By Tony Koester

# Floating cars across the Detroit River

When he got stuck in holiday traffic on the Ambassador Bridge between the U.S. and Canada, Bruce Ernatt hopped out of his car to photograph the Norfolk & Western (ex-Wabash) Boat Yard in Detroit, Mich., in July 1977. Bruce Ernatt photo

**Every so often,** a photo comes to my attention that shows a scene tailor-made for modeling. So it is with this photo by Bruce Ernatt.

Bruce was crossing the Ambassador Bridge between Windsor, Ontario, and Detroit and got stuck in holiday traffic back on July 7, 1977. Like any good railfan, Bruce had his camera with him and seized the opportunity to shoot the Norfolk & Western (formerly Wabash) Boat Yard along the Detroit River. The yard was also served by the Chesapeake & Ohio's river ferries.

I can remember several occasions when having a camera tucked under the seat of my car enabled me to get photos that I prize today. It has become much easier to do this with the advent of high-quality cameras built into cell phones, of course, so hardly anything of import passes unrecorded in the digital age. But luck is still most often a case where preparedness meets opportunity.

**The Wabash main line** between Kansas City, Mo., and Buffalo, N.Y., actually passed through Canada, so it faced the problem of getting cars across the Detroit River. (The Grand Trunk Western, Michigan Central, and Pere Marquette had similar challenges.) The tug in the photo ushered car floats back and forth across the river.

Over the years, this was done with car ferries until the three remaining ferries had their engines removed and were converted into car floats with four tracks instead of three. Thereafter, they were moved by tugs.

Fritz Milhaupt tells me that Norfolk & Western and successor Norfolk Southern continued this until April 30, 1994. By then, one tube of the Michigan Central Detroit River Tunnel had been enlarged sufficiently to allow for tall cars such as tri-level auto racks to pass through.

It's hard to imagine that these car floats were actually segments of the former Wabash main line. But as a Nickel Plate Road fan, I can tell you that competitor Wabash gave a very good account of itself between Kansas City, St. Louis, and Buffalo.

**This suggests a great** modeling opportunity for those with restricted space. A small riverside yard, perhaps fed by hidden staging, could in turn feed a car float or two that sails on specific schedules — this is a "mainline" operation, after all!

"Sailing" could involve cycling waybills to convert outbound to inbound cars, or the car floats could be physically moved to allow the consists to be changed. If the floats are stationary, adjacent storage shelves or drawers could allow swapping cars for variety very much like a fiddle yard.

In fact, Marshall Stull has done this as Free-mo modules (see smallmr.com/wordpress/the-boat-yard/). He has done a lot of homework, and you can see how the Boat Yard appeared over the years, as well as how he plans to model it in HO scale as it appeared in the 1980s. He's building a series of modules that measure 26" x 50", except for the one with the arrival track, which is 43" wide. Altogether, they add up to a length of 25'. In N scale, that would be around 15', the length of a spare-room wall.

Marshall also discusses his operating plans, including the all-important practice of loading the car float so as to keep the weight evenly distributed to avoid capsizing the float. This makes switching a car float much more challenging, hence interesting, than switching cars in a land-based yard of an equivalent number of tracks.

**There are few aspects** of railroading more interesting than the rail-marine interface, be it a river crossing, one of the Great Lakes ports, or a saltwater harbor. A yard and a car slip can be a complete Layout Design Element — that is, a visually and operationally recognizable model of an actual location, like Marshall's modules. And having a chance to model a car ferry, car float, barge, and/or tugboat offers welcome variety. MR

**A SMALL RIVERSIDE YARD, PERHAPS FED BY HIDDEN STAGING, COULD IN TURN FEED A CAR FLOAT OR TWO THAT SAILS ON SPECIFIC SCHEDULES. – TONY**

# A RAILROAD FOR THE FUTURE

Planning for possible downsizing, Doug Kirkpatrick adds a standalone waterfront shelf layout to his HO scale Virginia & Western

**By Douglas Kirkpatrick** • Photos by the author

My 45-year-old Virginia & Western RR is a relatively large layout that requires continual maintenance for reliable operation. Since this might become too difficult in the future, I wanted to build a smaller railroad that would be portable and easy to maintain. I also wanted a waterfront district to accept merchandise from the car float at Amy Port on my current layout.

I found a space approximately 15 inches wide and 17 feet long, sufficient for a shelf-type railroad, directly across the aisle from Amy Port. The new Tidewater District has many industries, a wharf, and a car float that provides the source of rail cars. The railroad is self-contained using a small diesel locomotive for power.

## Design criteria

I haven't embarked on any new construction on the V&W in decades, so the Tidewater District gives me a great opportunity to use new products and techniques to shorten the construction time. The 15" wide shelf had to be narrowed at one end to accommodate for the aisle, but even with this restriction, there's still plenty of railroad.

I decided to use the Walthers three-track car float because it would handle at least twelve 40-foot cars. I arranged the sidings along the railroad so that there are an equal number of trailing-point and facing-point switches.

I also limited the length of the only runaround so I can't remove or replace an entire string of cars from the float at once. After all, my objective is to keep an operator engaged for an entire 3-hour operating session.

