

The York Woodworkers Association
Newsletter for February 1, 2021
Corner Cabinet Construction by John Leake

Greetings all and welcome to the February 2021 club newsletter. If you have suggestions for improvements, please email me at martinsolutionsrh@att.net
Or ron.martin52611@att.net



Message from the President: Well, John did it again, he knocked the corner cupboard project out of the park! I expected that too, all the while claiming he was a little rusty. I only wish I could be that rusty. The catch is keep trying new things, sometime over and over, each time getting a little better at what we do. All in all, it was a great presentation by the best. It was good to be back in the shop with John again and see the crowd that our organization can attract. We had 22 in attendance.

March meeting was held in Sharon at my shop and the topic was working with "rough sawn wood". I am in the process of building a couple of twin beds from cherry wood that was harvested from my son's property in Rock Hill. It was cut and hauled to the mill almost 2 years ago. Once sawed it was stacked, stickers placed and covered to air dry. Lumber was selected and milled for use. We demonstrated how to flatten and true the boards for the construction task. All in all, it was an interesting meeting, we had 15 in attendance.

Our next meeting will be at the shop of Jimmy Matthews in Rock Hill. The presentation will be given by Jim Thorp and the topic is "legs for tables and benches". Hope to see you all there.


Please bring your mask and chair and enjoy one of Jim's great presentations.

Masks and hand sanitizer will be available at the door just in case you forget yours.



For our February 1, 2021 meeting, we had the distinct honor and privilege of having John Leake present a highly informative “Corner Cabinet Construction” demonstration. John has received international acclaim, recognition and prominence for his master craftsmanship. As always, his presentation was well organized, filled with valuable information and contained detailed examples of the subject matter.

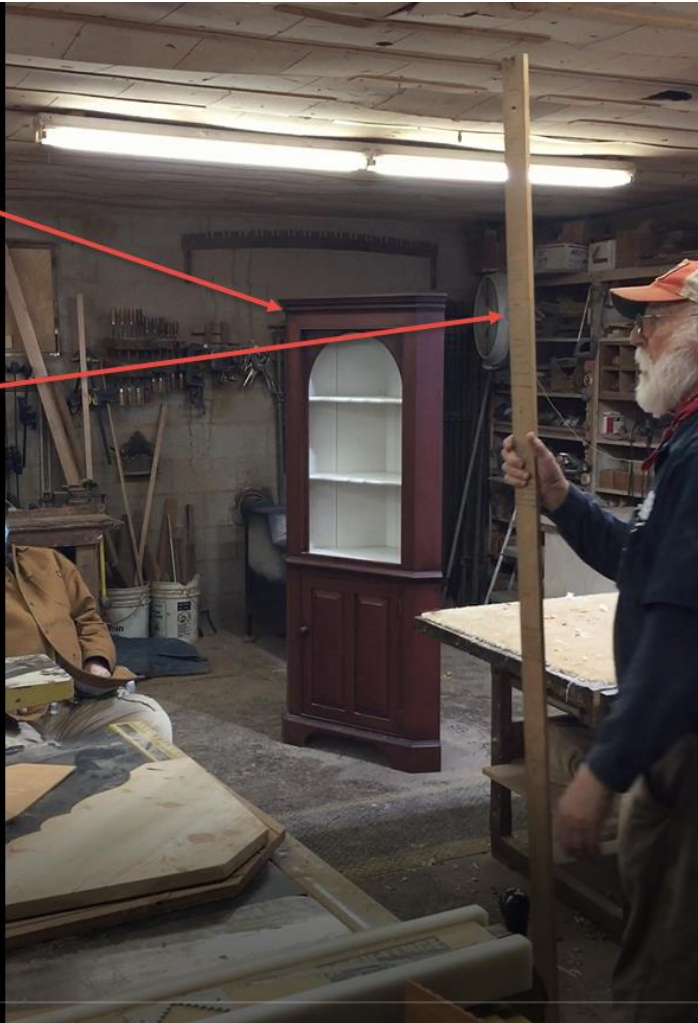
First John started off with several things you must consider prior to beginning your corner cupboard. #1 - You must make certain you have enough (there are no doors, windows, window treatments {i.e., curtains, etc.} or other features that would interfere with or with cabinet doors opening) room. It is not going to be how much you have across the front rather how much cabinet you have going down the wall. #2 – Know what you are going to be putting in the cabinet because this will determine the spacing of the shelves. Example: if you are going to be displaying dishes on the shelves (typical plate is 10”), so for this you are going to need around 10 ½ - 11” between the shelves or you are not going to be able to stand a plate up in them. Most corner cabinet shelves have a plate groove across the back of them. #3 – Then you must know if you are going to have doors, glass doors, no doors. Believe it or not, this too is going to determine the spacing of your shelves.

John always creates a layout stick (story stick) for every project he makes both for transferring dimensions to another part of the project but also for recreating the project again later.  .

