETY: INTEGRAL "UNIT" WITH FRAME
GENERAL DWG. OF TRUCK:
JOURNAL: 6½"x12" ROLLER BEARING - HYATT 4-R-3122
SIDE BEARING: DOUBLE ROLLER - "STUCKI" 668-B
SIDE FRAME: NARROW PEDESTAL - A5FTE552-E
SPRING: 2½" TRAVEL, ALCO D-3
WHEELS: 1-W.W.S., AAR H-36, CLASS "U"
WEIGHT OF ONE TRUCK: 10200 LBS.
MISCELLANEOUS
CENTER OF GRAVITY: 36.7" (FULL VOL. TO RAIL LOAD LIMIT)
NOTE No.1:
CAR NOS. 837530-837554: GRAVITY OUTLETS WITH LONGITUDINAL SLIDING GATE.
CAR NOS. 837555-837569: GRAVITY PNEUMATIC OUTLETS WITH SANITARY SHIELD, TRANSVERSE 6¼" ID X 6¼" NOZZLES AND GRAVITY OUTLETS WITH LONGITUDINAL SLIDING GATE.


B & O
B&O
837537

EXTRA SECTIONS FROM THE READERS

BY JOHN TEICHMOELLER

Section 1 Sprucing Up the Right of Way

From Dan Finfrock:

Paint chips from the Hamilton Ohio station showed a tan and dark brown paint scheme on the exterior wooden parts just before the C&O gray was applied. However, during WW II the whole station was painted gray, brick and all. Right after the war, the gray was removed from the brick and the woodwork was tan and dark brown. Have several Kodachrome slides to confirm this. Frankly I think many of the B&O buildings were painted with whatever was found in the warehouse.

Hamilton, OH, 10/1994 JT photo A lot of brick and not much wood on this station JT

Section 2 M-15k Chicagoland Project Comments

The M-15k Chicagoland Project seemed to have generated quite a bit of interest. I have no inside information but would not be surprised to see a RTR version of this class from one of the top-of-the-line makers. JT

From Ed Kirstatter:

In rereading over the *Modeler* several times I find one thing that needs commented upon in the M-15K article. When these M-15 and sub classes were rebuilt to the M-15K & Ls, they reused the ladders from the old cars on the new conversions! These show on the company diagrams and photos as only 6-rung ladders. The M-53s had 8-rungs, very noticeably different! That model should have 2 rungs removed and two grabirons applied on the body above it. Then it will be correct.

The sheets on the ends were different also.

You had no prototype photos just referred to *RPCYC No. 9*

There were prototype photos in the project PDF to which we provided the link. Plus, shouldn't every Prototype Modeler have a complete set of the Railroad Prototype Cyclopedias? JT

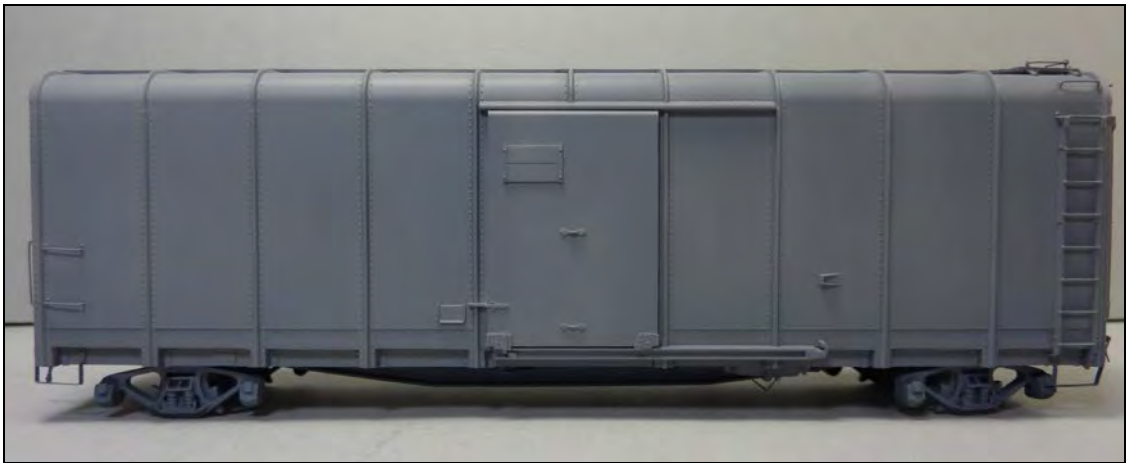
Bob Chapman responds:
In looking at many photos, I see 6-rung, 7-rung and 8-rung ladders. For good reason B&O can be called The Non-Standard Railroad of the World. We will have to model specific car numbers to be correct.

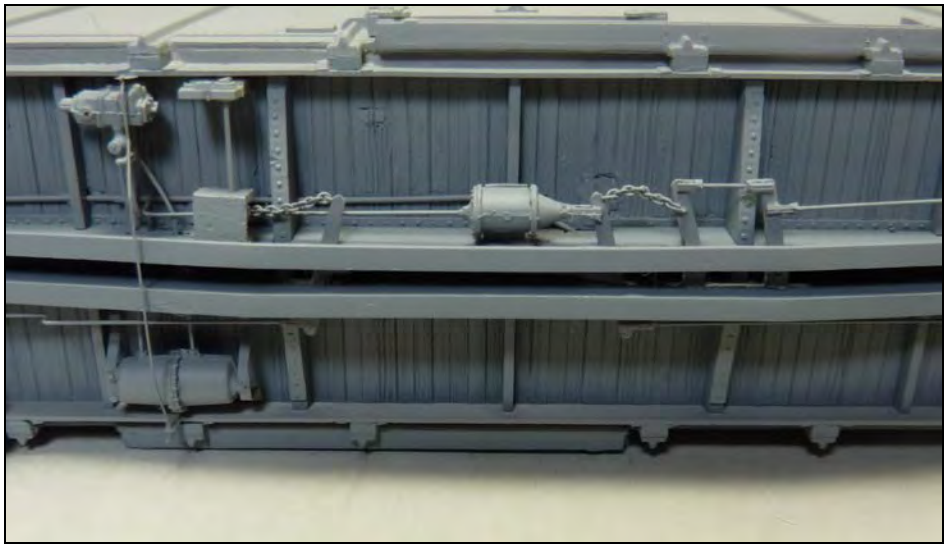
George Toman submitted some photos of his project in progress. In particular, he went to some effort to obtain what he feels is correct information for the underframe details. Here he shares the following results of his research as well as a photo of his model's underframe:

…the pdf instruction sheet that Frank [Hodina] did [for the project]….does not appear to have a correct layout of the brake components. I received a copy of the actual brake diagram from the Steam Era Freight Car Website posted by Robert Witt (there are actually 4 posted and it appears that the M-15k used a 5-lever arrangement). Also, Ted Cullota believes that the M-15k used a hybrid brake system that used the original reservoir of the K brakes as well as the newer AB reservoir. From Volume 7 of *Focus on Freight Cars* by Ted, there are 6 very good photos of the M-15k and some brake detail can be seen on the left-hand side view but none of the right side. I am overly particular when I build a model and try to get the underframes as correct as possible and would like to do the same on this M-15k.

Thanks, and if you are a member of the Steam Era Freight yahoo group you can download the actual pdf brake diagrams that show an arrangement diagram but not actual layout of triple valve, reservoir and slack adjustor. Link below:

B&O M-15k Brake Information





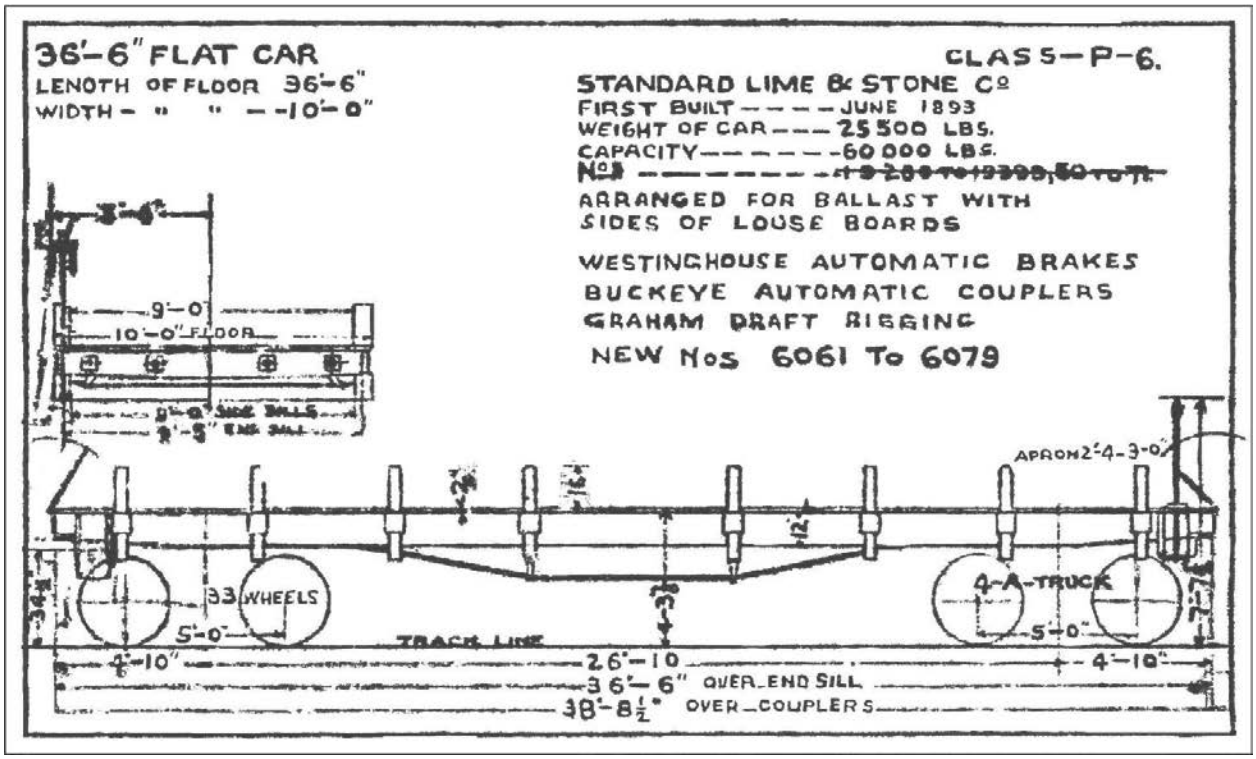
George Toman's M-15k underframe

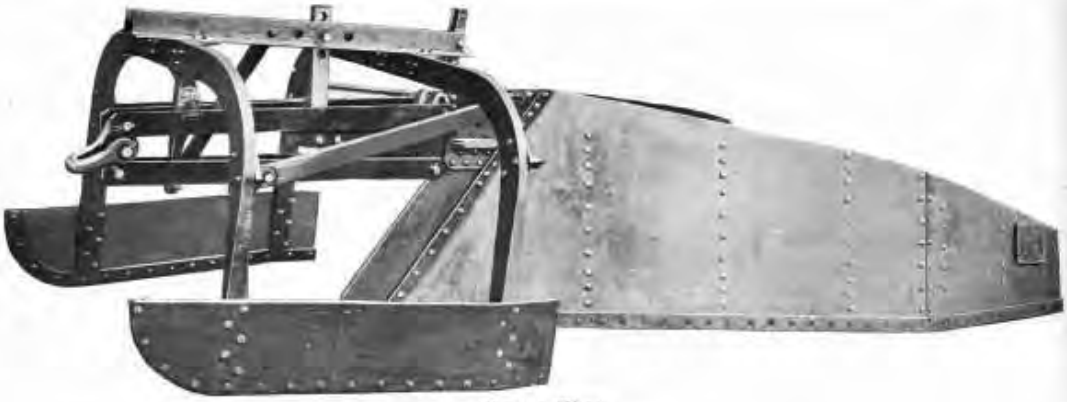
George also had his finished car on display at the Collinsville, IL Prototype Modelers Meet and is included in the photo album from that meet.

Section 3 Lidgerwoods

Yes, I know the following is prototype, not modeling information and I doubt we will be seeing an article on building fills on our layouts using model Lidgerwoods but… there seems to be an ongoing curiosity about this subject so we will indulge. Meanwhile, an unaddressed area remains: illustrated descriptions of the hardware used for machining loco drivers.

First, from Ed Kirstatter come the following reproductions from the 1921 *Maintenance of Way Cyclopedia* showing the ballast plow hardware and describing how the winch is used.

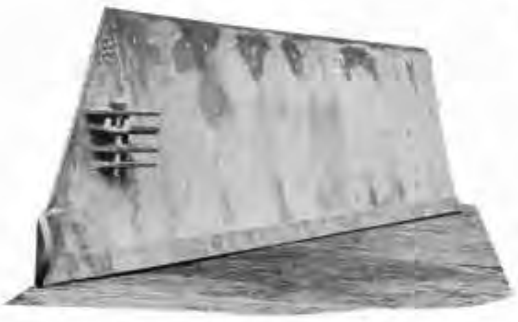




Center Plow
The Bucyrus Company

Bucyrus Side Plow
The Bucyrus Company

Marion Center Ballast Unloader
The Marion Steam Shovel Co.



