

Building a Maus cart

Read through this entirely first

I will not go through some things like applying stain and wood preservative as there is YouTube and the internet. Also think about what your needs are and build accordingly nice thing about the cart it is modular and it is yours.

Tools:

Hammer, drill, good set of drill bits, flat blade and Philips screw drivers masking tape. Corner clamps (even Ikea furniture can use these), hand saw, paint brushes. A decent L square

Shopping list

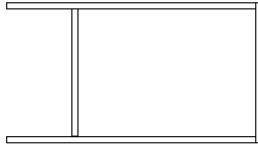
1. 1 pair of either plow share handles or Wheelbarrow handles
 1. I prefer the wheelbarrow as I can hang my helmet off of them some may prefer the plow handles because of the curves for easier hauling around. The plow handles also will often cost more and can be harder to get hold of locally.
2. Amazon list (<https://www.amazon.com/ideas/amzn1.account.AGKAHFMS4OYUGNTB3TRX46RZO47Q>)
3. If you do not shop on Amazon just make a list of the bits and buy local or go to Grainger.com or McMaster Carr
4. 3 pieces of 1x4 6 feet
5. 1 or 2 pieces of 1x2
6. One piece of 1/8 or 1/4 inch ply for the box bottom
7. Wood screws Flat Philips #6 x 1 1/2 in
 1. You can use deck screws if you have too.
8. Any stain(s) wood protection
9. 2 x .125 X 1-15/16 hitch clip pins (alternative to the shaft collars)
10. RELIABILT 1.5-in x 0.5-in x 1.5-in-Gauge Black Steel Corner Brace (4-Pack) (hardware store) or Amazon
11. Light grease for the wheels and axels

Construction:

Now is a good time to think about staining and wood protection for your cart if you want to do that and now is a good time before we put the pieces together. You may find it easier to stain the wood for the box once you have it cut as the parts will be smaller.

The Box

1. The box I have is made is 28 x 20 so that is two 28 inch long pieces and one 20 inch piece and one 18 inch piece.
2. The base of the box is made from either 1/4 inch or 1/8 inch plywood. It measures 24 x 19 1/2
 1. **Please stain this or seal it** with a poly based product as it will be in contact with the ground.
 2. You may decide to make your box deeper but remember you may not want things to slide much. In the box.
 3. If you decide to screw and glue the piece of the box together make sure you sand down any pre stained edges.
3. **Critical measurement time**
 1. Once you have cut out your two long box sides you need to figure where the axle will go for pivoting on one end. I recommend 2 inch in from the end and 2 inches down so the hole for the axle will be center. I recommend you do your measurements on the first piece drill your 3/8 inch hole. Then tape the two piece together so the edges align and drill through the original hole to leave a pilot mark on the other board. Next make sure that pilot mark matches the distances correctly and drill a hole in the other board.
4. Time to assemble the box.
 1. I highly recommend a set of corner clamps to make your edges square and use a L square.
 2. The two long pieces with the axel hole are set on the side and the one end piece butts against the ends of the long pieces the 18 inch piece will be at the end towards the axel holes in between the long pieces.

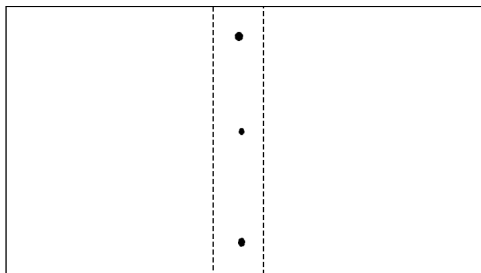


3. Clamp the box together
4. Check for square on the corners

5. Drill three evenly spaced holes through the end board using a small drill bit on both ends into the long board ends.



6. Using the 1 1/2 inch wood screws, screw one in each middle hole on each end.
7. On the piece on the end towards the axle between the two long boards drill three small holes evenly spaced on each side through the long pieces and into the end piece between them



<--Axle. Top -->

8. Put a wood screw into the middle hole on each end

9. Now go back to the top piece and put wood screw into the remaining holes and the holes in the end piece.
10. Now with the clamps in place flip the box frame over and set the plywood base on it. Square up the plywood to the frame you can use tape to keep the piece from moving. Drill two small holes space evenly apart on each edge of the plywood into the frame and screw the base to the frame. Now add more screw this same way till you have 4 to 6 screws on each edge
11. Your box should now be complete.

