



Plans for this workbench are available online at: www.SportAviation.org.

The EAA Workbench

Chapter 1000 members created the bench homebuilders can't live without

BY CHARLIE BECKER, EAA 515808

EVERYBODY NEEDS A WORKBENCH or two. When you build an aircraft, the workbench becomes the foundation on which the whole aircraft gets constructed. I tell my students at EAA SportAir Workshops, if you can build a workbench that is square and sturdy, then you can build an aircraft.

So, where to start? Just like any aircraft project, you need a set of plans. Unlike an aircraft project, you don't need to spend a lot of time trying to decide what workbench to build. Yes, there are lots of different plans out there, but long ago Norm Howell and Bob Waldmiller of EAA Chapter 1000 came up with the concept of the standardized or modular worktable. You can use these tables separately to build individual components or clamp them together to build a wing or fuselage. Their relatively short and narrow size is an advantage because they don't eat up a lot of space in your workshop. So no need to look further; just build a couple of these workbenches and you're well on your way to building your aircraft.

The step-by-step process is highlighted on the facing page. Here's a quick hint...we built our frame on the floor as that was the flattest place around.

CUT LIST

2 by 4	60 inches	33 inches			
2 by 4	60 inches	33 inches			
2 by 4	60 inches	33 inches			
2 by 4	60 inches	33 inches			
2 by 4	57 inches	33 inches			
2 by 4	57 inches	33 inches			
2 by 4	57 inches	33 inches			
2 by 4	17.5 inches	17.5 inches	17.5 inches	17.5 inches	17.5 inches
2 by 4	17.5 inches	17.5 inches	17.5 inches	21 inches	21 inches
2 by 4	21 inches	21 inches	21 inches	21 inches	8.5 inches
2 by 4	21 inches	21 inches	21 inches	21 inches	8.5 inches
2 by 4	21 inches	21 inches	21 inches	21 inches	8.5 inches
2 by 4	8.5 inches	8.5 inches	8.5 inches	8.5 inches	8.5 inches
4 by 8 MDF	24 inches	60 inches			
4 by 8 MDF	24 inches	50 inches			

Cut the MDF to size. You will want to cut across the piece first to leave a 3-foot by 4-foot piece left over. If you use a standard piece of plywood, your saw kerf will use up 1/8 inch or more, so the 24-inch top will be slightly undersized.



Here we just drilled the hole for the shank of our 1/2-inch carriage bolt. Then drilled a shoulder for the nut. You'll need to use a chisel to conform the hole to the nut and press fit it in. We added a little 5-minute epoxy to keep the nut in place.

AFTERMARKET MODS:

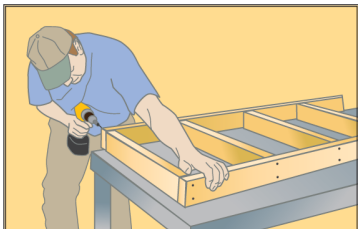
Levelers/ Some shop floors are anything but level. So if you built a nice flat table and you want it to be level, here are two ways to accomplish that. Initially we planned on using elevator bolts with tee nuts, but we balked at the price Lowe's wanted. Like any good homebuilder, we thought there had to be a cheaper way to do it. So we're passing along the carriage bolt option we used.

Retractable Gear/ The whole concept behind these modular workbenches is that you can use them side-by-side or stack them end-to-end. A great concept, but if you always need someone to help you move them around your shop, you are somewhat limited. Several EAAers have put casters on their workbenches to move the bench to the work. Personally, I like my table more permanently fixed than with a locking caster. One of the better mods we came across was a retractable gear. It's easy to construct. You just add it to one end of the bench and voilà...no more asking your spouse to help reposition the worktable.

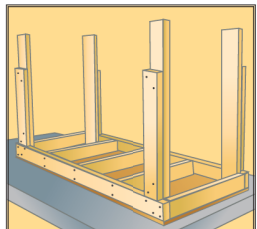
You may want to adjust the length of the 33-inch leg if you plan on using levelers because they will add about 1/2 inch to your table height. **EAA**

STEP BY STEP

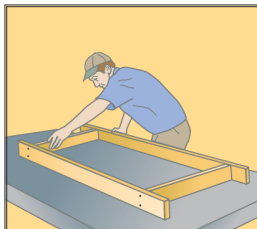
BUILDING THE STANDARDIZED WORKTABLE Every homebuilder needs one.



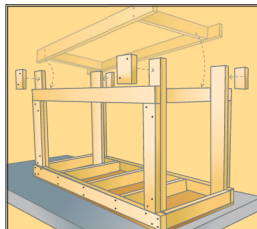
Step 1
To make the table flat and square, you build it from the top down. To construct the top frame, connect the 2 x 4s with wood glue and 3-inch screws. Flip the frame over so you use the truest side and cover it with the 3/4-inch medium density fiberboard (MDF). If you are going to have your table top be a piece that you can drill into, weld on, and generally abuse, do not use glue to attach it, just 1.5-inch screws. Countersink the holes.



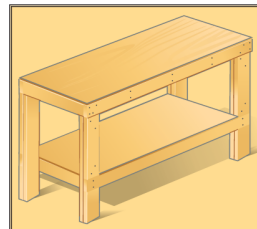
Step 2
Turn the top frame over and attach the four legs with wood glue and 3-inch screws. Make sure everything is as square as possible and then fasten the 17.5-inch leg doublers on the outside of each leg with glue and 2.5-inch screws.



