Woodworkers Technique for a Knock Down Train Table

A technique I read about in a work working magazine and subsequently used to build benches, cabinets and a rolling cart for my shop can be easily extrapolated into a good looking base for a train table. Once the 'woodworking' is done, the best thing about this table system is that to assemble or dismantle only a wrench (open end or socket) is needed. No other tools are required. The entire system consists of a table top frame and a set of legs which makes transport easy. This system can be used by train clubs to quickly assemble train boards at any location or even by a model railroader in his/her home. The legs (made from standard 2x4 lumber) are attached to the table top frame by carriage bolts with nuts and washers. The table top frame is made from 2x3 lumber with corner braces sawn from 2x4 lumber. The corner braces are glued and screwed to the stiles and rails of the top frame at the four corners to form one single assembly. Optional 2x3 cross members can be attached to the frame for added support. Due to the design of the legs and the way they are mated to the top frame; once bolted to the frame and a piece of plywood secured to the top the result is a rock solid train table a person can walk on.

Figure 1 Post and corner of top frame

Figure 2. Side view of post and top frame assembly

The only 'drawback' to this system is that you will need access to a table/contractors saw to make accurate cuts at 45 degrees for the legs and corner braces and a drill machine to make the pilot holes for the screws and carriage bolts. So cruise the neighborhood, listen for the sound of woodworker happily making saw dust in his/her garage and make friends! Described below is the process for making a sample train table.

POSTS

The corner posts (Figure x) are made from 2x4 lumber. The face of the post is beveled at 45 degrees to fit into the platform. The saw blade needs to be tilted for this operation. A hole is drilled in the center to fit either a 3/8 " or ½ " carriage bolt.

Figure 3. Photo of post profile

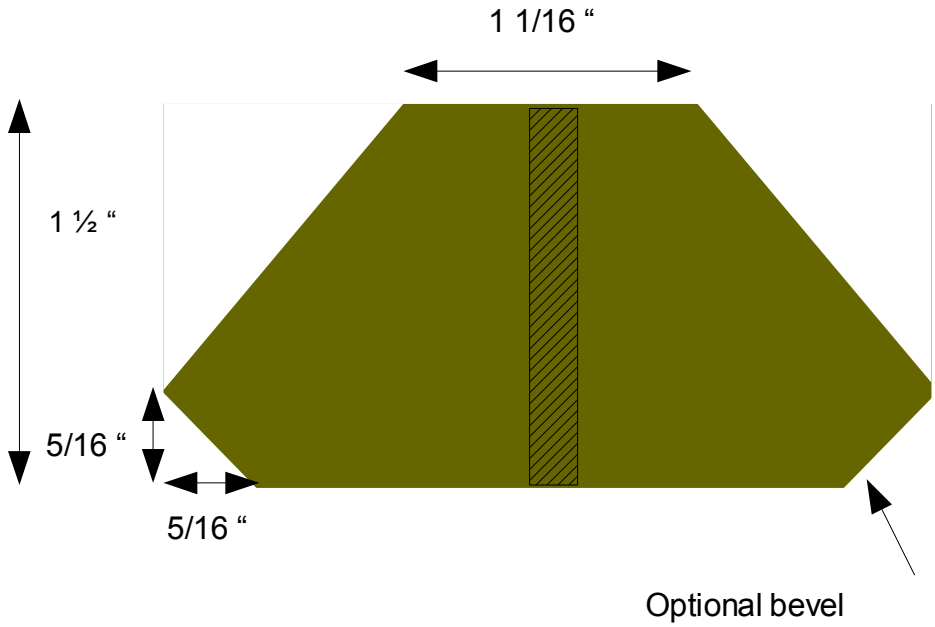

Figure 4. Schematic of post end

Tip – do not drill the carriage bolt hole in the post until the platform is complete. Due to assembly 'drift' each post should be fitted to each shelf platform corner and the hole drilled in the corner bracket used to line up the drill bit for the post. Mark each post and platform corner so the posts go back into the same position each time the table is dismantled and reassembled. To add a 'furniture' look to the post an optional small bevel can be cut (see the diagram).

Tip – If you do saw the optional smaller bevel then saw these two first then the larger bevel. This gives maximum support for the post as it is passed through the saw blade.

PLATFORM

The corner braces are sawed from 2x4 lumber. The dimensions are shown in Figure 5. Cut a 2x4 to width (2 9/16”) then set a miter gauge on the table saw to 45 degrees and place a stop block the correct distance from the blade to give a 5 11/16” bottom edge. Once set up simply flip the 2x4 after each cut to make the next cut. Once all corner braces are cut, the hole for the carriage bolt and two more holes for wood screws can be drilled using a drill press. Use 'cutoffs' from the saw operation. Clamp these to the drill post fence on both sides of the corner brace to act as drill stops. Position the corner brace with the long edge up.

