

## The First New Patrol Kitchen Box

# The T21 Kitchen Box

You've all seen the Patrol box plan that's been around on the web since the day the web was born. It's too big, built like a tank and will only fit into a truck, it's got parts to lose, it wasn't designed around today's equipment, and there's no easy way to carry it.



Here is the design Troop 21 decided upon for its new Patrol Kitchen boxes.

The goals for this box were:

- It is intended to be used to prepare food for cooking. Not as a cooking surface.
- It had to be light weight. Easily carried by two Boy Scouts.
- It had to fit easily into a standard mini-van.
- It had to carry the essential cooking equipment for a patrol. This included the cook kit, chef's kit (utensils), 3 dish pans for cleanup, generic spices, and a lantern, etc. **Note** that this box takes a **single mantle** propane lantern. If you want to get a double mantle lantern in it, you'll have to increase the side dimension to about 10".
- It had to be "boy proof."
- It had to have little or no loose parts. IE, wingnuts holding on legs that could get lost in the snow on campouts. This design has **NO** loose parts.

- It had to be easily transported from car to campsite.
- It was **not** intended to carry the ax, hatchet or saws.
- It was **not** intended to carry food. Everyone always uses coolers for this anyhow.

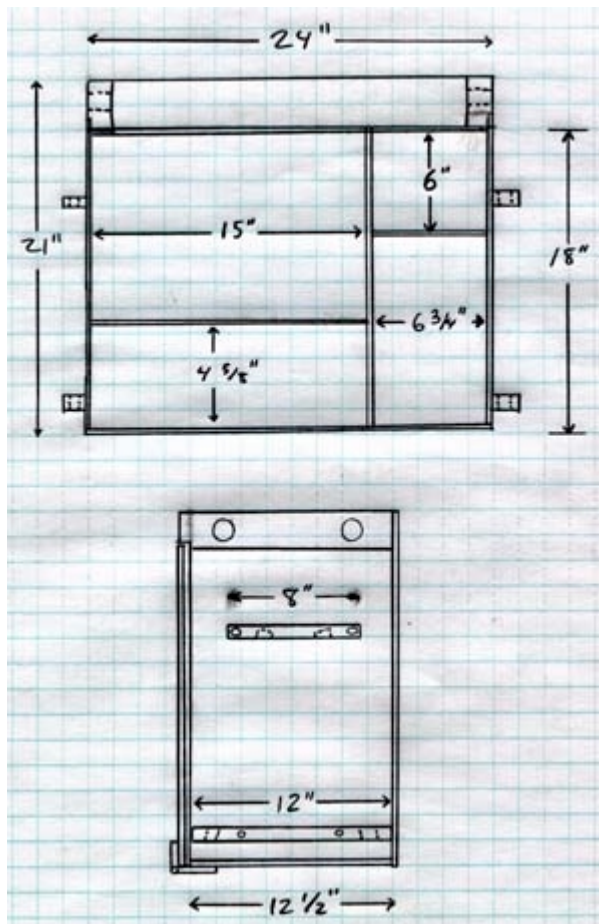
Note the following list of extra features that this box has.

- Laminate on the surfaces for easy cleanup.
- The top has a raised back and sides to keep items from rolling off.
- The legs are used for transport, and just slip in. No wingnuts to lose!
- The front is held in place for shipping by 2 barrel bolts.
- The front can be used for a cooking surface, but is not intended for it.
- The box is intended to be used near a picnic table, or with a stove on the



expandable metal  
legs. Coleman  
sells their "High  
Stand" for this  
use.

