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SitePrep

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EQUIPMENT TRACKING with GPS

+ Don't Let That Engine Idle!

WORKIN' ON T

Advanced tracking devices, software and machine control aid site prep for a railroad terminal.

BY CORI KEETON POPE

When Nick Savko & Sons Inc. was founded more than 60 years ago, GPS technology was a thing of the distant future. Today, the Columbus, Ohio-based site development firm considers it a necessity. From the owners to the estimators to the project supervisors, those who work at Nick Savko & Sons credit the technology for making them more efficient, more cost-effective and more competitive.

That is why one of the first calls that Nick Savko & Sons made when the company was awarded a $175-million contract with the CSX Railroad was to their local GPS dealer.

"We've been using GPS to guide our dozers on large earthmoving projects for about five years and we knew we'd just scratched the surface of the capabilities this kind of technology could provide for us," says Marty Savko Jr., who represents the third generation to enter the family business. "The CSX Railroad's trans-shipping terminal in North Baltimore, Ohio, just south of Toledo, was about 100 miles from our corporate offices in Columbus. Nick Savko & Sons was the general contractor for the entire project, and we were responsible for all facets of construction including 27 miles of track. We wanted a way to track our production, idle times and status from Columbus, so our first step was to start researching remote monitoring options."

Installing the System

With the help of Steve Schmitt from Precision Laser & Instrument, the local Trimble dealer, Nick Savko & Sons acquired 36 Trimble CrossCheck Global Locator devices and Trimble Construction Manager software for remote equipment monitoring. The company also purchased a Trimble GCS900 Grade Control System for greater fine grading precision and efficiency.

Nick Savko & Sons served as general contractor for the CSX Railroad trans-shipping terminal in North Baltimore, Ohio.

THE RAILROAD
with Remote Monitoring

"When Marty Savko [Jr.] contacted me, he was looking for software that was easy to use, could create reports about production and idle times, and would give those in the office real-time visibility into the jobsite," Schmitt says. "They've been using Trimble GPS equipment for years, so Trimble Construction Manager was the obvious choice."

As a first step, Schmitt delivered the CrossCheck Global Locator devices and trained Nick Savko & Sons personnel on the installation and maintenance. Once installed, the GPS device monitors information such as engine idle time, cycle times, productivity and more.

"Steve showed us how to install the CrossCheck device on a scraper and on an articulated dump truck," Marty Jr. says. "We then installed the other 34 units ourselves and have been able to handle all of the maintenance, too."

In addition to assisting with hardware installation, Schmitt installed the Trimble Construction Manager software on several Savko laptops and on two rugged Trimble Tablet computers. Following some brief training, the equipment and the users were ready to go.

Monitoring Production in Real Time

Nick Savko & Sons initiated the CSX Railroad's trans-shipping terminal in April 2009 with the CrossCheck devices installed on almost every piece of equipment at the jobsite. According to Marty Jr., that included Caterpillar 621 scrapers, Caterpillar 740 articulated dump trucks, Caterpillar dozers ranging from D8s to D6s, John Deere dozers ranging from 750s to 450s, and three Komatsu PC800 excavators.

As the company's personnel began moving dirt for the seven-mile-long, 800-acre trans-shipping terminal, both Marty and his dad were able to monitor the status of the job in real time on their laptops at the corporate offices.

"We had a lot of work to do in a short period of time, so our highest priority was staying on top of our production," Marty Jr. says. "We looked at the yardage we moved per hour and per day, as well as by category of machine and each individual machine."

Each day, Martin Sr. and Marty Jr. would discuss the reports and status, and share any concerns with the project superintendent at the jobsite, project manager and estimator. The reports were utilized to help make better decisions on-site, such as whether a particular machine or operator was under-performing, or if the equipment needed to be moved to a different jobsite location.

"Because we were able to maintain such close contact and supervision on our progress, we were able to complete the earthwork phase a month ahead of schedule," Marty Jr. says. "The software helped us move over three million cubic yards of dirt in five months. Equally important, the software helped us identify a major concern before it became a real problem."

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—**Marty Savko Jr.**, Nick Savko & Sons Inc.

In addition to monitoring production, the company also reviewed idle times in order to keep fuel costs down. Throughout the day, the Savkos referred to the software's idle time reports to identify which machines were idling and for how long. If idle times seemed unusually high on a particular day for a piece of equipment, the Savkos would then call the project superintendent to discuss what changes needed to be made.

