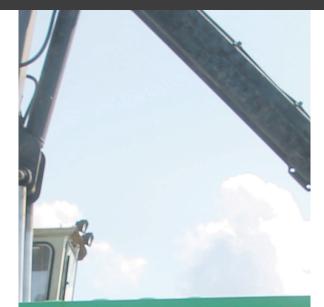


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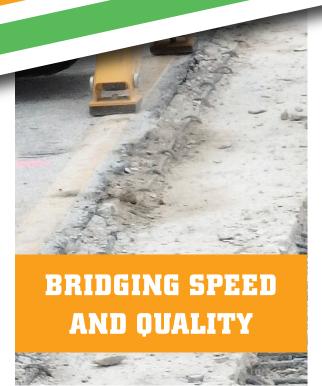








FUTURE HAS HAPPENED

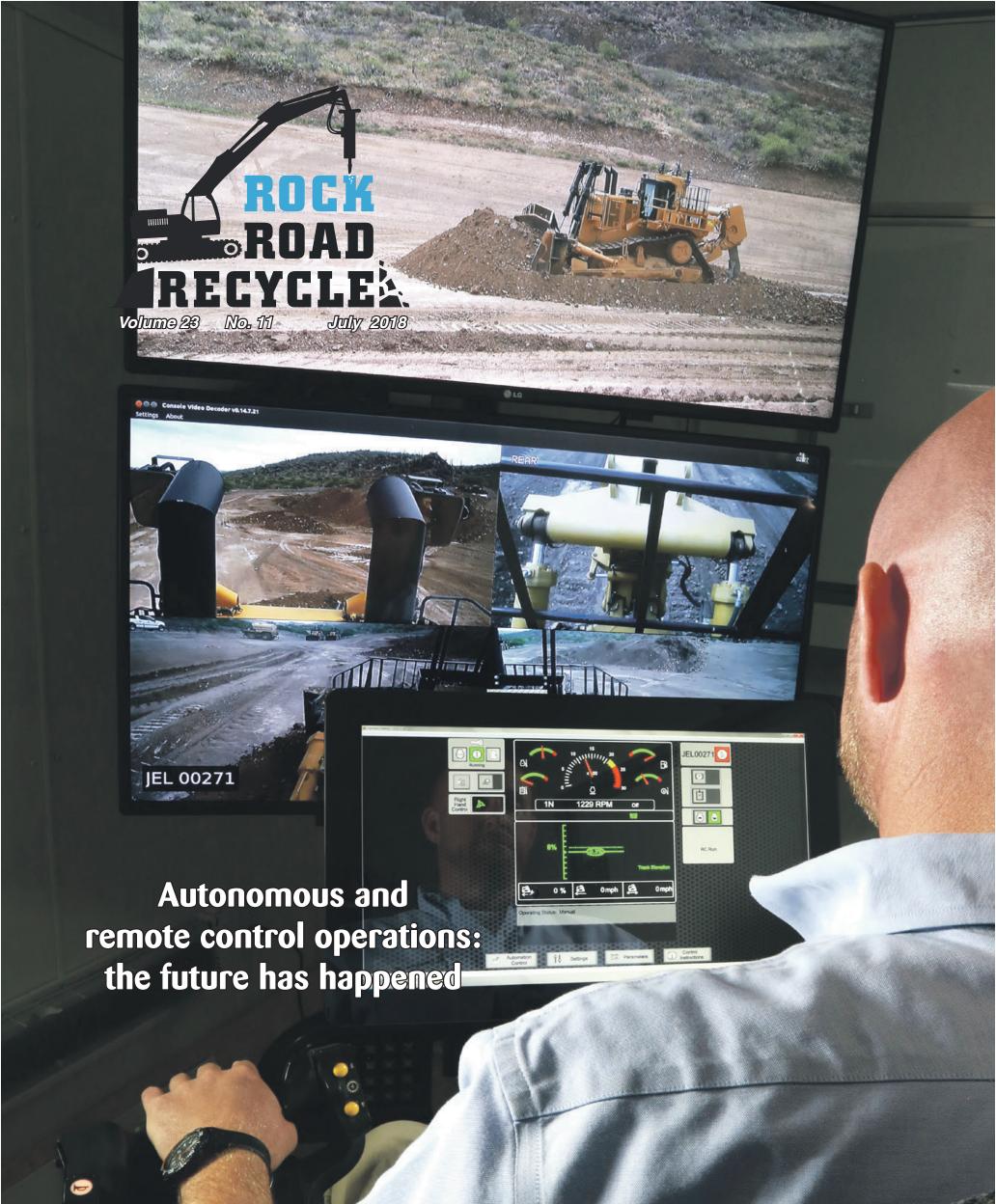






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- Remote control operations
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Autonomous and remote control operations: the future has happened

Introduction by Colleen Suo

On the cover:

The remote operator station is modeled on the actual cab of the machine, with all ergonomic controls, alarms and features operating as they do in the dozer.

PG3

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New DoosanCONNECT® system provides connected machine solution for Doosan equipment









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Rio Tinto in Australia recently reached the milestone of moving its 1-billionth ton of material with its fleet of autonomous haul trucks.

he major players in the world of autonomous mining applications thus far have been Komatsu and Cat©. With the purpose of automating the haul cycle, exploration into the current technology began over 30 years ago. The dream of "driverless" hauling has become a reality and the technology has taken the natural progression of being applied to other mining-application equipment.

According to Cat Autonomy Technical Steward, Craig Koehrsen, Caterpillar began their autonomous journey in the mid '80's by experimenting with GPS mapping when public use of GPS was still in its infancy. 1989 saw their first prototype being deployed at the Tucson Proving Grounds, and by 1994 Texas Crushed Stone had become Cat's first customer to run an automated truck in a mining application. Between 1996 and 2008 Cat went from their first MineExpo autonomous demonstration to promising customers the reality of autonomous mining. Today, Fortescue Metals Group (FMG) operates 20 autonomous Cat trucks within their fleet at the Solomon Hub mine with plans to double the number in the near future.

Komatsu claims to be the first manufacturer to commercialize Autonomous Haulage Systems (AHS) in the mining industry. Earlier this year, one of Komatsu's largest AHS customers — with a 20-year working relationship — Rio Tinto in Australia reached the milestone of moving its 1-billionth ton of material with its fleet of autonomous haul trucks. According to an article on Mining.com, Rio Tinto explained that since they began AHS trial operations in 2008, there has been zero injuries attributed to AHS equipped haul trucks.

Rio Tinto's fleet of 400 haul trucks includes 80 autonomous units, with plans to retrofit 48 existing Komatsu and Caterpillar haul trucks during the next couple of years.

AHS uses pre-defined GPS courses to navigate the ever-changing haul roads and intersections within a mining operation. Vehicles are also armed with obstacle detection systems and a wireless network system that allows them to interact safely with and around other equipment, which is also part of the autonomous system. Operations are programed and controlled in command centers filled with state of the art computer, GPS and radar equipment, in some cases miles from the application sites.

Both the manufacturers and the mine operators claim many advantages to running the autonomous equipment — not the least of which is the safety value as noted by Rio's zero injury record. Other benefits include an increase in production (running the mining operations around the clock), efficiency (no driver fatigue or personal breaks) and reduced operating costs by reducing fuel consumption and extending tire and brake system life.

Autonomous and remote control operations: the future has happened

Introduction by Colleen Suo Article and photos courtesy of Caterpillar and Komatsu

Below we will take a look at recent achievements within the world of autonomous and remote controlled equipment.

Cat© Command for wheel loaders

Cat® Command for loading enables line-of-sight remote control of Cat 988K Wheel Loaders. The new system reduces the risk of injury and enables production to continue by allowing safe operation of the loader in potentially hazardous environments. Command for loading is available as a retrofit kit for 988K machines in the field.

The system features a compact control console supported by a comfortable shoulder harness. Ergonomic controls, common with the controls in the cab, give the operator full access to primary machine functions. The controls are integrated with machine electronics to provide the same control and response as if operating from the cab, allowing the operator to maintain productivity from a distance. Advanced options such as Autodig are also accessible from the console. The portable console allows an operator to maintain line-of-sight control of the wheel loader



Cat® Command for loading reduces the risk of injury and enables production to continue by allowing safe operation of the loader in potentially hazardous environments.

RockRoadRecycle.com PG 4 July 2018



The Command for dozing system is proven in thousands of hours of operating Cat D10T and D11T Dozers working at mines around the world. This same technology is now available for the D8T, a workhorse in construction and aggregates operations

from as far away as a quarter mile (400 meters).

Full integration of Caterpillar electronics enables notifications of critical machine health parameters and the activation of several safety features to ensure that the operator remains in control of the machine at all times. For example, a machine shutdown will be activated if an off-board transceiver loses power or if radio or on-board communications are lost. A shutdown also will occur if the operator console is tipped more than 60 degrees, which could indicate that the operator has fallen. Any manual stopping of the machine results in application of the parking brake.

Command for loading is well suited to activities such as highwall and edge operations, stockpile feeding, and working on slopes and unstable surfaces or around hazardous materials. The system also allows access to valuable material that may be considered unsafe to extract with the operator aboard. Having a remotely operated loader on site can be the difference between continued production and a full stop.

Command for loading includes rugged onboard components that are sealed to keep out dust and moisture. Exterior components are housed in steel enclosures to protect from damage. The roof-mounted electronics enclosure houses the antenna, indicator lights and wireless receiver. Different colors of LED lights clearly indicate machine status for everyone in the area.

The remote console and on-board transceiver utilize spread spectrum technology to virtually eliminate interference from other wireless devices utilizing the 900 MHz or 2.4 GHz frequency bands. Proprietary algorithms secure the communications between the onboard wireless receiver and the console, preventing communications from unauthorized devices.

Cat® Command for dozing

Cat remote control system for dozers recently became available for the D8T Dozer. Command for dozing enhances safety and efficiency by enabling an operator to control the dozer nearby using a compact, portable console or a comfortable operator station. With the addition of video and sound to the system, the remote operator station can be used in a distant location. Deep integration with Cat machine systems enables smooth, precise control for superior efficiency and productivity.

The Command for dozing system is proven in thousands of hours of operating Cat D10T and D11T Dozers working at mines around the world. This same technology is now available for the D8T, a workhorse in construction and aggregates operations.

The over-the-shoulder console is recommended for short-duration activities such as cleaning up near highwalls and road cuts, stabilizing slides and working in any area that poses increased risks. Line-of-sight control distances can be as much as a quarter mile (400 meters).

The remote operator station enables the operator to work from a comfortable, seated position with familiar dozer controls—away from the active dozing area. The station promotes efficient operation in a wide range of site conditions.

The station itself is modeled on the actual cab of the machine, with all ergonomic controls, alarms and features operating as they do in the dozer. The system can be equipped for line-of-sight operation or for teleremote operation with the addition of video and audio feeds from the site and dozer. The design of the remote operator station allows it to be configured for easy transport in a truck or trailer, which adds flexibility in its application.

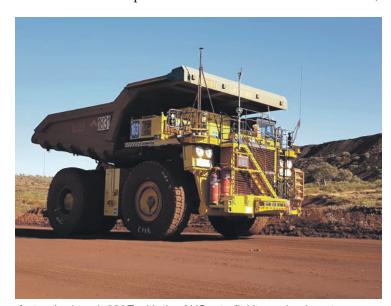
Remote operation allows dozers to be used in any situation that presents potential safety and health hazards. In addition to highwall and edge work, common challenges include steep slopes, pond and drainage operations, and aggressive ripping. Remote operation also enables a dozer to continue production immediately after blasting, rather than waiting for the air to clear.

Komatsu AHS

In 2005, Komatsu began the AHS trial at CODELCO's copper mine in Chile and succeeded in achieving the world's first commercial AHS deployment with Codelco in January 2008. A second successful deployment followed in late 2008 at Rio Tinto's iron ore mine in Australia and Rio Tinto currently operates AHS trucks in four mines in the Pilbara region of Western Australia. The entire AHS operation is controlled remotely and efficiently from Rio Tinto's operations center in Perth, roughly 932 miles (1,500 km) from the mines. Following those successes of AHS deployments, Komatsu supported Suncor's pilot of AHS in a section of their oil sands mine in Canada in 2013.

Today, the AHS operates around the clock, hauling three different commodities, in six mines across three continents. By the end of 2017, the AHS recorded a world-leading, cumulative total of 1.5 billion tons of hauled materials. In the area of safety, AHS is significantly safer than in conventional mining environments where even a small truck driving error could cause a serious accident. AHS-enabled customer productivity has improved, reducing load and haul unit costs by more than 15 percent, compared to conventional haulage methods. In addition, the optimized automatic controls of the AHS reduce sudden acceleration and abrupt steering resulting in 40 percent improvement in tire life compared to conventional operations and the various benefits of AHS deployment also show the great contribution to reducing the environmental impact.

To extend the proven AHS benefits to operations with manned haul fleets, Komatsu conducted and successfully completed trials of its AHS retrofit kit at Rio Tinto's existing mine in September 2017. The retrofit kit, mounted on a Komatsu electric drive standard truck 830E (nominal payload: 220 tons), enabled the truck to operate in autonomous mode. As a result, Komatsu recently



A standard truck 830E with the AHS retrofit kit running in autonomous mode at Rio Tinto's mine in Australia.

received an order from Rio Tinto for 29 AHS retrofit kits, to be installed on 830E standard trucks currently operating at Rio Tinto's Brockman 4 mine.

