



## THE LUCAS DSM23 DEEP THROAT SLABBER

Although I've cut thousands of slabs with my Lucas Model 8 slabber over the last few years, when a customer asked me to slab a 16,000-pound cottonwood log that was over 72 inches wide in places, I knew I had my work cut out for me. Although I have tackled larger logs, and I could trim the log to fit the 60-inch capacity of my slabber, the customer didn't want it trimmed. When I men-

tioned the challenge to Warren Lucas of Lucas Mills, he was kind enough to have Left Coast Supplies send over a DSM23 deep throat slabber so I could put it through the paces. The deep throat DSM23 is different from other Lucas slabbers in that it can cut slabs to a thickness of 20 inches instead of the normal 11 inches. There is also a standard DSM23, but it is not a deep throat version.

### The Concept

For those who have never seen a Lucas slabber or mill before, the concept is simple. The power head is on a trolley that rolls back and forth on long aluminum tracks that surround the log. The tracks attach to two end frames composed of two winch posts that are connected to one another via a top and bottom end frame pipe. To raise and lower the rails (and therefore the power head), the operator simply cranks the winch handle on each end frame. On each end frame there is an adjustable scale that indicates how far the track and power head have been adjusted up or down. Although it is 9 feet wide and nearly 29 feet long when set up, the entire system breaks down and can be transported on a pickup truck with overhead racks. The power head has two removable wheels that allow it to be easily transported by one person. The versatility of such a system is that the mill can be transported and

Left: The Lucas DSM23 deep throat slabber has the capacity to cut 76 in. wide and 20 in. deep.

assembled around the log instead of bringing the log to the mill. This portability is especially handy with extremely large logs that are otherwise unable to be transported or milled. Although the portability to mill large logs without moving them is nice, when it comes to slabbing, a piece of equipment is still required to handle the slabs.

The customer was kind enough to bring the massive cottonwood log to me. As a testament to the challenge and potential dangers of huge trees, as the tree was being removed it fell through a house that was being renovated and completely totaled it. It was then chained to the front of an end loader, and driven a few miles out of the city to my place of business. Weighing in at an estimated 8 tons, the log was so heavy that the loader had a hard time maneuvering and was occasionally teetering on the front two wheels. The log was 16 feet long, 57 inches in diameter on the stump, and had a fork that was well over 6 feet wide.

The DSM23 has a maximum cutting width of 76 inches, so the log was just within the rated capacity. The Lucas framework set up without incident, and was just tall enough that I did not have to prop up the frame on blocks to make the first cut with the slabber. The DSM23 has a 23-hp Briggs and Stratton engine with electric start. While the typical run speed of the engine is 3,600 rpm, Lucas Mill runs it at 4,000 rpm. When combined with their 14-tooth chain drive sprocket, the DSM23 seems to achieve a good balance between the chain speed and horsepower. The chain speed on earlier model Lucas slabbers was slower. While this ensured the slabber always had ample torque, it did so while

sacrificing cutting speed. A slabber should have a good balance between the chain speed, horsepower, and how hard the operator has to push the trolley. When the operator pushes the slabber hard it should bog down the motor. If it does not bog down the motor, chances are the chain speed is too slow and the slabber is inefficient. Overall the higher rpms and 14-tooth chain drive sprocket seemed to be a good match for the DSM23 deep throat slabber.

## The Chain

All Lucas slabbers use an Oregon 27RX super skip ripping chain.

The “super skip” ripping chain is missing five teeth between each pair of left and right cutters. The reason for the odd number of teeth missing between each pair is to have pairs of upper and lower teeth in succession and prevent the chain from snaking through the wood. I found that due to the massive size of the log, I could only cut two slabs before I had to stop and sharpen the single chain I had for the slabber. While cutting the largest parts of the log through the middle, the first slab took 10 minutes to cut and the second slab took 14 minutes to cut. After two cuts I then sharpened the chain on



Above: A hammer and wedges kept the slabs from pinching as I was cutting. Below: The Lucas DSM23 deep throat slabber powers its way through over 60 in. of wet, stringy cottonwood.





With ample adjustment in the tensioning mechanism, swapping chains can be accomplished in a couple of minutes.

my Oregon grinder equipped with a CBN grinding wheel.

