## sammill forum

## BY CASEY CREAMER

## I know you want the saws to all be flat on the log side. Just how flat is flat?

That is a good question because pursuant to my saying "show me something that is perfect and I will show you something you didn't measure close enough", there is no such thing as perfectly flat. So, now the question becomes: "How flat is flat enough?"

Not everyone who hammers saws thinks that they should be flat on the log side. But that is a different discussion. Of those who subscribe to the theory that these inserted tooth circular saws should be flat on the log side, there are a lot of differences of opinion as to just how flat, flat really is.

I tend to put up my saws to be as flat as possible, given the equipment that I have to work with. People who have lesser equipment to check the saw may think their saws are as flat as possible too. And they may be, given the way they check them. But that doesn't make them as flat as I think they should be. Now that doesn't make me any better at hammering



saws than anyone else who is aiming for the same target. I have developed some more precise ways to check my saws and that gives me the ability to get them that much flatter and also to be able to do it on a very consistent basis.

After running a number of tests, I was able to determine that all of my saws happen to stand within .005" of each other on a regular basis. Again, that doesn't make me any better at this stuff than others. It just means that I have better ways to measure in a more precise manner. It has more to do with the capabilities of the equipment at hand than it does the operator's ability. And anyone else can do the same with the same tools if they choose to.

When you first start to learn how to hammer saws, one of the toughest things to learn is how to determine when a saw is actually within a running tolerance. In other words, when you are hammering the saw, when is it finished? When is it good enough? Where do you stop? Because at some point, if you keep going, I can guarantee you that the saw will only get worse.

Let me say here that if you are aiming for flat on the log side like me, but because of the way you check the saw it won't be as flat or as consistent, that's okay. Those saws will run okay. And I suspect, on the average mill, maybe my flatter saws won't actually perform any better than those that are fairly close to being flat. On the other hand if you are dealing with a mill that is set up extremely accurately and set up for high production with high standards for lumber accuracy, that is when I think it really starts to matter just how accurately you can put up the saw.

For me, it is not that much easier to put up the saws to be close to flat than it is to put them up to be very flat. And if I decided to save a little time by sending them out when they were very close instead of very flat, I would have to waste my time trying to decide which mills could get away with their saws being close and which ones had to have them done to be as flat as possible. Then I would have to keep track of which saws were hammered which way just in case any of the mils had an issue. I really don't need that extra complication. It is easier for me to just put them all up the same relative to flatness. That way if there is a problem at the mill related to flatness of the saw, I know for sure the saw didn't go out with that sort of issue.

Now let's talk about how to check for flatness. The common method that we all learned, works well and has been in use since way before I was born. You stand the saw on the floor and you hold a long straightedge (usually 48") from 12:00 to 6:00. (Never hold the long straightedge from 3:00 to 9:00 because the center of the straightedge will sag and give you an inaccurate reading.) What you are looking for, assuming you have the proper lighting for checking a saw, is a total blackout between the straightedge and the body of the saw. If you see light between the straightedge and the body of the saw, you have a saw that is dished towards to log side. Or if the center of the straightedge rocks on the eye you are looking at a saw that is dished towards the board side. Either way that is a saw that is not ready to run.

Now this method is okay, but it does have some limitations as to how accurate a look you get. If you are holding the saw in a perfectly plumb manner, you will get an accurate reading. But remember what I said about anything that you think is perfect. What happens is that if you lean that saw just slightly out of plumb, the eye will move and give you an inaccurate reading at your straightedge. If you let the saw lean ever so slightly towards the board side, the eye will fall through and it will look like the saw is dished towards the log side. Conversely if you allow it to stand slightly off of plumb towards the log side the eye will fall through so that the saw will look like it is dished towards the board side.

Let me reiterate that if you are careful in how you hold the saw with this method, and the straightedge shows flat on the log side, chances are it will be close enough



to flat and run fine for most mills. It actually takes a fair amount of skill and experience to get a good enough reading using this method. One of the things I like about the slightly different method that I use is that it takes very little actual skill or experience to get a consistently very accurate reading. Which is why I say I am not better at this than anyone else. I am just using a method that is consistently more precise and less operator dependent.

Here is how it works: I start with a test arbor that has been leveled to a machinist's level. That way, when I put the saw on, I know it is standing as plumb as possible. Then I put the straightedge close to from 12:00 to 6:00. I say close because the straightedge has to clear the small collar that I use. A perfect blackout would be nice but if you have the right lighting, it just won't happen. So, how do I know when it is flat enough? That's fairly easy.

I hold the straightedge very carefully

without pushing on it so as not to cause any deflection. If it looks flat to me, I do something to confirm what I think I am seeing and feeling with my straightedge. With the straightedge going roughly from 12:00 to 6:00 I gently grab the saw at 9:00 and try to move that part of the saw as small a distance as humanly possible. As I move that part of the saw back and forth the saw will go from dished towards the log side to dished towards the board side and back. Here is the key. If by moving the saw in either direction just a tiny amount, I can make the saw look any flatter to the straightedge, then this saw is not flat enough yet and I need to do a little more work. But if even the slightest movement in each direction makes the saw look less flat in both directions, then this is a saw that is what I call as flat as it can ever get and therefore flat enough for any mill that it will go on and consequently flat enough for me to say this saw is done,

assuming that at the same time it also has an acceptable amount of wobble (as measured by a dial indicator) and the right amount of tension in the right location.

Anyone who wants to can do what I do. They just need to learn the proper methods, and then use the required tools to accomplish the task properly.

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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