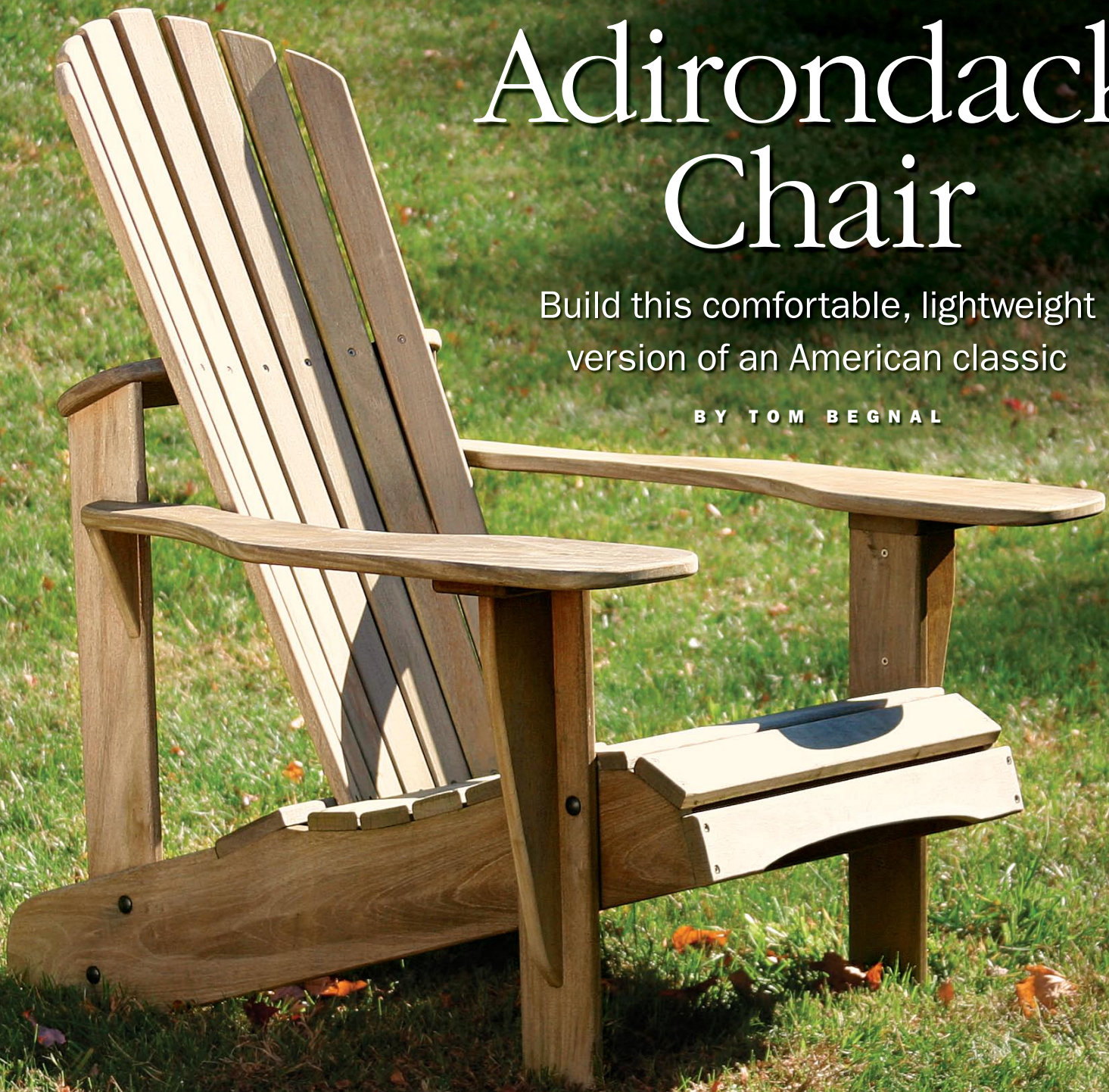


Adirondack Chair

Build this comfortable, lightweight version of an American classic

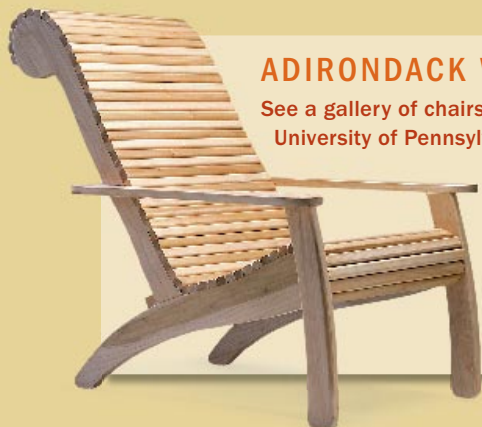
BY TOM BEGNAL



ADIRONDACK WITH A TWIST

See a gallery of chairs (pp. 60-61) from Indiana University of Pennsylvania's design competition.

Chair makers were invited to develop their own interpretations, using the basic concept of this classic chair as a point of departure.

