

The Barnsley Hay Rake Table

Inspired by the agricultural tools of rural England,
this massive oak table is awash in hand-worked details.

As a young fellow growing up in the countryside of Wales, I clambered over many a farm wagon, climbed into many a loft in barns that were jointed and pegged, and tripped over many a hay rake on my adventures.

I have always appreciated the simple, utilitarian, yet pleasing design of the vernacular woodworking of the countryside. My inspiration for furniture forms has always been the work of the wheelwright and coach maker. And the inspiration for how to build things came in part from Sidney Barnsley and Ernest Gimson.

Barnsley and Gimson were men of the Cotswolds school of craft architects. They were part of a group of London architects who moved to the countryside in the 19th century and set up what is known today as the English Arts & Crafts movement (along with William Morris at Kelmescott Manor).

These free thinkers broke away from convention and began to design not only the buildings, but the furnishings as well. And they turned to the rural countryside for their inspiration.

The hay rake table built for Rodmarton Manor was an example of how Gimson and Barnsley adopted details from farm wagons, carts and farming implements that were still in use in the Cotswolds.

The wagons of the farming community had many details a layman would not be aware of—the dish of the wheel, the complex undercarriage, the chamfering of braces for



BY DON WEBER

both decorative and structural intent. Adzed surfaces and chamfered edges added visual appeal and reduced weight in a farm wagon. The hay rake shape of the stretcher was an element found in farm equipment.

This table is made from Valley Oak (*Quercus lobata*), a gift from a friend who worked for a vineyard in Northern California. I milled the 8/4 planks eight years ago and carried them to their present location in Paint Lick, Ky., with the intent of building this very table. At last!

Fine Joinery in the Top

The top of the table was made from two fitch-cut planks of oak that were 24" wide and 2" thick. There was some sap wood to remove, so the overall width of the tabletop finished at 40" with a finished thickness of 1⁷/₈".

The original design called for butterfly splines to join the planks at their edges, but I decided to dowel the edges together with 1/2"-diameter osage orange dowels. No biscuit joiner here! After assembly, I used a scrub plane to level the glued-up planks to a reasonably flat surface.

The breadboard ends on the top not only cover the end grain but also keep the top from warping. First I cut the tenons on each end. The tenons are 2" long and 5/8" thick. I cut them with a backsaw and rebate plane (which is called a rabbet plane on this side of the Atlantic). I then sawed out the spaces between the tenons (leaving a short stub between each tenon) and cleaned things up with a chisel.

For the 3¹/₄"-wide end boards, I cut a groove with a plow plane to receive the stub, and I cut the deep mortises with a drill and chisel to receive the tenons. A router and mortising machine would, of course, also do the job.



***Built by hand.** The original versions of this table were built using lots of hand work. And so the author honored that tradition when he built his version of this Sidney Barnsley classic.*

Online EXTRAS

To see additional photos of the construction process and a SketchUp model, visit:

popularwoodworking.com/feb09

To secure the breadboard ends, I bored 1/4"-diameter holes through the end boards and tenons – then I pegged the joints with ebony pegs. Be sure to make the holes in the tenons elongated so that the top does not split when it moves with the seasons.

I beveled the underside of the tabletop only slightly to leave nearly the full thickness showing. In the end, after trimming and cutting mistakes, the table began to look rather thick. This is no delicate table; let the Vikings roar!

I added butterfly inlay to the top that measured 3/8" x 1 3/4" x 5 1/2". I cut the recesses in the top using a chisel and a router plane. Then I did the fine fitting of the inlay with a chisel.

The Base: Legs and Mortises

I glued up the legs for this table from 8/4 stock. I would have preferred to use a single thick piece of wood for each leg, but I wanted to use as much of the timber from the vineyard as possible. When making square legs, it is best to use slash grain (sometimes called bastard

grain), where the annular rings run diagonally across the end grain, from corner to corner. This gives you a uniform grain pattern on all four faces of the leg.

The legs have broad chamfers on all four long edges. I cut the 1"-wide chamfers the complete length of each leg with the table saw.

Each leg has a through-mortise that begins 5" up from the floor to receive a hay rake stretcher. Before drilling the waste holes for these mortises, score the final boundaries of each mortise with a marking knife to ensure



It starts with a saw. To make the breadboard end, I begin by sawing out the shoulder of the tenon. The block of wood acts as guide for the saw's blade.



Remove waste in haste. A few good whacks with a chisel and mallet popped out most of the waste.



Trimming by hand. Then I cleaned up the cheek and shoulder using my rabbit plane.



Ready for the pegs. In the finished breadboard end, you can see the stub tenon that fits into the groove and the five longer tenons.



Fine-fitting the inlay. After cutting the butterfly inlay to shape, I cut the recesses to receive them using a chisel and then a router plane.

there will be no tear-out when drilling out the waste.

