Patrol Boxes

Here are the plans for a wooden patrol box with metal legs. These boxes were designed and used for the national jamboree a couple years ago. After the jamboree was complete, the troop sold the boxes with the camping equipment in them as a fundraiser. The typical contents of a patrol box include a propane stove, pots and pans, 2 dish tubs, soap, cooking utensils and other items your scouts will need for outings.

The patrol boxes were made from fir plywood 9/16" thick for the most part. Some extra parts were pine cleats, and oak skids to help with stability and durability.

The leg system has 3 sizes of emt (electrical metal tubing) and plastic sleeves to shim the parts that must fit within the other parts. The legs were 'held' together with bungee cord, or 'shock-cord' on the inside. The legs seem to work just fine, even if the wobble a little.

I have included a material list along with photo's and some detail sketches that hopefully will allow you to make your own patrol boxes.

Front Closed with Legs on

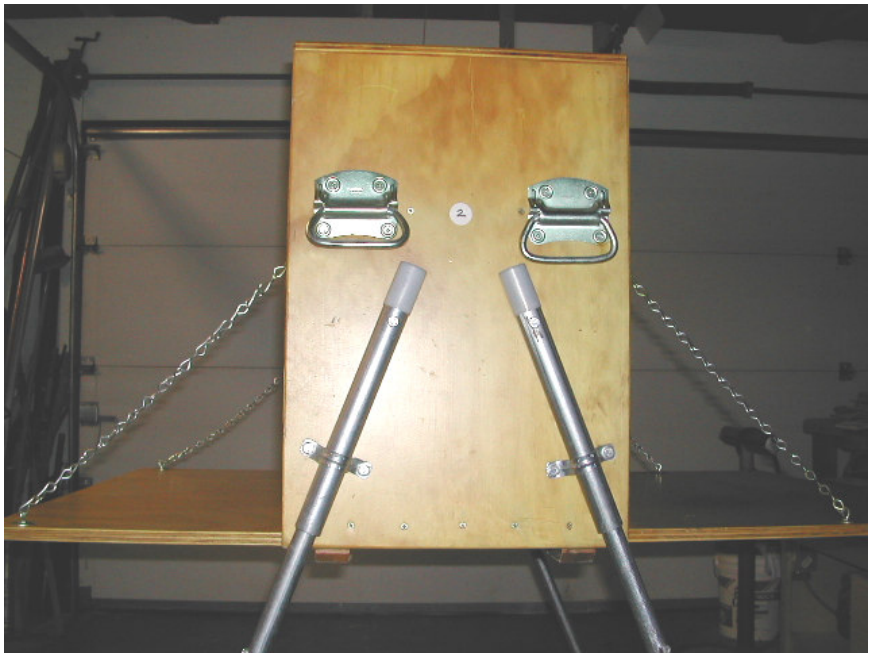
Materials:

