Critique: Using LVL is Pretty OK

by Christopher Schwarz

If yellow pine was sold everywhere in the United States, then we wouldn't have had to build the LVL Workbench. However, I'm really glad we did build it. Laminated veneer lumber, sometimes called LVL or Microlam, is remarkable stuff.

I first encountered the material in the early 1990s in the workshop of David Ross Puls, a woodworker and artist in Charleston, S.C. He was picking up offcuts of the stuff from building sites and cutting it on the bias. This exposed the laminations in surprising ways, which suited his furniture, lamps and sculpture.

He told me all about the virtues of the material, including its stability and rigidity. I was worried about what the adhesive would to the knives of the machinery. He's the one who convinced me that it wasn't as big a deal as most people think. And I marveled at the enormous chunks of LVL he had on his racks, stuff that was 6" thick, 12" wide and 10' long.

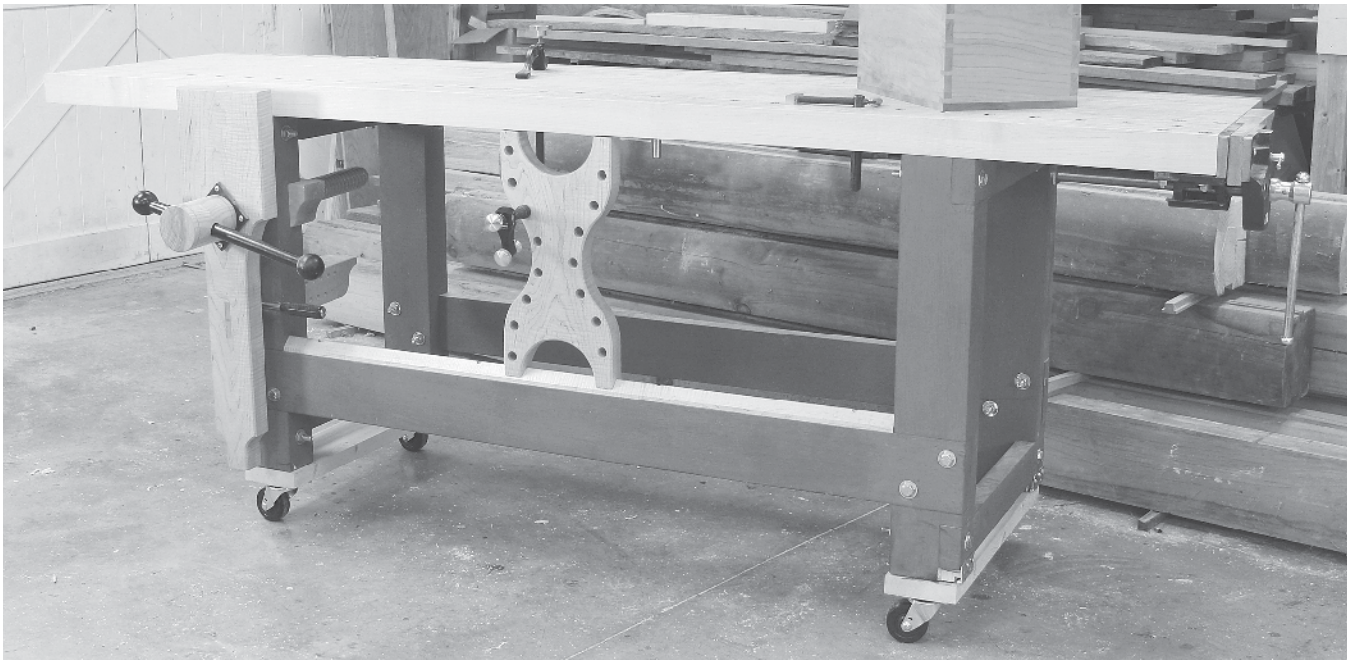
Meanwhile, readers of our magazine were complaining that they couldn't find yellow pine or Douglas fir at their home centers to build their workbenches. They wanted an inexpensive and widely available material. We put two and two together and ordered some LVL.

Stiff Top; Shifty Base

The LVL Workbench, which Megan Fitzpatrick uses in our shop, is what I would call a "qualified success." The LVL top is fantastic. It is remarkably tough, stable and has remained flat after a year of abuse. Thanks to the copious adhesive between the lams, I think the top is even denser than the yellow pine top of my first Roubo workbench.

The base of the workbench, however, is another matter. There were two goals with the base: Create a knock-down base that could be built in an afternoon, and find out if LVL was a good material choice for a base.

