

So, you want to make your own lightweight backpacking stove? Just a few things first. These instructions are provided as guidelines. They assume that you understand the inherent dangers involved with sharp tools and fire. Please be careful and have fun. I am not your mother, if she would yell at you, don't try this at home!

Step 1—Gather tools and materials



If all you have is a pocketknife, you will need to improvise but you can still make it work. These tools are what I used because I had them on hand.

Step 2—Score can for top cut

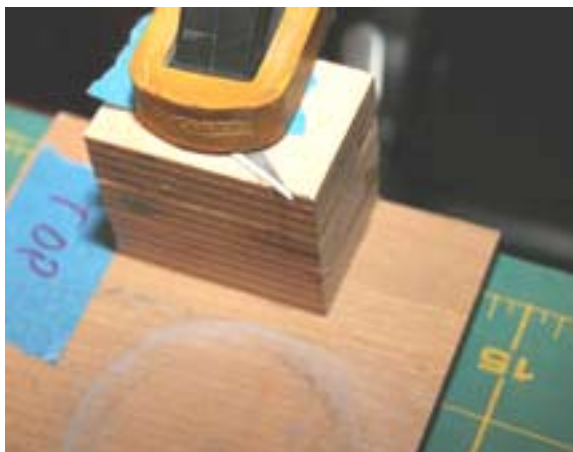
Flip the can upside down on a firm surface and score at it $1\frac{3}{8}$ " down from the top (note, the can is



upside down in the picture). Put some pressure down on the can and rotate the can clockwise keeping light pressure against the knife. You don't need to cut through the can, just score it neatly all the way around. See picture for example of a good score. There should only be a single line, if there are several, time for another can...



I made a small jig with a block $1\frac{3}{8}$ " tall since I make lots of these with the Scouts. You can use a book, a stack of washers, whatever you have handy. The exact height isn't critical but you might have to adjust the other pieces to fit.



Step 3—Score for bottom cut

Same as step three but score at $\frac{7}{8}$ " up from the bottom.

Step 4—Cut side



Using a sharp knife, pierce the side of the can and extend the cut from the top score to the bottom

score. Try not to cut past the score lines. At the score lines start to peel the middle part of the can.

Step 5—Peel side out

Continue to carefully peel the center section away from the top and the bottom. It isn't the end of the world if it tears away from the line. Just try peeling from the other side. If that tears too, back to the



fridge for another tasty beverage...

Step 6—Punch burner holes

Using a hole punch, punch eight evenly spaced holes in the top to form the burner. Punch them just be-



low where the can slopes up to the top.

Step 7—Crimp base

Using a small pair of pliers, crimp the base every 1/4" or so. This makes it easier to assemble the stove. It doesn't need to be pretty but try to avoid getting dents all the way down to the roll at the bottom as the completed stove will likely leak there. Test fit the top and make sure it will slip over the bottom. If it doesn't, go back and make the crimps a little bigger.



Step 8—Cut inner wall to size

From the center section, cut a piece 7 1/4" long by 1 3/4" tall. This will form the inner wall of the stove. The easy way to do this is with a knife and lightly score the piece. Then bend the piece at the score and it will snap cleanly. A pair of scissors will work just as well. Don't forget to ask Mom if it's ok to use her good scissors!



Step 9—Cut fuel holes in inner wall

Using the hole punch, punch three holes at the bottom of the inner wall. These are only actually half a hole. Again, exact placement isn't a big deal, this just allows the fuel to go between the inner and outer walls.



Step 10—Assemble

Now it's time to make it look like a stove. Take the inner wall and coil it into a circle and place it into the groove in the top. It should drop into the groove and hold its shape. Slip the top over the bottom, the inner wall should slide into the groove in the bottom. Evenly press the top down until the inner wall is touching both the top and bottom grooves. If everything is right, the bottom edge of the top will be sealed neatly just above the roll at the bottom of the base.

**Step 11—Test**

Now comes the best part, testing, woohoo! Put your new stove on a sturdy, hard, preferably fireproof, surface. In the middle of your Mom's heirloom quilt is a bad, very bad, idea.

Add a tablespoon of denatured alcohol and light with a match or lighter. Be careful, in bright light it is almost impossible to see the flame! In about 30 seconds the stove will warm up and the flame will



jump to the burner holes. In the picture the front

burner hole is just starting to light. After another 10 seconds or so all the burner holes are going well. Put your pot carefully on the stove (don't forget the



lid!) so it is balanced. In about 5 minutes two cups of water will be at a rolling boil. Cool, it works!

Notes:

- 1) Fuel, denatured alcohol is the preferred fuel. It is easily available at most hardware stores in the paint section. Fuel line antifreeze (Heat) will work and can be found in auto part stores. Isopropyl alcohol from the drug store will work but not as well as it contains water. Even the 99% Isopropyl will leave your pot sooty.
- 2) Do not refill the stove until it cools down! Unless being in the middle of a fireball is your idea of fun.
- 3) A wind screen will help your stove work more efficiently. Simply bend some heavy tinfoil into a ring a little bigger around than your pot. Using a hole punch, punch lots of holes at the bottom of the foil to allow air for combustion.
- 4) See <http://zenstoves.net> for more ideas
- 5) This design is not an original. It is a compilation of a number of other stoves. It is my attempt at simplifying the construction for our Scouts. No warranties are expressed or implied. If you do something dumb, I'm sorry but I can't be held responsible. Call your mother and tell her you love her. No really, I'll wait! Please enjoy your new stove responsibly!