These through-mortises were bored out with a $\frac{5}{8}$ "-diameter brad-point bit. Then I dressed the through-mortises out to $\frac{3}{4}$ " wide by $2\frac{1}{2}$ " long with a mortise chisel and a 2"-wide firmer chisel.

The old fellow I learned woodworking from insisted that I should always see the reflection of my scribe line in the back of the chisel when chopping out waste. Seeing the reflection of the scribe line ensured that I'd stay inside my lines when chopping. If you chisel directly on the scribe line, the bevel of the chisel has a tendency to push the cut outside the width of the mortise.

Building the Hay Rake

The beauty of this table is its hay rake stretcher. Its shape is taken from a heel rake, named because it follows close behind your heels. Heel rakes were used for raking hay into winnows and for the final clearing of the fields. It is a utilitarian implement, yet strong and pleasing to the eye.

Building the hay rake stretcher truly is a mortise-and-tenon exercise. The tenons on the stretcher are cut on a table saw with a stacked dado blade. I then cleaned them up with a Stanley No. 10 carriage maker's plane.

All the remaining mortises are drilled and chiseled. The angled ones are bored with the work secured horizontally in a bench vise. I've tried to do these on a drill press using an angled platform, but the drill press's pillar got in the way. So back to the old ways again!

To clean up the angled mortises, I used the waste block from the end of a tenon to act as a chisel guide. All the joints here are through-mortises, except the mortises in the center stretcher.

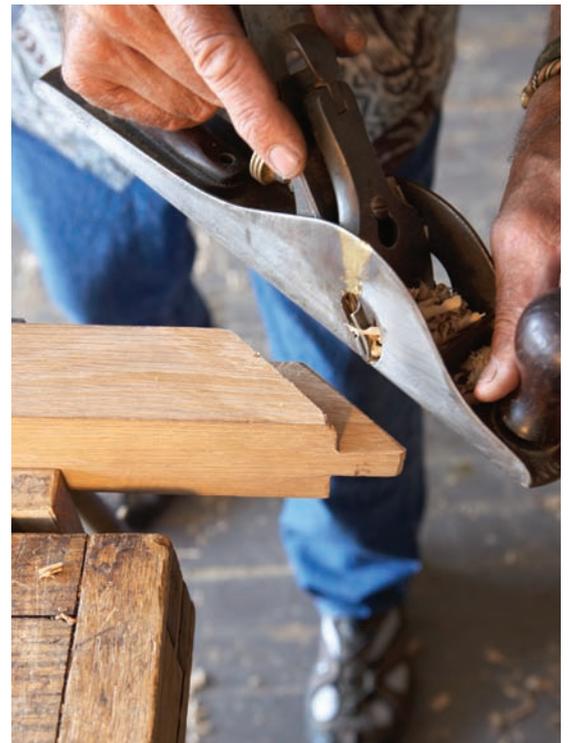
All the through-tenons are double-wedged from the outside; the blind mortises are pinned. All the joints are drawbored, just like in timber framing, to draw the tenon into the mortise with a mechanical lock.

All the edges of the hay rake stretcher have stop-chamfers. The distinctive stop-chamfers on agricultural implements were employed mostly to reduce weight without reducing strength, according to Richard Harrison, the wheelwright in Barnsley's village. (This comes from Mary Greensted's book about the Barnsleys.)

In furniture design, chamfering remained a useful technique that required skill and thought to soften sharp edges and anticipate wear. Many of the chamfers on Barnsley's pieces were done with a drawknife alone – no spokeshave or sandpaper. I have cut



Let your waste be your guide. Use a guide block to steer your chisel when you chop the angled mortises for the hay rake stretcher.



Plane to fit. I use a carriage maker's plane to trim the cheeks of the tenons for the hay rake stretcher.



Almost assembled. Here you can see how the stretcher assembly comes together. All the tenons are through-tenons, with the exception of the angled tenons that meet.

the stopped part of the chamfer with a draw-knife, then used a circular saw to remove the waste and used a smoothing plane to dress the surface.

Barnsley often chip-carved the edges of his furniture, but I've left off this detail.

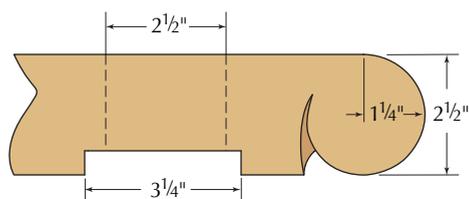
Bridle Joints at the Top of the Base

The legs are bridle jointed to a cross bar with a $2\frac{1}{4}'' \times \frac{3}{4}''$ tenon centered in the top of the leg. See the drawing below for details. This cross bar has its ends cut in a scroll and shaped with a #3 sweep gouge.