In addition to expanding the AHS retrofit kit to include other main models of Komatsu electric drive standard trucks, Komatsu is planning to enhance the AHS's mixed-operation functions. The planned enhancements will enable manned haul trucks of any make to safely interoperate with Komatsu AHS trucks in a blended fleet operation. Under this initiative, Komatsu has committed to provide mining customers with AHS solutions that meet the growing demand for gradual transition from existing to fully automated mining.

Cat® Fleet upgrades

Cat® Fleet tracks data across the entire mine site and automatically handles scheduling and assignment tasks, including refueling scheduling and shift changes. A capability set within Cat MineStar $^{\text{TM}}$, Fleet automatically provides reports and alerts in near real-time to pit managers for immediate response. Fleet works with all machines (regardless of manufacturer) and systems to measure, manage and maximize equipment operation and material movement.

Use of cloud-based computing technology and Wi-Fi connectivity offers an affordable and easy entry point for new Fleet users.

Caterpillar introduced a major upgrade, Fleet 5.0, in late 2017. The new version offers a number of expanded capabilities including Blending to Destination and Store and Forward for data handling during communications outages.

While Cat MineStar has always had a blending element, the new Blending to Destination feature expands blending capabilities to include wheel loaders and load-haul-dump scenarios. The new capabilities are designed to help blending operations run as smoothly and efficiently as possible.

Blending to Destination involves controlling the rates, grades and percentages of material to the crusher, stockpile or dump. This is done while simultaneously making the most effective use of mobile equipment given operational constraints (by assignment). Blending to Destination assists in delivering material as specified to the processing plant, maintaining acceptable grade and material homogeneity in stockpiles, and ensuring dump material conforms to design and regulatory bounds.

The Store and Forward capability manages data handling during communications outages, whether it's due to an area of the mine lacking adequate network coverage or a wider network communications outage. A communications outage can prevent collecting data needed to optimize fleet performance, but with Fleet, machines can store the communications they would normally send over the network and forward them when a network connection is re-estab-



While Cat MineStar has always had a blending element, the new Blending to Destination feature expands blending capabilities to include wheel loaders and load-hauldump scenarios.

lished. The system enables gathering data during a network outage, even one that lasts a full shift, and using that information to review and optimize operations

While the Store and Forward feature does not replace a well-maintained radio network, it helps ensure that minimum data requirements are met to enable the creation of cycle data in MineStar.

Fleet 5.0 also includes a number of improvements that make normal work routines faster and easier. These capabilities all come together to help mining operations reduce cost per ton, enhance productivity and boost overall site profitability.

The dream of "driverless" hauling has become a reality and the technology has taken the natural progression of being applied to other mining application equipment.





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Prairie Dawg Practical by Tim Holmberg, DEMI Equipment

Hey Prairie Dawg, Let's talk about "Safety Guarding" on my equipment

Why does it seem that I can never be his hand — I had noticed he was missjust right or have everything I need be guarded or covered with the proper guarding when it comes to these Mining Safety site visits? I'm referring to safety guarding of critical moving parts or pinch point areas of most all machinery operating within a production installation today. These operations are becoming more sophisticated and often require a full time Internal Safety Coordinator position making sure all equipment is safe and secure. This position also is in charge of keeping daily logs with the operators and maintenance personnel and holding daily briefings to promote as safe as possible conditions when working within inches of these rather dangerous moving and twisting parts. Safety guarding is always one of those unknown subjects that can get ugly fast, especially if there is a disagreement in interpretation as this can get extremely tense between an owner and an authoritative governing officer in figuring out a workable solution.

A few years back I spoke with an old timer who grew up without much regulatory restriction or safety education. When I asked what had happened to ing all his fingertips on the entire right hand— he went on to explain his story and then as he was finishing up simply ended with these very words "well that won't ever happen again." I knew full well what he meant. What a terrible realization that his fingertips, once wrapped in bandages and heading to the emergency medical center, will now be missing the remainder of his life. Sad to think that if only the factory guard cover back then had possibly been just a little more protective or possibly better initiated for the exact location the equipment was being operated, this incident may not have ever happened. On the other hand it may have had just passed an inspection with perfectly allocated guarding or easily be considered an accident that might never happen again. But if it is blatantly recognizable that it could then it is the owner of the equipment's responsibility to get his investment better guarded for the exact site-specific application it is being operated in. Can you believe some factory positioned guarding is either removed or modified in an attempt to get a bit more accessibility to the daily housekeeping chores of maintaining and keeping a plant clean of piling up debris?

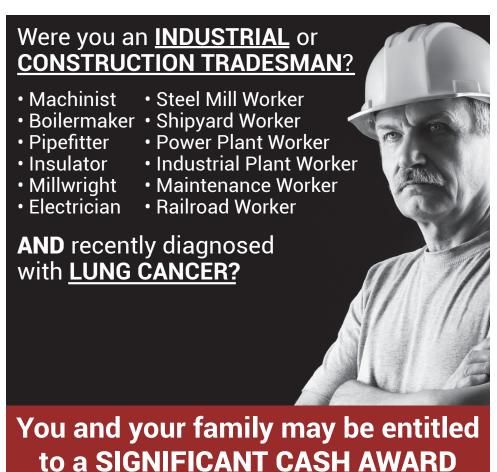
- When it comes to MSHA— and I know this may sound somewhat crazy- but think of them as your friendly policeman, someone who ultimately is trained with many safety aspects actually resulting from previous accidents or injuries in other settings. Consider these individuals as a second set of eyes trained specifically to look for danger associated specifically with mining- and aggregate-based production equipment and how it is being operated. Generally, these officials have once worked as a miner or had experience training workers on safety programs within an organization he or she now may be visiting and policing for infractions or courtesy preliminary
- These officials are often rotated so that it does provide extra efforts in recognizing a potentially harmful situation that their very own coworker or officer may have completely missed or overlooked. Because of this rotation, our aggregate producing organizations will inevitably be safer places to work daily.
- Site-specific guarding will always be the best effort in making sure the big crushing mining operations are doing their part into keeping all safe who enter these unforgiving dangerous machines.
- Most manufacturers are aware that they are required to provide certain guarding when building a specific processing plant but will often acknowledge that they can't meet all expectations of the representing dealer, buyer/producer and inspectors,

all while maintaining a fair and competitively priced plant. However, nine times out of ten the manufacturer is always willing to work with the representing dealer or even the producer to create any necessary guarding and have it resemble a more factory fit and finish appearance with matching paint characteristics and all. There are also many secondary level aftermarket manufacturers that will estimate these additional ongoing guarding requirements. Many will provide a service of installation and even maintenance as an alternative to the producer hiring a maintenance crew and burdening them with custom fabrication work.

Guarding within an operation can either be an item that is purposefully ignored or disliked because of the interpretation being complex and rather daunting. On the other hand, it can be not that big of deal if handled on a more consistent basis by a dedicated person who is characteristically savvy with challenging updates. Either way, guarding is here to stay and becoming a larger part of each organization's safety programs. So embrace the challenge and remain proactive in the process of keeping your employees protected and returning home without

Please, if you enjoy these random aggregate 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? Tim Holmberg prairiedawg@ <u>pdpractical.com</u> . Or simply write me a letter and we will send you a t-shirt or ball cap:

Tim Holmberg 2915 Idea Ave. Aberdeen, SD 57401



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Industry news

U.S. Department of Labor's Mine Safety and Health **Administration announces** \$10.5 million in state grant funding

ARLINGTON, VA - The U.S. Department of Labor's Mine Safety and Health Administration (MSHA) has announced the availability of \$10,537,000 in state grant funding to provide federally mandated training and retraining of miners and mine operators working at surface and underground coal and metal and

Under Section 503 of the Federal Mine Safety and Health Act of 1977, any state in which mining takes place may apply for the grant. MSHA may fund 80 percent of the activities under a state grant program, and the state must provide matching funds of no less than 20 percent of the total program costs.

For funding consideration, applications must be submitted electronically through www.grants.gov by July 16, 2018.

RockRoadRecycle.com July 2018

RockRoadRecycle Industry news

Superior schedules dealer open house for end of August

MORRIS, MN — Superior Industries, Inc. announced it's planning a dealer open house at its home factory in Morris, MN. Known as IGNITE18, the two-day event is open to the company's equipment dealers of crushing, washing, screening and/ or conveying equipment. IGNITE18 is scheduled for August 28-29, 2018.

"It's our first opportunity to meet as a large group since our big Rock Face to Load Out® product reveal at CONEXPO-CON/AGG 2018," says VP of Sales, John Garrison. "Our dealers are an important part of our future and we're excited to reveal lots of new updates to our products and services. Guests will leave Morris informed, entertained and well-fed!"

According to Superior, events will include a handson tour of its company-owned gravel pit. The operation supplies sand and gravel to pre-cast concrete manufacturer and sister company, Hancock Concrete Products. However, the pit is also used as a showcase and proving grounds for Superior's recently launched and developing product lines. In addition, all four product managers will share design and manufacturing updates, customer success stories and development plans for each product segment.

Superior is also planning an equipment expo, dealer program updates, aftermarket initiatives and marketing opportunities. Jarrod Felton, the manufacturer's president, will give a keynote address to share exciting developments about the future.

Dealers have received promotional materials to save the date. During the middle of June, they can expect to receive communication related to registration.



Known as IGNITE18, the two-day event is open to the com pany's equipment dealers of crushing, washing, screening and/or conveying equipment.

Photo courtesy of Superior



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RockRoadRecycle.com PG 8 July 2018



Mining is likely to see big changes over the next 10 years.

Source: www.volvoce.com

s commodity prices enjoy another bull run, how is the mining industry reacting to change? Professional services firm Deloitte Global identified 10 key trends facing the industry in their recent Tracking the Trends report. Here Deloitte's Global Leader of Mining Phil Hopwood explains more.

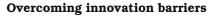
The last decade has been a rollercoaster of historic highs and historic lows in the mining sector. While

the industry currently enjoys strong commodity prices, the next decade is likely to see more vigorous change. But have mining companies learnt the lessons of the past – and how do they need to react to succeed in this new environment?

Bringing digital to life

Once measured by how well a company extracted resources, the industry's value proposition may be shifting to how well a company acts on information to optimize production, reduce costs, increase efficiency, and improve safety. In short, data – and the

ability to organize, manage, and process it – is becoming a competitive differentiator. To succeed in this effort, miners need a clear vision of how the future digital mine might transform core mining processes, the flow of information, and supporting back office processes. Once the information is captured, the use of data-driven analytics will help optimize their systems, from pit to customer.



To some extent, innovation barriers exist because the design of mines and processing plants hasn't

changed in decades. Although commodity prices have begun recovering, mining executives are still feeling the sting of the downturn. As a result, they are cautious, meaning that innovation efforts are constrained by the need to demonstrate short-term returns. The catch is that, unless you are trying new things, you are not learning, and if you are not learning then you will fall behind. Mining companies can only achieve true innovation maturity if they go beyond the basics of operational improvements to embrace innovation in a broader sense.

The future of work

As the digital mine becomes a reality, the nature of work is set to change dramatically. Repetitive human activities will be replaced by automation and autonomous equipment that reduces labor intensity and improve safety. AI will help knowledge workers and integrated communications support mobile workers, while digital work scheduling and robust cybersecurity will keep operations efficient and protected. These changes will support a more diverse and inclusive workforce.

The image of mining

Despite the significant contribution of the mining sector to the world's economy, the industry's reputation remains tarnished in many countries due to perceptions that mining contributes to environmental damage, causes a negative impact to the community and engages in dubious practices abroad. In a world influenced by round-the-clock



The way we access data can reduce costs and improve efficiency.

Photos courtesy of Volvo CE

news cycles and opinions aired in the court of social media, this type of backlash is only bound to increase. This will force mining companies to take proactive steps to address, and change, their reputations. This is more than a PR exercise. To rebuild trust with employees, investors, communities, governments and the public, mining companies must back up their messages with action.

Transforming stakeholder relationships

To expand local employment opportunities, increase tax revenues and meet demands for improved infrastructure and greater environmental protection, many governments of resource-rich countries continue to put pressure on the mining industry. As a result, mining companies still face considerable obstacles to investment, ranging from high royalty taxes, permitting challenges and uncertain tax rules, to demands for local processing. An underlying cause of this friction can be traced to miners' own actions. Some of the social initiatives mining companies have undertaken in the past have failed to deliver their intended results. Increasingly, the industry is realizing that its approach to community and government relations must change. As mines move towards more digital and automated operations, the effect on local employment – the basis of mines' relations with communities - will change. To prevent a backlash, companies will need to leverage the digital infrastructure on behalf of communities, to improve communications, create new education models (e-learning) or deliver other digitally-enabled services. This will require companies to be more creative in understanding the real needs of communities.

Water management

As ore grades decline, more water is needed to extract the same quantity, pushing up water requirements in the industry. Critically, this growing demand is not offset by available supply, with one-in-four people predicted to live in countries affected by chronic freshwater shortages by 2050. As concerns about water availability grow, communities and environment groups are turning their spotlight on water intensive industries. In light of this, mining companies must enhance their approach to water management.

