



# *The CHAPTER 221 FLYER*

Proudly Serving the Experimental Aircraft Association Chapter 221 in Kalamazoo, Michigan

[www.EAA221.org](http://www.EAA221.org)

September 2019



**Next Meeting**

**Date Edwards' Hangar**

**173 Skyview Dr.**

**September 4, 6:00 pm**





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## President's Message



Hello Everyone!

AirVenture 2019 is behind us now and the continuing consensus is that it was another great one. I certainly agree and my memory of the A-10, 2 F-22s and the F-35 was awesome and reassuring to me that we still rule the skies. I hope some of you will share your favorite memories with the rest of us too at our meeting next week.

Our next meeting will take

place at the hangar of Dale Edwards on Newman's Field (4N0) (173 S. Skyview Dr, Kalamazoo, MI 49009) on September 4 starting at 6:00 pm. Dale and Company (Jon, Paul and Ron) will have their beautiful Aer-onca Champ project on display. If the weather is good why not fly in if you can? I hope to fly my Spacewalker over (well if you're going to fire it up to taxi you might as well take it around the patch).

One agenda item will be information about the Air Zoo Reunion on Sep 14-15. It should be fun and we will participate, so save those days if you can.

Bob Aardema, EAA Chapter 221 President ✈

## Next Event...



**FNF Champ!**

**Dale Edwards' Hangar**

**September 4 at 6:00 pm**

**173 Skyview Dr.**

**Young Eagles, Unique Aircraft and More.**



**[AIR+ZOO]** Like No Place Else on Earth!

Map at [www.EAA221.org](http://www.EAA221.org)

**Ron Ryan**

*EAA 221 Newsletter Editor & Secretary*

*Unless otherwise specified, our chapter meetings are the first Wednesday of the month at 7:00 p.m. at the Airzoo Flight Center Classroom on the west side of the Kalamazoo-Battle Creek International Airport*