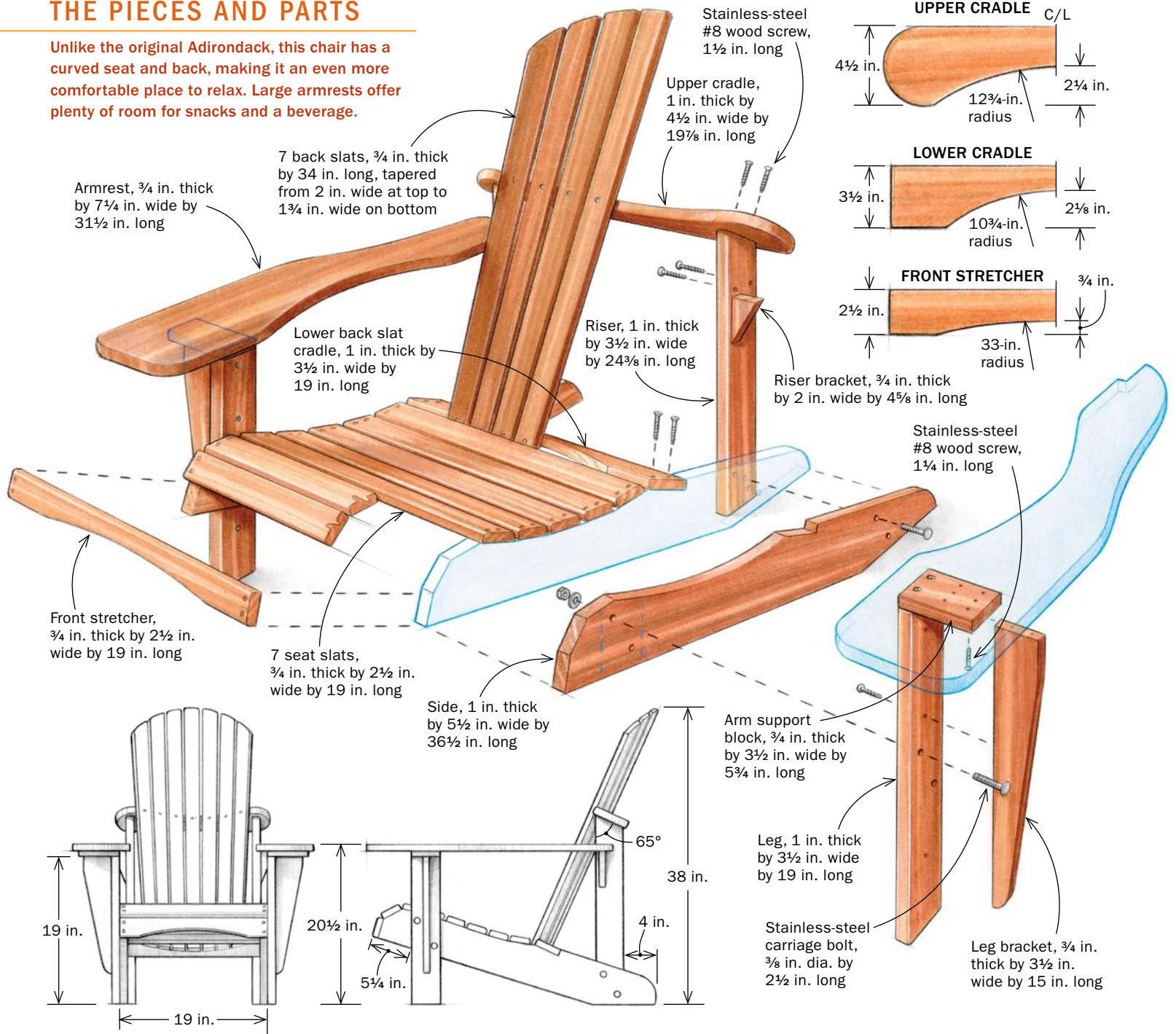


This quintessentially American outdoor chair was born in the early 1900s in the Adirondack mountain region of New York state. The generous slant of the seat and back make it an inviting place to relax outdoors. And for those who like to graze while relaxing, armrests the size of small tables offer plenty of room for a plate of snacks and a favorite beverage.

Unlike the original, our chair has a curved seat and back, making it a place where you won't mind spending a lot of downtime. It is made from western red cedar, a weather-resistant, lightweight wood available at most lumberyards. Cypress, mahogany, and redwood also are lightweight and enjoy the outdoors. Ipé and

THE PIECES AND PARTS