For those interested in building one, here are some drawings and a parts list:



- 2x4 Top pieces - 26" **Note** that these hang over the front door!
- 2x3 Side pieces that the legs slide into - 40"
- 3/4" Plywood - sides, top and bottom
- 1/2" Plywood - front and back
- 1/4" Plywood - shelves
- 4" Hinges (2)
- 1 1/2" Barrell Hasps (2) - to hold the front door closed for shipping
- 1 1/4"x48" Dowel (4) - legs
- 3/8"x3"? Carriage Bolts, nuts, lock washers, washers (8)
- ?" Chain - for the front door
- ? nylon-insert nuts - for hinges and for eyebolts
- 1/4" Eyebolts (2)- for the chain to the front door
- #8x1/2" screw (2) - for holding the chain to the inside walls
- 12"x16" Center board - 1x8 pine glued up and cut down to the desired size
- screws - stainless steel for holding the hinges on

- screws - bunches for holding the box together
- Good quality oil based paint
- "S" Hooks - to hold the chain

## Notes on building a T21 Kitchen Box.

It took me about 3 weeks of reasonably steady work, 3 hours a night, to build 3 of these boxes. Probably the hardest problem was making sure that the slots for the shelves were at the correct height on the various pieces of wood. The initial design was intended to be built from a 4x4 piece of 3/4" CD plywood. But I found that due to the kerf cuts I was losing too much interior size. On this box it is critical that the dish pans fit inside, and so I changed my plans and used 1/2" plywood for the front and back. This also helped reduce the weight a little. As mentioned above, it is also impossible to get a double mantle Coleman propane lantern in this box as designed. I purchased Mighty Lite lanterns for these boxes, as shown in the photo. If you want to use double mantle lanterns, you need to increase the overall box size by 4-5".

I cut the sides, top and bottom, and center board first. Then notched them all for the shelves.

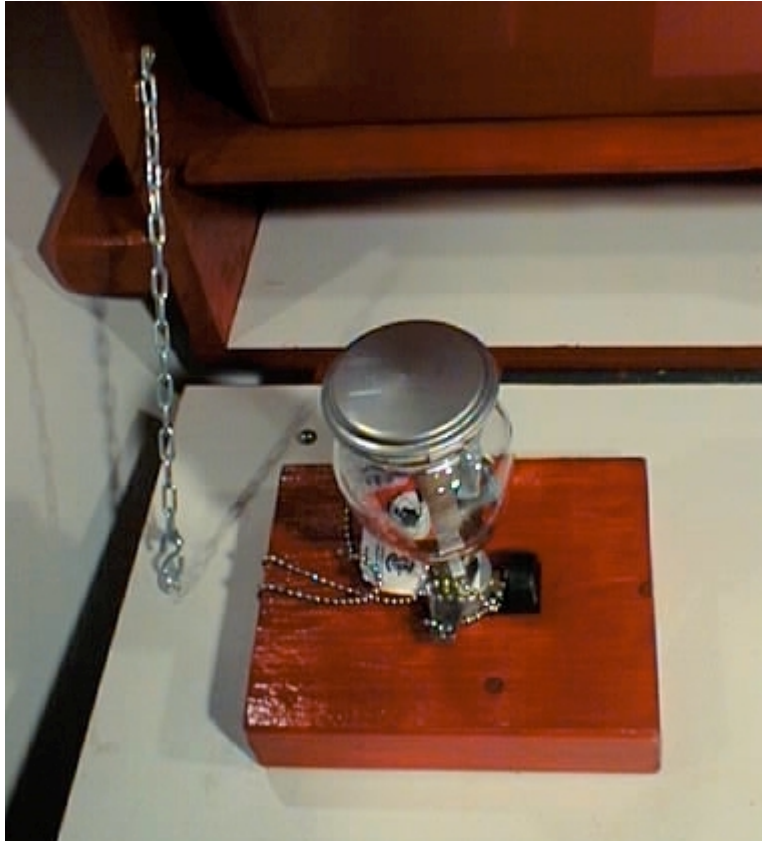


Then cut the 2x4 pieces for the top of the sides. **Note** that the 2x4 pieces have a notch in them for the 3/4" plywood to fit in for a smooth side. (See the photo.) I wanted the weight of the box to be carried by the sides, rather than have the carrying pieces screwed onto the top, and then have the weight being carried by the screws. The top of the box is glued and screwed from below into these 2x4's, then the sides are glued and screwed on. (**Note** that if you do this in reverse order it's darn hard to get the screws from the top into the 2x4's.) **NOTE** - that the 2x4 top pieces hang over the front by about 1/2-5/8" to allow for the door to close and for the barrel bolt to be mounted.