Osgood Side Plow, Front View
The Osgood Company

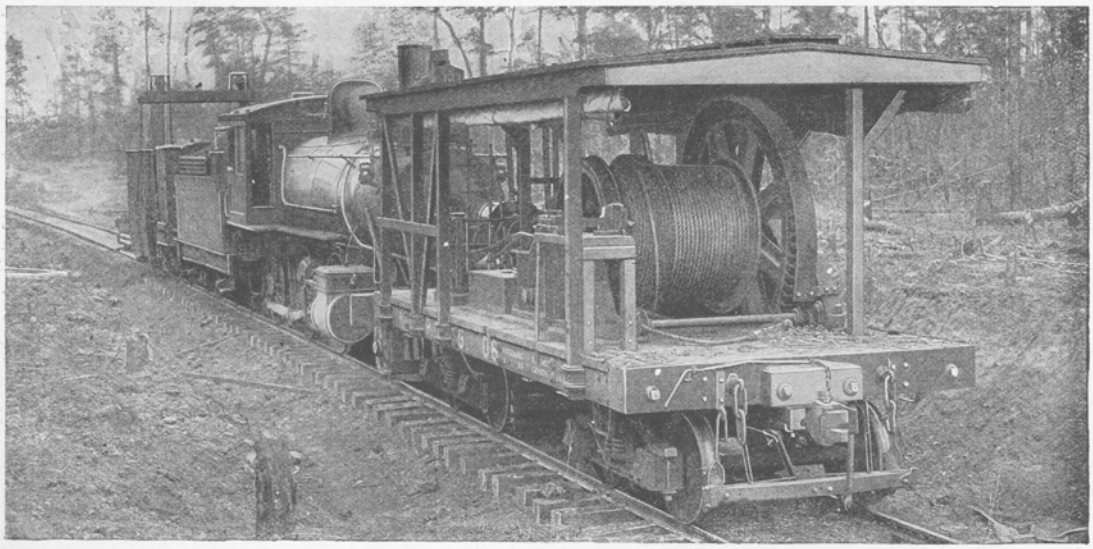
Osgood Side Plow, Back View
The Osgood Company

The cylinders are about 12 in. by 12 in., and are connected by driving shafts to fly wheels at each end of a cross shaft on which is mounted a small gear which engages a larger gear on an intermediate cross shaft which ends in a winch head and also mounts a small gear which in turn engages the drum gear which has a face of 6 in. to 8 in. and a diameter of about 3 ft. 6 in., while at the opposite end of the drum is a friction flange around which a metal band, usually mounting a series of hard wood blocks, is secured and operated by means of a hand or foot lever.

BALLAST UNLOADING. The removal of ballast from cars to the road bed. The manner of distributing ballast along the track is determined largely by the kind and quantity of the equipment available for the purpose, two general methods being in common use: (1) convertible cars or flat cars equipped with end aprons so that a ballast plow may be used to sweep the loads off on either or both sides, or (2) cars from which the loads may be dumped by tilting the car body or parts of it.

Unloading by the first method involves clearing the ends of the cars of all obstacles above the floor surface such as end gates and brake wheels, if any, and stretching a wire strand cable the length of the train, one end being coupled to the apex of the ballast plow at the rear while the other end is attached to and wound on the drum revolved by an unloader engine deriving power from the locomotive at the front end of the train. The distribution of the material along the road bed in thin layers or all in one spot is regulated by the rate of movement of the train while unloading is in progress.

The cable is commonly drawn off the drum of the unloader and over the loaded cars preparatory to unloading, by means of span chains stretched across the track about 12 ft. above the rails between two opposite poles or by means of a horizontal spar of timber extending at right angles over the loaded train from a stretcher car stationed on a parallel track. The cable is run through snatch blocks attached with chains to stakes in the stake pockets on the loaded flat cars preparatory to unloading on curved track, though such guides are not usually necessary for work on straight track. Convertible cars used in this service are equipped with removable ends and sides hinged at the top and arranged to open outward from the floor line. An advantage of flat cars is that the roughest material a steam shovel will load can be handled as described, affording a method of disposal from a pit of the largest boulders or other refuse material for filling or rip rap; although the available space on flat cars limits their ballast capacities to from one-third to one-half the yardage that can be carried in convertible cars of the same length.



Lidgerwood Ballast Unloader
The Lidgerwood Manufacturing Company

Ballast may also be unloaded with the locomotive of the ballast train only, by detaching it from the loaded train to pull the plow forward at the end of the cable. With this expedient, the distribution of the ballast cannot be controlled, as the train is stationary while being unloaded, and the cable is not so readily handled without the unloader drum, for it must be thrown off the unloaded train by hand and replaced partly by hand, which is slow and at times dangerous to employees.

Side dump cars are also sometimes used to unload ballast at the side of the track. This style of car is usually equipped with a special compressed air cylinder so arranged that the cars may be dumped toward either side from the locomotive where the air control is located or they may be released separately at the car. The car body is secured and supported along the center line to a horizontal draft beam held in position by braces from the truck frames, and high enough to permit the body to tilt sharply to discharge all the contents, the

Bob Weston came across a piece in the April 19, 1901 issue of *Railroad Gazette* that gives us some technical information for someone who wants to build a model of the Lidgerwood winch. Too bad elevation views of each side are not provided, but the true craftsman can go from the plan views and specifications. The article shows how the device was used to make fills. There are a number of commercially available winch model kits that could be used as a start or stand-in—check the logging model section of the Internet.

An Economical Method of Handling Dirt and Ballast.

BY SPENCER MILLER, C. E.

Having recently been collecting some data respecting the handling of dirt and ballast by the Rapid Unloader method, I have found some facts which I believe will be of interest to railroad men in general.

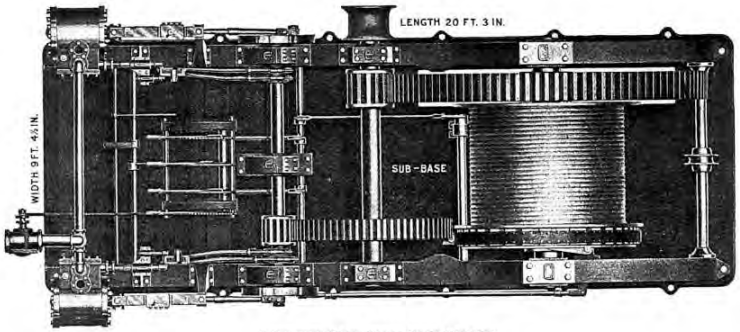
It was 10 years ago that, at the instance of Drake & Stratton, a special winding engine was constructed, mounted on a flat car and used to pull a plow along a train loaded with frozen clay. This is discharged with such despatch as to be given the name of "Rapid Unloader." Over 100 machines of the same size have since been put into use. This engine pulled over 25 tons on the plow line.

So long as the cars carried from 15 to 20 yards each, this size machine was found ample for all requirements. But for cars loaded with from 40 to 45 cu. yds., the necessity for a heavier machine became apparent. Such a one has now been produced. The accompanying cuts are plan views of the two Rapid Unloaders, and the following table of proportions indicates the difference in the strength of various parts of the two machines.

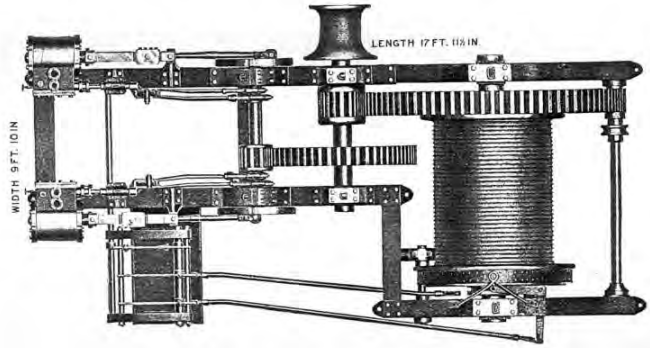
Comparison of Important Dimensions.

Standard Unloader, 25-ton pull.	Heavy Unloader, 60-ton pull.
Size, 10 x 12.	Size, 12 x 12.
Steam cylinder.....10 x 12	Steam cylinder.....12 x 12
Diameter drum.....41 in.	Diameter drum.....54 in.
Diameter drum shaft..8½ in.	Diameter drum shaft..10 in.
Face drum .....49 in.	Face drum .....42 in.
Grooved for rope diameter, 1¼ in.	Grooved for rope diameter, 1½ in.
Diameter large gear, cast iron, 89 in.	Diameter large gear (steel), 109 in.
Pitch large gear.....3½ in.	Pitch large gear.....3½ in.
Face large gear.....8	Face large gear.....10 in.
Proportion of gear..30.3 to 1	Proportion of gear...40 to 1
Width over all....9 ft. 10 in.	Width over all....9 ft. 4 in.
Length over all, 17 ft. 11½ in.	Length over all...20 ft. 3 in.
Weight 25,280	Weight 40,950
	Weight sub-base.....10,589

A large number of flat cars have been built to carry from 40 to 45 cu. yds. These are 40 ft. long and 8 ft. 9 in. between the stakes; side boards are provided 36 in. high, containing outswinging doors locked in position by levers. Steel aprons are hinged to one end of each car, so that a train of these cars becomes practically a con-



Lidgerwood Extra Heavy Rapid Unloader.



Lidgerwood Standard Rapid Unloader.

tinuous trough, favorably adapted to filling by steam shovels.

Mr. James J. Hill, President of the Great Northern Railroad, has filled cars of this sort with 41,700 yds. in nine days, or 4,563 cu. yds. a day. On the Port Arthur Route similar cars have been filled at the rate of 4,000 cu. yds. a day. These cars are only 7 ft. 1 in. above the rail, and the material is delivered almost continuously—conditions most favorable for a minimum cost in filling. Such cars should also permit a minimum cost in transportation, for we find them carrying 80 per cent. of live load. A train made up of 16 loaded cars, a rapid unloader car and a plow car will weight about 2,760,000 lbs., and is a pretty good load for the average locomotive. The train empty will weigh about 600,000 lbs., and the live load left along the track will be 2,160,000 lbs.

In contrast to this, suppose a dumping car train be composed of cars each having a carrying capacity of 80,000 lbs. and weighing empty 48,000 lbs. Twenty-two such cars will represent a total weight of 2,816,000 lbs., which is a little in excess of the rapid unloader train, and its live load will only be 1,760,000 lbs., or about 20 per cent. less than from the rapid unloader train, while the cost of these 22 cars will probably be double that of the unloader train. And to carry the same amount of dirt 27 cars would have to be provided.

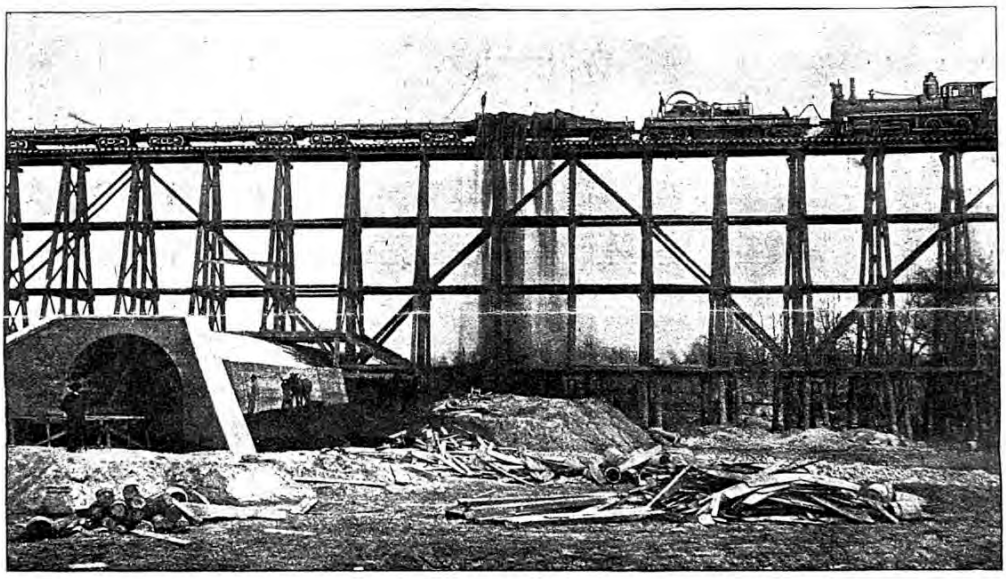
The cost of discharging a load with the Rapid Unloader is not easily separated from the cost of running the train. In fact, when one railroad contractor was asked what the cost of discharging was, he answered that it was too small to be found; but the combined cost of transportation and unloading has been given at 1.36 cents per cubic yard for five months' actual work. The capacity delivered by these trains is so large, and the cost of discharging is so small, that when the latter is divided by the former it brings the cost per cubic yard down to a small fraction of a cent. I have endeavored to obtain some actual figures of the cost of handling dirt from pit to track, and have written to some 300 railroad officials with this purpose in view. Many replies were received; but few figures given, arising from the fact that the work was carried on so intermittently that it was impossible to know what the cost was.

Mr. James J. Hill, of the Great Northern, has stated that he has handled dirt from pit to track for less than four cents per cubic yard. He employed a heavy steam shovel, cars with 36-in. side boards and the Lidgerwood Rapid Unloaders. Taking his record of 4,000 cu. yds. as the capacity of the steam shovel, it is wholly likely that he was able to pay all operating expenses inside this figure. It will be observed that 4,000 cu. yds. of earth at four cents per cubic yard will amount to $160 a day, which should certainly cover all the cost of operating one steam shovel and two rapid unloader trains, leaving considerable margin for repairs, etc.

The Kansas City Southern (The Port Arthur Route) kept careful account of all expenses for the months of March, April, May, June and July, 1900, and in that period 275,353 cu. yds. of dirt were handled at a total average cost of 0.0425 cents per cubic yard. This included dirt out on the road and leveling down, or 0.0289 cents per cubic yard loaded on cars at the pit, 0.0136 cents for hauling and unloading on the work and leveling down 0.0549 for putting same under the track, making a total cost of 0.0974 cents under the track. These figures cover all cost. Much of the work was in bad material, hauling from 5 to 50 miles and dumping with the Rapid Unloader. This work was done by use of the small size of Rapid Unloader, which needed frequent repairs in attempting to discharge 40 to 45 cu. yds. to the car, thus adding materially to the cost. Considering the difficulties encountered, this record is certainly remarkable.

