

Reaching More Destinations

MFA OPENS NEW RAIL TERMINAL ON UNION PACIFIC, MAJOR FOUR-LANE HIGHWAYS



MFA Inc.'s new 3.5-million-bushel rail terminal east of Hamilton, MO, which opened for business in June 2017. Aerial photo courtesy of Nathan Belstle, MFA Inc.

MFA Inc.

Columbia, MO • 573-874-5111



agronomy, animal health, farm supplies, financial services

Founded: 1914

Storage capacity: 47.5 million bushels at 71 locations

Annual volume: 60-90 million bushels

Annual revenues: \$1.47 billion

Number of customers: 45,000

Number of employees: 1,500

Crops handled: Corn, soybeans, sorghum, hard red and soft red winter wheat, rice, oats

Services: Grain handling and merchandising, feed,

Key personnel at Hamilton:

- David Jones, manager
- Nathan Belstle, project engineer
- Darren Harris, project engineer
- Jase Lee, plant operations
- Diana DeHart, grain originator
- Katelyn Skinner, scale operator
- Kellen Lippold, plant operator
- Petrea Carlson, office administrator

Prior to the opening of MFA's new rail terminal five miles east of Hamilton, MO in June (816-465-4000), producers in north central and northwest Missouri delivered grain mainly to local markets or terminal elevators in the Kansas City area.

Located on a north-south Union Pacific (UP) main line, the new terminal, with more than 2 million bushels of upright storage and another 1.5 million bushels of temporary storage, offers producers access to markets across the U.S.

Supplier List

Aeration fans.....Chief Agri
Bin sweeps.....Sioux Steel Co.
Bucket elevators.....Schlagel Inc.
Catwalks.....Allstate Tower Inc.
Concrete silos.....Hoffmann Inc.
Contractor.....Quad County Ag Service
Control system.....CompuWeigh Corp.
Conveyors (belt).....Hi Roller Conveyors
Conveyors (drag).....Schlagel Inc.
Distributor.....Schlagel Inc.
Dust collection system.....AIRLANCO
Electrical contractor.....A.K. Hangley Electric
Elevator buckets.....Maxi-Lift Inc.

Fall protection.....Fall Protection Systems Corp.
Foundations.....Philip Hardy
Grain dryer.....Zimmerman Grain Dryers
Grain temp system...Tri-States Grain Conditioning
Leg belting.....Goodyear Conveyor Belting
Level indicators.....BinMaster Level Controls
Millwright.....Quad County Ag Service
Rail construction.....Capital Rail Contracting Inc.
Steel storage.....Chief Agri
Temporary storage.....Quad County Ag Service
Tower support system.....Allstate Tower Inc.
Truck probe.....Gamet Mfg. Inc.
Truck scales.....Rice Lake Weighing Systems



Project Engineer Nathan Belstle (left) and Terminal Manager David Jones.

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southwest and Mexico, as well as export terminals on the Gulf Coast.

In addition, producers throughout the region are benefiting from the terminal's location on four-lane U.S. Highway 36 not far from Interstate 35.

The MFA Hamilton Rail Facility, a joint venture between MFA Inc., a grain handling and farm supply cooperative, and MFA Oil Co., a farmer-owned energy supply cooperative, also includes a 14,000-foot loop track for loading 110-car shuttles, 60,000 bph in receiving capacity, 50,000 bph in loadout capacity, and 4,750 bph of drying capacity.

"Our new Hamilton shuttle loader positions us to hit new markets that were not economically feasible before due to freight costs and volume shipment requirements," Mitch Dawson, MFA Inc. director of grain operations, during a facility open house June 20-21. "It shows that MFA is in the grain business for the long haul."

Added Adam McIntyre, regional manager for MFA locations in the area, "There is a lot of grain produced in north central and northwest Missouri, and harvest is a critical time for farmers. During high-volume periods, we can move grain from smaller elevators to the shuttle loader to keep local storage capacity available."

The Project

Construction on the Hamilton terminal broke ground in May 2016. After taking bids, MFA awarded the construction contract for an undisclosed sum to Quad County Ag Service, Paton, IA (515-968-4180), which served both



as general contractor and as millwright. Terminal Manager David Jones, who joined MFA a year ago from Cargill, commented that with the constant loading and unloading of grain, concrete would hold up to the stress better than steel.

The four jumpform concrete grain storage silos on site were constructed by Hoffmann Inc., Muscatine, IA (563-263-4733). It wasn't the easiest ground on which to build—before construction on the silos began, a total of 172 concrete piers 36 inches in diameter were socketed 50 inches deep into the rock. Hoffmann used a total of 8,000 cubic yards of concrete and 2 million pounds of steel rebar on the silos.

