JUNE 2019

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- Haul trucks
- Wear parts



Supplying the rock resources in West Texas

by RockRoadRecycle staff writer

On the cover:

L-R:

Cheyenne Smith of West Texas Rock Resources, Adrian Mannix of Crushing Tigers, and Randall Smith of West Texas Rock Resources

Photo courtesy of West Texas Rock Resources

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Classifieds



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Doosan Infracore NA to offer Trimble's new generation of loader onboard scales









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L-R: Cheyenne Smith, West Texas Rock Resources; Adrian Mannix, Crushing Tigers; and Randall Smith, West Texas Rock Resources.

ince 2007, West Texas Rock Resources LLC has been a leading provider of crushed limestone and other materials in Roscoe and surrounding areas. The company produces flex base, concrete aggregate and flexible fill for individuals, wind farms, highway construction and oilfield services. A major part of its success has been its crushing and screening equipment, which has been supplied for many years by Austin based Sandvik dealer Crushing Tigers.

The two things construction businesses need to do their job are the right materials and a supplier who can be relied upon to deliver. One such company that can be relied upon is West Texas Rock Resources (WTRR), which has since 2007 carved out a niche in providing aggregate of the highest quality for a diverse variety of applications.

An area of particular importance in which WTRR has excelled is the building and developing of relations with its customers. "Our projects are subject to strict quality control. As

Supplying the rock resources in west Texas

a result, customers can be assured of our ability to provide the best quality and production available," said the company's Cheyenne Smith. "Each member of our team strives to find creative solutions to satisfy the special needs of every project; the result is successful projects and repeat customers."

The privately owned company services the west Texas requirements of a diverse range of businesses. Its customers include local farmers, contractors, large wind farm construction companies, oilfield service companies, local municipalities and the Texas Department of Transportation. The company serves communities throughout the area, including Roscoe, Sweetwater, Loraine, Colorado City, Snyder, Roby, Rotan, Abilene and Big Spring, typically operating within a 100 mile radius of Roscoe.

Wide variety of services

WTRR provides a comprehensive range of civil site construction services including producing aggregate and clearing and grubbing of land as well as grading and compaction. With regards to the processing, stockpiling and efficient delivery of aggregate, the main materials produced are 247 flex base, 057 concrete rock, rip rap, select fill, 3/4" - 1 1/2" rock, 2"- 3" rock, sand and pea gravel. This selection is driven by customer demand and enables customers to have access to an extensive selection of materials for virtually any project need.

With regards to other work, clearing and grubbing of land has proven to be an important part of the business, with site excavation and the construction of oilfield pad sites also proving to be areas of specialism. However, it is not only the producing of the materials and dealing with sites that is of importance, but also distributing or removing it. To this end WTRR has access to a small rail spur located in Roscoe, with the ability to access all necessary equipment for unloading products.

Screening and crushing

As would be expected from a company involved in such diverse and specialized material processing fields, as well as being focused on the supply of high quality aggregate, WTRR operates an extensive fleet of equipment. "We have portable crushers and screen plants, equipment for stockpiling and delivery and transportation services provided as well. Material can be processed to meet most gradation and strength requirements, as requested.

"Currently, we have two locations for crushing and stockpiling limestone — in Roscoe and San Angelo. We also have portable, mobile crushers that are available to be set up in quick fashion to accommodate any quick turn-around projects. Our sand and pea gravel [site] is located in Bronte," added Smith.

The crushing and screening equipment used by WTRR is all supplied by local Sandvik



Product from the scalper being fed directly into a tracked conveyor.

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WTRR operates an extensive fleet of equipment.

dealer Crushing Tigers. The crushing fleet now operating consists of a QI441 impact crusher and a QI341+ jaw crusher. A QI240 impact crusher, after many years of excellent service, has recently been sold on, and is said to still work "excellently" for its new owner.

Screening is undertaken by two older but high performing units, an Extec S5 doublescreen and Extec E7 scalper (Extec was acquired by Sandvik in 2007/8). More modern constituents of the fleet include a QA 440, 2 x QE 341 and a QE 441 scalper. Stockpiling is provided by tracked stockpilers which are able to match the mobility of the tracked Extec and Sandvik equipment.

The crushing, screening and scalping equipment has proven ideal for WTRR's aggregates business. Depending on the specific requirements of the customer and the set-up of the crushing and screening train, production in the range of between 200 – 500 tons per hour is readily achievable. This flexibility and productivity has proven to be ideal for road construction businesses, windfarms, oilfields, building pads, parking lots, concrete aggregate and erosion control applications.

A 'big cat' in equipment supply

"Excellent service and an excellent working relationship," are the reasons Smith has for using Sandvik equipment from Crushing Tigers. He adds, "Sandvik machines are well constructed for minimal downtime." All its crushing and screening equipment is supplied by the Sandvik dealer in the area, Crushing Tigers.

Crushing Tigers, based in Austin, Texas, are distributors for some of the world leaders in the design and manufacture of crushing, screening, breaking, material handling, shredding and recycling equipment. Its business covers a diverse range of applications including, but not

limited to, quarrying, mining, landfill and waste management industries. "We have chosen equipment ranges to process aggregate, coal, C&D waste, municipal waste, compost, topsoil and sand. This is what drives our business: getting the customer the right kit for the job," says Crushing Tigers Sales Director Brian Costello.

"We are authorized distributors for Sandvik's premium line of mobile crushing and screening equipment, a distributor of EDGE material handling and recycling equipment and the Bretec line of breakers. Our strengths lie in the range of quality products we have at our disposal, and the ability to tailor a solution that will exceed customer expectations for any given requirement. We offer a range of products, at competitive cost, incorporating the very latest technology advances, with excellent sales and service support," Costello said.

No matter how good the machinery, it's all about the people who support it in the field that provides the real difference. "A highly skilled team of engineers has been created to ensure that advice before purchase and technical backup is the best available. Crushing Tigers is committed to building long term relationships based on integrity, performance, value and client satisfaction. We will continue to meet the changing needs of our clients with our quality services delivered by the most qualified people. In effect we are dedicated to satisfying our customers," adds Costello.

This is not an empty boast, as Smith explains, "Crushing Tigers believe in respecting its customers, listening to their requests and understanding their expectations. They strive to exceed expectations in affordability, quality and on-xtime delivery. As we have found, Crushing Tigers strive to provide an excellent service in terms of quality of work, timely delivery, professional behavior, customer service and value for money."



The crushing, screening and scalping equipment has proved ideal for WTRR's aggregates business.



Depending on the specific requirements of the customer and the set-up of the crushing and screening train, production in the range of between 200 – 500 tons per hour is readily achievable.

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CRUSHING TIGERS



The Road to
Success is
always under
Construction



Crushing Tigers strive to provide an excellent customer experience in solving their customers Crushing, Screening, Breaking, Recycling and Material Handling needs through:

- High Quality New & Used Equipment offered at very competitive pricing
- Fresh & Low Hour Sandvik & Edge Units available for Rent
- Aftermarket Spare Parts & Quality Service for Sandvik, Edge, Extec, Fintec, Deutz & other equip.
- Lean Six Sigma Process Improvement Consultation

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June 2019



Luck Stone is a third-generation crushed stone, sand and gravel company based in Richmond, VA, encompassing 4 divisions and 18 quarry sites throughout Virginia and North Carolina

on't sweat the small stuff. Don't fret over the details. Words to live by? Perhaps in one's personal life, such "wisdom" is well advised and embraced. But when it comes to business, the perspectives change drastically. Often times, what differentiates a good company from a great company is the attention paid to the so-called "small stuff." As companies strive to set themselves apart, it's the little things that can drastically impact the path to success. No one knows that better than Luck Stone.

Luck Stone is a third-generation crushed stone, sand and gravel company based in Richmond, VA. With 88 years of experience under its belt and a company encompassing 4 divisions and 18 quarry sites throughout Virginia and North Carolina, it's clear by its success that Luck Stone has been doing something right. Consistently, Luck Stone is ranked in the top two aggregate producers in the state of Virginia and it's the largest family-owned and family-run aggregates company in the United States, employing about 750 associates, 475 of whom work in the aggregates division. The key to its sustained success is sweating the small stuff.

While some aggregate companies remain content to see trucks of material moving from the muck pile to the primary crusher, Luck Stone is looking for more. More productivity. More uptime. More life out of its equipment. It's that quest for more that led the company to a 20-plus year working relationship with Philippi-Hagenbuch. It was in the early 1980s when the company purchased its first Philippi-Hagenbuch Heavy Duty Autogate® Tailgate, and this seemingly small step has led to big rewards.

The most evident initial impact of this small addition to the Luck Stone truck fleet was in the way of equipment maintenance and protection. "We have a passion for our equipment," Butch Rakes, Luck's mobile equipment manager, said. "We're very committed to taking care of it in the best possible way we can to ensure it's up and running so we can take care of our customers." With more than 35 years in the mobile equipment industry, Rakes has seen firsthand the importance of proper equipment care and maintenance. He

concedes that most companies recognize the value of regular maintenance but sometimes, for a number of different reasons fail to implement the programs and don't proactively look for solutions to maintenance concerns.

"We're constantly looking for ways to protect our equipment investment. We feel it's the best way we can uphold our vision of providing exceptional service to our customers," Rakes said. "Investing in our equipment is the best thing we can do, not only for our company, but for our customers as well."

It's that proactive approach to maintenance and protecting the equipment investment that first led the Luck Stone team to Philippi-Hagenbuch. In the day-to-day operation of its aggregate business, the company noticed that material rolling off the trucks had become a huge maintenance, safety and efficiency issue. Rolling debris had the potential to damage another piece of equipment, or worse yet, fall on an operator; and a debris-cluttered road is hazardous for all

equipment traveling on that path. If other trucks or loaders ran over the stones, significant damage could be caused to undercarriages, suspensions and especially the tires. With the cost of tires steadily increasing to upwards of \$20,000 per tire depending on the style and size, replacement costs became a major maintenance headache. It was clear something had to be done.

"Before tailgates we were often forced to stop the equipment and clean the roads on a frequent basis," said Jim Van Ness, VP of Luck Stone operational support. "But that approach significantly hampered our efficiency." For example, in the case of larger stones, the crew would have to bring in a separate loader to move spillage that had fallen off the back of the truck body.

The PHIL gates offered the ideal solution, noted Rakes. "The tailgates protect our equipment investment by safeguarding the tires and the suspensions, and they help us achieve maximum productivity."

Not only did the addition of the Philippi-Hagenbuch Autogate Tailgates reduce maintenance costs, it also increased overall jobsite safety. The tailgates eliminated the debris rolloff, in turn eliminating the need to have the crew cleaning the haul roads on the mine site.

"Before we purchased the gates, we noticed a serious threat to our workers' safety," he continued. "We had guys jumping in and out of haul trucks and pickups to move heavy rocks out of the haul roads. It was time for a better system."

In addition to eliminating the need to move rock off the haul roads, the tailgates offer the loader operator a better loading target and eliminate the need to reposition rocks in the body to keep them from falling off the back.

Van Ness recalls the loading process as less than desirable. "Before we implemented the tailgates, the loading process felt slow because the loader operator was focusing on loading the front portion of the truck bed. In extreme cases it would be necessary to stop



The tailgates have allowed Luck Stone to haul up to 8 more loads and increase revenue nearly \$8,000 in a single day.

Photos courtesy of Luck Stone

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Not only did the addition of the Philippi-Hagenbuch Autogate tailgates reduce maintenance costs, it also increased overall site safety.

during loading for the operator to reposition the rock in the truck's bed in order to even the load," he said.

He continued, "Rock spillage and the difficulty loading the trucks had been a recurring problem. And what I really remember noticing was how it was adversely affecting the cycle times on our loaders. The process simply was not meeting efficiency expectations."

As for the result of adding the PHIL tailgates?

"I could see the difference with the tailgates right away," Van Ness said. "Spillage was reduced and the cycle times on our loaders definitely increased. And of course, it was great to see our guys were no longer clearing debris [out] on those busy haul roads."

"We initially chose Philippi's standard Autogate Tailgate models for our CAT rigid frame haul units. Those trucks have a 70-ton payload capacity," he continued. "We've continued to use the tailgates ever since."

Van Ness notes that another added benefit of utilizing the tailgates was the ability to achieve the rated capacity of the trucks. But he's quick to point out they don't ever use the tailgates as a means to overload the truck. "If the truck is a 70-ton unit, we don't use the tailgate to try to get 80-ton on," he said, adding, "That causes stress on the equipment and one of our core values centers around taking care of the equipment."

Rakes agreed, "Central to our mission of getting the longevity out of the equipment and having the best equipment we can is treating it properly. Equipment is only designed for a certain tonnage so overloading our trucks is not something we endorse."

On the other hand, Van Ness agrees that they likely weren't achieving the rated capacity of the trucks before installing the tailgates, noting the fear of material roll off as the key reason. "Without the tailgates, some of our trucks weren't being filled to capacity," he said. "But they are now!"

Though Luck Stone has been in business long enough to have the experience to rely on intuition rather than mathematical equations to prove the impact on its business, other companies need not look very far to see the big impact of this one small step. With tire prices averaging between \$10,000 to \$20,000 per tire, and tire replacements due to rock damage often occurring 1-2 tires per year, it's easy to see that this small step quickly saves some big change.

But beyond the maintenance savings is the increased productivity achieved with the tail-gates. Faster cycle times can easily increase material delivery by 1 to 2 truckloads per hour serving two purposes — greater profits and happier customers. The majority of Luck Stone's customers are ready-mix concrete and asphalt producers working in heavy civil and large site construction projects often through state bids. The Luck team works closely with customers to establish pricing and material guarantees to help customers achieve success. Increased productivity ensures the Luck Stone team can maintain its promise of delivering the critical materials customers need, when they need it.

For the Luck Stone team, meeting and exceeding customer expectations is an efficient measurement of success – without the need for additional numbers. However, other similar businesses can also calculate their increased profitability with some quick and simple math. With an average truckload of aggregate valued anywhere from \$6 to \$14 dollars per ton — depending on region — 8 more loads per day on a 70 ton truck results in \$3,360 to \$7,840 more revenue each day.

For Luck Stone and Van Ness, however, success is less about facts and more tied to a feeling. "I'm not one to exclusively measure productivity with formulas and number crunching. My measurement tactics are based on my experience and what I actually see happening out on the jobsite. And what I was seeing was greater productivity and efficiency. Simple as that."

Rakes agreed with Van Ness, stating his experience working on equipment is how he determines improvement on the jobsite.

"The way I measure results? My gut," he joked. "Seriously, we track our equipment maintenance cost as well as our component life with our maintenance management system. With this information along with my team's experience in this industry, we can tell when something is working." He continued there were noticeably far less maintenance issues due to rock spillage and equipment lifecycles were much longer.

It has been more than two decades since Luck Stone first partnered with PHIL, and just as it did with the first purchase, Luck Stone has continued to utilize Philippi-Hagenbuch's heavy duty Autogate tailgates.

Though the increased safety, reduced maintenance and improved efficiency offered by this one small step is what led Luck Stone to Philippi-Hagenbuch, it's something much larger that has kept the company there. Van Ness credits PHIL's commitment to customer service and a like-minded partnership philosophy as a major reason they've remained partners throughout the years.

"They approach customers the way we do – as partners," said Rakes. "They're not focused on just making a sale and moving on. They're here to help solve problems."

Rakes cites one specific example that made a lasting impression on him and convinced him this vendor shared his company's philosophy.

"A few years back, we had purchased four [PHIL] tailgates for new CAT 775E haul units we were planning to buy." However, changes in purchasing decisions led the company to instead buy the newer CAT style, the 775F, which left the four Philippi-Hagenbuch tailgates without a home. They sat idle for quite some time, until one day when Rakes decided to give his sales contact a call and see if there was a solution — and there was. Rather than recommend Rakes try to sell off those tailgates and purchase new ones to accommodate the new equipment, PHIL representatives came out to Luck's jobsite and helped Rakes and his crew retrofit the existing tailgates to be compatible with the new trucks.

"I was blown away," Rakes recalled. "They could have easily made a quick buck by trying to sell us brand new units for our new equipment. But they took the time to come out and help us find a solution, and one that would ensure we were getting the best utilization we possibly could."

Once again an example of where one small detail can make all the difference for a customer, a company and a lasting partnership.

Sweating the details may not be advisable in day-to-day relationships or life, but in the world of business one might say the devil is in the details and the company that recognizes that is bound for success. Though Luck may be a part of this aggregate company's name, it's clear that sound business decisions and a commitment to customers — not luck — play the major role in the company's outstanding success.



Luck Stone has found an ideal balance with PHIL's tailgates – filled to capacity, no more, no less.

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Prairie Dawg Practical

by Tim Holmberg, DEMI Equipment

Hey Prairie Dawg, "What's up with wear parts?"

Wear parts: I'm sure you understand what makes this subject a bit frustrating at times. "I don't understand why my new parts don't fit so good?" or "Why did they wear faster than the last time I changed them out?" or maybe "It sure takes a long time to get them when I need them right now." If you feel like you've asked yourself any of these questions from time to time, you are not alone. What proactive steps are you taking to make sure the wear parts replacement experience for your machines isn't "wearing" you out?

For example, you unexpectedly have to shut down and can't be running your valuable equipment because you're waiting for parts to be delivered. Equipment in the aggregate world today includes wear parts in numerous places throughout. It's easier and less expensive to change out a few parts than to buy or lease another crusher or loader. OEMs and dealers use service trucks to change out the important parts you have been waiting for – sometimes as far out as six to eight weeks.

Some people never calculate the waitingfor-parts time into their contracted work, but rather, they hope to get by with lean media parts instead. This is why things get a bit tense when you're nearing the end of the contracted budget and you're nowhere near finished with the project. Why aren't these parts (that you just waited six weeks to be manufactured) fitting and lasting better? Was it because you never went with the manufacturer's wear part the machine was originally designed around? Or maybe the recipe for the wearing surface is less hardened than the factory-designed part?

These subtle details can often be deciding factors on the fail or success rate of the budgeted allotment per project and often times, the old saying is true about getting what you've paid for. Yes, there are many alternative suppliers that had a superior component when they originally came to market, but they don't always stay the course. They need to be QC'd from time to time, which is most easily accomplished by regular production record keeping, especially if you are a custom producer working from many different locations. In this case, well-kept performance records are worth their weight in gold.

There is still another factor: Did the material being processed change in abrasiveness? Maybe.

The material deposit contains more abrasive density than the last time you were working the same location. Maybe the moisture conditions were different, causing a significant change and effect in wear part consumption. These are problems that not

only affect the custom portable producers, but they also frustrate the fixed-in-place operations that didn't realize material could vary so much between different depths or areas at the same location.

The one advantage to the fixed position operation is they are less likely to be bidding work, so not knowing what they are facing in a shorter period of time can be absorbed better into the yearly-budgeted production runs.

Wear parts are also items for which you need to keep your options open. You don't want to get stagnant, missing opportunities of new technological advancement. Another important factor is knowing product shortages do happen from time to time for various reasons. Always doing business with or getting your product from one provider, who suddenly runs low on inventory, can really catch a person off guard.

One good solution to not being caught without available product is to contract purchase with a single-source provider so they can properly and safely inventory what you forecast or need 6 to 12 months at a time. Under the contract agreement, everything is typically priced to hold until it is time for the next contract period, which can give you time to look into alternative suppliers, allowing for some good competition for you, the consumer. It also lets you

compare the varying product wear differentials to make sure you see value for dollars invested. If it doesn't perform to contracted performance guarantees or percentages made as part of the agreement, it could allow you to back out of a contract.

Let's wrap this discussion on wear parts up and from time to time remind ourselves that this necessary component of the business always needs added flexibility figured into the budgetary part of the project, as you never know when the calculated assumption will make your day or do the extreme opposite and break it. No matter the outcome, we press on and do at all again tomorrow because a new challenge is what strengthens our determination to succeed.

If you enjoy these random aggregates and quarrying equipment-based subjects, tune back in for more topics to come. Send me a subject or topic you would like brought to light and any associated questions you would like to have discussed and I will gladly provide my best answer based upon my specific point of view and personal experience.

Questions or comments? Email Tim Holmberg at <u>prairiedawg@pdpractical.com</u> or visit <u>demiequipment.com</u>.

Write me a letter and we will send you a T-shirt or ball cap:

Tim Holmberg / 2915 Idea Ave. / Aberdeen, SD 57401 ■

Russell joins IROCK Crushers as regional sales manager Mid Atlantic/Northeast

VALLEY VIEW, OHIO – IROCK Crushers, a leading manufacturer of mobile and portable crushing plants, screening plants and conveying equipment, is pleased to announce its recent hire of Nate Russell, who joins as Regional Sales Manager Mid-Atlantic/Northeast.

"As part of our effort to expand distribution, we are very excited that Nate has joined our team. He has a tremendous amount of industry experience and his level of application and product knowledge with crushing and screening in the construction world makes him a great asset for our customers," stated Fred Gross, director of sales and business development, IROCK Crushers.

Russell comes to IROCK with a passion for heavy equipment and has spent the last 17 years working with customers, dealers and manufacturers in every capacity. Recently, he held the position of Regional Sales Manager at Terex Finlay and prior to his tenure at Finlay, occupied the role of Crushing and Screening Application Sales Specialist for Milton CAT. Pre-

ceding these roles, Russell owned and operated his own crushing company in New Hampshire. Russell will concentrate his efforts on strengthening and growing dealer relationships in the Mid-Atlantic and Northeast region as well as providing solutions and support to IROCK customers.

"Nate is a natural fit for IROCK because of his industry pedigree and the customer support principles he cultivated at Milton CAT. He respects and embraces the CAT values ingrained in our culture that influence our strategy and growth ambitions," stated Chris Larson, general manager, IROCK Crushers.

"I am thrilled to have the opportunity to work for an American-based, customer-focused equipment manufacturer. Being an end-user previously, I understand the mobile and portable crushing and screening business and the challenges producers face. I am looking forward to growing IROCK's distribution network and showing marketplace end-users the quality of the products being rolled out," Russell said.



Russell comes to IROCK with a passion for heavy equipment and experience as an end user.

Photo courtesy of IROCK

Komatsu America Corp. introduces the new hydraulic excavators

ROLLING MEADOWS, IL - Komatsu America Corp. recently introduced the new PC1250SP-11 and PC1250LC-11 Tier 4 final emissions certified hydraulic excavators. These new EPA Tier 4 Final (T4F) certified models have SAA6D170E-7 engines with two Komatsu Diesel Particulate Filters (KDPF) that do not require DEF or an SCR system.

The new PC1250SP-11 and PC1250LC-11 feature increased power, improved production and a new single "Power +" operating mode that does not compromise fuel consumption. Additionally, both excavators provide improved operator comfort levels while upholding the strong reputation the previous models earned in the North American marketplace.

"The PC1250 offers exceptional customer value across a

broad range of applications, including sewer and water, general construction and mass excavation as well as mining, quarry, sand and gravel," said Kurt Moncini, senior product manager, tracked equipment, Komatsu America.

The PC1250LC-11 operating weights vary between 269,300 lbs. (122,409 kg) and 275,240 lbs. (125,109 kg). The PC1250SP-11 operating weights vary between 259,960 lbs. (118,164 kg) and 265,900 lbs. (120,864 kg).