1

Cabinet John made for his wife which he used for demonstration

John always creates a layout stick for his projects



2

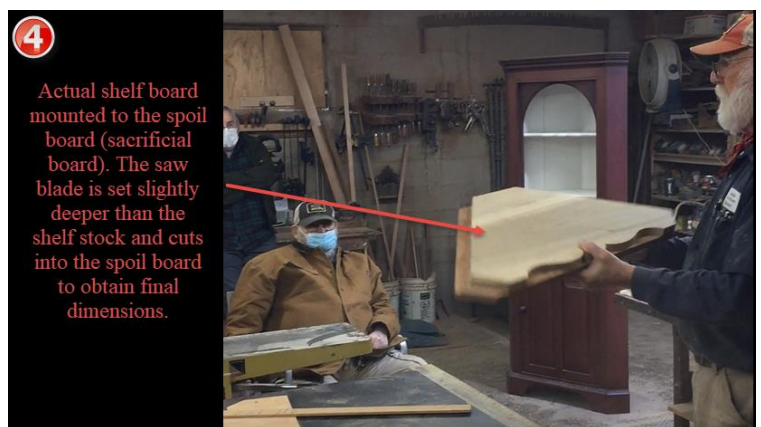
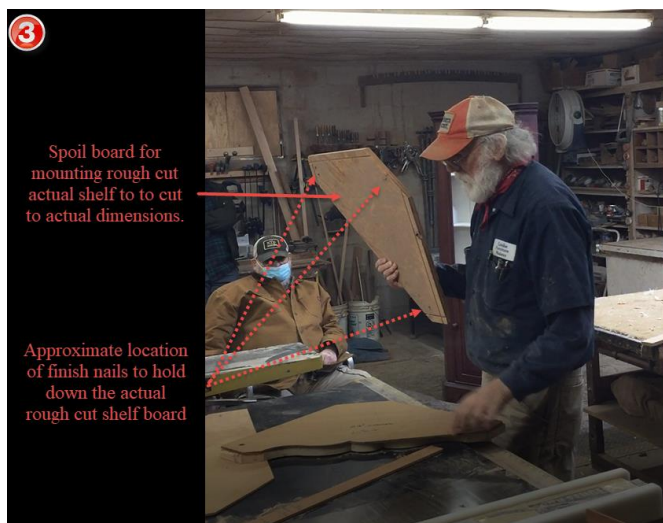
Cut shelf for a corner cabinet



John typical standard cabinet is about 7' tall. This height works great in an 8' ceiling room and yet still looks great in 9' and 10' ceilings. On one side of the story stick he had it labeled glass (which had all the shelves, etc. laid out for a cabinet with a glass door. On the opposite side, he had it labeled wood (because there will be different spacing for wood door). The great thing about having glass door is it enable you to keep the door shut (to keep dust, etc. out) while still displaying the contents. The majority he has made for customers has had a glass door and, in some cases, double glass doors. In these instances, you must make sure the shelves line up with the moldings separating the panes of glass. If not, you are going to have a shelf that lines up right in the middle of a pane of glass. On your story stick you are going to have markings for the shelves, markings for the at the top and the middle (the case pieces). So, when you lay out your stick, you must make sure you account for all of these. John has also made smaller hanging corner cabinets. Remember, along the back of the shelf you are going to have a plate groove. It can be anything you want but typically, the groove would

be about 1/4" wide and 1/4" deep. An example of one of the shelves **2** He always makes the shelves out of a secondary wood (typically popular). The shelf shown was made of three different boards joined together. John likes a painted interior but occasionally have had stained hardwood to match the case. You will want to make you a master pattern for the shelves (and retain for future like projects). Doing this also cuts down on wasted stock. You do not want to have to reinvent the wheel every time you make one. So, when a customer comes to him and says, "I want a corner cabinet 82" tall", he says, "No, it is going to be 84" tall" because he already has the story stick and patterns for that size, and he is not going to reinvent the whole thing over again. The shelf shown he call a butterfly self. In the cabinet shown in picture 1 you would only need two of these because the top and the bottom shelves would have straight fronts. Also, make a board out of scrap lumber whose dimensions are about 1" wider on the two sides and front to mount you rough cut shelf to. (he used some old 3/4" plywood). Later you would mount the shelf to this and cut the shelf to its actual

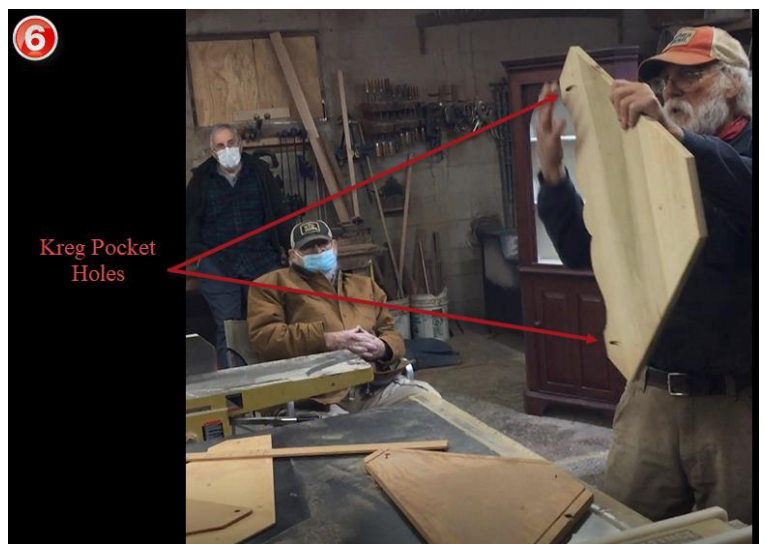
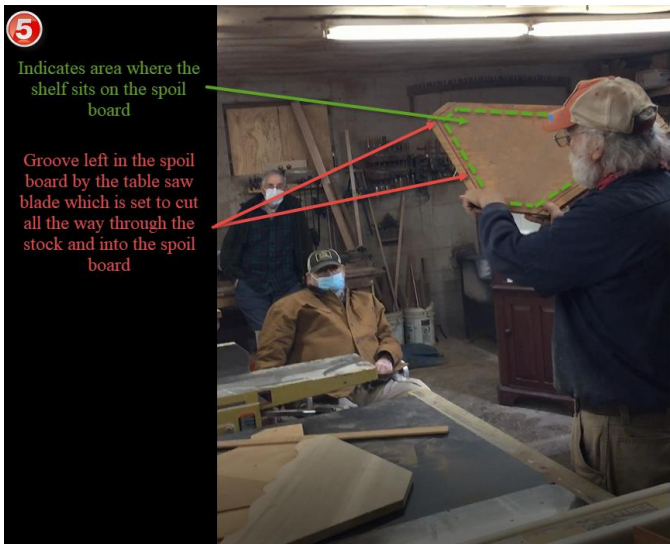
dimensions. **3** & **4** for more detail Note: in picture #4 the shelf board shown had already been cut. The shelf board would have been the same as the spoil board and then cut on the table saw to its final dimensions. He sets the saw blade so it will cut through the shelf stock and slightly into the spoil board. The butterfly front he cuts later the bandsaw.