A photograph is reproduced which shows a rapid unloader train delivering its entire load in a space of 50 ft. This was done in filling a trestle on the Nashville, Chattanooga & St. Louis Railway, near Paris, Tenn.; 210,000 cu. yds. are required to fill this trestle, which is 1,300 ft. long. The dumping is accomplished by moving the train in one direction as the Rapid Unloader pulls the plow in the opposite direction.

The opposite of this is resorted to in ballasting. On the Minneapolis & St. Louis Railway a load of gravel is deposited along a stretch of track three times as long as the train.



Filling a Trestle on the Nashville, Chattanooga & St. Louis Railway.

Finally, Section 4 Layout invitation from Dale Ridgeway
John, I saw the review in your *B&O Modeler* magazine you wrote on my article in the March issue of *Model Railroader*. It was sent to me by Fran Giacoma who is a close friend and a fellow operator on my layout. My layout is always open to visitors who would like to see it. They just need to call me in advance so I can schedule it. I also had an article in *Railroad Model Craftsman* back in the May 2015 issue on the layout. It was from a different perspective as you would have grown up on the layout. That idea came to me as I always wondered what it would be like to shrink down to HO size and ride the trains through the layout. The article is called "Growing Up in A Different World. "Once again, thank you for mentioning my article to fellow modelers.

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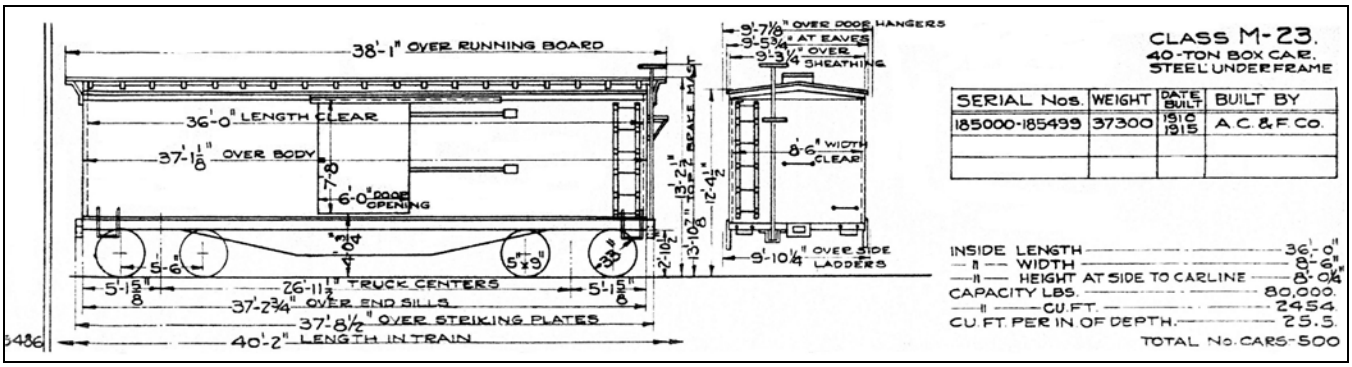
B&O MODELING IN THE ENTHUSIAST PRESS
BY JOHN TEICHMOLLER

We cite articles and product reviews of relevance to B&O modelers from the enthusiast press. We will particularly mention any evaluative comments that might be useful to purchasers or builders. Let us know if we have missed something.

"B&O Plan 3975 Cars," by Chuck Blardone and Myron Bilas in *The Sentinel*, Vol. 39, No. 1 (1st Qtr. 2017), pages 3-13. This article about these "sun room Pullmans," B&O class S-16, gave nice roster information and included good prototype photos as well as an equipment diagram, but there was nothing specific about modeling the car. Several readers asked if there was any possibility of talking passenger car guru Bob Chapman into executing and documenting a model project for this car. As it turns out, he already has. A two-part article on modeling the National Limited by Bob was published in the March and April 2002 issues of *Model Railroader* (the subject car was covered in the April installment). You can order each issue from the Kalmbach website for $5.99 (you used to be able to order individual MR articles) if you or a friend doesn't have the hard copy. Of course, that was 15 years ago, and it's reasonable to assume there are improvements in the available materials that would make this project easier now. Additionally, the above *Sentinel* article contains photos and other information not available to Bob back then. Since Bob is satisfied with his model (photo below), he has no interest in building another one. So we leave this as an open invitation to enterprising passenger car modelers.

Bob Chapman's photo of his Capitol Escort model at his Cincinnati Union Terminal.

"Accurail HO-Scale 36-foot double-sheathed boxcar kit," kit review by Dana Kawala in *Model Railroader*, August 2017, p. 62. This was a non-B&O specific review (review car is lettered NYC but is offered in B&O lettering) but this car may have some strong resemblances to B&O M-22 /M-23. Grabs and topside detail is standard Accurail cast-on but can be removed or enhanced with shading techniques. The review does address some enhanced underbody detail. There is a link on the Accurail website to a nice blog Eric Hansmann prepared about building the underframe: Accurail 36-foot box car underframe tutorial. Has anyone who has purchased the B&O version had a chance to do a side-by-side comparison between the model and diagrams/photos to see how close principal dimensions and other architectural features match? In any event, these cars seem to be a reasonable alternative to the MDC predecessors (apparently recently reissued as Athearn's "Roundhouse Line") or resin kits, even if they aren't "dead on" out of the box.



B&O Class M-23 Boxcar Equipment Diagram

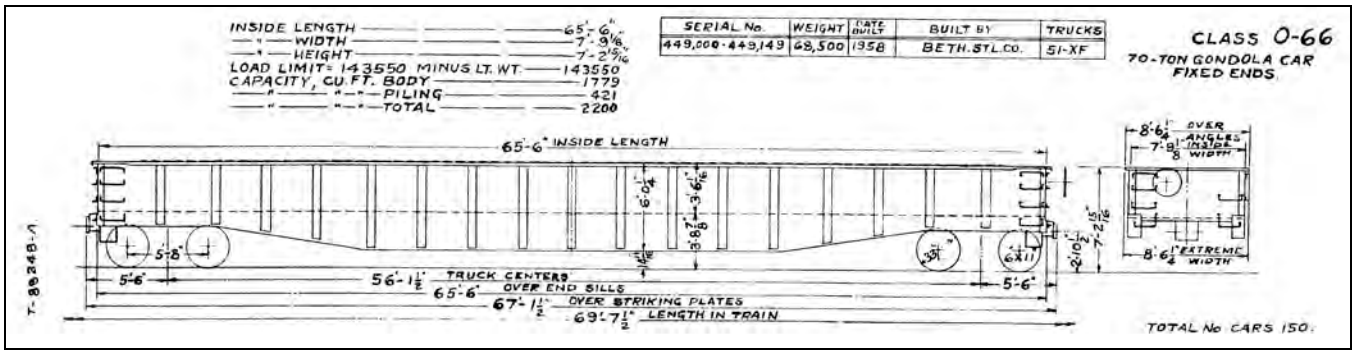
"Bachmann: E7A Diesel" Review by Tony Lucio in *Railroad Model Craftsman*, August 2017, pages 28-29. Review sample is a Union Pacific unit so there is nothing B&O-specific although Bachmann advertises it in B&O colors. The B&O rostered 9 A-A sets of these (4000 hp per set), acquired in 1945. Review cites no dimensional or detail discrepancies or criticisms. It is available with sound and DCC which was not evaluated because the review covered a DC-only unit. Loco has some applied details but details were hard to see in the review photos because of the bright yellow UP paint. The loco does not seem to be promoted as part of what is, or at least what once was, Bachmann's premier "Spectrum" line. The Spectrum line touted enhanced details but it is not clear that Bachmann maintains this brand anymore. The review's summary assessment was that these are nice-running models at an affordable price.

Dana Likes It!: **"Kitbashing an early B&O wagontop boxcar,"** by Dana Kawala, *Model Railroader*, September 2017, pages 22-25. Dana executed the Chicagoland 2016 M-15k project that Bob Chapman covered in *Modeler* No. 44. It's beneficial to be able to see two different modelers' approach to the same project. Dana even fesses up to a booboo he made and recovered from with the car weight. I read a lot of articles in *MR* that don't directly pertain to my interests because I am following their comments on the Testors Modelmaster paint numbers they choose as alternatives to discontinued Floquil-PolyScale colors. Dana tells how he overcomes the white decal paper devil. Dana painted his car the older brownish boxcar color and lettered it for the mid 1945-1946 Postwar Kuhler scheme. With the popularity of this project so seemingly great, can a RTR M-15k from Fox Valley be too far off?

"Upgrade an HO-Scale X29 with Photo-etched Parts," by Bruce F. Smith. *The Keystone Modeler*, No. 101, Summer 2017, pages 13-17. Bruce walks us through a challenging application of brass detail parts from Yarmouth Model Works, (part 505) to a Red Caboose X29 boxcar. Some of this might have relevance to the Red Caboose rendition of the B&O's M-26. I know enough about these boxcars and their differences to be dangerous, so I just throw this out. Round up your new sharp drill bits, your hemostat, and pierce your tube of Barge cement. You don't have to worry about the Carmer coupler apparatus on the B&O car, however.

"Baltimore & Ohio O-66 Mill Gondola" The gondola is one of my favorite car types so it was great to see these drawings by James Kinkaid and 8 prototype photos in the August 2017 *Railroad Model Craftsman*, pages 50-55. Drawings are published pursuant to *RMC* Editor Stephen Priest's new policy of "no specific scale, just run 'em to take up as much of the page as possible." Accordingly, the drawing comes out a little under O-scale but it would have been nice to have a few more elements dimensioned, such as width and overall side height. Never mind, we have the diagram. The prototype photos are excellent, especially the lead color shot by Craig Bossler that spans the tops of both pages 50-51.

When I first saw it I thought it was one of those stunning Ken Patterson model photos. There have been a number of 65' HO gon models available over the years-the ancient and way-before its time Railmaster, Eastern Car Works, Athearn, Precision Scale, but it gets tricky because most of them are "off" in one or more parameters. What we are looking for here are fixed ends, side "drop" that begins with stake 2 and ends at stake 5, stakes full length to bottom of side, 6' side height and 17 stakes total. The ancient Red Ball "Oregon" gon, catalogued as Kit No. 39, is close but no cigar because the sides are only 5' high. We have had material in *The Modeler* on B&O gons and welcome more, like Elden Gatwood's masterful series on PRR gons in *The Keystone Modeler*.



B&O Class O-66 Gondola Equipment Diagram

"Rapido Trains: Budd RDC," product review by David Otte in *Railroad Model Craftsman*, October 2017, pages 28-31. This review covers the Southern Pacific rendition of the RDC-1, of which the SP is said to have had a single unit. The first two pages of the review cover the history of the RDC, and then Otte describes the model's features with 5 good-sized photos. The model photos are lighted in such a way that you can see and appreciate the details. The evaluation is very positive, as is typical of Rapido products. Rapido produced a B&O-lettered version of the RDC-1 that was supposed to have B&O-specific details, but the article contains no information about the detail differences. I was tempted to buy one of these but decided to stick with my Walthers Proto-1000 unit to which I will add details if I live long enough. The Rapido model photos certainly provide good guidance for detail enhancement. Meanwhile, we invite a more descriptive article/review from a purchaser of the Rapido B&O unit. If I understand Rapido's ads, they will be doing a second run of the RDC-1s as well as RDC-2s lettered for B&O. Has anyone heard any rumblings about the dining section version of the RDC-2? My Hallmark RDC-2 with the dining section has been converted to the bar car in my fictional RDC service.

MODELING BUILDING THE SHENANDOAH SUB-DIVISION

BY FRAN GIACOMA

Introduction

John Teichmoeller recently asked me to do an article giving a general overview of my current version of the HO-scale, late September 1956, Shenandoah Sub-division. Some of you may remember the three-part series I did in the March thru October 2008 issues of the *B&O Modeler* titled "Turning the West End into the Shenandoah Sub-Division". The article described how I changed my B&O modeling focus from a double track mainline operation on a fully signaled layout to a single-track branchlike operation using TTTO. A lot has happened in the past 9 years since that article including grandchildren, retirement from CSX, and a move to a smaller house (say it with me: "downsizing"). Even though, the new layout is half the size of the old one, there is no need for the tissue box. This story is not a tear jerker but a "build 'em up to be better," feel good saga.

I was fortunate enough to have a few years between tearing down the old layout and having the new layout track design completed. This let me re-use the entire Winchester Yard and four locations from the old layout: Millville, Halltown, N&W Crossing, and Stephenson. My Charles Town module, built 42 years ago as a portable layout while in college was scrapped due to age and inaccuracies. This kept my costs down, enabled me to get running trains sooner than normal, and also reach the point where the basic scenery is done on the entire layout. All in the span of 4 years.

This smaller layout has challenged me to become more accurate in reproducing signature, recognizable scenes along the line. Like previous layouts, I am following the "good enough" method of building this one. The structures are not exact replicas of what was there nor are the track plans the same as what existed back then; they are "generally" correct. By looking at a scene, you should recognize some elements that were there in September 1956 enough to say, "Hey, I remember that place." The locomotives, rolling stock, vehicles, road signs, and billboards are correct for the time period. Except for 2 passenger trains (55 & 56 that last ran in 1948), I operate using the employee's timetable published in April 1956 and the 1953 rulebook. I have used the "modeler's license" for some of the industries that used to use rail but switched to truck, to still be active rail customers.