New features of the PC1250SP-11/PC1250LC-11 include a Komatsu 23.15-liter SAA6D170E-6 diesel engine with 758 HP/565 kW. It is EPA Tier 4 final emissions certified and requires no DEF or an SCR. The engine has 13% more horsepower than the previous models and uses the following technologies to meet EPA Tier 4 Final emission requirements:

• New Power+ work mode with enhanced engine/hy-

draulic pump control efficiency helps increase productivity up to 8% without negatively impacting fuel consumption compared to the previous models.

- Upgraded operator cab is 3.5" (90mm) wider than the current Dash 11 excavator cabs and is OPG Level 1 (ISO 12117-2) compliant with standard OPG Level 2 (ISO 10262) top guard. Sound levels are also 2 dB(A) lower than the previous models.
- Upgraded, high-resolution, 7" LCD color monitor panel that incorporates a new updated default split-display mode showing KomVision camera display and key gauges.
- Standard KomVision four camera system provides a bird's-eye view of the surrounding area for improved operator situational awareness.
- Auxiliary jack to connect MP3 players or other digital devices for playback through the standard stereo speakers.
- Operator ID system-records KOMTRAX machine operation and application data for up to 100 individual ID
- Auto idle and auto idle shutdown help reduce fuel consumption by limiting extended idle time.
- KOMTRAX Plus Version 2 enables expanded fleet monitoring via satellite and wireless LAN. Users can analyze "machine health" and performance from a remote location, on a near-real time basis.
- Tie off anchor points are integrated into the booms and arms for use with service technician restraint harnesses.
- New optional hydraulically-powered ladder provides easier access to machine cab and left side walkway. This option will also be available as a field installation kit.

Standard features include:

- A high-back and heated air suspension seat, with new adjustable armrests that easily adjusts to different heights
- Two 12-volt power ports provide convenient power for recharging and powering personal electronics.
- Electric grease pump equipped with a greasing gun on a hose reel to reach all grease points for easier lubrication of work equipment.
- Sliding front window and large skylight with sun shade.

Designed for easy maintenance:

- High resolution, 7" LCD color monitor panel displays information and incorporates new Tier 4 Final technology that helps improve, simplify and manage maintenance.
- Engine air/oil/fuel/KCCV filters are grouped together in the front of the hood for easy maintenance access.
- Electric fuel priming pump.
- Reversible hydraulic fan to clean out debris from the
- New battery master disconnect switch with lock out/tag out provision.
- New hinged A/C and fuel cooler swing open for

KOMATSU 10



Sales • Service • Rentals **Replacement Parts**

EQUIPMENT SPOTLIGHT



2006 Extec IC13 Impact Crusher

Low hrs on new CAT C13 engine, powerful, cost-efficient performance, discharge feeder pan protects conveyor belt and promotes free flow of material, 647 hrs. Stock #CE304RR



2015 Portafill 7000IC-R JCB SE 320 Engine,

Recycling conveyor returns oversize material to crushing unit, 1,160 hrs. Stock#CE333RR



1996 Re-Tech 720 **Trommel Screen**

5th wheel, new main hydraulic pump, 1/2" screen, good condition, John Deere engine, can be seen in operation, 5,500 hrs. Stock#CE338RR



2015 McCloskey 621RE Trommel

Suited for large, heavy duty applications, 2,326 hrs.



2014 McCloskey C38 **Cone Crusher**

Ideal portable secondary crushing solution, performance rates up to 300TPH, produces 3/8" to 2" product, 3,036 hrs. Stock #MCC130RR



2012 McCloskey I44 **Impact Crusher**

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Komatsu America Corp. recently introduced the new PC-1250SP-11 and PC1250LC-11 Tier 4 final emissions certified hydraulic excavators.

Photos courtesy of Komatsu

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KOMATSU from 9

improved access to hydraulic oil cooler core.

- Rear facing maintenance walkway light illuminates rear of machine for maintenance at night.
- New hydraulic filter sensors monitor restriction and trigger warning indicator in the monitor. Hydraulic filter restriction data is also monitored by KOMTRAX.

PC290LCi-11

The new PC290LCi-11 features intelligent Machine Control (iMC) which is based on Komatsu's unique sensor package, including stroke sensing hydraulic cylinders, an IMU sensor and GNSS antennas. This technology utilizes 3D design data loaded in the control box to accurately check its position against the target to semi-automatically limit over-excavation.

"The PC290LCi-11 is perfect for applications where the customer is looking for good stability and working range while avoiding the transportation limits of larger-size-class excavators," said Andrew Earing, senior product manager, tracked equipment, Komatsu.

Features that make the PC290LCi-11 a unique hydraulic excavator include:

- iMC Joysticks: semi-auto/manual-mode switching and design surface offset function can be operated with switches on the control levers.
- Auto grade assist: as the operator moves the arm, the boom adjusts the bucket height automatically, tracing the target surface and minimizing digging too deep.
- Auto stop control: during boom and bucket operation, the work equipment automatically stops when the bucket edge reaches the design surface, thus minimizing design surface damage.
- Minimum distance control: the machine controls the bucket by automatically selecting the point on the bucket closest to the target surface. If the machine is not facing a sloped surface at a right angle, it will still follow the target

surface and minimize digging below it.

- Facing angle compass: the orientation of the facing angle compass' arrow shows the operator the facing angle, relative to target surface. This allows the bucket edge to be accurately positioned square with the target surface.
- Realistic 3D display: the machine and design surfaces are shown in realistic 3D. The angle and magnification of the views can be changed, allowing the operator to select the optimum view, depending on work conditions.
- Control box: the Intelligent Machine Control monitor uses a large 12.1 screen for visibility and ease of use. The simple screen layout displays the necessary information in an easily understood fashion. A touchscreen icon interface, instead of a multi-step menu, simplifies operation.

Other performance features include:

- A 6.69 liter, 196-hp, EPA Tier 4 Final, SAA6D107E-3 engine
- KOMTRAX® level 5 technology feeds the operator machine data, such as fuel and diesel exhaust fluid (DEF) levels, Komatsu DPF, regeneration status, location, cautions and maintenance alert information.

Komatsu CARE

The PC1250LC-11 and PC1250SP-11 include Komatsu CARE, which provides complimentary scheduled factory maintenance (engine only) for the first 2,000 hours or three years, including a 50-point inspection at 500, 1,000, 1,500 and 2,000 service intervals. Complementary KDPF exchange covers exchange of both KDPFs within the first five years at the exchange interval of 4,500 hours.

The PC290LCi-11 excavator, whether rented, leased or purchased, is covered by the Komatsu CARE® complimentary maintenance program for the first three years or 2,000 hours, whichever comes first. Komatsu CARE® includes scheduled factory maintenance, a 50-point inspection at each service and up to two complimentary Komatsu DPF exchanges and up to two DEF tank flushes in the first five years.



The technology utilizes 3D design data loaded in the control box to accurately check its position against the target to semi-automatically limit over-excavation.



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Metso launches a hybrid truck body with unmatched payload and wear life

The Metso truck body is a groundbreaking innovation that combines the benefits of rubber and high structural strength steel, enabling mines and quarries to haul more with less.

"Hauling is one of the most cost-intensive components of a typical mining or quarrying operation. In addition to fuel and labor, there's plenty of maintenance involved too. To ensure cost efficiency, a haul truck should carry as much payload as possible on every round. At Metso, we set out to tackle this challenge and designed a truck body that requires minimal maintenance while maximizing payload. The result is a lower operating cost per hauled ton," said Lars Skoog, vice president, mining wear lining & screening, Metso.

The Metso truck body is a lightweight, rubber-lined tray designed for off-highway trucks. The elastic rubber absorbs the energy of every impact, preventing it from reaching the frame and thus allowing for a lighter-than-usual, high structural strength steel frame beneath the rubber. Thanks to this, the body can absorb maximum shock at the lowest possible weight.

Metso has been supplying its tried-andtested rubber lining for haul trucks for several decades with outstanding results both in reducing the need for maintenance and improving the working environment for truck drivers. The proven benefits include up to six times more wear life compared to traditional steel lining, half the noise and 97% less vibration. Their latest innovation, Metso Truck Body, takes this concept to another level by combining the wear protection and working environment benefits of rubber with the payload-maximizing abilities of a lightweight body.

"Many mines prefer lightweight truck bodies because they enable the carrying of more payload. However, the problem with these traditional lightweight bodies is their lack of durability – they often have to be replaced in every one or two years – or repaired, which gets expensive," Skoog explained.

"The Metso Truck Body provides an unprecedented solution that is both light and durable. The rubber lining and high structural strength steel frame have been engineered in a seamless process, utilizing the best qualities of both materials," he continued.

A typical Metso truck body weighs 20-30% less than a traditional steel-lined truck body. Depending on the application, this translates into a payload increase of several tons.

The Metso truck body is available globally for all major off-highway truck models used in mining and quarrying. Several lining options ensure application-specific fit, even in operations that struggle with problems such as carry-back.



The Metso truck body is a groundbreaking innovation that combines the benefits of rubber and high structural strength steel.

Photo courtesy of Metso

This new design does not require any welding to the frame, allowing operators to retain Komatsu's original OEM truck frame warranty.

Photo courtesy of PHIL

Philippi-Hagenbuch innovates new tailgate style for Komatsu rigid frame trucks

PEORIA, IL – Philippi-Hagenbuch Inc. has revolutionized a new version of their Autogate® Tailgate – a PHIL innovation unveiled 50 years ago specifically for Komatsu rigid frame trucks. With its introduction in 1969, PHIL's Autogate Tailgate was the first commercially available tailgate and has since become the de facto standard in off-highway truck tailgates utilized in quarries and mines around the world.

The new design reflects PHIL's commitment to keep pace with client feedback and constantly innovate new ideas to maximize efficiency and minimize maintenance on the ever-changing models of off-highway haul trucks available.

PHIL's new Autogate tailgate for Komatsu rigid frame trucks is designed with a traditional outrigger that bolts to the undercarriage of the off-highway truck. This new design does not require any welding to the frame, allowing operators to retain Komatsu's original OEM truck frame warranty. The design's new "banana superstructure" provides the stability, quality and structural integrity that Philippi-Hagenbuch is known for without sacrificing best-of-class opening clearance at full dump. The new design minimizes frustrations of end-user service departments concerning premature tailgate chain wear and roller-box maintenance found previously on tailgates designed for Komatsu rigid frame trucks.

As with PHIL's entire line of Autogate Tailgates, a three-year warranty is standard when installed

with PHIL installation supervision assistance or at their Peoria, IL, factory. Optional body seals, fluidic seals and cushion pads are available to further customize PHIL's Autogate Tailgates for unique applications. When capacity is a concern, the PHIL Autogate Tailgate for Komatsu rigid frame trucks can also be built up for sideboards. Sideboards are available in 1-inch increments from 6 inches to 40 inches in height and provide a unified body height while increasing the volumetric capacity of the truck body, helping operators achieve optimal loads.

The newest Autogate tailgate and its full slate of options are available for order on Komatsu HD405-8, HD465-8 and HD605-8 haul trucks. Retrofit kits to convert legacy tailgates for Komatsu HD series rigid frame trucks in -5, -7 and -7EO models will be available in late spring 2019.



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RockRoadRecycle.com June 2019

Redesigned G Series carries on 777 legacy with new tech

The new Cat® 777G dards and is available in off-highway truck builds on the legacy of performance, reliability and long-term durability established by 777 models since 1977, both in mining and large earthmoving applications.

Rated payload for the new 777G is 98.4 tons (89.4 MT), with a standard-body volume (SAE 2:1) of 83.8 cubic yards (64.1 m^3) . The design of the 777G, which replaces the 777F, focuses on fuel efficiency, enhanced visibility and operator comfort, convenience and safety.

Conserving fuel

The new 777G's Cat C32 ACERTTM engine meets U.S. EPA Tier 4 Final as well as EU Stage V emission stanconfigurations to meet emission standards of less regulated (LRC) countries. The engine delivers 1,025 gross hp (765 kW) and incorporates a number of fuel-conservation features.

Auto Neutral Idle allows

the 777G transmission to intermittently shift to neutral when the truck is idling in a forward gear to avoid stalling the torque converter and increasing engine speed. Engine Idle Shutdown, an operator-selected feature, stops the engine when the truck idles in park for more than a preset interval. Speed Limiting provides an alternative to gear-limiting the 777G by allowing the truck to travel at a more fuel-efficient engine speed and in a more efficient transmission gear. Advanced Productivity Electronic Control Strategy (APECS) transmission controls boost fuel efficiency by maintaining momentum and speed on uphill grades during shifts.

In addition, the 777G has two operating modes, Standard Economy and Adaptive Economy. Standard Economy saves fuel by reducing engine power by 0.5 - 15%, based on the fleet and economic conditions at a particular site. Adaptive Economy requires a production baseline for the site using the Advisor display, and then, as the truck travels the haul cycle, the system

automatically evaluates the power rating needed to meet baseline requirements. Full power is applied when needed, and reduced power is applied when appropriate. The efficiency of the 777G's performance is further enhanced by 7% more engine torque and an increase in top speed.

Operator environment and safety

The 777G features a redesigned cab which is easier to enter and exit, and has a new operator seat on the left and a more comfortable trainer seat on the right. A new console with an integrated hoist-and-shift lever enhances convenience, as does more interior space for storage. The truck's design also emphasizes improved visibility, to both the work area and instrumentation, and overall visibility is further enhanced with an optional object-detection system. Convenience items include a powered left window, automatic temperature control, throttle lock for long uphill grades and reduced interior sound (by 50% compared with predecessor models).

Operator safety is a primary design factor for the 777G, with roll-over and falling-object protective structures integrated into the cab's design. Laminated glass is used in the front and left windows, and emergency egress is provided via a right-side hinged window. A ground-level engine-shutdown switch is readily accessible, and a secondary steering system is provided in the event of the primary steering system failure.

Powerful wet-disc brakes are used at all four corners and provide parking brake and slope-holding capability. Brake life can be extended with an available engine brake, and a brake-wear indicator facilitates timely maintenance. Automatic retarding adds to positive control on downhill grades, and a new steering-sensitive traction-control system assists when ground conditions deteriorate.

Structures and bodies

The 777G's major structures are designed for long-

REDESIGNED 16



The new Cat® 777G off-highway truck builds on the legacy of performance, reliability and long-term durability.

Photos courtesy of Cat®



Rated payload for the new 777G is 98.4 tons (89.4 MT), with a standard-body volume (SAE 2:1) of 83.8 cubic yards (64.1 m³)





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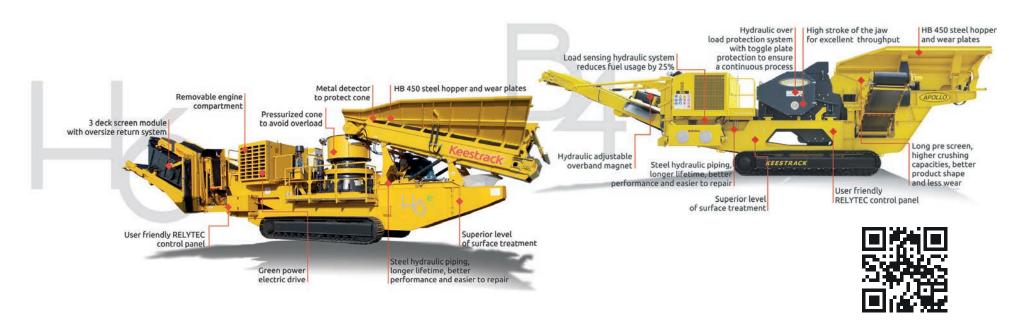
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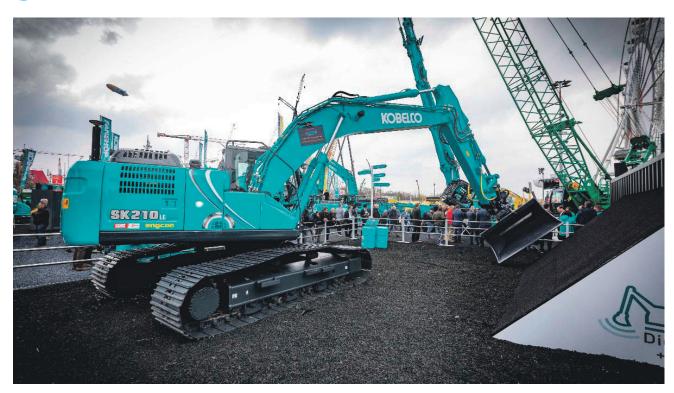
Kobelco demonstrates automated excavator with Engcon tiltrotator at Bauma

Engcon recently announced that, together with Kobelco Construction Machinery Europe B.V. (KCME) and Leica Geosystems, it exhibited the world's first tiltrotator-compatible excavator guidance system on a Kobelco SK210LC-10 excavator. The system combines the latest 3D Machine Control (3DMC) technology from Leica Geosystems with the leading tiltrotator technology from Engcon.

Engcon, Kobelco and Leica Geosystems have developed a system to automatically control the boom's up and down movement, position, tilt and rotational angle of the bucket with a single lever. The highly flexible system allows the operator to choose among auto boom control, auto bucket control, auto tilt control and auto rotation control or a combination of everything that is required to give the driver maximum control. Launch of Kobelco's automatic excavation and tiltrotator system is planned for the first quarter of 2020.

"We've developed an exciting solution together," said Krister Blomgren, Engcon Group's CEO.

"One step ahead" is the catchphrase of Engcon and that mission was fully transparent and visible at this year's Bauma trade fair, where the company exhibited displays of true innovation.



The highly flexible system allows the driver maximum control.

Photo courtesy of Kobelco

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term durability in harsh operating conditions, engineered to endure through more than one power-train life cycle. Box-section castings are used strategically in high-stress areas, a new front frame design increases the approach angle on ramps and grades and a heavy-duty rear axle housing axle allows increased lubrication and filtration of critical components.

The Dual Slope Body, designed for optimum material retention on haul roads with steep slopes, carries material low and centered for stability. Heaped capacity is 78.8 cubic yards (60.2 $\,\mathrm{m}^3$) in its standard configuration. Two side-board sizes increase capacity for lighter weight materials. The X body has a flat floor and facilitates metering material into a crusher; standard heaped capacity is 83.8 cubic yards (64.1 $\,\mathrm{m}^3$). Rubber or steel liners are available for both bodies. Light-material bodies provide capacities to 165 cubic yards (126 $\,\mathrm{m}^3$).

Serviceability

Tire life can be extended for the 777G with the TKPH/TMPH feature that calculates tire loading, and a mud-protection package is available to help keep power train components clean. Hydraulic-oil filter life is 1,000 hours in normal conditions. Fluid-fill and extraction points are grouped for convenience, and all check points are located at ground level and lighted for night access. A master disconnect switch, engine lock-out switch and hydraulic lockout switch provide a convenient method when servicing the 777G.



The engine delivers 1,025 gross hp (765 kW) and incorporates a number of fuel-conservation features.



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RockRoadRecycle.com June 2019

Exploring the potential for 5G in construction

Source: Volvo CE/news and events

In a global first, Volvo Construction Equipment (Volvo CE) is among a small number of pioneering companies trialling 5G mobile connectivity. With the program set to make a big impact on construction innovation, we find out more from 5G expert Calle Skillsäter, Volvo CE's technical specialist for connected machines.

The 5G partner program by Telia and Ericsson is the first industrial application of 5G, with only a small number of companies across the Nordic countries taking part. For Volvo, it means testing the development of remote-controlled machines and finding out the real-world potential for autonomous solutions.

What does this trial mean for Volvo CE?

5G allows us to transport data in ways that we could only ever dream about. A faster, more reliable mobile network will mean we're at the forefront of driving a much faster market implementation of technologies like automation. Something that had seemed impossible a few years ago is now a very real opportunity today.

What exactly are you testing and how is the test laid out? We have a 25-hectare test site where the remote-controlled wheel loader, the L180H, is located - and a simulator inside a tent about 100m away behind a concrete wall. The test track itself has a number of physical barriers, uphill and downhill tracks and rough terrain, all designed to mimic the real conditions of a construction site. At the moment, the simulator is actually quite close to the machine, but this is only so that we can be near the track to adjust the conditions. There really is no reason that the machine couldn't be located much further afield.

How far?

In 2017, we successfully placed a machine 400m below ground and controlled it from the surface. And when we first tested the technology back in 2015, we had an excavator placed in Eskilstuna and operated from Barcelona. So that tells you the potential for remote operation. And now with the increased latency that 5G provides, it really does mean you can achieve remote operation from extremely far



Calle Skillsäter, Volvo CE's technical specialist for connect-

Photos courtesy of Volvo CE



Volvo CE is currently testing the potential for 5G in powering a remote-controlled wheel loader.

away. But at a certain distance the latency in the network is clearly a good solution. will be significant anyhow.

How long will the trial last and what do you hope to achieve?

We will be testing this technology for two years. Over this time, we will see the performance of the network evolve and get better. What is really exciting is that at this very early stage, we are in a unique position to iron out any problems and play a key role in actually influencing how 5G will work for industrial purposes when it is rolled out more widely.

Of course, the goal for us here at Volvo CE is to make this system so mature and so successful that we can test it with our customers. To see how this technology can function on a real construction site. Hopefully that will be something we can achieve by the end of the trial.

Will you be testing technology out with other Volvo machines?

Absolutely. The aim is that after the initial testing phase with the wheel loader, we will then be able to test it with the HX2 hauler concept machine to see whether it is possible to have a work cycle operated entirely using 5G. In principle, we can then test 5G with six to eight autonomous haulers transporting gravel across the site.

It seems that mining offers some of the best potential for exploring this technology. Why is that?

Mining can be dangerous – either for people operating the machines in remote locations or because of the fumes that are released after blasting rock. But if we can remove people from the site, then we are reducing the risk of accidents entirely. You'll also have the capability to operate several operations and sites from one central location - increasing productivity.

Are there any other sectors that could benefit from 5G automation?

Absolutely, it's not just mining. The forestry industry could certainly benefit, as an industry where you have lots of incoming trucks loading and unloading on to trains, often at night. Clearly working at night offers some dangers for visibility so removing operators makes the operation more safe. And again, for really dangerous jobs in the steel industry or the energy sector, where physically moving material can risk explosion or toxic gas emissions, then removing people

But for construction it's really about boosting productivity?

Safety is obviously a big factor, but clearly 5G will have a direct positive impact on productivity. Today's remote control technology provides a delay which makes it very difficult to control a machine with any speed or precision, but 5G will be as good as real time. In addition, the picture quality is much better, video footage is in a better resolution and 5G provides a more reliable connection - all of which makes it easier for the operator in the simulator.

What challenges have you experienced so far?

We did find it hard to initially get the hardware. We are so early in the trial that we have trouble finding modems to communicate with the antenna. Telia has been useful in providing the right equipment for us to use. We are so early in trialing this technology that this obviously has its advantages and disadvantages.

When these issues are resolved, when can we see *5G* rolled out to the wider industry?

It depends on different use cases in construction – how do they work, do they meet the demands of the industry, is it feasible for customers? 5G will come first to those that benefit the most, but it will take time to build the network and required infrastructure. For us in the construction industry, and for static operations like a quarry or mine, it really can come quite fast. The timing is good - our customers need connectivity and they want more data. And we're the ones providing the research to see just how possible it is.