The process of mounting the rough-cut shelves to the spoil board and then cutting to the final dimension is know in the trade as "pattern sawing" and has been around for an exceptionally long time. Following this process, you will repeatedly get shelves that are the same repeatedly. One other

thing this does is prevent tear out on the shelf stock. **5** Note: the stock must be cut slightly smaller than the dimensions of the spoil board so you can ride the edge of the spoil board along the table saw fence. John did not know about the Kreg Pocket Hole Jig for the first half of his furniture making life,

but he now employs it to attach the front of the shelves to the cabinet case. **6** You do not really need them on the back as the shelf will be seated in the dado groove.

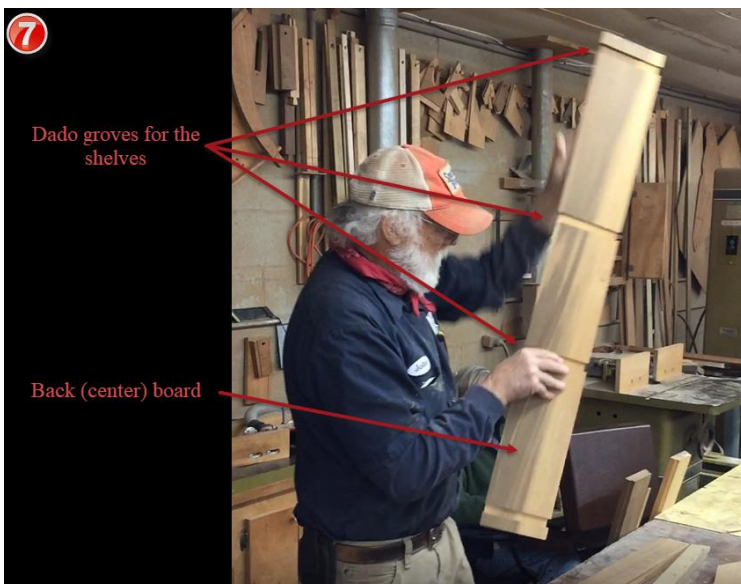


If you do not have a Kreg Jig, you can use the marks made by the screws to hold the stock as guides for drilling the pilot holes.

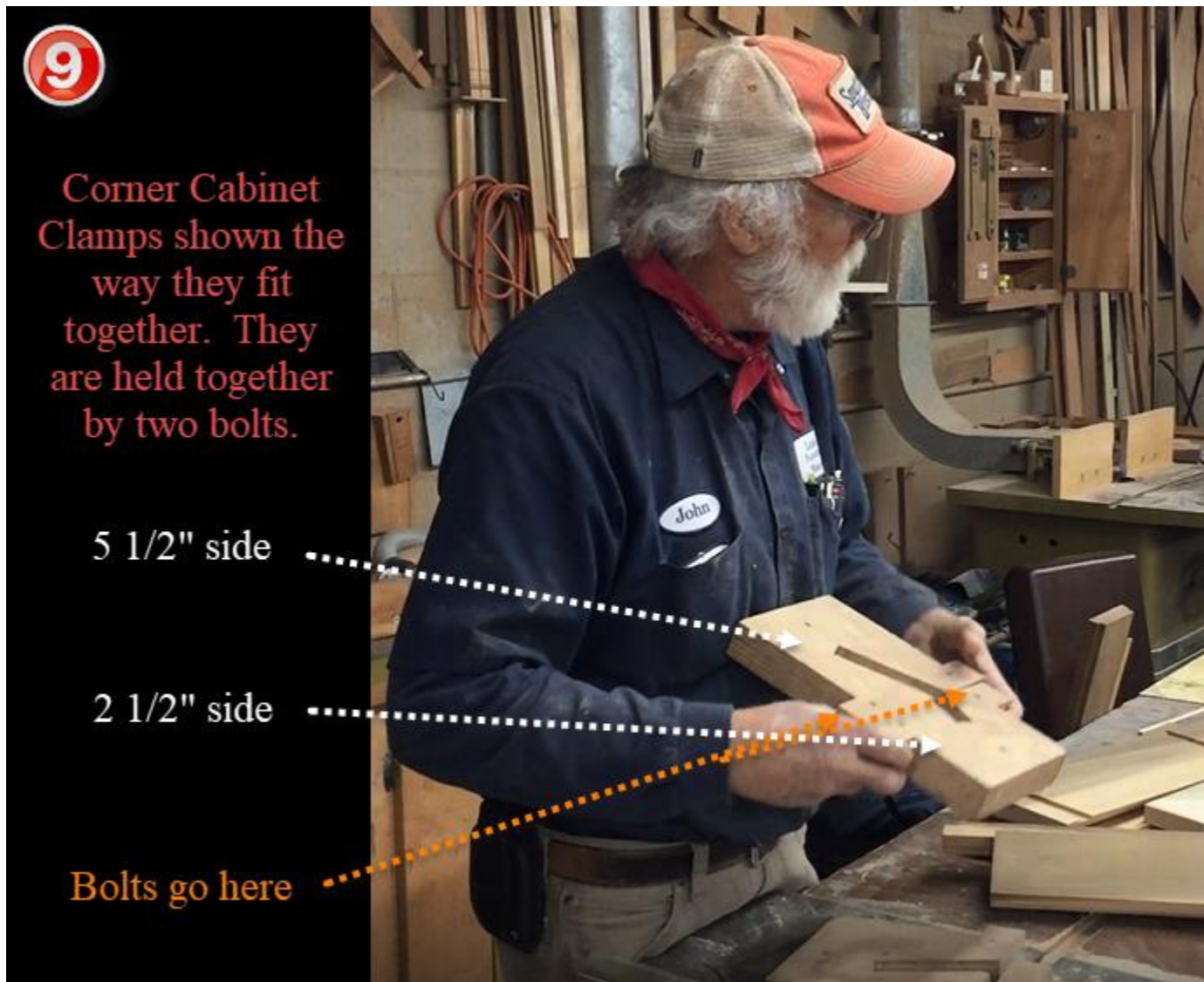
Once he has cut the contours on the front of the shelves, he likes to take a router and round over the edges on the top and the bottom to give the shelves a little more pop.

