

SAWMILL FORUM

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As a saw doctor, what is the one question that all newbies feel compelled to ask you when they get their saw hammered for the first time?

Every profession has one of those questions whether you're a realtor, a car salesman or a plumber. Aside from the familiar, "how much does it cost?" question, the one thing that all budding sawyers ask during their first saw hammering session: "How long can I expect the saw to hold it's hammering?" or, simply "How long will this last?"

Of course the quick and easy answer is: "Five minutes or five years, depending on how you treat the saw." I know some mills manage to go longer than five years between hammerings, but it is true that at the very least, your saw will need to be hammered the next time you get around to replacing the worn out shanks.

Why does it need to be hammered when the shanks are replaced? That's a simple one. Replacing worn out shanks with new ones tends to stretch the rim of the saw quite a bit. As a result, you have changed the tension in the saw. Remember that tension is simply the amount of stretch in the body of the saw in relation to the amount of stretch at the rim. So, when you stretch the rim by adding new shanks, you have changed the relationship between the length (circumference) of the body and the length (circumference) of the rim. That means that you have changed the amount of tension in the saw, and chances are that it is no longer the correct amount for what you are doing.

How about the five minutes problem? Let's look at what causes a saw to need to be hammered, aside from changing shanks.

Lateral Movement

There are many things that can push the rim of the saw from one side to the other. Bits that are not filed accurately will pull the saw in or out of the log, towards the high corner of the bit. A high log-side corner will make the saw run in and a high board-side corner will make it run out. The more the saw bends in one direction, the sooner it will need to be hammered. If the log rolls onto the saw or even just moves

slightly, this will put a bend in the saw. If a sawyer gets into too much of a hurry and makes a set while in the cut, this will fold the saw over the collar line and create quite a challenge for your local saw doctor. Of course, if you want to challenge your sawsmith even more, just keep trying to make that bent saw run when it refuses to. If you took the saw off as soon as you made that errant set in the cut, there would be one very sharp bend in the saw that the saw doctor would have to figure out how to work out of it. I am talking about a bend that is often so sharp and pronounced that you can feel it with your fingers. After spending a day trying to make that crippled saw run when it really won't, you have now added a series of extra bends that now make the saw five times as hard to fix.

Another form of lateral movement that will take its toll on your saw is when your carriage wheels are worn to the point that the carriage is no longer traveling in a straight line, or your track is not straight. Either way, the saw tries to cut a path for itself and your carriage keeps moving the log onto a different path--which starts to bend the saw.

Shock Force

Shock force can easily happen if the sawyer is a bit too aggressive about entering the cut. The sawyer should be entering the cut in a gradual fashion, sort of easing into the log and then as soon as the teeth are engaged, accelerating to a normal feed rate. But some sawyers have a tendency to ram the end of the log. This sort of abuse--which nets you no extra production--will definitely create a situation where your saws will tend to need to be hammered sooner instead of later.

Hitting large metallic objects that are buried in a log would be another example of unwanted shock force that will adversely affect the working life of your saw. And of course overfeeding, which will plug the gullets and in turn stall the saw, shear the pins, and ruin the taper on the collar, isn't a way to avoid a trip to your local saw doctor either.

Heat

Heat is probably the biggest and most common factor limiting



The blue streak tells a tale of overheating.

how long your saw will run between hammerings. Of course, heat happens for many different reasons. Trying to saw with dull teeth will cause heat. Trying to saw with inaccurately-filed teeth will not only bend the saw, but while the saw is running out of the log because it is being pulled that way by the teeth, its body is exposed to the log and being heated by it. Just slightly nicking all of the log side corners of the bits will cause the saw to run out dramatically and create a bend and a lot of heat--which will alter the tension because the heat stretches the steel. And of course, there are times when a sliver or a loose knot will get wedged in between the saw and the off-bearer and create tremendous heat and put a serious bend in the saw.

