

# The Traditional Pembroke Table

**A generous storage drawer and two fold-down leaves make this table a handsome addition in any Living Room or Bedroom.**

This small drop-leaf table with drawer is modeled after a traditional Pembroke Table. It is a versatile, compact piece of furniture, offering a multitude of uses in your home decorating plans. Place it in an entry hall under a mirror to offer a warm welcome to visiting guests. Open both leaves and place it next to a sofa to showcase a special lamp or other prized object. Open a single leaf and place it next to your bed for the telephone and a reading lamp. The drop leaves bring untold versatility to this handsome little table.

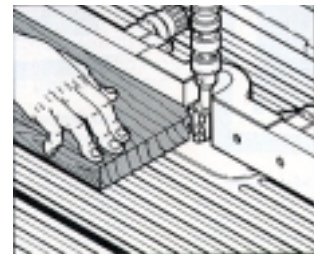
The table uses a total of eight different joints; five of them functioning as “locking joints” that help hold the carcass or drawer together, the other three are part of the movable features of the table. Each joint was chosen for a good reason. But don’t let all of this joinery overwhelm you. Remember, you don’t have to cut all of them at once. Instead, you can parcel out the work to suit your own pace.

## HERE WE GO

Start by studying the plan drawings. They contain all the information you need to build this great little table. Everything in these plans is there to help you – the smallest mark, the least dimension – review them all very carefully. Remember that an old, “Master Woodworker” once offered this formula: Of the total time required to build this or any project, 60% should be invested in studying and planning your approach...10% in sharpening and setting-up your tools...10% in making your cuts and fitting everything together...and the last 20% in final sanding and applying your finish.

Only one kind of specialized hardware is required for the table...the drop-leaf hinges. We used two pairs of Stanley 1-1/4” table hinges (Stanley item # 46-330), which we ordered through a woodworking supply catalog. All other hardware came from a local Home Center.

**1. Create the glue joints** that will hold the pieces of the top together. We used the Shopsmith Glue Joint Shaper Cutter to make the cuts for this joint. We recommend this joint because it consists of a unitized, self-aligning spline/groove combination that dramatically increases the amount of gluing surface. As a result, you get an incredibly strong joint, once assembled.



**Fig. 1. Cutting glue edge.**

When shaping these joints, remember to set your MARK V Work Table at waist-height or a little lower for optimum workpiece control and be sure your Shaper Cutters are sharp before you get started.

Your rough top, once assembled should be 36” x 19”. This will give you plenty of stock to dress up the edges and cut the special drop-leaf joint.

**Alternative Procedure:** As an alternative, you could also use the Shopsmith Molder Set-Up with the Molding Glue Joint Cutter to create these joints.

2. **Cut the drop-leaf (rule) joints** that allow the leaves to be raised or lowered without leaving an unsightly gap between the leaves and the tabletop when the leaves are down. This movable joint is created by using the Shopsmith Shaper set-up and a combination of two cutters: The Drop Leaf Cove Cutter and the Drop Leaf Bead Cutter. When creating these profiles, it's best to make a series of light passes under the cutters for the smoothest, most tight-fitting results. Again, sharp cutters can make a significant difference in your results.

**Alternative Procedure:** As an alternative, you could also use the Shopsmith Molder Set-Up with the Molding Drop Leaf Cove and Bead cutters to create these joints.

3. **Form the mortise-and-tenon joints** that will anchor the table sides and back to the legs. These joints will stand up under stress from almost all directions. Used as one of our locking joints, they'll help form the durable carcass framework for our table. Start by carefully marking the stock used for the legs, identifying them relative to their final position on the table. This procedure will prevent mixing up the faces as you cut the joinery. Mark the locations for eight mortises and two dovetails.

Before you cut the mortises, however, turn the legs on the lathe. Use the Shopsmith Lathe Duplicator to help ensure that all four legs are identical.

Always cut the mortises BEFORE you cut the tenons because it's easier to cut (or adjust) a tenon to fit a mortise than it is to cut a mortise to fit an existing tenon.

Use your Shopsmith Mortising Package with a 3/8" Mortising Bit/Chisel Set to create these mortises. Be sure to use your Telescoping Legs or a cut-to-length 2"x4" to brace the MARK V worktable during this operation, as the process of cutting mortises with this set-up requires substantial downward pressure, which will create table flex. If you don't have a Mortising Package, you can also cut these mortises by removing most of the stock with a 3/8" brad point drill bit, then cleaning them out with a chisel...or by using your Router set-up with a 3/8" straight router bit.