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Doosan Infracore NA to offer Trimble's new generation of loader onboard scales

SUNNYVALE, CA – Trimble and Doosan Infracore North America LLC recently announced the availability of Trimble® LOADRITE® L3180 SmartScale as an option on Doosan® wheel loaders.

The LOADRITE L3180 SmartScale uses weighing intelligence and solid state sensors for more accurate, precise and faster loading. It also connects machines and devices for the collection and syncing of data via the built-in WiFi to InsightHQ™ reporting portal. InsightHQ consolidates live, operational information from Trimble LOADRITE devices on loaders, excavators and conveyors across the site to provide near real-time productivity and performance reports for extraction, processing and loadout operations.

Reengineered from the ground up, Trimble's innovative, next-generation loader scale platform features smarter weighing, smarter data management and a smarter

interface. Intelligence in the weighing software and new hardware gives operators of all skill levels the ability to load faster and more productively than ever before.

"Our Doosan wheel loader customers will benefit greatly from the new option, helping them do their work more precisely to improve their overall productivity," said Bill Zak, wheel loader product specialist, Doosan Infracore North America. "This type of technology demonstrates our ongoing commitment to provide our Doosan dealers and customers with state-of-the-art equipment options."

"With Trimble and Doosan working together, we make the ordering process easier for our contractors and aggregate producers," said Johan Smet, general manager of Trimble's Aggregates Division. "Trimble LOADRITE onboard weighing technology on Doosan loaders helps our customers move more material each day."

Smarter weighing

The LOADRITE L3180 offers more precise weighing in a wide range of conditions including adjusting for rough terrain, operator technique and machine movement using new weighing intelligence. The system also features digital CAN-bus sensors for noise immunity and ground slope compensation as standard.

Smarter data management

The L3180 now offers in-cab key performance indicators (KPIs), including ton/hour, tons and truck count to enable operators to monitor performance and achieve daily targets. When using Trimble's cloud-based InsightHQ quarry reporting portal personnel can gain access to site production and operator performance KPIs on desktop or mobile devices. Data is presented in dashboard or graphical formats, including a new loadout performance heatmap, powered by built-in GPS. The system caches data locally and then syncs it with InsightHQ.

Smarter interface

The L3180 features a 5.7-inch touch-screen display, which is twice the size of previous generation scales. Colorful graphics, cleaner interface design and the new touchscreen allow for faster menu navigation and interaction. New loading information details including customer and prod-

uct for each job can be customized on the interface by each operator to match their workflow and make it easier to see the right information for maximum productivity.



Colorful graphics, cleaner interface design and the new touchscreen allow for faster menu navigation and interaction.



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Intelligence in the weighing software and new hardware gives operators of all skill levels the ability to load faster and more productively than ever before.





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Photos courtesy of Doosan

RockRoadRecycle.com June 2019

Volvo's new generation tooth system gives buckets something to chew on

Aimed at Volvo's larger excavators and wheel loaders, the new generation Volvo Tooth System features higher penetration, longer life and an easy "hammer-less" fitting system.

Volvo Construction Equipment's medium and large wheel loaders and excavators now have more to smile about – an all new premium tooth system that not only increases productivity and fuel efficiency, but is also more wear resistant and much easier to fit, thanks to its hammer-less pin design.

Offered for Volvo wheel loaders between L60 to L350, and for Volvo excavators from 14 ton capacity up to its largest 95 ton ma-

- boosting productivity and extending effective tooth life. The design also features a more self sharpening design, further helping to reduce fuel consumption.

Fitting geometry

Protected welding, stronger adaptor nose and clever design helps give the system added robustness, while the system's greater durability means longer change intervals and reduced bucket wear. Because they are designed exclusively for these Volvo machines, the teeth and adaptors are specifically matched to the specification, size and model of machine.

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The ultimate in wear parts, even the best teeth need to be replaced eventually, but changing teeth with Volvo's new generation tooth system couldn't be easier - or faster. A

true hammer-less system, the teeth feature a new locking system that has a reusable locking pin. Offering excellent fit and retention and an auto-tightening effect once

Volvo's 22



The new tooth system helps to distribute stress while working.



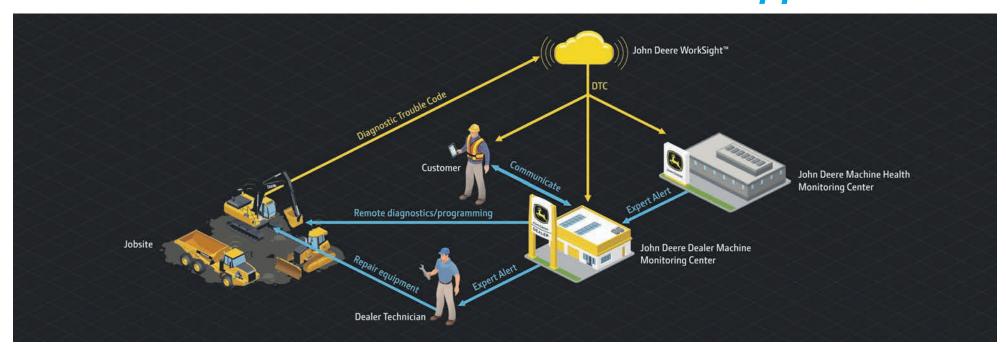
Volvo's new tooth systems has a longer life and higher penetration.

Photos courtesy of Volvo CE



RockRoadRecycle.com PG 22 June 2019

John Deere Construction and Forestry Division announces John Deere Connected Support™



John Deere Connected Support leverages a suite of dealer and factory tools to deliver increased productivity, uptime and lower daily operating costs.

Graphic courtesy of John Deere

MOLINE, IL – Designed to improve customer service and machine monitoring, John Deere announces the new John Deere Connected Support™. Enabled through the JDLink™ telematics connection, John Deere Connected Support leverages a suite of dealer and factory tools to deliver increased productivity, uptime and lower daily operating costs.

"With John Deere Connected Support, dealers take a proactive approach, efficiently improving service and the customer experience," said Jim Wagner, manager, connected support. "Dealers remotely monitor

machines, leveraging two key tools, Service ADVISOR™ Remote and Expert Alerts, which provides them with the information needed to act quickly to avoid or reduce machine downtime. This strategy was designed to ensure John Deere machines are kept in peak operating condition, resulting in increased productivity."

A key to the connected support offering is Service ADVISOR Remote, which allows the dealer to diagnose and repair a problem from a remote location. The dealer is able to analyze machine conditions in real time, or set a trigger point to record intermittent conditions, providing a deep look into the machine's health. Additionally, the remote diagnostic capabilities can reduce troubleshooting time and eliminate a trip to the machine.

Another supporting feature is Expert Alerts, created by John Deere machine health analysts monitoring fleetwide machine data to identify emerging trends. Working directly with the factory product teams, John Deere is able to develop solutions used by John Deere dealers and technicians to repair machines onsite. Expert Alerts also equip technicians

with information needed to bring the right part the first time so machines are back on the job as quickly as possible.

John Deere Connected Support creates a partnership between the John Deere dealer and factory teams that work tirelessly to monitor equipment, improving uptime. This allows machines to become more profitable and reduces potential delays to construction project schedules.

To learn more about John Deere Connected Support, visit www.JohnDeere.com or contact your local dealer.

Volvo's from 21

fitted, the reusable pin locks into place simply by twisting it a quarter turn. Taking just a few minutes, installation couldn't be simpler: place, push and twist – that's it.

The right tooth for the task

There are five types of tooth available for the excavators: general purpose, abrasive material and rock, pick point, twin pick and spade nose. There are two adaptor types offered and also an optional mechanical wear cap available, which fits on the standard adaptor and extends tooth life further. For wheel loaders there are three types of tooth available: general purpose, abrasive material and rock, along with three types of adaptor.





The teeth and adaptors are specifically matched to the specification, size and model of machine.

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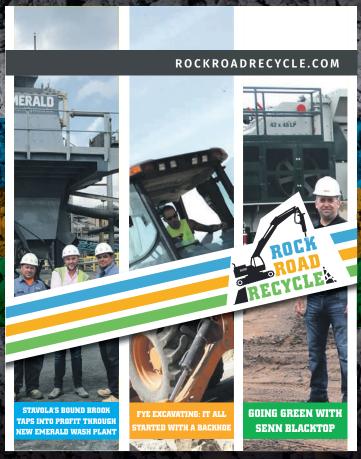
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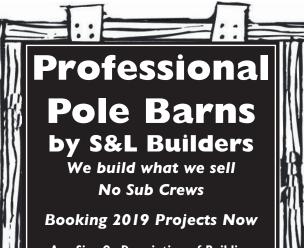
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- Paving equipment
- Compaction equipment
- Milling equipment



PavementGroup.com: An industry-leading supplier of paving related items

by Jon M. Casey

On the cover:

L-R PavementGroup's pugmill crew: Ned Reeves, Richard Wilensky, Steve Fuller, Andy Joubert, Tim Martino, Denis Daley, Nick Pontore, Joseph McMahon and Mark Reeves

Photo courtesy of PavementGroup

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Is SMA worth the investment over SuperpaveTM?

by Jon M. Casey









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Volvo CE expands ActiveCare Direct™ to pavers

Owners of select models can now benefit from the 24/7 machine monitoring and reporting service that provides all the benefits of telematics without the burden of sorting through data and alarm codes.

Originally launched in 2017 for excavators, articulated haulers and wheel loaders, ActiveCare DirectTM is now available on select Volvo asphalt pavers. As of February 2019, the P7110B and P7170B are eligible for a one-year free subscription to ActiveCare Direct with a new machine purchase.

The move to expand the managed telematics service into the Volvo road machinery line-up has been in large part due to the overwhelmingly positive response and rapid adoption of the service among Volvo dealers and customers. ActiveCare Direct is already available for certain asphalt and soil compactors.

"ActiveCare Direct gives road equipment owners and managers access to so much more intelligence and understanding about their business than they would otherwise have," said Dave Adams, sales manager for connected services, Volvo Construction Equipment. "This is an incredible step forward in how companies manage their equipment and employees. Adding the service to pavers is another sign of the impact and value our customers are experiencing in the markets where we already offer Active-Care Direct."

How it's different from traditional telematics

ActiveCare Direct sends data collected by CareTrack®, Volvo's telematics system, to the Volvo Uptime Center in Pennsylvania. There, analysts and a proprietary software sort through thousands of data points and fault codes. An owner, the dealer or both are contacted in near real time whenever an issue needs their attention. Rather than getting a flood of undiagnosed fault codes, ActiveCare Direct provides a case alert with the probable cause, the recommended solution and the consequence of not taking action.

With ActiveCare Direct owners also get monthly fleet utilization reports, showing fleet usage, individual machine summaries and machine misuse. This gives them the insight they need to make the best use of their fleet and to address machine misuse issues with operators.



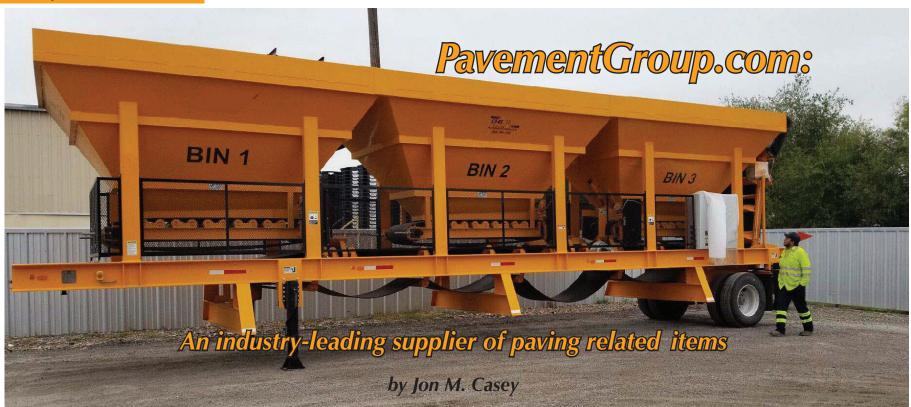
ActiveCare Direct is already available for certain asphalt and soil compactors

Photo courtesy of Volvo CE





RockRoad Recycle.com PG 4 June 2019



PavementGroup sold a 3-bin cold feed to QUICKRETE® last fall.

Photos courtesy of PavementGroup.com

or aggregate producers, paving contractors, asphalt plant operators and asphalt material recyclers who are looking to buy new or quality used equipment, PavementGroup.com of Albany, NY, has developed into an industry-leading supplier of paving related items. They offer everything for that sector from complete asphalt plants, pugmills, RCC plants and crushers down to job-specific items like crack sealing kettles, infrared asphalt heaters, tack distributors, recyclers, routers and the more. An additional service offered by PavementGroup is consignment selling. According to Mark Reeves, company founder, customers downsizing their fleet or simply wanting to sell a piece of equipment may find consigning with PavementGroup an ideal resource. Reeves noted, "We offer a zero-cost solution to our consignors. Besides consignment we buy and sell a lot of used equipment. Our quality standards are rigorous, so we created our PavementGroup Certified Pre-Owned Program which includes a 90-day parts warranty."

Histor

Reeves recalled how his company evolved from a small driveway sealing company into a worldwide equipment supplier. "We began while I was still in college at Siena College in Loudonville, NY," he said. "I started Siena Sealers, a driveway sealing company. As time passed and equipment sales increased, we began to phase out the paving and pavement service side. Since 2002, PavementGroup has been an equipment supplier exclusively."

Pugmill mixers and cold feed bins

Turning his attention to the company's new equipment lines, Reeves said their pugmill mixer sales have catapulted the company. "Our products are high-quality but they're also affordable and our turn-around time is 6-8 weeks, so customers can receive our systems quickly. We sold a 3-bin cold feed to QUICKRETE® last fall — they liked our price and they've been super satisfied with its performance," Reeves said. "It's that combination of quality, low price and quick delivery that's really propelled our growth. Many of our pugmills are used by our customers to

produce cold mix asphalt. It saves them a fortune." Reeves said that Jennings County, IN, dropped their asphalt cost from \$100 to \$34/ton. "It's been a huge cost saver. Asphalt Paving Systems, Gonzalez and Sons, Paul Reed Construction — they're all making cold asphalt using slightly different recipes. Pugmill ownership equates to a tremendous advantage over competitors. It's a homerun for them."

Reeves continued, "Our pugmills have recently become very popular in the waste handling market, especially when used with our proprietary solidification product. We can dramatically reduce the cost of landfill disposal by reducing the cost of solidification material and reducing the material weight going into the landfill." Reeves said their product works great with drilling mud tailings, oily sludge, waterway dredgings and even solid waste. "Our absorbant product is a market disrupter."



tion of quality, low price and quick delivery PavementGroup also manufactures Stratos asphalt distributor trailers — in capacities from that's really propelled our growth. Many of 400 - 2,000 gallons — with a worldwide customer base. Pictured is a 1,000 gallon example.

Roller compacted concrete

Reeves said his company is also moving into the RCC market with some potential game changing technology. He noted, "In the roller compacted concrete business, mobility costs can kill you, so we've created a system focused on efficiency." Reeves credits Mike Egan, president of Road Profiles Inc., for providing PavementGroup's engineering team with the proprietary concepts and technology.

Egan he was quick to point out, "PavementGroup is making inroads where other concrete equipment manufacturers have stalled. I had some proprietary ideas and Reeves' team was able to integrate them. We've added decumulative bins that load from the ground, bombay cleanout doors on our pugmill and a pressurized water cleanout system. On the cement side, we have a portable horizontal silo that can be transported half-full of material. Mobiliza-

tion and operational ease make it the most efficient system on the market. It sets their RCC system apart."

Bill Cuerdon, executive director of American Concrete Pavement Association, NY Chapter, agrees that they're onto something, "I'm excited with what Pavement-Group plans to bring to the RCC market. They've integrated a 3-bin system and that gives contractors greater versatility with their mix designs. It's much more efficient than a split bin which forces you to load from both sides," Cuerdon said. "It'll be a real game changer."

Asphalt distributors and recyclers

We asked Reeves about PavementGroup's Skidpatcher-10A asphalt recycler and how it came to be. "Steve Fox of NiTech Corp approached us and asked if we'd like to take on a project building 25 skidsteer mounted asphalt recyclers for the U.S. Air Force's SUPR KIT (Sustainment Pavement Repair Kit)." The Skidpatcher is a skidsteer mounted asphalt recycler that holds 750 lbs of millings or full gradation mix. Reeves added, "The Skidpatcher quick connects to your skidsteer and lets you zip to the repair

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site and back to get loaded. It's versatile and requires only 15 minutes to heat mix to 320F." There is also the Multipatcher, a tow-behind $\frac{1}{2}$ ton recycler.

Reeves added, "These products are a great tool in the arsenal of a municipality or contractor filling potholes and looking for an affordable year-round hot mix plant for under 20K"

NiTech company president Steve Fox said, "We went to PavementGroup because the Reeves brothers were uniquely qualified. They had experience with every asphalt recycler ever built. It's been a fine collaboration." Fox said NiTech manufactures pelletized asphalt and produces a full gradation mix for the USAF which is used on airfield runways. The material only requires heating.

Reeves noted PavementGroup also manufactures Stratos asphalt distributor trailers — in capacities from 400 - 2,000 gallons — with a worldwide customer base. Reeves said, "Our Stratos distributors spray 35 different emulsions such as CRS-2P. They're used mostly for chip sealing and waterproofing and occasionally for sealcoating." Reeves said his company also sells chip spreaders for under \$5,000 that hang from the back of a dump truck.

Company business development manager Joe McMahon reported that PavementGroup is on track to sell over 100 Stratos distributors in 2019, on top of the 150 currently in the field. McMahon is quick to point out that quality and pricing aren't the only factors driving growth. McMahon emphasized, "We're nimble! Customers wanted a 2,000-gallon unit, a 14' spray bar and a remote control, so we added those options. Customers asked for a full-circulating spray bar and computer controls and that's coming this year. Our Stratos 2000 is half the price of a Rosco or Etnyre." McMahon exclaimed, "To win in business, you lead from the front!" I asked McMahon if he was boasting. "Yes, I am. We are having fun," he said.

Used equipment

In addition to PavementGroup's extensive product line in the new equipment division, they currently have more than 200 used and refurbished pieces of pavement maintenance equipment. Reeves said the inventory includes things like asphalt/cement tanks, asphalt pavers, asphalt recyclers, crack sealing kettles, infrared heaters, hotboxes, crack sealing kettles and much more. "We have very nice Raytech and Poweray infrared heater trailers with hotboxes and 8 crack sealing kettles that need a home [at the time of this writing]. That is just one example of the extent of our equipment availability."



Reeves said he wants customers' used equipment purchasing experience to be like no other. "We want them coming back. Our expert mechanics in the service shop do repair and maintenance on all kinds of equipment. They also provide a multi-point inspection on our used equipment line which ensures our used equipment is serviced fully and arrives ready to work. With our PavementGroup Certified Pre-Owned Program, we include a 90-day parts warranty for added peace of mind.

"Our mission has remained unchanged," he concluded. "We strive to supply quality, affordable equipment, to offer excellent advice and know-how and to provide an overall experience that focuses on customer satisfaction. Our dedicated team at PavementGroup looks forward to serving and supporting our customers."

For more information, visit them at: www.pavementgroup.com . www.pavementgroup.com .





Pugmill sales, such as this 500tph single-bin, have catapulted the company, according to Reeves.

CASE launches new series of small-frame vibratory rollers

New DV23D and DV26D Double Drum Rollers and DV23CD and DV26CD Combination Vibratory Rollers deliver productivity solutions for small- to mid-size paving applications.

CASE Construction Equipment has announced a new series of small-frame vibratory rollers. Available in both double drum and combination (front drum with rear pneumatic tires) configurations, these compact rollers are easy to transport and are ideal for working in residential and commercial construction applications where the operator may encounter tight

quarters, curbs, structures and other obsta-

Designed with a high curb clearance, no overhangs and a narrow drum width of 37 inches, these compact DV Series rollers are ideal for walkways, residential driveways, bike paths, tennis courts, small parking lots and other small- to mid-size compaction applications. The drums can be offset to further improve accessibility, and to improve performance during turns. Visibility is improved with excellent sight lines and an adjustable work station that allows the operator to get the best vantage point down to the drums.

The new models include:

- DV23D Asphalt Roller (33.5 hp; 4,920
- DV23CD Combination Roller (33.5 hp; 4,600 lbs)
- DV26D Asphalt Roller (33.5 hp; 5,490
- DV26CD Combination Roller (33.5 hp; 5,170 lbs)

DV Series vibratory rollers

The DV Series combines a compact size and excellent maneuverability and visibility with many of the same features found in larger compaction machines. A 33.5 HP Tier 4 Final engine delivers high centrifugal forces and frequencies at lower RPMs, making the machine more fuel efficient, while selectable dual frequencies (3,480/3,960 VPM) further improve productivity and allows operators to dial the machine in to meet the compaction needs of the job.

Operators can also choose between ei-

ther automatic or manual vibration engagement to meet their preference and to help avoid damage to the asphalt during starts and stops, while the offset tapered drums reduce asphalt tearing during operation around curves. The units come standard with a 50-gallon water tank with a pressurized water system to ensure all-day water supply and consistent water spray to the drum.

DV Series rollers are compatible with the CASE ACE Force Intelligent compaction system - a technology designed to improve compaction quality, requiring fewer passes to reach target specs and resulting in savings in time, fuel costs and machine maintenance – as well as avoiding pitfalls related to under- or over-compaction. Ace Force also generates reports for applications where exacting specifications and records of compaction performance are required.

Comfort & visibility

DV Series rollers feature an iso-mounted operator platform that minimizes vibration and reduces operator fatigue. A standard lateral-sliding seat provides operators with superior visibility to the drum edges on both sides of the machine.

Serviceability

Like all CASE machines, the new rollers are designed for groundline serviceability. All fluid ports, drains and service checkpoints are grouped on one side of the machine for simplified maintenance.

For more information on the entire lineup of CASE asphalt and soil compactors, visit



The drums can be offset to further improve accessibility, and to improve performance during turns.

Photo courtesy of CASE CE



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Texas Materials wins two TXAPA Quality Pavement Awards

Photos courtesy of Texas Materials

exas Materials has been servicing the Central Texas area since its birth in 1982 as a family-owned sealcoat and asphalt paving company. Since then, it has grown to become a leading choice for asphalt production and paving services, ready-mix concrete, sand and gravel and crushed stone. The company is part of the Texas Materials Group, which includes Gulf Coast, TexasBit and Texas Concrete.

In 2019, the Cedar Park-based company had a portfolio of 11 asphalt plants, five ready-mix concrete plants, one crushed stone plant, two sand and gravel aggregate plants and three railroad-based aggregate terminals. It also runs full-range asphalt paving and maintenance construction businesses in the San Antonio, Austin and Waco areas.

Earlier this year, the company won two TXAPA Quality Pavement awards for two demanding jobs it undertook. Texas Materials Vice President and General Manager Mike Brown explained the TXAPA Quality Pavement Awards evaluate and judge pavements of association members and the best ones are voted on to decide a winner. The company was proud to be named tops in two categories.

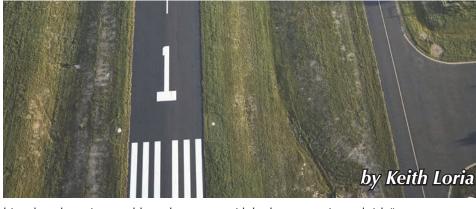
The first of these awards came in the Large Airport category and Texas Materials won for its work with the Burnet Municipal Airport.

