The Rough Rider Gun Cart
By Dave Steier

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The Rough Rider

This is a gun cart that I designed for travel. The requirements for this cart were that it had to hold enough for 2 people to shoot off of for a 2 day shoot. The key is to travel light.

Features

- FLAT RULES. The cart must take up as little room as possible
- hold at least 5 long guns, 2 of which are SxS shotguns.
- be easy to maneuver over rough terrain
- have a place to sit
- have "necessaries" close at hand
  (cell phone, keys, snacks, etc.) in a pair of Saddle Bags without having to bend over.

What was NOT a requirement:

The cart did not need to:

- transport a cooler, and
- have provision for an umbrella

Tools Required

While the answer to this is undoubtedly "whatever you can afford to buy or sneak into the house", the cart project we're going to do *"requires"* the following tools, followed by a *"suggested"* list of other "really nice to have" items.

Required Tools	*Suggested* Tools
Circular or Table Saw	Powered Screw Driver/Variable Speed Drill
Drill with bits including:	#6 Tapered Countersink Bit
1/2" Spade bit	#8 Tapered Countersink Bit
5/8" Forstner bit	
#8 (1/16" Drill Bit)	3/8" Tapered Plug Cutter
#6 (3/32" Drill Bit)	Router with Assortment of Bits
¼" Brad Point or standard bit	Corner and Bar Clamps
Screw Driver	Power Sander
Tape Measure	Drill Press
Hack Saw	Biscuit Jointer
Framing Square	
Sand Paper (60-80 grit, 120-150 grit minimum)	
Wood Glue	

Wood Selection

Now you're ready to go to the "Home Improvement Store" and/or Lumber yard. The first question is "what kind of wood do I get". For beginning wood workers, I recommend that for your first cart, you stay away from expensive woods like Mahogany, Teak, Walnut, Cherry. This cart design requires STRENGTH, so go with a good white or red oak, or hard maple. The wood pictured in this article is Red Oak.

Also, I buy my wood from a lumber yard that caters to Cabinet makers. As such, the wood is sold finished on 3 sides. The fourth side is rough. That means that most boards can be ripped (cut) to 6" wide. For the purposes of these plans, when a dimension of less than 5" is directed, it means that this piece must be ripped from a wider piece.

Bill of Materials

2 – Plow Handles – These can be ordered at the following site, although, I've had luck finding them at Flea Markets. The can also be ordered on-line at:
http://www.farmerbrownsPLOWshop.com

About 40 board feet of the wood of your choice.

1 – 9" x36" shelf stock (for base of cart and key box) or if using hardwood, add one more 10' board

1 – ½" Rod

2 Window sashes * Optional – Installed last to hold cart closed *

2 hinges for Removable box

6 – Nail in furniture feet

2 – 6" Screw in Furniture legs

2 – Mounting plates for furniture legs

2 – Retaining clips for wheels

1 draw catch for removable box

1 – Coat hook

1 – Cup Holder (Wal-Mart, Bike section)

4 – ½" steel washers

2 – 5/16" retaining clips

12" Crane Bolt to hold saddle bags

Paint or stain

Optional Materials

Self stick 2mm foam rubber (to line gun rack and base)

Brass "corners" to "dress up" edges

Step 1 - Building the Tray

OK, let's get started. The diagram below illustrates what you'll be building in this step.