Unlike the original Adirondack, this chair has a curved seat and back, making it an even more comfortable place to relax. Large armrests offer plenty of room for snacks and a beverage.



teak are at home outdoors, too, but expect a chair made from either to be a muscle-strainer.

Most of the parts are made from presurfaced “1-by” stock, but for the parts that carry extra load—sides, legs, risers, and cradles—I used 5/4 presurfaced stock. Much like a 2x4, the actual dimensions end up slightly less. That said, if you use teak, ipé, or any other hardwood, you can build the entire chair from 1-by boards.

Begin with the sides

The sides are the foundation of the framework. Cut a full-size pattern, then transfer it to the stock, and cut out the shape on the



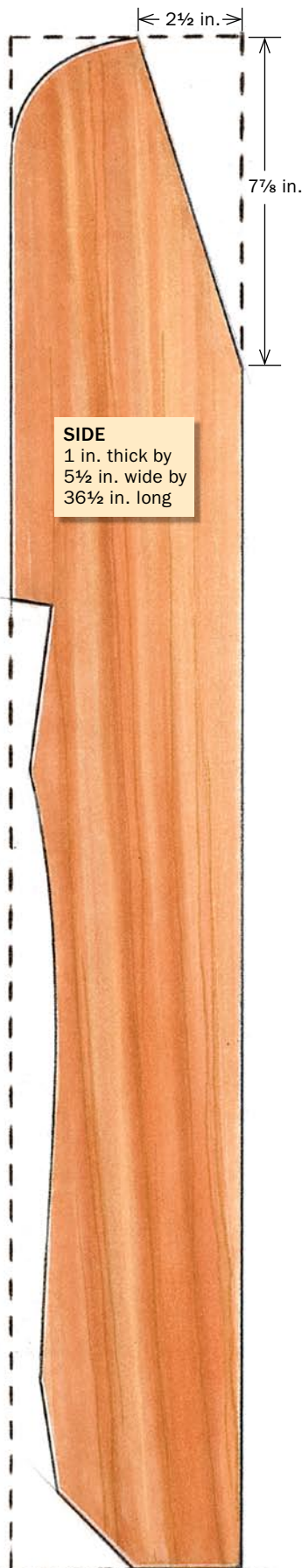
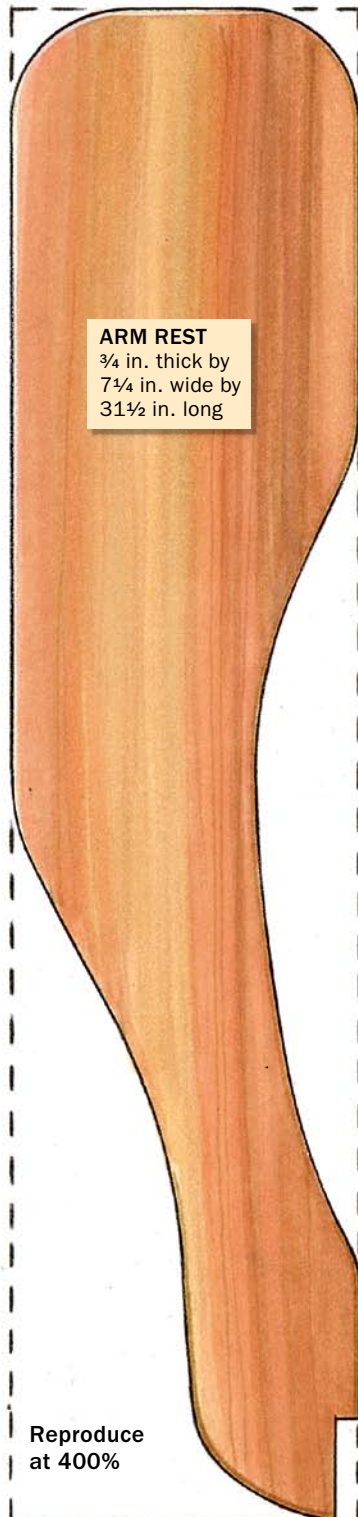
TIP