Construction

First the basics. The main portion of the layout (a basic E shape) is housed in a 13'x18' finished room (separate heat and air-conditioning zone with carpet on the floor) situated over a two-car garage. Access is up a stairway near the kitchen. The 7-track staging yard (10' long) is in an adjacent attic (no heat or AC, wood floor) that is accessible from the layout room using a 2' wide by 4' high door. A single track goes thru the wall into the layout room. The temperature range in the attic is 25° F to 108° F and stays mostly under 55% relative humidity. I have not had any problems with the track, rolling stock, or locomotives despite the large swing in temperatures.

The layout is flat with top of rail 41” above the floor; I would have liked it higher, but the ceiling starts sloping in at 44” above the floor. Construction along the walls utilizes 6”-16” long L brackets screwed into the wallboard (not studs) every 16”-20” and legs spaced every 6’ at the front wood fascia. 1” pink foam board is attached to the fascia and brackets utilizing coarse drywall screws. Where the layout runs along the wall, the depth varies from 8” to 24”. The free standing part of the layout (center part of the “E”) is built of 2”x4” legs and 1”x4”s for the rest which supports the 1” foam board. This is the third layout I have built this way and have not had any problems or catastrophes with this type of construction.

Control is Digitrax wireless UT4D throttles. Signaling and grade crossing flashers are done using Tomar, Integrated Signal Systems, DCC Specialties, Logic Rail Technologies, and “good old” relays. Scenery is complete and utilizes plaster cloth over the foam board with various shades/textures/colors of paint, ground cover, and trees over it. The main track and sidings at Charles Town and Winchester are code 83 and are ballasted with gray and white Woodland Scenics ballast blends to get that B&O limestone look. All other tracks are code 70 and ballasted with Woodland Scenics cinders. Everything is lightly weathered using paint and women’s powered makeup and eye shadow of various colors.

On the road

Let’s take a trip down the line (moving east to west) so you can get a feel for what I have accomplished so far and what I plan to do.

Brunswick Staging Yard is where most trains originate and terminate.

Harpers Ferry The point where the track comes thru the wall into the layout room and crosses a short bridge over a waterway represents crossing the Potomac River. An interlocking signal sits outside the tunnel, just like the prototype.

Millville A single turnout in the main track leads to 2 tracks (each holding 4 cars) for the Michigan Limestone Co. (recycled from the West End layout) and a 3-car track for Standard Lime & Stone Co. A passenger platform is next to the freight agent's office.

Between Millville and Halltown, the next station modeled, there is a speedometer (made by Boulder Creek Engineering) that train crews can use to gauge their train speed and an approach signal for the Harpers Ferry interlocking.

Halltown, A single turnout in the main track leads to two sidetracks that serve the Halltown Glass Company. A paper company actually existed here, but a glass manufacturing facility allowed for more types of cars to be used and also let me recycle a finished scene from my previous West End layout. In the future, I may change to the paper company once I get more info on it. There is a passenger shed next to the main track turnout.

Ranson A turnout in the main track connects to the Charles Town Belt Line. This track ran around the north side of Charles Town and was jointly operated by the B&O and N&W. They both had rights to switch all the industries; however, it was maintained by the B&O. The west end of the Belt Line connected to the N&W main track that ran between Roanoke and Hagerstown. Also at Ranson is the east turnout of the Charles Town siding, which is used frequently for meets during op sessions.

Charles Town is located at the west end of the siding and has a train order office in the passenger station. A team track that has a dock and unloading ramp comes off the siding. The Charles Town switcher locomotive parks here when not switching the industries off the main track and on the Belt Line. Besides the Team Track, industries on the main track are the Charles Town Grain & Feed and Whitmore Lumber Company. The Grain & Feed has a pit for unloading covered hopper cars of feed, a platform for unloading boxcars of farm goods and flatcars of farm equipment, and a trestle to unload a single "twin" hopper car of coal - all on one sidetrack! Whitmore Lumber has a dock to receive boxcars and flatcars of lumber.

The Belt Line has the following industries (east to west):

- Essotane Gas Service - a 1-car track that receives tank cars of propane
- Beltline Cold Storage - a 2-car track that ships reefers of apples
- Miller Chemical Company - a 1-car industry that receives tank cars of chemicals used in the farms and orchards
- Jefferson County Coop - a 2-spot facility that receives boxcars of home and farm goods. The actual industry is Jefferson Cooperage, a barrel maker, but I modified it to be more current.
- Powhatan Brass & Iron Works - a 2-spot facility that receives boxcars of brass and bronze and ships boxcars of fire nozzles and other types of castings.
- MJG Scrap - a 1-car junk yard that ships gondolas of scrap metal. Named after my son and recycled from the West End layout
- N&W Interchange - this is the west end of the Belt Line between the Powhatan Brass and Iron Works turnout and the dwarf signal protecting the turnout connecting the Belt Line to the N&W main track. Depending on length, 3-4 cars can fit here.

Whitmore Lumber Company

Charles Town Grain & Feed

N&W Crossing is where the Shenandoah SD crossed the N&W line from Roanoke to Hagerstown at grade using a near 90-degree diamond. It is an interlocking controlled by the N&W dispatcher. On the layout, it is an automatic interlocking that shows "Clear" for the B&O unless I throw a hidden switch which causes the B&O signals to display "Stop" simulating an N&W movement thru the interlocking. The N&W track is non-operational with one end disappearing into a tunnel and the other end stopping at the edge of the layout.

Summit Point has a defect detector (made by Boulder Creek Engineering) that will sound a whistle if a defect is detected based upon what is programmed. It is set up to have the conductor talk to the engineer (after the train stops) giving him the details of the defect. It adds a real-life event to the op session.

At **Stephenson**, a single turnout in the main track leads to a 4-track facility belonging to WS Frey Lime & Stone Co. (recycled from the West End layout) that loads powered lime into covered hoppers and ballast size limestone into hoppers. There is also a track with a loading dock to unload boxcars or flatcars of machinery. A "dummy" scale is on one of the tracks to weigh the hopper cars. There is a passenger shed next to the main track turnout.

CV Junction consists of a single track used to interchange 4 cars with the PRR.

Passing the Yard Limit sign, we come to the east end of Winchester. The track layout is based upon maps I obtained while working at CSX, B&O Form 6 and fellow Shenandoah SD modeler John King's layout. Industries are (east to west):

- Essotane Gas Service - a 1-car track that receives tank cars of propane
- Winchester Cold Storage - this is a 2-track, 6-car facility that loads reefers of apples.
- Cooperative Fruit Exchange - this is a 2-car facility that receives reefers of produce/fruit.
- Stock Yards - sharing the same sidetrack as the above, this is a 2-car facility that loads stock cars of cattle.
- Green Chemical Company - a 2-car facility that receives tank cars of chemicals used in the farms and orchards.
- America Oil (Amoco) Texaco, and Standard Oil all share the same sidetrack that has a spot for each of their tank cars that bring in gasoline and other oil products.
- B&O Team Track consisting of 3 1-car spots: dock, overhead crane, and pit. Various types of cars are spotted here for loading and unloading.
- WB Snider & Sons Coal Co. - a 2-car facility that receives hopper cars of coal that is unloaded by a portable conveyer placed on the track under the car.
- B&O Engine Service Track – 3-spot track used for fueling switchers and cabooses and performing light repairs on cars. Inbound parts, fuel, and sand comes in via boxcars, tank cars and covered hoppers, respectively.
- Southern States Cooperative - a 2-spot facility that gets boxcars of farm and home goods.
- Winchester Milling Co. - a 2-spot building that ships boxcars of milled grain products.
- Grocers Wholesale Company - a 2-spot building that receives boxcars of food and home goods.

There is also a working scale (Boulder Creek Engineering) on the Scale Track that utilizes a live track for weighing cars and a dead track for thru movements. The passenger station contains a train order office. A crew report/MW office/signal dept. office/freight agent is located in a brick building between Green Chemical and Winchester Cold Storage facilities. A siding is used to pass trains and also is used as an arrival/departure track. The Stone Track and the Scale Track both run the length of the yard and are used for runaround moves, switching, and car sorting and storage. Locomotives, when not on a train or being serviced, are stored on the New Track.

Just outside the Winchester Yard Limit sign is W&W Junction consisting of a single track that is used to interchange cars (4-5) with the Winchester & Western Railroad. The main track ends at a wall about 3' beyond the W&W turnout, and this represents Strasburg Junction, the end of the line and connection with the Southern Railway. No interchange is done here. Train 55, the local passenger train the runs from Harpers Ferry to Strasburg Jct. in the early morning lays over here before it becomes Train 56 that runs to Harpers Ferry in the evening.

Winchester Cold Storage

Cooperative Fruit Exchange and Stock Yards

Green Chemical Company

America Oil (Amoco), Texaco, and Standard Oil.
Yellow ties mark the fouling point.

WB Snider & Sons Coal Co. and B&O Engine Service Track

Winchester Milling Co.

Scale Track

Grocers Wholesale Company

Winchester & Western Railroad Interchange

Operations

Operations consist of a switcher based at Charles Town and two switchers based at Winchester. They work two shifts with the first shift pulling cars from industries and making up outbound trains and the second shift spotting cars at industries from the inbound trains. A local, originating at Brunswick, switches Millville and Halltown, runs around its train at Charles Town, and returns to Brunswick. Another local originates at Brunswick, works the facility at Stephenson, runs around its train at Winchester, and then returns to Brunswick. Originating at Brunswick are two mixed freight trains for Winchester and one mixed freight train for Charles Town. The power from these trains is used to run the reverse route back to Brunswick with cars from their respective locations. MW extras are run using a Jordan Spreader and a snow plow being brought to Winchester for the winter. A 2-car passenger extra, utilizing a passenger GP7 and GP9, runs from Brunswick (actually Washington) to Charles Town carrying patrons for the race track located near the main track (in the aisle!). The train unloads at a short platform on the main track next to the East 5th Avenue grade crossing, the power runs around the train using the siding and then is parked on the Belt Line until it is time to bring the "losers" home. The train loads at the platform on the main track, then heads for Brunswick.

Conclusion and Future

The layout is fun to operate solo or with a group of four (maximum due to room size) that includes me. During those op sessions, I act as the operator at Brunswick, Charles Town, and Winchester preparing and delivering the train orders to the crews. As for projects, the next layer of scenery will consist of figures, more details at the buildings, and more trees. I also plan to redo a few areas that are already looking "tired." Details like air hoses and reweigh data will be added to the car fleet. Structures will be replaced as new kits become available to "kit bash" into buildings that more closely resemble the prototype.

MODELING LEES COALING TOWER

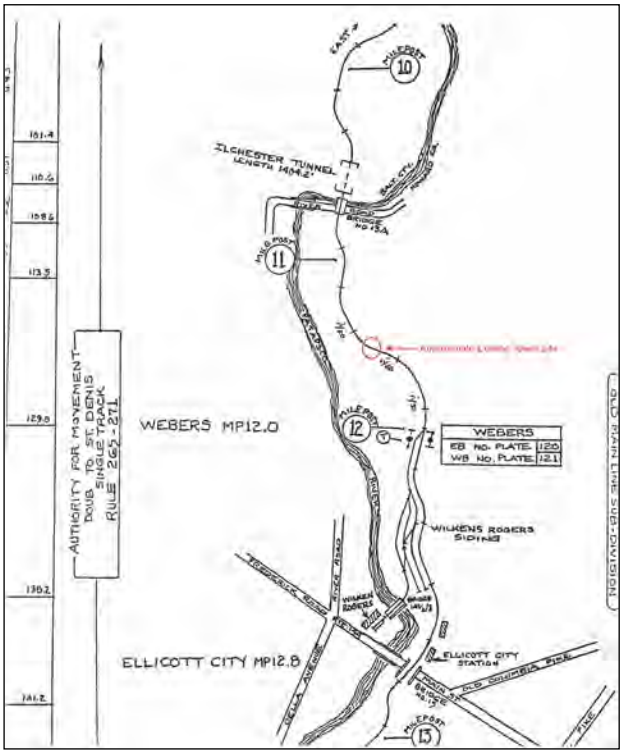
BY JOHN TEICHMOELLER

Introduction

The Third Quarter 2017 issue of *The Sentinel* contained an article with photos on the Lees coaling tower. This facility was built between Ilchester and Ellicott City during World War II to expedite servicing of eastbound freight trains on the Old Main Line. The coaling tower was dynamited after the steam era and, in Herb Harwood's words, "...its carcass remains buried in brush." My interest in this started with a desire to build a model of it. Material from the late Norman Nelson and me covering the prototype and modeling issues was submitted for publication in *The Sentinel* when *The B&O Modeler* was in hibernation. Now that *The Modeler* is back, *Sentinel* editor Kennard Wing and I agreed it made sense to separate the model and prototype information. So the following is the "modeling part" of the story.

Layout Background

In the early 1990s, I began planning a model railroad based on selected segments of the Old Main Line. The track plan begins with a caricature of Mt. Clare A Yard (my staging yard). There follows representations of St. Denis, Ilchester, Ellicott City and Oella, ending at the Union Dam tunnel where the track emerges to rejoin Mt. Clare A Yard for continuous loop operation. The era is November 1967, a few months before Penn Central. Modeling, however, had a wrinkle. It was pretty much like the movie "Back to the Future"—it was the same place but different. The biggest difference was that, in my 1967 modeling fiction, the industries in the valley that had been wiped out by the flood of 1868 had recovered. Instead of being a nicely wooded State Park, the Patapsco Valley of my layout was now heavily industrialized. (However, the fantasy did not change the space-time continuum enough to have steam in 1967.) Even so, I thought it would be kind of neat to have a model of an extant but abandoned Lees coaling tower as part of the scenery. Shouldn't be too hard, right? These coaling towers were more or less standard, weren't they? As outlined on the following page, the B&O even had several others that at least in photos appear to be identical to Lees.