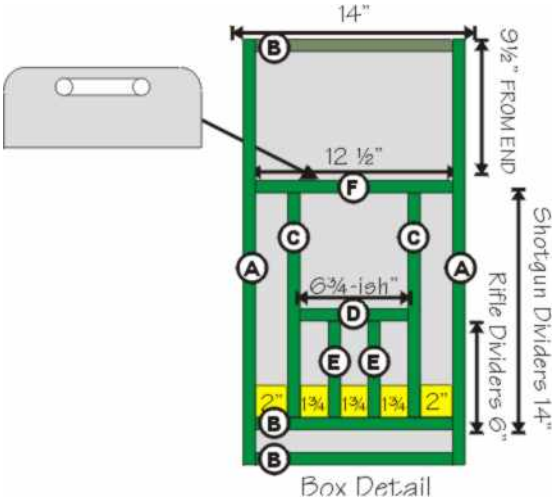

Figure 1, diagram of lower cart – Top View

- You first need to build the base. I do this by using a plate jointer to glue boards together, but you could just cut a piece of plywood that's 14" x 27". After that, you'll work from the outside, in.
- Rip several lengths of board 1¾" wide.
- A – Cut two sides, 27" x 1¾". You'll need to drill a ½" hole for the axle (see figure 2) The hole should be measured from the TOP and REAR of the piece of wood. Measure 1¾" from the rear of the cart, and 1¼" from the TOP.

Figure 2, Side detail showing hole for axle

- Attach each side to the base by gluing and screwing through the bottom of the base to each of the long sides as shown in Figure 1.
- B – Cut three internal dividers, 12½" x 1¾. Attach to base by screwing through bottom and through sides. The first and third "B" should be at the ends. The second should be placed 2" from the rear edge (see Figure 1).
- C – Cut two shotgun dividers, 14" x 1¾. Attach by gluing and screwing from bottom of cart and glue to part "B".
- D – Measure the distance between the two shotgun dividers and cut a piece for part "D". Mine measures just a cat's hair over 6 ¾".
- E – Cut two pieces to fit between "B" and "D". These pieces should be glued and screwed in to place 1¾" from the inside of piece "C".

Figure 3, Photo of Tray with Dividers

- F – Building the center divider. This piece serves three functions:
    - A – Separates the Long gun dividers from the removable box
    - B – Forms a "retaining wall" to keep the removable box from tumbling into your long guns when the cart is reclined
    - C – Has an integral handle to grab to close the cart.
- Rip one of your boards as to at least 5", cut to same length as internal dividers ("B").
- Using a spade bit, cut two, 1¼" holes, 5" apart, 2" below the top of the divider.
- Using a Keyhole saw or Jigsaw, cut out the wood between the holes (as pictured).

Optional: I used a router to round off the area inside the handle and the top of the divider.

- Glue divider to floor of tray and long gun dividers. Glue and screw from the bottom.
- Brace the divider and clamp.

Step 2 – Building the Gun Rack

This step will construct the "gun rack" part of the cart. NOTE: DO NOT USE SOFT PINE FOR THIS STEP! It's just not strong enough. Best to just get a piece of Oak or other hard wood.

Refer to the following drawing for this operation.

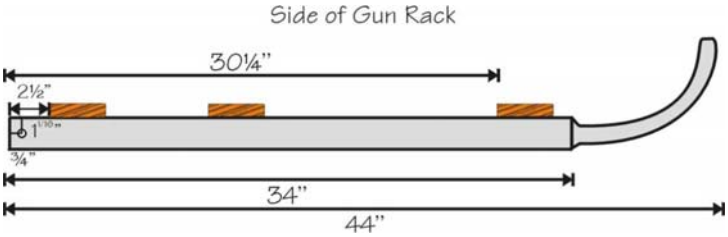

Figure 4, Side drawing of Gun Rack

- Cut two plow handles to an overall length of 44".
- Drill a ½" hole in the base of each plow handle for the axel, ¾" from base, on center (see detail on Figure 4).

Note: At this point, it's useful to thread the ½" rod through the base of the cart and slide each plow handle onto the each side.

- Cut three boards 3½" x 16¼" (4" width may be substituted)
- Drill, glue and screw the bottom board 2½" from the base of the plow handle.
- Measure, Mark the second board (for the top). The bottom of the board should be 30¼" from the bottom of the plow handle.
- Now you're ready to attach the middle, strengthening beam. When the cart is folded, this beam should rest right behind the center divider (F) that was created in the previous step. Fold the cart down and attach the third beam, so that the TOP of the board rests against the bottom of the internal divider. Mine is about 15¾" from the base of the plow handle.

Figure 5, Attaching the third horizontal support to the gun rack

- Stand the cart up and attach the two draw catches as shown in Figure 5. These will keep the cart from folding down when you don't want it to.