The Burnet Municipal Airport project included 36,371 tons of asphalt produced by Texas Materials' Liberty Hill asphalt plant with aggregates from its Marble Falls Quarry, which was used to pave the runway. The company utilized five active rollers to compact the mix—three 10-ton vibratory steel wheel rollers, and two 25-ton pneumatic rollers.

"This type of job requires enough rollers to achieve consistent compaction and thorough coverage of the mat," Brown says. "Typically, with asphalt paving, it is dried out with a big dryer with a direct flame that dries and heats up the aggregate. Then a hot asphalt binder is added to it produced at 300 degrees Fahrenheit, put into a silo and then dropped into trucks. Deliver the asphalt paving mix to



The Burnet Municipal Airport project included 36,371 tons of asphalt produced by Texas Materials' Liberty Hill asphalt plant.



the job site into a machine that places it smoothly and at a uniform thickness."

From here, it is compacted with rollers, which are typically double drum steel rollers and pneumatic rollers that have rubber tires. Brown explains that happens whether it's an airport or highway.

"Production and trucking were coordinated to provide a steady constant stream of material to the paver, ensuring steady, constant paver speed and consistency when compacting," Brown said. "We made sure we had adequate time and production capability to complete each pass on the same day it began. We also made sure the operator avoided changing direction on the fresh mat whenever possible — and that they pulled off onto an adjacent area when stopping was unavoidable."

The airport project specification requirements were a little tighter than a residential subdivision or city street, which presented some challenges to the Texas Materials team.

"The tolerance on the pavement elevation, smoothness and thickness needed to be a little bit tighter and we used a GPS control system on our paver that helped us achieve a closer grade tolerance," Brown said. "Our compaction team had to be very careful because it's hot and would deflect, so they monitored temperatures closely. Our whole team was on board and up to the challenge."

That team included an asphalt paving crew, delivery trucks and the quality control technicians at the hot mix plant and on the job site and quality assurance personnel.

"There are always logistical challenges but nothing that as a team we couldn't overcome," Brown says. "In both jobs that won awards, it took a lot of teamwork, communication and partnering to be successful — to meet the quality for the award categories. Our team, starting with the estimators, construction superintendents and technicians, working with engineers and inspectors and with the crews who produced, delivered, placed and compacted the mix,

were all outstanding and delivered a real good execution."

The second TXAPA and NAPA Quality Pavement Award came in the Special Award category for the project FM 3470 in Killeen for the Waco District, where Texas Materials did a level up using 47,348 total tons of asphalt on a 2-inch HIR Item 358 above a 1-inch surface TOM Item 347.

"What was unique about the 3470 project is that TxDOT had two inches of hot-in-place recycling that they did first. We had a subcontractor working for who us came in and did two-inch recycling and we came in after them and did a one-inch TOM overlay," Brown said. "TxDOT wanted a higher-performing project, so they increased the asphalt binder quality from a PG7022 to a PG7622 and changed the surface aggregate classification from a Class B to a Class A and also added a ride spec, which provided

us with both opportunity and risk."

He explained that the ride change specification became a bonus/penalty situation, meaning that if both companies placed and compacted it very precisely and improved the ride significantly, it would receive a bonus, but if they couldn't they would get a penalty. To no surprise, Texas Materials was successful.

The major challenge of the project was that it was in a high-traffic zone with two lanes in each direction and a center double left turn lane with approximately 40,000 vehicles a day travelling on the road. Also key to the project was collaboration with TxDOT and outside engineering on a revised traffic control plan to safely manage the traveling public and internal construction traffic. Additionally, the team had to be vigilant to prevent the HIR from melting the traffic cones and catching fire to adjacent grass.

"The challenge was getting the work done under these traffic conditions, minimizing interruptions and accidents. We did pretty well," Brown says.

The hot-in-place recyclable equipment was unique, as it was basically a thousand-foot long train with direct fire heaters that were heating the pavement up at one quarter inch depths in order to scarify and windrow a total of two inches of the existing mix. Then an emulsified rejuvenator was added to the windrowed mix and the recycled/rejuvenated mix was run back through a paving machine and re-placed and compacted.

"But it looked like fresh hot mix, the subcontractor placed the recycled mix on grade and it was very stable. Then we came on top of that with non-tracking asphalt membrane, followed by the 1-inch TOM mix on top of the non-tracking tack product," Brown said. "That made a three-inch pavement brand new structure that is expected to provide more than ten years of rut and crack-resistant, smooth, quiet, durable pavement for the traveling public. It was both innovative and unique and came out looking great."



The second TXAPA and NAPA Quality Pavement Award came in the Special Award category.

RockRoad Recycle.com PG 8



Industry news

Hitachi Wheel Loaders "re-opens" the Road 2 Pocono with sweepstakes for 2019 Indy race

Last year, more than 4,000 Indy race fans signed in to win a pair of tickets to see the 2019 NTT INDYCAR Series ABC 500 at the famous Pocono Raceway as guests of Hitachi Construction Machinery Loaders Americas Inc. (HCMA). For 2019, Hitachi is offering them another chance!

"The Road 2 Pocono Sweepstakes" was introduced last year as part of Hitachi's new wheel loaders' brand launch. Building on Hitachi Motorsports' long connection with Indy racing, the sweepstakes is back again to bring two new lucky winners to the Pocono event in Long Pond, PA.

Customers and friends of Hitachi Wheel Loaders are invited to enter their ballot online (no purchase necessary) for a chance to win a once in a lifetime opportunity for a three-day, two-night weekend getaway alongside the Hitachi INDYCAR Series Racing Team. Official details are available at the website or from any authorized Hitachi Wheel Loaders dealer.

The special <u>website</u> is now open to receive entries. A winner will be chosen at random from all entries submitted by the sweepstakes deadline on July 19.

The #WeRHitachiLoaders three-day weekend, from Aug. 16 - 18, culminates in the 2019 NTT INDYCAR Series ABC 500 on Sunday afternoon. The lucky winner and guest will receive:

- Round-trip coach airfare and ground transfers for two
- Two nights hotel accommodation (one room/double occupancy)
- Two grandstand tickets for the 2019 NTT INDYCAR Series ABC 500 at Pocono Raceway
- Two INDYCAR credentials

Drawings for monthly prizes will also be held on the 19th of every month for Hitachi Wheel Loaders gear.

Hitachi has been a proud partner with Team Penske for eight years. In 2018, reigning Series Champion Josef Newgarden drove the Team Penske and Hitachi colors in the Hitachi Dallara/Chevrolet. Hitachi Motorsport continues to partner with Team Penske and Josef Newgarden for the 2019 Series. Hitachi will also continue as an Associate Sponsor with the entire Team Penske crew including the Dallara/Chevrolets driven by 2016 Champion Simon Pagenaud and Will Power, the 2014 title winner.



Southeastern Equipment adds Mauldin paving products to Indiana branches

Southeastern Equipment Co. Inc. now offers Mauldin Paving Products at their Fort Wayne, Indianapolis and Evansville locations in Indiana. Mauldin's products cover

the complete road building process – grading, tacking, paving and compaction.

"We are excited to bring Mauldin's quality equipment to our Indiana customers," said Southeastern Equipment's president, Mickey Gourley. "The reliability and durability of Mauldin's equipment is well-known in the industry and the machines are engineered to be very operator friendly."

Mauldin's paver line consists of six models that provide up to 16 ft of continuous, seamless paving. The 1750-C model features bestin-class head-of-material control, the heaviest screed weight in class and the Mauldin exclusive 4-auguer material feed system.

Mauldin Paving Products can be purchased or rented immediately at any of Southeastern Equipment's Indiana locations. ■



Mauldin Paving Products can be purchased or rented immediately at any of Southeastern Equipment's Indiana locations.

Photo courtesy of Southeastern Equipment





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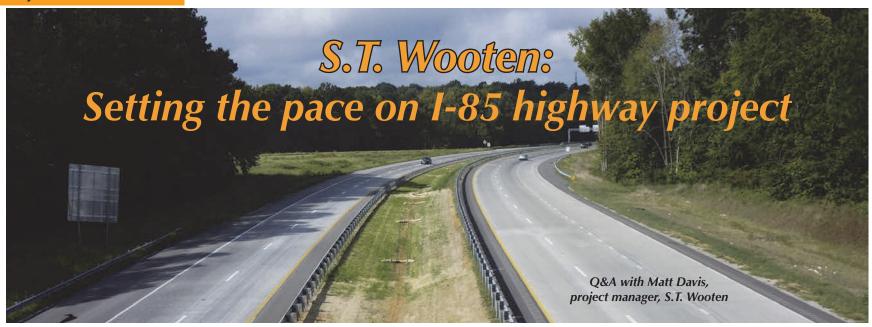




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RockRoad Recycle.com PG 10 June 2019



It's the public that ultimately benefits when construction is completed faster.

Photos courtesy of S.T. Wooten

an you provide some background info on the I-85 project?

Since 2015, we've been working on I-85 Rehabilitation Project that encompasses a 21-mile stretch of I-85 from North Carolina's Vance County to the Virginia state line. This is one of the largest projects our company has constructed; it also included the replacement of seven bridges and rehabilitation of nine bridges. Most of the asphalt for the project has been produced at one of our nearby plants in Henderson, NC. Construction has been headed up by S.T. Wooten Project Manager Matt Davis and Superintendent Mark Wilson.

What has been your biggest challenge on the project?

Originally, I-85 was planned as a five-year project. However, at the request of the NC Department of Transportation (NCDOT), we found a way to move up our deadline by a year. As you can imagine, accelerating our timelines like this has created several challenges in planning and execution. However, with the crew's hard work, things are moving along right on schedule for us to complete the project this year.

To get ahead of the curve, we've had to do some strategic planning and make communication even more of a priority. Those have been key elements in keeping us on track and adjusting our plans when necessary.

How did plans change with your accelerated timelines?

With the shift in our timeline, we had to plan for a lot of different construction activities and tasks to be completed at the same time across different sections of the project. To do this effectively, the NCDOT allowed us to open up



Paving and bridge work is complete on I-85, just a few punchlist items remain before permanent road markings are applied.

more areas to work. We created a strategic map with different work zones charted out across the project to improve efficiency and help us manage all the elements happening simultaneously.

Because the project site is 21 miles long (it takes 20 minutes to drive from one end of the site to the other) it was crucial for us to be in constant contact to ensure we were on the same page and staying on schedule. By having the work zones diagrammed and understanding how things are progressing in each section, we've been able to adjust when dealing with other obstacles.

What are some of the other unanticipated obstacles you've faced?

As it is with any construction project, you have to expect the unexpected. Over the past few years, we've dealt with everything from hurricanes to traffic accidents that have caused us to shift course. But, having an understanding of how each work zone across the project fits together, we've been able to prioritize the work that needs to get done when something comes up and make sure we don't get too far behind.

It really comes down to maintaining focus and working together as a team. Our crews understand that if we fall behind, we could face potential penalties from NCDOT, so they work hard and smart to help us avoid delays. We've had 50 Intermediate Contract Time (ITC) deadlines to meet on exit ramps alone and — knock on wood — we haven't missed one yet. A lot of the credit for that goes to the teamwork and camaraderie that has been built between crew members over the past few years.

Have you used any new or innovative kinds of equipment?

The use of advanced technology has certainly helped us drive quality and efficiency on the I-85 job. One example is robotic controlled asphalt and concrete paving machines, which allow our crews to pave quickly and within ¼-inch tolerance while maintaining rideability on interstate lanes. The pavers are equipped with the Trimble GCS900 automated machine guidance (AMG) system and use the Trimble Total Station -SPS930 setup on control points every 500 feet for guidance.

To improve safety for drivers and crews, we made the I-85 project part of an automated work zone. Sensors have been placed along the road to get data on traffic conditions surrounding the work zone. This information is used to give updates to drivers on traffic conditions, indicate where there are stops ahead and offer alternative driving routes.

How big of a factor is traffic management on the busy interstate?

It has been a heightened priority with the shift in schedule. In addition to making I-85 part of an automated work zone, we've adjusted our plans to accommodate the accelerated timelines. The original plan was to open the interstate up to four lanes each year from Thanksgiving through New Year's, but to speed up construction, we had to switch gears and keep the lanes more restricted.

Having fewer lanes open can be frustrating for travelers, but it's the public that ultimately benefits when construction is completed faster. It also improves safety for everyone since drivers are less likely to weave in and out of traffic when there are only one or two lanes open — so there's less potential for an accident.

S.T. Wooten works with NCDOT regularly. Talk about this relationship and the value of communication for healthy partnerships.

Communication is key in everything we do, whether it's with the NCDOT or between our crewmembers. Working with NCDOT is great because we've established a trusted partnership through years of working together on projects. Our teams know how to stay well connected during the duration of construction, whether it's a minor question about project specifications or collaboration on major changes like we faced with our work on I-85. Maintaining open communication and building that trust over time has helped us to be successful.

What else needs to be done before the project is complete?

All our paving and bridge work is complete on I-85, so we just have a few punchlist items remaining before we finish up and apply the permanent road markings. Once state inspections are complete and the project is finished, all lanes of traffic will open up and drivers headed north and south on the interstate will enjoy the new surface. It's safe to say our crew's hard work is paying off as we wrap up the final phase of the project and the early finishing date will be welcomed by travelers.

Any other thoughts you'd like to include?

We are always looking for talent to join our team. Right now, we have several major projects underway in North Carolina, including one we're gearing up for right now on I-40 in Raleigh. To search for construction jobs with S.T. Wooten and submit an application, visit the careers section on our website.

June 2019 PG 11 RockRoadRecycle.com

BOMAG BM 2200/75 cold mill built for power, production and efficiency

RIDGEWAY, SC – With its powerful 760.3-hp (567-kW) diesel engine, the BOMAG BM 2200/75 delivers high-performance milling of half-lane widths reaching 86.6 in (2,200 mm) at precise milling depths of up to 13.8 in (350 mm). Offering a range of quick-change milling drums options and efficient transition of engine to milling power, this largest cold mill in the BOMAG product line is built for high performance applications such as major county roads, highways, interstates and airports.

Perfected over decades of design research and field experience, BOMAG's unique BMS 15 milling tooth holder system delivers superior milling productivity with low wear to extended service life by up to 30% over other cutting systems. The base tooth holder features a maintenance-free bolt-on design that does not require retightening to reduce service time. Featuring a low-resistance profile, the tapered tooth retainer claw delivers more cutting power with less wear. When cutting tool changing is required, the holder's quick-change design requires approximately 25% of the time required to change a full set of teeth compared to conventional systems, increasing machine uptime availability.

Built with high quality hardened materials, the milling drums for the BM 2200/75 feature optimized cutting tooth arrangement for high efficiency asphalt removal. The base section of the cutting tool holder is identical for all drums, giving contractors a lower cost for replacement parts. Material ejector plates boast a symmetrical design, so they can be rotated and used twice, cutting replacement costs in half. The drum's heavily loaded edge cutter is protected by high-performance hardened chromium carbide wear elements to increase service life and easy access to the tool edge shortens the time for tooth exchange. With the machine's quick-change drum design, contractors can easily switch from the standard drum for general milling to a fine milling mandrel for close tooth spacing to the power drum for demanding applications.

The BM 2200/75 mill's 35.4-in (900-mm) wide inner and outer conveyer system quickly removes material from the cutting chamber at a flow rate of 285.5 ft³/min (8.1 m³/min). The outer conveyor swivels 60° left or right of center and discharges material at a height of 16.4 ft (5 m), allowing the mill to efficiently convey material to trucks positioned at either side of the machine. For machine transport, the conveyor hydraulically folds to reduce machine height and length, improving flexibility and ease of moving the mill from site to site.

An integrated service platform simplifies and significantly reduces the time for daily maintenance procedures, further improving machine uptime. All major service points, including the water system, air filter, cooling system and engine components are centralized for fast access, while high visibility markings help the technician to quickly locate machine service points. The mill's standard auxilia-

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ry one-cylinder engine provides supplemental power for refilling water tanks, cutting tooth replacement and machine cleaning, significantly reducing fuel consumption for these maintenance tasks. Accessed from ground level, large storage compartments allow for transporting tools and replacement parts.

Mounted on rubber isolation buffers, the operator's platform minimizes vibration feedback to the operator, ensuring a comfortable working environment. The rotor and platform's central machine positioning gives the operator excellent view of both edges of the cutter housing and the entire working area to improve operating safety. The mill features an adjustable operator's seat that slews and swivels 45° for fatigue-free machine operation. Logical gauge positioning and self-explanatory controls on the dash panels improve operator efficiency and allow new operators to quickly learn machine operation.

The BOMAG BM 2200/75 mill's 760.3-hp (567-kW) liquid cooled diesel engine meets stringent Tier 4 Final/ Stage IV emissions standards. The 4-crawler mill features all-crawler steering and crab walk and delivers a maximum working speed of 0-229.7 fpm (0-70 m/min). Simple selection of three milling speeds − ECO/torque, universal and speed − via a three-stage switch offers excellent utilization of torque and power for higher productivity with reduced fuel consumption and less wear. ■



The outer conveyor swivels 60° left or right of center and discharges material at a height of 16.4 ft (5 m).

Photos courtesy of BOMAG



With its powerful 760.3-hp (567-kW) diesel engine, the BOMAG BM 2200/75 delivers high-performance milling of half-lane widths reaching 86.6 in (2,200 mm) at precise milling depths of up to 13.8 in (350 mm).

RockRoad Recycle.com PG 12 June 2019





Brad Perrine district sales manager for Manitou Group, said ADMAR does a fantastic job of putting on hands-on events.

This year ADMAR opened the event to valued customers, giving them a chance to try out various equipment.

Photos courtesy of ADMAR Construction
Equipment & Supplies

DMAR Construction Equipment & Supplies, headquartered in Rochester, NY, recently conducted their annual equipment Employee Demo Days event. The format in the past has been a three-day training event for staff only, covering product training with all inside and outside sales personnel on the equipment they sell and service.

This year, they added a fourth day, May 10, at a Victor, NY, location and opened the event to valued customers. Equipment manufacturer specialists from Kubota, Land Pride, Gehl/Manitou, Wacker and Paladin were on hand to answer questions and explain any new technical advances on their equipment.

Attendees had the opportunity for hands-on interactive sessions before buying, leasing or renting. In keeping with the trend toward smaller machines; skid steers, compact track loaders, small wheel loaders and mini excavators were the order of the day.

There was also a Wacker Neuson wheeled excavator on hand that can travel at 6-10 mph around a jobsite, which Rolf Witt (ADMAR corporate sales manager) said is a very popular rental item for contractors and a machine that appeals to towns and villages

Many of ADMAR's expert staff and management were on hand, including ADMAR's Executive Vice President Rich DiMarco II. His responsibilities include overseeing purchasing, researching new tech/products and trends and managing the ADMAR sales and delivery truck fleets. He

is very knowledgeable regarding the generator lines they handle, including power distribution.

ADMAR Compact Equipment Product Manager Jonah Yezzi had this to say regarding the occasion, "This event is advantageous for contractors because they often don't get to operate equipment when they start evaluating purchases and technology is ever-changing. They might not be aware of new features that are available to them. [It is also] advantageous for ADMAR personnel in that they receive high-quality hands on training and all departments cross train (outside sales, inside sales, rental care, road techs, marketing personnel, financing) so everyone has an understanding of our company's lines. ADMAR believes in consistent product training. And it is very rare for customers to be able to demo multiple premium brands in one location in the same day."

Ken Scott, regional sales manager for Kubota, offered,



Participants had the opportunity for hands-on interactive sessions before buying, leasing or renting.



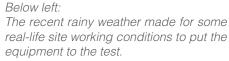
ADMAR's Compact Equipment Product Manager, Jonah Yezzi instructs a participant on the controls of a Gehl RT165.

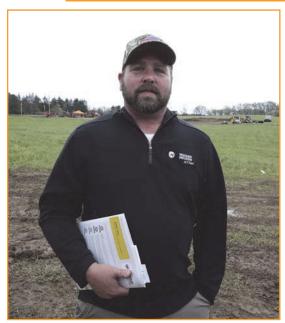


Wacker Neuson had a new battery-powered tamper and 1 1/4 ton roller on hand.

Right:

Wacker Neuson's Chad Ruffel said the event was a good opportunity for exposure to would-be buyers.









Equipment manufacturer specialists from Kubota with Land Pride were on hand to answer questions and explain any new technical advances on the equipment. L-R: Karl Vonhahmann and Ken Scott.



The format in the past had been a three-day training event for staff only.

"This is a prime opportunity for seat time. Operators want to have their butts in the seat, which creates an opportunity to point out the features and benefits of the equipment. Opportunities exist to highlight different features and compare other brands at the same time. On the training and support side I get to spend time with ADMAR personnel with 'walk-arounds' and take it to the next level with demonstrations."

A variety of Land Pride attachments were mounted on Kubota machines for everyone to learn about as well, and Land Pride territory manager Karl Vonhahmann was on hand to answer questions.

Representing the Manitou Group (Manitou, Gehl, Mustang), Brad Perrine, district sales manager, said "A live event with 'hands-on' is huge! Having customers get in the operator's seat delivers a real feel and allows for live comparison. Getting OEMs together with dealer personnel on this level is great and ADMAR does a fantastic job putting this event on."

Chad Ruffel, district manager with Wacker Neuson, commented it was a "good opportunity to showcase new equipment and actually operate equipment, especially customers who deal with purchasing - but don't get to use [construction equipment] in real-life situations." Wacker Neuson was displaying some new technology, including a new battery powered tamper and 1-1/4 ton compaction roller.

ADMAR Construction Equipment & Supplies has been family-owned and operated for almost 50 years, providing construction equipment and supplies throughout New York, Ohio, Pennsylvania, Massachusetts and Connecticut. They've been a long-term exhibitor at the annual Hard Hat Expo in Syracuse, NY, and will be taking advantage of the new demonstration area at the 2020 event as well as helping attendees with their static exhibit in the new outdoor heated tent structure.



ADMAR Training Manager Ryan Nott, oversees the product training with all appropriate personnel on the equipment they sell and service.

including (L-R): Stephanie Robinson, Katy DeLorme, Millie Thomas and Michael McSparron, ADMAR's fi-

RockRoad Recycle.com PG 14 June 2019

Maine DOT uses new GPR technology to improve road pavement quality and service life

by Rob Sommerfeldt, GSSI

The State of Maine Department of Transportation is at the forefront of research on how to improve road pavement quality and extend service life. They focus on improving both the material mixes used and how they are put down in the field. One recent addition is the use of GSSI's PaveScan RDM, which can accurately measure whether there is density uniformity throughout the pavement layer. Studies have found that optimum pavement density is a crucial factor in increasing pavement life. Pilot tests on about a dozen projects show promising results; researchers believe the equipment will be a powerful tool to help contractors make adjustments to ensure pavement quality.

State of Maine uses a variety of methods to make the most of their road paving budgets

Every state faces road paving funding restrictions. Maine DOT devotes a significant portion of its budget to roadway and pavement improvements and needs to make the most of its limited resources. The state has a three-year, \$2.3 billion work plan; 2018 work included 48 miles of highway construction and rehabilitation at an estimated cost of \$67.6 million; 356 miles of preservation paving estimated at \$93.8 million; and 600 miles of light capital paving at a cost of about \$22 million.

