



THE PINKERTON MILL isn't located next to the Teeswater River, but that doesn't stop it from using water, instead of electric, power. It is one of a few mills in Ontario that relies solely on water power. (Wassink photo)

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One of the few left in Ontario Mill still uses water power

by Ron Wassink

PINKERTON—Rain or shine, hydro or no hydro, the Pinkerton feedmill never shuts down, only at closing time. That's because it doesn't rely on electricity, but it's water power.

One of a few mills in Ontario relying solely on water to power its grinders, choppers, and elevators, it's also a mill from another era that wasn't built beside a river. Water from the Teeswater River is diverted about 200 yards by a small stream that feeds the 50 inch turbine in the mill.

Though there aren't power lines and fuses to contend with, the mill did shutdown for several days this summer. The problem wasn't at the mill, but at the junction of the stream and dam where erosion threatened to take out a bank. During the shutdown, the mill pond was drained to allow construction workers to install two wing-walls to stop the erosion.

It was one of the few times Bob Flett, manager, climbed down into the cavern below the mill to examine the housing of the turbine. It's as good as the day it was put in 23 years ago.

Harold Birrell of Pinkerton followed in the footsteps of his father and grandfather. He ran the mill until 1971 when he sold out to New Life Feeds in Hanover.

Had the main road leading into Pinkerton crossed the river instead of curving around and bypassing it, the mill would have been located beside the river, says Birrell. But

because of elevation, bridging the river was impractical at the time "because it would have meant a lot of fill and the bridge would have had to be tremendous."

The off-river location has resulted in a major benefit, more headwater. There's about 18 feet of headwater at the mill compared to about 10 feet at the dam. Eight extra feet of fall means a lot when you're using water power.

The Birrell family got involved in the milling business in Pinkerton when Thomas purchased the flour mill in 1902. He moved to the village two years later after operating a mill in Bradford.

"We could have used a water wheel, but we got a lot more horsepower by using a turbine," says Birrell.

As a comparison, the overshot water wheel at Black Creek Pioneer Village develops about 16 horsepower. The present turbine at the mill puts out 180 horsepower.

Turbine size makes the difference between what you can and can't do at a mill such as Pinkerton. Up until 1963, the mill was powered by a 36 inch Barber horizontal turbine that was manufactured in Meaford. It was in operation for 90 years and only generated 90 horsepower compared to the 180 horses by the present Little Giant vertical turbine.

"It's quieter than diesel, but it depends on what machines you're running. I wouldn't say it's quieter than electric. There's no noise from the turbine itself, just the

machinery and belting."

Grinders and choppers are powered from a line shaft and power is either increased or reduced through a series of pulleys and belts. Because he was limited as to adding extra machines to the lineshaft, Birrell added hydraulic oil pumps to operate some of the new equipment with hydraulic motors.

An example of how power can be increased by using pulleys of various sizes, Birrell says the turbine shaft turns at 100 revolutions per minute (rpms). The line shaft runs at 600 rpms and the chopper at 2,200.

"Everything runs according to size of pulleys. Occasionally there are problems with belts slipping but that's because belts stretch in hot weather creating more slippage."

Even in dry summers, the mill never ran out of water to grind grain. But there were times before the old turbine was replaced that the mill had to be shut down two hours early because of lack of water.

"The old turbine was a little greedy on water because it discharged top and bottom. We never shut down with the new turbine and we could also get more tonnage through."

The present Pinkerton mill was constructed after fire destroyed the old flour mill on June 28, 1928. The cause, ironically, was an electrical storm.

"My grandfather died exactly a year to

the date after the fire and I think he died of shock.

"There was a terrific lightning strike about 4 p.m. Usually, two hours before the mill shut down, the four floors would be patrolled to check everything out. He was four steps off the top flight when the lightning struck. It knocked him to the floor.

"He knew the mill had been struck and he and dad (Wesley) walked from one end of the mill to the other until 7 that night.

"Dad had to go to a school meeting that night and my mother heard someone calling around 8 that the mill was on fire. That summer a new feed mill was built."

Birrell says it was difficult to compete with the bigger mills because everything had to be transported by rail from Toronto. That's why the flour mill was never reconstructed as such.

Stepping into the mill today is like stepping back in time. Since it is water powered, he gets the impression the mill is a large ship because of the large ship's wheel that operates the turbine. The wheel is located in the midst of the grinders, baggers, and choppers.

NEW DAM

As was the case when dams were first constructed in Bruce County in the mid-1800s, the dam at Pinkerton was made of timbers. It stood the test of time until 1912 when Birrell's grandfather constructed a concrete dam. The wooden dam had to be replaced because a flood took it out.

"The concrete was all mixed by hand—it took 12 train car loads of cement alone. And it was all shovelled by hand."

Birrell can well remember having to skip classes at the Walkerton High School during his depression to help out at the mill. Things were pretty tight."

He says there was some bartering then and his family had trouble collecting accounts "the same as now. All through the years farmers have had problems."

LITTLE HAS CHANGED

There haven't been any drastic changes at the mill over the years. Today, two feed rucks replace the horses and wagons of yesteryear. Most farmers purchase bulk feed instead of bags. And today, the mill has added three electric motors to operate grain augers. If the turbine was taken out, it would have to be replaced with at least 12, large electric motors.

Flett started with the mill in 1964 moving his way up to manager. The advantage to using water power, he says is money—it's a lot cheaper than electricity.

"Because we use water power is probably why the mill is still operating," he says.

Electricity is used to operate adding machines and lights. There's also a fan in the office.

But it's water that makes the mill go round.