Next, you are going to focus on assembling the casing. The first thing is to make the back board or

center board making a dado where the shelves are going to go. **7** The shelf does not go into a tight corner because if it did, you would not have a place to stand a plate up in the center. The center spot is the prime location for displaying a plate. It depends on the size of your cabinet as to how many plates you can get on a shelf. A full-size cabinet should enable you to get one center plate and two on each side. You would then put serving pieces or glassware to fill in all around them. Again, shelf spacing is critical. Someone is going to be upset if you build this nice cabinet and then “mama” cannot stand her plates up in there. John thinks the old timers would take the shelves and first assemble them to the back center board.

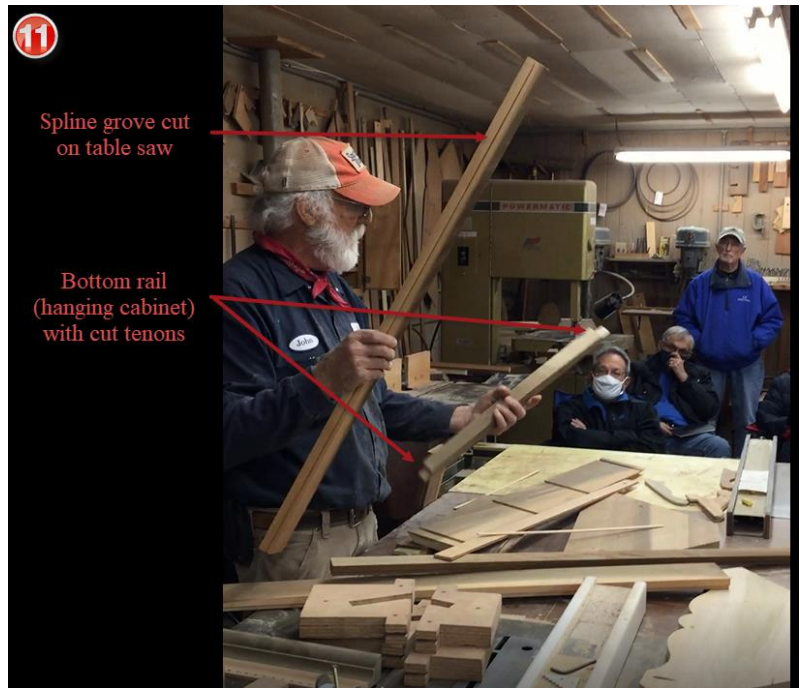
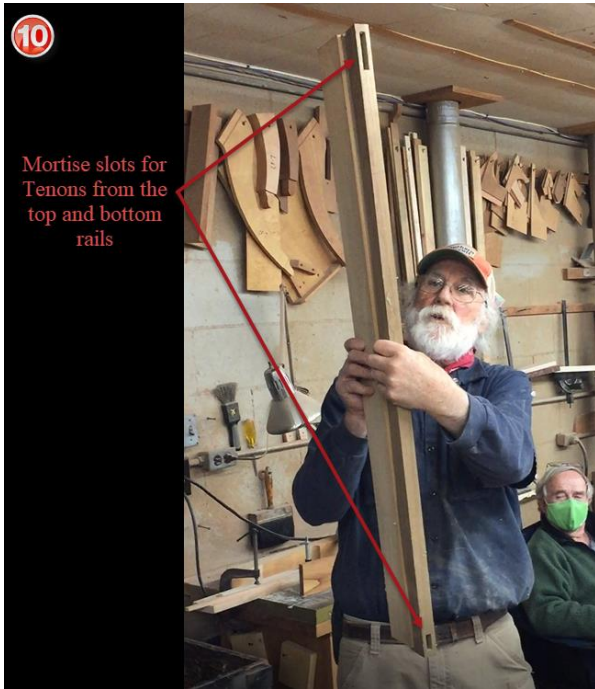


Both for economics (cost) as well as responsible stewardship of mother nature, everything on the inside and back is made with popular or a secondary wood. The front stile is always going to be 2 1/2 " wide and side stile is always going to be 5" on an 84" tall cabinet. If it is a wall hanging cabinet or a small corner cabinet, the dimension on the stiles would be 2" and 4" respectively. John designed and built special clamp to hold these joints together during glue up. When gluing up the cabinets with smaller dimensions, he used scrap wood to fill in the gaps left in the clamping jigs. **8** & **9**.



If you really want to dial your cupboard up, you are going to make your front corners out of one board. When you put them together it is going to look like it has just been folded. **10** Also notice the mortise slots to receive the top and bottom rails on the front of the cabinet. If you are going to make the 7' standing cupboard, ideally you are going to want a 7'+ board that is 8" wide and rip the two rails from this (you would need two of them, one for each side). So, if you are using something like walnut, cherry or other pretty hardwood and can wrap the grain around the corner, this effect is extremely hard to beat. The worst thing about a hanging corner cupboard is you must hang it. If you

have glass doors it could weigh between 100-150 lbs. John locates studs on each wall and screws through the back of the cupboard directly into them.

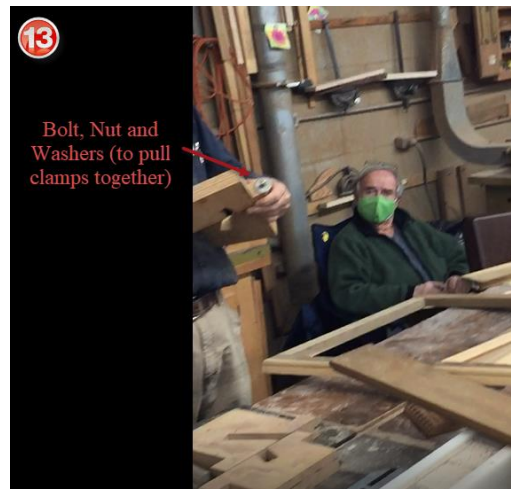
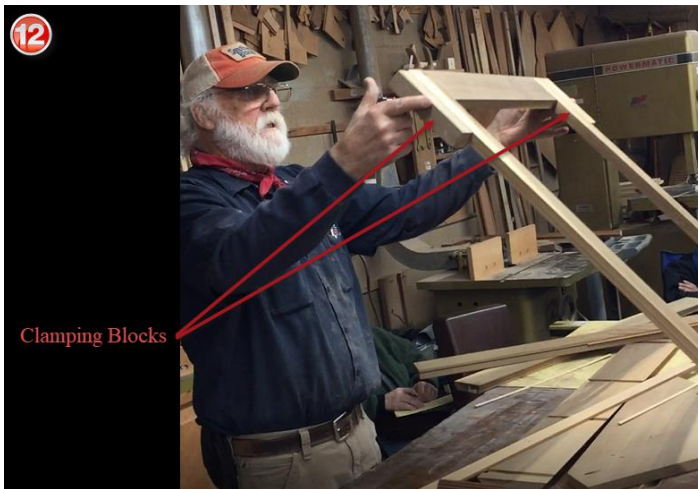