Bernie Beavers Track Chart of Old Main Line between Ilchester and Ellicott City.

Other Lees Lookalikes and the Search for Drawings

I checked with the folks who worked in the Society's Archives, and was told there didn't seem to be any recorded drawings of Lees in the Archives. I didn't stop there, however. I had come across some photos in *The Sentinel* and elsewhere of coaling towers that resembled Lees, so I thought if I looked into them a bit I might learn something. Along the way, I also had obtained the TLC Publishing reprint of a Fairbanks-Morse coaling tower catalog as well as an original 1917 Roberts and Schaefer catalog. Unfortunately, neither catalog yielded anything like Lees—there were similar models but not alike. (I now believe the tower was a product of Ogle's engineering.)

Cowen and Brooklyn Jct. Photo research suggested that Lees was some sort of "production" as opposed to "custom" design. For example, the Fourth Quarter 1999 issue of *The Sentinel* contained several photos of the coaling tower at Cowen, WV that appears to be a dead ringer for Lees. The photos are credited to several collections. Indeed, the caption of the photo on page 12 of that issue even states that it is a 200-ton Ogle design. I wonder where that information came from, the back of the photo you suppose? Unfortunately, I have been unable to find an Ogle catalog. Then somewhere I obtained from a photo dealer a 1942 company photo (based on the back stamp) of another tower. This one was at Brooklyn Jct., WV, and was very similar to Lees. I assumed there might be something more in the Archives on these structures.

Brooklyn Jct., WV, April 25, 1942, photographer unknown. Author's collection.

I decided to make further inquiries about drawings of the B&O installations; I connected with several people who had actually done their own scratching in the Archives for coaling towers. Unfortunately, the verdict was unanimous: there are no drawings of concrete coaling towers ("at least we haven't come across any"). A search in the file index under Cowen and Brooklyn Jct. came up empty handed. Strangely, there was even an article on the new (1947) concrete tower at Riverside that appeared, with photos but no drawings, in the September/October 1987 *Sentinel*. Photos were said to come from the B&O Railroad HS Archives. That file, too, could not be located when I looked. Maybe long-lost treasures will turn up now that the collection has moved to Eldersburg! After all, someone once happened upon some almost illegible drawings of the Locust Pt. transfer bridges that became the basis for marvelous HAER recordation drawings (MD HAER 180). Now that I write this and start to make connections as I noted earlier, it seems likely that we should have been looking at whatever the Archives has filed under "E.L. Thompson" instead of coaling towers. But it is moot now.

Going beyond the B&O, over the years I also learned that the PRR had very similar towers in York and Northumberland, PA (more about this later). Surely, I thought, the mighty Pennsylvania Railroad Technical and Historical Society would have something on microfilm or in roll files in their Lewistown Archives. Wrong. "As far as I know, such things don't exist," I was informed by one member "in the know." He thought he had some photos of York that he might send me but never did.

Time for Some Field Work

So much for drawings. Well, as Herb Harwood said, "its carcass remains buried in brush," so I decided to see how buried the carcass was.

It was December of 1998 when Fred Wirth and I took our trek, armed with camera, tape measures and notepads and hoping the snakes would be comfortably asleep. Due to film not advancing in the camera, it required another photo trip in

March of 1999 to finish the job. We drafted a dimensioned "scale sketch" based on our fieldwork. A shrunken-down version of this appears on page 18 of the 3rd Qtr. 2017 *Sentinel*. I gave a presentation at one of the Society's Minicons on this subject and offered to share copies of the scale sketch. There was one requester, but I never heard whether he built a model using it. I can provide a more legible digital copy to anyone who wishes if they are motivated to build a model and can't read the reproduction in *The Sentinel*.

Brainstorming for Ideas for Building the Model

Once I had a general idea of dimensions I contemplated approaches to modeling. One of my ideas was to "cut down" the Walthers 450-ton concrete coaling tower, Cat. No. 933-2903. I bought one when it was on sale, which it is from time to time, but after inspection, I determined that scratch-building the sides from styrene would be easier than cutting apart and splicing back together the kit parts. The kit hardware (skip hoist, chutes, etc.) might be useful, however. (By the way, it was on sale again in the summer of 2017, and Greg Smith is curious to know if anyone has used this kit as a basis for modeling a representation of the large concrete Grafton coaling tower.) I also took a look at the hardware used on Walthers' cylindrical coaling tower, No. 933-2042 which would also work. Then there is the wonderful hardware set which Don Tichy sells separately for his. Finally, I had sitting on the shelf from earlier modeling visions, a cardstock, wood and styrene Suncoast model of a 200-ton coaling tower (I believe based on an N&W prototype) that is somewhat squatter than Lees. At least I thought perhaps I could use the materials.

Roof and west side. Note no shingles. March, 1999.
John Teichmoeller photo.

Going farther afield, my Lees Coaling Tower file contained some other odds and ends I had accumulated over the years. The March 2004 issue of *Railmodel Journal* (pp. 48-52) had a sample of graphics from Ogle and other catalogs, but nothing there exactly matched Lees. Way back in a magazine called *Model Railroading Ideas*, (I think a precursor to Robert Schleicher's *Model Railroading Magazine*), there was a fairly detailed construction article for a Southern Pacific concrete coaling tower similar to but larger than Lees entitled "Coaling Tower How-To."

There was a bit of a pleasant informational breakthrough when excellent PRR modeler Chuck Cover built a model of the Northumberland tower. He shared his approach via a fairly detailed construction article in the Spring 2012 *Keystone Modeler* issue No. 80. As I write this, this issue is still available for free download from the PRRT&HS website.

But by this time, I had had lots of fun with all this planning, But my main line was in place on the layout and, guess what? There was just no room to really model Lees between the representation of Ilchester and Ellicott City on the layout.

***Finally, a Model*!**

In 2015, Don Barnes, who is modeling the Old Main Line in the steam era and who is a regular participant on the Yahoo list, did have a model of Lees scratch-built by friend Bill Winn. Bill had access to my "scale sketch," and the various photos. He found some dimensional inconsistencies in the drawing, not surprising considering it was a "best efforts" sketch and never run through a CAD process to "line things up." Moreover, Bill raised a number of detail questions that I was only able to answer by citing "typical design experience." At any rate, it looks like a fine effort, and some photos are presented on the following page. Thanks to Don and Bill for sharing.

Model by Bill Winn, Photos courtesy Don Barnes. Hey, what's that PRR-lettered stuff doing there?

East Side

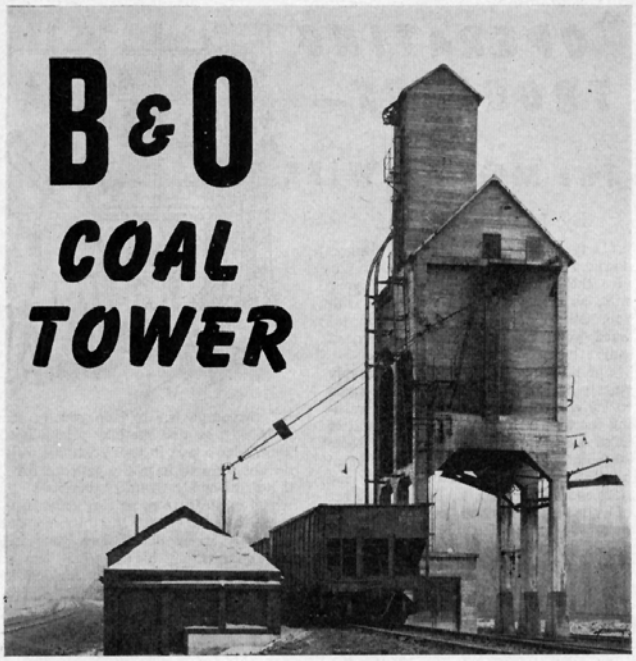
East and North Side

West and East Side

Postscript

Scott recently came across an interesting relic: "B&O Coal Tower," by Thomas Leaming in the September, 1946 issue of Model Craftsman. *This is a construction article for the tower at Cowen. It is part of a series of articles on the loco facilities at Cowen. Leaming includes two prototype photos but no model photos. He provides drawings with a scale rule and described how he built his model using Bristol Board. His approach to building the carcass would still be valid, although fortunately we have much easier ways to handle the hoist and other hardware. I compared the overall dimensions in his drawing and they were within a foot or so (length and width) of those from our field recording of Lees. This article is reproduced here with the permission of White River Junction Publications.*
John Teichmoeller

B&O COAL TOWER



By THOMAS LEAMING

THE engine terminal facilities to be described in this series of articles were built by the B. & O. a few years ago at Cowen, West Virginia. They include the coal tower described this month, as well as an ash handler, water tank and small modern engine house to be given in future issues, together with the layout of the entire terminal. These facilities are ideal for adapting to model purposes, for they fit in well with the limited roster of a model pike.

Although the original coal tower was built of reinforced concrete, my model has been made of the old reliable bristol board, which is as strong as concrete when scaled down. This is the kind of bristol sold in stationery stores for making posters—large sheets usually cost about fifteen cents each. They usually come white in color, but if you can obtain the gray color in heavy weight, it will save some painting.

The carcass of the tower is easily made by marking and cutting out the bristol board in the general pattern shown in fig. 1. The four segments at each leg are wrapped around and cemented to form a substantial upright. The narrow tabs along each upright panel in the pocket itself are folded back to provide the setback for the paneling. In making the folds, slit the bristol board almost through with a razor blade. The narrow depth strips will have a slight tendency not to stay back at right angles and this will be corrected when the backing is put in place. The depth at the bottom of the paneling is a slanting piece which is best affixed before the panel itself. It can then be made longer than it actually shows and the panel can rest its bottom edge on it. Since it will not be visible, no similar depth piece need be added at the top of the paneling. For similar reasons, no thickness need be indicated by extra pieces at the tops of the legs.

The panel for the rear of the tower extends upward above the roof and has four sides of the enclosed dump made integral with it. When this section together with the roof and sloping floor are cemented together, your tower is beginning to take form.

The average model builder, including myself, will not want to take the trouble to show the marks of the boards from the concrete forms used in casting the tower. In the photos, these show up enough to make it almost look like a wooden tower. If you do want to show these marks, *before* cutting out the sides, scribe the *back* of the bristol board with a sharp pointed pencil while the piece is resting on another piece of paper. Some experimenting will be necessary to tell you just how hard you must bear on the pencil. The impressions on the right side will gather both paint and dirt and appear like the form marks.

The flaring bases for the tower feet, as well as the various housings and coal dumping facilities, can easily be fabricated from bristol board using the same methods for obtaining depth.

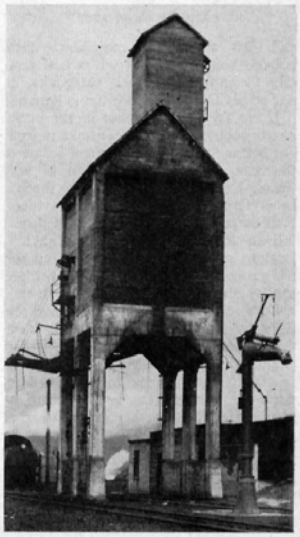
The rails going up the back of the tower which carry the buckets, can be made from flat strips of bristol board painted black. Note the many braces to the back of the tower. The door at the very top of the back must be affixed. It should be set into a cut-out in the housing, although it looks very well hung outside and even without the paneling.

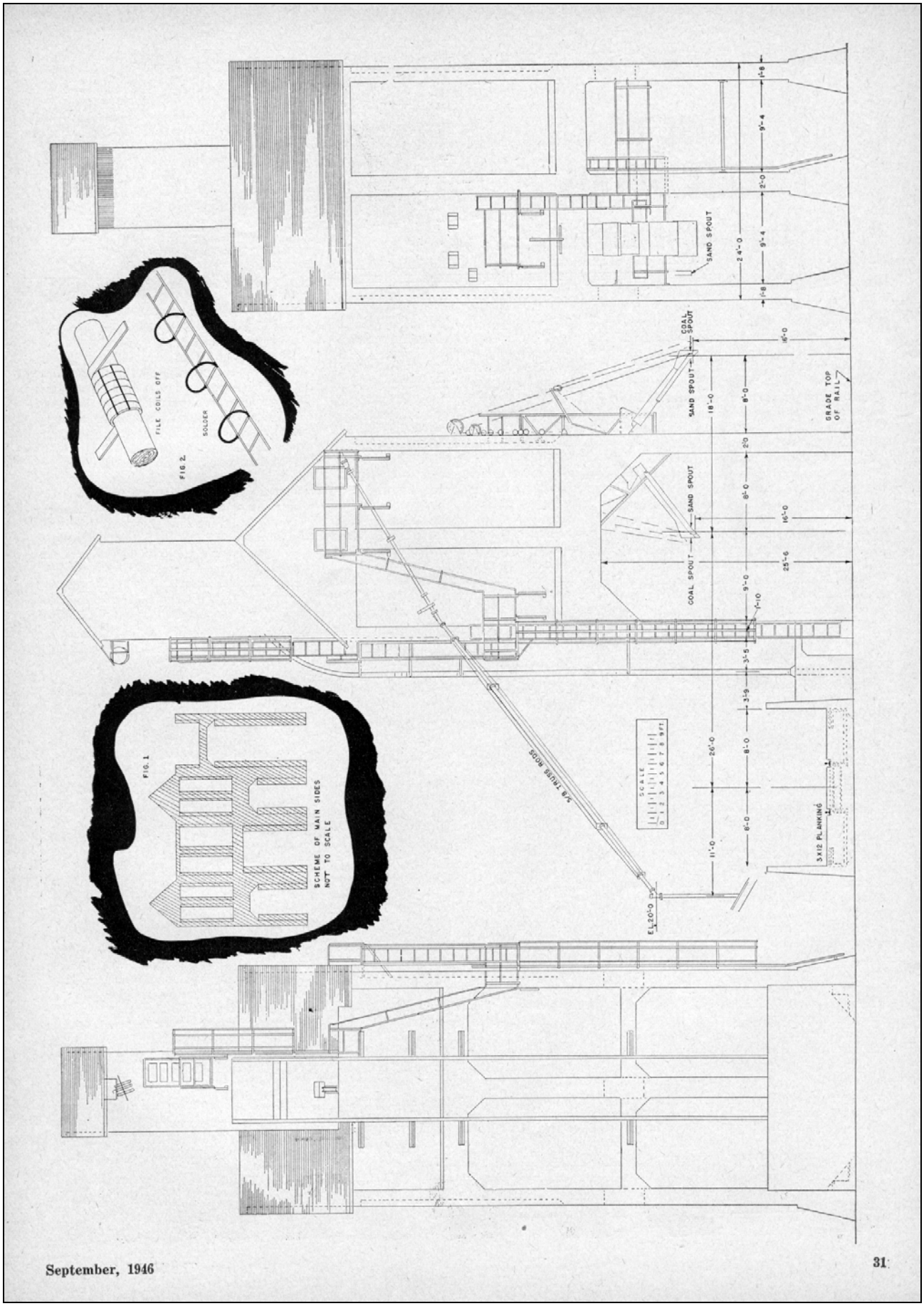
Before adding much more detail, all concrete work should be painted a whitish gray or whatever shade you care to use to indicate cement. Mix a tiny bit of black with some white paint, add a small amount of japan drier and you will have a quick drying mixture. When it is quite dry, smudges of lamp black can be smeared on where engine smoke would naturally hit the tower.

