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► TECHNOLOGY

Government contracts keep Sagebrush's sales rolling

The company's Roto-Lok technology is becoming hot property for military, security, and commercial applications. By Shea Andersen, NMBW Staff, photo by Shea Anderson, copyright 2001

In the rarified world of gimbal production, Albuquerque's Sagebrush Technologies Inc. is quietly making a name for itself.

On July 10, Sagebrush announced it had secured a \$762,100 contract with Northrop Grumman Corporation to provide two-axis gimbals for use in positioning a particular antenna array aboard the U.S. Army's "Shadow" tactical unmanned aerial vehicle, or TUAV. Northrop Grumman is known to be the prime contractor with the Army's Communications and Electronics Command.

In case you're wondering, a gimbal is a two-axis mechanism that allows cameras, sensors or other equipment to swivel in numerous directions while attached to something else. They're frequently used to mount cameras and sensors on law enforcement or media helicopters.

Government defense contracts have pushed Sagebrush's sales steadily upward in the last five years. As of fiscal year 2000, Sagebrush had sales of over \$2.5 million, up from just \$500,000 in 1995. Sagebrush President Joe Zmuda says orders for this year are already 100 percent of sales last year. "If we continue at our rate, we'll potentially double the sales of last year," says Zmuda. "I don't see anyone as a direct competitor for the space we're in."

The contract with Northrop builds off of a previous \$326,000 contract, under which the Albuquerque engineering firm put another gimbal setup on a larger, heavier version of the Shadow TUAV. That antenna setup was about 12.5 inches high and weighed 8.5

pounds. Now, said Zmuda, the army is looking for a much smaller, seven-inch antenna mount. They asked Northrop, which turned again to Sagebrush to do the job.

Sagebrush is a wholly-owned subsidiary of Nextpath Technologies Inc., which bought Sagebrush at the same time that it bought Willow Technologies, in 1999. Zmuda was hired as the program manager at Willow in March of 2000. Soon thereafter, in July of 2000, Nextpath sold Willow to New York-based Corning Inc. for \$15 million. Although he doesn't know what Nextpath paid for Sagebrush, Zmuda suspects it was something less than half of the Willow price tag. When Willow was sold, Nextpath wanted someone to run Sagebrush, and they brought in Zmuda.

But while Willow, now Corning, moved to a fancy North I-25 office park, Sagebrush stayed in its rather remote location; it's literally the last building within Albuquerque's eastern city limits before Tijeras Canyon. From their dusty, weedy front porch you can see the company's namesake plant. Employees there say coyotes and roadrunners are frequent commuters through the parking lot.

Step inside, however, and the modest building holds some of the latest innovations in gimbal technology, the sort of thing that attracts large contractors like Northrop Grumman.

Under the terms of the Northrop contract, Sagebrush will be designing and developing a prototype and two flight test gimbals in its Albuquerque facility, then providing them to Northrop to put onto the TUAVs.

Sagebrush will be using its patented Roto-Lok drive, an innovation in gimbal design that uses no gears. Instead, the Sagebrush gimbals move in their particular directions by the use of tensioned wires. Using wires, not gears, said Zmuda, keeps the gimbals running smoothly, without lubricants, friction, drive irregularities or "backlash," which is the joggling of the instrument that occurs when the gimbal changes direction.

Sagebrush makes several sizes of Roto-Lok gimbals, including a Model 20, which is designed to accommodate a 20-pound object, which sells for \$5,495 a piece. But it's the smaller ones, says Zmuda, that the company is likely to focus on in the future. They're currently working on a project for Raytheon Corporation, which is helping the military to retrofit reconnaissance hardware on F-18 warplanes.