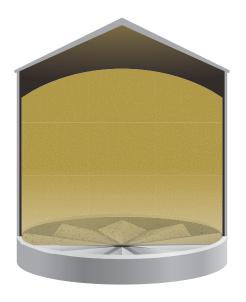
Air Unloading and Aeration Systems

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Jamie Mattson Operations Manager James Valley Grain | Oakes, ND

"When JVG built our first shuttle facility 15 years ago, we were asked if we wanted air unloading and aeration systems. We went for it, and it has been great. So it was a no-brainer when we built the Verona, ND facility two years ago to go with the same type of system.

"They perform well, as long as you take care of them, making sure they are clean and eliminating buildup on them after the bin is emptied. It's a big deal to make sure the end is open and clean, or it won't push the grain; it will just sit and bubble.

"I like these vs. sweeps, because there are no moving parts; they are fast and require minimal maintenance. You already need aeration on the bin, so why not use the fans for cleanout as well? If there is a downside, it would be the minimal amount of bushel capacity you lose with the system."

Tim Phillips **Operations/Construction Manager Ray-Carroll County Grain Growers** Richmond, MO

"Ray-Carroll installed the first air unloading system 20 years ago in two 50-foot-diameter concrete silos with side sumps. I wasn't involved with that project, but I believe the decision was based on cost compared to a tunnel and conveyor to the side. Since then, we have installed the floors in six more silos at two different locations, the latest one being two years ago.

"Overall, the systems perform best

with wheat, then corn, then soybeans. Normally, wheat and corn just require brooming to finish, while soybeans require more labor. I should say that soybeans also challenge some of our bin sweep systems also. The application

The benefits we've seen since installing them is you don't need to worry about maintaining the auger or getting the auger to start and keep it going. The air-assisted systems are just easier to use.

> Jack Queen, Farmers Coop Elevator Co., Halstead, KS



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The big factor that sold us more than anything was that no one has to go in the bin. You run down the bin and turn on the aeration pumps, and the system literally empties the bin. You might get a five-gallon bucket of excess, but that's it.

> Wesley Lentz, Chelsea Milling Co., Chelsea, MI

where we use air unloading now and will continue is where we have a tunnel with smaller silos on each side of the tunnel. This requires less physical labor and is much safer than cleaning sloped floors to a side sump; the total cleaning time is about the same, however."

Scott Althoff General Manager Alton Grain Terminal | Hillsboro, ND

"We first learned of these floors when the facility was built back in 1998-99. We have installed them in the two expansion projects since then. We initially installed them in the design phase of this facility back in the late '90s because the system promised to reduce employee bin entry. A contractor we work with recommended that they be put into the bin bottoms during the initial construction project.

"The system works great. It's much better than any bin sweep we have ever been around. There's never really any maintenance to them, except for visual inspection to verify the screens are clean and secured to the floor.

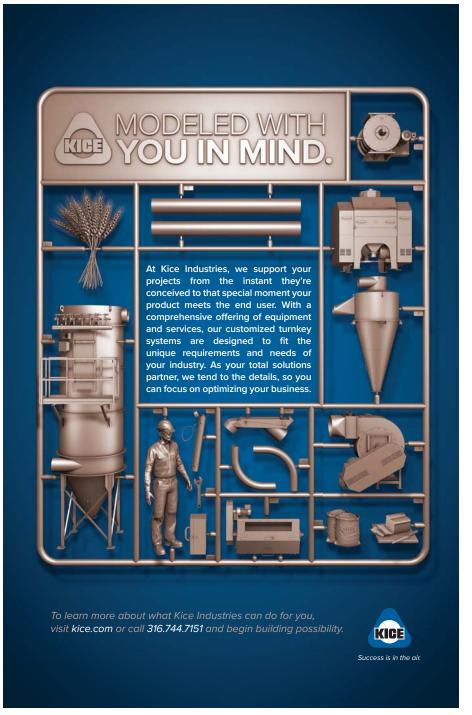
"One of the benefits to air unloading systems is that the time it takes to clean out the bin bottoms is quite a bit less than traditional bin sweeps. Some of these bins are a half a million bushels in capacity – we can get them cleaned out in a matter of hours rather than days. And it doesn't take any real manpower away. A lot of times you have to be out watching the bin sweep to make sure it's going, but with these aeration systems, you can just basically set them to run, turn them on, and watch your amp

gauges inside. When the amps drop, you switch the air to direct it to a different tunnel.

"Another benefit is that employees do not have to enter the bins until the majority of the grain has been removed, and it's only to inspect or confirm that all of the grain is removed from the bin.

"Sometimes you do have to take a little scraper in and scrape off a few areas. But for the most part, you just go in and make sure everything looks good. Then you can back out and turn the fans back on. So, there's no chance of an employee getting in with a bin sweep running.

"And there's practically no maintenance. If a bin sweep breaks down, you go inside and do your repair work right in there with the grain, but with these air-assisted systems, everything's on the outside of the bin. The only thing that can really happen is a fan would quit



working. And in that case, you replace the fan from the outside, and you're back in operation."

Wesley Lentz Flour Mill and Wheat Dept. Manager Chelsea Milling Co. Chelsea, MI

"We slipped six new silos back in 2010, and of course, we wanted to look at aeration and unloading. I did a little research, talked to a few people, and everybody was talking about this these systems and how effective they were. It sounded like a win-win for two reasons: One, you don't have to get into the bin and clean it out, a safety factor. Two, bins that had them pretty much cleaned out themselves. There wasn't that much residue left after you got done unloading.

"The big factor that sold us more than anything was that no one has to go in the bin. You run down the bin and turn on the aeration pumps, and the system literally empties the bin. You might get a five-gallon bucket of excess, but that's it." The system works great. It's much better than any bin sweep we have ever been around. There's never really any maintenance to them, except for visual inspection to verify the screens are clean and secured to the floor.

> Scott Althoff, Alton Grain Terminal, Hillsboro, ND

Jack Queen | General Manager Farmers Coop Elevator Co. Halstead, KS

"I started looking into air-assisted unloading systems about 10 to 12 years ago when I was down in Oklahoma and had some older bins. I liked the idea of getting away from the sweep auger and increasing aeration to have better air

in the bins. But with old bins, it just didn't make any sense to spend that kind of money. So when we built new McPherson tanks here, I took it to my board and spent a little bit more money. We would save time and labor, and we'd be safer, because you didn't have to have people in the bins. Typically, it takes about three guys to man a sweep auger with some of our older bins.

"Today, we have seven bins with that aeration and unloading system. Originally, we had two at one facility and then built a greenfield site with five bins, all with the air-assisted system.

"The benefits we've seen since installing them is you don't need to worry about maintaining the auger or getting the auger to start and keep it going. The air-assisted systems are just easier to use. You really only need one guy to get in there to turn on the fans. I just like them a lot better than the augers. You don't have to worry about the auger plugging or the grain falling over the top of the auger and having to stop and dig it out."