Step 3 – Gun Rack Dividers

- Glue two 1x4 boards together to make dividers. Let them dry over night.
- Refer to Figure 6 for this step.

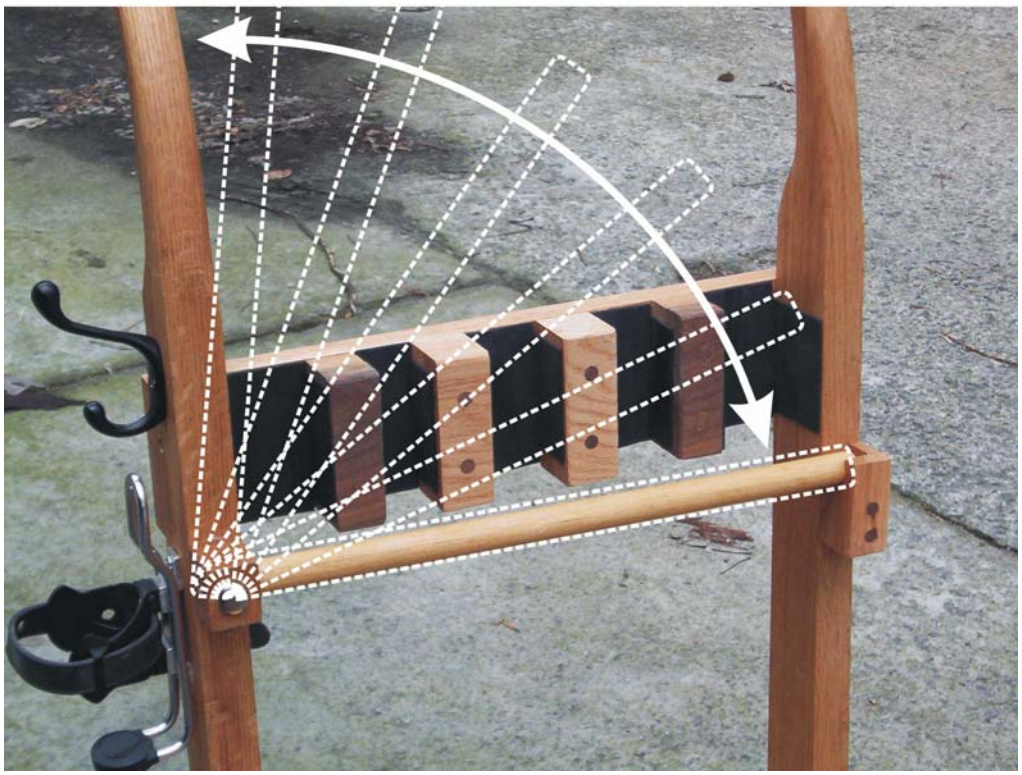

Figure 6, Adding gun rack dividers

- Go and get your guns.
- Start on the outside by setting your SxS shotgun in the cart.
- Mark on the outside of the shotgun. Replace the shotgun with a Rifle or '97 in the second slot. Again mark on either side of the gun rack. Repeat until all slots are full.
- Measure the areas between the marks, and cut part of the two boards you glued together earlier. I like to use a contrasting wood like Cherry or Walnut to provide some contrast.
- *Optional:* I like to use my router to "round over" the edges of the dividers, but it's not really necessary.
- When finished, it should look like Figure 6. I like to line the inside with Self Stick foam rubber to cushion guns.

Step 4 - Retaining Rod and Holder

Retaining Rod

- Get the dowel rod, and find that piece of the plow handle you cut off earlier… You DID save it didn't you? Cut a piece of the plow handle to 1½" x 1¼"
- Drill a ½" hole in the side of the block, and glue in the ½" rod.
- Turn piece over, using a spade bit, drill a hole until the tip of the spade just pokes a hole through the back of the piece.
- Slide a ½" nylon spacer (available in the "custom hardware" section of most Lowe's, Home Depot, or Ace hardware stores) into the hole and thread the 2" #8 screw through the spacer (see Figure 7).
- Attach to cart and cover with chrome hole cap (also available in custom hardware section).