Changing shareholder expectations

As shareholder expectations grow, mining companies have begun focusing on reestablishing their credibility in the investor community and with analysts. Rather than pursuing the mega-mergers of the past or building new mines, many are exercising higher degrees of financial discipline.

Worries about reserves

Intense cost cutting may have improved the short-term fortunes of many miners, but it comes at a cost, with reserves of many commodities sharply down. Gold, copper, silver, nickel and zinc, to name a few, have all experienced reserve depletion in recent years. Despite the pick-up in commodity prices, many miners are struggling to free up the exploration and development budgets needed to exploit new resources.

Realigning mining boards

To transition to the mine of the future, companies must embrace new talent. To do this, miners need to make a substantial cultural shift. Some companies have already taken steps in this direction by engaging in cross-functional collaboration, seeking out best practices from other industries, strengthening their executive teams and setting targets to achieve greater diversity and inclusion.

Commodities of the future

To decide which commodities to invest in, and which to get out of, miners need to keep their fingers on the pulse of changing consumer demands and economics, demographics and environmental change. More recently, they have also had to follow the rapidly developing emergence of new technologies. Battery demand is set to soar in anticipation of the exponential growth of electric vehicles and energy storage systems. Demand for lithium is also expected to soar, as is graphite, nickel and copper. The impact of these trends on the mining industry could be transformative.



Meya Mining employs and trains local operators - helping improve perceptions of Sierra Leone's diamond trade.

RockRoadRecycle.com PG 10 July 2018

Skycatch and DJI announce global agreement to deliver high-precision custom drones for Komatsu

Commercial drone data company, Skycatch, and DJI, the world's leading manufacturer of civilian drones and aerial imaging technology, have extended their partnership to manufacture and deliver a fleet of high-precision drones for Komatsu Smart Construction. Each drone is manufactured by DJI and outfitted with specialized Skycatch technology, and is the first time DJI has manufactured a custom drone for a partner.

The Skycatch Explore1 drone autonomously flies over job sites to create highly accurate 3D site maps and models and will be deployed on Komatsu job sites. This map data will be used for Komatsu Smart Construction's new data service that enables robotic

earth moving equipment, used in the earthwork stage of the construction process, to correctly dig, bulldoze and grade land autonomously according to digital construction plans.

"Conducting a site survey using a drone used to take hours. However, by implementing Explore1, users can carry out surveying quickly and easily. Now it is possible to perform drone surveying every day. Taking off, landing and flight route setting are all automated. Ground Control Points (GCPs) are no longer needed. 3D data is immediately generated and an entire construction site can be visually checked with the 3D map. The Explore1 is a true game changer for the construction site," said Chikashi Shike,

executive office of Smart Construction Division at Komatsu.

The Explore1 drone is built on DJI's customizable Matrice 100 enterprise drone platform and is part of Skycatch's High Precision Package along with the Edge1 RTK base station, a highly powerful ruggedized computer with software that locally processes drone images into precise 3D models regardless of wireless connectivity and location. Together, these technologies enable firms to create highly accurate maps and point clouds, discover costly job site mistakes and predict schedule delays, saving up to tens of thousands of dollars per week.

"Being the first company to integrate into DJI's manufacturing process will deliver incredible value to our customers worldwide," said Christian Sanz, CEO at Skycatch. "By combining DJI's mastery of hardware manufacturing and aerial technology with Skycatch's data processing and customer expertise, we've created the most powerful and comprehensive solution for enterprise customers everywhere."

"The Explore1 demonstrates DJI's strategy to provide customers with the most powerful and reliable drone platforms on the market that can be tailored to the needs of any industry," said Jan Gasparic, head of enterprise partnerships at DJI. "Our close collaboration with Skycatch on this exciting program has resulted in a best-in-class solution of software and hardware for aerial surveying that truly changes the game for both our customers and the commercial drone industry."



The map data will be used for Komatsu Smart Construction's new data service that enables robotic earth moving equipment to perform according to digital plans.



Skycatch and DJI have extended their partnership to manufacture and deliver a fleet of high-precision drones for Komatsu Smart Construction.







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RockRoadRecycle.com July 2018



The 345C features three hydraulic pumps that provide optimum hydraulic pressure to various functions of the excavator when the demand is needed. Alex Anhalt, product consultant for excavators, explains how the systems work.

Excavator demonstration and walk-around features the latest in innovative design and technology

by Jon M. Casey

ohn Deere-Hitachi celebrated the 30th anniversary of their joint venture in the Americas by hosting visitors and company employees at an equipment demonstration and walk-around, part of the three-day event held May 16-19, 2018. On Wednesday, media guests not only toured the manufacturing facility in Kernersville, NC, but they also enjoyed a morning of hands-on opportunities to see some of the latest improvements in excavator technology to help make the jobsite experience safer and more productive. On display were an Hitachi 300LC, a John Deere 350G outfitted with the company's new grade control system, a John Deere 85G mini excavator, and the new John Deere 345G LC, reduced tail swing model.

It features no diesel particulate filter (DPF) after treatment and a three-pump hydraulic system that provides generous hydraulic flow for fast cycle times.

New to the John Deere lineup of excavators is the 345G LC. It features the power and agility of the JD 350 series models, with the added benefit of reduced tail swing design. According to Jonathan Spendlove, excavator product marketing manager for John Deere Construction & Forestry, the need for larger, more powerful reduced tail swing excavators are in demand to traverse the tighter jobsite requirements. This new model adds another option to the manufacturer's 33 - 40 metric ton size class. It provides customers with a larger machine with increased lift capacity, more reach, deeper dig depth and greater breakout forces compared to the current 245G LC model. The excavator is ideal for work in road building, underground, building, landscaping and site development applications.

Photos by Jon M. Casey

"The ability for our customers to swing a machine and not have the counterweight extend into an additional lane of traffic or bump into a tree is an equipment trait they are considering when looking at options like the 345G LC," he said.

The 345G LC is outfitted with a 249-horsepower John Deere Final Tier 4 diesel engine. It features no diesel particulate filter (DPF) after treatment and a three-pump hydraulic system that provides generous hydraulic flow for fast cycle times, greater flow for attachments and larger efficiency for improved fuel economy.

Improved hydraulics

At the demonstration site, Alex Anhalt, John Deere product consultant for excavators, explained that the JD345G LC is equipped with three hydraulic pumps that provide 180 gallons per minute, which is about 20 percent more than the larger 350 G LC model. He explained that the pumps are computer controlled to deliver the fluid to the machine at the desired place at the desired time. For example, there is a very quick response when the operator changes from digging to swinging the unit to dump the bucket full of material. When digging, the three pumps all direct their flow to the digging. When that action is completed, pump three disengages and waits for the operator to swing the excavator to the side. At that time, it instantly responds, providing faster swing and dump times, which help to increase production rates. He said that digging rates are about the same as previous models; however, the swing, dump and return times are greatly increased to help reduce lost time in motion.

He noted the three-pump hydraulic system also provides for easier attachment changes since the flow and pressure rates can be adjusted from within the cab. Operators will not need to disembark the unit and make manual changes to the hydraulics in order to switch attachments. An optional factory-installed system is available to help power larger GPS telemetry enables the John Deere Excavator Grade attachments like hammers or shears, when great- Control System to perform at a high level of accuracy. er flow rates are needed. The electronic control on

the hydraulic system provides up to 12 settings for attachments. These changes can be made instantly. This makes changing attachments significantly faster. "All the operator has to do is push a button," Anhalt said.

The 345G LC is built with side-by-side cooling cores for maximum cooling efficiency and easy cleaning. This means less downtime to clean debris and less overheating. The unit can be equipped for reversing fans for applications where the machine is in dusty conditions or areas like mulch production facilities where radiators can plug more easily.







It's in the details

Anhalt noted there are several "smaller" details in the design improvements of the 345G LC that go together to enhance the complete package. For example, the excavator is now equipped with LED exterior lights for brighter jobsite visibility and longer useful life. The 345 uses the undercarriage from the 350 model for added weight and stability. More importantly, there are now three track guides on the 300, 345 and 350 models instead of the previous conventional one in the center. With the added track stability, the entire machine is able to perform more effectively.

Like the other G-Series excavator models, the 345G LC features a spacious, comfortable cab and easy-to-use enhanced LCD monitors. A simple turn-and-tap of the rotary dial allows operators to select work mode, to access operating info, to check maintenance intervals, to source diagnostic codes, to adjust cab temperature and to tune the radio. The cab includes a comfortable, fabric-covered adjustable suspension seat with ample

legroom. The wide expanse of front and side glass, narrow front cab posts, large tinted overhead hatch and numerous mirrors provide all-around visibility. A standard rearview camera improves visibility to the rear of the machine. Optional side-mount cameras can provide additional safety monitoring on all sides.

"Smart" excavating

John Deere offers several, innovative technological advances that help make production more efficient and profitable. John Deere dealers can provide Ultimate Uptime, featuring John Deere WorkSight^ $^{\text{TM}}$. With Ultimate Uptime, owners receive pre-delivery and follow-up inspections that include five years of JDLink $^{\text{TM}}$ telemetrics, machine health prognostics, remote diagnostics, programming capabilities and the ability to add dealer-provided features with a customized package.

For more information visit $\underline{www.deere.com}$.

Above Left:

As this JD 345G LC emerges from the freshly dug trench, we are able to see more clearly the compact design of the main frame's rear section.

Above Right:

These electronic components, mounted on the excavator boom, are a part of the John Deere Excavator Grade Control System.



The difference in the boom attachment points for conventional (left) and reduced tail swing excavators (right) can be seen in this photo. On the conventional design, the boom is closer to the front of the main frame while on the reduced tail swing model, the attachment point (fulcrum) is somewhat elevated and set back from the front edge.

Counter weight placement is adjusted accordingly on the rear and underside/undercarriage to help provide similar digging capabilities for both units.



RockRoadRecycle.com PG 14 July 2018

New DoosanCONNECT® system provides connected machine solution for Doosan equipment

SUWANEE, GA — Doosan Infracore North America, LLC, introduces DoosanCONNECT® — a new telematics management system for Doosan® excavators, wheel loaders, material handlers, log loaders and articulated dump trucks. The connected machine solution provides greater machine-to-machine communication, machine intelligence and remote equipment monitoring to maximize machine uptime protection.

Doosan has offered a telematics management system to its customers since 2008. The new DoosanCONNECT telematics system is standard on all Doosan equipment, except DX63-3 and DX85R-3 compact excavators. Each new machine comes with a free 36-month subscription. Customers have the option to purchase a service extension after the subscription expires, and the subscription is transferrable if a customer sells a machine to another individu-

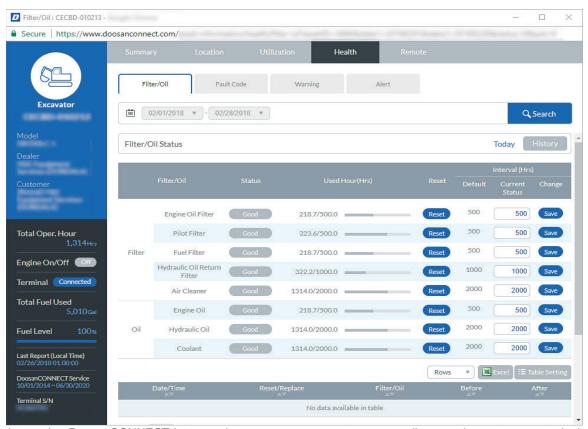
How it works

Doosan equipment equipped with a modem and furnished with a cellular and satellite antenna, which collects data from sensors on the machine. The modem sends the data from the machine to a central database via cellular or satellites, making it readily accessible, even in remote locations when cellular service is not available. Equipment owners and fleet managers can review the data produced and monitor the equipment remotely from an internet-enabled device by logging into the DoosanCONNECT website: <u>DoosanCONNECT.com</u>.

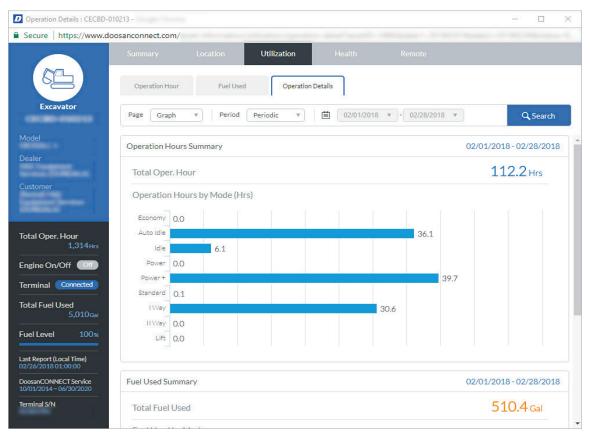
The website is available in 11 different languages and viewers can choose their preferred language from a dropdown menu. A mobile app is available for download from DoosanCONNECT.com to allow owners to access Doosan-CONNECT® alerts from a connected mobile device.

