SAWMILL FORUM

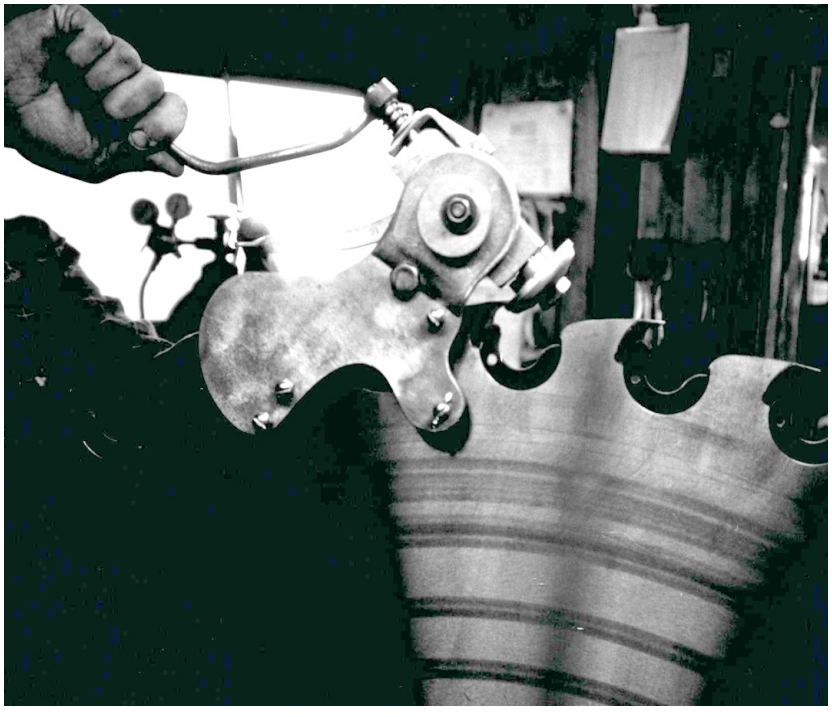
CASEY CREAMER

SAW DOCTOR

I have an old hand-set mill with a 46" saw with 30 teeth in it that I run at 540 RPM. I have been trying to run it with a 60 HP diesel tractor and it seems like I just don't have enough power. How much more power do I need?

Many, many years ago I asked an old timer how much horsepower it takes to run a sawmill, and he said about 100 more than you have. I think his point was that there is no such thing as too much power.

There are some folks who assume that power requirements are directly related to the size of the saw. Actually, your power plant couldn't care less about the saw's diameter. That's because the part of the saw that draws power is the tooth. So the more teeth you have, the more power you need. Of course, the power plant is only concerned with how many teeth are in the cut at any given moment, but it is safe to say that the more teeth on the saw, the more that are likely to be in the cut at the same time. You do have to remember it is the amount of teeth relative to the diameter of the saw that counts the most. A 60" saw with 50 teeth would draw less power than a 50" saw with 50 teeth because the 50" saw would have more teeth in the cut on any given depth of cut than a 60" saw would have.



How's your sharpening?

You are running a 46"saw with 30 teeth. Assuming that you are not powering any hydraulics or a sawdust blower with the same powerplant, it is safe to say that you actually have plenty of power, assuming that you can transmit it properly.

There are most likely at least two reasons that it seems to you as though the mill lacks horsepower. First, at 540 RPM, you are turning the saw too slow. A good all-around speed for sawing frozen and unfrozen hardwoods and softwoods is anywhere from 8,000 to 9,000 surface feet per minute. For a 46" saw 9,000 SFPM = 747 RPM and 8,000 SFPM = 664 RPM. In other words, 650 RPM would be an ideal speed for your 46" saw. You will find that when you have the teeth impacting the log at the right speed, the saw will tend to draw a little less power and run much smoother.

My guess is that your other problem is that your saw needs to be hammered properly. Any ill-running saw will draw way more power than a properly put up one. Of course, I am assuming that your diesel is running properly with a properly functioning governor and I am also assuming that your drive is such that you are able to transmit the power properly, without any undue belt slippage.

And then there is that age-old saw doctor's question: Are

the teeth sharpened properly? Teeth that have too blunt of a hook angle will draw excess power and teeth that are sharpened out of square will require a huge amount of power because those out of square teeth will be pulling the saw to one side and make it heat and wobble. This will of course consume gobs of extra power. Needless to say, overly dull teeth don't make the saw run any easier either.

I suppose that old timer's advice might have been based on the premise that you would have problems with the saw being maintained properly. In that case you would likely need about 100 more horsepower than you already have.

On the other hand, if you just get all of your ducks in a row, you will find that your saw will run a lot smoother, easier, and as a result draw a lot less power. When that happens you will find that for your operation a 60 HP diesel will easily be a sufficient powerplant.

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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