

Two-Year Rebuild

ALL POINTS COOP ELEVATOR BACK IN OPERATION AFTER 2008 EXPLOSION

NEBRASKA

★ Gothenburg

All Points Cooperative

Gothenburg, NE • 308-537-7141

Founded: 1920s

Storage capacity: 5 million bushels at two locations

Annual volume: 15 million bushels

Annual revenues: \$180 million

Number of members: X,XXX

Number of employees: 120

Crops handled: Corn, soybeans, hard red winter wheat, sorghum

Services: Grain handling and merchandising, agronomy, seed, propane, service station, convenience stores

Key personnel:

- Ed Foster, CEO
- Steve Costello, vice president-grain
- Mark Balmer, vice president-agronomy
- Craig Saum, vice president-petroleum
- Mike Schrader, CFO/controller
- Craig Streeter, grain operations mgr.

Supplier List

Aeration fnns AIRLANCO
Bearing sensors Rolfes@Boone
Bin sweeps The GSI Group
Bucket elevators Hayes & Stolz Ind. Mfg. Co. Inc., Intersystems/
Bulk weigh scale Intersystems/
John Deere Agri Services
Catwalk .. LeMar Industries Corp.
Cleaner ... Triple/S Dynamics Inc.
Contractor/millwright Frisbie Construction Co. Inc.
Control system Kasa Industrial Controls
Conveyors Intersystems
Distributors Hayes & Stolz
Dust collection system AIRLANCO
Elevator buckets Tapco Inc., Maxi-Lift Inc.
Grain dryer .. Brock Grain Systems
Grain temperature system Rolfes@Boone
Level indicators Monitor Technologies LLC
Magnets .. Bunting Magnetics Co.
Manlift .. Schumacher Elevator Co.
Motion sensors Rolfes@Boone
Steel storage Behlen Mfg. Co.
Tower support system LeMar Industries Corp.



All Points Cooperative's 3-million-bushel grain elevator in Gothenburg, NE, as viewed from the State Highway 47 viaduct, dominates the town's skyline. Photos by Ed Zdrojewski.

To the untrained eye, the All Points Cooperative elevator that dominates the skyline of Gothenburg, NE appears largely unchanged since it was built in the 1960s. The white slipform concrete workhouse rises more than 120 feet into the air, with the letters "GOTHENBURG" painted on the south side. The only recent visible change are three new steel tanks and a dryer at the east end.

The 120 employees of the cooperative know better. "For all intents and purposes, it's a new elevator," says Grain Division Manager Steve Costello.

The changes have come as part of a two-year, \$9 million rebuilding process following a Nov. 19, 2008 explosion severely injured one worker, destroyed the headhouse, and severely damaged the rest of the facility. The cause of the blast has never been determined.

Since then, the headhouse has been replaced with an outside steel structure for replacement grain handling equipment, and perhaps more importantly, the entire elevator has been automated.

Before the Blast

In fact, Frisbie Construction Co. Inc.,



Grain Division Manager Steve Costello.

Gypsum, KS (785-536-4288), which served as general contractor on the rebuild, had been on-site for nearly a year before the explosion constructing a 1.2 million bushel steel annex at the east end of the facility.

The annex, intended to hold grain for loading onto Union Pacific shuttle trains, included three 420,000-bushel Behlen steel tanks, a new receiving pit and outside leg, and a 7,500-bph GSI grain dryer.

The three tanks stand approximately 79 feet in diameter, 95 feet tall at the eaves, and 117 feet tall at the peaks. The flat bottom tanks are outfitted with outside stiffeners, 12-inch GSI sweep augers, 10-cable



Rolfes@Boone grain temperature monitoring systems, and Monitor Technologies level indicators. A set of four 40-hp AIRLANCO centrifugal fans provide 1/7 cfm per bushel of aeration on coarse grains.

A combination of Intersystems 20,000-bph belt and drag conveyors take grain out to the annex, while another set of 20,000-bph reclaim grain in a below-ground tunnel and take it back to a new leg.

That 20,000-bph Intersystems leg is fed by a 200-bushel receiving pit located between the concrete workhouse and steel annex. It is outfitted with two rows of 14x8 Tapco CC-XD extreme-duty buckets mounted on a 30-inch Goodyear belt. The leg feeds into a six-hole Hayes & Stolz distributor that can reach the new overhead conveyor, the concrete workhouse, and



New leg head sections, double distributor, and screener now are located on the outside of the slipform concrete workhouse.

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How important is your process?



Three Behlen tanks make up a 1.2-million-bushel steel annex that was completed just prior to a Nov. 19, 2008 explosion.

indirectly, the new dryer.

The 7,000-bph Brock dryer is fired by natural gas and has received a thorough workout since it was constructed in 2008. It empties into a 10,000-bph Intersystems wet leg.

The Rebuild

Frisbie was just finishing up a new AIRLANCO dust collection system at the time of the explosion. The contractor agreed to stay on to serve as general and millwright on the rebuild.

That was a lengthy process, since All Points stipulated that equipment was to be restored in priority order to return the facility to operation as quickly as possible, and the rebuild was to proceed with minimal disruption to elevator operations. Costello comments that getting the elevator back into operation within a couple of months of the explosion minimized the loss of business to competitors.

The cooperative brought in C-Tec Inc., York, NE (800-345-2832), to handle the extensive concrete repair work required in the workhouse. C-Tec repaired the structural damage to the concrete sidewalls, relined almost every concrete tank and interstice, and rebuilt the workhouse roof.

Other major repairs included:

- Replacement of two inside legs with 20,000-bph Hayes & Stolz legs

outfitted with a single row of 20x8 Maxi-Lift CC-MAX buckets on a 22-inch Goodyear belt. The head sections of the legs now terminate in an outside steel frame structure.

- Installed a 26-hole, 24-inch-duct Hayes & Stolz double distributor in the rooftop complex.

- Installed a 20,000-bph Texas Shaker cleaner, outfitted with an optional hinged sidewall for easy screen changes.

- Replaced the damaged aeration systems on six concrete tanks with a single 20-hp AIRLANCO centrifugal fan per tank, set to supply 1/7 cfm per bushel, and installed single-cable Rolfes@Boone temperature monitors in each tank.

- Performed repairs on an existing Intersystems bulkweigher located inside the slip and installed new computer hardware to link the existing Agris control systems with the new elevator automation system.

- Installed a new Schumacher manlift.

Automation

All Points took advantage of the rebuilding process to completely automate the elevator using a software system from Kasa Industrial Controls, Salina, KS (785-825-7181).

The new system allows all elevator functions to be operated from any of three workstations located in the of-



Relatively new 7,000-bph Brock natural-gas-fired grain dryer was built as part of the steel annex project.

fice building across U.S. Highway 30 from the elevator, at the west end of the workhouse, and from the a station near the existing receiving pits.

“You can switch any motor on and off from the workstation,” says Costello. “It has a power management function that allows the system to balance the load in the event of a power surge and to operate certain systems to avoid peak hours. It also provides and operations history, tracks hours of service, and alerts you when any piece of equipment needs routine maintenance.”

Ed Zdrojewski, editor