Below is a sample of the many reports available from the telematics management system:

- Fleet status
- Machine location (last reported GPS location)
- Operating hours
- Fuel usage
- Fuel and diesel exhaust fluid (DEF) levels
- Engine idle time versus work time



Integrating DoosanCONNECT into a maintenance management program allows equipment owners to look ahead and see when a machine is due for its next maintenance appointment.



By analyzing this data, Doosan equipment owners can determine if they are underusing their assets or whether it is time to invest in adding to their equipment fleet to maximize their return on investment.

- Error codes
- Engine and hydraulic oil temperatures
- Load counts and weights
- Tonnage hauled

Better manage equipment

DoosanCONNECT puts more information in the hands of equipment owners to help better manage their equip-

ment fleet. They can monitor operational utilization reports to determine how often their Doosan equipment is being operated. An operation trend report includes a search by time period option, average utilization rate, and load count and weight data. By analyzing this data, Doosan equipment

owners can determine if they are underusing their assets or whether it is time to invest in adding to their equipment fleet to maximize their return on investment.

Data collected through DoosanCONNECT can also be used to solve business challenges, such as improper use of equipment on the jobsite. Owners can use this data to correct operator behavior to promote a productive and safer jobsite. The connected machine solution displays operation hours. Accurate machine usage reports can help owners fine tune their bids and determine operating costs and labor costs for more accurate billing on future jobs.

Track fuel usage

With the help of Doosan-CONNECT, owners can make improvements to equipment fuel efficiency and reduce diesel fuel consumption. Fuel efficiency (gallons per hour) and fuel used (gallons) can be viewed from the website, eliminating the need to physically check each machine and minimizing trips for a fuel truck.

The system also monitors equipment idle time, helping to identify machines that are working under or over capacity. Reducing idle times can help extend engine life and reduce repair and maintenance costs. Owners can also monitor power mode operation and advise operators to adjust the power mode to do the same work while using less fuel.

Warning information readily available

DoosanCONNECT enables equipment owners to track service and maintenance warnings. The website provides owners with a fault code status and history related to the machine's engine, transmission, steering and more. Maintenance warnings alert owners and fleet managers with an easy-to-read status of a machine's parts status. A list of parts includes each part's status - good, upcoming or overdue - and the number of hours used. Dealers can also monitor this information and proactively reach out to customers to encourage them to properly service their Doosan equipment to ensure the machine is operating correct-

Improved maintenance scheduling

Integrating DoosanCON-NECT into a maintenance management program allows equipment owners to look ahead and see when a machine is due for its next maintenance appointment. If a problem does arise, Doosan-CONNECT reports real-time fault and warning codes. The

DoosanCONNECT® 15

DoosanCONNECT® from 14

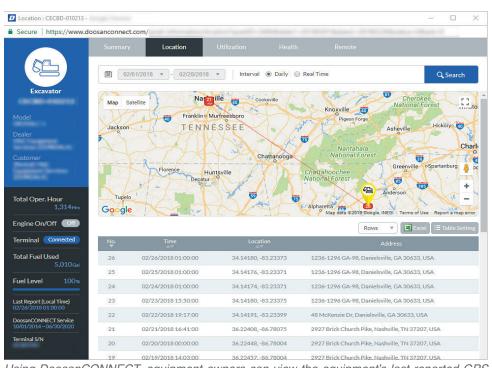
data can be shared with dealers, enabling a quick response and ensuring more uptime and continued productivity. Dealers can view the problem on the DoosanCONNECT website to help diagnose the problem without physically being in the same location as the machine. This helps save unnecessary downtime and reduces travel time for the dealership's service department.

Reduce equipment theft

Equipment location is an important data point for equipment owners. Using DoosanCONNECT, equipment owners can view the equipment's last reported GPS location, including an aerial map view. This feature allows them to keep a close eye on their equipment fleet and see where its being operated through the DoosanCONNECT website.

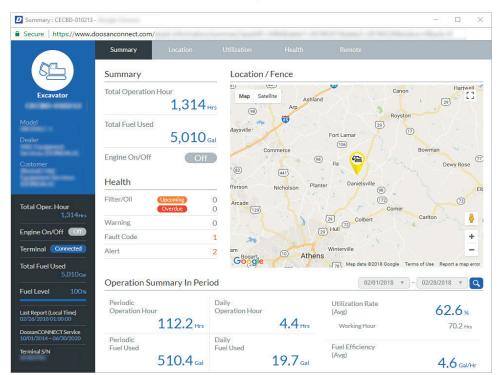
Customers can create a geo/time fence or an invisible/virtual boundary through the machine's GPS

system. If the machine leaves the virtual fence, it will send a notification and can alert the equipment owner and authorities about possible equipment theft. Additionally, a time fence or curfew on each machine can be created. If the machine is operated outside of working hours, an email or SMS text notification can be sent to the owner. This helps to prevent unauthorized operation and potential vandalism to the machine and jobsite.



Using DoosanCONNECT, equipment owners can view the equipment's last reported GPS location, including an aerial map view.

Graphics courtesy of Doosan



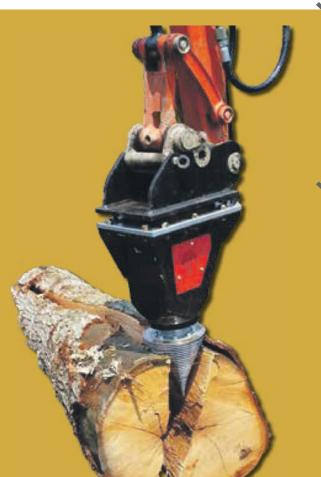
DoosanCONNECT puts more information in the hands of equipment owners to help better manage their equipment fleet.



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RockRoadRecycle.com July 2018

Volvo CE moves into 3D printing of parts

As the construction industry looks to new methods for efficient production, equipment manufacturers are likewise exploring additional ways to boost productivity. Volvo CE has introduced 3D printing in order to deliver spare parts to customers more quickly and efficiently. The company is also investing in 3D printing methods in the research and development of its prototype machinery.

"We are supporting customers through the life cycle of their equipment," says Jasenko Lagumdzija, Manager of Business Support at Volvo CE. "It's especially good for older machines where the parts that have worn out are no longer made efficiently in traditional production methods. Producing new parts by 3D printing cuts down on time and costs, so it's an efficient way of helping customers.'

Additive manufacturing benefits customers

Additive manufacturing - as 3D printing is commonly known – is the process of repeatedly layering a molten material or liquid in a specific pattern that is set by the printer's software, until it solidifies into the required three-dimensional shape. For its aftermarket service, Volvo CE commissions the creation of spare parts made of thermoplastics to send to customers who require the replacement of a part that has worn out through natural usage.

Parts can be made of any shape and size, and for any unit in Volvo CE's range of off-road machinery. Typical parts made by 3D printing so far include parts of a cabin, plastic coverings, and sections of air conditioning units. The company uses its own archive of drawings, 3D models and product information to feed into the printer to produce the correct new part.

"The customer is getting exactly the same part in replacing plastic with plastic," says Annika Fries, aftermarket branding manager at Volvo CE. "We do a lot of quality assurance — the 3D parts have the same specifications and go through the same process as the original, and get the same warranty, so customers can be confident they are getting a genuine Volvo approved part."

Quick and efficient response

The creation of new parts via the 3D printing process can take as little as one week. Fast delivery of required components maximizes the uptime of customers' equipment; and the ability to supply new parts to replace those that have gone out of normal production may also extend the lifetime of the machine as a whole. Parts made of metals through additive manufacturing may also be offered in future.

"Lead-times are significantly reduced with 3D printing and since there are no minimum order quantity requirements, we benefit from quicker delivery of parts, lower inventory levels in our warehouses and an improved ability to balance supply and demand," says Daniel Kalfholm, project leader for aftermarket purchasing for Volvo CE's EMEA region.

Moving forward with prototyping

In addition to 3D printing being an increasingly desirable element in the production of aftermarket parts, the process is also being used by Volvo CE in building new components for prototype machinery. The company has several 3D printers for this purpose at its research and development premises.

"As we only need to produce low vol-



A workshop tool for mounting parts on an axle has been made by 3D printing.

Photo courtesy of Volvo CE

umes of parts for prototyping, it's a good way to see what works," says Fredrick Andersson, development engineer for wheel loaders powertrain installation at Volvo CE. "We have a lot of knowledge and we can make changes quickly and easily with 3D printing. And because of this, it means that the time to market for a new product is quicker, so it's of great benefit to our company."



People in the industry

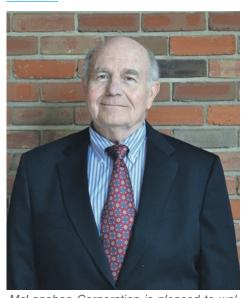
Ron DeDiemar joins **McLanahan Board of Directors**

HOLLIDAYSBURG, PA — McLanahan Corporation is pleased to welcome Ron DeDiemar as the newest member of the company's Board of Directors. Ron brings nearly 60 years of experience in the materials processing industry, having served in a wide array of roles with manufacturers throughout the United States.

He has served on boards and committees for organizations such as the National Stone, Sand and Gravel Association, Crusher and Portable Plant Association, American Institute of Mining Engineers/Society of Mining Engineers (AIME/SME), and various other manufacturing Board of Directors positions. Ron currently holds 13 U.S. Patents, covering unique and novel enhancements to industry equipment staples, including jaw crushers, cone crushers, gravel scrubbers and apron feeders.

"We are very excited about the industry experience and knowledge that Ron brings to McLanahan's Board of Directors," stated Chairman, Michael McLanahan. "Our board members provide invaluable insight to our business by offering years of experience and helping us set direction for future growth. We are confident that Ron will serve us well in that capacity and be a wonderful addition to the team."

Headquartered in Hollidaysburg, PA, McLanahan Corporation offers over 180 years of experience in providing processing solutions to a variety of materials handling industries. For more information, visit: www.mclanahan.com .



McLanahan Corporation is pleased to welcome Ron DeDiemar as the newest member of the company's Board of Directors.

Photo courtesy of McLanahan Corp.





On the front lines with Fisher Phillips:

by Travis Vance and Pamela Williams

Don't be late! Recent decisions remind employers that OSHA citations may become final if not timely contested



Pamela Williams

Two recent cases should remind employers to contest OSHA citations quickly to prevent the citations from becoming final. It's an uphill battle if your notice of contest is submitted late.

Employers have 15 working days to challenge OSHA citations

Under the Occupational Safety and Health Act of 1970 (OSH Act), once OSHA has issued a citation to an employer for an alleged violation of the OSH Act and the employer receives notice of it, the employer has only fifteen working days to contest the citation, penalty amount, and/or abatement period. 29 U.S.C. § 659(a)*. If the employer fails to notify OSHA that it intends to contest the citation, the law provides that the citation "shall be deemed a final order" of the Occupational Safety and Health Review Commission (OSHRC or Commission) and "not subject to review by any court or agency." 29 U.S.C. § 659(a). In other words, the citation becomes final, and the employer has lost its ability to contest the citation. Even worse, OSHA may cite your company over \$12,500 a day for the failure to abate any uncontested citations.

Once the contest period has closed, the employer can file a motion to reopen the case with the Commission under Federal Rule of Civil Procedure 60 — Relief from a Judgment or Order. The standard for success of the motion is set out in Pioneer Inv. Servs. v. Brunswick Assocs., 507 U.S. 380, 395 (1993), which provides a four part test: (1) the danger of

prejudice to the opposing party; (2) the length of the delay and its impact on judicial proceedings; (3) the reason for the delay, including whether it was within the reasonable control of the movant; and (4) whether the movant acted in good faith.

Two cases affirm the difficulty of trying to file a late notice of contest

Two recent cases have reaffirmed that it is very difficult to challenge an OSHA citation if the employer fails to contest it within fifteen working days.

In Secretary of Labor v. Frame Q, LLC, an employer filed a late notice of contest, approximately two months after it was due, and the Secretary of Labor later moved to dismiss it. OSHRC Docket No. 16-2010 (Feb. 5, 2018). OSHRC considered the late notice of contest under Rule 60 and held that it should be dismissed because OSHA had twice mailed the citation to the employer — once by certified mail and a second time by regular mail — and it was presumed that the mail was delivered because it was not sent back. The Commission rejected the employer's argument that it delayed because it "did not fully understand OSHA rule and regulations." The Commission also noted that the employer needed to show that it "played no role in causing his [notice of contest] to be filed late.'

The U.S. Court of Appeals for the D.C. Circuit reached a similar result in <u>David E. Harvey Builders, Inc. v. Secretary of Labor</u>, No. 17-1215, May 11,

2018. In that case, the court upheld the administrative law judge's finding that the employer was at least "partly to blame for the delayed filing" and the employer "provided no explanation why the citation was not timely forwarded" to responsible parties within the company.

Lessons learned

It remains exceedingly difficult to challenge an OSHA citation if the employer waits until after the fifteen working day period to challenge the citation. Given this difficulty, employers should review their procedures for responding to OSHA investigations, including who will be in charge of receiving and reviewing any citations received and [by] who and when they will be contested. Specifically, employers should ensure that after OSHA has conducted an investigation, its employees know to watch for correspondence from OSHA and know where to channel that correspondence in the company so that the right people know in a timely fashion that OSHA has issued a citation.

