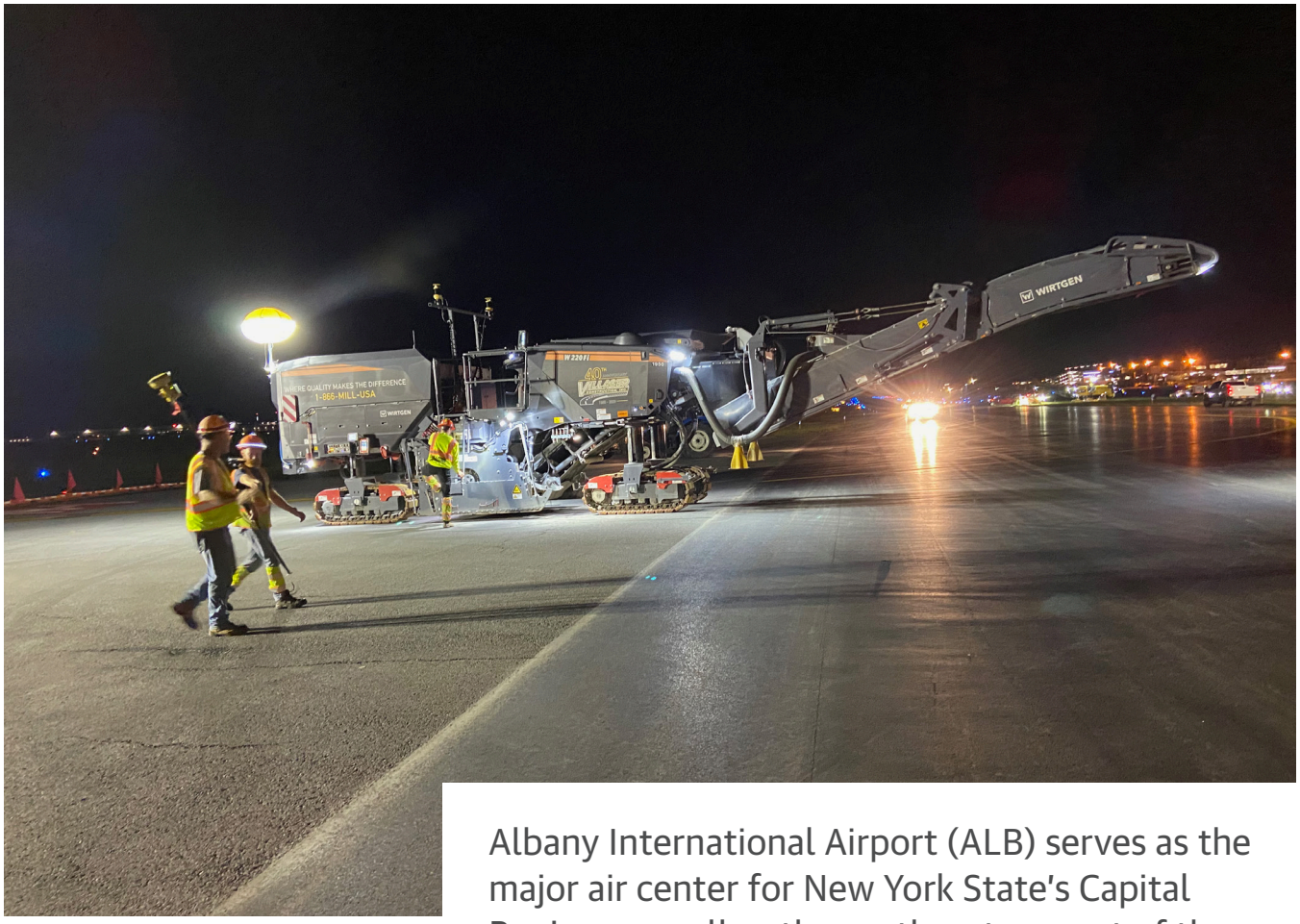
Exceedingly Fine Grind

GPS Milling solution proves that speed and accuracy are not mutually exclusive concepts



Albany International Airport (ALB) serves as the major air center for New York State's Capital Region, as well as the northeastern part of the state, and Western New England, handling roughly 1.5 million passengers annually. That huge number, however, also dictates the difficulty of scheduling regular maintenance on its runways and taxiway surfaces.

"One of the real challenges after winning the bid for the project was getting the work done in a severely constricted time frame," said Darin Cooper, Rifenburg's superintendent. "We were limited to performing between 10:00 p.m. and 5:00 a.m. Add in the 20 to 30 minutes each for setup and breakdown, and we were actually only left with about six hours to get out to the area being resurfaced, set up, mill, clean out the area, tack it, pave it, get it striped, and move off."

Company
Rifenburg Construction
Troy, New York

Project
Airport Taxiway Resurfacing
Albany, New York

Topcon Solutions
Millimeter GPS

Topcon Dealer
Admar Positioning Solutions
Rochester, New York

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Rifenburg decided early on that a profile milling approach would be best to correct a number of surface irregularities that had been identified in the initial survey design. So, well before the project started, Topcon representatives met with those from Villager Construction, a milling subcontractor brought in for the job, to discuss ways in which the Topcon Millimeter GPS solution could work with a new Wirtgen 210 Fi they'd just purchased. The combination of the Wirtgen unit's CAN interface and the plug-and-play design of the Millimeter GPS solution quickly resolved any concerns.

While Runway 01/19 was resurfaced in 2015 — a project Rifenburg also headed up — the adjacent taxiway was not. The need for improvement was showing it in many areas, according to Brian McGrath, Rifenburg's survey manager.

"There were many cracks in the taxiway surface, and, based on some areas that had standing water after a heavy rain, there were also some grade issues that needed to be corrected," he said. "So it wasn't a typical 'mill-and-fill' where we could just track the existing surface, mill 2-inches and put back 2-inches. The profile-based solution played perfectly to the strengths Millimeter GPS brings."

Millimeter GPS augments the benefits of GPS positioning technology with a zone laser reference to improve the vertical accuracy of the milling machine. Working off an initial survey design, Rifenburg simply ran a minus 2-inch offset from proposed grade and both units milled to that design grade.

"Running off that model made all the difference," said McGrath. "I'm sure there'd been some basic mill-and-pave resurfacing in the past — without any changes for grade issues. Now, however, in order to get the necessary grade corrections, we were milling anywhere from less than an inch in some spots to as much as five inches in others, all while trying to maintain a 1:1.5 slope to the edges. Without Millimeter GPS, it would have been extremely difficult."

Although they're one of the larger milling companies serving the East Coast, this was Villager's first foray into the 3D realm. The benefits realized through the use of Millimeter GPS were many. In addition to bringing the taxiway up to standards and correcting the long-standing drainage issues, the solution both streamlined the milling process and resulted in material savings.

"Profile milling with Millimeter GPS results in a much higher degree of accuracy," said Cooper. "And, because the accuracies are so tight to the design, the amount of asphalt needed to get back to grade is reduced, saving the owners money. On a project in which we paved anywhere from 500-650 tons per night, material savings are welcome."

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A **full-length version** of this story is on the Topcon website.

Visit the **Topcon YouTube channel** to watch video on Millimeter GPS technology featured in this TAW.