

DRONES

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Pendleton has become one of the most popular of the federal government's seven drone testing sites, with up to 1,000 takeoffs or landings every month.

Retired Air Force Col. Stan Springer runs the Volatus Group, a drone pilot training facility in Pendleton. He said there are several reasons Pendleton has become popular. High on the list: cost.

"They have a natural distinct advantage with their low-cost base," he said, noting that the price of doing business in Eastern Oregon is cheaper than in parts of the country that already have a booming tech scene, such as Texas.

Also, Eastern Oregon skies are not as busy as those around some other test ranges.

"They have a great big range that nobody else can duplicate," Springer said of the Pendleton site.

Pendleton offers 14,000 square miles of sky, and the altitude limit doesn't kick in until 15,000 feet. That's a big slice of North-eastern Oregon skies, higher than Mount Rainier. The range runs from Boardman in the west to the Idaho border in the east and from the Columbia River in the north almost to John Day in the south.

"By negotiating with area wheat farmers and other land-owners, we can spread operations out away from congestion, which provides some level of safety," explained Cory Roeseler, with Hood Technology, which specializes in blade vibration and monitoring.

Chrisman, the airport economic development director, said there's another reason Pendleton is popular. The city's mantra, "Let 'er Buck," fits well with fast-paced, high-tech businesses that don't want to be tied down with red tape.

"So many of these test sites are operated by government entities, universities. Folks that maybe are more interested in printing research papers than they are in understanding what the customer wants," Chrisman said.

What customers want, according to Chrisman, is to get to market quickly and safely. And Pendleton helps them do that.

Economy boost

Over the last six years, the airport has hosted dozens of major tech organizations, including Airbus, Yamaha, NASA and Verizon.

Nine companies now lease space year-round; Yamaha is testing unmanned helicopters about the size of a small person. They can deliver herbicides directly onto an individual vine on a hillside. Company leaders think the drones might be more efficient and cheaper than traditional crop-dusting planes.

An Arizona-based company, Spright, is working on transporting medical tests between a



Retired Air Force Col. Stan Springer, right, runs the Volatus Group, a drone pilot training facility at the Pendleton Unmanned Aircraft System Range. He said there are several reasons Pendleton's drone range has become popular.

health clinic and a laboratory via drones.

"Our goal is not to come, test and leave. It's actually to come, test and hire and encourage jobs locally," said Spright's vice president, Justin Steinke.

About 10% of drone activity at the Pendleton Unmanned Aircraft System Range is military. Those projects are secret. Chrisman said what's important is that all these technologies are cutting-edge and the basis of what he calls a fourth industrial revolution.

"The world and Oregon would be very shocked if they knew the technology that's right on the horizon. And we're going to hopefully usher it in, right here through the Pendleton airport," Chrisman said.

All the new activity at the drone range has been good for the local economy. Employment around the airport has jumped from 20 jobs to 200 over the last six years.

But the new workers are not doing traditional airport work like air traffic control, and the airport doesn't offer any more commercial flights than before the drone boom. Instead, the new employees are drone pilots, engineers, entrepreneurs and software experts, all working for private companies on drone projects.

Those businesses are paying to lease hangars and to use the drone range, money that funnels back to local coffers. Airport revenues will amount to about \$1.7 million this financial year; that's four-and-a-half times more than in 2016.

After years of operating in the red, the airport now makes a profit.

Drone activity is being felt in town too. A brand new Radisson Hotel opens this spring, to provide accommodation for visiting drone pilots. One drone company booked the local Pendleton House Bed and Breakfast for two years solid.

"Aerospace is a fever. Once you get it, you don't get out, and you'll go to about any place in the world to do something cool."

— Retired Air Force Col. Stan Springer, Volatus Group drone pilot training

Some of Pendleton's construction companies have benefited. Joseph Hull, a vice president at McCormack Construction, said they have hired several dozen workers to build hangars over the last couple of years.

Pendleton's car rental businesses are benefiting and local restaurants like the Oregon Grain Growers Distillery have seen a substantial increase in diners. Not one Pendleton restaurant closed during the pandemic.

But the owner of Eden's Kitchen, Kayla Henshaw, said while she's seen a few extra customers, the bigger deal for her has been all the weird things in the sky.

She lives out by the airport: "I like to do motion lapses, time-lapses out my porch, of the sunset. And there's this one that me and my husband to this day can't figure out," Henshaw said. "It looks almost like a spaceship or something."

Manufacturing next?

While restaurants, hotels and car rental shops are reporting increased economic activity, Oregon Employment Department economist Dallas Fridley said a major drone impact cannot yet be detected in the local job numbers. It's one thing to test drones in Pendleton; the real question is whether Eastern Oregon can someday attract businesses that make drones.

"It's not a situation where you have manufacturers who are based in Umatilla County testing products," Fridley said.

Over the last 20 years, Umatilla County has had a remark-

ably stable economy with a level of 28,000 non-farm jobs. But that stability masks turmoil. For example, hundreds lost work when the Umatilla Chemical Weapons Depot closed. At around that same time, hundreds of others found work, as the nearby Wildhorse Resort and Casino expanded.

Twenty years of stability may be comfortable, but it's not growth. Pendleton leaders would very much like to grow by attracting drone manufacturers. Fridley, the state economist, thinks the airport is on the right path.