Because I enjoy handlaying track, I included several crossovers to make the trackwork a little more interesting. At the opposite end from the car float, I placed a small engine shed and a fuel track for the diesel switcher. The overall length of the layout could have been shortened to accommodate a smaller area by moving the enginehouse 4 feet closer to the car float without affecting the operation.


❶ Seen through the float bridge, Virginia & Western Alco S2 No. 6 is switching Marine Power and Parts on the Tidewater Division waterfront. Doug Kirkpatrick built the 17-foot-long standalone shelf addition to his layout so he will have a smaller model railroad to run if he has to move or downsize.

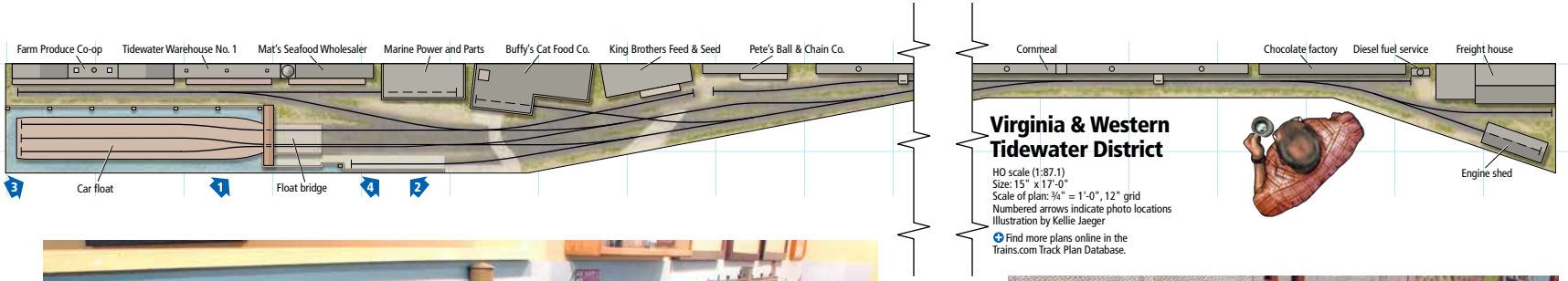
I selected a layout height of 44" for ease of viewing and operation. The downside is that Amy Port, which is directly across from the Tidewater District, is only 38" high. I suppose there must be a dam and locks to get the car floats from one dock to the other.

In the past, when constructing the V&W, I laid the track and then purchased or scratchbuilt buildings to fit the space available. This time, I fabricated most of the buildings first, placed them in their relative locations on the floor below the intended space, and planned the cork roadbed to fit them. I then transferred this information to the plywood base. This approach eliminated the need to re-lay a siding because I had provided insufficient clearance in the first place.

## Construction

Because the shelf width is narrow, I supported the plywood base with shelf brackets attached to the wall studs. I placed the brackets approximately 4 feet apart, which was more than sufficient to support the load. However,


❷ The Walthers car float and float apron kit originally had the turnout points on the apron. Doug built a metal frog on the float and ran the closure rails across the apron gantlet style so he could put the switch points on land, allowing installation of a switch motor.

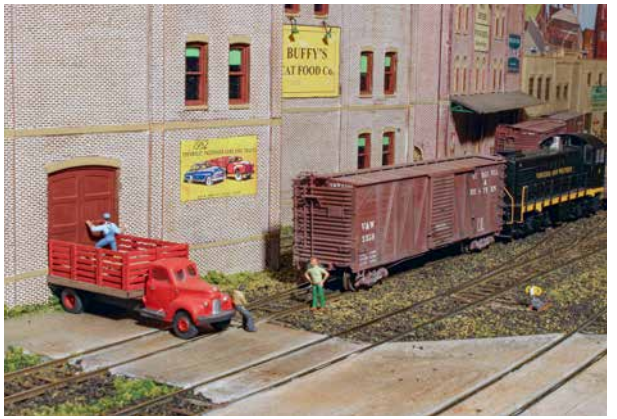



## Virginia & Western Tidewater District

HO scale (1:87.1)
Size: 15" x 17'-0"
Scale of plan: ¾" = 1'-0", 12" grid
Numbered arrows indicate photo locations
Illustration by Kellie Jaeger

Find more plans online in the Trains.com Track Plan Database.

❸ Doug enjoys handlaying track, so he included several crossovers to make the work more interesting. The plan has an equal number of facing- and trailing-point turnouts, which helps keep operation engaging for a 3-hour operating session.




❹ Doug inserted some random complications into his operating scheme to extend how long it takes to switch the layout. One of them is a delivery truck blocking the track to the car float. As soon as the loading doors open, the truck can make its delivery and be on its way, but for now, the train crew is not very happy.

