

# SAWMILL FORUM

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Here is an interesting case I had recently. Check out the picture. Yes, the rim of that saw turned blue right in the guideline.

Of course the person who brought the saw in knew nothing about what might have happened to it. But as usual, these saws have stories to tell if you know where and how to look. Anyone who welds shoulders on a saw is aware that to turn that shade of blue, that part of the saw had to reach approximately 850 degrees, Fahrenheit. It is lucky that nobody decided to pour water on it to cool it off. Pouring water on a saw that hot could easily crack it, or at least cause small cracks that might not be visible to the naked eye until the next time the saw was run and it broke apart.

My first assumption when seeing the saw in the crate was that a sliver got jammed between the offbearer and the saw. That is a common problem, although it is quite odd for any sawyer to leave it there long enough to turn the saw blue. Seeing saws with two diametrically opposed blue spots is another common sight. But to see a saw with a blue ring around it like this one, is thankfully a rare occurrence. This isn't the first one I have seen and I assume it won't be the last one, either.

Upon removing the saw from the crate, I realized that this blue ring was right in the guideline area. That certainly pokes a large hole in the usual jammed sliver theory. Then I noticed something even more unusual: It was equally blue in exactly the same area on both sides of the blade. I say it is unusual because typically, the mark would be a very shiny spot on one side of the blade, with the blue mark on the other side. This is also true when we see those blue spots mentioned earlier.

So, whatever turned this saw blue had to have happened on both sides at the same time. I then searched the saw for any other evidence. I did find a bit of collar metal that I had to remove, which would certainly indicate that this saw sheared the lug pins some time between now and the last time I hammered that saw. I always remove collar metal deposits from any saw I am working on.

This saw may well have sheared the pins, and that would



have caused some collar damage. But whatever turned this saw blue didn't happen while the pins were sheared because that would have left the saw standing still while the mandrel continued to rotate.

If I had seen that the guideline was blue on just the log side, I would have concluded that the saw was running out and the sawyer tried to hold it in with the guides until it got so hot on the board side that it turned blue on the log side. When a saw turns blue from friction (something rubbing it hard) it turns blue on the opposite side because whatever is rubbing it is also polishing it at the same time so that the opposite side is the one that shows the color change. Additionally, when you heat one side of the saw, it will dish because you are stretching just one side more than the other side, so it has to dish to one side.

Sometimes the saw will bend towards the board side as it runs out of the log. That bend then exposes the log side in a way that it rubs the log because the kerf is no longer creating the clearance for the body of the saw to clear the log. This rubbing heats and stretches the log side which then dishes the saw that much more towards the board side and of course makes it run out of the log that much more. Sometimes it is

not clear whether the saw heated first on one side, which then dished the saw, or the saw laid over first and then got hot, which in turn laid it over that much farther.

But in this case, remember that I observed equal bluing on both sides of the saw at the guideline. And to sort of confirm that finding, I also noted that the saw, although dished some towards the board side, was not nearly as dished as what would be consistent with finding a blue area on one side of the saw.

At that point my conclusion was that the saw must have been heated fairly evenly from both sides at the same time. How could this happen? As many of you know, I do keep records on every saw I have hammered over the past 30 years. I looked at my previous notes on this saw and this mill, and I noticed something very interesting. On a number of occasions I made the notation that saws from this mill seemed to have a lot of guideline wear on both sides. Guideline wear, however undesirable, is not all that uncommon on one side of the saw. It is usually on

the board side because when saws go wrong they are more likely to run out than in. It is not uncommon for a sawyer to try to hold a saw into the cut instead of shutting down to sharpen properly or change saws. Seeing this excessive wear on this mill's saws equally on both sides of the guideline was certainly something that made me take notice and wonder how or why that would happen.

Obviously, we have a sawyer here who is running the guides way too tight, which is an understatement. We all know that the term "guides" is not a good description of what the part does. The guides are not supposed to actually guide the saw, but rather just to catch it if it runs too far off line. We all know that you are supposed to have some clearance between the guides and the saw. If the saw lays over to one side it will of course use up that clearance in a hurry, but for the guide assembly to rub both sides at the same time, it could only mean that there was no clearance to start with on either side. I can just imagine how much that saw must have resembled a potato chip while it was running with that much heat on the rim. Fortunately by the time it cooled off and got to my

shop, it no longer had that familiar potato chip configuration. It did have some serious tension problems in an around the guideline area.

The first thing you should do if there is blue on a saw is to very gently and carefully sand off the discolored metal. That means removing just the blue without removing any other metal. Well of course that is physically impossible, but if you are very careful, you can remove the one or two thousandths of an inch of blue without taking any more material than you absolutely have to. If you remove too much metal, then it will be a real problem for anyone to put a straight edge on that area and be able to get meaningful readings.

On the other hand, that blued material will no longer move correctly like the rest of the steel when you hammer or roll it. So you have to get rid of it before you try to work on the saw. Once you do, you may notice a large bend in that area on the opposite side from the blue. In this case, both sides were blue so it wasn't a matter of a bend in that area, but there certainly was an enormous amount of tensioning work to be done to restore the body of

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that saw to the right amount of tension in the right location.

Now that I have the saw back into proper working condition, I will try to finish a very important part of the process of fixing saws. I will make sure that I find a way to properly communicate to the right person at that mill what is being done wrong so that they can avoid this problem in the future. They need to realize that if they had gotten this saw just a few degrees hotter, they would be replacing it now. It was way too close to the brink for comfort.

*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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# Bandit