Next, mark the tenons with a knife to prevent feather splinters, then use your Dado Set-Up to cut the tenons, custom-fitting them to fit your mortises. Cut them 1/8" shorter than the depth of your mortises to leave room for the glue.

**A Rule of thumb** for mortise-and-tenon joints: Mortise widths should be no more than one-third to one-half the thickness of the stock you're using.

4. **Cut the locking dovetails.** The "female" parts of these joints will be cut on the inside top of the two front legs...and the "male" parts will be cut on each end of the Front Top Rail (C). These joints will be located where the table will be stressed the most – at the top of the drawer opening

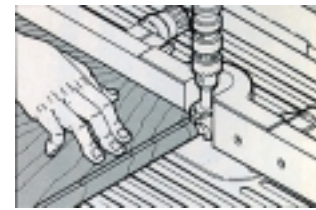


Fig. 2. Cut in the drop-leaf joints before the edges of the top are shaped.



Fig. 3. Cutting mortise in leg (note hold-down).



Fig. 4. Using dado to cut tenons (note use of extension fence.)

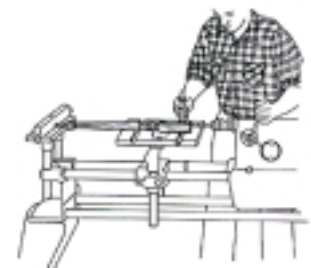


Fig. 4.5. Forming dovetail socket in top of front leg. Horizontal bore removes about 80% of all waste stock.

– and will lock the legs and the front of the table assembly firmly together.

Start by cutting the dovetail slots in the tops of the two front legs. Use your horizontal boring set-up to drill out most of the waste, then clean them up with a 1/2" chisel.

Next, cut the mating dovetails into the ends of the Front Top Rail using your Bandsaw, then a chisel and wood rasp to achieve a tight, final fit with the Legs. It's best to cut these a bit over-size to begin with, then "pare" them down carefully until they fit snugly.

**5. Cut the doweled joint for the drop leaf supports.** The supports (F) fit into hollowed-out areas at the tops of the two sides, and pivot on a center dowel. The ends of the hollows – and the ends of the supports are each mitered at 45-degrees. When closed, these mitered ends allow the supports to rest flush with the sides. **NOTE:** Refer to the drawings to be sure your miters go in the proper directions so the supports will pivot properly when installed.

You'll want some clearance for the dowel pins to move freely when this movable joint opens and closes. Cut the hollows (or openings) in the sides using a Dado Blade with your miter gauge set at 45-degrees. Next, cut the supports and drill them to accept the dowel pivot pins. Place the dowels in the supports and sides; rub a little paraffin onto them so they'll pivot smoothly.

**Do NOT glue them into place.**

Use your Molding Set-Up with a Bead & Quarter-Round cutter to add a decorative bead around the two sides (B) and back (E) that form the base of the assembled table apron. Position it halfway onto the surface of the bottom edge of the wood. Use your Push Stick or Push Block for added safety during this operation.

Next, drill screw pockets into the inside top edges of the sides (B) and back (E) to accept the screws that will hold the top of the table in place. Now, assemble the legs to the apron pieces to check the fit. Use no glue at this point. Instead, while everything's "dry-fitted" together, apply masking tape at each joint; take it apart and apply glue to each mortise and tenon – and each dovetail. Then – checking for squareness – clamp it together overnight. The masking tape will keep excess glue from seeping into the face of the wood.

**6/7. Form the locking drawer joints.** The front of the drawer assembly is locked together with one of these fancy joints – a combination dado/spline. This special joint is able to withstand the pressure exerted on the drawer case during loading, opening & closing. Using your Dado Blade, turn the drawer front on edge and cut the 5/16" wide by 3/4" deep dado first. Then cut the 3/16" wide by 1/4" deep feather spline with a regular saw blade.

