



Aerial Applicators Soar Over Iowa's Croplands

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Jordan Omstead/Pilot – Stardust Ag Aviation, Lamoni, Iowa: “Flying is the ultimate freedom. You leave the ground and all your problems, all your worries, they’re behind you. It’s you and the airplane.”

Agricultural Aviator Jordan Omstead is entering his 5th year of flying the friendly skies over his home state of Iowa. After graduating from the Air Force Academy in 2006, Omstead spent time in Afghanistan and Iraq – in the military and as a private contractor, before coming home to pursue a childhood passion.

Jordan Omstead/Pilot – Stardust Ag Aviation, Lamoni, Iowa: “I like to tell people I had to get out of the Air Force to start my flying career. My dad was a pilot. I grew up on a farm, so this is the combination of agriculture and aviation, so I get to be a part of all the attributes that I really love.”

USDA figures reveal the Hawkeye State, a national leader in corn and soybean production, planted over 23 million acres of both crops, combined, in 2017 – at a value of \$13.6 billion. But even robust yields are susceptible to pest, disease and fertility pressures, which, if left unchecked, can negatively impact farm revenues.

That’s where pilots like Omstead soar into the picture.

Jordan Omstead/Pilot – Stardust Ag Aviation, Lamoni, Iowa: “The vast majority of what we do is insecticide and fungicide.”

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Aerial application, or crop dusting, began nearly a century ago in the U.S., and over time has reaped the benefits of technological advancement like other wings of agriculture. Several types of growers and ranchers employ the method, along with herbicides, dry fertilizers and cover crop seeding.

According to the National Agricultural Aviation Association, a Washington, D.C. based industry advocate, 71 million acres of cropland across the nation are treated from above every year, in addition to millions of acres of pasture and rangeland.

In Iowa, that amounts to a more than \$214 million annual industry with the mix applied to around 5 million acres - as estimated by the Iowa Agricultural Aviation Association.

Cliff Crowl/Owner - Stardust Ag Aviation, Altoona, Iowa: "We actually put it on better than a ground rig. Because a ground rig, they'll go out there in winds that we don't work in."

Cliff Crowl owns Stardust Ag Aviation. He taught Omstead the trade before hiring him as a subcontractor, and will one day pass the business down to him. Crowl, a Navy veteran, launched his career in crop dusting over 20 years ago - landing in Iowa by chance.

Cliff Crowl/Owner - Stardust Ag Aviation, Altoona, Iowa: "When I got out of the military I had a buddy who lived here. So I flipped a coin and said Des Moines, Iowa or Little Rock...we went heads so we went with Des Moines."

Though ground applicators might have a different take on best methods, Crowl says diligence is paramount to ironing out any shortcomings.

Cliff Crowl/Owner - Stardust Ag Aviation, Altoona, Iowa: "We do have some drift problems, but we are working with those and dealing with those constantly as far as the safety aspect of it. I think the airplane does a better job and is a safer way of applying it."

Critics charge all manner of spray applications are susceptible to contamination and runoff which can threaten the environment and human health

But aerial proponents point out all of their liquid pesticides are approved by the Environmental Protection Agency, and say they employ precision techniques.

Jordan Omstead/Pilot - Stardust Ag Aviation, Lamoni, Iowa: "Without getting into a lot of aerodynamics, just the forces coming off this wing are pushing the air behind the airplane down into the crops. And the way we've got the booms positioned, they're releasing that chemical into that air. So it forces it down with it. That said, the closer we are to the crops, the less fall time there is for that chemical to evaporate. So we get as close as we can, safely."

Omstead references the myriad safety precautions emphasized by the industry and his mentor, like preflight analysis, annual inspections, and scouting fields for people, obstacles, and other hazards.

Mark Hanna/Iowa State Extension Agricultural Engineer - Retired: "Safety is always an issue, just like with ground based application - that type of thing. We want to make sure we are doing it correctly and well."

Recently retired Iowa State Extension Agricultural Engineer Mark Hanna emphasizes the land grant university's outreach efforts to local flight crews, while national training to calibrate equipment also takes place ahead of flight season.

Mark Hanna/Iowa State Extension Agricultural Engineer - Retired: "We spend a fair bit of time every year working with aerial applicators, doing a good patternation check off their aircraft - making sure that we've got some good uniform application. Make sure we don't have some of the things that might cause some off-target movement or drift on that aircraft."

Over the past several years, Stardust Ag Aviation has seen a steady rise in customers seeking aerial cover crop seeding. Released at a higher altitude than spray liquids, the boom accounted for over 10 percent of the company's business in 2017. That's good news for Iowa, which is highly susceptible to runoff.

Mark Hanna/Iowa State Extension Agricultural Engineer - Retired: "Cover crop has some distinct advantages, particularly for water quality. It helps keep the soil in place, but another thing it does is it uses nutrients down in the soil, and particularly nitrates."

Some see growth areas for conservation and precision agriculture as food production increases to serve a growing global population. Going forward, Hanna says it's possible the industry could benefit from unmanned systems working in tandem with pilots.

But for Omstead, it's easy enough now to use an iPhone to map routes to his customers' fields, and listen to his favorite playlists all day long.

Jordan Omstead/Pilot - Stardust Ag Aviation, Lamoni, Iowa: "It depends on...kind of the day and my mood. Sometimes there's some classic rock in there, sometimes there's some Beethoven...just a little bit of everything."

For Market to Market, I'm Josh Buettner. @mtmjosh



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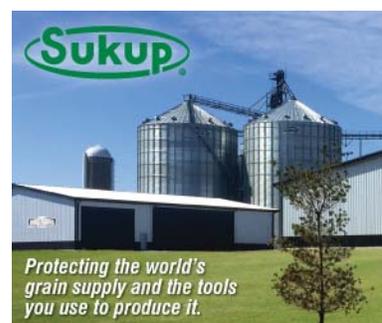
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