

Sawmill Forum

BY CASEY CREAMER

During the early days of my career as a saw doctor I was a sponge for information that pertained to what I was undertaking. Of course, being a saw doctor isn't just about hammering saws. Yes, the physical labor that I do involves hammering saws, but that is not enough if you want to be successful in this trade. You also have to become well versed in what else contributes to making a mill run properly and even more important, what else can and will prevent a saw from performing properly.

There are a lot of variables in any sawmill, large or small. When a mill isn't running properly, it can be hard for the sawyer and/or mill manager to immediately determine the exact cause so they can resolve the problem. Does the saw need to be hammered? Does the saw just need to be sharpened accurately? Or does the saw now need to be hammered because you ran it with inaccurately sharpened teeth that also need to be corrected?

As you all know, that is just the tip of the iceberg when it comes to finding reasons for a saw to not run right. During my quest for useful information during these early days of my career, I kept running into a plethora of not so useful information regarding sawmills and what makes them tick. In fact, I heard so many things that didn't make sense to me that I started to write them down when I could. I put them in a folder and called it Myths and Misinformation of the Sawmill. That early collection was actually the beginning basis for the "Sawmill Forum", way back when.

Here we are 41 years later, and I continue to see and hear some of those same myths and misinformation that seem so prevalent in the lumber industry. I suppose other industries have their own version of the same sort of stuff. Last month, I wrote about people trying to paper a collar to make it work. And just last week I ran into a mill that had been papering their collar for the last five years. Fortunately, they have since machined their collars properly and are now back on the right track.

I will occasionally see a saw that is

running "long" bits. They also used to be called "Pacific Coast" or "PC" bits. The theory was that because they are longer, they would last longer. That was not only the theory, but also the myth. The reality is that those so-called long bits don't have any more sharpen-able material than a regular bit. They just have that sharpen-able material sticking out a little farther. When you put the two different bits next to each other you can easily see that the difference is really where that sharpen-able material is located. I always advise mills to stay away from that style of bits because they are not saving any money through their perceived longevity because they don't last any longer than a regular bit. So, what's the harm? Well, think about it. What is the weakest part of an inserted tooth circular saw? It is the shoulders and the tips of the shoulders which are right behind the bits.

Because these long bits stick out a little farther, that means that they provide the means for more leverage to be exerted against those tips and shoulders of the saw. They are only slightly longer than a regular bit, so they only see slightly more leverage applied against the shoulders of the saw. But sometimes that slight difference is all it takes to go from ruining a set of bits to ruining a set of bits and breaking several tips and/or shoulders that now have to be welded. And if you break enough of them, that can also be the difference between just putting in a new set of teeth and having to replace the saw with a new one. How much money did those long bits save you now?

Here is yet another example of what we are up against: Most headsaws are what we call split gauge. The most common would be seven/eight gauge. That means that the rim of the saw will measure .165" while the center will measure around .180". Remember that the log side of the saw is supposed to be flat, so that puts all of that extra .015" at the center on the board side of the saw as it tapers down to .165" on its way out to the rim. Somewhere around 20 or 30 years ago the saw sales people selling to

the mill supply houses started pushing six by eight gauge instead of seven by eight gauge with the idea that the thicker center would make the saw that much stronger and therefore more durable. And, of course, the mill supply houses followed suit and pushed that theory to the mills.

I assume they all believed the idea of that theory, but basically what every salesperson wants is something new to show to their customers and this six by eight idea fit that need. Now, if the mills were breaking their saws in the center or just outside of the collar line, making the saws an additional gauge heavier in that area would be a great fix. But most mills weren't having that problem.

Aside from hitting metal and breaking the shoulders, the most common problem we have with saws is that they heat and then that heat changes the tension and/or the flatness of the saw so that it then runs offline. Adding more metal to the center of the saw is not going to solve that problem at all. In fact, heat comes from friction. Friction comes from the wood rubbing the saw. How is adding metal without increasing the kerf going to do anything but make matters worse?

Your teeth are wider than the body of the saw. That is called kerf. And the difference between the measurement of the rim of the saw and the width of the tooth divided by two is called side clearance. The more side clearance you have the less likely the wood is to rub the saw. By going to a six by eight saw we now have yet another .015" on the board side of the saw for roughly .030" extra on that side of the saw.

We do have a board spreader just behind the saw that is designed to keep the board from rubbing the body of the saw as it is being cut. And that is enough to get past the additional .015" on a seven by eight blade. But now when you add yet another .015" things start to change a little. I say a little because it is not enough material to prevent the saw from running properly. But being that little bit closer to the board is enough to create a situation where the board side of the saw is taking



on just a tiny bit of heat with every cut that wouldn't happen with a seven by eight blade. Not enough heat or friction to prevent the saw from running properly, but this tiny amount of extra heat is just enough that it will cause the saw to need to be hammered just a little sooner than it would if it was a seven by eight. I know that a lot of sawyers swear by these six by eight blades, but that is because they are not taking all of the variables into account.

If they replaced a terribly worn out seven by eight with a six by eight, of course they are going to think the six by eight configuration is the way to go. Compared to their worn out blade, anything would be an improvement. I know they think the six by eight is stronger and will stand up better, but the reality is that the seven by eight had more than enough beam strength for what they are doing. All the six by eight has is a way to start heating just a little sooner. And once a blade gets hot, it won't matter how thick it is, the performance will suffer.

If you really need a stronger blade (which some mills do) you should go to six by seven gauge and then run 5/16" bits instead of 9/32". That way you get the added strength and are still able to maintain the required amount of side clearance to prevent friction and heating.

These myths just keep on coming. I still get to hear the greatest myth of all about how the saw should be dish towards the log side so that when it comes up to speed, the centrifugal force will straighten it out and it will magically stand up. First, at the speed we typical run, there is not enough centrifugal force created to accomplish that task. Second, if centrifugal force really did straighten the saw up, why not just start with a saw that is already standing up straight? And if the centrifugal force was going to straighten the saw, why do we have saws that get hot and lay over and run out. Why isn't the centrifugal force straightening those saws?

Some might say centrifugal force works in mysterious ways. I just say that science doesn't care what you believe.

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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