Capital Rail Contracting, Inc., Columbia, MO (573-474-3588), built more than 14,000 feet of track for the facility, enough space on the main loop for three engines and 114 jumbo covered hopper cars. A total of 684,000 cubic yards of material had to be moved to build the track to UP standards, with the deepest cut 42 feet.

Grain Storage

Most of the grain storage on site is in four Hoffmann jumpform concrete silos.

Three of the four silos, holding 550,000 bushels each, are dedicated to dry grain ready to ship. They stand 80 feet in diameter and 128 feet tall. Each jumpform silo is outfitted with flat floors, sidedraw spouts, Daay paddle sweeps, 14-cable Tri-States Grain Conditioning grain temperature monitoring systems, and BinMaster level indicators. A total of eight Caldwell 40-hp aeration fans per tank supply 1/5 cfm per bushel of aeration through flush-floor grating.



Closeup of 60,000-bph CompuWeigh bulkweigher for loading 110-car shuttle trains, with Gamet sampler immediately below. Ground level shed is used for official grain inspection.



Two enclosed receiving pits take in grain at 30,000-bph and are topped by Chief surge tanks.



Facility office building with adjacent Gamet Apollo truck probe and Compu-Weigh SmartView screens for directing traffic.



Grain handling equipment from left includes a Zimmerman 4,750-bph tower dryer, Chief screenings tanks, two Schlagel 30,000-bph receiving legs enclosed in an Allstate support tower, Schlagel rotary double distributor, InterSystems gravity screener, and 60,000-bph CompuWeigh bulk weigh loadout scale.

The other Hoffmann concrete silo is dedicated to wet grain. It stands 60 feet in diameter and 128 feet tall, holding 316,000 bushels. Otherwise, it is outfitted similarly to the dry silos.

The facility also includes three 30,000-bushel Chief screenings tanks. They are 30 feet in diameter with 48-foot sidewalls and hopper bottoms.

The center air tower ground pile, custom built by Quad County Ag Service is 320 feet in diameter, with 4-foot sidewalls, four 60-hp Caldwell centrifugal fans on an Allstate tower, and lime floor. It is filled directly from a gravity spout in the main elevator or from a 40,000-bph Hi Roller enclosed belt conveyor from dry tank No. 3. It is emptied using front-end loaders and a portable auger.



Daay paddle sweep and TSGC grain temperature monitoring cables inside one of the two larger upright storage tanks.

Grain Routing

Incoming grain trucks are routed through the facility using an automated CompuWeigh SmartTruck system complete with RF tag readers providing the identity of individual trucks.

After being sampled with a Gamet Apollo truck probe, drivers continue onto a 12-foot-x-80-foot inbound Rice Lake Survivor pitless truck scale for weighing. Then the SmartTruck system routes them to one of two 1,500-bushel mechanical receiving pits. After depositing their loads, drivers continue to another 12-x-80-foot outbound scale for tare weight and scale tickets from an adjacent printer.

Adjacent to the receiving pits, the facility is serviced by an AIRLANCO Series 45 Model 420RLP12 reverse low pressure dust collector designed to handle 46,800 cfm of grain dust.

The pits feed a pair of Schlagel 30,000-bph receiving legs outfitted with a single row of Maxi-Lift 28x10 Tiger-CC Orange elevator buckets mounted on a 30-inch Goodyear belt.

The legs deposit grain into a Schlagel 12-hole double rotary distributor with 30-inch spouts. From there, 60,000-bph overhead Hi Roller Hi Life enclosed belt conveyors carry grain out to storage.

Dry storage Hoffmann concrete silos are emptied onto above-ground 60,000-bph Hi Life belts via a combination of sidedraws and silo augers. These run to a 60,000-bph Schlagel shipping leg equipped with two rows of Maxi-Lift 24x10 Tiger-CC Orange elevator buckets on a 50-inch Goodyear belt.

The operator has the option of running grain through a 40,000-bph InterSystems gravity screener before it is

deposited into a CompuWeigh 60,000-bph bulkweigher run by a CD4000 automated controller.

Workers atop railcars during rail loading operations are protected by a 360-foot trolley-type unit from Fall Protection Systems. The entire system can load 110-car trains in eight hours or less.

The facility also includes a propane-fired Zimmerman tower dryer rated at 4,750-bph at five points of moisture removal. MFA Oil supplies propane to the Hamilton site.

Ed Zdrojewski, editor



Hi Roller Hi Life reclaim enclosed belt conveyor runs at 60,000 bph.