Travis Vance is a partner in the firm's Charlotte office. He can be reached at <u>tvance@fisherphillips.com</u> or 704•778•4164. Pamela Williams is a partner in the firm's Houston office. She can be reached at <u>pwilliams@fisherphillips.com</u> or 713•292•5622.

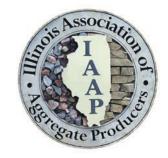
*Please note that some State Plan States have different contest periods and rules; consult with legal counsel

IAAP Bill to extend mining equipment sales tax exemption passes

An IAAP legislative initiative to extend the sales tax exemption on mining equipment — HB 4415 — overwhelmingly passed the House and Senate and will now be sent to Governor Rauner to be signed into law. The exemption is currently scheduled to sunset in August of this year. The legislation will extend the exemption for five years. Sena-

tor Don Harmon and Representative Jerry Costello were the lead sponsors of the bill. The legislation is a joint initiative with the Illinois Coal Association. While the IAAP has successfully assured through recent rules adopted by the Illinois Department of Revenue that most mining equipment is also exempt under the Manufacturing

Machinery and Equipment Tax Exemption (MM&E), the mining equipment exemption is broader than the MM&E and serves as an insurance policy should the MM&E be eliminated. The IAAP has met with officials from the Rauner administration and we expect the bill to be signed into law in the next few weeks.



Sandvik Mining and Rock Technology releases data interoperability policy

The Sandvik Mining and Rock Technology Interoperability Policy is now available on the My Sandvik customer portal. It outlines the principles by which Sandvik systems can communicate within a digital ecosystem, including data accessibility, fleet data compatibility, data rights and control and data privacy.

"In their desire for the optimal safety, productivity and profitability of their mining operations, our customers are looking to digital technologies to enable optimized processes," says Patrick Murphy, president, rock drills and technologies, Sandvik Mining and Rock Technology. "Sandvik systems and equipment will form a key part of the digital ecosystems at these mines of the future."

Sandvik's digital offering ranges from systems for autonomous equipment and features, such as the industry-leading AutoMine® platform, to systems for process management and optimization, to tailored data analytics solutions. Sandvik understands the essential role its systems will play within the larger digital ecosystem at each of its customers' sites. Sandvik systems will be able to interface and exchange data with other

systems around the operation, ensuring that the value of the data can be unlocked. Sandvik will take the lead in shaping industry standards in data interoperability.

"Our customers have naturally asked that they can access equipment health and productivity data from the solutions that we provide them," Murphy says. "While interfaces are not available for all equipment models today, these will be progressively rolled out as new products come to market. However, there are today already over 1,000 machines connected to our industry-leading, cloud-connected productivity and eCommerce platform, My Sandvik, as well as the more advanced OptiMine® mining process optimization platform. Data interfaces can be created so that the customer can access the raw data from these offerings."

The data interoperability policy outlines the principles behind Sandvik's digital offering, explaining, for example, how data can be accessed, depending on the customer's fleet — i.e. at equipment level, at server level onsite or within the cloud. And, of course, how it is protected.

"We know that cloud-based data processing services offer tremendous advantages over local server based

solutions, and are critical in leveraging the full potential of the industrial Internet of Things," says Manny Maloney, General Counsel at Sandvik Mining and Rock Technology. "And when our customers choose us to process data on their behalf, we don't take it lightly. Access to data needs to be defined and restricted, because it is often operator-related and commercially-sensitive."

The Sandvik data interoperability policy is designed to ensure the highest levels of data privacy and security whilst ensuring the customer retains all rights to information related to the use and application of their equipment. The policy has been designed with the General Data Protection Regulation (GDPR) in mind. The GDPR is a European Union (EU) law on data protection and privacy, which also applies to the export of personal data outside the EU — with the intention of harmonizing data privacy laws across Europe.

"Although the GDPR is a European regulation, we aspire to apply the same level of rigor regarding data privacy across the world, wherever we operate," added Maloney.

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Improving construction safety: 3-step plan

Modern machines have more safety features than ever before — so why do accidents still happen? Brian O'Sullivan considers the relationship between work site traffic, people and machines.

It has been estimated that 60 percent of all fatalities on sites can be attributed to choices made before work begins. When investigated, the root cause of many of these tragedies is traced back to the misalignment between site materials, equipment and processes. So, what can be done to kill deaths on construction sites worldwide? The answer is a coordinated approach to safety that involves good site layout and rules, well trained site personnel and properly maintained and operated construction equipment. This can be implemented through a simple 3-step plan.

When coordinating a site from a safety perspective you should ask the following:

- What could go wrong?
- How bad could it be?
- How likely is it to happen?
- What do we need to do about it?

Once you've done your risk analysis, there are three stages to delivering safer sites:

• Traffic management

The foundation of creating safer sites is effectively coordinating the movement of people, materials and machinery. After thousands of construction site inspections last year, the UK's Building Safety Group reported a 74 percent rise in traffic management breaches - an increase they claimed was behind the majority of construction-related accidents.

A large part of making this traffic flow safer is establishing a management plan that gives the safest passage between places where vehicles and people operate. It is a good idea to avoid sharp or blind bends and to set sensible speed limits. Obstructions should be protected and safety banks may be needed to prevent machines running over open edges. The quality of site roads should be suitable for the vehicles using them: firm, even, properly drained



The 3-point plan to improve construction safety.

and avoiding steep slopes. Reversing should be minimized and tightly controlled. Not always easy or practical, but this should be the goal.

• People management

It's obvious that all staff on site — regardless of how long they are going to be there — should be highly visible, wear personal protective equipment and be made aware of the dangers present. The young and/or inexperienced are most at risk — workers in their first year of employment account for almost two thirds of all construction accidents — and no short cuts should be made on site safety education. A 'no blame/no fault' culture should also be encouraged, where no one feels the need to hush up minor accidents or 'near misses' and everyone feels able to contribute ideas on how to improve safety.

Construction does involve risks, but any job undertaken carelessly can be made dangerous, and likewise any dangerous job can be made safer if everyone concerned devotes the proper time and thought.

• Machine management

Safety is no longer an optional extra when it comes to construction equipment design. Many accidents involving machines are 'slip and trip' incidents — so the simple solution is to provide an entry/exit system that allows good foot and handholds, effective step treads and entry that is wide and not too steep. Also, if you can keep the technician on the ground rather than climbing all over the machine when servicing you reduce the risk of a fall. Placing service points that are accessible from the ground is simple and effective.

Providing safe design involves a package of features. ROPS/FOPS cab protection, seat belts, good lighting, minimal blind spots and reduced vibration (and noise) all play their part. But so too does a clear view of the work area and comfortable working con-

Technology is already playing an important part in keeping worksites safe — and this is destined to increase significantly. Reversing alarms and cameras have been around a while, and the next generation are systems like Volvo Smart View — a series of cameras fitted to several Volvo machines that give the operator a virtual bird's eye view around the machine, displayed on the company's HMI award-winning Co-Pilot in-cab console.

This is just the start — the industry is now working on proximity systems that identify people or obstructions in the path of the machine and take corrective action, thereby helping to prevent collisions. And just like in the automotive sector, research into semi or completely autonomous construction equipment is advancing at a rapid rate. Is the answer to safer sites not to have operators in the cab at all? This is a question that will need to be answered in the years to come.

Securing the safety chain

Just as there is a chain of events leading up to an accident, there is a chain of safety actions that can help prevent it. A safe machine in a safe environment provides the best overall solution.

Haver & Boecker expands process equipment division with technical application specialist

ST. CATHARINES, ONTARIO — Haver & Boecker recently hired Sydney Page as a technical applications specialist. Page helps processing customers increase efficiencies, productivity and ROI by working closely with Haver & Boecker engineers to create custom solutions.

She connected with the company during Haver & Boecker's University Mining Seminar, which the manufacturer offered through a partnership with the University of Toronto's Lassonde Mineral Engineering program.

"The seminar gives students a firsthand look at what a career path in this industry involves," said Karen Thompson, Haver & Boecker Canada president. "We are fortunate to have these opportunities to connect with talented, young professionals like Sydney. Her ability to quickly recognize customer needs makes her a great fit for Haver & Boecker."

As a technical application specialist, Page is dedicated to thorough communication and visits customer operations to discuss challenges directly. She uses Haver & Boecker's signature NIAflow plant simulation software to identify potential inefficiencies and offer solutions to increase productivity.

"Each operation is unique and has its own challenges to be solved," Page said. "I am passionate about collaborating with customers to solve those challenges so operations can become more profitable."

Page graduated with honors from the University of Toronto where she earned her Bachelor of Applied Science degree in the Lassonde Mineral Engineering program. Her coursework prepared her with a wide breadth of mining industry knowledge.

Haver & Boecker's University Mining Seminar provides students with an opportunity to reinforce skills learned in the classroom in addition to screening basics, screen sizing, mechanical performance, Pulse Vibration Analysis and more. Haver & Boecker is open to hosting the seminar for other schools, as well. For more information: info@havercan-<u>ada.com</u> or visit: <u>www.havercanada.com</u> .



People in the industry

Haver & Boecker hires Sydney Page, a University of Toronto graduate who took part in the company's first university partnership tour. Photo courtesy of

Haver & Boecker



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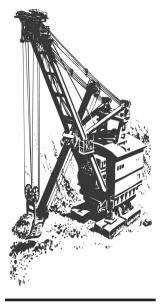
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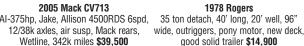
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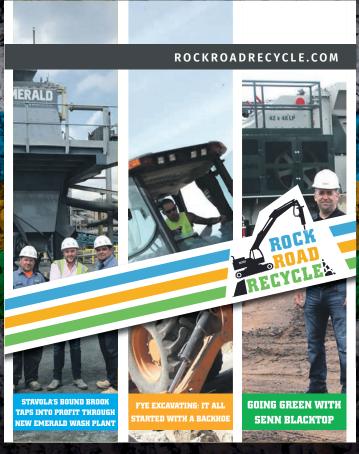
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RockRoadRecycle.com July 2018

Liebherr delivers 200-ton electric drive excavator to Eurovia mine

The new R 9200 E with a rated output of 1,675 HP (850 kW) is the biggest excavator on Eurovia's 350 sites today. The electric 200-ton excavator balances performance with environmental consciousness: No exposure of people and the environment to diesel emissions and noise, longer engine life cycle and up to 25 percent less maintenance costs compared to a diesel excavator.

The R 9200 E has been designed to fully answer requirements of the mining industry. In addition to the massive integration of components designed inhouse by Liebherr, the R 9200 E design and new technologies are inspired from larger Liebherr mining shovels of the latest generation such as the R 9400 and R 9800.

Moreover, the machine has been developed to promote easy and fast maintenance: Its service flap is accessible from the ground level and offers direct access to grease, hydraulic oil and windshield cleaner refilling points (and fuel for diesel engines). Fitted with Wiggins quick couplings for all fluids as a standard feature, the required time to refill each fluid is



The R 9200 E has been designed to fully answer requirements of the mining industry.

Photo courtesy of Liebherr



consistently reduced.

In addition, to reduce maintenance and machine downtime, the electric motor is equipped with an air-to-air heat exchanger. This integrated and easy system is less maintenance intensive than traditional cooling systems for Diesel engines. The airto-air heat exchanger doesn't use polluted air from the outside which keeps the electric motor protected from dust at all times.

Setting new efficiency standards in 200 t class The R 9200 is the only 200 t class mining excavator using a closed loop swing circuit. The kinematic energy can be saved when the swing motion is used during deceleration to drive the main and auxiliary pumps allowing faster other motions. Further, with an electric drive excavator, the hydraulic power can briefly be higher than the nominal power during the load cycle, which results in better reactivity and shorter cycle times to gain higher productivity.

In order to reduce starting inrush current, all electric Liebherr mining hydraulic excavators are equipped with an autotransformer starting device, reducing inrush current to 2.2x nominal current.

Together with the Liebherr-patented Litronic Plus system for intelligent power management, the R 9200 E achieves super-fast cycle times, the fastest measured at less than 20 seconds. Fitted with a 16.4 yd³ (12.5 m³) HDV bucket and patented Liebherr GET to load material with a loose density of 2.8 lb/ yd3 (1.65 t/m3), the R 9200 E efficiently loads 65 t dump trucks in three passes.

Ergonomic workplace

Accessibility, comfort and safety set the standards for the panoramic Liebherr cabin. The hydraulic control system of the R 9200 is optimized in order to improve combined machine motions. The ergonomically mounted joysticks on the suspended seat armrests allow the operator to precisely position the machine.

In addition, the fully air-conditioned cab is equipped with a pressurization system. This system prevents dust from entering the cabin so that the driver can breathe clean air.

DSC Dredge announces spectacular innovations for the dredge industry

RESERVE, LA — DSC Dredge LLC has built a reputation for designing and manufacturing quality dredges, engineered to meet specific production needs. Based on individual analysis, DSC provides information allowing customers to select the best dredge class and size for their needs. In approximately 50 percent of the cases, DSC custom-builds and tailors the selected dredge for production, efficiency and the material being dredged. DSC's robust engineering, design and automation departments established DSC Dredge as a world leader in customized dredging solutions. DSC Dredge offers outstanding service after the sale, including 24/7 access, even during holidays and weekends and DSC Dredge has the best 12-month new equipment warranty.