The various ladders can be made from stamped brass ladder strip or built up from pieces of wire the hard way. Railings can be easily soldered on—first the stand-off posts, then the rails themselves. The safety ladders are made from ladder strip to which loops of wire are soldered, as seen in fig. 2. Make these loops by coiling some soft wire around a dowel of proper size and then filing or sawing them off with two cuts the width of the ladder apart as shown. The other vertical members can be soldered to the loops. The ladder had best be spiked to a piece of wood during all the soldering.

The many platforms are soldered up from shim brass or tin can on the job. First push pins or pieces of wire into the "concrete" at the line of the floor of a platform and where the braces will come. The floor is then soldered to the pins and the braces soldered to the floor and to their pins. Next the uprights for the railing are soldered to the floor (it will help if the floor is pre-drilled to take these), then the lengthwise members of the railings. Ladders are soldered to the railings and floors as well as to other pins thrust into the concrete. This work can also be done with bristol board, split bamboo, and cement, but the time it takes for each blob of cement to dry makes the solder method much faster. If a hot iron

(*Continued on page 59*)





September, 1946

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B & O COAL TOWER

(*Continued from page 30*)

and soldering salts are used quickly at each joint, adjacent ones will not unsolder. If they should, hold them with tweezers.

The spouts for the coal can be formed of metal or filing folder stock, following the shape shown on the plans and photos. A sturdier structure will result if you fasten them permanently in an *up* position. The sandspout can be made from a length of wire solder. Pulleys may be carefully turned up and bracketed so that they can be used, but my way was to use discs of bristol board with thread running over and cemented to them.

The pipe to carry the sand from the sandhouse to the sand pocket within the coal tower is wire. The truss rod frame surrounding and supporting this pipe should be carefully copied, using lighter wire and metal squares for spacers. Here again, solder is the best adhesive, although cement can be used. The design of the sandhouse is not shown, but can be a simple four-walled structure with a slight slope to the roof and one wide door to take in the "seashore."

When it comes to actual laying of tracks around your coal tower and other engine terminal facilities, do not use ties, but lay the rail right on the baseboard and scatter plenty of cinders around.

ALONG THE TINPLATE TRACK

(*Continued from page 32*)

the passenger cars similarly, they not only made them of the vestibule design externally, but were careful to put real miniature interior vestibule compartments into even the cheaper cars. The lettering on the cars and tender in this Ives train is all done in raised cast letters, not stamped on, but touched over in gold. The star herald on the box car is cast on similarly.

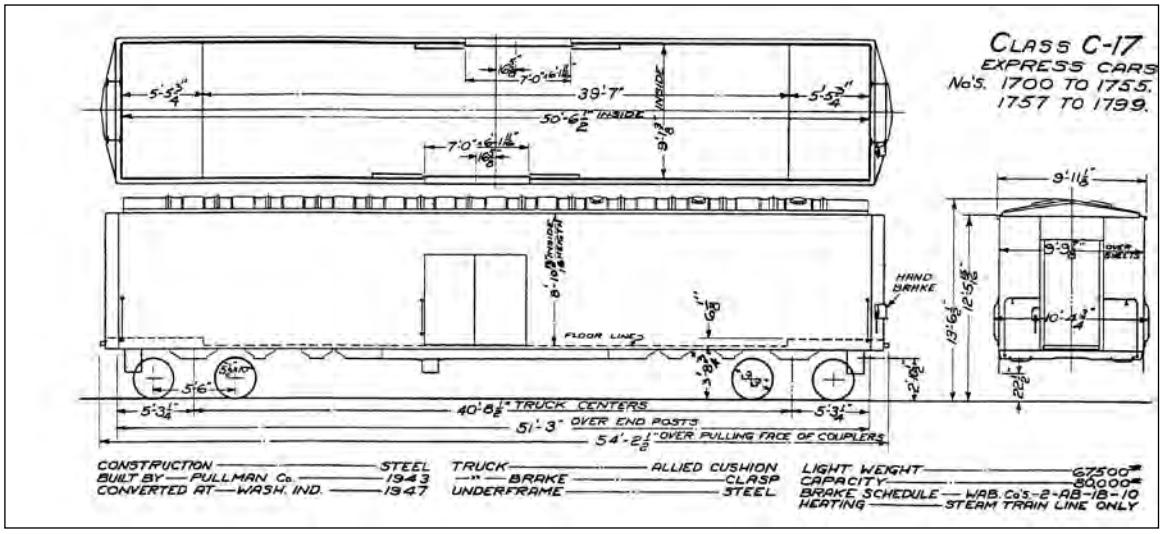
Wilkins put out elaborate and very realistic model baggage cars and coaches for their largest locomotive, lettered simply "Limited Express," Ives also having some smaller sized open and iron coaches with the same lettering. It was apparently only on the big "iron cannonball train" pictured here that they used the "Limited Vestibule Express." Wilkins also put out a series of iron freight cars, well designed and accurate models, consisting of box, oil and gondola cars and a four wheel caboose.

None of the later Ives trackless iron trains were either as large in size or as accurate reproductions of any prototype as the model illustrated here. A comparison of it with their deluxe (but considerably smaller) iron pull engine of 1910, pictured in this department two months ago, will reveal interesting variations, not only in prototype style and fidelity of reproduction, but in maufacturing style as well. Indeed, it may well be that the 4-4-0 pictured here, the big iron engine of 1890, is the most accurate and closely scaled replica of any prototype locomotive ever turned out by Ives in all their years of business.

One other fact of American tinplate industry in the late nineteenth century,

TURNING THE WEAVER O-SCALE TROOP/EXPRESS INTO A B&O C-17

BY EDWARD F. BOMMER



The trucks are referred to in the diagram as Allied Cushion but their manufacturer, Allied Railway Equipment, denoted them as "Allied Full Cushion" The 1946 *Car Builders' Cyclopedia* carries a nice two-page spread on the trucks.

Project History and Motivation

Volume 28, No. 2 (2nd Qtr. 2006) of *The Sentinel* featured an article by the late R.N. Nelson on the B&O's class C-17 express cars. The 100 cars were converted from troop sleepers built for service during WWII. This article contained diagrams and photos from the late Ralph Barger and others and provides good background for the modeling project outlined below. Moreover, for another take in HO-scale, the March/April 2006 *B&O Modeler* carried an article entitled "HO C-17 Express Car Conversion from a Walthers Troop Sleeper" by Greg Smith.

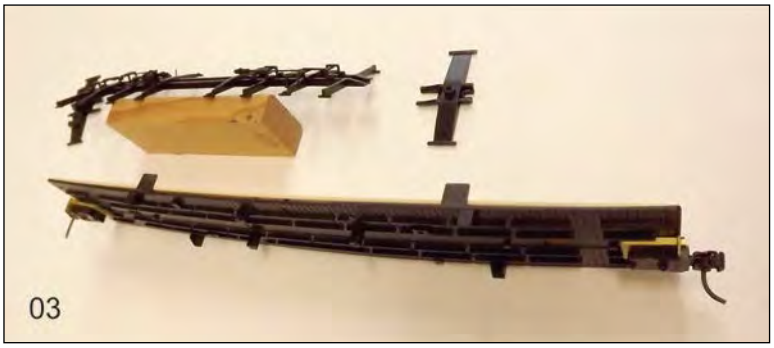
About twelve years ago, Weaver Models of Northumberland, PA, introduced O-scale ready to roll models of the WW-II era Pullman troop sleepers built in 1943-45. They were among the first Weaver O-scale models that followed a specific prototype. This was a car rarely modeled in O-scale. In the Post War 1940s, Grace Line offered a wood and metal kit for the Pullman troop sleepers and conversion express cars in 1947. The sides and ends were made from pressed plasticized card stock named "compressic." Allied Full Cushion trucks were included. Later, much more expensive O-scale imported brass models were offered for these unique cars. *[In addition to the Walthers HO troop sleeper, models of the troop sleeper have been produced in HO in brass by Hallmark and in styrene by Model Railroad Warehouse. I believe both Walthers and MRRW have produced versions with express conversion for various railroads—photoetched brass sides in the case of MRRW-- but I believe none are correct for the B&O's, naturally. JT]*

Weaver's offering was moderately priced, full scale, well detailed with Allied Full Cushion trucks and made for the O-scale three-rail and two-rail markets, thereby assuring a wider market. Variations were made for an express car conversion used by REX and other railroads. The models were well accepted.

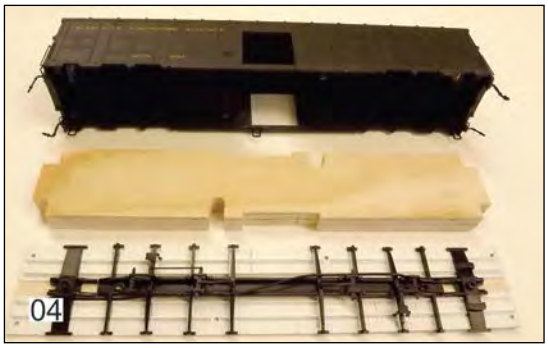
In 2005, I bought the Weaver Railway Express Agency troop sleeper/express version seen below. It is full scale, with working diaphragms and a detailed underbody featuring the dual air brake system and steam line as individual detail parts applied to a die cast floor and underframe.

Yet I wanted a correct B&O C-17. A year or so later Weaver made a special run of their troop/express as B&O for an O-Scale Convention held near Washington, DC. I held off buying one. Weaver's model had some shortcomings regarding B&O fidelity. It lacked roof ventilators. The side doors did not look quite right. Ready to roll from the box, it had a good paint job, lettering, striping and accurate numbers. Since I was busy building a good-sized O-scale two-rail layout at the time, the two-rail REX car remained in its box.

A Problem Curled Up



The die cast zamac floor and under frame castings had curled even more when this photo was taken in 2017.

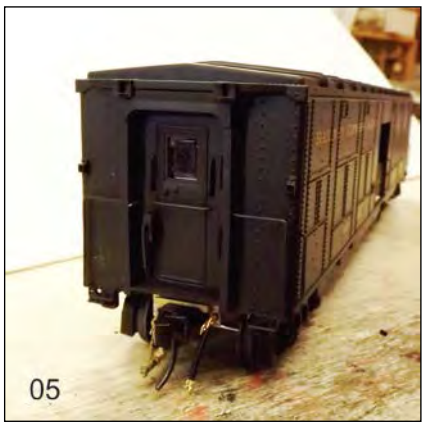


Plywood weight fitted to underframe.

Photo 03 Time passed. By 2012 I found the die cast floor and underframe of my Weaver car was becoming deformed. Many Weaver troop and express cars were suffering the same condition, some to the point of spitting the ABS car body apart. The floor and underframe castings on my car were slightly bent. I removed them to save the car body from damage.

Photo 04 Atlas Models took over the troop/express car line after Weaver went out of business and recently have been marketing these cars again. Atlas is currently providing replacement floor and underframe castings. Still, I was leery of any replacement zamac castings. Instead, I made a new floor to the size and detail of the original from ABS sheet and styrene. The original frame casting although broken, was salvaged for use along with the under-body details. A piece of ¾" thick plywood was fitted as a weight, since the replacement floor was much lighter than the original casting.

Modification to C-17



Original Weaver end after removal of diaphragm.

Paint was scraped down to bare ABS at the new location for the cardholder, gauged from prototype photos.

Photo 05 With that issue resolved, it was time to make the car body into a B&O C-17. The soft rubber Weaver diaphragms were removed. They measured over a scale 4' wide. Brass steam lines from Precision Scale and air hose details from Bills Train Shop (BTS) replaced Weaver's plastic parts. They are mounted to brass Kadee coupler pads made by Rod Miller of Model Railroad Services in 2008. They enable closer coupling between Weaver troop and express cars. In addition, Keil Line made a set of replacement Allied truck bolsters to bring the Weaver Allied truck side frames inward, closer to scale width.

