

Keep it Moving

RAY-CARROLL ELEVATOR ADDS 75% RECEIVING CAPACITY WITHOUT PAUSING OPERATIONS

Ray-Carroll County Grain Growers, Inc.'s 2.8-million-bushel country elevator in Carrollton, MO needed increased receiving capacity in order to better accommodate its growing customer base.

According to Location Manager **David Heddings** (800-722-4482), the elevator received grain through two InterSystems 8,500-bph receiving legs, which were installed when the elevator was built in 1995. However, the challenge, was to upgrade the receiving system without shutting down operations, he explains.

"Twenty million bushels of corn come through our elevator every year, says Heddings, "so we definitely could not afford to stop receiving grain."

To resolve the issue, Heddings in February 2014 began working with Carl Swisher, material handling manager, **4B Components, Ltd.**, Morton, IL (309-698-5611).

4B's engineering staff proposed upgrading the facility's two receiving legs instead of replacing them, which would have halted operations for weeks.

So in the spring of 2015, the Carroll-

4B BC1 belt splice clamps and JUMBO™ CC-S® 16x8 low-profile buckets spaced 7.75 inches apart on 1,000-piw rubber belting. Photo courtesy of 4B Components.



ton elevator's in-house millwright crew, managed by Barry Lewis, began installing new bucket elevator components.

4B JUMBO™ CC-S® 16x8 low-profile buckets were installed and spaced 7.75 inches apart. "We're really pleased with the new buckets," says Heddings. "The low-profile design allowed us to install the buckets closer together, so we were able to fit 624 buckets on each leg." Before, each leg held 400 buckets spaced 12 inches apart.

Eighteen-inch 1,000-piw (pounds per inch of belt width) rubber belting was supplied by **IBT** to handle the increased bucket load. According to Swisher, "not many people opt for 1,000-piw belting, because it's more expensive, but it's a great option. It's very durable and will last for years, which will save you the time and money spent maintaining or replacing standard belting."

Grain Superintendent Troy Tague explains that new **Marathon Electric 150-hp VFD (variable frequency drive) inverter motors** makes it very easy to routinely check the condition of the buckets: "With the VFD, you just turn down the motor to about 2 Hz, and check the buckets as they creep by."

4B BC1 belt splice clamps, designed for belts up to 1,000 piw, were installed.

Two Days, 6,500 bph Later

It took two days for Lewis and his millwright team to install all of the new components on the two legs. By working on one leg at a time, the other remained operational, and the elevator was able to receive grain throughout the process.

Before the upgrades, Heddings says the two legs each ran at 8,500 bph. Now, each leg can handle 15,000 bph, an increase of approximately 75%.

In order to accommodate an increased receiving capacity, the elevator implemented several other upgrades.

"We replaced our two small



Modified Rapat distributor with enlarged spouting (middle platform) below a second, new Rapat distributor (top platform). Photo by Tucker Scharfenberg.

500-bushel dump pits with two 1,100-bushel mechanical pits that now feed two new Tramco 20,000-bph drag conveyors," he says, "and on top of the bins, we replaced two 20,000-bph drag conveyors with two new Tramco 40,000-bph drags.

"We also rebuilt our distributor with custom-designed spouting by Rapat, added a new electronic controller, and converted it from dual-flow output to a single, large swing-flow spout to distribute grain to one receiving leg. We then added a second Rapat distributor to accommodate the other receiving leg.

"All in all, we're very pleased with our upgrades and the way we chose to implement them," says Heddings. "Our goal was to make it easier and quicker for our customers to deliver their grain – trucks now go scale-to-scale in under four minutes, and that's a big improvement," he adds.

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