Dale Peabody, director of the transportation research division at Maine DOT, explained there is never enough funding to keep up with all the road pavement work needed. That's why his team is constantly looking for ways to improve both the material mixes used and how they are laid in the field.

On the mix side, Maine DOT uses a variety of tools to test compacted asphalt mixtures, including the Hamburg wheel tracking device (HWTD) and the asphalt mixture performance tester (AMPT), a computer-controlled hydraulic testing machine that subjects samples to cyclic loading over a range of temperatures and frequencies. They also recently began using MiST (Moisture Induced Stress Tester), a new method for testing moisture damage susceptibility of asphalt mixtures.

As for the materials themselves, Maine has conducted research on hot in-place recycling (HIPR), plant mixed recycled asphalt pavement (PMRAP) – construction using asphalt emulsion and cement – and ultra-thin bounded wearing course (UTBWC) surface treatment, which nationwide research suggests reduces deterioration. They are also using thin hot-mix asphalt (HMA) overlays to extend the life of pavement still in serviceable shape. Laboratory performance test equipment is used to ensure the mixtures will last longer and be more durable. They are also working on new lab tests that will be better at measuring performance with regard to moisture.

On the material lay down side, Maine DOT does the

Segregation is the enemy of density and a major cause of premature pavement failure.

most it can to make sure the material is applied properly in the field. It specifies equipment contractors must have materials transfer vehicles (MTVs), which ensure a more uniform and longer lasting road surface. They also include ride smoothness specifications to cut down on the undulations that would eventually lead to road performance issues. Also included are specifications for joints, thermal profiling with an infrared (IR) scanner and use of intelligent compaction (IC) rollers which facilitate real-time compaction monitoring and timely adjustments to the compaction process by integrating measurement, docu-

mentation and control systems.

"We began implementing quality control/quality assurance (QC/QA) practices years ago and we have trained and certified technicians sampling material on the roadway," said Peabody. "It's a continuous process, in which we have gone away from fixing the worst first to aggressive preservation practices. It's just like how drivers don't wait until a car breaks down before changing the oil."

Uniform density throughout the pavement layer is criti-

Maine DOT 15



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Maine DOT from 14

cal. According to Peabody, optimum pavement density is the crucial factor in increasing pavement life. "Optimum density reduces oxidation, reduces moisture damage and decreases rutting potential. It also offers improved fatigue life and increased load bearing capacity." He cited past studies relating density to pavement life – the rule of thumb is that even a 1% decrease below minimum density results in a 10% loss of pavement life.

Peabody has found that segregation is the enemy of density – and is a major cause of premature pavement failures. There are two types of segregation: mechanical (physical or gradation) and thermal. Unfortunately, segregation is often only identified visually and is a subjective value that is difficult to quantify. It may not even be apparent at the time of construction, making it very difficult to enforce contractually.



PaveScan RDM set up with three 2-GHz sensors mounted on a portable push

In the past, Maine has used nuclear density gauges to measure density but has moved away from this type of technology. Contractors now use a non-nuclear asphalt density gauge for QC purposes and cores are collected and sent to a lab to determine voids/density acceptance. "The down side of cores is limited sampling and not having real time values," Peabody said.

National highway research solutions include use of GPR

The issue of pavement density has been extensively researched as part of the Federal Highway Administration's Strategic Highway Research Program (SHRP2). SHRP2 eventually came up with two non-destructive techniques for evaluating asphalt pavements during construction: infrared thermal scanning and the use of ground-penetrating radar (GPR), which uses electromagnetic wave reflection to "see" through materials.

According to SHRP2 studies, GPR can be used to measure uniformity and potential defect areas in asphalt pavements during construction. Significantly, it offers real-time testing of potentially 100% of the pavement area. Compare that to current density tests, in which typical random sampling measures only about 0.003% of pavement area.

Widely used for many applications, GPR is a common tool for utility location, measuring pavement thickness and bridge deck deterioration. For decades, researchers have been investigating whether it could be used for measuring pavement density, but they could never achieve the level of accuracy that would warrant recommending its widespread use. In addition, the use of GPR technique previously required specialized equipment, a great deal of data interpretation and a number of manual steps.

In 2013, SHRP2 funded work aimed at developing a streamlined and operator-friendly GPR device that would provide real time profiling of asphalt mixture uniformity. The research was done by the Texas Transportation Institute (TTI), which worked with GSSI to develop the technology into the PaveScan RDM asphalt density assessment system. The non-contact PaveScan RDM technology uses a sensor that typically outputs a measurement each half-foot along the lane traveled, so a mile's worth of data includes roughly 10,000 measurements for each sensor used. This system is ideal for uncovering inconsistencies that occur during the paving process, including poor uniformity and significant variations in density.

To arrive at pavement density, PaveScan RDM measures the dielectric properties of the asphalt surface. The dielectric constant is the ability of a substance to store electrical energy in an electric field. For example, air dielectric is 1.00059, asphalt aggregate is about 3 to 6, while the dielectric of water is 80. With new pavement, the mixture is uniform; dielectric variation occurs primarily due to the percentage of air voids – which directly correlates to density. The measurement is based on the ratio of reflection from the asphalt surface to the reflection from a metal plate.

On the road in Maine

Maine is one of several states that have conducted pilot studies using PaveScan RDM equipment. The PaveScan RDM uses one or three 2-gigahertz (GHz) sensors mounted on a portable push cart that can scan up to a 6-foot width. Each antenna collects a continuous line of dielectric/density. An onboard computer captures dielectric values, which can be correlated to core densities.

Operators scan a pavement section and the device identifies high, low and median density locations. They take a static reading directly over each location, obtain cores at each location and then test the cores, entering the results in the software. Correlation accuracy depends on obtaining core densities over the entire range of measured dielectric values.

To date, Maine DOT has collected data on about a dozen recent paving projects and found the data align well with what they have seen in the field. Peabody said, "We were looking for a better way to ensure we are achieving desired density ranges, since studies show that good density leads to improved service life. PaveScan RDM gives a much larger sample of the HMA mat and can be used as a QC/QA tool. The results to date have been really positive."

It helped that Maine DOT had a crew that was already familiar with GPR, making it a relatively easy transition to get up to speed. The crew found the PaveScan RDM equipment to be easy to set up and use. The only limitation they found is that the battery does not last long enough for a full day of data collection. Other recent adjustments include a laser pointer that can be attached to the equipment to help operators align the scanning equipment, especially for use in night work. Operators found the extra lighting to be very helpful.

However, Peabody noted the technology does have some boundaries. It is affected by surface moisture, does not work as well when temperatures dip below 40°F and can be affected by mix constituents, which may happen with a change in aggregate source. Measurement accuracy for layers of less than 1 inch may be affected by the underlying layer, while layers that are 2.5 to 3 inches may be affected by density gradients within the layer.

Maine DOT is also looking for further enhancements. For example, some users are adapting the technology for use with vehicle mounts. This issue is one that GSSI is actively pursuing for spring 2019. Other items on the wish list are better ways of using the technology for longitudinal joints, incorporation into the Veta intelligent construction software (a map-based tool for viewing and analyzing geospatial data) and better data analysis of intelligent compaction, thermal profile and GPR density data.

Peabody's colleague, Rick Bradbury, has presented the positive results of the pilot studies at several SHRP2 work-



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shops and has shared the information with New England DOT colleagues. He also recently presented the information at the 2018 North East Asphalt User/Producer Group (NEAUPG), which is focused on improving the quality and performance of asphalt pavement applications in the Northeastern United States by promoting

communication, knowledge, technology and uniform solutions.

Special focus on data analysis

While not unique to this technology, one of the key factors affecting whether Maine DOT would want to implement the technology statewide is the issue of data analysis. "Who is going to collect all this data?"

Ultimately, he believed it would be best if these type of data could be collected in a moving vehicle; the vehicle could then go project to project and collect data. However, Peabody acknowledged that this approach would have a downside - the lack of real time data contractors could use to make adjustments as they are going along. "If they collect data but don't look at them until the next day, that does not really give the contractor a chance to make adjustments if there are density issues. I'd like a way to share data with the project team in real time, other than only being able to show the display on the Toughpad."

According to Peabody, the larger question that must be answered is how to effective-

asked Peabody. "If there are 20 projects,

you can't have just one crew collecting

data. We have thought about asking the

contractor to purchase the equipment and

use it but we are not ready for that, because

for it to work you have to have people who

really understand the technology.

ly manage the data to make near-real time changes during production and to get timely reports to project personnel.

"Currently, there is no good way to get data in the right people's hands so they can make adjustments on the fly. There is a lot of benefit to having that ability. They could collect data and then go back to specific points on the road. They could select locations of high and low dielectric/density and then cut a core there and send it to the lab to determine the actual density," he said.

GPR surveys show good correlation between dielectric and air voids

The PaveScan RDM surveys show a good correlation between the dielectric value and the air void contents. Maine DOT can use the surveys to quickly identify and investigate low density areas and to check the compaction consistency. While data management is a huge effort, they believe the surveys will be very useful, in conjunction with other new technologies, including intelligent compaction and pave IR.



how they are laid in the field



According to SHRP2 studies, GPR can be used to measure uniformity and potential defect areas in asphalt pavements during construction.

Photos courtesy of GSSI & Maine DOT





Ultimately, Peabody believes it would be best if these type of data could be collected in a movina vehicle

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Road Dryer introduces new dealer representation in eastern Canada

GREENVILLE, SC – As part of its expanding sales force, Road Dryer LLC has added new authorized dealers for provinces in Eastern Canada. Montreal Tracteur/Montreal Tractor (MTI) and its sister company Hot Mix & Aggregate (HMA) now exclusively represent Road Dryer's line of pavement-drying units in Ontario, Quebec, Nova Scotia, New Brunswick, PEI and Newfoundland. Both dealerships focus on providing customers with excellent service, unparalleled technical knowledge and competitive pricing in their representation of quality new, used and rebuilt equipment, accessories, parts and components. MTI, with headquarters in Baie D'Urfé, Quebec, was founded in the early 1980s and works with customers across Canada, the United States and worldwide. HMA, which was founded in 2010 in Orangeville, Ontario, concentrates its efforts primarily in Ontario.

Road Dryer's trailer and truck-mounted pavement drying units quickly dry asphalt and concrete pavement, allowing crews to pave or apply surface treatments or striping after just one pass. The units blow heated air up to 400° F (204° C) directly downward through multiple nozzles, eliminating the risk of "flying objects" and allowing traffic to flow in nearby lanes – thus reducing congestion caused by traffic restrictions. The RD-1200 XT can be adjusted for drying widths of 8 to 12 ft (2.4 to 3.7 m). Because it dries pavement on demand, the Road Dryer unit provides flexibility for contractors and government agencies to meet timetables by minimizing delays from weather or project-related wet conditions.



As part of its expanding sales force, Road Dryer LLC has added new authorized dealers for provinces in Eastern Canada.

Photos courtesy of Road Dryer LLC

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Blastcrete Equipment offers precision Piccola gunning machine

ANNISTON, AL – Blastcrete Equipment LLC's AA020 Piccola Rotary Gunite Machine is designed to be easy to own, operate and maintain. Featuring proven Piccola technology for precise and effective operation, the gunite machine is ideal for a variety of applications, including dry and underground shotcreting, concrete repair and refractory installation.

Blastcrete's Piccola gunite machine is intended to be a simple solution for gunning applications up to 6 cubic yards per hour. It offers precise material output, with the ability to deliver a maximum of 3/8-inch aggregate.

The Piccola machine features a simplified one-bolt clamping system. Unlike similar systems that typically include three to four adjustment bolts to seal the clamping plate to the rotor, Blastcrete's requires just one bolt. This simplified design makes it quick and easy to adjust, and

ensures an excellent seal each and every time. A good seal will prevent dust leakage around the rotor and is essential for optimal results.

Blastcrete also designed the Piccola machine for trouble-free cleaning and maintenance. Technicians can easily take apart the entire unit for quick, effective cleaning and easy access for routine maintenance.

The unit's compact design and solid rubber tires provide easy mobility around the jobsite and allow contractors to place it in a pickup bed for hassle-free transportation. Blastcrete also offers the Piccola as a skid-mounted machine with forklift pockets. Users can choose either a 5-hp electric motor or 16AM Gast air motor to power the unit. The Piccola requires 250 to 600 cfm of air flow, depending on the power choice.



Blastcrete Equipment's Piccola gunite machine is a simple solution for gunning applications up to 6 cubic yards per hour.

Photo courtesy of Blastcrete

Road Dryer from 17

According to Maxime Petrin, product manager for the Road Building Division at Montreal Tracteur Inc., "We're delighted to offer our clients a tool to take control of their

time schedules. We cannot control Mother Nature, but the Road Dryer will become the 'ace-up-your-sleeve' tool that will give our clients more control over their jobsite."

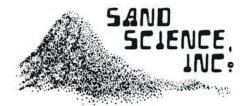
"The Road Dryer will help our clients extend their asphalt paving season. They will be able to reduce their downtime and be more efficient on the job site, while improving the mat quality. Five years from now, I think every large asphalt road building contractor will have a Road Dryer, or two, in their fleet," added Brian Keveryga, general manager for HMA.

"All of us at Road Dryer are excited to partner with Montreal Tracteur and HMA. They have a great reputation in Canada and worldwide, and they are doing an outstanding job spreading our message and marketing our equipment," said Todd Toole, operations manager for Road Dryer, based in Greenville, SC. ■



Road Dryer's trailer and truck-mounted pavement drying units quickly dry asphalt and concrete pavement, allowing crews to pave or apply surface treatments or striping after just one pass.

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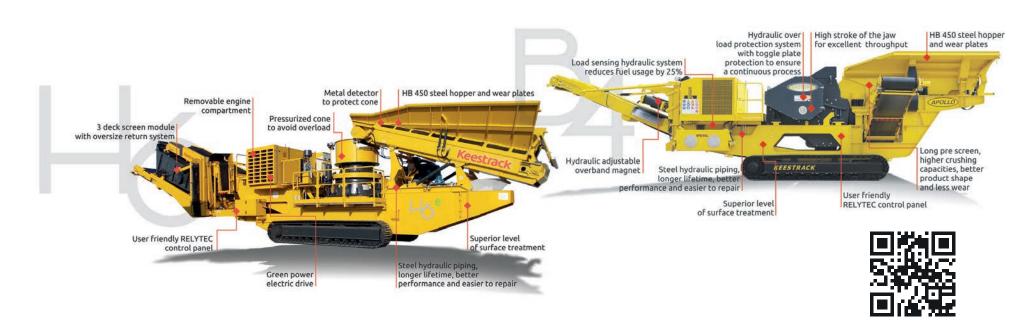
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Marijuana-impaired drivers

Trucking research group recommends ways to stem increasing threat to commercial drivers

Source: EHS Today David Sparkman | April 16, 2019

new study urges state and federal governments to take stronger actions to improve the ability of law enforcement to seek to identify and deter the growing danger of marijuana-impaired driving.

A study of our current state of knowledge about the topic was recently published by the American Transportation Research Institute (ATRI), the nonprofit research arm of American Trucking Associations.

The growing trend of more states choosing to allow both the medical and recreational use of the drug has not been accompanied by advances in methods for effectively addressing marijuana-impaired driving. As a result, this topic is a top-of-mind concern for many truckers, the institute noted. In fact, last year the subject was identified as a top safety research priority by ATRI's Research Advisory Committee (RAC), made up of industry safety experts.

"While increased access to marijuana has not directly impacted the trucking industry in terms of truck drivers testing positive for marijuana, the increased frequency of marijuana-positive drivers operating on the same roadways as trucks makes marijuana-impaired driving a critical safety issue for the trucking industry," ATRI's report pointed out.

Mike Card, president of Combined Transport Inc., agreed. "It is extremely concerning to motor carriers and our drivers that recreational marijuana is legal in so many states, yet as the ATRI report documents, a valid and widely accepted breathalyzer-type test is not available to law enforcement. ATRI's study clearly defines a role for federal and state leaders to support law enforcement and others in keeping the roadways safe from those who choose to drive high."

In particular, the report highlights the importance of training law enforcement in how to identify and collect evidence of marijuana-impaired driving, particularly through the development of more well-trained drug recognition experts (DREs).

"As ATRI's research identifies, a key tool for combating drugged drivers is deploying additional drug recognition experts," said Mark Savage, deputy chief of the Colorado State Patrol. "A DRE can bring critical evidence to prosecutors that other tests simply cannot measure."

Test methods inadequate

Although drunk driving can be prosecuted using accurate testing tools, widely-tested and accepted tools and methods are not currently available for marijuana impairment testing, according to the researchers. As a result, truck drivers in many states now face the significant risk of having legal marijuana users drive impaired (and illegally) alongside their trucks.

When it comes to alcohol and driving, in recent decades tightened laws and development of accurate testing tech-

nology aimed at combatting driving under the influence (DUI) are credited with contributing to an approximately 50% decrease in annual alcohol-related traffic deaths currently versus the 1980s.

Several states that have approved medical or recreational marijuana use also have codified legal protections that prevent employers from taking adverse action against employees for their use of the drug anywhere except when at work. Of course, it is well established that even the most generous of the state marijuana legalization laws do not protect workers in professions where it is banned for safety reasons, such as commercial drivers, train operators and pilots.

Because marijuana is processed by the body differently than alcohol, existing drug testing mechanisms can easily identify past marijuana use by measuring metabolites, but they cannot measure a current state of intoxication.

Although not generally indicative of current state of intoxication, a positive test for past marijuana use can allow for employee termination by many employers, particularly those with strict anti-drug policies or those who employ safety-sensitive transportation workers.

Thus, a simple blood or breathalyzer test – commonly employed by law enforcement when alcohol impairment is suspected – is not ideal for identifying drivers operating under the influence of marijuana. This is due to the body's mechanisms for processing marijuana's intoxicant agent, THC.

Of the states that have legalized recreational marijuana, most have set limits on the amount of acceptable THC in blood tests when testing for driver impairment. However, there are several issues related to such tests. Some state laws allow a DUI charge if following an arrest the driver tests positive for THC derivatives in urine, which indicates marijuana use in the previous 30 days but not necessarily recent marijuana use.

Testing driver behavior

Identifying, documenting and prosecuting marijuana-impaired drivers depends on each state's laws, but can be achieved through observation and documentation of behavior, physical evidence and drug testing in states where there are THC limits or zero tolerance laws.

Police officers are extensively trained in how to identify impaired driving while observing how a vehicle is being operated, or after an accident on how the driver is behaving. In most cases the officer first conducts a standard field sobriety test (SFST), which involves asking the driver to stand on one leg, walk and turn, and moving an object like a pen or light in front of the driver's face to see if their eyes jerk.

The Advanced Roadside Impaired Driving Enforcement (ARIDE) program, developed by the National Highway Traffic Safety Administration (NHTSA) and the International Association of Chiefs of Police (IACP), seeks to bridge the gap between SFST and Drug Recognition Ex-

pert (DRE) evaluations of impairment. However, only 17 states have more than 20% of officers trained in ARIDE.

DRE's are specially trained law enforcement officers certified in recognizing and assessing individuals who are under the influence of drugs and alcohol. DREs are a key method that many states, Canada and the European Union use to determine marijuana impairment. DRE impairment determinations are supported by drug tests, which include oral or saliva swabs, urine testing and blood sample testing.

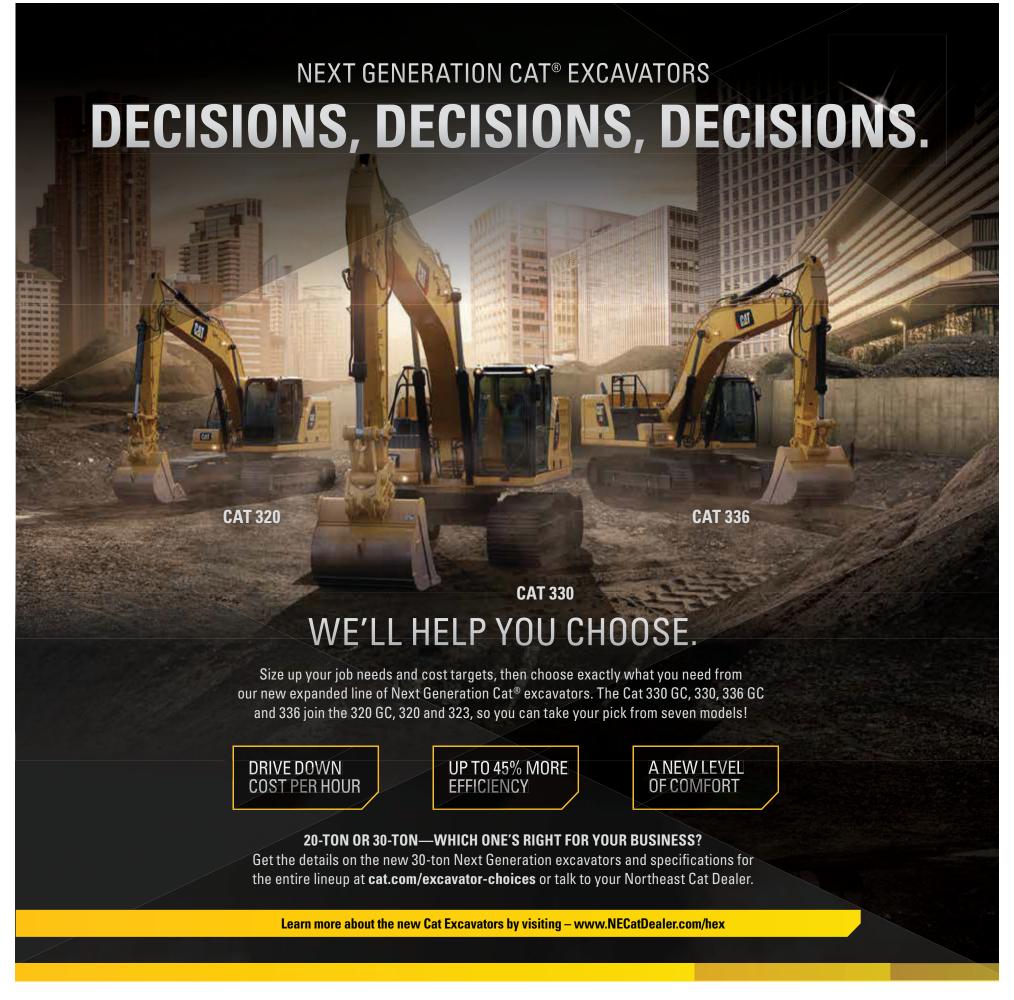
In 2017, there were 8,606 DREs operating in the U.S. who conducted a total of 30,989 enforcement examinations, the researchers found. Marijuana was the most frequently identified substance in these examinations.

The ATRI study also recommends that a number of other steps be taken to deal with the growing problem. These include increased data collection on the frequency and impacts of marijuana-impaired driving; public education and information be widely disseminated concerning the risks of impaired driving; better equipping law enforcement and the court system to intercept and ultimately prosecute impaired drivers; and targeting tax revenue generated from marijuana sales to fund these activities.

"Educating the public on the dangers of marijuana-impaired driving, and of the legal consequences, is critical to preventing drugged driving," the ATRI researchers stressed. "Marijuana users – particularly younger users – do not perceive marijuana as having an impact on driving safety, and in a smaller number of cases, they may believe that marijuana improves driving safety. These beliefs are in direct contrast to the documented effects that marijuana has on driving-critical cognitive functions."