Retaining Rod Holder

- Take another section of the Plow handle that was cut off and cut about a 2" long piece.
- Using a 5/8" Forstner bit, drill an off-center hole in the upper left hand corner. ***NOTE: Don't drill through the entire piece of wood!*** *Refer to Figure 6.*
- Attach to the right hand support of the gun rack and position to capture the rod (when rotated into position). When finished, it should resemble Figure 6.

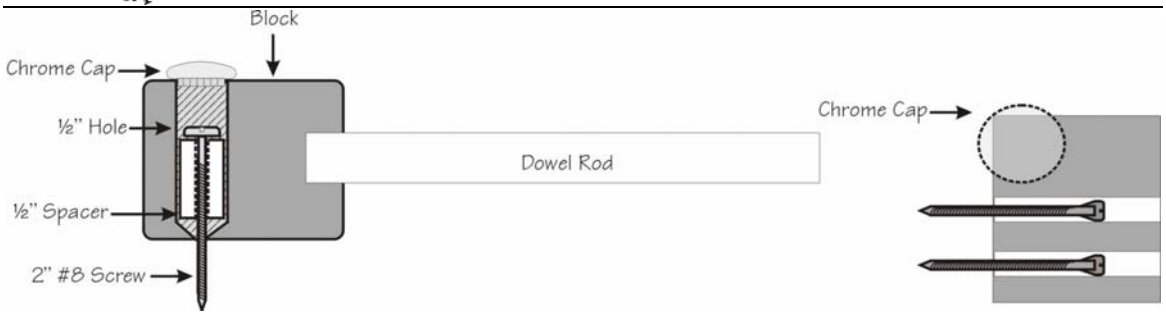

Figure 7, Retaining Rod

Step 5 - Adding the Wheels and Front Supports

NOTE: A drill Press is required for this operation. If you don't have one, or access to one substitute a ½" Threaded Steel rod for the ½" Steel Rod, and use two, ½" nuts on each side, or a Nylon Nut.

Step 5A – Installing the Axel and Wheels

- Place the gun rack on top of the base of the cart.
- Thread the rod through the holes in the Gun rack and the base of the cart.
- Install the draw catches (or "tool box latches") on the base of the box and the lowest brace of the gun rack.
- Add a washer on each side of the rod, and place the wheels on the rod.
- Adjust the rod until the end protrudes approximately ½" through the left side of the cart.
- Add a washer, and use a permanent marker to mark a spot to drill a 5/16" hole.
- Add the wheel and washer on the other side of the cart.
- Using the permanent marker, mark the spot to drill the 5/16" hole and add about ½" to mark where to cut the rod off.
- Remove rod, drill two holes where marked and cut off Rod. ***HINT:*** I find it's best to drill the first hole, install the retaining pin, washers, wheel, *then* pull the rod through the cart to mark and screw.

Figure 8, Photo of back of cart

Step 5B – Adding Front Support

- Turn the cart over and measure 5½" from the FRONT of the base of the box.
- Drill and screw the two foot plates onto the cart.
- Screw in legs.

Hint: I like to add the "nail in" furniture "feet" to my front supports to keep them from splitting.

- Stand cart up on a level surface. The cart base should be level or should only have a SLIGHT incline to the rear. You may have to saw off the front legs to level the cart.

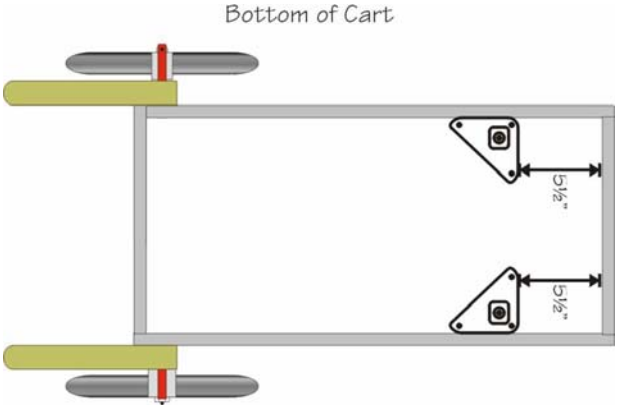

Figure 9, Bottom of cart showing placement of screw-in plates

Step 6 – Building the Removable Front Box

OK, so are you still with me? If you made it this far, you're ready for the next step!

