

Va. Cooperative Finds Solution From Above

By Preston Knight

In 2004, Shenandoah Valley Electric Cooperative (SVEC) in Mount Crawford, Va., looked to the skies to maintain rights-of-way in areas largely inaccessible to ground crews.

Aerial Solutions Inc., a company based in Tabor City, N.C., proved to be the perfect match. About 95 percent of its work involves aerial side trimming, a practice that it pioneered when the company opened in 1985.

Aerial Solutions primarily works for utilities east of the Mississippi River, and among that group, it has served seven electric cooperatives, including SVEC. The Cooperative's service territory of 7,633 miles of line features many remote and rugged areas, making it an ideal fit for the trimming company's patented aerial saw, said Ted McAllister, Aerial Solutions operations manager.

"The terrain is [often] not conducive to getting ground crews and equipment back in there," he said. "We're recovering a lot of right-of-way that needed some attention. The aerial saw has been a good tool to help get them through their cutting rotation. It's been a good fit for the program."

Each cutting project includes one of the company's fleet of eight McDonnell Douglas 500 helicopters, affixed with the power saw – an 800-pound machine consisting of multiple 24-inch diameter rotary blades. Suspended from a 90-foot vertical boom beneath the helicopter, the saw provides maximum lateral clearances from vegetation encroaching into the right-of-way, trimming trees from ground to sky to further avoid conflicts with power lines.

The saw is suspended by aluminum tubing and is attached to the aircraft through a specially designed brace that prevents the saw from twisting, the company says. Because the helicopter and saw are not grounded, the saw can get within inches of power lines. However, pilots rarely need to get that close to the wires, according to Aerial Solutions.

The saw's versatility and speed provides SVEC with an efficient and cost-effective alternative to conventional side trimming methods, with little to no environmental impact. Long-term outages in severe weather are avoided after a right-of-way is trimmed.

"The Cooperative's vegetation management program employs a mix of ground crews, bucket crews, mechanized ground crews, selective herbicide application, and aerial saw. The aerial saw has become an essential tool for SVEC to keep its rights-of-way clear," said Myron Rummel, SVEC's president and CEO who retired in July. "In 2004, we completed 40 miles of clearing using this method. Today, SVEC clears about 200 miles of distribution and subtransmission right-of-way using the aerial saw."

SVEC trims right-of-way on a roughly seven-year cycle, with Aerial Solutions normally coming into the service territory from January to March.

A highly trained professional pilot and groundsman work each project, the latter responsible for fueling the helicopter and engine that runs the saw, coordinating with the pilot on anything that occurs on the ground and working alongside the utility company, in case debris might fall on the road or a fence.

SVEC has always provided more than enough additional assistance in planning for and then carrying out projects, said Jeff Pigott, an Aerial Solutions pilot.

“Any extra eyes help,” he said. “A lot of companies are cutting back on ground help. With Shenandoah, it’s very comforting. They’ve had the same guys for years. You know what to expect.”

Cleve Cox, Aerial Solutions’ president and chief pilot, adds: “They’ve got everything pretty well lined up when we show up. It keeps everything moving.”

One of the reasons SVEC and Aerial Solutions work well together is both companies’ commitment to safety. In its mission statement, SVEC pledges to provide “reliable and safe electric service at the lowest possible cost.” There were no lost-time accidents after 631,372 hours worked throughout SVEC’s territory in 2015.

Meanwhile, Aerial Solutions has safely flown over 140,000 hours since the company was founded in 1985. All pilots hired are required to have 1,000 hours of flying experience, the company says, and although it is not required by the FAA, all pilots receive annual recurrent training covering helicopter operations and emergency procedures.

A pilot views the utility tree line by looking directly down from the helicopter. By following proper procedures, pilots can see, and avoid, obstacles such as deer stands and guy wires, the company says.

The saw rarely goes closer than 200 feet from highways and occupied houses. In many situations, the distance can safely be shortened once proper procedures and pre-planning take place, the company says.

Aerial Solutions employs 55 people, including 16 air saw pilots. The company can trim 20 miles of transmission and 10 miles of distribution in a six-day work week. That includes trimming both sides of the right-of-way.

The helicopter is capable of flying for 90 minutes with a half hour of safety reserve fuel remaining, Aerial Solutions says.

“You can cover a lot of territory in a short amount of time,” Cox said.

Rummel said that the benefits of the aerial saw are seen when compared to the time and cost that would be involved if a ground crew would instead be sent to clear right-of-way. In many cases, he said, a ground crew could not access the same vegetation as the saw.

The end result is improved reliability across SVEC's system. In 2015, the right-of-way clearances from aerial cutting were one component contributing to SVEC's reliability of 99.97 percent. The average number of outage hours per member-owner was 2.64 hours.

Cox, whose father purchased the aerial saw's patent decades ago, said his company's work "certainly draws attention anywhere we go," and employees explain their craft to residents on the ground. Beyond the visual of clear rights-of-way, the finished product is certainly noticeable to SVEC member-owners.

"We tend to see that most people are very appreciative of the help to keep their power on, especially in the winter months," Cox said.