Because marijuana is processed by the body differently than alcohol, existing drug testing mechanisms can easily identify past marijuana use by measuring metabolites, but they cannot measure a current state of intoxication.









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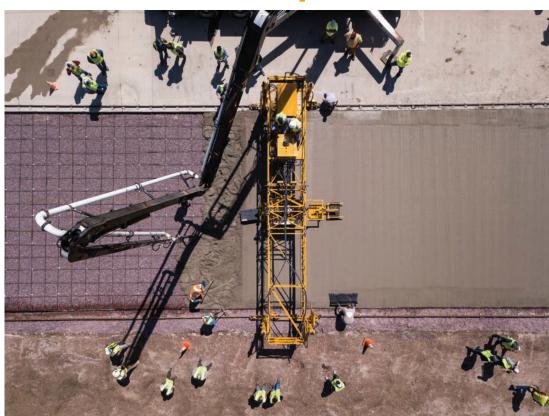
Terex® Bid-Well Service School class of 2019 get first preview of new 3600RC paver

CANTON, SD – More than 60 paver operators from across the U.S. gathered for specialized training as well as for the unveiling of the newest Terex Bid-Well Remote Control paver (model 3600RC) at Terex Bid-Well's annual service school, which took place in April at its facility in Canton, SD.

The annual service school, held over two days, was hosted by the experienced Terex Bid-Well Service Department. The first day consisted of classroom topics covering components, configuration, calibration and proper use of Terex Bid-Well paving equipment. Day two gave students the opportunity to have hands-on training by being involved in an actual concrete pour along with Terex Bid-Well's service technicians, who shared their experience and knowledge with the operators, showing them proper technique and how to achieve a uniform and consistent finish as well as time-saving tips and tricks to get the most out of their Terex Bid-Well paving equipment.

Timothy Rubalcaba, sales and marketing manager, Terex Bid-Well, explained, "When you buy a Terex Bid-Well you are backed by the experience, service and support of the industry leader. Our number one priority is to ensure that our customers' project is successful by training operators to properly set up and utilize their equipment."

This year, attendees were also present for the unveiling and first use of the newest Terex Bid-Well Remote Control paver model 3600RC. This new remote control system allows the operator to control the machine from the ground/work area offering increased safety as well as the ability to communicate with other team members and more importantly with the concrete placer. The 3600RC, as well as its larger sister paver model 4800RC, is capable of paving bridge decks, flatwork and roads with minimal set up time and increased flexibility.



The 3600RC is capable of paving bridge decks, flatwork and roads with minimal set up time and increased flexibility.

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Wirtgen W 220 mills surface course at the foot of Mont Blanc in half the time

Somewhat surprisingly, the Wirtgen W 220 large milling machine's first job in Italy did not take the high-performance machine to a highway but to a winding country road at the foot of Mont Blanc in the northwest of the country. It was at this location that the extremely powerful 577-kW machine made its mark, milling the surface twice as fast as scheduled.

10 km of new surface course along the route to the peak The Strada Statale 26 (SS 26) stretches from the flat land-

The Strada Statale 26 (SS 26) stretches from the flat landscape of Piemont to the Alpine regions around Mont Blanc and includes a link to the Mont Blanc Tunnel. The road winds its way up to the Aosta Valley, reaching altitudes of almost 1,000 m and all sections are heavily trafficked, both by tourists and freight traffic. It is used by an average of 5,000 vehicles per day.

The road was due for rehabilitation in the summer of 2018: The 4 cm-thick surface course was to be renewed across the entire width along a 10-km section. In some sections, rehabilitation of the 10 cm-thick binder course was due as well.

Cost-efficient quality

Full road closures are extremely difficult to achieve in the

Alps, and so only one side of the SS 26 was blocked at one time when the road was rehabilitated in July and August 2018. But the contractor, Italfrese s.r.l., a Piemont-based company and one of Italy's largest milling contractors, was able to shorten the construction period by using the W 220. This is partly due to the machine ability to mill across 2.2 m in a single pass, meaning that just two passes were required in most areas, rather than three. What's more, the milling machine operated at an advance rate of 28-30 m/min – even at inclines of around 5%. Ultimately, the milling contractor completed the milling work in just half the time that would have been estimated for one of the smaller

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More than 60 paver operators from across the U.S. gathered for specialized training on the 3600RC.



The remote control units give the operator the flexibility to move away from the platform and have greater control over machine settings.

Photos courtesy of Terex Bid-Well

"While paving, it is common for the operator to make minor adjustments to machine settings," said Dean Johnson, service manager for Terex Bid-Well. "Without our remote operation, he/she will either need to call down to a laborer on the ground to make the adjustment or will have to stop the paver and paving operation to make the change. Our remote control units give the operator the flexibility to move away from the platform and have greater control over machine settings."

Since 1961, Terex Bid-Well has been developing and manufacturing a complete line of versatile and specialized concrete paving machines for the bridge and highway construction market. Terex Bid-Well pavers, manufactured in Canton, SD, are used locally, across the country and internationally as well.



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machines usually used on confined sections such as those on the Alpine pass. And all of this without compromising on quality.

Ernesto Franco and Emanuele Franco, managing director and technical director of Italfrese, were well aware of the time savings when planning the job: "In the run-up, we investigated which of our 12 milling machines could complete this job as economically and quickly as possible. And the answer was the new W 220. Though the milling machine was operating at quite a high milling speed, it had not yet reached its technical limits. The immense engine power and the sophisticated control system enabled the machine to mill at a constant speed, even in regions at higher altitudes and on hairpin bends – a feat achieved while maintaining a moderate fuel consumption."

Milling performances like these are achievable thanks to the excellent weight-to-power ratio of the new W 220: an operating weight of 36,360 kg meets an engine output of 571 kW (777 HP).

Intelligent use of power

In addition, the powerful drive enables asphalt pavements to be removed not just layer by layer, leveling unevenness in the surface course or increasing the grip, but also by removing entire roadways down to a maximum milling depth of 350 mm in a single pass. The Franco brothers agree: "This extra power often makes all the difference on large, time-critical projects at airports or on highways." Particularly when operating at large milling depths, the W 220 has another handy feature





The milled texture reveals all: In this area, the Wirtgen milling machine was operating with a high milling drum speed and a high advance rate.

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Wirtgen from 24

up its sleeve. The right-hand side plate can be raised by 450 mm, so that a curb can be scanned as a reference, even when working at large milling depths, and the machine can remove the pavement completely.

A glance at the traction drive shows that its power is harnessed intelligently, since Wirtgen has equipped the W 220 with the intelligent ISC traction drive. It delivers optimum traction with electronic traction control, adapts the advance rate of the machine to the current engine load and regulates the current speed of the external and internal crawler tracks on bends. On the SS 26, this was particularly advantageous on the many hairpin bends.

Optimum milling result thanks to adapted milling drum speed

Thanks to the variable milling drum speed of the W 220, on which three speeds can be set from the operator's stand, the machine operator can also influence the milling texture, i.e. the surface finish and the peak-to-valley depth. For the project on the SS 26, the Italfrese team decided to combine the maximum milling drum speed with a high advance rate when milling off the surface course. Meanwhile, the HT 22 quick-change tool-holder system and type W 7 cutting tools ensured cost-efficiency.

High machine utilization

Thanks to its powerful engine, the W 220 has plenty of steam, even when operating at large milling widths. The large milling machine therefore is not only available with the standard 2.2-m milling drum assembly, but also is optionally available with a 2.5 m-wide version. To enable the machine to flexibly produce certain surface textures, the FCS Light milling drum changing system is optionally available for the 2.2-m milling drum assembly. As a result, milling drums can be exchanged quickly for drums with another tool spacing – be it standard milling drums, Eco Cutters or fine milling drums – equipping the machine for a wide range of different applications.

Quiet power development

Despite creating a machine with an immense power development, Wirtgen's development engineers were able to greatly reduce noise emissions. The Italfrese team immediately noticed this on the job at the foot of Mont Blanc. Thanks to this feature, the team has no concerns about working in residential areas, and the milling contractor already has such a job lined up for its new powerhouse.



Wirtgen's W 220 was able to mill off the surface course across the full width of the roadway in just two tracks on most sections of the highway.



L - R: Emanuele Franco (technical director), Ernesto Franco (managing director) and Pop Vasilev Gonco (senior milling machine operator) from Italfrese are overjoyed with the first job performed by their new W 220 large milling machine.

Photos courtesy of Wirtgen

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RockRoad Recycle.com PG 26 June 2019

Is SMA worth the investment over Superpave TM?



Prompt compaction gives additional strength and lifespan to the overall project.

Coverage and photos by Jon M. Casey

n recent years, highway asphalt paving projects have evolved to include the addition of innovative new mix designs including Superior Performing Asphalt Pavements (Superpave™) and most recently stone matrix asphalt (SMA). With each improvement, increased costs accompany the new products. New binder formulations as well as the need for mix additives have helped to improve pavement durability and longevity in high stress situations. At the same time, these increased costs have caused engineers to question the overall benefits of using the newer, more expensive SMA in place of the familiar Superpave material.

In response to that inquiry, Dr. Randy West and Dr. Fan Yin, both Ph.D., P.E. engineers at the National Center for Asphalt Technology, presented a webinar on Jan. 29, aired by the National Asphalt Pavement Association (NAPA), titled "Performance and life-cycle cost benefits of stone matrix asphalt." In a nutshell, they explored to determine if it's worth the extra cost to use SMA over Superpave in high stress, heavy use paving and overlay applications. For those who would like the details of their findings, the entire study (funded by NAPA and the Federal Highway Administration) is obtainable at the National Center for Asphalt Technology (NCAT) website: http://eng.auburn.edu/research/centers/ncat/files/technical-reports/rep18-03.pdf

West began the webinar with a brief history of SMA. SMA is a mix design that was developed in northern Europe as a way to resist studded tire wear. These countries found that this mix was also resistant to rutting and was extremely durable. The design calls for an aggregate gradation that provides stone-on-stone contact. This is what provides the added strength. Additionally, a "rich" mortar binder content made with high concentration of asphalt and stabilizers gives the mix the added durability.

West said SMA was introduced to the U.S. in the early 1990s, just prior to the introduction of Superpave. "It is considered a premium mix that has an extended lifespan for higher risk pavement. It is more expensive than dense-graded mixes containing polymer-modified asphalt binders, however, the higher cost is offset by a longer life expectancy," he said.

"In the 1990s, there were several studies that evaluated SMA mixtures. In a few cases, they were compared to dense-graded mixes. In the early days, the asphalt binders used in SMA in the U.S. were not polymer-modified. It was pre-Superpave days and it was common to use [existing binders]."

The early tests showed better rutting resistance due to the stone-on-stone aggregate structure and it had better resis-

tance to moisture damage because of the thicker asphalt film between aggregate particles. The testing did not find any consistent trends on stiffness or cracking resistance. Field performance, conducted at NCAT in 86 pavement sections showed excellent results, however the tests were only two to six years old — thus did not offer actual longevity results.

For this presentation, West and Yin did a market analysis to determine which states actually use SMA. They then did a performance analysis and a life-cycle cost analysis. These comparisons of SMA to polymer-modified Superpave dense-graded mix designs were performed on similarly constructed and similarly trafficked highways.

West and Yin found at least 18 states use SMA on a regular basis. Their follow up work included surveys of the state highway agencies to determine such factors as field performance data, cost and tonnage from 2011 to 2015. They also looked at mix design specs and mix selection policies.

Most states have a policy on when SMA is to be used. Six leave it to a pavement engineer or district engineer to make that decision, while 10 have written policies. Nine states follow the AASHTO 46 mix design and two follow the AASHTO 35 design. Five have a state designed method, which adds or modifies either of the two AASHTO designs. During those five years, the lowest state usage was South Dakota at 68,000 tons, while the highest was Maryland, using 1.872 million tons.

Yin said SMA consistently proved to be more expensive than dense-graded mixes — with price variations of between \$6 per ton in one state to as much as \$31 per ton in another state. He said the higher prices of SMA were possibly due to higher asphalt contents, differing requirements for cubical and durable aggregates and the inclusion of fibers as stabilizers.

Yin noted that fibers as stabilizers are included in SMA because of the higher asphalt content. The fibers are there to help prevent asphalt drain-down during transport and application. He also noted that there was no use of RAP or RAS in the mix.

Yin explained that comparisons of SMA vs. Superpave dense-graded mixes required equivalent roadway categories and equivalent pavement types. When the results were submitted from the participating state DOTs, Yin and West separated the data into two categories — flexible pavement vs. composite pavement. Their data included more than 400 SMA test results and more than 800 Superpave pavement sections. These came from nine state DOTs.

Yin said the performance analysis was done using a Network-Level analysis approach. All the data from each single state were compiled using information from several sites to draw a single conclusion for each state. Since most of the data come from roadways that have not been in place for more than 10 years, Yin and West had to use performance prediction models to calculate the extended performance over the upcoming 10 or so years.

Yin presented a series of slides that summarized the results from states like Michigan, Virginia and Pennsylvania. West then summarized both flexible pavements and composite pavements with data from several additional states, which included Maryland, Illinois, Georgia, Alabama, Colorado and Minnesota.

Overall, SMA life extension generally outperforms Superpave in flexible pavement applications by an average of

about 5.7 years. They noted that Alabama, Colorado and Maryland showed no apparent difference in longevity. Composite Pavement predicted service life extension for SMA sites proved much better with increases ranging from 0.9 years (Michigan DOT) to PennDOT's 13.5 years life expectancy.

Interestingly, PennDOT reported the highest longevity on their non-interstate application at 13.5 years and they also reported the lowest at -0.9 years on interstate pavement. Meanwhile, VADOT reported the next longest extension at 10.3 years of extra life.

In the Virginia deterministic approach, SMA at \$114/ton with a 23-year service life (composite pavements) compared to the Superpave at \$89/ton with a 13-year service life (composite pavements) and the need for an overlay after 13 years showed a cost benefit of 18.5 percent per lane mile. By comparison, in Michigan, SMA needs a service life of 26 years to make it a cost effective alternative to Superpave.

SMA had equivalent or better performance than Superpave mixes on similarly trafficked highways in most cases. In cases where SMA had better performance, the improvement varied from one to 13 years. In each case the individual application needs to be examined to determine if the increased cost versus the extended life service is worth the difference. That can only be determined by the circumstances of how the roads are used and maintained over time.

In conclusion, Yin and West determined that there was not enough overall consistency in the results to conclude that the extended wear of SMA offsets the added cost per ton of material over that of Superpave on a general basis. Yin said that each state should do their own analysis to determine the benefits of both mixes in their respective locales before making a decision on which material to use. Overall, SMA did have better resistance to rutting and moisture damage over Superpave, but there weren't consistent results on mixture stiffness and cracking. "In addition to performance benefits, SMA pavements demonstrated functional benefits such as improved visibility, reduced splash and spray, increased frictional resistance and noise reduction" (NCAT Report 18-03; Performance and life-cycle cost benefits of stone matrix asphalt).

For more information on the latest in paving information, visit www.pavementinteractive.org and the NCAT at Auburn University online.



The entire paving crew needs to be aware of the specs of the material being applied in order to arrive at the desired roadway surface quality.

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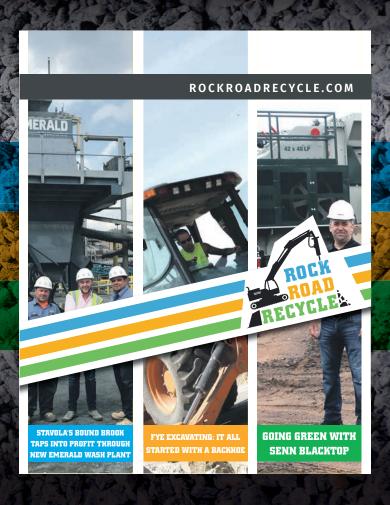
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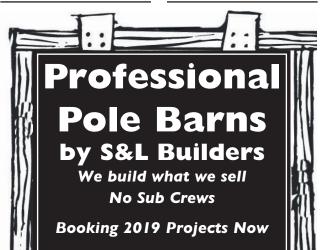
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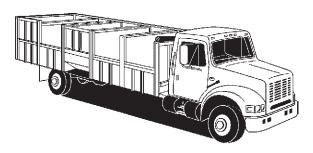
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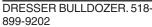
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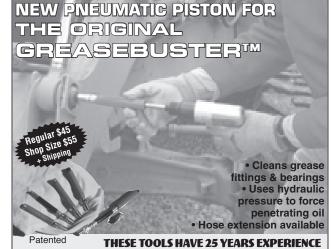


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- Scrap processing equipment
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From trash to treasure: Daly Plastics transforms dirty agricultural and packaging film into high-quality regranulate

On the Cover:

L-R:

Lindner Product Manager Stefan Scheiflinger-Ehrenwerth, Daly Plastics Managing Director and Owner Peter Daalder and Daly Plastics COO Gerd Gerdes in front of the bales of packaging film. Photo courtesy of Daly Plastics

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Robots to sort scrap metal at Skrotfrag in Sweden

Swedish scrap processing company Skrotfrag installs a robotic sorting line for scrap metal. The sorting line, equipped with a three-armed ZenRobotics Heavy Picker, will be the third of its kind in Sweden. Skrotfrag will be one of the first companies to apply robotic sorting technology to scrap metal. The application is a welcomed addition to advance Skrotfrag's operations.

"Automation liberates human resources and allows them to be assigned with new tasks that are less weighty. In addition, automation increases the availability of the entire installation," said Jonas Lindh, director at Skrotfrag.

ZenRobotics waste sorting robots harness the power of artificial intelligence (AI) for waste recognition. The AI software, called ZenBrain, analyzes sensor data in real-time and allows the robots to identify and sort objects just as well as humans do - but faster and safer.

"We are excited to introduce scrap metal as an application for robotic sorting as it often involves heavy and sharp objects that can be hazardous," said Rainer Rehn from ZenRobotics.

The ZenRobotics Heavy Picker can identify metal objects such as copper, brass, stainless steel, aluminum or zinc, based on specific features. In addition, the robot can be trained to identify specific objects such as electric motors, wires, residue, etc.

"Humans don't have metal sensors but yet we're able to

identify different types of metals based on specific characteristics like shape or color. That's exactly how the robots identify the objects. A great benefit of intelligent robots is their ability to learn to identify various materials and thus they adapt to a wide range of sorting needs," Rehn

ZenRobotics' Swedish partner Mared AB will deliver the new robotic sorting line during the summer of 2019. ■



In addition, the robots can be trained to identify specific



objects such as electric motors, wires, residue, etc.



ZenRobotics waste sorting robots harness the power of artificial intelligence (AI) for waste recognition.

Photos courtesy of ZenRobotics



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2014 McCloskey C38 **Cone Crusher**

Ideal portable secondary crushing solution, performance rates up to 300TPH, produces 3/8" to 2" product, 3,036 hrs. Stock #MCC130RR



2012 McCloskey I44 **Impact Crusher**

Ideal for asphalt recycling, concrete recycling, rock crushing, construction and demolition. 4,650 hrs. Stock #MCC137RR



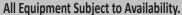
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RockRoad Recycle.com PG 4 June 20



aly Plastics is one of the largest plastics waste processing companies in the Netherlands. At the Zutphen site, the subsidiary Caroda Polymer Recovery recycles agricultural and packaging films. The aim is to produce regranulates of the same quality as virgin material. That requires innovative solutions. Two Jupiter 2200 and four Micromat 2000 shredders from Lindner Recyclingtech provide the recovery facility with the ideal particle size.

Peter Daalder is a seasoned industry expert and can often be found at specialist events such as the "Internationaler Altkunststofftag," an international conference on plastics recycling. The Dutch businessman's expertise is particularly in demand when it comes to film recovery. Daalder recognized its potential more than 30 years ago, at the age of just 16, and founded Daly Plastics BV in Zutphen with the help of his parents in 1985. At the time two generations of his family had worked in the waste paper trade. His parents belonged to the second generation of his family to work in the waste paper trade. The newly founded company – which he still presides over today – specialized in plastic waste collection and processing.

Twenty-five years later, Daalder expanded his business, entering the plastics recycling business in 2013 with his own recovery facility for agricultural and packaging films. Market conditions had changed, and the collection logistics and used material export company grasped the opportunity.

The subsidiary Caroda Polymer Recovery now operates four granulation lines at the Zutphen site. This makes Daly Plastics one of the largest plastics waste processing companies in the Netherlands today. The agricultural film is collected from over 2,500 farmers in the Benelux countries and northern Germany. Approximately 64,000 metric tons of used film arrives for processing each year, the majority of which is recycled as reusable polyethylene recyclate (regranulate).

Lindner Jupiter – the perfect primary shredder for agricultural and packaging film

Daly Plastics relies on Lindner's technological expertise for film shredding. Two Jupiter 2200 and four Micromat 2000 shredders are in continuous operation – four shifts, 24/7, 365 days a year. The material delivered to the site is weighed, roughly pre-sorted by crane grabbers and fed onto a conveyor belt for processing. A Jupiter located just outside the sorting hall shreds the agricultural film so that the drum screen can do a better job of filtering stones and soil out of the material.

"Agricultural film often contains foreign material such as lumps of soil or stones. Even large foreign matter in the feed material doesn't make any difference to Jupiter," said Daalder, adding, "That's one of the main reasons why we decided to buy Lindner shredders."

The second Jupiter 2200 primary shredder is installed in the hall, in front of one of Pellenc's most advanced automatic NIR sorting systems and shreds post-consumer film to A4 size. Optimum output and simultaneous dosing for subsequent sorting are essential for a smooth operation. In addition to these features, the Jupiter also pushes all the right buttons with its low energy consumption (energy-efficient drive, flywheel energy storage) and resistance to foreign parts, as well as easy operation and maintenance.

In the hall, the packaging film is first roughly separated by the crane grabber and then fed into the Jupiter, which shreds the material to the size of A4 paper, as mentioned above. "This size is ideal for optical sorting processes," explained Daalder. "It means the sensors can optimally distinguish LDPE from other PE and PP plastic types and separate it from the material stream. The Jupiter produces the perfect output, with the perfect cut for subsequent automatic NIR sorting."

Lindner's shredders were also chosen for their formidable safety clutch that prevents machine damage caused by foreign parts and non-shreddables as well as its convenient hydraulic maintenance door, which has also proven itself. Daalder is convinced that the Jupiter is the best choice for his application: "It can happen that metal parts or even stones get into the Jupiter despite pre-sorting. The safety clutch prevents the cutting system from being damaged in the process. The machine immediately jams and all our employees have to do is open the hydraulic maintenance door.

That's very easy and not at all messy since the material that's still present in the cutting chamber is pushed upward. Then you simply let the cutting system run back a little, remove the foreign material and close the maintenance door. All in all, that only takes a few minutes."

Four Micromat shredders ensure the perfect output and dosing

The recycling of the film flakes next door includes fine shredding, dry cleaning, extrusion and granulate bagging. Each of the four lines processes one color of film and is equipped with a Lindner Micromat 2000. An economical solution for Daly Plastics/Caroda — with a capacity of two to three metric tons per hour, the Micromat produces 50-millimeter particles. This is ideal for subsequent dry

From trash to treasure:

Daly Plastics transforms dirty agricultural and packaging film into high-quality regranulate

Left:

Four Lindner Micromat 2000 shredders are in the processing line for packaging film at Daly Plastics.