1@ 15" x 33-1/8" Top	fir ply 9/16" thick
2@ 21-3/8" x 15" Ends	fir ply 9/16" thick
1@ 31-7/8" x 20-1/2" Big Front Door	fir ply 9/16" thick
1@ 13-7/8" x 32" Bottom	fir ply 9/16" thick
1@ 13-7/8" x 32" Divider (shelf)	fir ply 9/16" thick
1@ 32-1/8" x 6-3/4" Back Stiffener	fir ply 9/16" thick
1@ 31-7/8" x 13-3/4" Back Door	fir ply 9/16" thick
2@ 1-1/2" x 33" Skids	Solid Oak
6@ 3/4" x 1-1/2" x 12" Cleats	Solid Pine
1@ 3/4" x 1-1/2" x 32" Shelf Front	Solid Pine
1@ 3/4" x 1-1/4" x Top Back Cleat	Solid Pine
2@ 1-1/2" x 30" Piano Hinge	measured 1-1/2" open
4 pieces chain @ 18" long	1" long links approx.
12 "T-Nuts" ¼-20 thread	
4 Large Handles	Chest-Type for moving case
2 to 4 Latches, twist-type	Used for securing doors closed
8 @ 1/4x20 bolts ¾" long	Used to secure lower straps on legs
4 @ 1" Pipe straps	Use with above bolts to hold pipe to wood
4 @1/8" "T-Nuts"	Use to secure chain to fold down doors
4 @ 1/8" Eyelet Bolts	Thread through doors and secure chain
4 @ 1" Dia. Washers with 1/8" hole	Use on (inside) of eyelet bolts (at chain)
4 @ 1/8" Aero nuts (nylock insert)	
4 @ 1/8" x 1" Bolts	Use on Leg Assembly, shock cord bottom
4 @ ¼-20 x 1-1/4" long	Use on Leg Assembly, shock cord top
4 @ ¼-20 Aero nuts (nylock insert)	
8 @ "S-hooks" approx. 1" long	Use inside Legs to attach shock cord to
4 Rubber leg tips for ½" Leg	
4 @ 1" x 11-7/8" Emt	Tubing for outside of Box (leg reciever)
4 @ 1" Emt caps	Top of tube closure
4 @ ¾" x 30" Emt	Top half of leg assembly
4 @ ½" x 30" Emt	Bottom half of leg assembly
4 @ 7/8" x 9" Plastic PVC pipe	1/16" wall, for top tube shim inside 1" pipe
4 @ 5/8" x 12" Plastic PVC Pipe	1/16" wall, for leg shim inside ¾"pipe
4 pieces inner tube sections	Use to secure legs together when folded

Most of these materials can be purchased at Home Depot. The specialty twist catches can be obtained through McMaster/Carr catalog.

Current design problems:

1. Weight. Boxes can be pretty heavy… but that's probably something that can't be fixed.
2. Door Warps. Use 2 latches on each door instead of one.
3. Piano hinge screws come loose at ends. Use small bolts at end of hinge instead of screw to make hinge more secure.
4. Tubes at outside can get smashed, making fit of tubes hard. Suggest maybe moving tubes inside to protect them.
5. Multiple piece legs with shock-cord can be complicated. Suggest maybe building one-piece pipe legs. May need to make longer to get legs inside.
6. Must un-pack to get legs out. Maybe make legs more accessible for set-up.



