

Sawmill Forum

BY CASEY CREAMER

Here is one that a lot of us saw doctors encounter every now and then that can be easily overlooked and yet cause a number of fairly minor problems. Occasionally we will notice when cleaning a saw prior to working on it that the guides are set incorrectly.

Let me first say that although inserted tooth circular headrig saws all have a set of what we call guides, that does not mean that they are considered to be “guided saws.” There are gang edgers that have “guided saws,” and Pacific Hoe used to manufacture a “guided headrig” system. Guided systems are usually set up to have floating collars or a splined bore that floats on the mandrel as part of that system. A traditional headrig does not have a floating collar and is therefore not referred to as a “guided saw.”

So, why do these saws have guides if

they are not guided saws? Well, they really shouldn't be called guides because they are not supposed to be guiding the saw. Their real purpose is to try to catch the saw if it gets into real trouble. If you get the log side of the saw hot, it will stretch, and as a result the saw will dish toward the board side and consequently run out of the log. The so-called guides will not keep the saw in the cut and sawing accurate lumber, but they will most likely contain the rim of the saw enough that it won't come out far enough to start sawing into the offbearer, or the husk that the mandrel bearings are

attached to. And if you overheat the board side of the saw, the guides should prevent it from sawing into the carriage if you are lucky. Maybe we should start calling them “catchers” instead of guides. Well that might be too progressive for an industry that still has a lot of people who think the saw should be dished toward the log side so that it can magically stand up straight when up to speed instead of starting out straight and then remaining straight when up to speed.

The proper way to set your guides is to have a minimal and equal amount of light between each guide and the saw. I prefer to set them while the saw is stationary. But because every saw has some wobble, you need to rotate the saw between the guides by hand so that the saw is not quite touching either guide at the two extreme points of the wobble. Some adjust their guides while their saw is up to speed. That's not the safest way to go unless you can adjust them while being protected inside the sawyer's booth, but then you can't get a good look at how much light you are running between the saw and the guides. You could set them where you think it is okay and then get out of the booth to eyeball them, but then you are looking right down the barrel of a running saw. That's just not a safe way to do things.

Once your guides are safely and properly set with a small and equal amount of light between the saw and the guides, there is one more component of properly set guides to consider. Where are the guides located relative to the diameter of the saw? I think you want them out toward the rim as far as possible but without touching the shanks. It is obvious that you would not want the guides to go right across the middle of the shanks, but as you put them out as far as they will go, you could easily miss the fact that they are actually just slightly ticking the very bottom of the shanks as they go around. This is the part that, when we clean the saw before hammering, might or might

Notice the crack at the bottom of the shank.





not get caught by your saw doctor. It really depends on how much the guides have intruded on the plane of the shanks and just how close your sawsmith is looking at that area of the saw.

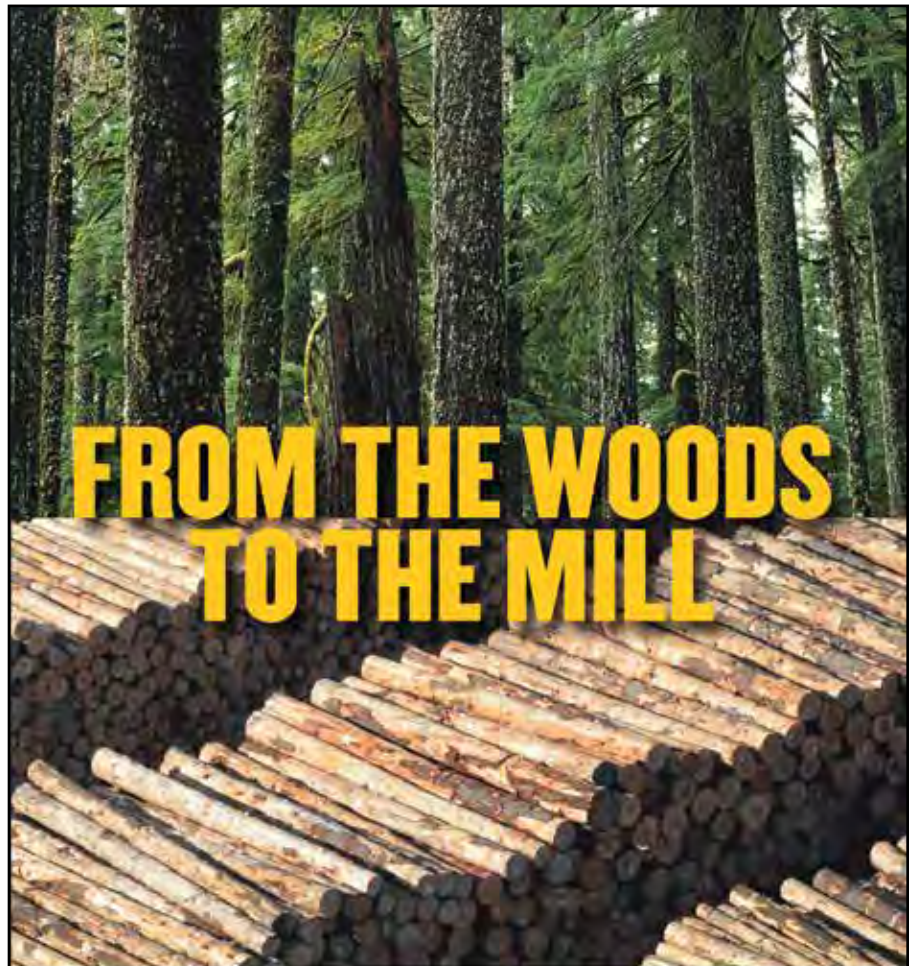
Of course when we do look at that area of the saw, we also look for excessive guideline wear because that indicates that the sawyer is trying to steer the saw with the guides. Which of course never works very well in the long run. If you need to steer the saw with the guides, you really need to either sharpen it properly or fix whatever else is preventing it from sawing accurately. When you resort to steering the saw with the guides, you are also heating the rim of the saw, which means you are stretching the rim, which is akin to taking tension out of the saw. At that point the saw doesn't have enough tension to saw properly and it will run in, out, or both as it dodges knots and generally resists a proper feed rate.

Getting back to where the guides are located relative to the diameter of the saw, if they just slightly tick the bottom of the shanks, that will set up a vibration in the rim of the saw that can create some fairly serious sawing problems. That vibration can contribute to some of the bits tending to work their way out a little, which can turn into broken bits and even broken shoulders at times. But that vibration also does something to the tension in the saw sort of like what a harmonic would do. And one additional thing that can be quite dangerous is that eventually that slight ticking of the shanks will cause some of the shanks to start cracking at the spot where the guides are hitting them. And you can easily imagine what happens when a crack that develops in a shank grows enough. The shank breaks and can easily take out a shoulder or two, or even harm someone in the mill environment.

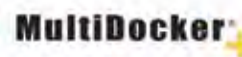
When the guides are set properly, they don't really have much to do other than to catch an errant saw in an emergency, but when they are set improperly, they sure can cause a lot of problems that will result in miscut lumber and increased maintenance costs.

Interested to learn more from Casey Creamer? You can watch our video on how Casey hammers circular saws on The Northern Logger YouTube page. Just search for "The Northern Logger" on YouTube and click the video entitled "How to Hammer a Circular Saw with

Casey Creamer." Please send future questions about sawmills and their operation to Casey Creamer, saw doctor and president of Seneca Saw Works, Inc., PO Box 681, Burdett, NY 14818, (607) 546-5887. You can also reach out by email: casey@senecasaw.com.



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