Photos courtesy of Daly Plastics

Inset

The Daly Plastics polyethylene regranulate has the same properties as virgin material. The only difference is its appearance.

Relow:

A Lindner Jupiter 2200 is used at Daly Plastics to shred agricultural film

cleaning, whereby Linder WashTech's Intensive Dry Cleaner 150/300 is used to remove leftover dirt and mineral build-up, as well as reduce the moisture present in the film.

Subsequently the clean film flakes are granulated and transported to the extruder. The extruded, thread-like plastic strands are then cooled and cut to pellets. The end product is filled into big bags ready for dispatch or stored in silos for transport to the customer by tanker. The very homogeneous grey, black and brown granulate pellets are used to produce new tear-resistant film and waste collection bags.

The Micromat has proven itself a key component and benchmark for the target quality: the extrusion line is fed with the optimum particles. As Daalder confirmed and emphasizes, "The machine fulfills two important functions in the line. It reduces the feed material to exactly the optimum particle size needed for the extruder and simultaneously doses the material. The Micromat is therefore a shredder and a dosing system in one. Another great advantage is the internal pusher to make feeding even more efficient, which is also an added benefit for dry cleaning downstream.

"Thanks to the continuous, uniform output, the material can be cleaned effectively. The degree of purity determines the quality of the end product. The industry needs clean and homogeneous granulates to turn it back into film." Daly Plastics continuously checks the quality of the granulates in the laboratory and also produces rubbish bags for inspection

Lindner has exceeded Daly Plastics/Caroda Polymer Recovery's expectations. Experience has shown that the same can be said of the machine and system manufacturer's after-sales service. As yet, maintenance work has only been carried out as part of the usual routine — something that clients can do themselves. Long downtimes are virtually non-existent. Daalder is very satisfied with the overall system and would choose Lindner's innovative machines again in future.



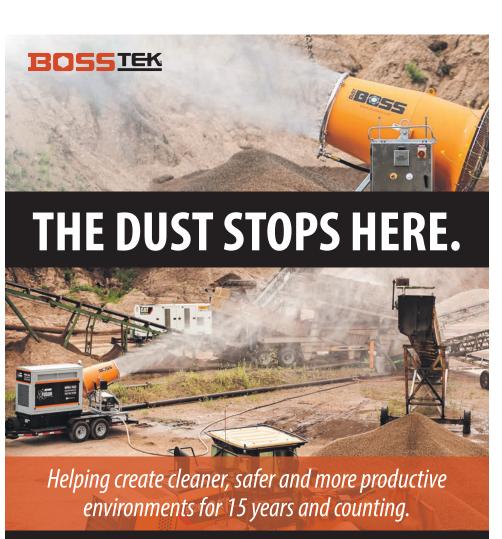
CASE celebrates 50 years of skid steer manufacturing





CASE CE celebrated 50 years of skid steer manufacturing recently with a ceremony at its Wichita, KS, plant.

Photos courtesy of CASE CE



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CASE CE celebrated 50 years of skid steer manufacturing recently with a ceremony at its Wichita, KS, plant. CASE first built skid steers in 1969 at its Burlington, lowa, facility, before eventually moving production to Wichita.

"Skid steers completely transformed the construction equipment landscape, and CASE has played a leading role in the evolution and development of this product category throughout the last 50 years," said Michel Marchand, vice president – North America, CASE Construction Equipment. "These machines reflect every bit of our heritage from construction to agriculture, and we are committed to helping our customers build strong communities and businesses with the help of CASE skid steers built here in the U.S.A."

Global CASE and CNH Industrial lead-

ers Carl Gustaf Göransson (president of construction, CNH Industrial), Larry Bryce (chief operating officer of construction equipment, CNH Industrial) and Marchand were on-hand to mark the milestone, as were local CASE employees and members of the manufacturer's Dealer Advisory Board. The event was hosted by Mike Petersen, plant manager, CNH Wichita.

CASE skid steers and compact track loaders (CTL) are made "For the World" in Wichita – meaning that every CASE skid steer or CTL sold and operated anywhere in the world today comes from Wichita. The plant is designated at the "Silver Level" for World Class Manufacturing (WCM), one of the global manufacturing industry's highest standards for the integrated management of manufacturing plants and processes.



RockRoadRecycle.com PG 6



Travis Vance

On the front lines with Fisher Phillips:

by Travis Vance and Pamela Williams



Pamela Williams

Can employers correct accident and injury reports to OSHA and avoid an inspection?

What happens if an accident occurs at work, but the safety director or person charged with notifying OSHA of reportable injuries and accidents receives incorrect information about the event? For instance, consider a situation where safety personnel or management receives information that an employee has had a finger amputated or is admitted for in-patient hospitalization and then rushes to meet the statutory deadline by reporting the incident to OSHA, only to later learn that neither the amputation nor the in-patient hospital admission were accurate.

To add insult to injury (figuratively and literally), an OSHA compliance officer shows up, demanding to inspect the worksite. Can you stop the inspection? Probably not.

OSHA requirements regarding injury reports

Generally speaking, companies must record injuries if they result in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid or loss of consciousness (29 C.F.R. § 1904.7(a)).

Companies also must report more significant injuries to OSHA. Fatalities, for example, must be reported to OSHA within eight hours from the time the company becomes aware of the death (29 C.F.R. § 1904.39(a)(1)). When an employee suffers an amputation or loss of an eye, or is admitted to in-patient hospitalization, the company must report the injury to OSHA within 24 hours of becoming aware that the injury is reportable (29 C.F.R. § 1904.39(a) (2))

To report an injury to OSHA, a company can choose either to call OSHA or to report the injury on OSHA's website (29 C.F.R. § 1904.39(a)(3)).

OSHA's authority to conduct an inspection

Under the Occupational Safety and Health Act of 1970 (the OSH Act), OSHA is authorized to conduct two types of workplace inspections. First, OSHA can conduct a programmed inspection according to a general administrative plan based upon neutral criteria. See 29 U.S.C. § 657(a). Second, OSHA can conduct an unprogrammed inspection where there is specific evidence of an existing violation. See 29 U.S.C. § 657(f). See also Donovan v. Sarasota Concrete Co., 693 F.2d 1061, 1068 (11th Cir. 1982). Unprogrammed inspections arise from reported accidents and injuries, complaints and referrals.

To conduct an inspection based upon a report of injury, complaint or referral, generally there must be reasonable grounds to believe that an OSH Act violation has occurred or that an imminent danger of death or serious injury exists under Section 8(f)(1) of the OSH Act. Courts have held that it is not enough for OSHA to believe that a hazard may exist; rather, there must be reasonable grounds that a violation of an occupational safety and health standard exists. See United States v. Mar-Jac Poultry, Inc., No. 16-17745, slip op. at 8 (11th Cir. Oct. 9, 2018).

OSHA inspections based on an erroneous report of injury

OSHA does not investigate all reportable injuries. Rather, the agency makes a judgment based upon the information reported to determine whether it believes an OSH Act violation may exist, and therefore an inspection is warranted. If an OSHA inspector shows up at your worksite after you report an injury, it means OSHA has determined that there are reasonable grounds to believe a violation may exist.

In the example at the start of this article, the company learned information indicating that the initial report of injury was incorrect prior to the time an OSHA inspector arrived to conduct an inspection. Despite this fact, it will still be very difficult to prevent OSHA from conducting an inspection to investigate the cause of the injury.

Once OSHA learns that an accident has occurred, regardless of severity, it is unlikely to agree to refrain from a workplace inspection. This may be due in part to the fact that although the severity of the injury may affect citation classification (i.e., serious, other-than-serious, etc.), the possible occurrence of a violation is based on the existence of the injury, as well as information reported to OSHA regarding its cause.

How does a company handle this issue?

While revisions or corrections to OSHA reports may not help companies avoid inspections, companies can take precautionary steps to prevent erroneous reports from occurring in the first place.

First, it is important to remember that companies have 24 hours to make a report to OSHA from the time they know the injury is reportable. The required reporting period does not begin to run immediately when the injury occurs. Therefore, it is important for companies to take the time to investigate and confirm the nature of the injury before hastily (and potentially unnecessarily) reporting the injury to OSHA. By properly reviewing the matter and patiently waiting to have the status of the injury confirmed before reporting the event to OSHA, it is more likely the report will be accurate.

Second, companies should call legal counsel once a potentially reportable injury has occurred. Experienced legal counsel can guide companies through the process of reporting to OSHA and ensure that the report, if necessary, is done in a way to minimize the chances of an inspection. As noted, OSHA will not investigate every report of injury but will make its determination based upon what is said in the report regarding the cause and circumstances of the injury. Experienced legal counsel can assist companies regarding what information is reported to OSHA.

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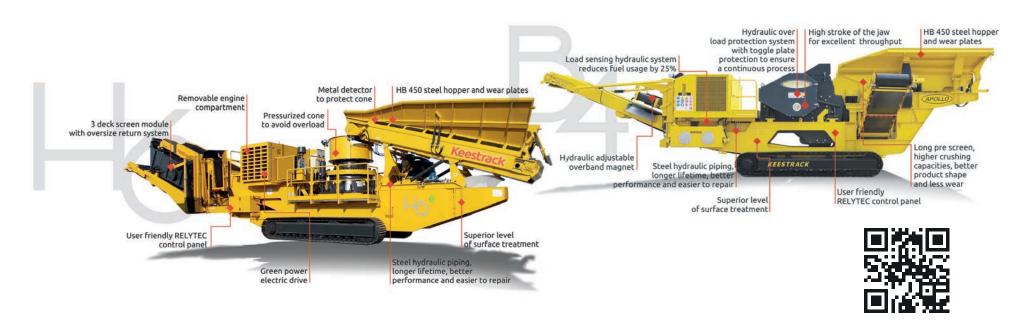
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RockRoadRecycle.com PG 8 June 2

Discover Metso's extensive metal recycling product offering

Metso recently introduced its state-of-the-art solutions for the metal recycling industry at ISRI 2019.

"All our recycling solutions are well-known for their high efficiency, durability, usability and low energy consumption. The recycling solutions we're introducing at ISRI are helping our customers to achieve their business' targets, whether that's related to increased and more efficient production, ease-of-maintenance, safety measures or other industry relevant challenges," said Mark Haire, vice president, Metal Recycling Americas.

Metso's N-Series line of robust shears and balers are suitable especially for smaller and mid-market operators. Metso's N-Series TM has become the popular choice amongst small to midsize market operators and niche industries around the globe.

The N-Series Modular (NMS) shear/baler/logger (SBL) is the most recent addition to the popular product line, meeting the growing market demand for site-to-site and on-site mobility.

The exclusive solution provides scrap facilities with a robust and reliable shear available in their choice of stationary, transportable, mobile or track-mounted styles to best meet their facility requirements. The current NMS Series shears have a 660- to 700-ton shearing force range.

shears have a 660- to 700-ton shearing force range. Through its Texas Shredder TM and Lindemann TM product lines, Metso offers a full range of pre-shredders, automobile shredders, shears, balers and briquetters, along with complete capabilities for developing custom solutions for our customers' ferrous and non-ferrous scrap processing needs.

Lindemann EtaRipTM is a heavy-duty pre-shredder providing greater shredder efficiency by pre-shredding bales and ELVs. This results in better sorting and fewer unshreddables into the main shredder, significantly reducing the risk of explosions and maximizing production output.

The N-Series product range offers robust performance for smaller operators and for niche industries. The portfolio includes the NIS Inclined Shear, NCS Clamshell Shear/Baler/Logger, NMS Mobile Shear/Baler/Logger, NTB Triple Ram Baler, NLB Lid Baler and NBS Box Shear. The NIS Inclined Shear, for example, has proven itself as an excellent solution for shearing reclaimed rebar from C&D sites, which is historically a very challenging material to process.

In total, over 120 Metso shredders are currently in operation in North America alone, which represents about 40% of the total operating capacity in the market. Additionally, through the Lindemann and Metso N-Series brands, there are over 40 shear and baler installations currently in North America.

This is exemplified in Metso being sequentially named as AMM's Scrap Equipment Provider of the Year for 2017 and 2018.

Metso Metrics digital solution

The most recent addition to the solution portfolio is the Metso Metrics digital solution, which is designed to provide waste recycling customers improved visibility and new insights into their equipment and processes with analytics, condition monitoring and predictive maintenance – all supported by expert services from Metso. Also launched recently are easy-to-use service tool packages each containing a complete set of components and tools needed for every shredder type.

Customers can also benefit from our spare parts services to maximize value by having the right parts at the right time. In addition, Metso offers field service agreements that can be tailored to the customer's needs. With Metso's preventive maintenance services, the target is to improve the performance of the installed equipment.

Outstanding pre-shredder performance for various customer needs

Metso's M&J pre-shredding technology for stationary and mobile plants is based on a powerful hydrostatic drive system, excellent knife design and an open cutting table. These features and other distinct technical advantages benefit customers who are looking for a robust high-capacity shredder for continuous use at a high run rate even with hard and abrasive materials.

Homogenous output of Metso's fine-shredders increases the value of RDF

Metso's M&J fine-shredders handle a wide range of different materials and deliver very stable and homogenous output that is extremely suitable for Refuse Derived Fuel (RDF) production.

With Metso's fine-shredder, customers can achieve a throughput of up to 28 tons per hour, depending on the output size. The multi-edged shaft is fitted with a patented knife system and smart-engineering to reduce real-life operating costs.



Metso Metrics digital solution is designed to provide waste recycling customers improved visibility and new insights into their equipment and processes.

Image courtesy of Metso



Metso recently introduced its state-of-the-art solutions for the metal recycling industry at ISRI 2019.

Rockster showed a wide spectrum

Wolfgang Kormann, CEO of Rockster Recycler from Austria, is convinced that the Bauma trade fair really deserves to be called "The World's Leading Trade Fair for Construction Machinery."

"The visitors come from all over the world and the potential of serious prospects is considerable. On the first day of the fair, we were already able to sell one of our machines with a patented Duplex-System in combination with a screener to an Argentinean entrepreneur, who had never heard of Rockster before," Kormann said.

Rockster showed a wide spectrum

Rockster presented a diverse range of available machines, such as the R1100DS impact crusher with a screening system and new air blower, the scalping screen RSS410 and the stacker RST23. The Upper Austrians, who are well known for their development of innovative and compact mobile impact crushers, want to offer even more versatile and flexible application options. In addition to jaw and impact crushers, the Rockster portfolio includes scalpers and finishing screens, drum screens, stackers and feeder conveyors. Most of the machines can be ordered with the latest Stage V engines.

Everything under control

This is the motto of the new Machine Monitoring System (MMS), which Rockster first presented at the Bauma. Rockster Sales Manager Norbert Feichtinger sees the benefits not only in the simpler overview of the machinery or the improved control of machine utilization, but also in monitoring the very handling of the crusher. "Due to the possibility

of the MMS to check the crusher speed, crusher load, gap setting and vibrating speed even in real time, you can quickly see if there is any need for optimization in machine handling. Both parties, the owner of the machine, as well as the manufacturer, can react immediately and therefor reduce wear, increase throughput and optimize the crushing result. Quick access to location data, operating hours or fuel consumption provides valuable services especially in the rental business," he said.

Virtual reality - one-of-a-kind insight

The feedback from the visitors at Rockster's Bauma booth was consistent: "Wow, that's a unique feeling." To suddenly find yourself in another world, even look into it, and enter the crusher was a completely new experience for most of them. Rockster had used this tool to show its latest impact crusher, the R1000S, both from outside and inside. Equipped with VR glasses and a controller, interested visitors were allowed to beam in front, behind on or even into the crusher, raise and lower the magnetic separator or screen box, open the crusher chamber, change blow bars and much more.

"We want to further develop this tool and, for example, use it for training purposes as well," said Kormann.

When it comes to global support, such technologies are extremely helpful for Rockster. It keeps both dealers and customers up to date, which makes it easier and quicker to implement necessary optimization suggestions.



At Rockster's outdoor area, visitors could take a closer look at the air blower or the hydraulically foldable screening system of the impactor R1100DS

Photos courtesy of Rockster



Rockster had used this tool to show its latest impact crusher, the R1000S, both from outside and inside.



Rockster presented a diverse range of available machines, such as the R1100DS impact crusher with a screening system and new air blower, the scalping screen RSS410 and the stacker RST23.



Trans-Jordan uses two Cat 836K Landfill Compactors working together, equipped with the JohnnyBall 3D level and slope measuring system.

Photos courtesy of Trans-Jordan Cities Landfill

uilding landfills has become more complex and technologically sophisticated. Gone are the days when a smart owner could manage a site by pushing dirt over collected refuse. Back then, measurements were close approximations and quality was achieved through the skills and experience of the heavy-equipment operator.

Today, contractors and project owners expect more. Speed, exacting accuracy, productivity and quality long-life results are the expectation. Construction machines are more technologically advanced and sophisticated software creates project plans, manages the work and documents the results.

"Amidst the expensive, often difficult to learn, advanced technology is a simple and effective tool for building and maintaining landfills," said John Miller, owner of JCM Excavating, Allendale, MI, and inventor of the JohnnyBall® 3D level and slope measuring system. "The JohnnyBall is mounted inside the operator's compartment and is designed to allow operators to quickly check if their machine is at true level to then ascertain slope and grade. The



Before Trans-Jordan began using JohnnyBall for training and its daily heavy production, employee field training was "painful," according to Turville

mechanical device requires no electronics, batteries or satellites. It uses a compass-like design where the inner ball has industry-standard level and slope indications printed on it and the outer ball carries a stationary dot to indicate the true attitude of the machine providing a 3D level and slope perspective at a glance."

Miller believes the JohnnyBall provides the accountability that can help both the experienced operator perform better and the new machine operator get over the initial "new-kid learning hump" to gain comfortable proficiency and high production.

"Training is crucial for our success as a landfill, since many of our employees come from varying types of backgrounds," stated Jason Turville, operations supervisor at Trans-Jordan Cities Landfill, South Jordan, Utah. "Our construction process is very specific and so most of our new hires have to be taught from scratch."

Most Trans-Jordan machine operators are hired from outside the industry and have had no landfill experience. Generally, the new employee is mature, between 30 and 50 years old, and will have real-world equipment experience from various construction-type companies. Experience can vary from well seasoned to some with experience on only one machine type.

Training is a constant at Trans-Jordan, since there are many aspects to learn about processing municipal solid waste (MSW). Because some challenges do not happen that often, the company management uses the atypical as a chance to show the less experienced how to handle it.

For basic training, Trans-Jordan uses some instructional materials produced by the equipment manufacturers, the Solid Waste Association of North America (SWANA) and the Utah Safety Counsel. They conduct classroom training and a lot of hands-on training. Each division of job type has a trainer associated with that skill, typically the supervisors who themselves are experienced experts in all aspects of the landfill.

When asked why training is important, Turville responded, "Training is needed to ensure all our employees are on the same page and doing things consistently the same way. Processing 1,500 tons a day of MSW takes teamwork and coordination. In order to keep it safe and productive, training is the key ingredient. Training is also needed to ensure that new employees are doing the job as we expect of them rather than some other way they did somewhere else. For example, we compact the trash in a very specific way in order to get the best possible compaction. This process has taken much refinement through the years and is crucial to our success."

Key to Trans-Jordan's technical skills field training is the JohnnyBall 3D level and slope measuring system. Why is JohnnyBall so important?

"We purchased our first JohnnyBall merely to help aid the operators achieve true machine

level, but then we quickly realized how it can help new operators who don't quite understand or know what different slope angles look and feel like," Turville said. "On a daily basis, we expect our working face to be a 4:1, with side slopes of 3:1. The JohnnyBall has been instrumental in teaching this technical requirement that we expect of all our operators. A 4:1 working face is ideal for the best compaction, based on how we run our operation, and the JohnnyBall holds them accountable by showing consistent, accurate feedback."

Turville cited one employee who especially benefited from JohnnyBall training: "We had one guy who was maintaining the tipping face of the active landfill too steep and it was making the job really hard on him. Once we got him comfortable with the JohnnyBall and he realized the correct slope, he was able to use it to learn the correct steepness for the best compaction. He was clearly happier and more productive using JohnnyBall in his daily production!"

Before Trans-Jordan began using JohnnyBall for training and its daily heavy production, employee field training was "painful," according to Turville. It was not only very time consuming, but required a second individual watching the employee while they were learning, to give constant feedback on the operator's performance.

"We expect our operators to be comfortable and proficient with all of our equipment," Turville said. "With a new operator, we start them with running the compactor because that is a core machine to our business. Compactors are 'the money maker,' and must be the piece of heavy equipment that can be operated by everyone."

After compactor training, Trans-Jordan will slowly integrate the newbies into the other machines, which are also equipped with JohnnyBall 3D level and slope measuring systems. Their philosophy is that everyone should have good skills on all equipment, so they can be rotated through that equipment, keeping them interested and fresh, plus ensuring that they always have skilled operators available to get any job done correctly.

In the end, does proper training result in improved company productivity, and how does training affect the worker who is trained?

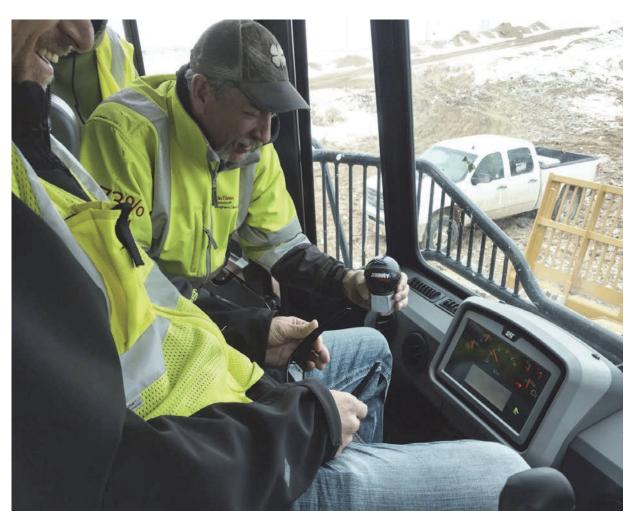
"For our operation, the best MSW compaction is achieved with 4:1 working face and a 3:1 side slope, using our two Cat 836K Landfill Compactors working together," stated Turville. "We achieve maximum productivity by using our prescribed working order and that method ensures that we do get the best compaction. And the JohnnyBall provides the accountability.

"When our operators are working the landfill tipping face and gaining the compaction necessary, they can feel it while operating and verify by glancing down at the JohnnyBall. We think that having an expectation and giving the operators the tools to meet that expectation helps the operator to be successful and improves personal satisfaction. A successful operator shows pride in their work, feels accomplished at the end of the day and is motivated to continue to improve."

Jeff Winke is a business and construction writer based in Milwaukee, WI. He can be reached through jeff winke@yahoo.com. ■



Training is also needed to ensure that new employees are doing the job as expected of them rather than some other way they did somewhere else.



Key to Trans-Jordan's technical skills field training is the JohnnyBall 3D level and slope measuring system.

RockRoadRecycle.com



People in the industry

GTMA's New Jersey locations now carry Liebherr

VINELAND, NJ – GT Mid Atlantic is excited to announce that three locations in New Jersey now carry Liebherr construction equipment. Customers are able to purchase Liebherr crawler tractors, crawler dozers, excavators, wheel loaders and mobile material handlers at GTMA branches in Freehold, Totowa and Vineland. Liebherr's product line covers a wide variety of machines specifically designed for excavation, material handling, scrap, demolition, heavy highway construction, utility work and more.