The angle you want on these boards is 22 ½ degrees. This joint is not going to stay lined up down the length of the board without a spline. John uses 1/8" Baltic Birch for the spline. He usually gets it from York Lumber Company and comes in a 5' x 5' sheet. You can make the kerf with your saw blade on the table saw. Remember you are also going to have a top piece, a middle piece and a bottom. The best joinery for this is mortise and tenon and you want to cut these prior to case assembly and glue

up.  and 

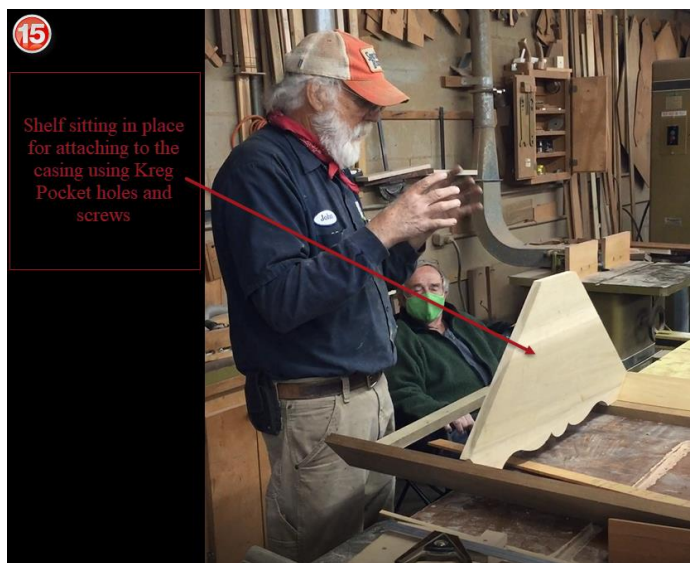
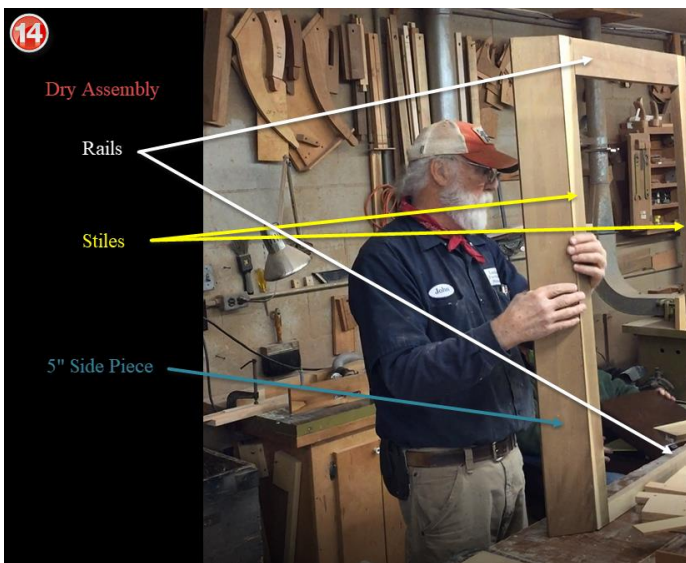
The top rail is cut wider than the bottom (or center rail in a full-size cupboard) for two reason: 1) to allow extra space for attaching the molding and 2) to maintain equal spacing to coincide with the side stiles. **See first picture in final results below.** Note: he does not cut the spline groove in the middle of the board but rather more towards the back. If you cut it in the center, you are starting to get really close to the front edge, drastically reducing your strength. Make sure you cut your groove deep enough so the spline will not bottom out later. You glue up the front stiles and rails first. You are face with a unique clamping issue for this operation. John created special clamping block to alleviate this problem. He cuts some block with the 22 ½ degree angle on one side and a spline groove. He then

uses these on the four corners to give him a flat surface for clamping. 



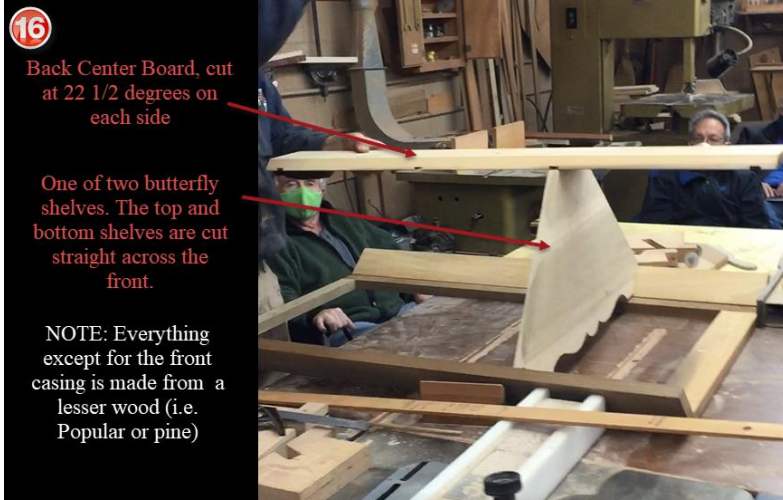
For the full-size cupboard, there would be three rails (so you should go ahead and make six clamping blocks). Be sure to square it up during dry assembly and then during final glue up by measuring your

diagonals. Next, he attaches the side, and this is where the handy-dandy clamps **9** come in. John likes his case stock to be 7/8" thick so the slot in the clamping fixture is slightly bigger than that. He uses 7/16" nuts and bolts along with the washers to pull these clamps together. You gradually adjust the tightness on each side until you get the two pieces pulled together properly. John pointed out you never want to pull these clamps completely together or shut and look for a nice bead of glue squeeze out along the length of the joint.



