

THANK YOU!

You have successfully downloaded your **FREE** PlansNOW members technique article.

▶ [Go to Page 1](#)

▶ [Go PlansNOW.com](#) and save 20% with coupon code: **S Q U A R E**

Tips for Trouble-Free Printing

▶ **Clear memory.** Most printing problems can be avoided by freeing up memory on your computer and printer before printing from Acrobat Reader. Close all other programs that may be running and turn off your printer for at least 15 seconds to flush printer memory.

▶ **Get advanced printer help.** Visit the [Adobe Reader Support web site](#) for detailed instructions for troubleshooting common printer problems.

Plans NOW MEMBER

Save 20% on every plan!

BACK IN THE SHOP?

Let PlansNOW take the guesswork out of woodworking with step-by-step project plans for your home and woodworking shop.



Craftsman Furniture

Same distinctive features found in early 1900s furniture.



Home Improvement

Save hundreds of dollars in remodeling when you DIY.



Weekend Projects

Build it start to finish in one weekend! Low-cost materials.



Jigs, Tips & Techniques

Work smarter, faster, and safer with our shop-tested techniques.

Save 20% on these plans and more when you visit
www.PlansNOW.com

Coupon Code for December 2004: **S Q U A R E**

Need Hardware? [Woodsmith Project Supplies](#) 1-800-444-7527

For plans that require unique or hard-to-find hardware and accessories, we may have a kit available for purchase. Please contact Woodsmith Project Supplies for more information.

Contact Us. Have a question about PlansNOW? We want to hear from you!

E-mail: ▶ planman@augusthome.com Phone: ▶ 1-800-333-5441 (Mon-Fri 8-5 Central time)



Ultimate Layout Square

The perfect layout tool for big projects.

Blade in closed position

When it comes to working with wide boards or large plywood panels, a framing square is just the right size. The only problem is that the thin, metal body of a framing square can be difficult to hold against the edge of a workpiece.

This problem became the inspiration for the project shown in the photo above. The idea was to take an aluminum framing square and turn it into the ultimate layout tool.

Now I'll admit that the result looks a little bit like an over-sized Swiss army knife. But after giving this tool a try in my own shop, it quickly became one of my favorites.

As you can see in the Exploded View drawing on page 2, there really isn't much to this project. To make it easier to register the tongue of the square against the edge of a workpiece, I simply sandwiched it between a pair of wood "cheeks." Then I added a couple of extra features — a bevel gauge for

laying out angles (see photos above) and a slide-out tab to support the square when using it as a layout tool (see photos below).

Cheeks – To make the cheeks, I started by cutting two strips of wood to match the width of the tongue of my square (1½"). Before attaching the cheeks to the square, however, I did all the machining.

First, I cut a shallow, stopped recess on the inside face of the short cheek to serve as a pocket for holding the bevel gauge blade that is added later. I cut this recess on the table saw (but you could use a router table). Since the saw blade leaves the end of the recess rounded, you'll have to square up the end with a chisel.

Next, I mitered the end of each cheek (see drawings at right). Then I routed a finger grip on the outside face of each cheek with a core box

bit. I also made a small cutout in the short cheek to make it easier to pull out the bevel gauge blade (see short cheek drawing at right and inset photo on opposite page). Finally, I drilled a hole and installed a threaded insert near the end of the long cheek and rounded off the end.

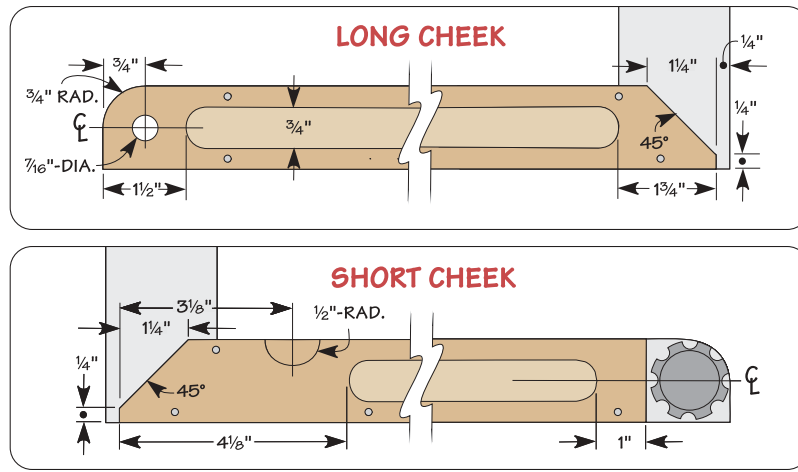


◀ **Slide-Out Tab.** A tab at one end of the tongue supports the square along the edge of the workpiece.

The cheeks are glued to the framing square with epoxy and then pinned in place. I started with the long cheek. Once it was glued in place, I drilled four holes along the inside edge, through the cheek and the framing square (see detail 'a' in exploded view). To lock the cheek in place, I used "pins" cut from 16d finish nails. I drove the pins into the holes and peened over the ends with a ball-peen hammer. Then I filed the pins flush with the surface.

Once the long cheek is in place, you can add the short cheek. The process is exactly the same. The only difference is that the pins you'll use here pass through both cheeks as well as the square. Take a look at detail 'b' in the exploded view to see what I'm talking about.

Blade and Tab – All that remains to complete the layout square is to add the bevel gauge blade and the slide-out tab. These are both cut from 1/8"-thick aluminum bar stock. The bevel gauge blade is mitered at 30° at one end. The other end is cut and filed to shape. Then a couple of holes are drilled in the blade — one is for the



▲ **Locking Knob.**
To make the locking knob for the layout square, a cap screw is press-fit into a blind hole in the center of the knob.

knob (see details below and photo in margin) and the other is to make it easier to pull the blade out of the recess (see inset photo on opposite page).

The tab is slotted to allow it to slide in and out. After you've made the slot, you can attach the tab and bevel gauge blade with the knob and washer and go to work. 🛠️