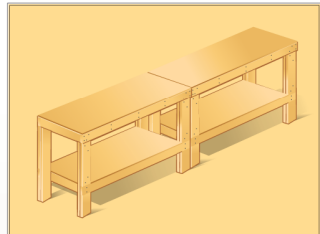
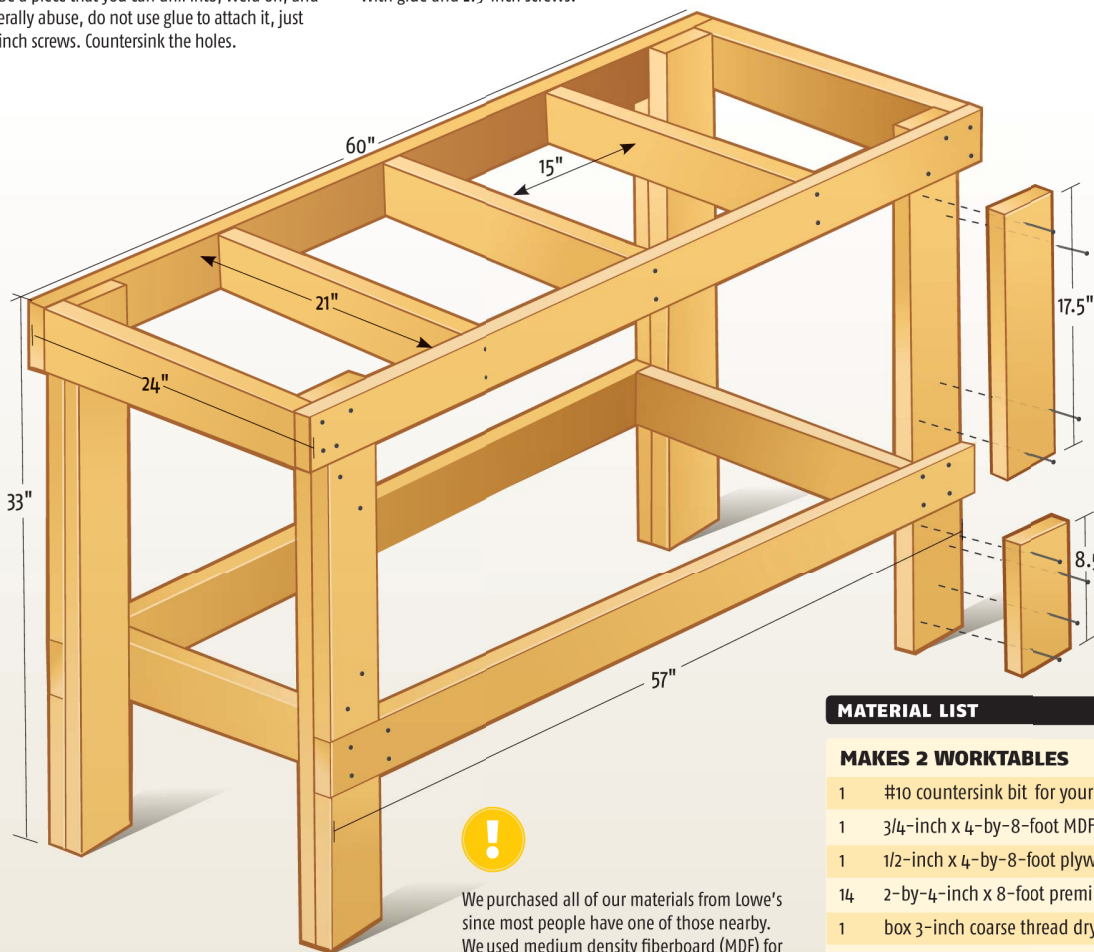
Step 3
Build the lower 2 x 4 shelf frame, again using wood glue and 3-inch screws.



Step 4
With the table upside down, put the shelf frame on the table legs with the glue and 2.5-inch screws and add the remaining 8.5-inch leg doublers.



Step 5
Turn the table upright and fasten the lower shelf plywood in place with the 1.5-inch screws.



The two tables can be configured side by side or end to end.

Move It!
Add to the versatility of your workbench with a caster set that locks in place. Instructions and photos are available at www.SportAviation.org.

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We purchased all of our materials from Lowe's since most people have one of those nearby. We used medium density fiberboard (MDF) for the top surface because it provides a flat and true work surface. We used coarse drywall screws because Lowe's construction screws were expensive.

MATERIAL LIST

MAKES 2 WORKTABLES		PRICE
1	#10 countersink bit for your drill	
1	3/4-inch x 4-by-8-foot MDF	\$26.98
1	1/2-inch x 4-by-8-foot plywood	\$15.27
14	2-by-4-inch x 8-foot premium studs	\$32.48
1	box 3-inch coarse thread drywall or construction screws	\$2.78
1	box 2.5-inch coarse thread drywall or construction screws	\$2.78
1	box 1.5-inch coarse thread drywall or construction screws	\$2.78
1	Elmer's Carpenter's Wood Glue, 16 ounces	\$3.28

Total Cost for Two Workbenches: \$86.35