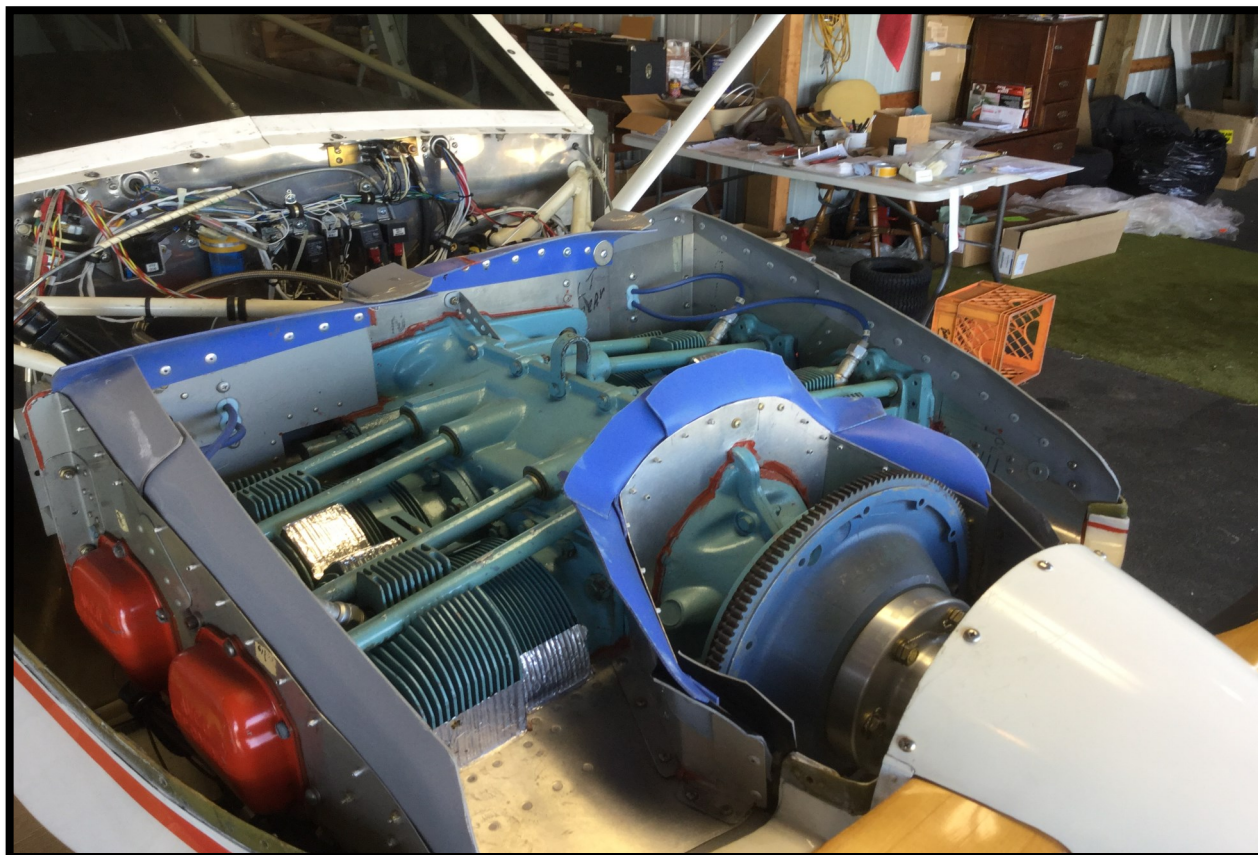


# September 2019

September 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4 6:00 pm Chapter Meeting Dale Edwards' Hangar.	5	6	7 88th Anniversary Historic Fly-in/Drive-in Brooks Field (RMY), Marshall
8 Annual Dawn Patrol Fly-in: Maple Grove Airport (65G), Fowlerville Hillsdale (JYM)	9	10 8 pm IMC Club Meeting	11	12	13	14 Air Zoo's 40th Anniversary Fly-in: Kalamazoo/Battle Creek International Airport (AZO), Kalamazoo
15 Young Eagles Event, KAZO Fall Fly-in: Watervliet Municipal (40C)	16	17	18	19	20	21 3TR Three Rivers OZW Howell IMT Iron Mnt
22	23	24	25 7:00 pm VMC Club Meeting Brewster's	26	27 Airport Movie Night & Open House: Sanderson Field Airport (ANJ), Sault Ste. Marie	28 2019 Aerial Color Tours: Sanderson Field Airport (ANJ), Sault Ste. Marie
29 Fly-in/Drive-in Pancake Breakfast: Andrews University Airport (C20), Berrien Springs	30					

# FOR SALE



Lycoming O320-E2D, 2280 snw, first run engine still running fine in my Tailwind. Come hear it run at The South Haven Airport, KLWA. Uses 7 hrs/qt oil. On last oil analysis by Blackstone, the analyst commented that the engine should run "a long time" in the airplane. Compressions: 72/80, 74/80, 66/80, 73/80. Includes all logs snw and two Slick magnetos. Exhaust, starter, and modified carburetor not included. Was the original engine in a privately owned, well maintained C-172. I am the second owner and have put 150 trouble free hours on it in the past 4 years. I put this proven engine into my unproven Tailwind airframe that I built in order to limit risk and to avoid the need for engine break in operation at the same time. Now that I have sorted out the airframe, I have a new engine to go in it and offer this engine for sale. Use it as is, like I did, or overhaul it and return it to a certified airplane. \$5900.

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Plans for this workbench are available online at: [www.SportAviation.org](http://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	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.

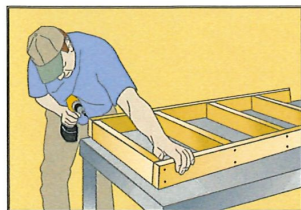
**Retractable Gear/** The whole concept behind these modular workbenches is that you can use them side-by-side or stack them end-to-end. A great concept, but if you always need someone to help you move them around your shop, you are somewhat limited. Several EAAers have put casters on their workbenches 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**



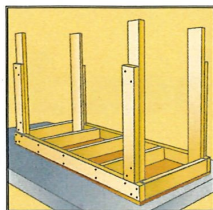
## STEP BY STEP

### BUILDING THE STANDARDIZED WORKTABLE Every homebuilder needs one.



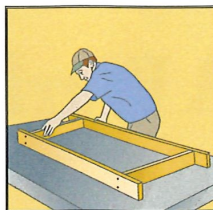
#### Step 1

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.



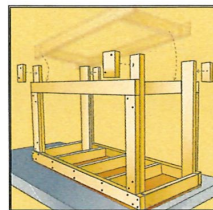
#### Step 2

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.