5. Axle placement

1. To place the axle correctly measure 4 inches from the bottom of one of the handles mark a line this should equal the height of your box you just built.
2. Measure two inches up from the bottom of the handles and mark. Now measure across the handle and find the mid point mark the point lightly across. Now mark the intersection which should be 2 inches up and half way between the two side of the handle. This is where you will drill your 3/8 hole for the axle. Once the hole is drilled you can either measure the other axle the same way or tape the handles together align the edges and bottoms and create a pilot mark by drilling through the first handle and marking into the second.
3. Now drill the second 3/8 hole
4. Now the axle is going to be longer than what you need so you will need to find a way to cut it down either with a hack saw or a Dremel something to cut off the extra axle.
 1. I recommend cleaning up the cut end with a file and rounding the edges just a touch.
5. My axle is X long and that seems to cover holding the wheel and a hitch clip pin or a shaft collar.
6. Place the long arms of the box between the handles.
7. Once you have the axle cut tap it through the hole in one handle then through the box holes and then the other handle, till you have equal metal on each side of the handles.

6. Tension bar

1. Lay the handles now mounted to the box in the opposite direction.
2. Make sure the handle are evenly space all the way
3. About half way up figure where you want your tension board. Remember this may be the place where you hang your masks or mount a back rest , who knows what you have planned.

4. Now measure from the outer edges of the handles and cut another piece of 1x4 to that length. For my cart this is X inches, you can use the fishing pole carrier as your guide if you are following how I built the original cart.
5. Square the edge of the board with the edges of the handle. Then drill two pilot holes on each end of the board into the handles. Now with wood screws screw the board to the handles.

7. Weapons rack

1. My rack is made out of a fishing pole hanger so it is quick and easy to deal with you will have to figure out what your weapons are and build accordingly. I will be using the fishing pole rack for this build
2. Now that you have the handles stabilized carefully flip the cart over or fold the arms up towards the box
3. If you did the tensioner width based on the fishing pole carrier these should lay across the arms correctly. Use the screws to place the upper one where you want it. Make sure you take in account your longest weapon.
4. Now place the other one below at a height you are happy with and again use the screws provided.
5. Okay to handle the weight of swords we will need to reinforce the holders. Find your black right angle brackets. Again create pilot holes for the screws for right angle brackets. Now screw the brackets to the handles and the rod holders. I put mine on the top for the top holder and at the bottom for bottom holder. Your ascetics will be your own.

8. Side stays

1. These two items support the box when it is down.
2. Grab your 1 x 2 and cut both to at least 36 inches
3. I recommend rounding the ends with a bit of sanding
4. Drill a hole one inch down from the top and the same on the other end in the 2 inch side just slightly larger than the knob threads
5. repeat 4 on the on the other stay.
6. Now figure out where you want these to hang off of the side of the handles I recommend about half to 3/4 of the way up when I say side I mean the side where the wheel will go, and in the middle of the handle. I recommend you measure and write this distance down as you will be repeating this step.
7. Now drill a hole a bit smaller than the threads for the threaded insert all the way into the handle till it is flush.

8. Repeat 6, 7 for the other handle being careful to match the position.
9. Now with both holes in the handles thread in the inserts
10. Now thread the knobs in through the two stays and into the two inserts.
11. Now you need to drill a holes in both sides of the box.
12. Pull the stay arm forward until the handles tip slightly forward towards the box. Take the hole at the bottom of the stay arm and line its up with the middle of the box side and mark the spot.
13. Now take measuremeants of that spot as you will apply them to the other side.
14. As you did with the handles drill a smaller hole than the insert through the side. Now thread the insert into the hole. Take one of the remaining knobs and put it through the stay into the insert just enough to hold it.
15. With the other side and that arm apply the measurements and drill the hole add the insert and insert the remaining knob.
16. If you did the measurements corectly everything should be together.

9. Wheels

1. Okay its time to roll. So take your wheels and stick them on the shafts they should just slide on till they stop. Check the remaining shaft it should stick out from the wheels at the same distance.
2. Mark where the wheel stops on the outside. You will need this to apply the collars or the pins. Let me say this, that **the collars are a much easier way to mount the wheels if you have a limited tool set**
3. Remove the wheels
 1. If you have a shop and a drill press you can remove the axle and do this work without the cart attached.
 4. If you are going with the collars or the pins I recommend highly you create a flat spot the width of the collars next to that outside line. Give it just a hairs distance from the outside wheel mark.
 5. Now if you are using a collar once you have the flat spot you can put the wheel back on and then the collar and run the set screw down. This should keep the wheel in place.
 6. **Pins:** If you are using the pins create a flat spot about half the width of the collar or double the pin width. Now take a piece of masking tape and lay it over the flat spot. Mark a spot just slightly over from the wheel mark so you do not have this to tight against the wheel.

1. Now with a proper metal bit in your drill, drill hole slightly larger than the pin. The tape should give the bit grip to start the hole.
2. Once you have the hole clean up any burs
3. Slide on the wheels and insert the pins.

You should now have a completed basic cart. From here on out it is up to you to finish it out as you see fit. One thing I recommend is a box for your kit that fits inside the cart box and is sturdy enough to sit on.