Controlling the Blade

While using GPS technology to monitor jobsite performance from the office, Nick Savko & Sons also invested in a new dozer and GPS machine control system specifically for the CSX Railroad

To track production on the site, Nick Savko & Sons installed Trimble CrossCheck devices on almost every piece of equipment and reviewed reports in real time in Trimble Construction Manager software.

A Caterpillar D6N was equipped with a Trimble GCS900 Grade Control System with the GLONASS option for blade control within three to six millimeters.

Nick Savko & Sons moved more than three million cubic yards of dirt in five months and completed the earthwork phase a month ahead of schedule.

project. The company purchased a Caterpillar D6N and equipped it with a Trimble GCS900 Grade Control System. The GCS900 is a 3D grade control system that puts the design grade surfaces and alignments at the operator's fingertips. The system uses GPS technology to position the blade in real time, which eliminates the need for manual staking and improves productivity.

"We have machine control systems on the majority of our earthmoving equipment, but we were drawn to the Trimble GCS900 because its GLONASS capabilities provide blade control within three to six millimeters," Marty Jr. says. "We had 400 acres of fine grading work to do on this project, so we wanted to be as precise and efficient as possible."

With the GCS900 system and GLONASS upgrade selected by Nick Savko & Sons, a dual GPS/GLONASS antenna system was mounted to the blade of the dozer. The antenna delivers precise positioning data to an in-cab control box that determines the position of each tip of the blade and compares it to the design elevation to compute cut or fill to grade. An in-cab monitor gives the operator full visibility into the jobsite, his location and the position of the blade.

According to Marty Jr., there was virtually no training required for the veteran operator who ran the new D6N equipped with the GCS900 system.

"Within a day, the operator was comfortable with the new system and was operating at full capacity," he says. "The equipment is extremely user-friendly and easy to use." He also says the increased production of the dozer equipped with the GCS900 paid for the technology in less than five months.

"The accuracy and productivity gains we saw from this bulldozer compared to those guided by stakes was astonishing," Marty Jr. says. "The grade control system paid for itself before this job was even completed, and we've been using it on every job since."

Reassuring the Client

Another major advantage of using GPS technology is the reassurance it provides to the client. When executives from CSX visited the jobsite, the site supervisor was able to drive them around the project in a truck equipped with a Trimble Site Positioning System GPS receiver mounted to the cab's roof and a Trimble Tablet computer inside.

Michael Ward, CEO of CSX Railroad, was able to tour the jobsite and receive real-time updates about production progress from the Trimble Construction Manager software, as well as information about blade positioning and grading from the GCS900.

"He left the jobsite feeling even more confident about the job we were doing. The CSX executives were very impressed with the technology," Marty Jr. says.

Although the earthwork phase of the CSX Railroad's transshipping terminal is completed, all of the GPS equipment purchased for the job is now being utilized on new construction projects. According to Marty Jr., the GPS technology not only improves the productivity of current jobs, but also helps the company more accurately bid future projects.

"Every year we allocate funds in our annual budget to further invest in GPS equipment. Now it is hard to remember how we ever got along without it."

—**Marty Savko Jr.**, Nick Savko & Sons Inc.

"This technology provides us with our true costs, so we know how to bid and track jobs down to the minute," he says. "We've been able to lower our overall cost, which make us more competitive and gives our clients a more cost-efficient project."

When it comes to future planning and technology investment, the company's strategy is clear. "Every year we allocate funds in our annual budget to further invest in GPS equipment," he says. "Now it is hard to remember how we ever got along without it." SP

Cori Keeton Pope is a freelance writer covering a variety of topics, including construction technology. She can be reached at cori@keetonpr.com.

TRIMBLE GPS TECHNOLOGY PROVIDES MANY BENEFITS FOR NICK SAVKO & SONS, INC.

CUSTOMER STORY

PROJECT HIGHLIGHTS

- Contractor uses Trimble asset management and grade control technology for increased job site efficiency
- Trimble Construction Manager helps Savko & Sons monitor equipment operating 100 miles away
- Daily monitoring helped contractor move three million cubic yards of dirt in five months – a full month ahead of schedule
- Trimble GCS900 3D grade control system provided grade control within three to six millimeters and paid for itself in a matter of months

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CUSTOMER: **SAVKO & SONS, INC.**
COLUMBUS, OHIO, USA

PROJECT: **CSX RAILROAD'S TRANS-SHIPPING TERMINAL**

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