# A Turntable and Roundhouse for the Water Level Route

by Bob Shaw, RM 7726 photos submitted by the author



Let's face it: there's something "magical" about seeing an engine drive onto a turntable and revolve slowly before backing into Because the cost of new a roundhouse. turntables is high, I bought an old Bowser 30inch turntable at a train show and installed it to link with a Korber roundhouse. The project called for scratch-building the turntable bridge and control house decks from basswood and kit-bashing a trackside shanty to convert it into a control cab (house), which were firsts for me. The results aren't perfect, but they were fun to do, look better than expected, and encouraged me to employ them on future projects. Because these building techniques can be applied to other scratch-building and kit-bashing projects, I hope you'll consider using them on your layout.

#### You Need a Big Turntable to Turn Big Engines

After moving to our new home, I finally had enough "real estate" in the basement to build a 35.5 x 14.75 foot layout that would accommodate a large Bowser turntable and four-stall Korber roundhouse. This article recaps the initial installation process before final touches are added such as roundhouse doors, smoke stacks, lighting and so forth along with other structures and scenery.





If you're considering purchasing a turntable, buy a long one. As you can see, a Lionel Niagara just fits on the 30-inch model. Unfortunately, all turntables require a lot of space on the layout, even in shorter lengths. Consequently, I suggest purchasing one that's at least 30 inches long, because the trade-off of requiring more layout space is outweighed by the ability to accommodate today's larger engines.

#### Keep the Turntable Pit Level during Installation



The turntable pit assembly is inserted into a square hole cut into the plywood top of the layout. It's essential to keep the assembly level to ensure proper track alignment on both ends of the turntable bridge. A single circular track is



recessed into the pit so rollers on each end of the bridge can ride on it. A drive shaft is located in the center of the pit, and secured by a set screw in a brass collar. The top of the drive shaft is inserted into a cast collar in the center of the bridge and secured with a set screw. "Hot" power for the center rail of the turntable track is supplied through



this shaft, while "common" power to the outside rails is supplied through the pit track and rollers.

#### A New Drive System for an Old Turntable

The bottom of the drive shaft connects to a wood timing gear that's driven by a timing belt powered



by a heavy duty motor. They were included in a Bowser Turntable Upgrade Kit purchased from Ross Custom Switches.

The kit also contains a power supply and controller



that slowly moves the bridge until it aligns with the desired track. The square grey controller is resting on top of a temporary

control panel that switches turntable track sections "on" and "off." I found it saves time to be sure a system is functioning properly before permanently installing it on the control panel. While the sidings can be controlled remotely by TMCC, I prefer to use "old school" switches to avoid a mishap caused by pressing the wrong button on the TMCC CAB-1. The seven switched turntable and roundhouse sidings include:



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- T1 Turntable Staging Track
- TT Turntable Track
- T2 Siding by roundhouse
- T3 Roundhouse Stall 1
- T4 Roundhouse Stall 2
- T5 Roundhouse Stall 3
- T6 Roundhouse Stall 4

### Scratch-Building the Turntable Bridge

Components supplied with the Bowser turntable bridge included hardware, pit track rollers, metal side plates and a 30-inch wood block, that can be seen in this end view of the bridge. First, track



rollers were attached to the bottom of the block. Then three narrow basswood planks were added, along with a wide basswood board to support a length of GarGraves track so the height precisely matched track on each side of the bridge. This is critical to ensuring a smooth transition from the staging track to the bridge track to the roundhouse stall track. Note that track shims are sometimes required to fine tune the alignment.



A wide-angle top view shows evenly-spaced horizontal support "beams" along the entire length



of the turntable bridge. Wider beams will support the control house platform. Each "beam" was



nailed in place after first drilling a pilot hole through the basswood to prevent splitting. All basswood was wiped with red oak stain to allow the grain to show through the rich hue.

With the support "beams" in place, vertical decking



planks were glued to them and secured with clamps until dry. Some of the planks on the left side were already glued in place, along with the control house platform.



The completed turntable bridge can be seen in the wide-angle photo below. Square basswood strips were glued along the outer edge of each side to hold railing stanchions, which were threaded with copper wire to simulate guard wires.



Kitbashing a Shanty into a Turntable Control Cab (House)



The completed turntable control house began as a



trackside shanty that cost \$1 at a train meet. While the shanty's original width was good, it was too long and had a pitched roof. So it was back to the bandsaw to do some cutting! After removing the roof and

base, I carefully cut each side so it was slightly

wider than each window and cut off the back wall to preserve the tool box. Next, the front, two sides and back wall with the tool box were aligned and





glued together. White styrene strips were glued to hide the vertical exterior seams, and wood supports were cut and glued along the inside seams

to reinforce the walls. These supports were painted red along with the rest of the house.

Because a curved roof was prototypical on most



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turntable control houses, I cut two curved "half



glued the other to the back wall. The overhanging round roof in both pictures was



circle" pieces out of a styrene sheet and glued one to the top of the front wall, and

made from skinny wood strips that were glued to printed roof paper before being bent and glued to the "half circle" styrene pieces. Final touches included adding a lamp over the door, and gluing clear plastic to simulate glass in the door and windows. Making this was a lot of fun and, while not perfect, it felt great to add this personal touch to the project.



## Precisely Placing the Roundhouse and Stall Tracks

The overhead view of a Dreyfuss Hudson being turned to enter the last stall illustrates the track density required to make roundhouse sidings, as well as the precise track placement needed for proper alignment of each track. In addition, the close-up view shows the exacting tolerances required for small gaps between the end of each



stall track and the turntable bridge track. Tweaking everything so it runs smoothly takes a lot of patience, but the resulting flawless operation



is worth the effort. From left to right, this close-up shows a Dreyfuss Hudson, Niagara, Mohawk, Hudson and a Legacy Mohawk on the siding, which can also be seen in this side image of the roundhouse.



#### **Powering Roundhouse Track**

I found the roundhouse kit at a train show and had a model maker build it. He mounted it on a board that was the same thickness as my cork roadbed.





That way, I could run cork up to the front of each stall, as it was level with the interior board, and lay track into each stall, as shown in this rear view of the roundhouse with the rear roof removed. Track power to each isolated stall section is supplied through feeder wires fed through holes drilled through the roundhouse floor and benchwork. All visible track power connections on my layout are

"hidden." However, because the rear interior of the roundhouse will be covered by the roof when it's put into place, GarGraves track power clips were installed to provide secure connections.



What's Next?

Now that the turntable and roundhouse are operational, final touches will be added to the roundhouse including doors, smoke stacks,



lighting and interior details to enhance realism. Scenery comes next, along with an operating water tank, sand tower and other structures found in a steam yard, which will be the subject of another *NYC Water Level Route* update.



