

Drone business provides important ag info

Beeman: Saves farmers time, money

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Drones are becoming an ever-more popular pastime, but one Chadron man is hoping they will be the answer to a new career.

Larry Beeman has started AIRborne, a drone-based agricultural information resource business, using the platform licensed by Slantrange. His drone – or air platform – isn't what the general population thinks about when they think of drones. This isn't the rotor-powered type of aircraft you can purchase for less than \$100.

Beeman's fixed-wing drone has a wingspan of six feet, weighs 13 pounds and provides mapping services with a multi-spectral camera. The mapping service can assist farmers in determining population counts, stressed areas, pest infestations and more.

"That is used by growers and agronomists, who use the information to prescribe field treatments," Beeman said. "They can use the pictures I give them to see where everything is stressed, where there might be weeds."

The data can then be used to create a targeted plan for fertilizer or pesticide applications or re-seeding. Problems that often aren't visible to the farmer on the ground "stick out like a sore thumb" on the maps, Beeman said. Stressed plants reflect more light, which highlights trouble spots.

"The spectrum we're picking up is beyond the human eye," Beeman said.

The Florida native, who has been in Chadron for seven years, purchased the air platform, sensors, algorithms and software from Slantrange to launch his business, saying the company offered the best overall product and quality tutorials and training. A light sensor on the drone calibrates the reflection of light so farmers can be ensured that their readings are accurate and consistent in both sunny and cloudy weather. Most flights are done within two hours of either side of solar noon, which makes the light calibration more accurate, Beeman said.

A computer flies the drone, though Beeman can take control if necessary. That computer monitors the drone's altimeter, speed and direction once every 12 seconds. The fixed-wing nature of the drone means he can safely fly for up to 45 minutes, depending on altitude. Once he lands the drone, he can download the data



PHOTO COURTESY OF SLANTRANGE

Larry Beeman's drone used to fly fields is one he purchased from Slantrange, which allows him to provide farmers with field data 20 minutes after he downloads the information from the drone.

from the camera and provide complete electronic maps to the farmer in 20 minutes; he doesn't even need an internet connection in the field to do so.

The unit has two global positioning units, one tied to the aircraft itself and the other working in tandem with the camera so the maps have accurate geographical data to pinpoint trouble spots on the ground. The electronic maps have various functions, including the capability of zooming in and out, changing colors and adjusting filters for a better understanding of what is happening in the field.

"It gives them the tools," Beeman said.

The maps are also clearer and more accurate than traditional airplane flyovers offered by some companies, he added.

"We're flying low and slow," he said, with less vibration. Combined with the quicker turnaround and a more reasonable price – at about \$5 per acre – Beeman said drones make sense for use in the agricultural industry.



GRAPHIC COURTESY OF SLANTRANGE

This graphic depicts a drone flying a field, using a multi-spectral camera that senses light reflection to determine problem areas in a crop.

But it wasn't a simple matter to launch AIRborne. In addition to acquiring the drone and all the related sensors and software, Beeman had to train and become officially licensed by the Federal Aviation Administration. He also

completed a week-long training with the manufacturer. Drones cannot fly higher than 400 feet and must remain in the operator's line of sight. In order to earn his license, Beeman also had to learn about meteorological data, clouds

and air density, flight restrictions – such as those around airports and population centers – and to read aeronautical maps.

Before flying a field, Beeman will do a pre-visit to identify obstacles such as outbuildings or windmills. On the day of the flight, he must send a notice to airman, as required by the FAA to alert pilots that there is an unmanned aerial vehicle in the vicinity, and he must plant a large red flag in the field as an alert to other aircraft, especially crop dusters.

"We get out of everybody's way," Beeman said.

He recommends farmers do five passes with the drone during the growing season, starting with one to do an emerging crop count. That flight can determine if there is a problem spot in the field that might need to be re-seeded while there is still time, he said. Throughout the season, he can check canopy cover, work with agronomists to determine stress levels and causes and even estimate yield per acre across the entire field.