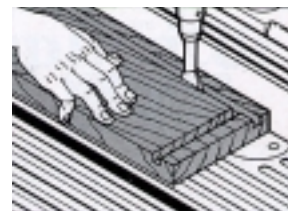
Next, cut the 1/2" stop dado for the drawer end with the dado blade or a



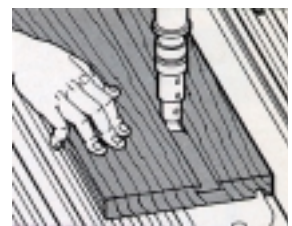
**Fig. 5. Cutting the opening for drop-leaf supports 1/2 of the depth at a time.**



**Fig. 6. Drilling screw pockets in sides. Drilled at 10-degrees with a 1/2" Forstner bit, to within 3/8" of the bottom. Use a 1/4" brad-point bit to make pilot hole for the #12 roundhead screws.**



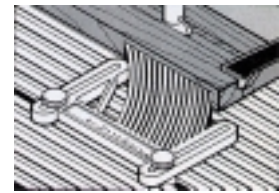
**Fig. 7. Routing 1/4" groove for drawer bottom.**



**Fig. 8. Routing dovetail slot for drawer guide. Two passes are needed, both at full 1/4" depth.**

router and rout the groove for the drawer bottom. These joints will be strong enough to make added glue blocks unnecessary.

**8. Create the sliding dovetails.** These movable joints are self-aligning – unlike square or center-mounted guides that can (and WILL) bind as you pull the drawer open. In the MARK V drill press mode, use the Shopsmith 1/2” Dovetail Router Bit to cut the (female) dovetail slot in the sides of the drawer. Using the same router bit and same basic set-up, cut the (male) drawer guides (G) to match the slots in the drawer sides. Use a push stick to feed the wood *against* the rotation of the bit. Now, drill and countersink the screw holes for attaching these guides to the inside faces of the two apron sides (B)...but don't attach them yet.



**Fig. 9. Routing dovetail drawer guides with feather board firmly holding stock against fence. Push against router rotation.**

Assemble and glue the drawer together. Don't glue the bottom. You may need to do some final fitting. Mark the sides for the drawer guides and drill the screw pilot hole. Again, don't attach the guides yet.

Note that the position of the drop-leaf hinges is important (See Detail A). From the *shoulder* of the joint, move the hinges 1/16” toward the *leaf*. This will prevent binding as the leaf moves. As you chisel or rout the mortise to accept the hinge, form a relief cut for the barrel of the hinge.

Now, fit the top into place (use no glue – screws along will hold it, allowing it to move as the wood expands and contracts). Once the top is secured, mount the drawer guides without glue. Rub a little paraffin or wax on them for smooth operation.

Remove the drop-leaf hinges, final sand the entire project, stain and finish it as you like.

Believe it or not, woodworking is much less precise and demanding than let's say, machining steel. Therein lies both the pleasure and the frustration of it; wood remains *organic*, even after it's air or kiln-dried. Though it's a forgiving medium in which to work, you'll find that it can be stubborn, too. Tenons may balk at fitting into their mortises and dovetail pins may argue with their slots before they finally slip into place. But don't let inexperience or embarrassment at not knowing *everything* about wood keep you from the simple pleasures of making this enduring contribution to the world of fine furniture.

## List of Materials

(finished dimensions in inches)

<b>A</b>	Legs (4)	1-3/4 x 1-3/4 x 25
<b>B</b>	Sides (2)	3/4 x 6 x 14-1/2
<b>C</b>	Front Top Rail	3/4 x 1-3/4 x 16-1/2
<b>D</b>	Front Bottom Rail	3/4 x 1-3/4 x 16-1/2
<b>E</b>	Back	3/4 x 6 x 16-1/2
<b>F</b>	Drop-Leaf Supports (2)	3/4 x 3/4 x 10
<b>G</b>	Drawer Guides (2)	3/4 x 1-1/16 x 13
<b>H</b>	Drawer Front	3/4 x 4-1/2 x 15
<b>J</b>	Drawer Sides (2)	3/4 x 4-1/2 x 15-1/4
<b>K</b>	Drawer Back	1/2 x 3-3/8 x 14
<b>L</b>	Drawer Bottom	1/4 x 14 x 15-1/4
<b>M</b>	Table Top (before joinery)	3/4 x 36 x 19
<b>N</b>	Dowels (2)	3/8 dia. x 1-1/2

### Hardware

- (4) #12 x 1-1/4" Flathead Wood Screws
- (6) 1" Roundhead Wood Screws
- (4) 1-1/4" Table Hinges  
(2 pair, Stanley # 46-3300)