"Liebherr is a proven brand that delivers quality equipment," Pat Sherwood, president and COO of GT Mid Atlantic, stated, "and we are ecstatic to sell and service their quality machines at our locations in New Jersey."

Sean Collins, senior VP of business development for Groff Tractor Holdings, will oversee the Liebherr business for GTMA. "Our company's success has been built on the principle of 'Taking care of the customer.'

Expanding our presence with Liebherr beyond our footprint of central and eastern Pennsylvania enables us to invest in additional products and people to promote the Liebherr brand and further support our customers," noted

Justin Howard, product and technical specialist, and Bill Barry, VP/GM of NJ Operations, along with factory trained service technicians are key to this development.

"We are very excited to offer another high quality and specialized product to our customers. Between the excellent team we have built and the supreme quality of Liebherr, we know that our customers will not only benefit from this addition to GTMA, they will profit," stated Barry. Liebherr construction equipment can be purchased or rented immediately at any one of GT Mid Atlantic's three New Jersey locations. ■



GT Mid Atlantic is excited to announce that three locations in New Jersey now carry Liebherr construction equipment. Photo courtesy of Liebherr

West Salem Machinery focus on parts & service

WSM is pleased to announce the appointment of Dan Garrett as Director of WSM Parts & Service. Dan has worked for WSM for over 22 years and brings a vast amount of experience to this expanded role. "We consistently hear from our customers how important quick response for parts and service is to them," said Mark Lyman, president of West Salem, "We want to ensure that our commitment is well understood by the industry and have further invested in our Parts and Service group by formally separating them from any new equipment responsibilities and adding personnel."

"WSM has always placed an emphasis on customer service," said Dan Garrett, director of parts and service, "but now we have an additional push to ensure that our customers and even customers who may have other brands are being helped and serviced in an expeditious fashion." WSM Parts and Service Department can be reached at 503-364-2213 / 800-722-3530, parts@westsalem.com or service@westsalem.com

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RockRoad Recycle.com PG 14 June 20

A Sioux Falls recycler flourishes amid struggling industry

Source: Sioux Falls Argus Leader / by Patrick Anderson SIOUX FALLS, SD – Jake Anderson kept the house he owned in the Twin Cities when he moved away to start his own recycling business.

After working in the industry for a Minnesota-based company, Anderson bought a small recycling company in Sioux Falls that had fallen on hard times and moved into a triplex in the center of the city.

He took on a shop with eight employees, uncertain of the future and hoping to make a mark.

Millennium Recycling Inc. is celebrating its 20th anniversary this year, having become a local leader in an industry filled with fluctuation and uncertainty, the Sioux Falls Argus Leader reported.

As recycling processors across the United States face ongoing problems in the global market, Millennium has built a solid foundation thanks to Anderson's prudence, the company's willingness to embrace new technology and lessons learned during the lean years. "Too often, people have too short of a memory in this industry," the 47-year-old said.

The Sioux Falls-based materials recovery facility is still pulled by those market forces. The 20-year mark represents what Anderson called a "down time" in a business that ebbs and flows with market demands for papers, plastics and metals. But he and other company leaders have weathered worse storms and have built a business model designed for long-term success.

Millennium is using 2019 to instead celebrate its success and growth over the years including being an innovator in South Dakota's recycling industry, being the first in the state to recycle consumer electronics, going on a trade mission to China with former Gov. Dennis Daugaard and launching the nonprofit Ecomaniacs, which provides recycling services to summer events.

Anderson was born into an entrepreneurial family. His father owned a liquor store, health clubs and other businesses during his childhood in Owatonna, MN.

After working for years for a recycling company in the Minneapolis area, he was interested when he heard there was a small processor in Sioux Falls that was looking at either closing up shop or selling to a new owner. He was 27 when bought Python's Recycling in 1999.

He came with experience and expertise in a larger market, bringing ideas that were new to Sioux Falls. A lot of the work he did in his first year was focused on getting to know the community, its people and businesses.

Millennium's growth over the years is a testament to those relationships, Anderson said.

"We spent the first – probably – year trying to refine the operation," he said.

The company's northern Sioux Falls facility handles 3,500 to 4,000 tons per month compared to the 150 to 300 tons per month it handled when Anderson bought the company. It employs about 30 people, not including the dozen staff members at Secure Enterprise Asset Management, a spin-off company that specializes in electronics recycling.

Relationships with the people and companies in the Sioux Falls area remain a strong focus for Millennium, which doesn't do residential hauling but still actively tries to educate the community about up-to-date best practices in recycling, Millennium President Shannon Dwire said.

Dwire worked for Python before Anderson bought the company and has been with Millennium ever since. Connection to the community has been a common thread since Anderson bought the company, she said.

"We always have some level of support out there," she said. Millennium's single-stream recyclable sorter runs like a backbone through its plant. It's also a backbone of the business itself.

The decision to buy and install the sorter was a defining moment for Millennium. The equipment changed the company as much as it changed how hundreds of thousands of people in the Sioux Falls area recycle, allowing them to combine papers, plastics, glass bottles and cans in one bag and not worry about the logistics of separating everything out agair

That all happens at Millennium now. Recyclables running through the sorter are separated and belted off to different parts of the plant, where they are baled and packed with like materials. Only about 3.5% of the stuff that comes in can't be recycled.

Anderson spent years researching the game-changing technology before deciding to invest, but was pressured by conversations with Waste Management, which had already altered the industry landscape by allowing consumers to mix recyclables.

But the national chain didn't have the technology in smaller secondary markets such as Sioux Falls to sort recyclables and was losing money by having an ancillary operation in the city

But it was clear the industry was going in a new direction. If Millennium didn't move to single-stream sorting, there was a chance another company would one day take its place, Anderson said.

"It was the equivalent of an all-in play for us," he said. "We spent a painstaking amount of time just trying to pencil this out."

Millennium bought and went through the first phase of installing the technology in 2007, and then the Great Recession hit.

The fallout of the economic downturn left Millennium floundering with an oversupply of recycled materials and minimal demand from buyers such as the paper mills who rely on processors for product.

Millennium had gone into debt as much as the bank would allow, and Anderson started meeting with attorneys about bankruptcy. And then, at the wire, business started to rebound, Anderson said. "All of a sudden, we started to get orders." he said.

It took about two years for Millennium to catch up to where it was before the recession, but company leadership left the experience having learned a number of important lessons.

Perhaps the most important was clarity on the realities of the industry. There will be good times and bad times, and Millennium doesn't take anything for granted. "You use your good markets wisely," Dwire said. "Even when things are running well, you look for efficiencies."

Global market forces have continued to squeeze the industry, starting with tighter limits China's government approved in 2013 for imported recycled material.

China sparked incredible growth in the U.S. recycling industry in 1999 when it opened massive paper mills subsidized by the government. The buoying of the industry was felt all the way in Sioux Falls, where Anderson was just starting to build Millennium into a bigger, more commercially-focused recycler.

China dominated the market, becoming the biggest buyer of America's recycled goods. While recycling processors benefited from Chinese demand, paper mills in the U.S. started a process of acquisition and consolidation to compete, eventually closing plants across the country, especially in the coastal states.

The domestic demand for recycled goods weakened, and China started limiting waste imports. China's new policy, dubbed "Green Fence," was a solution to the country's increasing problems with pollution, but Anderson believes the restrictions on imported recycling products were painting with too big of a brush.

Then, in 2018, China upped the ante with an even stricter policy called "National Sword." It was basically a list of outright bans on materials, including imported recyclables.

But the loss of North American paper mills during the boom years of Chinese demand has now left the entire industry scrambling for solutions, Anderson said. That includes Chinese investment in some of the closed U.S.-based paper mills.

Millennium, with its strong ties to the region, isn't directly affected by China's policies. About 90% of its recycled material is sold to buyers in the Midwest.

None of the current stress caused by the global market compares to what Millennium has already survived.

"Recycling is not going to go away," Anderson said. "It's going to do what it's always done. It's going to evolve."



Millennium Recycling Inc. is celebrating its 20th anniversary this year.

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SAFETY

The not-so-quiet dangers of hearing loss

Take steps to prevent hearing damage in the workplace before it happens.

Source: <u>EHS Today</u> / Reed Erickson

Some of the most prevalent workplace hazards aren't seen—they're heard. The National Institute for Occupational Safety and Health (NIOSH) reports that 22 million U.S. workers are exposed to damaging noise levels at work, and according to the Centers for Disease Control and Prevention (CDC), workplace-related hearing loss is the most commonly reported injury.

It's not surprising, then, that hearing loss disability accounts for an estimated \$242 million in workers' compensation payments each year, according to the Department of Labor.

Approximately 48 million Americans have some degree of hearing loss, according to the Hearing Loss Association of America. The National Institutes of Health estimates that 15% of those aged 20 to 65 are living with some level of noise-induced hearing loss.

Noises over 85 decibels (dB) warrant the use of protection. For reference, normal talking is 60 dB, city traffic is 85 dB and a rock concert or a tractor is about 100-115 dB. Without proper protection, prolonged noise exposure in a factory setting can compound the hearing loss incurred from everyday noises.

Because hearing damage is cumulative and permanent, it is vital—and in many cases required—for businesses to protect their workers' hearing, especially for those with a workforce exposed to loud machinery, power tools and heavy equipment. In this article, we'll examine the top industries affected by hearing loss and identify opportunities to minimize noise through hearing conservation programs.

Industries most affected by hearing loss

From office environments to busy construction sites, workplace hearing loss is a reality for many industries. However, there are workers in certain roles who are at increased risk for hearing damage, and the needs of these employees should be more closely monitored and accommodated.

Hearing loss in the manufacturing industry

For workers in the manufacturing industry, hearing loss is the most commonly recorded occupational injury. Between compressed air, which is an estimated 92

dB, and loud machinery like grinders, drills and milling machines, which typically hit dB levels 95 and above, it's important for employers to take extra care to protect workers' hearing.

Hearing loss in the construction, carpentry and mining industries

Loud power tools also make workers in construction, carpentry and mining industries particularly susceptible to hearing loss. In fact, some tools, like a jackhammer, can reach up to 130 dB—more than 45 dB above the recommended limit. When exposed to these sounds for extended periods of time during a shift, the risk of hearing damage increases.

Likewise, miners are regularly exposed to sounds related to drilling into rock in a confined work environment, and as a result most miners have some form of hearing loss by the time they retire, according to the CDC.

Other industries most commonly affected by hearing loss include entertainment and nightlife, military, agriculture and farming.

Workplace risks associated with hearing loss

Hearing is the body's built-in alarm system and plays a vital role in protecting a person from physical harm. Hearing picks up on possible dangers that may not be visible yet, like the sound of an approaching truck or the clanging of a broken machine. However, when hearing is compromised, the built-in alarm system isn't as effective and may not pick up on incoming dangers as quickly, putting workers at risk.

Workplace accidents are common among workers with hearing damage due to reduced situational awareness or the inability to hear a warning siren or signal.

The risks associated with hearing loss don't stop there. Not only does hearing loss contribute to workplace-related issues, it can also take a toll on an employee's quality of life. Hearing loss is permanent, and as it worsens, it can make interpersonal communication difficult and frustrating, putting a strain on relationships. In addition, ringing in the ears associated with hearing loss can be disruptive to normal sleep patterns and concentration, which sometimes can increase the risk of depression, anxiety and stress. All of these factors may contribute to underperformance or dissatisfaction at

work.

Opportunities for improvement

When it comes to hearing loss, prevention is key. Almost all work-related hearing loss is cumulative and permanent, so it's important for employers to take steps to prevent damage before it happens.

A great step in preventing work-related hearing damage is to implement a hearing conservation program. Not only do these programs protect workers from occupational hearing loss, but they can also play a role in increasing employees' sense of well-being and reduce the incidence of stress-related disease. Stress decreases blood flow that helps hair cells within the ear work properly. Therefore, reducing workers' stress can help maintain the overall health of the ear.

Hearing conservation is an OSHA mandate that requires companies to take action and institute occupational noise and hearing conservation programs for employees who work in areas where the probable exposure to noise equals or exceeds an eighthour time-weighted average (TWA) sound level of 85 dB.

An effective hearing conservation program includes regular, ongoing sound monitoring, audiograms, employee training and protective equipment.

Regular, ongoing sound monitoring

Sound level meters and dosimeters are two important elements of an effective hearing conservation program. Sound level meters measure sound intensity at a specific moment, while dosimeters measure a person's average exposure to noise over a period of a time. Employers can monitor and record sound levels throughout the workplace to help employees understand areas where the risk of hearing loss may be higher.

Audiograms

An effective hearing conservation program includes taking a baseline audiogram, which takes place 14 hours or more after the employee was last exposed to occupational noise. Following the baseline audiogram, annual audiograms should be performed to record any changes. These results should be analyzed and compared to previous tests to provide insights into how an employee's hearing has changed. These changes are recorded as a Standard Thresh-

old Shift (STS) if the loss is greater than a certain level.

An STS is a detectable change in hearing when compared to the baseline audiogram. If a shift is identified, an employer is required to inform the employee within 21 days and refer them to an audiologist for follow-up testing and possible treatment. This also is a good opportunity for both employers and employees to assess hearing protection methods and make any needed changes.

Employee training

Training workers is another essential step to educating a workforce about the risks associated with hearing loss and the importance of prevention. At a minimum, employers should conduct an annual noise training with all employees, but regular reminders throughout the year are also recommended. For example, hanging educational posters and noise maps, which highlight decibel levels throughout the workplace, is a great way to remind employees throughout the year to take steps to mitigate hearing damage.

It can also be helpful to offer one-on-one educational sessions with individual employees who may be exposed to louder noises on a regular basis.

Protective equipment

In addition to monitoring and training, employers must also provide workers with suitable equipment to protect hearing while at work. In fact, this is an OSHA requirement for workplaces where the noise levels meet or exceed 85 dB.

There are a wide variety of options when it comes to hearing protective devices and employers can often find several appropriate options that fit the needs of employees and the workplace. Examples include earplugs and earmuffs that come in a wide variety of different styles, like disposable and reusable, to fit employers' and employees' preferences.

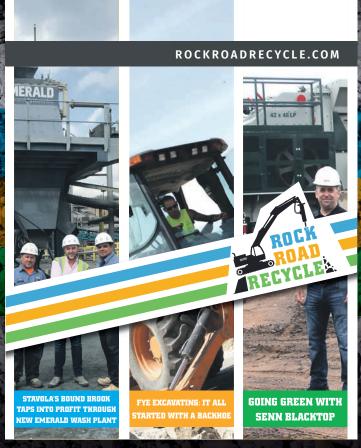


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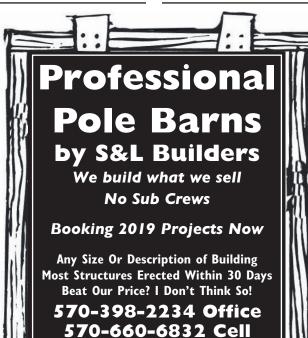


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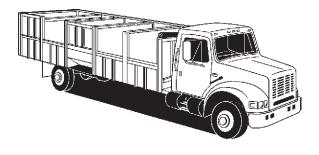
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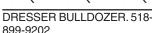


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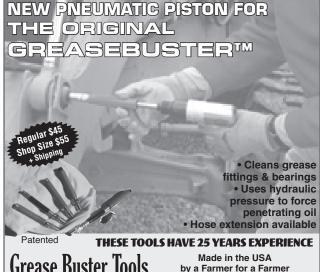
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Industry news

First Caterpillar Global Operator Challenge: A tough competition to find the world's best operators

Caterpillar is proud to announce the launch of the 2019/20 Global Operator Challenge Competition. Operators will test their skills against those of fellow operators around the world to determine who can claim the title of

In each stage of the competition, operators will be challenged to test their agility, mental toughness and versatility as well as their competence in using integrated technology to enhance machine performance, such as Cat® Production Measurement and Cat GRADE systems.

Operators qualifying in the local heats conducted by Cat dealers around the globe will participate in regional semi-final competitions that are to be held in Japan, Brazil, Spain and the United States during October and November 2019. The winners in each regional semi-final will take part in the global finals that will take place at Conexpo-Con/Agg in Las Vegas in March 2020. The crowned champion will be awarded an all-expense, "VIP" trip for two to a global Caterpillar facility of his or her choice.

The Caterpillar 2019/20 Global Operator Challenge will be the largest-ever competition of its type, following in the success of the European "New Range-New Rules" competition in October 2018 at the Caterpillar Demonstration & Learning Center in Malaga, Spain. In Malaga, 18 operators from 10 nations across Europe, the Middle East and Eurasia were in the final competition; German operator Sebastian Behr took the top prize.

"Through the Global Operator Challenge, Caterpillar

wishes to celebrate the diversity and skill of all operators around the world who use construction equipment every day and contribute to the success of our industry," said lessica Nunley, global marketing innovations manager for Caterpillar Global Construction & Infrastructure division.

"In addition," she said, "this competition will highlight the Cat Next Generation machines that are transforming job sites by increasing productivity to new levels, providing a new experience of comfort and ease of operation through technology. We hope the Global Operator Challenge will attract more individuals to join our industry."

For more information about the Caterpillar Global Operator Challenge, contact your local Cat dealer and visit <u>CatGlobalOperatorChallenge.Com</u> for details.



The Caterpillar 2019/20 Global Operator Challenge will be the largest-ever competition of its type.



Operators will test their skills against those of fellow operators around the world to determine who can claim the title of "best.





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1-800-872-2390 www.traceyroad.com RockRoadRecycle.com PG 24 June 20

National Safety Council appoints new president & CEO



People in the industry

Lorraine Martin has been named the new president and CEO of the National Safety Council (NSC).

The current co-founder of the nonprofit Pegasus Springs Foundation will join NSC on June 3 at its headquarters in Itasca, IL, in suburban Chicago.

"Lorraine has more than 30 years' experience leading and developing successful global and international businesses," said NSC Chairman Mark Vergnano. "She has a successful track record of working in both civic and corporate roles, which makes her a natural fit for the Council – an organization that offers a suite of products, training services and advocacy resources with the mission of eliminating preventable deaths."

As co-founder and current president of the Pegasus Springs Foundation, Martin has focused on providing opportunities for educators, students and community members to collaborate on learning models. She is an enthusiastic advocate for school, community and national resource engagement.

Martin is actively involved and passionately dedicated to social impact and global change endeavors promot-

ing diversity, inclusion and equality. As a champion for advancing women and girls in STEM, she was recently named among STEMConnector's 100 Corporate Women Leaders, and she frequently lectures on core issues related to the cause.

Over her career, she has led global aircraft and complex system development and manufacturing, always with a focus on safety for the employees and for those who used the products, often in high consequence environments. Among her top achievements, Martin led the largest defense program, F-35 Lightning II, a stealth fighter aircraft.

"Saving lives and preventing needless injuries is a noble mission and one I was drawn to immediately," Martin said. "I am deeply passionate and committed to keeping people safe wherever they are and I will bring that commitment to NSC as we work to eliminate all preventable deaths."

The NSC board partnered with Koya Leadership Partners, the executive recruiting firm that specializes in mission-driven searches, on the comprehensive national search that resulted in Martin's recruitment.



Lorraine Martin, co-founder of the nonprofit Pegasus Springs Foundation, will join NSC on June 3.

Photo courtesy of NSC

CAT 299D2 XHP: Purpose-built to handle difficult land clearing applications

The Cat® 299D2 XHP land management compact track loader (CTL) is a superior, purpose-built machine solution for customers involved in demanding vegetation-management applications, ranging from mulching, brush-cutting, vegetation control and mowing. This segment-focused machine delivers the advantages of efficiency and economy in specific applications, including site preparation, utility right-of-way clearing, vegetation management for fire prevention, railroad maintenance-of-way, agriculture and forestry.

The 299D2 XHP Land Management machine's powerful Cat C3.8 engine, rated at 110 gross hp (82 kW), combines with its high-flow/high-pressure auxiliary hydraulic system – 40 gpm @ 4,061 psi (150 L/min @ 28,000 kPa) for a calculated hydraulic-horsepower rating of 94 (70 kW) – to ensure optimum performance when powering high-production, hydro-mechanical attachments, such as mulching heads and industrial brush-cutters.

Design details

To provide longer intervals of uninterrupted work, the 299D2 XHP land management CTL has a 58.1-gallon (220 L) fuel tank, which is 80% larger than the tank on standard 299D2 XHP models and sized to provide and estimated run time of 11 to 12 hours.

This machine is also factory-equipped with seal and cover components designed to restrict debris and other material from entering the engine compartment and lower frame. A debris deflector channels any material created by rotating attachments away from the front of the cab for added safety.

In addition, certain engine and emissions components incorporate special parts and covers, designed to deter debris from collecting on the components, and large frame-access panels provide easy access to aid in routine cleaning. A turbine-type pre-cleaner ejects dust, dirt and debris from engine-intake airflow before it reaches the filter, thus extending air-filter service life.

The 299D2 XHP land management model also comes factory-equipped with components that provide guarding to protect front and rear LED work lights, work-tool coupler area, work-tool electrical harness connections and auxiliary-hydraulic quick-disconnect fittings from impact and debris that are often hazards in land-clearing applications.

Operator station

The 299D2 XHP land management machine also features a one-piece, sealed, pressurized cab design to keep the operator's environment clean and quiet. Operator comfort/convenience features include a premium, heated, air-suspension seat with independently adjustable arm-rest/joystick-control positions, integrated full-color display for machine operating information and performance adjustments, rearview camera and integrated Bluetooth radio with microphone. A bracket in the cab accommodates a 5-pound fire extinguisher bottle.

The 299D2 XHP model also includes a full-color, 5-inch LCD advanced display monitor that enables on-screen adjustment of implement response, hydrostatic-drive response, creep-control speed, ride-control-activation speed, language preference and gauge layout. The electronic instrumentation includes fuel level, DEF level, hydraulic and engine-coolant temperatures and tachometer. For added operating safety and security, the rearview camera provides high-resolution images of difficult-to-see areas behind the machine, thus expanding the operator's field of vision for enhanced job-site awareness. The advanced display also provides a coded theft-deterrent system.

Additional features

The cooling system's hydraulically-driven demand fan operates only when required, saving fuel and reducing sound levels. The reversing fan clears intake screens and can operate in both automatic- and momentary-purge modes. A battery disconnect adds to machine security and

allows isolating the battery when servicing the machine or when storing the machine to minimize battery drain.

The 299D2 XHP Land Management Compact Track Loader uses a torsion-axle-type undercarriage-suspension system that allows independent vertical movement between the frame and undercarriage. The system distributes loads and absorbs shock and vibration that can occur when operating in uneven underfoot conditions, thus isolating the frame and providing a smoother ride for operators and protecting the machine from unnecessary stress. Standard two-speed travel and an electronic hand/foot throttle system (with decelerator pedal) further increase operator control, especially when using hydro-mechanical attachments.

The 299D2 XHP land management machine provides ground-level access to all daily and routine service points, including engine air cleaner, fuel filter/water separator, engine oil check, engine oil fill, hydraulic oil fill and hydraulic filter.



The Cat® 299D2 XHP land management machine is a superior purpose-built machine solution for customers involved in demanding vegetation-management applications.

Photo courtesy of CAT®

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