Let's not forget what happens when a bearing heats a little. That heat will travel to the collar and then into the saw, which will alter the tension and make the saw run off line, which will also put a bend in the saw.

Then there is the problem where the saw is running a bit off line, so you try to steer it with the guides. This will bend the saw at the rim and in the body and stretch the rim from the heat to the point where the saw no longer has enough tension to saw properly.

So the bottom line is that if you never let any heat get to your saw, and always keep it accurately sharpened and never let it see any shock force or lateral movement, it will not need to be rehammered until you are ready to change the shanks. Of course if you managed all of that, you probably aren't sawing very much, either.

Questions about sawmills and their operation should be sent to Forum, *The Northern Logger*, P.O. Box 69, Old Forge, NY 13420, FAX #315-369-3736.

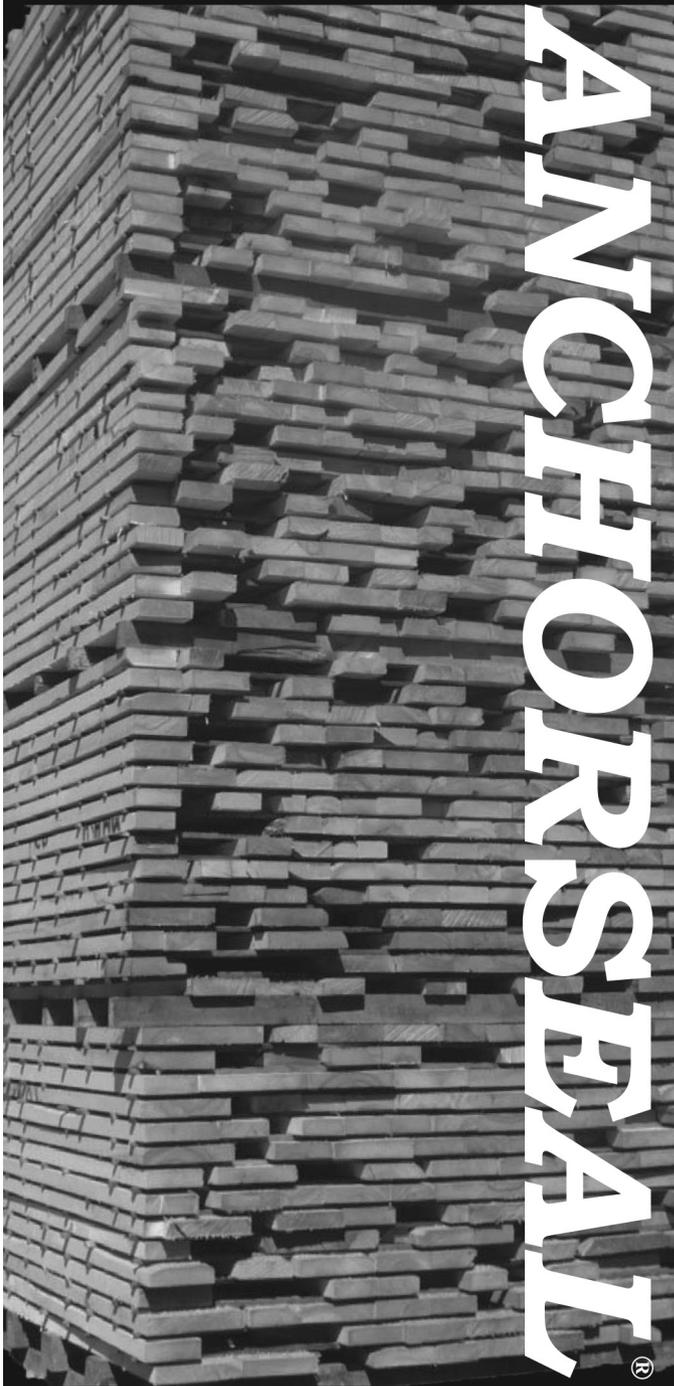
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