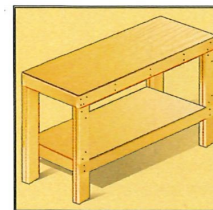
#### Step 3

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



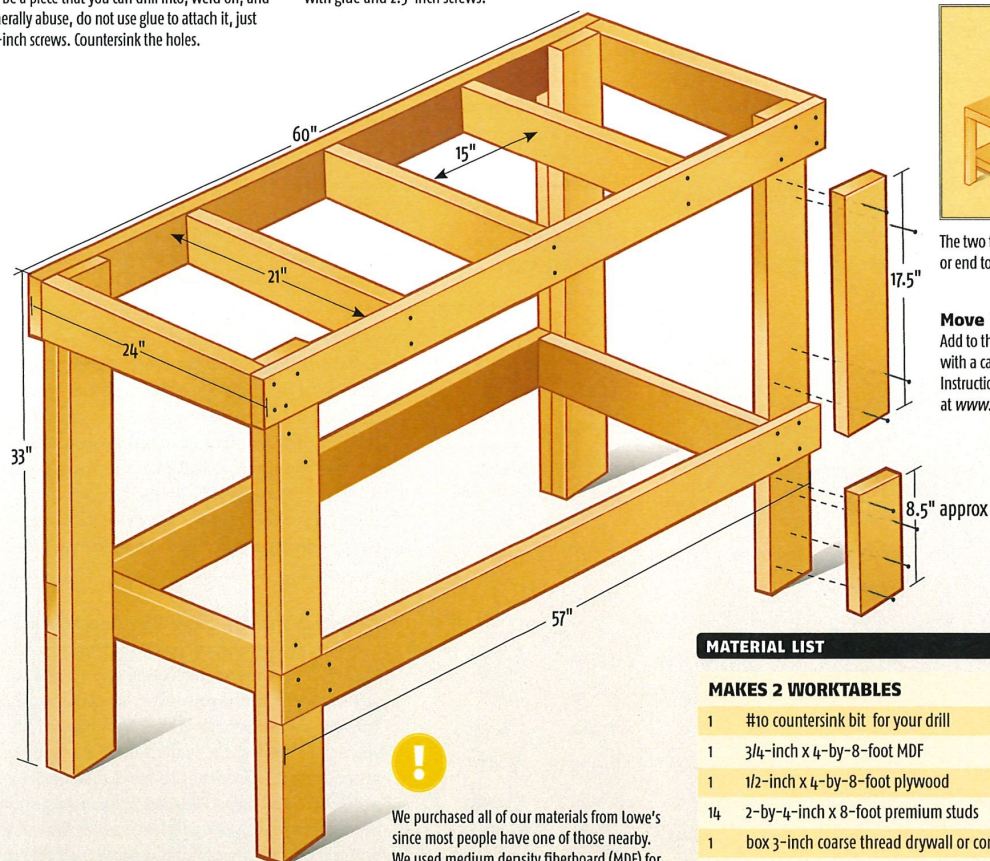
#### Step 4

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.

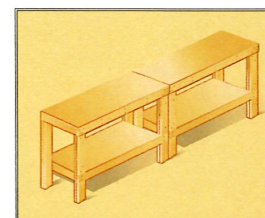


#### Step 5

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



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.



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](http://www.SportAviation.org).

#### 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



# Young Eagles

The AirZoo has asked us to hold a Young Eagles event on Sunday, September 15th and we have agreed. If you are able to fly with us on that date it would be greatly appreciated. Also if you know anyone who would be interested in flying YE let them know of this event. Remember that they must be a EAA member and have completed the EAA Youth Protection Program. Here is the link to accomplish that if you or they have not. <https://www.eaa.org/eaayouth/youth-protection-policy-and-program>

Starting this month every young eagle we fly earns us \$5 dollars in points toward scholarships to send youth to Airventure Aviation Camps in Oshkosh, WI. Before this year each pilot had to fly 10 youth before they started counting for points but now every flight counts. This is great news and will increase the scholarship money earned by quite a bit.

Thank you for your time, aircraft and fuel used for helping youth to fly. If you have any questions feel free to contact me or Bob Aardema. [robert.aardema@wmich.edu](mailto:robert.aardema@wmich.edu) 269-358-7267

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## Chapter 221

[www.eaa221.org](http://www.eaa221.org)

Supporting the recreational builder/flyer with technical, social, and political news to promote flying safety and enjoyment:

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