DSC's design team listens to customers' needs, examines the production goals and materials and continually imagines ways to improve dredge designs, production and efficiency. Further, DSC contributes to the dredging industry with its focus on education and training with Dreducation®.



DSC Dredge 24

DSC Dredge LLC - Fleet of seven dredge classes.

RockRoadRecycle.com PG 24
July 2018

New Hitachi ZX345USLC-6 ultrashort excavator delivers power and efficiency in tight spaces



MOLINE, IL — Hitachi's ultrashort excavator lineup in North America continues to grow with the introduction of its most powerful reduced-tail-swing excavator – the ZX345USLC-6.

The new ZX345USLC-6 offers increased reach, dig forces, bucket capacity and lift capacity, while simultaneously making it possible to work in tight, confined spaces. With generous legroom, the ZX345US-LC-6 cab features daylong convenience and comfort and is the only full-size cab on a reduced tail swing machine in the industry.

Built with the same toughness as Hitachi's larger mining excavators, the 30-metric-ton ZX345USLC-6 delivers efficiency, reliability and durability.

Efficiency

The ZX345USLC-6 features an exclusive three-pump hydraulic system that provides multifunction performance and the fastest cycle times in the industry.

It also comes with a standard auxiliary function lever (AFL) and control, designed for precise control of all attachments, including thumbs and grapples. The lever enables the operator to precisely and easily move attachments by the "slider" on the right hand of the pilot joystick. Optional auxiliary hydraulic line and proportional reliefs are available, making the machine ready for immediate installation of thumbs or other proportional controlled attachments.

Reliability

The new excavator is equipped with a powerful Certified Final Tier 4 (FT4)/EU Stage IV Isuzu 7.8-liter engine (249 hp) that features integrated, effective engine technologies.

The Isuzu engine employs cooled exhaust gas recirculation (EGR), a diesel oxidation catalyst (DOC) and selective catalytic reduction (SCR). Diesel exhaust fluid (DEF) is injected into the exhaust stream of the engine, runs through a catalyst, and turns the NOx in the exhaust into harmless water vapor and nitrogen gas. The EGR is specifically tuned to further reduce NOx (compared to EPA Interim Tier 4 [IT4]/EU Stage IIIB engines) to meet new emission standards with minimal use of DEF. Additionally, an improved piston design allows particulate matter to be burned in cylinder, so there's no need for a diesel particulate filter (DPF).

Durability

The ZX345USLC-6 undercarriage has been designed with durability in mind. The heavy-duty undercarriage, designed for a 35-metric-ton machine, provides a low center of gravity, greater stability and increased lift capacity.

D-channel side frames house and protect the highly efficient coolers and FT4 engine. The boom, arm and mainframe are so tough, they're warranted for three years or 10,000 hours, whichever comes first.

Uptime

Maintenance for the ZX345USLC-6 is minimized with features such as side-by-side cooling cores, a standard battery disconnect switch and ground-level access to filters. Extended service intervals help maximize uptime, and scheduled maintenance is easy to track using Hitachi's ZXLinkTM system, which comes standard equipped on the model.

ZXLink gives owners the power to optimize their operation and maximize profits. With the support of their dealer, owners can use their data to reduce idling time as well as maximize productivity and uptime. Without ever leaving their seat, they have access to fleet location, functions, hours, fuel consumption, alerts and other essential machine data. Owners can also view location and alert information in the field from iOS or Android devices.

The new ZX345USLC-6 is now available in the United States and Canada.



The heavy-duty undercarriage, designed for a 35-metric-ton machine, provides a low center of gravity, greater stability and increased lift capacity.

Photo courtesy of Hitachi

DSC Dredge from 23 -

Ongoing customer support and operations training are keystones of the DSC Dredge customer relationship.

When customers explained to DSC the value that increased production would mean to their bottom lines, a vision was imagined. DSC leads the way in dredging innovation and strives to be on the cutting edge of useful improvements that change the way dredging is performed. Through the years dredges change — DSC has helped make dredges and the dredging industry more automated and efficient and adapted these changes to work in tandem with other new technology.

In response to this particular request for increased production, DSC Dredge developed spectacular dredge industry innovations. This new dredge design includes two provisional patents: Walking carriages and wide format swinging ladder. DSC engineers imagined a dredge that continually moves forward without cables. This model is the first of a new design concept. This concept allows for continuous uninterrupted production representing timesavings, cost savings and safety advantages since the dredge moves without cables. This dredge recruits advantages from the DSC Shark Class Dredge and Barracuda Class Dredge features.



The newest DSC Dredge LLC dredge design: SHARKUDA™.
Images courtesy of DSC Dredge LLC

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George Sidney, McLanahan president & COO, to retire at end of 2018, succession plan announced



People in the industry



George started with McLanahan upon earning his mechanical engineering degree from the Pennsylvania State University in 1973. Before being named company President in 2004, he served in a variety of positions, including design engineer, sales engineer, engineering manager and several executive roles. George has been actively involved in many mining and aggregate associations. He is a past-chairman of the Manufacturers and Services Division of the NSSGA and a ROCKPAC trustee. In 2017, he was named Grassroots CEO of the Year.

Upon George's retirement at the end of the year, Sean McLanahan's title will change to President and CEO.



George Sidney has announced his plans to retire at the end of 2018.

Photos courtesy of McLanahan

Effective May 1, 2018, Cory Jenson has been named Executive Vice President - Sales and Business Development, a new position that will directly



Cory Jenson has been named Executive Vice President - Sales and Business Development

manage the sales and business development of the company's global offices, as well as overseeing the product management and marketing and commu-



Brian Prenatt will oversee the growth of Mc-Lanahan's product lines through the product management group.

Lanahan's product lines through the product management group, as well as overseeing the company's process engineering and technical standards.

Sandvik Plant Solutions introduces three exciting new ways to purchase crushing & screening plants

The new Sandvik Plant Solutions' offering now provides customers with the opportunity to acquire the plant that is exactly suited to their needs.

By analyzing our current global installed plant base, we have been able to gain valuable insights into the core needs of our customers when it comes to Plant Solutions for mines and quarries. These insights have provided the guiding principles for our development of three completely new plant solutions:

- \bullet FastPlant $^{\text{\tiny TM}}$ Pre-defined plant solution with a fast delivery time of just 12 weeks.
- ullet SmartPlantTM Smart, modular plant solution based on Sandvik SmartStations and automation-ready.
- ullet CustomPlantTM Long-term plant development relationship based on an Early Contractor Involvement (ECI) agreement to create the optimal plant for the customer's needs.

"We've learned a lot about the needs of our customers through this process and have created what we feel is the optimal solution for their wide and varied needs," says Pär Stigmer, director of Sandvik Plant Solutions. Sandvik Plant Solutions provides customers with a more compelling value proposition for the initial plant purchase — and also for the entire lifecycle support of their new plant."

FastPlantTM

Sandvik FastPlants are made for speed — pure and simple. They are based on the concept of giving customers the plant that they need, without unnecessary hurdles or hassle. Based on their pre-definition, the plant can be chosen, quoted and ordered in just one meeting — saving precious time in production for the customer.

SmartPlantTM

Sandvik SmartPlants are a modular approach to the building of plants. Customers can select the SmartStations that meet their crushing and screening needs and place them together to create their



The new Sandvik Plant Solutions' offering now provides customers with the opportunity to acquire the plant that is exactly suited to their needs.

Photo courtesy of Sandvik

plant. SmartPlants are supplied automation-ready and can be upgraded and expanded to accommodate the customer's evolving requirements.

CustomPlantTM

Sandvik CustomPlants are the premier plant solutions on the market today, built with performance, capacity and cost-efficiency in mind. Starting with a comprehensive Early Contractor Involvement (ECI) agreement, CustomPlants are a long-term plant partnership that delivers a new level of integration between the customer and Sandvik.

Sandvik 365

Sandvik 365 is the lifecycle support solution that can be added to every Sandvik plant solution to reduce commissioning time and increase uptime, providing services and support throughout the lifetime of the plant.

The new Sandvik Plant Solutions can be viewed at <u>rocktechnology.sandvik/plantsolutions</u> and are available for purchase now by contacting your local Sandvik representative.

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by Nicholas L. Shires, **CPA**

Tactical Takedown

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John Deere-Hitachi celebrates 30 years of joint venture

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With Dannible & McKee, LLP

Getting to the bottom line

The impact of tax reform on equipment purchasing by Nicholas L. Shires, CPA

Nicholas L. Shire, CPA

The Tax Cuts and Jobs Act (TCJA) was a bill of 505 pages that was signed into law by President Trump on Dec. 22, 2017. The first complete tax overhaul in over 30 years has a far-reaching impact on businesses (both small and large) as well as individuals. In the information outlined below, the focus will

be for construction contractors looking to purchase equipment, whether that is new equipment or used equipment. The impact of TCJA will reap benefits for those looking to purchase long-lived assets but were concerned of the tax costs. There are two key areas of focus for equipment purchases, Section 179 and

Bonus Depreciation, as explained further below.

Section 179 expensing

Section 179 permits taxpayers to elect to fully expense equipment purchases in the year the equipment is placed in service rather than take the expense over the assigned life, typically 5 years for construction equipment. Under pre-Tax Cuts and Jobs Act law, a taxpayer's annually allowable Code Sec. 179 expense could not exceed \$500,000 as adjusted for inflation (\$510,000 for 2017). If qualified purchases exceeded \$2,000,000, the dollar limit had to be reduced by the amount by which the cost of section 179 property placed in service by the taxpayer during the tax year exceeded \$2,000,000 adjusted for inflation (\$2,030,000 for 2017). Therefore, under prior law, if purchases exceeded \$2,500,000 (\$2,540,000 in 2017), the taxpayer could not elect to expense assets pursuant to Section 179.

The Tax Cuts and Jobs Act raises the pre-inflation-adjusted annual dollar limit from \$500,000 to \$1 million and the pre-inflation-adjusted annual beginning-of-phase-down threshold from \$2 million to \$2.5 million. In addition to the increased limits, TCJA expanded the definition of qualified property to include "qualified real property." The Tax Cuts and Jobs Act changes the definition of "qualified real property" by adding roofs; heating, HVAC property; fire-protection and alarm systems; and security systems. This definitional adjustment is not only a tax benefit for construction contractors renovating their own properties, but it should also be utilized as a marketing tool to inform customers of the opportunity to fully expense certain real property improvements.

Bonus Depreciation

Like the Section 179 expense, bonus depreciation provides an accelerated deduction for capital expenditures made during the year. Before the TCJA, taxpayers were allowed to deduct 50 percent of the cost of most new tangible property other than buildings and even some building improvements. Most new computer software was also eligible for the 50 percent deduction. Because of the deduction in the year placed in service, there was an adjustment of the regular depreciation allowed in that year and later years. The "50 percent bonus depreciation" was to be phased down to 40 percent for property placed in service in calendar year 2018, 40 percent in 2019 and 0 percent in 2020 and afterward. The phase down was to begin a year later for certain private aircraft and long-production period property.

Pursuant to the TCJA, for property placed in service and acquired after Sept. 27, 2017, the TCJA has raised the 50 percent deduction to 100 percent. (Appropriately, 100 percent bonus depreciation is also called "full expensing" or "100 percent expensing".) Most importantly for construction contractors, under the TCJA the definition of qualified property has been expanded to include used tangible property. The post-Sept. 27, 2017 property eligible for bonus depreciation can be new or used. This would mean equipment purchased at auction or from used equipment dealers would be eligible for immediate expensing in the first year. This was not allowable under previous law.

While the new depreciation rules are not permanent, the 2018/2019/2020 phase down does not







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RockRoad Recycle.com PG 4 July 2018



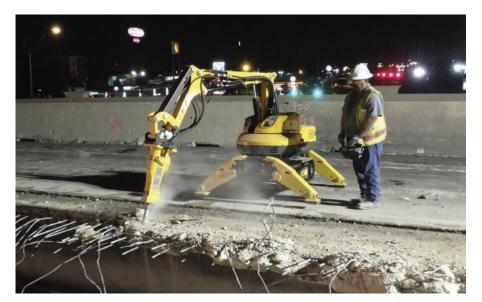
General contractor Lane Construction hired demolition contractor JR RAMON to remove three stretches of 400-feet-long, 3-feet-wide and 6-inch-deep concrete bridge decks so crews could fill the gap between two parallel bridges as well as add a new auxiliary lane on one side.

Photos courtesy of Brokk

If there's one thing most people can agree on, it's that being stuck in traffic is incredibly annoying. It was a problem the Texas Department of Transportation was dealing with on the state's 47th most congested roadway. Cars take about 185,000 trips on the 4-mile-long stretch between Loop 410 NE and Loop 410 S on I-35 in San Antonio daily. The rising congestion levels and demand from area stakeholders made improving the section a priority.

Travel times rose as much as 65 percent during rush hour. Not only that, ramps on opposite sides of the interstate caused additional congestion and safety issues. In one section, trucks entering were commonly forced to immediately cross all lanes of traffic to reach their exit.