Photo 06 The most involved part of this project was enlarging the side door openings and making new double doors. First, the defect card holders at the left side of the doorways were moved to the right side by carefully shaving them off with a fresh X-Acto chisel blade. Next, the car door openings had to be enlarged to obtain a 7' width. To do this, the left side of the door opening was cut away with a razor saw and a fresh X-Acto pointed blade. It is slow, fussy work. First, with a straight edge score the top and bottom opening edges back by a scale 7' 3". That extra 3" will be filled in by salvaging the door edge rivet strip. Using a machinist's square, score a line at that point for the vertical cut after the top and bottom edges have been cut with the saw blade.

Photo 07 That done, with an X-Acto pointed blade make repeated passes along the vertical line in both directions to cut away the side panel. Take care to keep it perfectly square to the car side. This may take some time, as the car side is 3/32' thick ABS. The sides of the cut must be clean, straight and square. It's best not to rush this operation.

Photo 08 When the left side doorway panel removed, the car body should look like the photo at right.

Photo 09 The rivet strip on the removed part is now cut from it using a razor saw or single edge razor blades. Like the other cut, this one must also be straight and square. This strip will be cemented to the left side of the door opening, along with top and bottom styrene shims to fill in the saw kerfs. This will make the doorway opening a scale 7' (1 ¾") wide.

Photo 10 New doors were made from scrap 1/16" ABS sheet (styrene would also work). To match the original door thickness for mounting, a 1/32" thick x ¼" wide styrene shim was cemented along the top inside edge. The doors are made ¼" wider than the opening and the same height as the originals. The original doors had an alignment dog. This was cut away and cemented to the

new doors so they would interlock with the body like the originals. The bottom edge of the door must be at the same level as the lower edge of the door opening when fitted into the car body.

With a door in place, mark the left and right door openings with pencil lines. A deep, vertical line is to be scored on the door faces exactly half way between those lines to model double doors of the B&O C-17 cars.

Photo 11 The door width is now fixed at a scale 7' but what about the door height? From the B&O diagram for C-17 class cars, it is 6' 1 and 11/16". (This dimension is "hiding" in the plan view on the diagram.) The Weaver opening was too high. So, a strip of 3/32" thick styrene was fitted in the top of the opening to reduce the opening height to a scale 6' 2" which I felt was close enough. The vertical rivet band over the now enlarged doorway's original left side was scraped off. A new rivet embossed strip 1/16" wide made with .010" thick styrene was applied above the left doorway rivet strip, to continue it to the eaves line. Over the door head filler, a rivet embossed .005" thick styrene band 9/64" wide and a scale 7' long was cemented in place, replicating the B&O header panel. The top edge of this panel is a scale 7" below the bottom edge of the upper window frame detailing. This provides flat space above the doors for the 5" high B&O road name to fit.

Photo 12 End details were made to recreate the steel framing B&O applied to their troop sleepers during conversion. To do this, the original door frame and diaphragm spring end details were removed. Recesses that held the soft rubber diaphragms in place were filled in with scrap styrene pieces. Automotive glazing putty was used to fill the patch seams. They were sanded and smoothed with 1000 grit wet paper to make them even with the car end sheets, taking care not to remove any rivet detail.

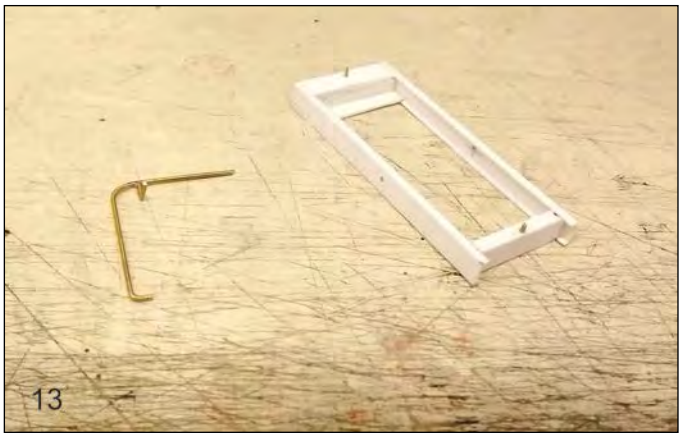


Photo 13 Replacement end frames were made with 3/16" styrene channel, .010" thick styrene sheet and pieces of 3/32" thick scrap styrene stock to fill in the header and to making a floor. The end frame was fitted so the channel's inner flange edge is a scale 3" (1/16") from the grab irons on either side of the door. .030" diameter brass rod alignment pins were put into the head and floor blocks. They hold the end frames in position on the car body. They are also removable for painting. .025" diameter brass rod formed new left and right hand car end grab iron railings of the correct shape.

Photo 14 End sill extensions were added. These are seldom noticed or modeled, yet they provide a step for boarding a car from the ground, as well as enabling trainmen to hang markers at the rear corners if this is an end car in a train. The original lower end grab irons were reinstalled on the end sill extensions. They are made from .080"x .100" styrene strips cemented to car ends, even with the bottom edge on each side of the end door frames. The hand brake detail was relocated to the left side of the end door frame. The wood shim seen in the photo below was used as a heat shield while soldering a corner brace to the railing.

Photo 15 Commercial parts replaced the plastic steam line and air hoses Weaver applied to the corners of the car for the three-rail trade. Here, they are mounted in a more accurate location, on the face plate of a brass Kadee coupler pad. These were described above, with Photo 4.

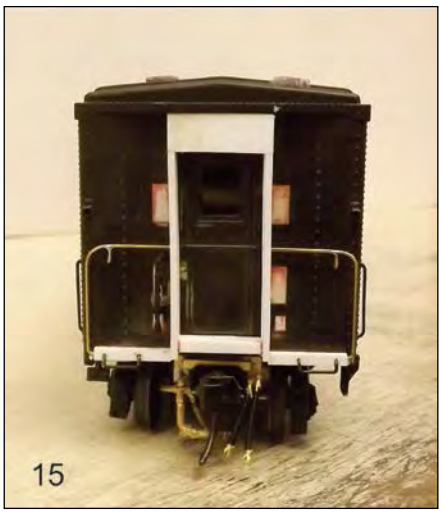
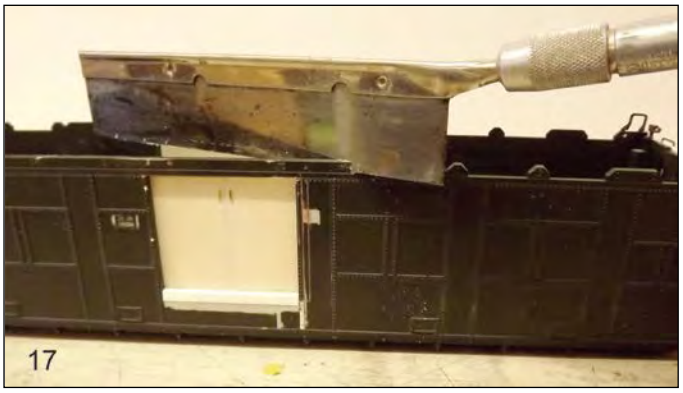


Photo 16 For the final touch, low profile Garland ventilators were installed on the roof. B&O kept the original roof vents in their conversion of 100 troop sleepers into express cars. Most other companies doing conversions removed them.

Photo 17 <u>But wait a minute, (or more)!</u> Looking again at prototype C-17 photos, what about those notches in the side sills on either side of the doors? They are definitive B&O details, easily overlooked. B&O installed side sill re-enforcements between those notches. This covered where the original troop sleeper side sill was open for the Pullman entry steps on early cars. The later cars got two-step stirrups instead. Weaver modeled their express version express car with a continuous side sill. But such is not B&O! Locations 4 ½" in from the car ends were marked with a scriber, where cuts are to be made in the side sill. These cuts are on a very a shallow angle. They are ¼" long toward the middle of the car across its 3/32" thick side to get that "turned inward" B&O look. A razor saw was used, carefully cutting to the top edge of the side sill and not into the car side sheets.

Completed car end detailing. Compare with Photo 4.



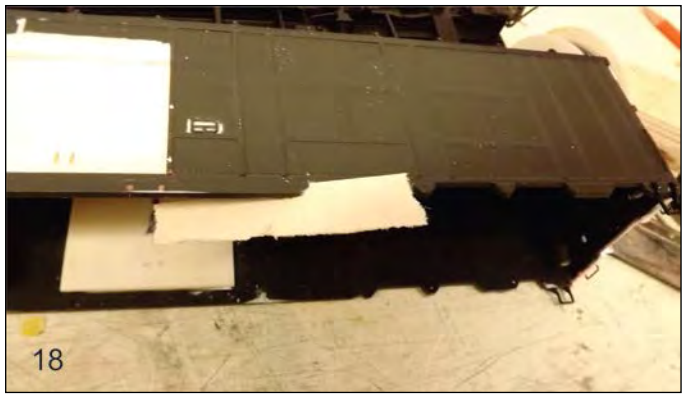


Photo 18 That done, the ends of the center section were trimmed and notched to match the other side sill ends. The cut area was sanded to round it inward and smooth the surface.

Photo 19 All in one piece again, the car is now ready for its B&O paint and lettering.

Right side handrail holes were plugged with styrene rod. Handles were added to the doors.
The original doorway handrail was moved to the left side.

Painting and Final Details

Photo 20 First the body is masked and the under body/floor were made ready for a coat of black. Tamiya semi-gloss black in a spray can was used. Spray cans deliver far too much paint. To get finer coverage, the paint was sprayed into another container and transferred to the air brush. This enabled more even coating for difficult areas of the detailed underbody without flooding it. Two coats were then applied to the roof.

Photo 21 Now for application of Scale Coat B&O Royal Blue, after masking the roof and laying out end door framing parts, end grab railings and the side doors separately. These parts were re-installed after the blue paint dried for about two days.

Photo 22 By then, it was time to apply the decal lettering and striping. A Microscale O-scale B&O decal set has just one road name - the longest. For this car, each letter had to be applied separately. A cartoon was made to space the letters, based on a C-17 prototype photo. Notably, the road name is not centered on the C-17 car body but is offset to the left. New stirrups for the side doors were made from .015”x 1/16” brass strip to replace plastic originals. These new stirrups were flush mounted to the bottom of the side sills, following the prototype.

Photo 23 After that, the single 1” Dulux body stripe was applied, a scale 36” above the side sill. It runs from end doorway to end doorway, representing an early paint job. Once the striping had set, the Railway Express Agency lettering and a car number was applied. Walters Solvaset thinned with some distilled water [or aged ca. 10 years JT] was used to seal the decals to the car body. It sat for another day or two before gently washing off remaining decal residue with a thin, damp cloth. Two light dustings of Testors Dullcote finished the job.

The transformed Weaver troop/express as a B&O C-17. Uncoupling rods made with .030” diameter brass rod are the very last details added and were touched up with black paint.

Parts List

Manufacturer	Part No.	Description
Detail Associates		
.028” Brass Rod	229-2508	Used for end railings.
.033” Brass Rod	229-2509	Used for uncoupling rods.
.015”x .060” Brass Strip	229-2530	Used for side door stirrups.
Plastruct Styrene		
Cement	570-2	Used for ABS and styrene.
Evergreen Styrene		
.010” x .020” Styrene Strip	269-100	
.080” x .100” Styrene Strip	269-165	
.040” x .080” Styrene Strip	269-144	
.188" Styrene Channel	269-266	
.005” Styrene Sheet	269-9009	
.010” Styrene Sheet	269-9101	
.030” Styrene Sheet	269-9104	

Manufacturer	Part No.	Description
.060" Styrene Sheet	269-9106	
.080" Styrene Sheet	269-9107	
.100" Styrene Sheet	269-9100	
Keil Line (Now Scale City	48-929	Replacement bolsters to narrow Weaver's Allied Trucks, 1 pair.
Keil Line (Now Scale City	48-239	Low Garland ventilators, 8 needed.
Kadee	805	Couplers, 1 pair.
Rod Miller Model Railroad Services	CCP-1	Close coupling pads, 1 pair. Available from Rod Miller Model Railroad
Precision Scale or BTS	4649	Precision Scale air hoses
	12302	BTS air hoses
Precision Scale	40461	Steam connections, 1 pair.
Microscale	48-343	B&O Dulux Passenger Decals
	48-344	B&O 1" Dulux Stripe Decals
Tamiya	TS-29	Semi-gloss black paint
Scalecoat II	S-2037	B&O Royal Blue paint. Now available from Minuteman Scale Models
Walthers		Solvaset (To reduce strength, add 3/4 tsp. distilled water to a new bottle.)
Testors		Dullcote

References

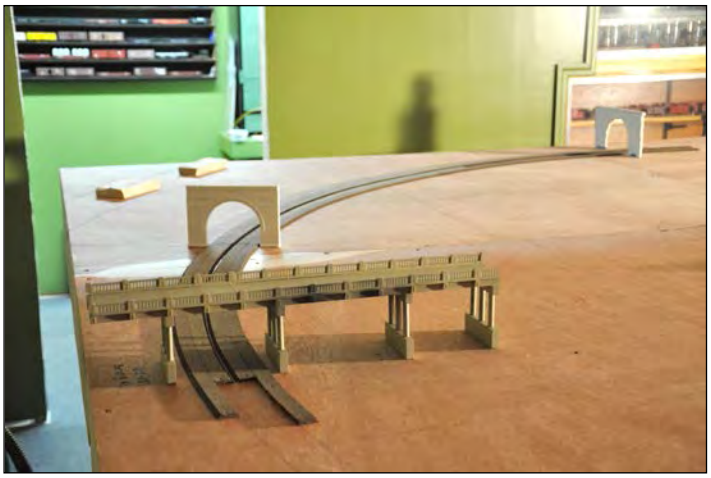
For readers interested in more information about the original troop sleepers, see "Production WWII Troop Sleeping and Kitchen Cars," by Pat Wider in *Railway Prototype Cyclopedia No. 5* [2001], pages 25-41. Included are photos of four different railroad express conversions, each one different, none B&O.