After notching the center board for the shelves, make sure you put it in right-side up. Then glue and screw all joints together. And then square up the entire box. Make sure that the center board is flush front and back. Check to see that the shelves are ok. I made them so they can slide out for cleaning, and for ease of installing the leg holding 2x3's on the sides.

At this point you have a choice. If you wish to put laminate on the inside surfaces, you should do it before putting on the back.

After laminating the inside surfaces, you can now glue and screw on the back.



Next you can attach the hinges, and the front door. Remember to laminate it first, if desired. The hinge is a standard 4" hinge, but due to the 1/2" plywood front, you cannot use the 3/4" screws that come with the hinge. I held them on with stainless screws and washers on the top. The screws are held on with ylon-insert nuts on the bottom. Now mount the barrell bolt on the upper 2x4's. Note that you do not install the barrell that the bolt would slide into. We rely on our trusty friend gravity to hold the bolt down. See the photo. The door is held in the open position by a piece of chain, which is attached to the door with an eyebolt. I drilled a hole through the door, made sure it cleared the sides, and put a nylon-insert nut on the outside. The chain is held to the eyebolt with an S hook, which is oversized for strength, and has had the loops closed so it won't fall off. The chain is screwed into the inside of the box with a #10 3/4" screw. **NOTE** - because the chain will be in the way, you need to notch the left shelf to get the door to close. You can see this notch in the photo if you look carefully.

Now cut the 2x3's for the leg holders and drill the 1 1/4" hole for the legs. The holes in the leg holders are at 70 degrees. This was also a tricky bit of work. I jury-rigged up a jig to hold the 2x3's and drilled the holes at about 70 degrees. The holes in the 12" pieces go all the way through, the holes in the 8" piece are blind, i.e. do not go all the way through. After installing them, I used a 3/4" sanding tool that fits into an electric drill to fine-tune the holes. **NOTE** the holes should be oversized to allow for swelling during weather. Note that the bolts are on the outside edge of the upper, 8", 2x3, and on the inner part on the lower 12" 2x3. This is for clearance for the holes for the legs. I used carriage bolts because they leave a fairly smooth surface on the inside of the box. The actual position of these pieces is not critical, but you need to watch out for the shelves. It is easier to slide the legs into the holes, then position the pieces, drill the holes for the carriage bolts, and then bolt them in place. (The entire assembly laying on it's side during this operation.) After attaching both sets of leg holders, when you stand up your box it is hopefully close to level, and doesn't rock too badly. If it rocks a little don't worry. Remember the ground is seldom level and flat where Boy Scouts camp.

If you haven't already, drill the upper 2x4's with 1 1/4" holes for the legs for transporting the box. Again, sand these to be oversized. (I actually experimented with using 1 3/8" spade drill, but I found that the hole was too big, and there was too much slop. I think it would cause the entire box to rock too much.)

Now paint it a nice shade of green or red, and turn it over to the patrol.

## Features you may want to add.

- A bulletin board on the back for duty rosters, news, etc.
- Skids on the bottom. The hinges are in the "line of fire" on the bottom, and skids may help their longevity.
- Handles on the sides. The leg holders work reasonably well for moving the boxes short distances, but if you want to spend the money, handles can easily be attached just above the 8" leg piece.
- I used some scrap 2x6 and made shipping stands for the propane lanterns. They have a 1" hole drilled in, and a notch off the hole for the control knob. See the photo for an example.
- Cut off the excess length of carriage bolts, or use a cover. These don't stick out too far, but I cut the excess off of my boxes for safety, and to keep down the scratching during shipping.