

June 2001

Mr. Peter Lammert  
State Utilization Forester  
Division of Policy and Management  
22 State House Station  
Augusta, Maine 04333

Dear Mr. Lammert:

I enjoyed your talk at the “last-minute-get-some-credits-so-you-remain-certified” meeting in Brewer last December. You are an excellent and entertaining speaker. Here I am responding to something from that meeting – a half-year later!

You distributed copies of the book, *Felling and Bucking Hardwoods, How to Improve your Profits*, by F. J. Petro. In that book on pages 3-5, the author pushes for the Humboldt undercut, in order to save some wood.

Sorry, I don't buy it.



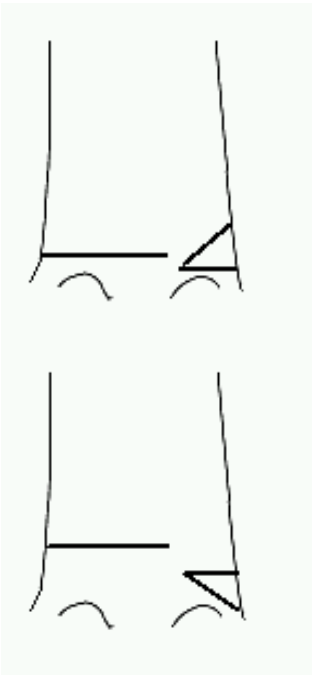
I've heard that many times, and I always figured that some day I would look into it. Today's the day!

First of all, it seems reasonable the method got its name from the Humboldt region of California.

They had big trees there.



Some with lots of pitch. (Bob Van Natta of Oregon has told me that sometimes *gallons* of pitch would come out if the stump were cut into.) And they had trees with large amounts of butt rot, and swell-butted trees. So the trees were cut with high stumps, some even like this.

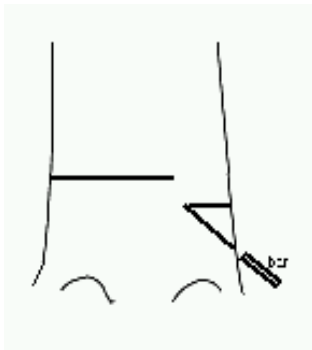


When chain saws came along, they were often cutting smaller trees, but trying to cut at ground level would be a real back-breaker with 70 pound saws, so they “bellied-up” to the tree like this.

Now in those situations, somebody got the great idea that if you cut the notch by making the second cut *up*, the log would not have any wood missing, and it would be A Good Thing.

But now some say we should cut like that here. But if we are cutting as low as we can, there are only two ways to cut up from the bottom: dig big holes (absurd!), or raise the whole cut so that you can get under it.

Now my point is that the wood saved by the Humboldt cut is *less* than the amount lost by raising the cut on the tree in order to fit the undercut in.



To prove it, I calculated how much wood was in the undercut, and how much wood was in the amount the whole cut was raised. Calculating the volume due to raising the cut wasn't hard; you figure the volume of a disk of the same diameter as the tree and as thick as the amount the whole cut is raised. And it's raised at least as much as the vertical component of the upward cut.

I say “at least as much” because you still haven’t any room to put the saw in. If you have the bar parallel with the ground, you’d need at least 4-5 inches more to fit it in.

If, instead of cutting parallel, you pivot the bar around, you need more – if the bar is much longer than the tree, a *lot* more!

And, by the way, raising the cut goes all the way across the log; *all* that fiber could have been lumber!

Calculating the volume of the undercut itself takes a little more work, but, hey, once in a while I have to show my students there’s a use for all that stuff I pour into their heads, The resulting write up, included, is surely overkill, and no one will probably ever read it, but if anybody asks how I made the calculation, now they’ll know.

If anyone wants the computer programs you can play with, have them drop me a line..

And don’t get me started on “open face” cutting – we could be here all day! (But as far as the volume part of it, you can calculate the volume with one of the programs, or by the equation.)

Sincerely,

Red Sarna  
P.O. Box 106  
Penobscot, ME 04476  
326-2362 office (Maine Maritime Academy)  
326-8219 home  
[sarna@mma.edu](mailto:sarna@mma.edu)