In this step, we'll make a removable box for the front of the gun cart. If you have a biscuit jointer, simply join the boards together and glue. If not...

Let's build a box. To fit in the cart, the external dimensions of the box need to be 12¼" x 8½".

In order to save on wood, we'll "make" our own board.

Making the Removable Box Sides

- Cut three boards, 48". ***Note:*** While this operation shows that less than 48" total will be needed, it's always best to add a little bit to take the cut into account. Most blades loose 1/8" on the cut. You should adjust accordingly.
- Cut 2 boards that are 12¼"
- Cut 2 boards that are 7"
- If you don't have a "biscuit jointer", then cut 6, 1" boards to secure the sides together.
- Lay out the three boards. Glue the boards together (Clamp 'em if you've got 'em).
- Glue the six, 1" boards to the "sides" of the box (if you don't have a biscuit jointer).
- Using the # 6, 1" screws, screw one screw into each board.
- Assemble the box so that the long edges (the 12¼" lengths) overlap the 7" sides. This will yield an external dimension of 10 5/8" inches. Drill, glue, and screw.

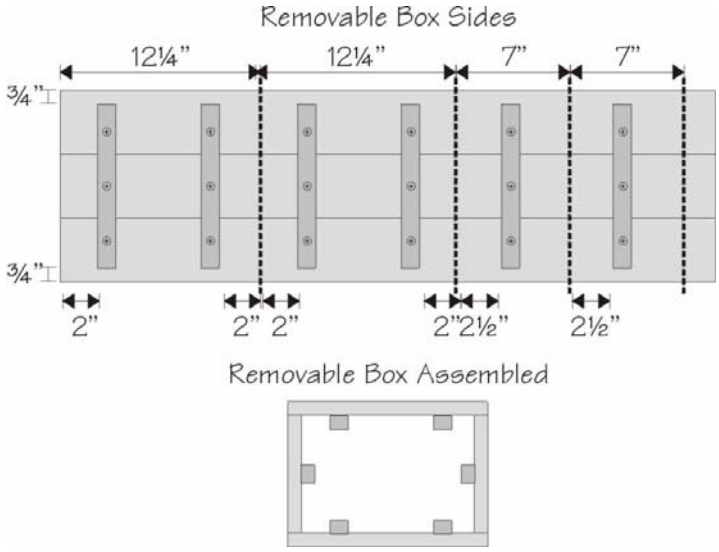

Figure 10, Making a Box

Making the Box Floor and Lid

To make the floor of the box,

- Get remaining "shelf" to cut a piece for the floor.

- Fit board into the top and bottom of the box.
- Drill, glue, and screw the top and bottom into the box
- Set aside to dry.
- On a table saw, set the rip fence to a depth of 2".
- Cut through the entire box, flip and run through again.
- This way, your top and bottom will match.
- Add hinges on the back, and handles on the sides.
- *Optional:* I like to get a piece of chain to keep the lid from opening more than 90°.

Figure 11, Removable Box, open showing retaining chain

Step 7 – Finishing Touches

Normally, I like a BIG box on the back of my gun cart that I can put my phone, keys and other stuff I want to keep close without having to bend over to get into the ammo box that was built in the previous step. This cart does not feature that because that would increase both the weight and the bulk. So I came up with the idea of mounting a pair of Saddle bags on the back using a **crane** Bolt.

I also installed a cup holder, a coat hook and a handle (for easy carrying). Note that I only installed hooks and a handle on the right side. This was done so that the cart could lay on it's side in the back of a car or SUV without poking holes in the upholstery.

Figure 12, Back of cart detail showing location of Crane Bolt, Saddle Bags, Coat Hook and Carry Handle

Finished Product

Good Luck, and enjoy your new cart!

The Rough Rider gun cart on left, a 3 gun version of the Cherokee Cowboy cart on right, and Hondo Howard's best side as he unloads his 4 gun Cherokee Cowboy Cart