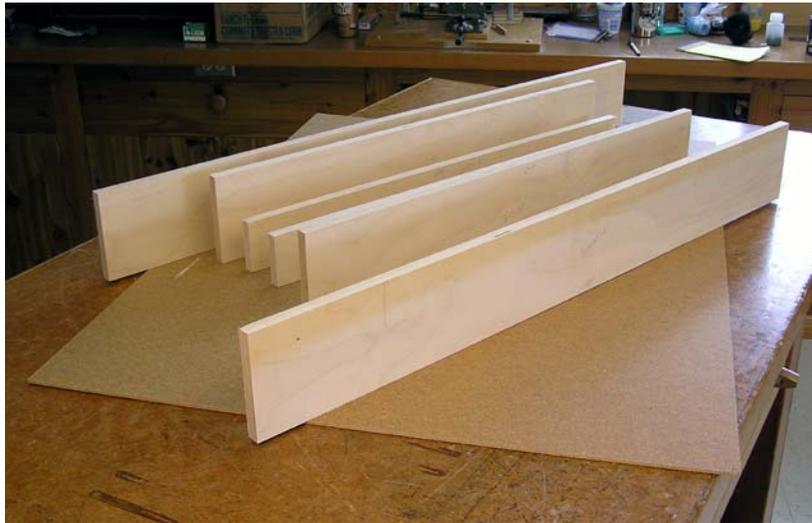


Monday, February 04, 2008

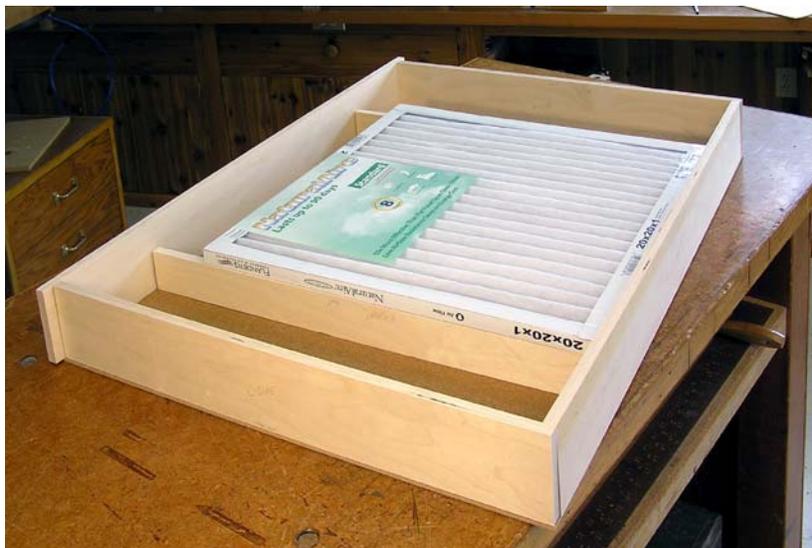
## Folding Wall-Hung Spray Booth Chapter III: Filter Cabinet

Dear Conscripted Recipients,

The wall-mounted filter cabinet, which holds the disposable filters and directs the airstream upward into the venturi, was quite simple to build. The first step was to rip and crosscut the rectangular pieces: top, bottom, two sides, two filter supports, and back:

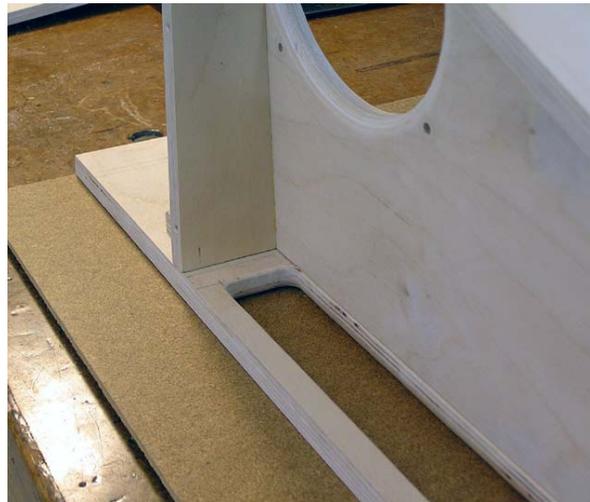


The back is tempered hardboard, the rest 1/2" Baltic birch. This test fit shows how they go together:



(By the way, that prominently marked filter size (20 x 20 x 1) is nominal at best. This filter actually measures 19.625" square x ~0.75 deep. This mattered when setting support spacing.)