I'm quite happy with the bolt-together base. We honestly cut all the joints for the base and assembled it in just a few hours. But the LVL doesn't seem to be the right choice for a material. When we bolted it together, the lams tended to get crushed and seemed to delaminate a bit – at least I think that's what hap-



WORK IN PROGRESS: This bench began as a materials experiment, and we continue to use it as a test case. I recently added heavy-duty casters on a base that flips in and out of position so we can move it around the shop. And, I'm about to add a row of dog holes along the back edge to line up with the new Veritas Quick-release Tail Vise that we installed.

pened. In any case, the bolts and nuts tend to work loose more than I like. Perhaps this will stop some day when the lams are crushed to their maximum density?

If we built this bench again, I would use solid wood for the base. Perhaps poplar, yellow pine or whatever I could find that wasn't completely lightweight.

If you make this bench, or a knockdown variant like it, here are some other modifications I'd consider:

1. Attach the top with both lags and "bullets." I dislike knockdown workbenches, but I know that they are a necessary evil of our mobile society. So if you are building a workbench that travels, you need to overcome the limitations of your hardware. If you attach the top using only lag bolts and you use a leg vise, you are going to run into a problem.

Here's why: A leg vise is so powerful that it will push the top off the base, reaming out the holes for your lag bolts. (Note: If you use a quick-release vise as a face vise then you won't have this problem. Leg vises transfer their pivoting power from the base onto the top.)

So you need to keep the front edge of your benchtop in line with the front leg of your base. The solution is what are commonly known as "bullets." These are essentially loose ¾"-diameter dowels that are inserted into the base and the top. They're called bullets because you shape the top of each dowel to a bullet shape to make it easier to drop the top onto the base. These solid-wood dowels plus your lag screws should keep everything in line. So add a bullet. We did.

2. Countersink the hex-head bolts that attach the front stretcher to the legs. I left these bolts proud so there would be more meat for the bolts, nuts and washers to hold onto. But they sometimes get in the way of the occasional clamping operation.

3. Use lock nuts instead of standard nuts. These nuts have an integrated plastic part that keeps them in place. It wouldn't hurt to throw a lock washer on each joint as well. You want the bolt assemblies to stay put, so spending a little more money (we're talking about pennies here) is a good idea. Heck, I'm planning on making this change on our LVL workbench right now.

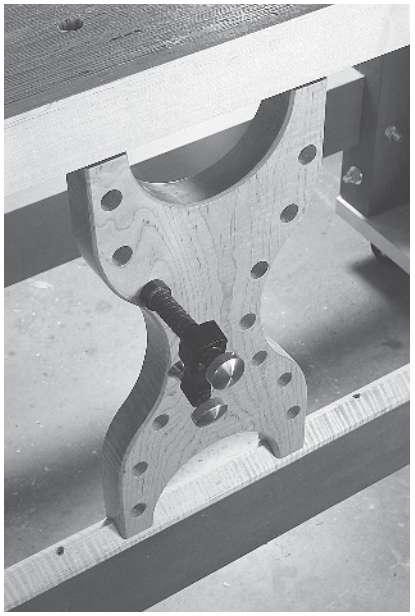
Is it a Keeper?

So what do I like about this bench and what would I do again?

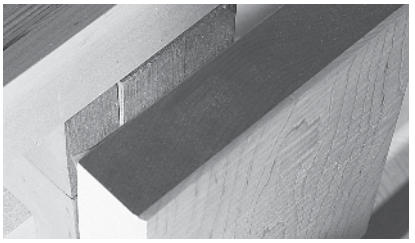
1. I really do like the LVL top. It doesn't look traditional, but it does look cool and it works extremely well. And the video we made of Megan jumping on the LVL top generated a few fans for her. I'm not sure if this was good or bad. Some of those fans were in prison.

2. I was surprised by how much I like the painted workbench base. The milk paint we used takes a real beating and just looks better and better with age. I used the same stuff on my toolbox 10 years ago – milk paint is remarkable stuff for workbench equipment.

3. The shape of the "sliding deadwoman" is both attractive and useful. I developed the shape based on a number of historical examples I've encountered. The circle-shaped gap at the top and bottom is actually a nice place to apply a clamp, it's a nice grab point when you move the appliance and it lightens the whole assembly, making it easier to slide. And I think it looks great, too. I'm sure I'll use this shape again.



USEFUL CURVES: The design of the sliding deadman looks good, and is also practical. The open spaces in the curves are a great place to apply clamp pressure.



A BIT SHIFTY: The chop of the leg vise has pushed the top out of alignment with the front leg and one of the stretchers. This is annoying and can damage soft pieces of work.

IT'S PERSONAL: A fellow editor painted this 8-ball on the end of the vise's handle. Why? We don't know.

Pluses & Minuses With this Bench

+ LVL top is stiff and stable
+ Bolt-together base is fast to build
+ Milk paint is a good, durable choice
+ Sliding deadwoman is a great design

- LVL base isn't as durable as hoped
- Top needs both lags and bullets
- Base requires lock-nuts and washers