June saw the restoration crew working on more repairs and working on interpretive exhibits. Some of our plans are still on hold due to the creek being high and are not having all of our normal staff available.

**Corn Milling Plant**

This month we had problems with one of the elevators that serve the corn milling plant. Specifically the elevator that moves the corn from the sheller to the cleaning screen on the second floor had jammed. When we opened up the boot of the elevator to inspect it we found a scrap of old wood in the boot that jammed the buckets. While removing it cleared up the problem, we still had to find where it came from.

Up on the second floor at the head of the elevator we discovered that an old repair (done back when the mill was in commercial operation) was the problem. As the wood dried out and the building shifted a piece of wood that had been used as a rude patch had broken off and fallen down the elevator leg. Gary Otto and Dick Klauer did a permanent repair of the damaged area. We should not have this happen again.

**Millstone Maintenance**

For some time now our run of 36” millstones have not been working properly. They have a problem that I have been told is common to milling museums, that is “hot stone odor.” In a properly set up run of millstones the two stones should never touch when operating. There should be a space between them about the thickness of a sheet of paper. If the millstones touch at any point, the friction developed creates the hot stone odor we smell when our millstones are running.

Why is this occurring? Over the years several problems have slowly developed. One is an old and common one at Pine Mills, the building is settling. This causes the bed stone to be out of level. Note that it must be perfectly level or at some point on its surface the runner stone will touch it. Another problem we have found is that the runner stone has balance issues. It must be perfectly balanced or it will wobble when it is rotating. And finally there is the issue of the “dress” of the millstones. Unless the dress is sharp and even the stones will not grind properly.

The wood frame work in the basement of the mill that supports the millstones is called a “hurst.” Like the rest of this part of the mill it is of timber frame construction. It you look at the mortis and tendon joints in the upper part you can see where wedges have been driven in to lift the hurst’s cross beams to compensate for the building settling. Some of these wedges are broken and others are at their limit and cannot be pounded in any more. Our plan is to get the hurst back into shape then go back to working on leveling the bedstone.

One reason we stopped working on the problem of the bedstone level is that we discovered that the carpenters levels we had been using at the mill were not accurate. It was sort of like measuring things with a rubber ruler. Unless measurements are repeatable, they are worthless. To solve this problem I purchased an ultra accurate machinists level to use to calibrate our other levels. We found that surprisingly the most accurate level we had at the mill is our antique cast iron proof staff!

We have also done a considerable amount of work on the runner stone balance. The job is very much like having the wheels on your car balanced right down to the use of the lead weights. We use the same method of testing dynamic balance that traditional millwrights used, that is detecting the degree of wobble by making a pencil mark on the rotating millstone. Then the weights are modified to reduce the wobble. We have the balance of the runner much better than it was.

And this brings us to the last step. If the surface of the millstones are more worn in one area than another you will still have the problem of them touching. The solution is to “paint” the stones, work down the high spots and redress them.

I have spoken with Meadows Mills about our problem and purchased a pneumatic dressing tool from them. We plan to experiment on the mini-mill stones with the tool before attempting to redress our 36” stones. Hopefully we will able to correct all of problems soon and get the mill grinding properly again.
Dick Klauer is putting the finishing touches on the restored hand cranked corn sheller. As much of the original pin striping and decals was preserved as possible.

Gary Ottom and Dick Klauer are rebuilding the shelled corn elevator head on the 2nd floor.

Jerry Kieth and Dick are checking the level of the bedstone. Note that we are comparing two different levels. We found that the large and very heavy cast iron proof staff level worked best.

Jerry is doing a runner stone balance test. By barely touching the surface of the stone as it revolves with a pencil a mark is made that indicates the degree of balance of the stone.