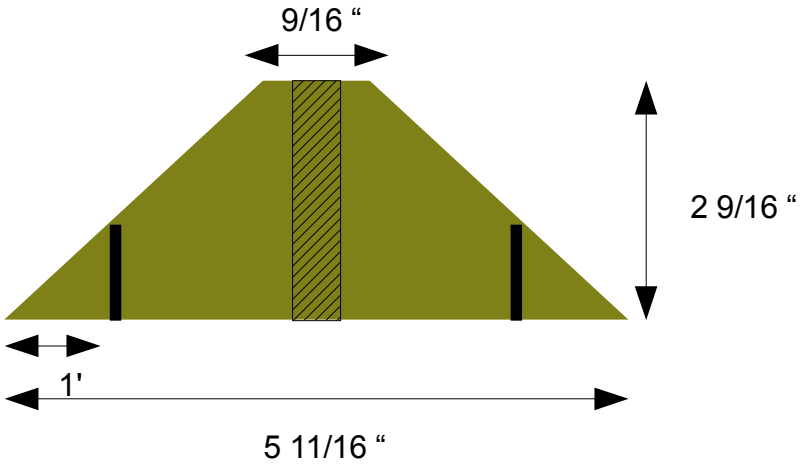

Figure 5. Schematic of corner brace

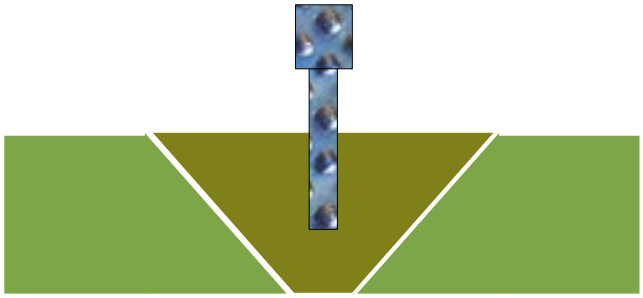

Figure 6. Drill press setup

The top platform is 2x3 lumber cut to 1 ½ “ x 2”. The corner braces are attached to the ends of the shelf with glue and screws.

Tip: Driving screws at an angle from the brace into the shelf will cause the brace to move. It is best to apply glue to the surfaces first and set aside the assembly for about 30 minutes then drive in the screws. No need to clamp since the screws will provide the joint strength. Line up the edge of the corner brace with the end of the rail. This will allow a space to exist between the platform and post on the inside of the assembly. It is this small space that allows the post to secure firmly to the platform assembly when bolted in place.

Figure 7. Rail and corner bracket assembly showing position for wood screw

Also align the brace to the shelf so that one side of the brace is level with one side of the shelf. This will provide a flat top surface for the table top.

Once the shelf is assembled all that remains is to position the four posts with each corner of the shelf one at a time. Use the carriage bolt hole in the corner brace to line up the drill bit to the post and make a small indentation to mark the location. Remove the post and finish the hole on the drill press. Be sure to mark both the post and the shelf corner with an identifier for later assembly.

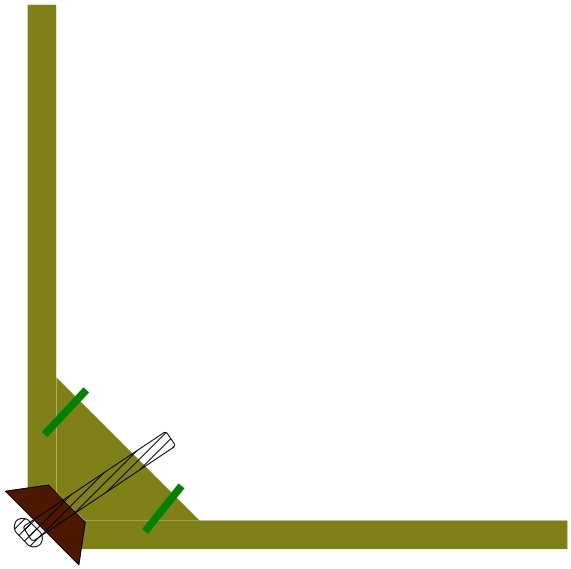

Figure 8. Lining up post to platform to mark position of hole for carriage bolt

Final assembly consists of using a carriage bolt with a flat washer on the outside of the post and another flat washer, lock washer and nut on the inside. The flat washers stop the bolt/nut from indenting the post.

The table can be assembled and dismantled as often as necessary by simply removing the carriage bolts.

Tip: Build the table assembly in multiples of slightly less than 4 feet x 4 feet to accommodate standard plywood or homasote sheets. Maximum table size should be

slightly less than 4 feet by 8 feet. Insert 2x3 lumber cut to size about every 2 or 3 feet for additional cross support of the shelf assembly.

Tip: Don't cut the shelf rails and stiles to exact multiples of 4 feet but about 6-8 inches less. The notches in the corners where the posts fit will add extra length. Always allow for a slight overlap when the top is placed on the table assembly. This aids in final positioning of multiple tables together.

Tip: If extra shelving is required for storage simply build an extra shelf platform and add to the assembly after the top shelf and posts are bolted in place. Turn the table upside down and use spacer blocks in the four corners to set the distance you want between the table top and the shelf. Notches in the corners of the shelf top will need to be cut to fit between the posts.

About the Author

Joe Fauty is a retired Microelectronics Engineer, avid wood worker and Model Train Operator. Two years ago he started his own company (Model Structures for Model Railroads) first building custom wood bridges and decking for HO, S, and O scale layouts. He has since expanded into custom plastic structures for O scale modelers.