A slot in the top passes air through to the venturi. The slot is 17.75" long x 1.5" wide (26.6 in<sup>2</sup>) and should not contribute undue impedance. The intake-side edges are rounded over where appropriate to smooth airflow:<sup>1</sup>



The frame went together quickly with finishing nails and glue. No fancy joinery needed here, just simple butt joints. I temporarily tacked on the back, using the “squarest” corner to help align the frame, then clamped everything down to the workbench, so it would dry square and (I hope) stay that way:



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<sup>1</sup> That’s probably overkill, but that’s the kind of thing you do when you’re in Dutch with the Wifely One and doing your best to hide out in the shop...

To hang the cabinet, that now-surplus 115VAC, 20A electrical outlet had to come out. I “wire-nutted” the hot and neutral leads, ignored the ground lead, and crammed everything back in the hole. A blank cover plate will serve as an inspection access panel:



Scrap wood props helped me to set the frame at the right height, level and centered on the available space; and to decide where to cut the electrical access hole in the back:



Then I glued and bradded the back on permanently.<sup>2</sup> When dry, I hung the filter cabinet with two 1/4" lag screws through the mounting ledger into wall studs:



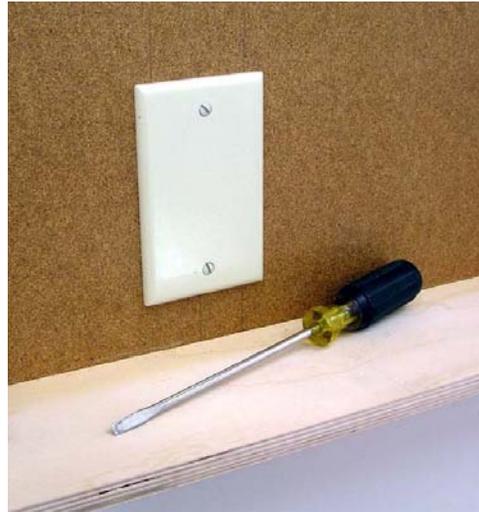
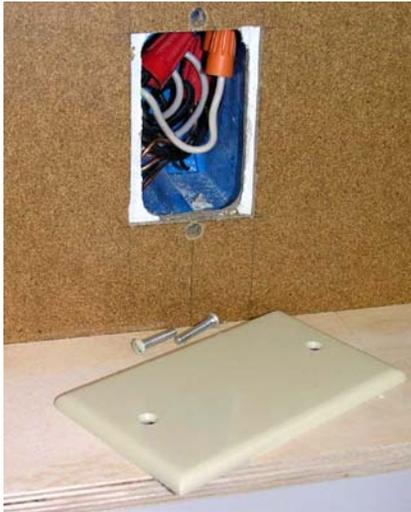
I was rather relieved to find that I had, indeed, cut the access hole where wanted. I know this is the way things are *supposed* to work but, well...let's just say that by now I have lots of hard-won experience fine-tuning things that came out *almost* right:



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<sup>2</sup> This sort of thing goes much quicker now that I have shop air installed and can use my 18 ga. brad nailer without first having to drag in my old compressor—through the snow, of course—from the maintenance shop.

Heck, even the cover plate fits the way it's supposed to. Amazing...



That's about it for this installment. Next I'll tackle the folding platform and support arms. Stay tuned.

Steve

P.S. I posted drawings for the filter cabinet here:

<http://1stclass.mylargescale.com/dawgnabbit/spraybooth/cabinet.pdf>