

## The Saw-Filer Guy

Lee Gass

During my PhD studies at Oregon, I became obsessed with how people get good at what they do. I guess that was natural, given what I was trying to do for myself. I kept my antennae out for especially competent people in all sorts of work, and when I found them I did everything I could to find out how they got that way.

Here is the story of a person I identify only as “Saw Filer Guy”, because in addition to his being very good at what he did at work, he left much to be desired in other aspects of his life. I don’t want to embarrass him, and I also don’t want to dwell on those other aspects.

I met Saw Filer Guy at a family gathering in Washington State; he came with one of my distant relatives. Within minutes of our meeting, I knew that he considered himself one of the world’s five best professional saw filers. He was very proud of that fact, and made sure I knew that the man who maintains the giant bandsaws in sawmills is so important that he is paid more than anyone other than the overall plant manager.

I was impressed. Clearly, I needed to know more about Saw Filer Guy, so I did what I could to keep him talking about himself (which wasn’t especially difficult). He was incredible, actually, in the strength and power of his self-promotion, but I couldn’t get enough of it.

Here is an example. The party retired to a restaurant/bar paneled on the inside with rough-cut lumber, and Saw Filer Guy and I spent literally hours examining individual boards in detail for various kinds of evidence of poor filing. Each board carried a record of equipment maintenance and I learned to read that record critically. I was intrigued, because our inspection of the evidence made it abundantly clear that perfect saw filing would consist among other things of making each tooth of the saw identical to every other. Any tooth higher than the others would wear faster, get hotter, and tear rather than cut the wood, no matter how sharp it was at the beginning. And any tooth set farther to the side than others would malfunction similarly. Both kinds of errors leave tracks in the wood and hasten the failure of the blade, so avoiding both is worth a lot to a sawmill.

This line of thinking led to the idea of the tolerance for error in the process, and at a certain moment I asked “What tolerance do you work to, Saw Filer Guy?” He knew exactly what I was asking, and he gave exactly the wrong answer: “Zero. I work to zero tolerance. My teeth are exactly the same and my saws don’t vibrate at all.” As a scientist, I knew that answer to be impossible in principle, and even ludicrous to consider. After all, the saws we were talking about were designed to slice 40-foot logs of Douglas fir, 8 feet in diameter, from end to end in about 10 seconds! They are fast-moving loops of high-grade steel, only a few sixteenths of an inch thick but a foot wide and bearing hundreds of jagged, several-inch teeth on both edges (they cut going both forwards and backwards through the log). They run continuously for four hours at a time, then are

replaced by freshly-sharpened blades for the next four hours. How could something like that be maintained to zero tolerance?

And so I said “Come on, now! Zero is a pretty small number. I’m happy to believe that you’re one of the world’s five best saw filers, and I’m already convinced that you’re awfully damn good. But zero? I just don’t believe it. Give me a break!”

He resisted for as long as he could, but Saw Filer Guy was smart enough to realize that I was not going to let him out of it. I could see the look of resignation in his eyes long before he came clean with the truth, which was a long time in coming.

He countered by asking me how I came to know enough about saw filing to question him. I replied that although I knew nothing at all about saw filing, I knew a lot about zero and that alone was enough to show me he was blowing wind. That made him mad, and he tried to scare me off with bluster. He even told me his family history, and offered it as evidence of his perfection. Both his father and his grandfather had been renowned saw filers in their own day, and he claimed he inherited his skill from them.

“I can appreciate that saw filing is a highly technical skill that takes both ability and attitude. I can imagine your gaining valuable attitude from your forebears; especially attitude about ability. But things have changed so much in the industry since they were working that I’ll bet you couldn’t have gotten your ability from them. For example, how wide was the kerf in the olden days, and how wide is it now? And did they even have bandsaws when your Dad was working?” It turned out that there were only circle saws in the olden days, and that modern bandsaws are only a small fraction of the thickness of the old circle saws (producing less sawdust, and therefore more lumber from the logs). They cut much faster, and they are also much more dangerous if they break.

Everywhere we went in our conversation made it increasingly obvious to both of us that Saw Filer Guy would either have to confess to working to somewhat greater than zero tolerance or punch me in the eye, and I don’t think it was clear to either of us which way it would turn out. Sometimes it got a little iffy.

At one point, when Saw Filer Guy was well into his cups and getting desperate, I let him off the hook by motioning that I wanted to whisper something in his ear. When he leaned forward, I cupped my hand to his ear and asked, quietly, “When did you make your last mistake at work?”

I thought he would blow a gasket, right there in front of me. He glared at me, trying to decide how to respond. Eventually, he changed his demeanor, lowered his voice, and told me that he had made a mistake just the afternoon before, but that “No one will ever find it, because I found it first and fixed it! Nobody ever finds my mistakes.” I didn’t have the heart to tell Saw Filer Guy how easy it was for me to find one of his more glaring mistakes - - claiming he worked to zero tolerance! But as I said in the beginning, I had no need to embarrass him.

That confession was a gem of a discovery. Not only did it clear the slate of our conversation and pave the way for us to continue our interaction on more amicable terms, but it demonstrated how attitude about ability can drive the acquisition of world-class skills and maintain them in the face of evolving requirements. That insight, that attitude, as it turns out, is at the very heart of quality control in any domain, including science, education, and sculpting. It has served me well for a long time, and through me it has served my students. See my essay about sculpting, "[work on the ugliest part](#)".

Several months later, I visited Saw Filer Guy at the sawmill, where he showed me the incredible equipment he maintains and something of his methods of work. He also took me to his own small sawmill in the woods, where a beautifully-tuned circle saw turned out (nearly) perfect boards for his own use. Saw Filer Guy was a real master for sure, and he was something of a wizard. In some way, he remains a hero of mine.