End View Open

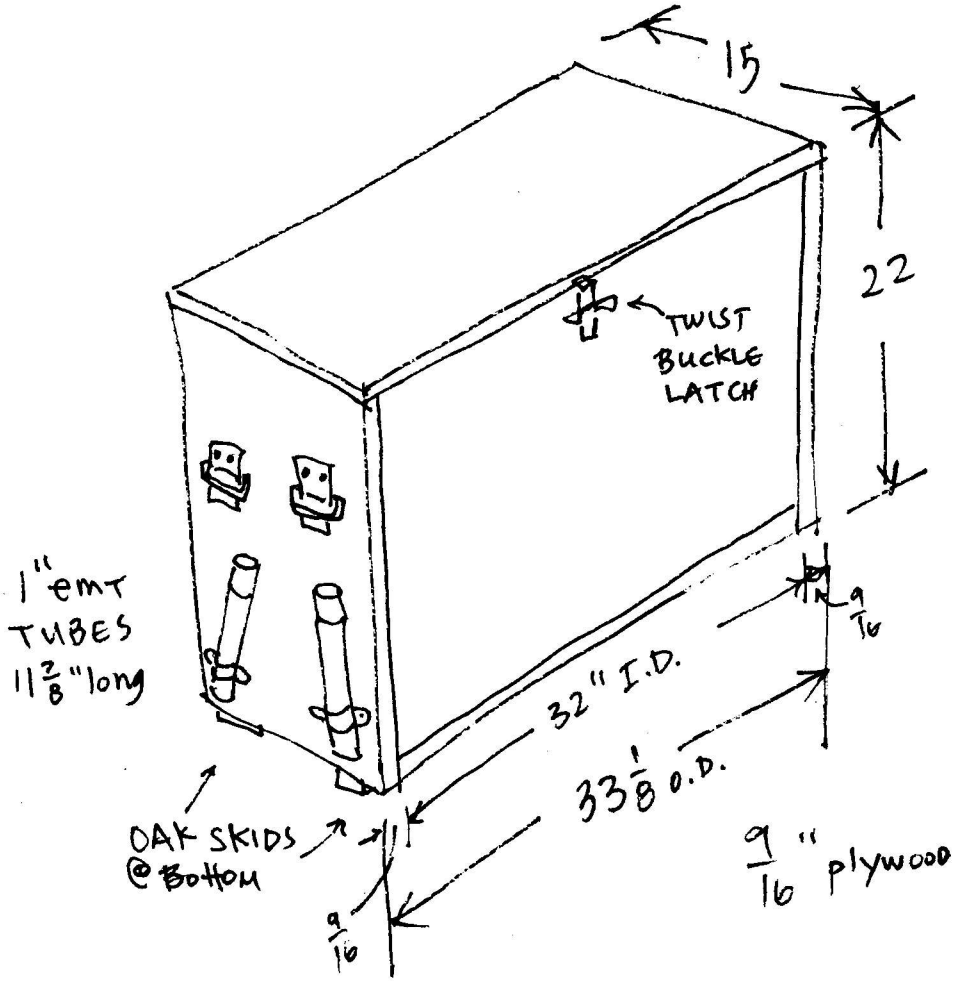
Detail Inside

Other Ideas:

1. Add wheels for transport.
2. Add hardwood faceframes to both sides to stiffen boxes.
3. Add hardwood at top corners for better wear in transit.

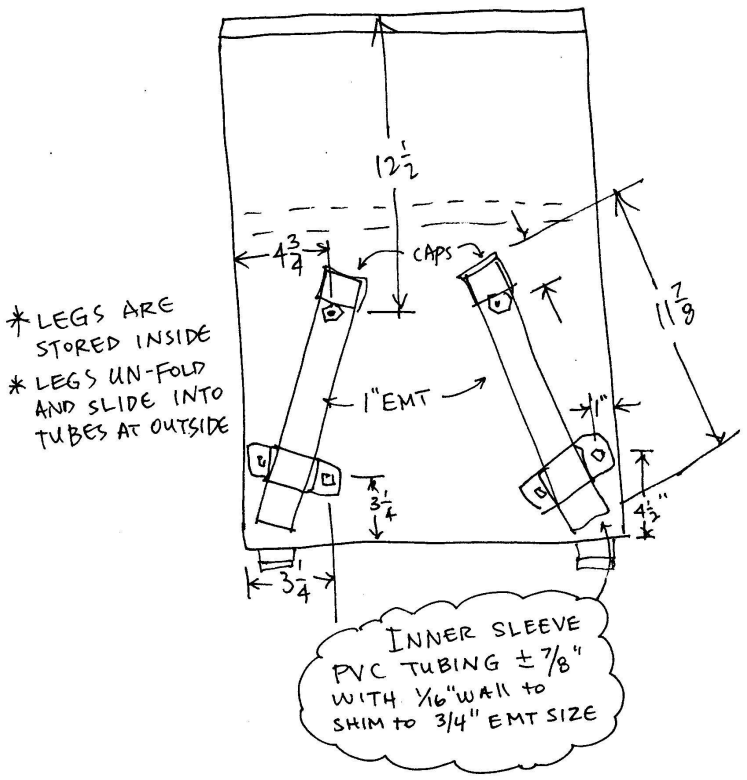
Front View Open

Outside Open


15
22
TWIST BUCKLE LATCH
1" emt TUBES 11 2/8" long
9/16
32" I.D.
33 1/8 O.D.
OAK SKIDS @ Bottom
9/16
9/16 " plywood

PATROL BOXES

SIDE VIEW OUTSIDE



* LEGS ARE STORED INSIDE
* LEGS UN-FOLD AND SLIDE INTO TUBES AT OUTSIDE

PATROL BOXES

3/4" EMT QTY 4

1/2" EMT