After harvest, the farmer can take the season's maps and analyze and compare them for more efficient planning during the next season. Slantrange is cooperating with Trimble Ag Software, allowing the photos to be uploaded through that system directly to combines and other machinery, putting all of a farmer's management data in one place, Beeman said.

AIRborne's platform can also be used to determine forest health and could probably even be used to count cows if need be, he said. A broken pivot can be identified much more quickly from the air than by a farmer stomping around a field all day.

Targeted application of pesticides or herbicides based on the maps can decrease costs, and identifying problems more quickly also translates into savings, especially in time. A producer can spend hours searching a field for a problem and solution or be at his kid's ball game.

"And family time is just as important as field time," Beeman said.

Storm damage from hail or a tornado can also be documented quickly, and the maps sent directly to a producer's insurance company, possibly eliminating the wait for an insurance adjuster.

Beeman is available for questions and demonstrations by contacting him at airviews@gmail.com or at 430-8745.

"I'm looking forward to meeting the agronomists and farmers in the area," Beeman said.

New Leaf

From C3

experience will also allow them to offer a new service: the ability to create unique outdoor living areas.

"I'm a fairly artistic mindset," Phill said, noting that he likes working with different elevations and textures.

The New Leaf was a labor of love for owners Wayne and Deanna Barber, he continued. That was obvious when they met with them about the purchase.

"It was more like an interview," Phill said. "They weren't going to sell it to just anyone because they wanted us to be successful."

The Lollars have every intention of carrying on the hard work of the previous owners while making the business their own. For Phill, it's about the spiritual connection to the work, and that's something he hopes they inspire in all of their employees.

"It's not just the church's grass we are mowing. Some kid is going to find God on that grass. When we are doing a backyard, it's where that family is going to celebrate birthdays and when we deliver sympathy flowers, it's a hug. It's so much bigger. There's so much more to it," he said.

An 80-year-old might need us to mow their lawn, but they may need a relationship even more, and the Lollars and their employees can provide that, Phill continued.

"My goal is not the dollars. It's to serve," he said.

When it comes to the gift side of the store, Angela has a plan to bring in new inventory that will retain a standard of quality while still being affordable. She already has several new items in stock, including a complete line of Melissa and Doug items for children. The New Leaf will be a place that shoppers can find a gift for everyone on their list, most of the time



KERRI REMPP PHOTOS, RECORD PHOTO

Phill Lollar is ready for the spring spraying and lawn care duties as the new owner of The New Leaf in Chadron. He and his wife Angela purchased the entire business in January.



LEFT: The Lollar family purchased the entire New Leaf entity in January and while they plan to continue offering many of the same products and services, they are also bringing new products in to the gift shop portion of the business, making it a place where you can find a reasonably-priced gift for anyone. **RIGHT:** The Lollar family purchased the entire New Leaf entity in January and while they plan to continue offering many of the same products and services, they are also bringing new products in to the gift shop portion of the business, including a line of Melissa and Doug kids' items.

for less than \$30, she said.

"It's going to be unique. It's go-

ing to be thoughtful," Phill added.

"It should be a place that's fun to

go whether you walk out with a bag or not."



The Lollar family purchased the entire New Leaf entity in January and while they plan to continue offering many of the same products and services, they are also bringing new products in to the gift shop portion of the business.

Dedicated to customer service, the couple is also remodeling two small offices in the back of the business into one larger one. The new space will be used during consultations with customers seeking floral arrangements for funerals or weddings, or those inquiring about the landscaping services.

"They are spending money with us, so we should take it seriously. Customer service is paramount for us," Phill said.

That dedication to customer service extends to their employees. The Lollars have retained the previous team members, including Jasmine Spencer, Bobbi Dickerson, Alex Brodrick, Gentry Rivitsch and Owen Christason. In Phill and Angela's eyes, their primary job is to take care of their team so they can take care of the business' clients.

"Watching them find their potential is exciting. If I get to be a little bit of that, that's gravy," Phill said.