TxDOT officials decided on a plan to add one additional lane in each direction, expanding the road to eight lanes, as well as realign several ramps. In addition, the Department of Defense granted \$20 million for the construction of a direct connector for southbound I-35 to I-410 to reduce congestion for traffic headed into the U.S. Army's busiest hospital complex, the San Antonio Military Medical Center. Overall, the improvements would enhance safety and



The Brokk 120D saved JR RAMON President Timothy Ramon considerable time and labor when his team discovered the inner section cut line on the northbound bridge was off by 2 inches.

traffic flow and increase operational capacity by about 33 percent.

The department hired general contractor Lane Construction for the four-year \$61.2 million project and work began in fall 2013.

Several sections along the stretch required widening bridges, and one section involved filling a 20-foot gap between two parallel bridges above a busy highway to allow for the additional lanes. The section also called for a new auxiliary lane. To complete all of this, concrete rails and some of the bridge deck concrete needed to be removed. Lane Construction hired San Antonio-based demolition contractor JR RAMON for that portion of the project, as well as several other bridges.

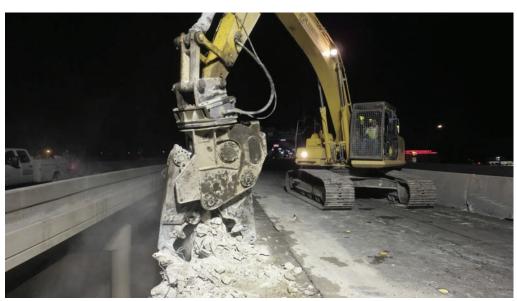
Before connecting the bridges, the contractor would need to remove 3-foottall, 1-foot-thick, rebar-reinforced concrete rails and three stretches of 400-feet-long, 3-feet-wide and 6-inch-deep concrete bridge decks. Two of those stretches were on the inner sides of the bridges and one was on the southbound side's outer section. Each stretch needed to be removed in just three days to minimize traffic impact and, to make it more challenging, the two layers of 3/4-inch rebar needed to remain undamaged so Lane Construction could reuse it to tie into the new concrete decking.

JR RAMON's demolition crews started with the outer section, using an 80,000-pound Komatsu PC360 excavator with a CAT pulverizer attachment to reach up and demolish the barriers from the roadway below.

Next, they removed a 400-foot section of concrete from the southbound bridge's outer bridge deck. JR RAMON used the excavator and pulverizer attachment to weaken the concrete up to the saw-cut concrete line on the first section before workers with hand tools removed the concrete.

The excavator made quick work of removing the concrete but heavily damaged the rebar in the process, twisting, denting and snapping much of it. Tx-DOT assessed the rebar and determined it would need to be replaced because it didn't meet specifications. The process to patch up the rebar was expensive and time consuming, setting the project back several days and costing more than \$100,000.

JR RAMON President Timothy Ramon knew he had to find a way to complete the inner section without causing the general contractor the same headache twice. He also wanted to reduce the labor costs involved with having so many workers remove concrete with hand tools. He turned to Brokk, a manufacJuly 2018 PG 5 RockRoad Recycle.com



JR RAMON used an 80,000-pound Komatsu PC360 excavator with a CAT pulverizer attachment section twice as fast as on the to demolish the 3-foot-tall, 1-foot-thick, rebar-reinforced concrete rails.

turer of remote-controlled demolition machines that had previously helped him solve a complicated project.

"We bought our first Brokk machine, a Brokk 160, in 2012 for a concrete silo job that required precise demolition from the top down," Ramon said. "The unit was so productive that it nearly paid for itself on the first job. I wanted that same type of precision for this project."

Ramon had considered using the B160 for the outer bridge section but realized the electric-powered machine's cords and generator would clutter the single lane of traffic they would be working in, creating a logistical problem. After realizing the high costs of using the excavator for the work, he decided to purchase a new Brokk 120D specifically for the inner

sections. The diesel-powered, cordless machine can run as long as eight hours on a full tank.

Armed with this new tool, JR RA-MON took on the inner sections of the two bridges. Crews again used the excavator to remove the concrete rails, but then moved in with the Brokk machine to demolish the bridge deck concrete. An operator used the B120D's remote control to direct the powerful and precise three-part arm with an Atlas Copco SB 152 breaker to remove the concrete while avoiding the underlying rebar.

The general contractor had a mini-excavator with a breaker attachment on site, so Ramon's crew also used that to remove concrete. They soon realized that although the machine featured similar power to the Brokk, it

lacked the necessary precision for the job. Ramon said because of the machine's small size — it's barely 30 inches wide — they had been skeptical that the B120D could achieve the production rates they needed along with the precision to leave a clean, straight edge, but they were blown away by its performance.

"There was no comparison between the two pieces of equipment. We actually had to use the Brokk machine to clean up and finish the work on the sections where we used the mini-excavator," Ramon said. "The B120D allowed us to complete the inner section twice as fast as on the outer section while leaving the rebar undamaged. We had a crew standing by with hand tools just

in case the edge needed to be cleared of loose debris but, thanks to the machine's precision, we never needed them."

In addition to leaving the rebar untouched, the machine greatly increased productivity. Unlike workers with hand tools, the B120D didn't fatigue, meaning the operator could work a 14-hour shift without tiring from both the work and the Texas heat. This increased productivity as well as safety by eliminating mistakes and injuries caused by tired workers. The operator stood about 6-feet away, monitoring the work a safe distance from flying concrete as well as the 20foot drop to the road below. Ramon said the setup saved him the three or four hours it would have taken in each section just to install tethers for

workers

The B120D also saved Ramon considerable time and labor when his team discovered the inner section cut line on the northbound bridge was off by two inches. Ramon said he operated the Brokk himself to break the remaining concrete in just six hours — a task, he said, that would have taken 20 workers with hand tools to complete in the same amount of time.

Even with the extra work, JR RA-MON crews finished the inner section in just 1.5 days, including cleanup time. In comparison, the outer section took six days. Between the outer and inner sections, JR RAMON removed about 1,050 tons of concrete.

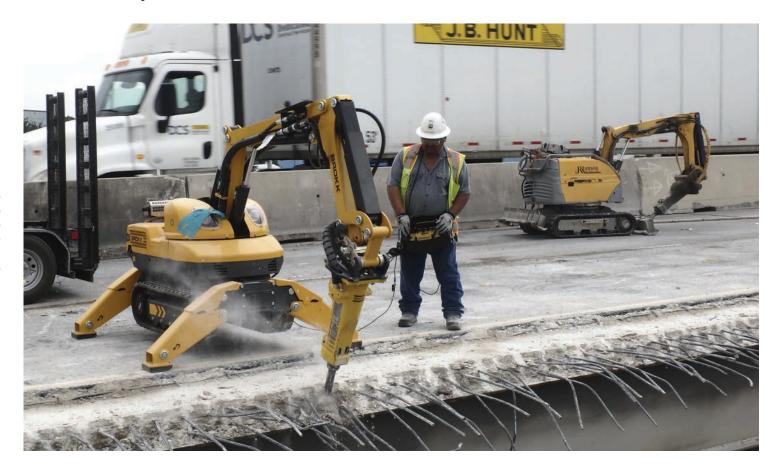
Ramon said the new equipment reduced his labor costs on the second section by 90 percent and strengthened his relationship with the general contractor, making his company a more likely choice for future jobs. He added it also helped his ultimate goal of always improving safety while increasing his bottom line.

After JR RAMON finished its portion, Lane Construction continued working on connecting the bridges as well as completing the other traffic improvements. The original overall project completion estimate was November 2016, but delays moved the expected date to late 2017.

Aaron Boerner is a writer for the construction, demolition, landscaping, mining and aggregates industries.

A JR RAMON operator used the Brokk 120D's remote control to direct the powerful and precise three-part arm with an Atlas Copco SB 152 breaker to remove bridge deck concrete while avoiding the underlying rebar.





RockRoadRecycle.com PG 6

New from Earth & Turf Products, LLC

Earth & Turf Products, LLC announces high-quality forks and dump cart to fit the Category I three-point hitches of compact tractors.

The unique forks give any tractor additional versatility. Their design makes them especially easy to install and to remove, and the tines are attached by lynch pins so they are both completely removable and can pivot upward for space-saving storage.

Two design features of these forks make them an exceptionally good value package:

- The upper link is provided with a hook for use as a sturdy log hitch.
- A receiver built into the frame makes it easy to install a ball hitch for towing when the forks are removed.

The Earth & Turf dump cart has box dimensions of 42 inches wide, 31 inches long, and 11 inches deep. Its Overall Height to the Top Link Connection is 24 inches. Capacity is 8.75 cubic feet, and its weight when empty is 125 Lbs. The Dump Cart moves on 3-inch caster wheels. The cart has a weight capacity of 800 lbs. And can be moved easily on smooth surfaces either empty or with a load.



The tines are attached by lynch pins so they are both completely removable and can pivot upward for space-saving storage.

Photos courtesy of Earth & Turf Products, LLC



The cart has a weight capacity of 800 lbs and can be moved easily on smooth surfaces either empty or with a load.

Bottom Line from 3

apply to post-Sept 27, 2017 property. Instead, 100 percent depreciation applies for property placed in service on or before Dec. 31, 2022. After that, the expense percentage is decreased to 80 percent for property placed in service in calendar year 2023, 60 percent in 2024, 40 percent in 2025, 20 percent in 2026 and 0 percent in 2027 and afterward (with phase down beginning a year later for certain private aircraft and long-production period property).

It is important to note that each state has its own set of rules related to depreciation, and those rules vary. Not every state conforms to the Federal tax laws as written. Even with the potential for nonconformity at the state level, there is a clear opportunity for construction contractors who need to expand their equipment purchasing. Under the new law, contractors can increase their equipment fleet without adverse tax implications, as the likely outcome for in-

come tax purposes is immediate expensing through either the use of Section 179 or Bonus Depreciation. Nicholas L. Shires, CPA, is a tax partner with Dannible & McKee, LLP, a Syracuse, New York based public accounting firm. The firm has specialized in providing tax, audit and accounting service to the construction industry since its inception in 1978. For more information on this topic, you may contact him at 315.472.9127 or visit online at www.dmcpas.com.





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Aquajet Systems introduces specialized training academy to North America

MONROE, WA — Aquajet Systems AB provides how to enhance precision and efficiency. This course North American operators advanced training through its new Aquajet Academy. The Academy's Six Steps of Education training program includes six courses, which cover all aspects of hydrodemolition, from streamlining work to cutting-edge techniques allowing operators to increase jobsite efficiency and safety. Aquajet Systems specialists host the Academy program periodically throughout the year.

"We've always offered product training to ensure ease of use, but on a smaller scale. With the Aquajet Academy, we're helping contractors heighten their skills and advance their businesses with cutting-edge operating techniques," said Roger Simonsson, Aquajet Systems AB managing director. "This program helps hydrodemolition operators increase their bottom line by using the equipment and accompanying attachments to the fullest extent."

The training program incorporates individual courses offering more extensive training and adaptation to each customer's knowledge and experience. Products: During the two-day course operators get to know their hydrodemolition machine from the inside out. The course is both practical and theoretical. The practical portion gives operators hands-on experience setting up and maneuvering the machine while the theoretical course includes a deep overview of the operations manual.

Hydrodemolition: The two-day course focuses on the concrete removal process. Operators will explore the robot's various programable settings and learn also covers tips for increasing safety on the jobsite.

Streamlining work: Aquajet instructors spend two days at one of the customer's jobsites to adapt their training to suit the contractor's specific line of work.

Safety and technique: Often referred to as the most important part of the training program, this one-day course educates operators on the power and risks of the highly pressurized water used in hydrodemolition. It provides tips on how to best calculate pressure and flow and consider reaction force, as well as offers different techniques to get the job done in a safe and efficient way.

Service: Operators spend a full day learning how to maintain and adjust the robot's components to ensure equipment longevity.

Train the trainer: This three-day course makes you a certified Aquajet instructor with the capability and knowledge to hold courses yourself. Requirements to take this course include being a distributor or customer of Aquajet, with at least one year of experience and obtain the required licenses.

Aquajet maintains small class sizes during each course, teaching approximately five students at a time to ensure a high level of individual attention and support. The course can also be adapted to specific operator skill levels and experience. For novice students, instructors will explain hydrodemolition basics before diving into the functionality of the Aqua Cutter robots. Skilled operators experience a more ambitious approach, which includes learning new techniques and specific settings that heighten efficiency.

"Our Aquajet Academy has been a huge success among our customers, with more than 60 companies having participated since we started the program in 2017," said Shawn Kirkpatrick, Aquajet Systems U.S.A. product and application specialist. "It has been remarkable to see the benefits our training has provided operators across the world. Contractors want to do their best while maintaining productivity and safety on the jobsite, and we're glad we can help them do that even better."

For more information on the Aquajet Academy, or to register, contact Shawn Kirkpatrick at shawn@



Aquajet Systems' Six Steps of Education training program covers all aspects of hydrodemolition, from streamlining work to cutting-edge techniques, allowing operators to increase jobsite efficiency and safety.

Photo courtesy of Aquajet



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RockRoadRecycle.com PG8



The EC700CHR excavator uses 346 kW (464 Hp) of power, plus perfectly harmonized hydraulics to make light of the heavy-duty task.