The chain is tensioned by a tension screw underneath the motor. As you tighten the screw it also tensions two v-belts that help hold constant tension on the chain as it is cutting. There is ample adjustment in the tension screw to remove and swap chains. Some earlier model Lucas slabbers and slabbing attachments for the mills did not have as much adjustment. This gave some operators a bit more difficulty when it came time to swap chains, especially if the chain was new and had yet to stretch. On the DSM23 deep throat slabber there is ample slack to swap out chains without any frustration or bloody knuckles. Even with the longer chain and bar, I found that removing and reattaching the chain could be done in about five minutes, not including the time it took me to sharpen. Lucas mill recommends the use of engine oil for lubricant, as they say bar oil is too thick. The chain is lubricated by a manually controlled toggle valve that is connected to a small plastic bottle

mounted above the nose roller. Gravity does the job of getting the oil from the jug to the nose roller and the flow is controlled by the toggle valve. Before starting cutting, the operator simply flips the toggle valve to roughly halfway to begin the flow of oil onto the bar. When the cut is complete, the operator turns off the toggle valve.

There was one aspect of the DSM23 I was not expecting. Due to the length of the bar, the mounting plates on each side have an upward bias of 2 degrees to prevent it from sagging in the middle. While this results in a flat slab, I quickly realized one downside to having a longer bar. It has inherently more flex to it than my shorter 60-inch capacity Lucas slabber. Because of this, as soon as the chain gets dull, the bar flexes and it starts to climb in the cut. The obvious solution is to stop and either sharpen or swap chains, since you should never cut with a dull chain anyway. It did catch me by surprise though as I can actually get slightly more life out of a chain on my smaller slabber before I need to

swap it out, and without any of the climbing issues. I could see this becoming an issue if the operator is trying to slab a lot of urban woods that might contain metal and foreign objects. If the chain hits a piece of metal, it will not be possible to finish the cut with the same chain without the bar climbing and ruining the slab. One would have to stop and sharpen or swap chains before continuing, which could mean running multiple chains through the same patch of nails instead of completing the cut with the same chain. This is, of course, a minor issue that few will encounter and is beyond the scope of what a slabber is meant to do—which is cut wood, not nails.

## Work Smarter, Not Harder

Although the log was monstrous and could not be picked up with my skid loader, I had no trouble cutting the entire thing by myself, or moving the cut slabs. My methodology for moving massive cut slabs was simple. I pushed each slab with the forks on my skid loader until it was slightly hanging over the edge of the log. I then drove around to the other side, hooked the tip of my forks under it, lifted up that side of the slab, and drove backwards slightly. When the bulk of the slab's weight was on my forks and not on the log, I simply lowered my forks on the skid loader and the slab slid right onto them. At no point did I have to manually move a slab by hand, even a few inches. Cutting hundreds of slabs has taught me to work smarter, not harder.

I use wedges when I slab to prevent the slab from pinching on the bar and chain. Because of the extreme width and length of the log, I used a pair on each end of the log. One reason I do this is to use the log as the scaffolding to walk on without having to build or disassemble any secondary scaffolding as I cut. This enables me to



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A piece of equipment to move the slabs is an absolute must when it comes to slabbing large logs.

simply use a ladder to climb on top of the log and start cutting. I scanned after each pass with a metal detector. Despite the fact that it was a massive yard tree, it was surprisingly without metal. Cottonwood is well known for ring shake, a condition where it splits apart along the growth rings. The condition was so severe that some of the slabs began to break apart on the ends. To hold them together so they could be stickered I screwed strips of OSB to the ends. Each slab was then stacked and stickered in my barn, and upon completion had a few hundred pounds of concrete blocks placed on top to keep them flat during drying. The log took a total of 20 hours to complete, including cutting, sharpening, stickering, and screwing OSB to the ends of the split pieces.

Overall the Lucas DSM23 deep throat slabber is well suited for its intended purpose. It is adequately powered, the chain speed is very well matched for the horsepower,

and it is miles ahead of some of its predecessors. The electric start on the engine and the ample adjustment on the chain tensioner make it more user friendly than earlier versions. The extra depth capacity also comes in handy for those who are looking to cut larger logs into more manageable sizes for sawing on other mills. For those who have logs that are too large for their sawmills, or want to halve large logs for quartersawing, the Lucas DSM23 deep throat slabber would easily accomplish the job. And of course, for those who are looking to cut slabs up to 76 inches wide, the DSM23 deep throat slabber is more than capable. ■

*As a self-described "sawdust addict," J.R. Salzman runs a custom sawing and slabbing business in Wisconsin. He is a longtime competitor in professional lumberjack sports, winning nine Men's Professional Log Rolling world titles, and the 2005 ESPY Award for Best Outdoor Sports Athlete. He has a BS in Technology Education.*



The log was scanned after every slab and, despite being a yard tree, was surprisingly without metal.

After cutting, the slabs were stacked and stickered in a barn with good airflow.



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