Make a jumbo compass. The compass is a thin strip of wood about 36 in. long. Measure 1 in. from the end, and drill a hole to accept a nail. Create a pivot point by driving the nail through the strip and into a square block of ¾-in.-thick stock. The location of the pencil hole will vary depending on the radius of the arc.

BEGIN WITH THE SIDE PIECES

FULL-SIZE TEMPLATES MAKE CURVES EASY

Copy these patterns at 400% and use them to draw templates. Cut out the templates and transfer the shapes to the workpieces.



Trace the shape. Use a thick-paper template to outline the side shape on stock.



Tape sides together. Begnal uses double-sided tape to hold the boards together as he cuts them.



Keep the parts taped together. A file, followed with sandpaper, is a good way to smooth the edges of inside or outside curves. Start sanding with coarse paper, say P80-grit, working up to P150-grit.

bandsaw. Smooth the sawblade marks on the edges of the sides with a plane, scraper, or sanding block.

Cut seat slats, stretcher, and lower back-slat cradle

Cut the seat slats to size before moving on to the front stretcher. To lay out the curve along the bottom edge of the stretcher, make a jumbo compass (see tip, p. 55) Measure 33 in. from the compass pivot point and drill a 1/8-in.-dia. hole to accept a pencil point.

Before scribing the curve, add reference points to the stretcher. At a point 3/4 in. from the front edge, draw a line across the length of the piece. On that line, mark the center point. Now, place the stretcher on a workbench. Align the pivot point of the compass with the center mark on the stretcher, positioning the pencil on the center point. Use the compass to scribe the arc across the stretcher, use a bandsaw to cut it out, then smooth the sawn edges.

Again, turn to the jumbo compass to scribe the curved front edge of the lower cradle. Relocate the pencil hole to create a 10 3/4-in. radius. At a point 2 1/8 in. from the front edge of the cradle, draw a reference line across the length of the piece. Then, mark the end-

TAPER AND SHAPE THE BACK SLATS



Easy tapering on the jointer. With the infeed table set to make a $\frac{1}{8}$ -in.-deep cut, add a piece of tape to the fence 1 in. from the front edge of the outfeed table. Also, wedge the guard open 1 in. or so. Now, with the machine running, lower the top end of a slat onto the outfeed table, using the tape as a guide and keeping your hands a safe distance from the cutterhead.



One pass per side. Use a push block to feed the back slat through the cutterhead. Flip the slat over and repeat. The short untapered portion at the top end won't be visible after sanding.

to-end center point on the line and cut the curve on the bandsaw. After that, smooth, sand, and round over the edges.

Move on to the leg assemblies, then the back

Each of the two leg assemblies is made up of a leg, a leg bracket, and an arm-support block. With the parts disassembled, drill all the shank holes in the legs and support block. Use a bandsaw to cut the taper on the bracket, and then smooth with a smoothing plane. Now, sand all the leg parts and round over the edges. But do not round edges where parts meet. Screw one block to the top of each leg. For each leg assembly, screw a bracket to the underside of a block and outside of a leg.

The back assembly is made up of two parts: a pair of vertical risers and a pair of riser brackets. Once the parts are cut, rounded, and smoothed, screw them together. To locate the proper position for the riser brackets, place a leg assembly on the riser with both bottom ends flush, then use the arm-support block as a straight-edge to scribe a line across the riser. Position the bracket so that its face is flush with the front edge of the riser and its top edge is at the marked line. Secure each bracket in place by driving three screws through the inside face of the riser and into the bracket.