PIEDMONT DIVISION ANNEX

BY BRUCE ELLIOTT

[Some photos got left out from the coverage of Bruce Elliott's layout in Modeler *44 so we are including them now. Since these illustrate "the beginning of time", they are particularly striking in view of the progress Bruce has made. Look forward to more photos of progress in a future issue, probably No. 46. JT]*

This is as basic as it gets, the "beginning of time". In the lower left corner eventually will be the C&O Canal and the side of the tunnel. The town of Point of Rocks will be to the right. The vacuum cleaner brush is located approximately where the tunnel portal will be that starts the depiction of Fairmont on the layout.



Looking west is the US 15 bridge and the tunnel portal. This is a 65" plus radius curve. The far end of the tunnel enters the Fairmont area on the layout. The two blocks of wood in the upper left corner of the layout is the location of the C&O Canal.

This view is from above the tunnel looking east at the US 15 bridge and the station. The distance from the camera to the far end of the plywood is 12 feet, which is half the length of the Point of Rocks depiction. From left to right is 4 feet. Eventually I added another 12 feet of length and another 4 feet of width for a total of 24x8 feet for Point of Rocks.

Window screen is in place and ready for application of Sculpt-a-mold.

The other 12 feet of plywood has been installed to the left, and benchwork has been finished for the Old Main Line. The Metropolitan Sub has been laid and is operational, and the Old Main Line track is being laid out. The curves at the station are at least 60+ inch radius and the single leg is 40 inch. Eventually another 4 feet of depth was added to the inside of the layout (to the right).

BUILDING A BETTER PLATFORM ROOF FOR THE MODEL TECH STUDIOS POINT OF ROCKS STATION

BY BRUCE ELLIOTT

The station at Point of Rocks, MD, (POR) designed by E. Francis Baldwin, is a distinctive B&O structure. Even the late John Armstrong had a representation of the building on his O-scale Canandaigua Southern (the station was named Warm River because it was next to the hot water heater.) If you want to model this location on your layout, of course you need a model of the station. In 2001, Model Tech Studios came out with an HO-scale kit of the structure. The kit is mostly resin but it includes laser cut fiber windows, soft metal bracket castings and plaster foundations. It sold out, and a second run was made in 2005. I have no intention of ever modeling POR, but I fancied building up the station as a display model. So I picked up one from the second run for $250 plus shipping in December of 2005 as a Christmas present to myself. Bruce's kit is No. 18 of 250 from the first production run. I can't find any such production data in my kit box, but the second run was probably at least 100. Therefore there should be a respectable body of modelers potentially interested in information on enhancing the kit construction experience. Thus, I've asked Bruce to share some of his pointers.

These kits come up rarely on the "secondary market." For those who think they can do as well scratch building, drawings were published in the January 1974 Railroad Model Craftsman*. The structure was also recorded by the Historic American Engineering Record with measured drawings (HAER MD, 11). There was even a nicely detailed one-piece approx. N-scale version produced in ceramic by one of the Christmas ornament makers, perhaps Hallmark. Thanks, Bruce.*

John Teichmoeller

Close to twenty years ago, the New Hampshire firm of Model Tech Studios created a nice HO kit for the famous Point of Rocks, MD passenger station. Several of us have bought the model, l and a few of us I know have actually assembled it. Some of us have farmed out the kit for others to assemble. After almost 15 yrs. I'm finally getting around to finishing mine. Among the many challenges to the kit is the fact that well over 95% of it is resin. Well that isn't all that bad, but resin has its drawbacks, and in the early days of working with resin this was problematic. Perhaps one of the biggest problems is thick walls that have openings that aren't exactly square and require inserting laser cut window frames.

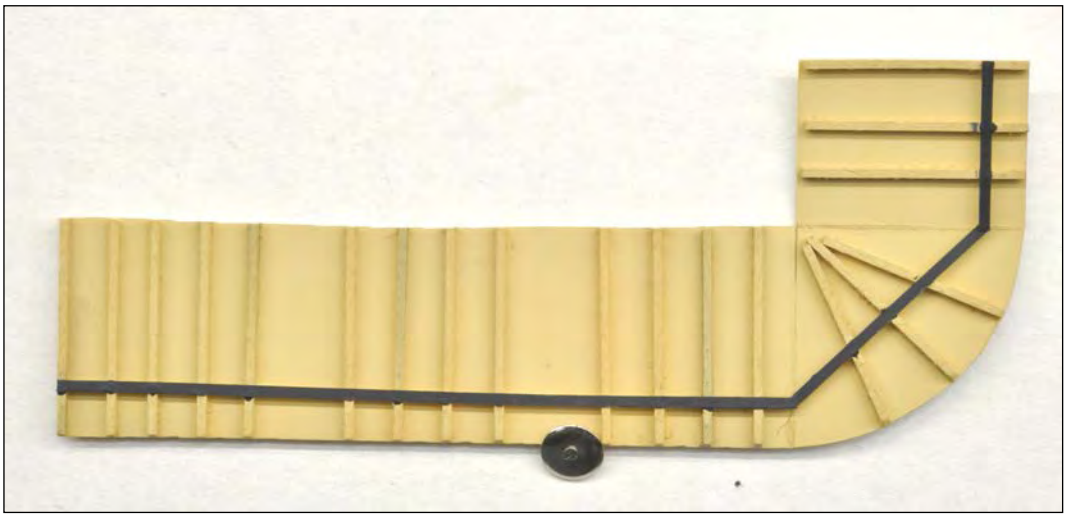
Two of the features that bothered me were the extreme thickness of the platform roofs and the suggested tarpaper roof covering. Each of the two platform roofs, mirror images of each other, is "L" shaped and consists of two rectangular parts and a quarter circular part for the "elbow." Model Tech used .092" thick resin sheet stock as a base for the platform roofs. Several red flags went up! The biggest was the thickness. So I decided to put off the platform roofs until another time. Now is that other time.

Model Tech tells you that checking the fit as you assemble is necessary. They're right. There are slight differences in size between the left and the right platform roofs. Additionally, the resin walls aren't exactly flat. Anyway, I decided that I wanted more fidelity in the appearance of the platform roofs and decided to scratch-build my own. Instead of .092" thick resin, I chose .030" Evergreen sheet styrene. I did use the 4x6 rafters provided but decided that I would use 1x8 purlins to connect the rafters instead of the 4x8's that were provided with the kit. The 4x8s were much larger than what was actually used and the 1" thickness gave me the fidelity I was looking for. In the end, I was compelled to compromise reality for the model.

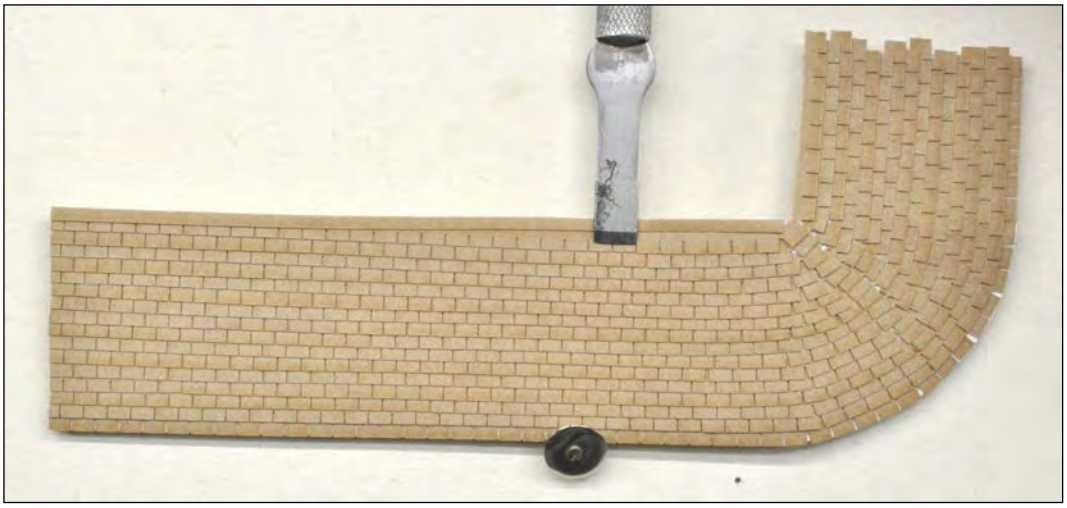
One of the biggest differences between the kit and reality was the roof material. Model Tech uses a tar-paper roof. While it would be a blessing for most modelers to simply cut and use spray adhesive and apply, I can't find a single photo that doesn't have shingles nor can I find any documentation saying that shingles were replaced with tar-paper. So I decided to use Laser Craft shingles. These are peel and stick. While this is a time consuming task, the real challenge is that each canopy is an L-shaped structure and the elbows have a compound slope. I can't imagine any other way to install a shingle roof other than one row at a time. 2x6s were attached to the real rafters and plywood over that, then tarpaper and shingles. [Note, other than the platform roofs, the rest of the kit's roofing is shingles pre-cast in the resin so your shingling job is limited to the platform roofs. JT] The fidelity of the new roof is greatly improved vs. the kit. As always, it's a matter of what suits you. This approach of using .030" material makes the platform roof a lot easier and less daunting. Going to the

trouble of a shingle roof may be much more than what most of you want to tackle, but the effort and reward is well worth it. Further research shows that in the "teens" of the 20th century the roof had a metal appearance. That said, it can be documented that the platform roof was covered in sheet metal and later, shingles. As always, when building a model, be it a structure, a piece of rolling stock or a locomotive, knowing your time frame can make all the difference in the fidelity of what you're representing.

So in summary, I followed the kit instructions for the platform roofs (which take up a page) except for the differences described previously: .030” material for the roof, 1x8 for the purlins and shingles for the covering. Once complete the underside was painted with Floquil using depot buff, and the shingles were painted Floquil weathered gray.



Bottom side of platform roof. There is a companion that is a mirror



Shingled side of platform roof.

Platform roofs installed on station. The terrible blizzard of January, 2010 caused the south side roof to collapse but MARC replaced it in 2011 with a proper shingled roof. Even the prototype design seems somewhat flawed.

ROSEBY'S ROCK

BY BRUCE ELLIOTT

I really liked the article on "Rosbbys" Rock in the 4th Quarter 2017 *Sentinel*. Not a lot of people know about Roseby's Rock and fewer have visited there. For our two Wheeling conventions the story was that you couldn't get a bus in there. True, it's not easy to get to, but for a B&O person, it's a "must see". As a modeler and B&O enthusiast, I found it unthinkable not to have some form of homage to this important event in our history on the model layout. As you readers know, my model layout is made up of five locations around the system arranged so that the track plans of each flow fluidly with each other. So I just had to decide where to put my "shrine."

Roseby's Rock represents the completion of the original charter of the railroad, and this location is where it all came together trackwise. As I was building the layout, I had no clear idea where I would make the connection for the mainline. As it turned out, the connection was made on the layout at Patterson Creek, in front of FN tower. Obviously Patterson Creek is nowhere near Roseby's Rock in real life, but it is on the Old Main Line, and it is in West Virginia. I considered painting and installing a "golden spike" to personally commemorate the event, but that was a Union Pacific thing. Even though the location is wrong, it commemorates a real historical event and the closing of the mainline on the layout. While few visitors are aware of the event to begin with, many of them have positive comments about the model feature, especially after I tell them how it came to be on the layout and in this location. The cliffs at Patterson Creek gave me a great background from which to create the sign with a bit of modeling license.

The plaque was created from a plaster mold that my father made some four decades ago. Once it was poured and dried, a basic size of what I had in mind, relative to reality and the available size of the casting was drawn out. The casting was colored and the sign work started. Floquil Aged White was hand painted on the casting and the lettering was all done with dry transfer lettering. Ok, the font isn't correct, but I'm used to working with what I have available. Floquil High Gloss was applied over the lettering in order to seal it. Seldom, if ever will you see such historical homage re-created on a model, when you do and it is recognized, it's special. Future issues of *The B&O Modeler* will have the conclusion of the Point of Rocks section of the layout and then will, over time, feature other sections.

Meanwhile, consider this a postscript to the *Sentinel* article. If nothing else I'm glad to have shared it with you.

COMING FUTURE ISSUES

Reflect on the fact that some of our features have started with little more than a couple photos and some e-mails, while others, of course, have been full blown articles. We can start with glimpses of your project and torment it into an article! Our B&O modeling readers are interested in seeing what you are up to! Remember, we are dedicated to the B&O's idiosyncrasies! And do let us know if there is some aspect of B&O modeling we should be covering but aren't.

Here are the titles of articles for which material is in hand or is backed by credible author promises. Plus, if you can help or have anything you feel might contribute to the strength of articles on these topics, please contact the editors:

Layouts— Conclusion of Point of Rocks on Bruce Elliott's HO Piedmont Division
B-8 Baggage Car
Concrete Phone Booths
One Man's Roster--Wagon Top Cabooses
One Man's Roster--Wagon Top Covered Hoppers
Walthers E9A Diesel Review
M-55h Timesaver Service Boxcar
Pro-Custom Hobbies I-16 caboose, styrene edition
Tatum Ladders
Tatum Slack Adjuster—cushioned underframe version
Ed Kirstatter's Roundhouse Queen--E-39 2-8-0

Bob Chapman's M-55h Timesaver Comet;
Probably the second most favorite B&O boxcar.