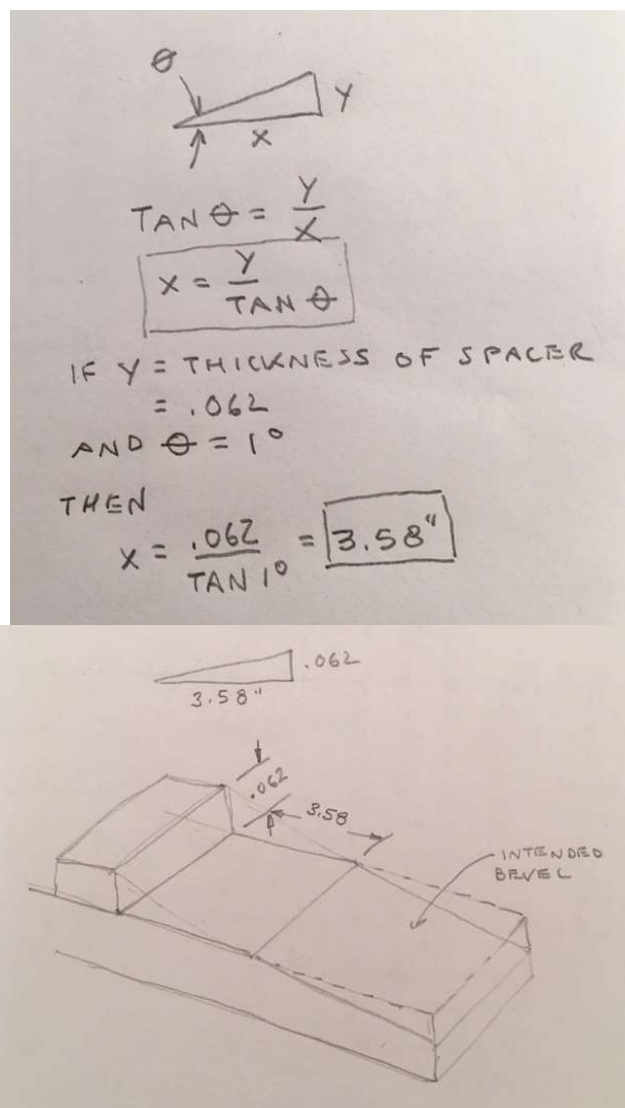


## How to plane a neck relief bevel

Have you ever wanted to attach a bolt-on neck to a reinforcing plank, and needed to add a slight angle for the neck? In my case, the angle was about  $1^\circ$ . I needed to produce this angle on the plank for about  $4\frac{3}{4}$ ". It had to be flat, square and accurate. Sawing a slight angle is not easy. How was I going to do it?

The answer was to use a shim to set the plane on an angle. You measure the thickness of the spacer and use basic trig to calculate how far from the start of your bevel you need to set it to get the plane on the correct angle.

From basic trig, the tangent of an angle is the 'rise over run' or  $\tan = y/x$ . Let's say you want a  $1^\circ$  angle and are using a tongue depressor for the shim, which is  $1/16"$  (.062) thick.



Bevel setup calculation

The resulting calculation was 3.58", which was the distance away from the START of the bevel to the spacer. Measure beyond the start of the bevel for the length of the bevel you

want. So, if you wanted another 4.75", the spacer would be  $4.75+3.58=8.33$ " back from the end of the board.

I simply glued the spacer to the work piece. It is very important that you attach the spacer SQUARE to the work or your bevel will be twisted. Removing the spacer later is simple.

Then you simply plane away until the bevel reaches the line designating the start of the bevel. I find it useful to put a bunch of squiggles in pencil across the bevel line so I can see when the plane gets there.

After planing is done, you can lay the face of the bevel on a sheet of sandpaper on a flat surface, like a glass plate or a scrap piece of granite counter top to true it up. I found it comes out pretty darn close to perfect so it needs very little sanding.



Setup with spacer glued in place and bevel line marked



Planing. The spacer tilts the plane up from the work.



At first, you only cut near the end of the board. As the work progresses, you cut more and more until the bevel reaches the line.



The finished bevel. Note the 'squiggles' that show that the cut has reached the line.

Some things to keep in mind:

- Your plane has to be long enough to stay on the spacer until the blade has cleared the end of the work.
- Avoid cutting your spacer by only retracting the plane enough to start the next cut.
- The plane works more easily if you wax its sole occasionally and you keep the blade sharp.
- Make sure your work is held firmly and that you are set up so the plane won't hit the vise or clamps. This will not only damage your plane, but it will change the angle!

Good luck!