The grooves for the splines will be 3/8" deep and splines will be 3/4" wide (minus 1/16th) because you do not want the spline to bottom out. It will not be seen and will be just as strong a joint. Take a piece of

220 sandpaper and de-burr the spline. Case, dry assembled **14** and first shelf in position for mounting with Kreg Jig Pocket Holes and Screws **15**. John the demonstrated placement of the back center board **16**.



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Back Center Board, cut at 22 1/2 degrees on each side

One of two butterfly shelves. The top and bottom shelves are cut straight across the front.

NOTE: Everything except for the front casing is made from a lesser wood (i.e. Poplar or pine)



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This is one of John's favorite moldings

He would then screw in through the back center board and into the respective shelves. At this point, you have almost a complete case.

For the remainder of the back, John hopes you are not going to put plywood back there. This will really take away from the quality of the piece, He uses individual boards (usually poplar but you can also use pine). It does add weight to the piece, but it also adds integrity. The side backboards are not typically dado onto the shelves for the smaller hanging cupboard however he does dado the shelves for the larger free-standing cupboard. He would dado every backboard per his story stick and shiplap (rabbit/opposite rabbit) to lock them together. This also allows for the shrinking and swelling of the wood. He does not worry about the screws having any effect on this because screw holes are a little bit forgiving. For a #8 screw, he drills a 3/16 "hole. When you really get screwed up on shrinking and swelling is when you glue something too much. One other thing you can do to help avoid this is to get a good finish on it. Once all your backboards are in and secured your case is complete and then you sand the whole case out. Then comes attaching the molding. John and Jay make all their

17

moldings (they do not have a fancy molder). If you make your molding, make sure you make enough for the entire piece. The molding shown is made from 5 pieces of wood. You will usually make this out of one stick (possibly two). You do not want to have a whole lot left over, but you do not want to come up slightly short (because matching up another piece exactly would be extremely difficult to do). The top shelf is not flush with the molding but sits about 1 1/2 "below the molding. This way he can screw the case directly into the molding instead of trying to do it from the inside making it a lot easier and stronger. The two larger pieces he glues together clamping them up along the length of the board and then attaches them first. He then attaches the smaller pieces, bedding them up into the larger pieces. When making the smaller pieces, you want to make it from a larger piece of wood. Made your beads or coves and then rip it to the proper thickness (trying to cut from smaller pieces is not safe).

18

John likes the arched front but they are a real pain to make. He likes to round over the edges of the back board for extra pop.



19

He rounds the inside corners of the backboards and screws the shelves into place from the back. He dados the shelf grooves for the larger cabinet



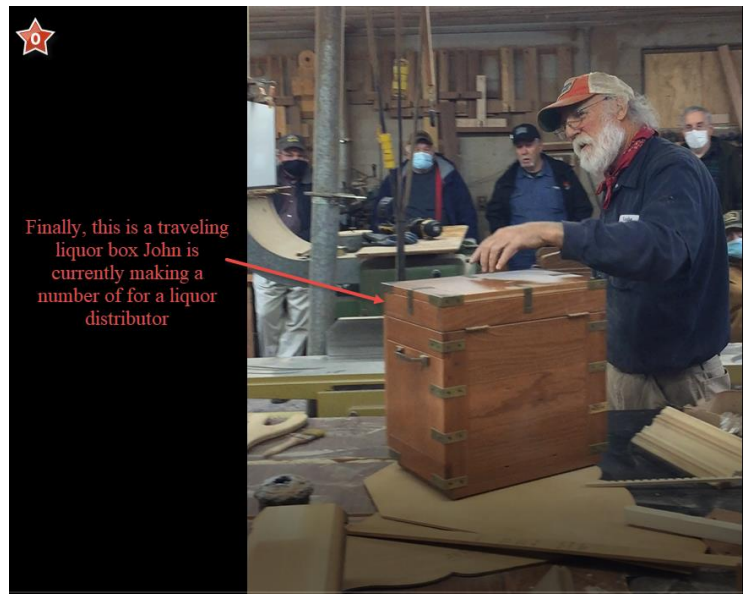
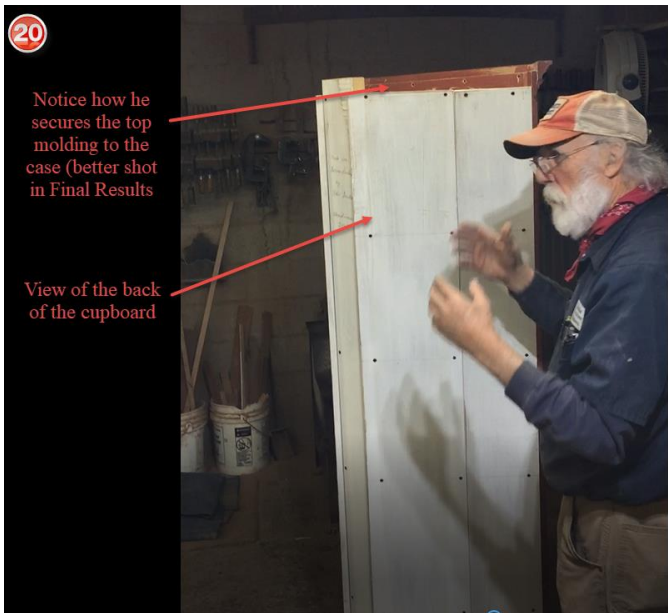
John like the appearance of the arched front but said they are a real pain to make. **VERY IMPORTANT!** If you are going to put glass panel doors on the cabinet, then this will affect the location of the shelves. You do not want a shelf in the middle of a glass pane but rather have them line up with the panel strips between the panes of glass. If you do panel doors it will not make as much difference. At the bottom he has one single door. See final results pictures. One side note for the doors (on any

cabinet) ...you get to a point where one door is just too darn big and two small doors are just to darn little. In this case you can make a large door and split it up with two panels. He added a piece of bead molding around the arched upper section and around the bottom section inside the door to give it added character. He added molding around the center and along the bottom. He has several different patterns for making the feet. Put your 22 ½ degree miters on the corners.