"They are setting themselves up for the future by doing this, because we're looking at the first phase of development in drone technology and who knows what it's going to be like in 10 years," Fridley said.

Pendleton Mayor John Turner thinks that given time, some drone companies will start manufacturing locally. He points out that to start with, they only came to the airport for a week. Then they started to stay for a few months. Now many have a permanent presence and some are starting to bring in parts to assemble.

"We think the next logical step would be manufacturing of some kind," Turner said.

He thinks manufacturing in Pendleton makes sense because costs are lower than in places like Silicon Valley. The city has invested in the kind of infrastructure — state-of-the-art hangars, high-tech lathes, 3D printers and fast internet connectivity — necessary for more.

Springer, the retired Air Force colonel, agrees the airport has done a good job attracting busi-

nesses such as his. But he's not sure attracting manufacturers is as simple as saying: "Build it and drones will come."

"There has to be an investment in people capital, on top of the physical capital to really see a spike in employment," Springer said.

Springer's company trains dozens of people a year to maintain and fly drones that check power lines and survey farmland. They can start at \$60,000 a year and make upward of \$150,000 over time.

Springer believes there is a good chance some manufacturing will come to Pendleton, largely because the barriers to entry are low. For example, drones are small, relatively cheap and easy to design and manufacture. Plus there are a lot of inexpensive high-tech sensors and probes that can be attached.

He thinks the sector is still at the stage where a couple of people in a garage can break through. But there's always one question companies ask before moving to an area: "What's the local labor force?"

The city of Pendleton knows skilled labor is an issue and has taken steps to grow the supply. For example, Blue Mountain Community College now offers drone operator and maintenance courses, and Pendleton High School has a talented robotics team.

If Pendleton can increase its supply of drone experts, Springer said it doesn't need to worry about competing with overseas labor, like in China. That's because national security concerns, overseas supply chain constraints, and intellectual property issues are now driving many Western companies to relocate manufacturing in the United States again, particularly in the high-tech sector.

The fact that Pendleton is a small rural town isn't a problem either, he said: "Aerospace is a fever. Once you get it, you don't get out, and you'll go to about any place in the world to do something cool."

Incubation center on the horizon

There is one thing Pendleton needs that has yet to be built and that's a drone incubation center, a place where garage tinkerers can share ideas and get advice from experts.

The airport has picked out a location for just such an incubation center, but it's still trying to find the money.

In 2020, the airport received \$16.8 million in CARES ACT funds from the Federal Aviation Administration to help recover from the effects of COVID-19. Pendleton used the money to improve airport infrastructure and build new hangars.

Meanwhile, unlike Pendleton, the skies above most American cities remain relatively drone-free. FAA rules continue to restrict airspace. But those rules are constantly being updated as businesses push for new ways to fit drones into the economy.

SCIENCE

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collected and sampled the types of invertebrates, such as insects or crayfish, in the water.

In the riparian vegetation zone, students learned about flora along the riverbank and helped catalog locations while learning which plants have cultural significance to Indigenous peoples. This workstation is done in partnership with the Confederated Tribes of the Umatilla Indian Reservation.

"We're learning out in nature," said Mason Miles, a high school student from La Grande. "We see it in the books, then get the hands-on experience."



Isabella Crowley/The Observer

Students measure water temperature as part of the water quality workstation while attending the Qapqápnim Wéele/Grande Ronde Community Science Project on Wednesday, June 1, 2022, at Bird Track Springs.

Outreach programs are beneficial for both students and schools. Field trips can be cost-prohibitive for schools, as they

need to cover the price of buses and substitute teachers, Galvez said. Programs such as the Grande Ronde community science



Isabella Crowley/The Observer

Brandon Galvez, left, LHS science teacher, helps students carefully empty nets at the macroinvertebrates station while attending the Qapqápnim Wéele/Grande Ronde Community Science Project on Wednesday, June 1, 2022, at Bird Track Springs.

project get funding specifically to conduct outreach. "This is a really nice partnership with the schools and program," the

LHS teacher said. The Qapqápnim Wéele/Grande Ronde Community Science Project is funded entirely through

grants and donations. This year it received \$120,000 — from the Wildhorse Foundation, National Park Service's Crayfish Study and Amazon Web Services in collaboration with the Greater Oregon Science, Technology, Engineering and Math Hub — to cover the cost of implementation, supplies, tribal guidance and local participation.

There is sometimes a debate within the scientific community whether to refer to projects like this as citizen science or community science, Lowe said.

"We use 'community science,'" she said, "because we want the community to know that everyone is welcome."

BOUTIQUE

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can try on their clothing in one of two dressing rooms.

"We're really trying to create a place that people from surrounding counties can come to as well, including Baker, Wallowa and people from Pendleton," he said.

With the rise of online shopping, Moschkau said women don't have the option of trying clothes

on before purchasing and finding out what actually feels comfortable to them. That's what Bout Time Boutique wants to give their shoppers, a retail space in which to explore and try things on at their leisure.

Bout Time Boutique practices and promotes the "buy local" motto, and the owners encourage customers to visit them and discover the affordability of the shop's comfortable women's clothing for everyday wear.

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