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## Lazy Susan

*Deceptively simple in design, this functional project offers a lesson in bent laminations*

By RICK CAMPBELL  
Photos by TRACY COX



After 30 years making sawdust, I'm amazed that I continue to learn something new with each project. It's true even with simple projects like this lazy Susan. At first glance it appears easy, but a closer look reveals an intriguing challenge. The raised rim isn't cut from solid boards, it's created by gluing a series of thin slices of wood together around circular form. The process is called bent lamination, and although I've used it before to add curves to projects, making a complete circle is more of a challenge. But don't let this

scare you because you have a distinct advantage over me--you can learn from my mistakes.

I made my lazy Susan 18" in diameter, but size isn't critical. You can adjust dimensions to fit many situations. Just remember, the smaller the diameter, the more difficult it is to bend the wood around the rim successfully

### **Build the Bending Form**

Successful bent laminations begin with strong, accurate forms. Make the circular bending form for this project from two pieces of medium-density fibreboard (MDF). Start with two pieces of square stock, secured together with 1 1/4"-long screws. Pre-drill holes to avoid splitting the material, and countersink the heads flush so they're out of the way.

Next, draw diagonal lines from corner to corner to find the centre of the blank, then use this reference point to layout an 18" diameter circle with a compass. If you don't have a large compass, use a stick with a nail driven into one end to serve as the pivot point and a hole drilled in the other to hold your pencil tip.

When preparing bent laminations remember that the thin plies will conform to any flat spots or irregularities on the bending form. That's why you've got to make everything perfectly round. Start by rough cutting the circle with the bandsaw or hand-held jigsaw, keeping about 1/8" away from the waste side of the layout line.

Finish rounding the edges using a straight bit installed in a hand-held router and circle-cutting jig. This assures a perfectly smooth, square edge, in a minimum of time. You can buy a jig, or make your own from 1/4" ply, as I did. See Gary Walchuk's "Circle-Cutting Jig" on page 34 for a detailed look at how to build your own. In use, the router acts like a power-compass, milling a circle as it rotates. Make several routing passes, lowering the bit about 1/4" with each rotation. Make sure to raise your workpiece on some scrap so you don't mill your benchtop while routing.

Next, drill two 1" diameter clamping holes on each side of the bending form, about 2" in from the edge. These allow you to clamp the laminations to the form. To prevent the strips from sticking to the bending form, rub the edges with a candle, creating a generous coating of wax.



1. Steam and heat from a standard household iron help coax the thin plies around the circular form



2. Mark the overlapping ply on a 45° angle. The resulting scarf joint helps conceal any gaps that might occur



3. Hold the fixed end of the web clamp using a C-clamp. Position the ratchet mechanism over the joint



4. Let the glue dry for a couple of hours between strips. Dealing with one ply at a time is easier than all at once

### Cutting the Plies

Virtually any species of wood can be coaxed around a lamination form if the strips are cut thin enough. Straight-grained ash or oak are my favourites. Select boards that are free of knots, radical grain patterns or other defects that will weaken the plies.

You'll need five strips in all, each measuring 1/8" x 1" x 72". But since bending is always an unpredictable process, cut a few extras in case of problems. You can prepare strips using a well-tuned bandsaw equipped with a fence, or rip them on the tablesaw as I did.

Cutting thin material with a tablesaw can be dangerous without proper safety precautions. First of all, use a zero-clearance insert around the blade to stop the thin plies from slipping down next to the spinning blade after they're cut. Also, use push sticks to keep fingers safely away from the blade. This is a good safety practice even when you're not making thin material. Finally, use feather boards to keep the stock firmly against the fence and flat on the table, eliminating a potential distraction that could divert your attention from the task at hand. If you've got access to a thickness planer, you'll find it worthwhile cutting your plies slightly thicker than necessary, then planing down to finished size. The smooth surface and absolutely consistent thickness will lead to tighter ply-to-ply joints when it comes time for gluing.

You will need:			
Parts	Material	Size	Quantity
Base	ash	1/2" x 13" x 13"	1
Lazy Susan bearing	9" dia. Lee Valley 12K01.06		1
Bending form panels	MDF	3/4" x 19" x 19"	2
Steaming form panel	MDF	3/4" x 10" x 20"	1
Rim plies	ash	1/8" x 1" x 72"	at least 5
Bottom panel	ash	1/2" x 20" x 20"	1