For your dental mold, first rip your stock to size and then he uses a 1/4" dado to cut the slot and leaves a 3/8' space between the slots. He put this on last and glues the top (fat part, not the tooth) strip and uses a pin nailer to attach it and secure it in place. He highly recommends Horton Brasses in Connecticut for the brass hardware. They always know exactly what they have, and it is all high-quality brass.

See  and . He uses 2" hinges on the smaller doors and 2 1/2" on the larger doors. They are

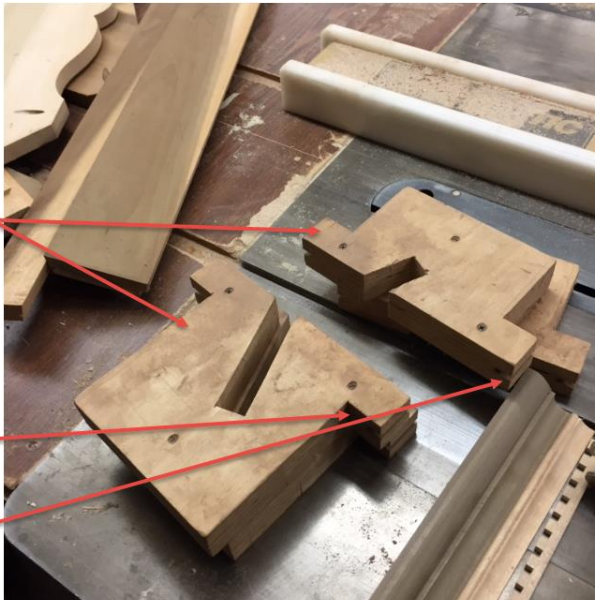
 mortised in. View of the back of the cupboard . Before he attaches the back boards, he takes a block plane or a chaffer plane and runs it down the edge to round the corners on the front to knock the sharp corners off and give the back interior a little more pop. In fact, he recommends you not leave sharp corners on anything.