Make the upper cradle

To create the curved front edge, use the jumbo compass again. This time, though, locate the pencil hole $12\frac{3}{4}$ in. from the nail hole. Again, add a reference point to the cradle. Draw a line $2\frac{1}{4}$ in. from the front edge of the cradle, and then mark the end-to-end center point on the line. Use the compass to scribe the arc.

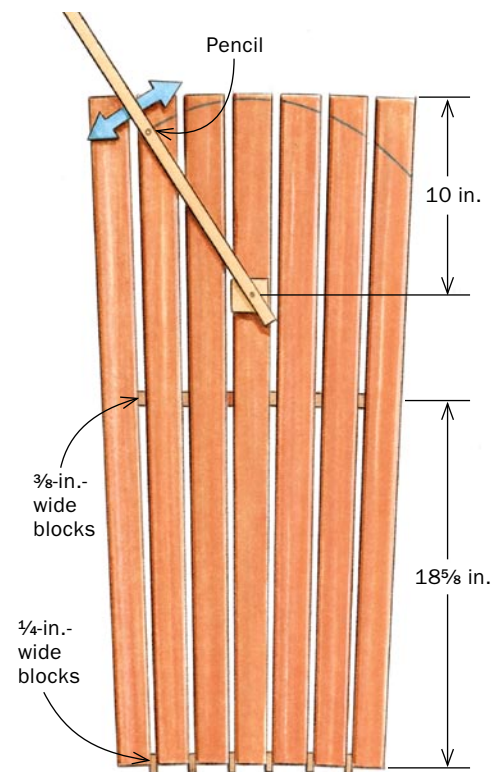
The end curves are next. I experimented with several shapes on the end of a $4\frac{1}{2}$ -in.-wide piece of cardboard. When I hit on one that looked good, I cut out the curve and used the cardboard to trace the shape on each end of the cradle. Use a bandsaw to cut them out, and then smooth the sawn edges.

Cut out the arms

The arms are the focal point of the chair. Enlarge the drawing on p. 56 to trace a full-size pattern on stiff paper or cardboard. Cut

SCRIBE AN ARC ON THE BACK SLATS

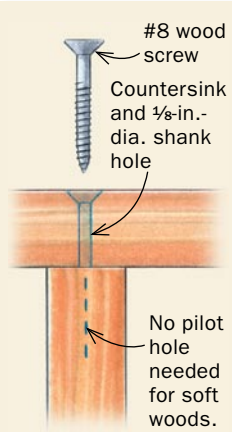
Use the tip on p. 55 to create a jumbo compass. After that, measure 10 in. from the nail hole and drill a $\frac{1}{8}$ -in.-dia. hole—a size just big enough to accept a pencil point.



Mark the arc. A clamp and some light pressure keep the back slats and spacers from shifting while Begnal uses the jumbo compass.



ASSEMBLE THE BASE



SCREW DETAIL



Make a subassembly. Screw the stretcher to the front and follow with the lower cradle.

out the pattern and use it as a template to trace the shape on each length of stock. Then use a bandsaw to cut out both arms at the same time. Smooth the edges, round them over, and sand through P150-grit.

Taper the back slats

To taper the seven back slats, I use an old jointer trick that makes the process quick and easy. First, apply a piece of tape to the jointer fence to establish a point about 1 in. from the front edge of the outfeed table. Lower the infeed table 1/8 in. (the amount of taper you want on each edge). Then wedge the guard open so that you can lower a slat onto the cutterhead.

Next, with the machine turned on, rest the bottom end of the slat on the infeed table (or, if the infeed table is short, overhanging the end), and align the top end of the slat with the tape. Holding the slat against the fence with your hands well behind the cutterhead, lower the end onto the outfeed table. Use a push block to feed the slat through the cutterhead. Repeat on the opposite edge.

Now you're ready to trace the top curve on the back slats. Start by placing all the back slats edge to edge with a pair of spacers between each. Redrill the pencil hole on the jumbo compass

Add one leg assembly at a time. Use a spring clamp to temporarily clamp each one to a side piece, then square it to the worksurface.