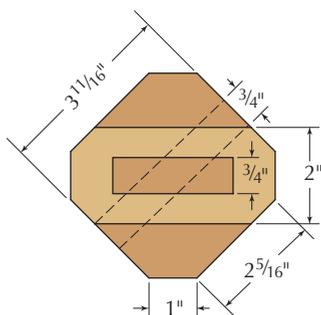
I attached the top to the leg frame with buttons of iron. I'd made wooden buttons out of locust, but they looked weak with the mass of this table. So it was into the smithy for me. I searched for some time for the right size stock, but nothing showed up until I found a box of old railroad spikes. So I heated them up in the forge, flattened the sides, cut them to 1" in height and forged a dimple in the top to receive the screw.

There are simpler methods, and wooden buttons would probably work fine, but I'm a blacksmith and the table could handle their forged appearance. (Even if you have to lie on your back on the floor to view them.) The ends of the buttons are set into grooves in the cross bar, 4" in from the legs and $\frac{3}{4}''$ down from the tabletop.

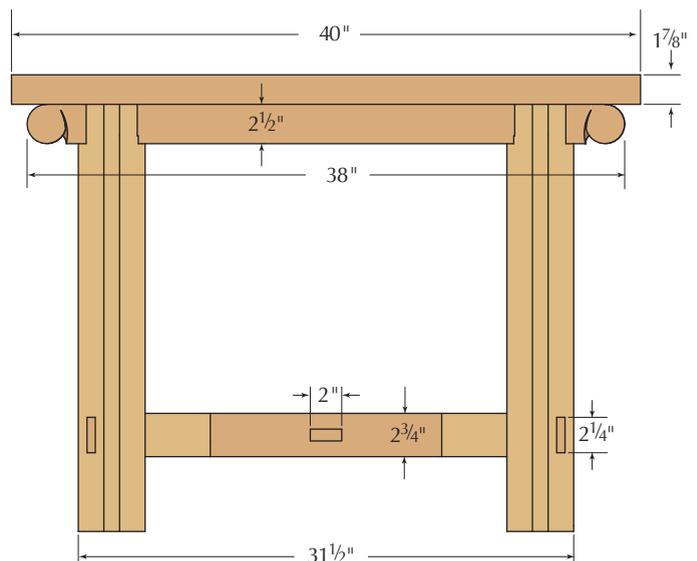
For a finish I used an oil and varnish blend that was tinted with a bit of aniline dye to bring this American oak to the rich brown tone of English oak. Hand rubbed and polished with furniture wax, it brought up the texture of the tools used in the construction of this piece.