### The layout at a glance

**Name:** Virginia & Western RR, Tidewater District
**Scale:** HO (1:87.1)
**Size:** 1'-3" x 17'-0"
**Theme:** Waterfront industrial district
**Locale:** Mid-Atlantic tidewater
**Era:** 1948-54
**Style:** shelf
**Mainline run:** none
**Minimum radius:** cosmetic curves
**Minimum turnout:** No. 5
**Maximum grade:** none
**Benchwork:** plywood on shelf brackets
**Height:** 44"
**Roadbed:** cork
**Track:** handlaid code 70
**Scenery:** tabletop
**Backdrop:** painted ¼" plywood
**Control:** Digitrax DCC

I took care not to install a shelf bracket directly below a switch point, which could have infringed on the location of a switch machine.

I used white glue to attach cork roadbed to the ½" plywood. I then glued strips of wooden ties to the cork and, when dry, lightly sanded the tops to even them out. I wanted to use lightweight rail, since this is a typical industrial switching railroad with small locomotives. I selected code 70 rail because handlaying code 55 rail would be too much of a challenge.

I selected number 5 turnouts, which provided for a compact design yet minimized the misalignment of couplers when shoving cars into sidings. I did not install under track uncoupler magnets; I rely on a manual uncoupler pick for spotting cars.

I attached a 12" high, ¼" thick plywood backdrop rather than paint the sky directly on the wall. The backdrop also provided support for buildings along the back of the shelf.

I also used ¼" plywood for the fascia. By attaching the backdrop and the fascia to the plywood base, a structural beam is formed that results in a solid unit. I designed the shelf with joints every 6 to 8 feet for easy removal in the future.

## Float and apron modification

The Walthers car float (933-3152) and matching apron (933-3068) provide an excellent choice to support a waterfront district. I installed code 70 rails on the float and across the apron.

Since the float contains three tracks and the apron two tracks, a turnout is needed. The original kit has the turnout points on the apron deck. I removed the molded frog on the float and discarded the apron deck. Instead, I modified the apron using styrene girders and placed wooden ties on top of them.

I fabricated a metal frog on the molded cleats on the float and ran the closure rails across the entire apron, gantlet-style. The actual switch points were placed on land. Using stripwood, I filled around the rails on the apron. I didn't cut gaps in the rails between the apron and the float or between the apron and land.

## Scenery

Because of the limited width of the waterfront district, I built most of the industries from Walthers low-profile background buildings. I also used the Design Preservation Models (DPM) modular building system from Woodland Scenics to construct several other industries.

The wharf is constructed from basswood sealed and painted to resemble aged concrete. There are several areas where the tracks are embedded in the street. To capture the look of street trackage, I placed strips of .060" square styrene along the inside and outside of the rails. I used these strips as a form to spread joint compound between the rails and for the rest of the street. This method ensures that the code 70 rail will always be above the street for reliable electrical contact with the locomotive.

The water area beneath the float and around the wharf was sealed by a thin coat of joint compound, lightly sanded and painted. Once I was assured that the area to represent water was completely sealed and level, I mixed a two-part epoxy and slowly poured it to form the water. When the epoxy cured, I installed the float in front of the apron.

I tried to select names for the industries that would be associated with activities along the waterfront. On occasions I operate the V&W at night, so I installed lights throughout the buildings and along the waterfront areas.

## Turnout control and track power

Once the handlaid track was completed, I mounted Tortoise by Circuitron switch machines beneath each turnout. I controlled each machine with a three-position rotary switch that was featured in an article by Pete LaGuardia in the July 2017 issue of *Model Railroader*.

I wanted each turnout frog powered for reliable operations of the short-wheelbase switcher. A set of terminals on the Tortoise switch machine is used to provide track power to the frog. I mounted the rotary switches on the fascia directly in front of each turnout.

I installed a single set of bus wires the length of the district and provided track drops so that all rails are directly powered. Digital Command Control (DCC) power was provided to the Tidewater District through a power shield from the main railroad power supply. If an electrical short occurs, it can be contained to this specific area of the railroad.

I elected to use DCC auto-reversers to power the all-metal crossovers rather than wiring them directly to the closest turnout. If the operator forgets to align the turnout after leaving the siding and then runs through the crossover in the opposite direction, the auto-reverser will prevent an electrical short.

## Operation

The operation scenario sounds quite simple: move all the cars on the float and at each industry to their correct location via a switch list. But I also provide a few complications. One is that one of the industries' cars cannot be moved until a certain time because the forklift has malfunctioned and the car is being loaded by hand.

Another complication is that the local foreman forgot to check the amount of fuel in the storage tank available to fill the diesel switcher. With only two hours worth of fuel left, the switcher must retrieve the loaded tank car buried behind other cars on the car float and position it on the refueling track next to the enginehouse.

I also use 9 volts to power the switch machines, which slows down their action. With a top locomotive speed of 15 mph and built-in momentum, the entire operating session takes between 2½ and 3 real hours.

The Tidewater Division is a sought-after assignment by my local crew. I have considered adding overhead wiring and using electric freight motors; however, the operators have strongly discouraged this, since so much manual uncoupling is required. MR

*Doug Kirkpatrick, a frequent contributor to* Model Railroader *and its special issues, lives in Falls Church, Va. His layout last appeared in our September 2019 issue; his most recent track plan was published in* Model Railroad Planning 2017.