Secure the leg assemblies. Once the leg assemblies are in place, drill 3/8-in.-dia. holes through the sides and legs and add bolts, nuts, and washers.



FineWoodworking.com

Tom Begnal walks through the complete assembly process.



Attach the upper cradle. Use a temporary spacer board to ensure that the risers stay parallel when the upper cradle is attached.

ADD THE ARMS AND SLATS



Add the arms. Drive the riser screws (at the back) first to be sure the arm notch fits snugly around the riser. Begnal conceals the screws by driving them in from the inside of the riser and the underside of the support block.



Position the back slats. Start with the center slat, then the two end slats, and work your way in. The slats must be aligned at the bottom of the lower cradle, with even spacing between them.



Layout trick. Place the chair on its back and use spring clamps to level it. This will allow you to rest the slats on the cradles and adjust positioning without slippage.

10 in. from the nail. Position the pivot point 10 in. from the top end of the slats and centered on the middle slat. Scribe the arc across all the slats.

Cut out the curved ends with a bandsaw. Sand or scrape each sawn edge and sand the faces through P150-grit before rounding the edges.

Assemble all the parts

You are ready to start putting the chair together. Stainless-steel screws (countersunk) and carriage bolts eliminate the need for glue. Start the assembly by screwing the stretcher to the front end of each side piece. With the stretcher mounted, add the lower back-slat cradle to give some rigidity to the subassembly.

Now, on each side piece, mark a line $5\frac{1}{4}$ in. from the front face of the stretcher. Elevate the stretcher until the back ends are flat on the work surface. Then place a leg against the side piece, and use a square to make sure it is square to the work surface and on your mark. Add a clamp to make sure it won't inadvertently shift out of position as you drill a pair of $\frac{3}{8}$ -in.-dia. holes through the legs and sides. Bolt the leg in place, then attach the other leg.

With the legs safely at first base, the back assembly is now at bat. At a point 4 in. from the back end of the side, clamp a riser to a side piece. Check for square with the work surface, then drill the holes and add the bolts. Follow the same procedure for the second riser.

The upper cradle is next. Position the cradle so that its back edge is set back $\frac{1}{4}$ in. from the back edges of the risers. Measure and drill for a pair of shank holes at each end of the upper cradle.

After you attach the upper cradle, add the arms, as it becomes a chore to attach them once the back slats are in place. Position each arm so that the notch fits around the riser, and screw through the riser and arm-support block.

The back slats are attached to the lower and upper cradles. I attach the center slat first, then move to the two outside slats and work inward. Before drilling the shank holes, it is important to



Seat slats are the final step. The seven slats are attached at each end. The $\frac{3}{8}$ -in. spacers between each slat make placement a snap.

align them from left to right, up and down, and keep the spacing even to maintain a nice curve on the bottom and the top.

Give the entire project a quick once-over with P150-grit sandpaper, and break any sharp edges. You can leave the chair unfinished and let it weather naturally. Or, three coats of spar varnish provide a finish that will hold up well in an outdoor environment. A fresh coat every couple of years should keep the chair happy and fit for decades to come.

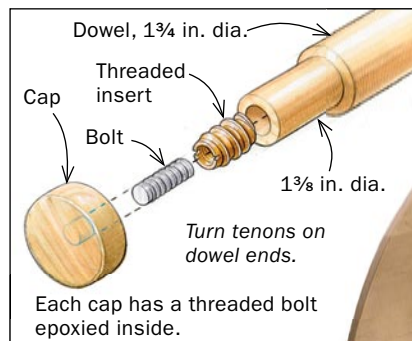
Tom Begnal is an associate editor.

A gallery of inventive designs

These chairs are a sampling from Indiana University of Pennsylvania's second exhibition on the Adirondack theme. Professor Christopher Weiland and director Steve Loar invited students and alumni from recognized furniture and design programs, challenging them to explore and redesign the century-old Adirondack chair. These are design exercises, so feel free to vary materials or joinery for outdoor use.