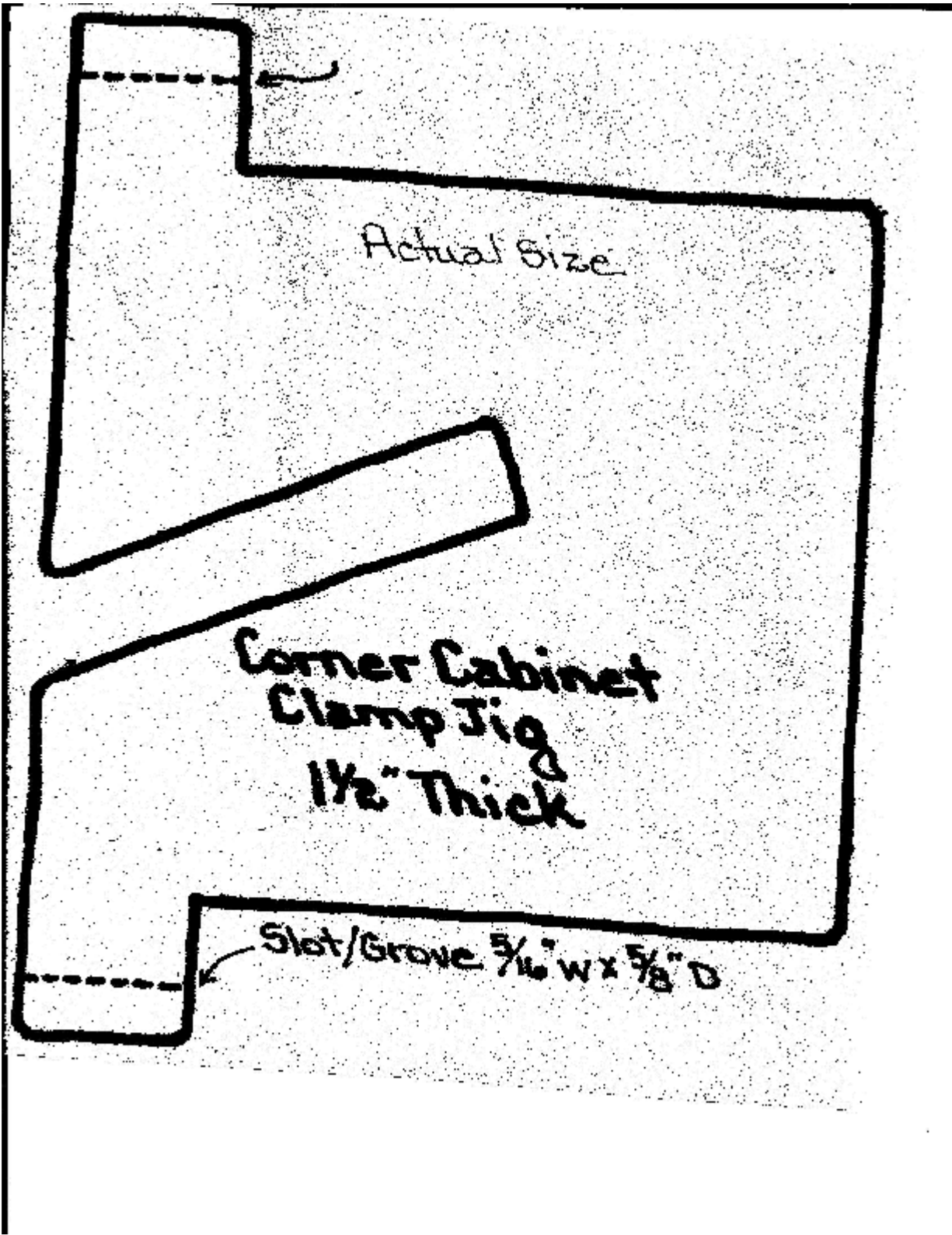


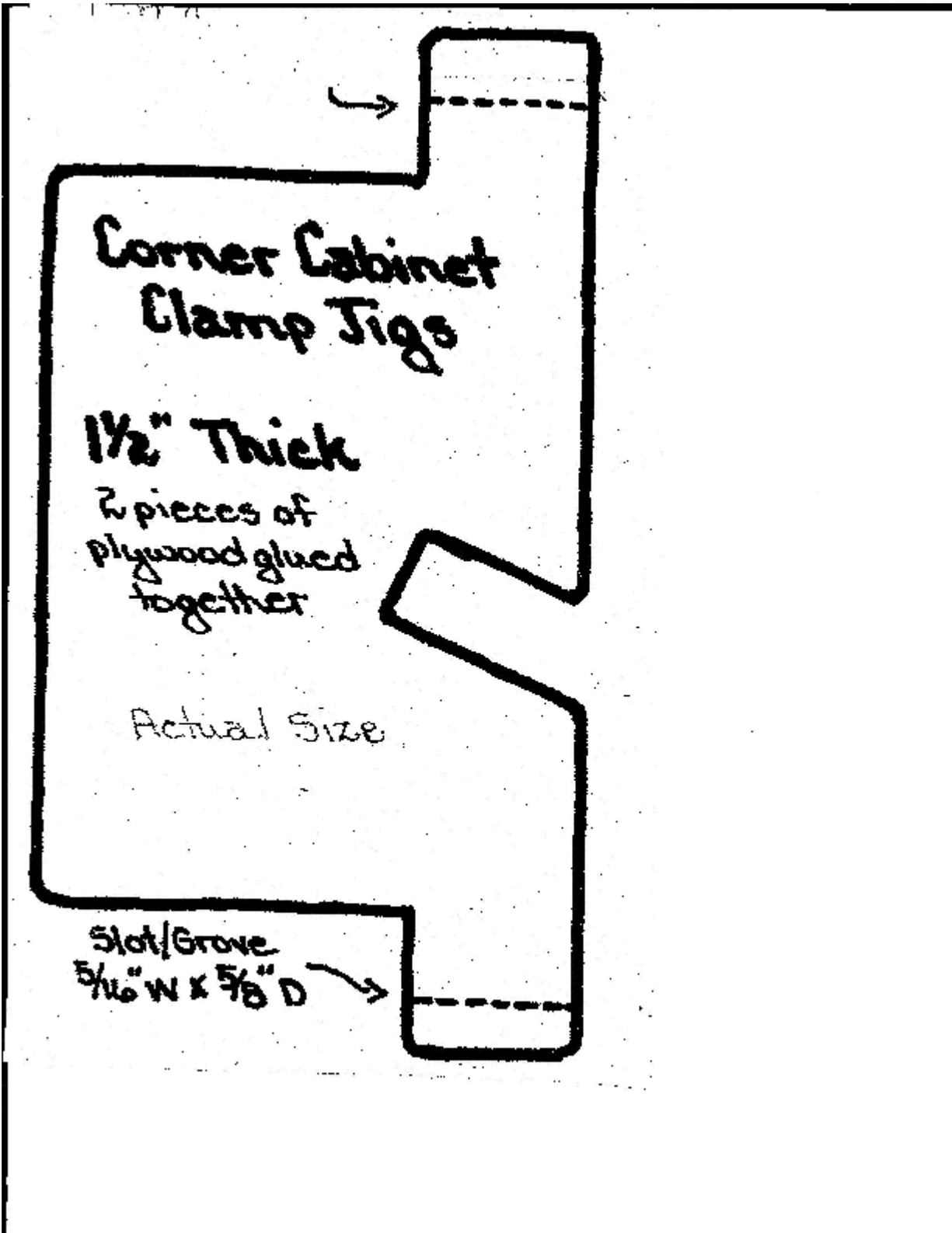
Clamping Jig
created by John
for clamping the
front sides of the
cupboard

Bolts and
Washer fit here.
Use grade "A"
bolts as they are
under a lot of
pressure



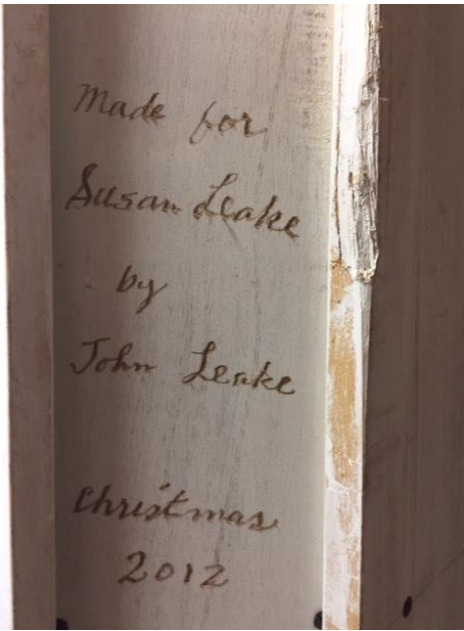
You will want to get grade "A" bolts because you will be putting a lot of pressure on them when clamping up.





The Final Results:





FROM THE EDITOR: This concludes the February 1, 2021 newsletter on “**Corner Cabinet Construction.**” I hope I have done you all and John justice. Thanks, John for a very educational, informative and exceptional meeting. It felt good this month to be able to get this newsletter out to you in November. I try to make this as good a newsletter as possible however it does take tremendous amounts of time to create, document and supply this much detail. It is my honor to be able provide this service to such a wonderful and skilled bunch of folks. Thanks for your support and encouragement as we work with and learn from each other.

Happy Woodworking,

Ron Martin

Newsletter Editor

"BETTER TOGETHER"

Greatness is not standing above our fellows and ordering them around - it is standing with them and helping them be all they can be!