TOP CROSS BAR DETAIL



LEG DETAIL



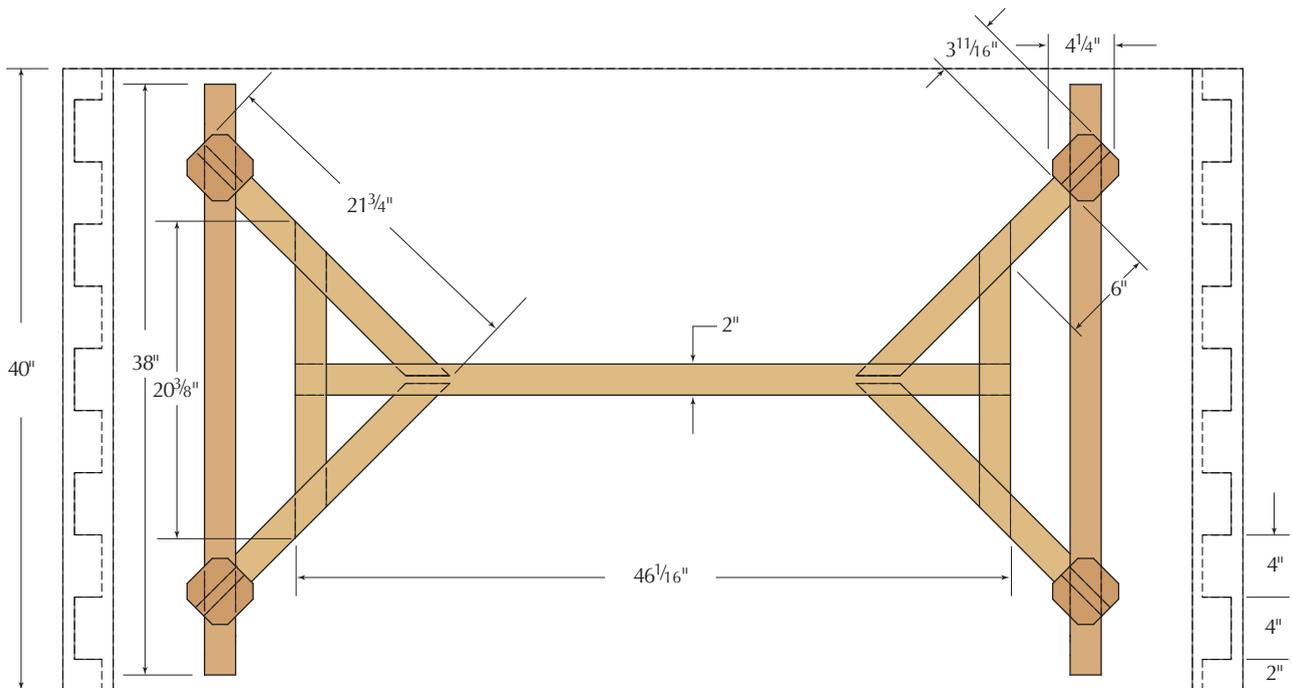
PROFILE

The dimensions of this table were determined by the material I had on hand and the special nature of it. This table can be constructed from conventional lumber – 2" x 12" oak for the top, 4" x 4" oak for the legs and 2" x 4" material for the rest. Conventional woodworking machinery can do a speedy job of it, but I'm a hand woodworker; the feel and texture tell me all I need to know. And I do believe Barnsley would approve. **PW**

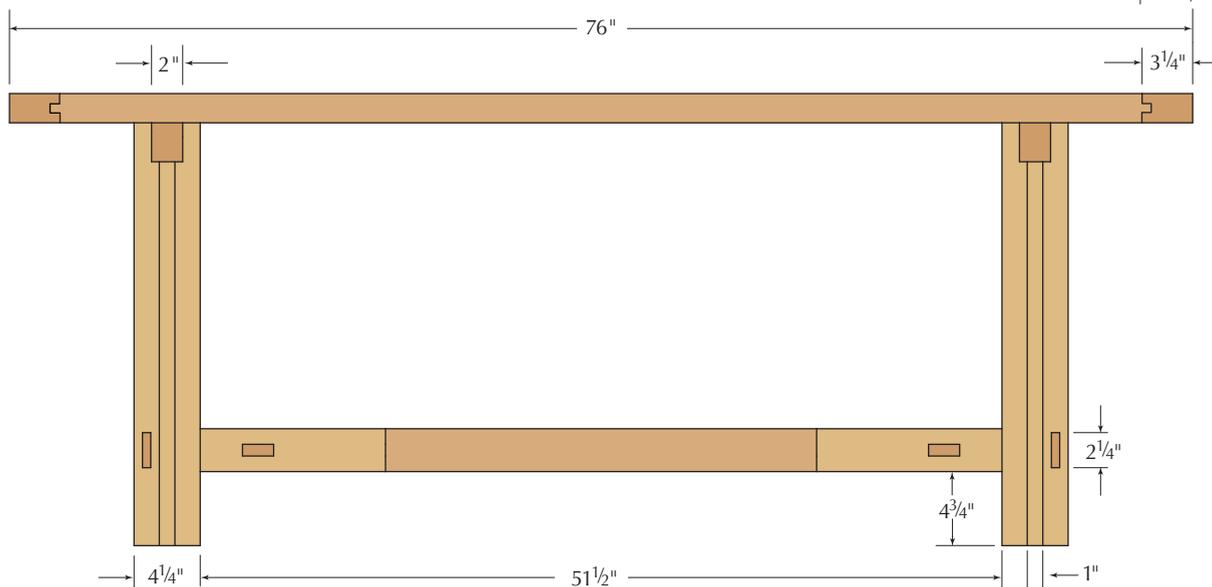
Don is a chairmaker and blacksmith in Paint Lick, Ky. You can see more of his work and learn about the classes he teaches at handcraftwoodworks.com.

Barnsley Hay Rake Table

NO.	ITEM	DIMENSIONS (INCHES)			MATERIAL	COMMENTS
		T	W	L		
❑ 1	Top	1 ⁷ / ₈	40	74 ¹ / ₂	Oak	
❑ 2	Breadboard ends	1 ⁷ / ₈	3 ¹ / ₄	40	Oak	
❑ 4	Legs	3 ¹¹ / ₁₆	3 ¹¹ / ₁₆	27 ¹ / ₈	Oak	1" chamfers on corners
❑ 1	Long stretcher	2	2 ³ / ₄	46 ¹ / ₁₆	Oak	2" tenon, both ends
❑ 4	Angled stretchers	2	2 ³ / ₄	21 ³ / ₄	Oak	
❑ 2	Cross stretchers	2	2 ³ / ₄	20 ³ / ₈	Oak	
❑ 2	Top cross bars	2	2 ¹ / ₂	38	Oak	Notched into legs



PLAN



ELEVATION