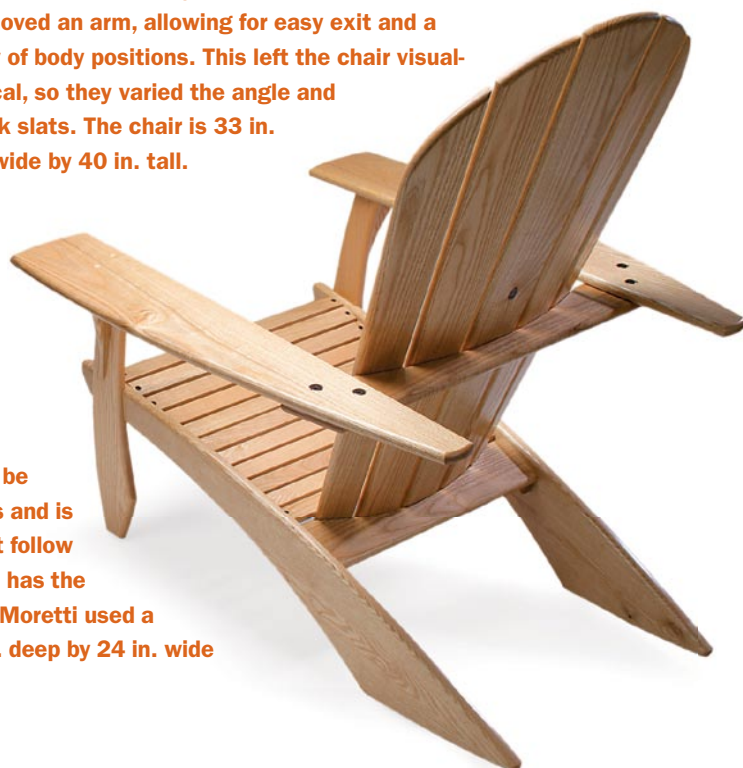
NICOLE TARTONI *Indiana University of Pennsylvania (IUP)*

This version borrows its inspiration from a sundial. To allow the chair to recline and break down, Tartoni incorporated hand-turned, threaded dowels into the design, construction, and function. Upright, the chair stands nearly 41 in. tall. Fully reclined, it is 47 in. deep and 30 in. wide.



ANTHONY McCARTY, IAN ELDRIDGE, AND SAMANTHA SARHADI *Purchase College, State University of New York*

While the construction of this chair is traditional, the design is not. Adirondacks can be hard to exit, and the backs aren't always comfortable. So the makers removed an arm, allowing for easy exit and a wider variety of body positions. This left the chair visually asymmetrical, so they varied the angle and size of the back slats. The chair is 33 in. deep by 30 in. wide by 40 in. tall.



RON MORETTI *IUP*

Moretti likes the traditional version, but felt it could be streamlined and softened. His chair has more curves and is tapered nearly 6 in. to the back. The seat slats must follow the taper. Unlike the typical Adirondack chair, which has the seat slats resting directly across the side supports, Moretti used a bracket to recess the slats slightly. The chair (40 in. deep by 24 in. wide by 41 in. tall) breaks down to four pieces.



MARK WEABER *Lehigh University*

At the time the call for entries was announced, Weaber was studying ergonomics in design. The thin slats allowed a more ergonomic profile than the traditional chair. He curved the front slats down and around to avoid sharp edges. For a smoother front surface, he glued the back and seat slats to the framework and reinforced them with a cleat and screws from the back. The joint between the back post and back legs is a half-lap, pared by hand for a gap-free shoulder. The chair is 40 in. deep by 25 in. wide by 41 in. tall.

ISAAC HILLSON *IUP*

Hillson's chair (29 in. deep by 22 in. wide by 32 in. tall) merges two typical outdoor images, the wheelbarrow and the Adirondack chair. The wheel turns on a dowel, which is glued into larger dowels at both ends to keep the wheel in place. The seat supports run from the front to the back at an angle, where they fit over the larger dowels.



MATHEW NAUMAN *IUP*

Nauman's chair merges the Adirondack with a rocker. Nauman created the rockers as one large circle, then broke the circle into halves. He began with eight biscuit segments. The resulting octagon was glued and clamped,

and the two halves were rough cut to a circle on the bandsaw and then finish-routed using a template. For strength, Nauman inserted 1/4-in. dowels to support the biscuit joint. The chair is 32 in. deep by 24 in. wide by 36 in. tall.