The height of the structure,

itself to being one of the most

in the history of

Rachel Contracting.

Photos courtesy of Rachel Contracting

t. Paul, one half of Minnesota's twin cities rose from the steep bluffs where the Mississippi and Minnesota rivers collide. Once a quiet frontier trading post, the city was soon transformed into an industrial hub. The transition sprouted new enterprises, such as West Publishing Company, which today remains the nation's largest producer of academic and law books.

The lawless also flocked to the city. As described by infamous gangster Al Karpis: "If you were looking for a guy you hadn't seen for a few months, you usually thought of two places: prison or St. Paul." Fellow outlaws, such as Baby Face Nelson and Ma-

chine Gun Kelly, notoriously used the natural caves tunneling under the city as hideouts.

The former West Publishing complex, built in 1886, and the Ramsey County Adult Detention Center (ADC), built in 1979, occupied three blocks in downtown St. Paul. The local landmarks became disused when

West Publishing relocated to the suburbs. The city strained for urban housing, but potential buyers balked the risks of developing such large structures. Instead, the council voted to demolish the vacant complex, market the site and recoup the costs from future income from the new development, projected at \$150 million. When the bidding process was complete, Rachel Contracting, based in St. Michael, Minnesota, was awarded the \$15 million, 94,666 square yards (852,000 sq ft) demolition contract.

Building on the bluff

Established in 2006, Rachel Contracting specializes in earthwork, demolition, utilities and specialty contracting. "We take the jobs that are unusual, the projects others don't want," says CEO Don Rachel.

Work began in November 2015 on the 10-story, seven-building complex. The job covered a variety of applications - from asbestos abatement and excavation, and total demolition to bluff stabilization and erecting a cast-in-place concrete retaining wall along Kellogg Boulevard, a main road in the city's center.

"The first step was to abate all hazardous plus the location of the site lent materials, including asbestos," says Nick Bartemio, project manager challenging demolition projects for Rachel Contracting, adding that more asbestos was uncovered than initially anticipated by pre-engineering studies. Before any ex-

terior demolition could

begin in earnest, bluff stabilization was required to shore up the back wall facing Kellogg Boulevard. Rachel completed this by drilling 5,486 linear meters (18,000 ft) of grouted rock bolt anchors into the face of the bluff. After demolition is completed, Rachel Contracting will build a 457-609 mm (18-24 in) thick retaining wall using 2,777 square yards (25,000 sq ft) of cast-in-place concrete along Kellogg Boulevard.

The height of the structure, plus the location of



The Volvo EC700CHR optimizes safety and stability thanks to its long undercarriage, extra modular counterweight, and boom and arm holding valves.

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the site lent itself to being one of the most challenging demolition projects in the history of Rachel Contracting. "The site sits between a main downtown artery and is nine meters (30 ft) from an active rail line on the Mississippi River-facing side," says Mark Kraemer, vice president of field operations for Rachel Contracting.

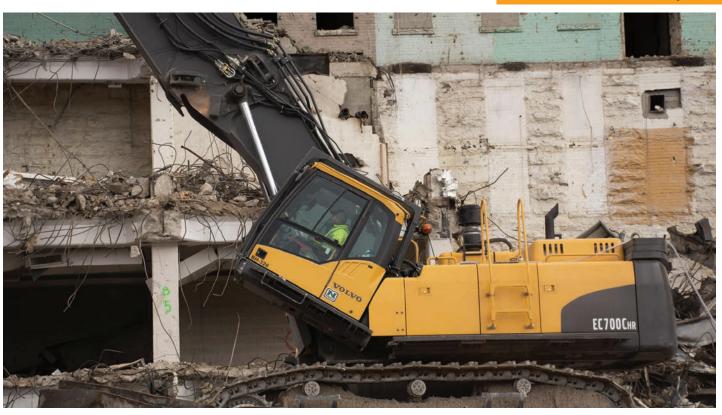
"We knew going into the bid that we could not bring it down by explosives, so the only option was to use a high reach demolition excavator," Kraemer adds. "We looked at competing brands, but we felt more comfortable going with the Volvo. The support from local dealer Nuss Truck & Equipment was a big factor in our decision. We had a short lead time, and Nuss was able to provide the machine very quickly and were on site for set-up and training our operators."

"The high reach allows us to bring this job down in a much more controlled fashion. On a building like this, with thick concrete columns wrapped around steel I-beams, we can cut through them

with the shear without jeopardizing the safety of the building, pedestrians and vehicular traffic," says Randy Shultz, general demolition superintendent at



An innovative design makes it easy for the crew members to change the boom quickly and efficiently.



The 30° tilt offered by the Volvo cab increases operator visibility and comfort.

Rachel Contracting. Reinforced concrete slabs range in size up to 304 mm (12 in) in thickness.

The EC700CHR high reach excavator's added value is its ability to convert to a standard excavator efficiently. The Volvo-patented modular joint design, located in front of the boom cylinders has a self-aligning, hydraulic push-pull pin system that makes changing the boom swift and simple. These features contribute to one less machine on site and keep the EC700CHR from becoming idle.

The high reach boom is converted to a standard boom every two to three days and is paired with a Genesis DemoPro 900 for concrete cleanup. "The conversion enables the machine to work with a 5.4 tonne (12,000 lb) attachment and use at work heights of 18-20 meters (60-65 ft)," says Kraemer. "That height level is our bread-and-butter here in the Midwest. We have it down to less than an hour with two people. Volvo did an excellent job making this machine come apart and reassemble easily."

Rachel Contracting also uses a Genesis GDR 300 demolition recycler and LXP® 300 Logix Processor fitted on three 36 tonne (80,000 lb) excavators for sorting and processing. Over 85 percent of the compound is being recycled and left on site. All concrete is crushed for base or backfill. The steel and ferrous, and non-ferrous metals are recycled and the remainder sent to the landfill.

Zero to 100

The work, which was completed in laTE 2017 demonstrated the power of innovation and a tactical approach, developed by Don Rachel and partners Jerry Rachel, Mark Kraemer and Matt Coz. "We went from zero to \$100 million in projects over 10 years, and today we have over 220 employees," says Rachel.

Rachel owes his success to the right employees and equipment. "This is a very large job in our market and intrigued us for a lot of different reasons, including the history and the challenge of the bluffs. The demo portion is typical for us, but the anchor tie-ins under the city and retaining wall were unusual." Unusual, but not out of scope, as Rachel Contracting has an entire division devoted to earthwork, soil remediation and stabilization.

Most jobs are concentrated in the upper Midwest. Recent demolition projects include the 93,000 square meter (1 million sq ft) 3M plant in Beacon Bluff and the 112,000 square meter (1.2 million sq ft) Brookdale Mall in Brooklyn Center, MN.

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Engcon sees success at Intermat

Engcon saw record booth traffic at Internat 2018, the international exhibition for equipment and techniques for construction and materials industries. Engcon's tiltrotators and gear attachment with EC-Oil automatic oil coupling generated the biggest interest.

Engcon has been manufacturing and selling its tiltrotators, quick couplers, control systems and tools for excavators throughout Europe and Australia for 27 years, and in North America for 11 years through dealers.

Held in Paris, Intermat is one of the world's three largest construction and machine fairs, and in this year's edition, the world-leading tiltrotator manufacturer Engcon conducted a live demonstration with two non-stop excavators. The company also offered a test run on two additional excavators.

Intermat alternates every three years with CONEXPO, held in Las Vegas, and BAUMA, held in Munich. The show was the official launch for an intensive international trade show season for En-

gcon. North American exhibitions include Demonstration Days at Engcon offices on June 16 and July 14.

"It is now full speed for the exhibition season and it is incredibly important for us to attend as many of them as possible. Exhibitions are one of the best opportunities for us to showcase our products and especially talk about our latest news," said Sten Strömgren, communications manager at Engcon Group.



Engcon has been manufacturing and selling its tiltrotators, quick couplers, control systems and tools for excavators throughout Europe and Australia for 27 years, and in North America for 11 years through dealers.

Photos courtesy of Engcon



Engcon conducted a live demonstration with two non-stop excavators.

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RockRoadRecycle.com PG 12

demolition emissions from leaving site The downtown

Mobile dust suppression keeps

location required dust control beyond manual spraying.

pioneer in industrial dust control helped a demolition firm contain fugitive dust emissions during the teardown of a five-story concrete parking deck in a densely populated area. River City Demolition used a self-contained and mobile DustBoss® DB-60 Fusion® manufactured by BossTek to suppress airborne dust created by the jaw processor and falling debris. The result was adjustable wide-area control of airborne and surface dust that reduced the need for manned hoses and maintained the air quality needed to comply with regulations.

From the outset, the planners realized that the downtown location of the parking deck would require dust control beyond the conventional approach of manual spraying with a fire hose. "With occupied buildings on two sides and city streets on the other two, we wanted to find the best method available to suppress the demolition dust and prevent its migration," observed Operator/Estimator Josh Runyon. "We knew our water trucks could help control surface dust on the ground, but our big concern was finding a way to address airborne dust, something that could knock down particles and keep them on-site."

Because of the close-in location and confined space, River City crews decided to use a jaw processor to pulverize the concrete and take the parking decks down a section at a time. That helped avoid dust clouds from large sections falling at once, but

Runyon stressed the need for containment when he spoke to BossTek Sales Manager Mike Lewis. "When Josh called us, we had a Dust-Boss® DB-60 FusionTM on hand,

which is one of our larger designs that's equipped with its own generator for locations without convenient access to power," Lewis commented.

With all components mounted on a road-worthy trailer, the system gave River City crews the versatility to position the fan-driven unit wherever it was needed on a given day. The water source was a municipal hydrant located nearby, fed by a standard 2-inch (50.1 mm) hose.

The DB-60 Fusion forces water through a circular stainless steel manifold with 30 atomizing spray nozzles, then launches millions of tiny droplets with a powerful 25 HP fan that produces 30,000 CFM (849.50 CMM) of air flow. Atomized mist droplets of 50 to 200 microns in size are thrown out in a 200 foot (60 meter) cone at an adjustable 0° to 50° elevation angle, capturing airborne dust particles and dragging them to the ground. Unlike industrial sprinklers used for the same purpose, which can require 500 GPM (1893 LPM) or more of water, the DB-60 uses only ~23 GPM (87 LPM).

Rather than have personnel handling hoses to suppress the dust, the single atomized misting unit delivers 62,800 square feet (5,834 square meters) of coverage, while using far less water than hoses and sprinklers, helping contractors avoid over-saturation and run-off. The unit is paired with a 45 KW gen set featuring a John Deere Tier III Flex

engine with a 100-gallon fuel tank, allowing up to 24 hours of runtime. The efficient diesel engine delivers 480 Volts (60 Hz) with a full load current of 46 amps.

At just 80 inches (2.03 meters) wide, the system can be placed virtually anywhere dust suppression is needed and adjusted based on changes in wind or work activity. The optional dosing pump is powered from the standard 120V electrical outlet on the gen set, allowing operators to precisely meter surfactants or other additives. The unit's versatility makes it suitable for uneven ground, as well as open spaces or tiered terrain.

Water sources can vary, and the unit requires a constant supply pressure of just 10 PSI (.069 BAR). Standard municipal water pressures are generally around 40-50 PSI (2.76-3.44 BAR). The water is



Once the DB-60 is positioned as needed, it can run unattended all day.

delivered to the atomized misting unit through a hose with a cam-and-groove quick disconnect coupling leading to the booster pump. The pump adds approximately 150 PSI (10.34 BAR), with a maximum of 250 PSI (17.23 BAR), depending on the inlet pressure. For use with a non-potable water source, the Fusion can be equipped with a number of filter options.

From the beginning, Runyon's suspicions proved correct. "It was one of the dustiest projects I've ever worked on," he continued. "But the DustBoss did a great job. We could locate and aim it perfectly each day, and neighbors seemed pleased with the dust management. In fact, we didn't receive a single dust-related complaint during the entire 2-1/2 months on the job."

For more than a decade BossTek has been an innovator in dust suppression, developing a wide range of equipment and accessories that enable atomized mist technology to control fugitive particles for applications in demolition, construction, waste and scrap handling, recycling and landfills. Recently the company has extended its expertise to odor management solutions using similar technology, which distributes safe and environmentally friendly topical and airborne deodorants. Headquartered in Peoria, IL (USA), the company's dust and odor control units are designed and manufactured in the USA and delivered to customers around the world, with its equipment sold to users in 40 different countries to date.



The atomized misting unit can deliver up to 62,800 sq. ft. (5,834 sq. meters) of coverage.

Bejac Corporation opens new location in Nevada

Bejac Corporation is pleased to announce the opening of their new location in Las Vegas, NV. The new facility will support operations with service bays, warehousing, wash rack and secure paved yard. This new branch offers heavy equipment for sale or rent, plus an extensive parts inventory and on-site or in shop service for maintenance and repairs. The new Las Vegas branch is located at 3838 Octagon Rd.

"We are proud to be expanding our operations and we look forward to providing a wide range of equipment options to companies in the area," says Ron Barlet, president at Bejac Corporation. "We have assembled an experienced team with strong ties to the area. We are seeing tremendous growth in the Las Vegas area and decided it was time to bring our experience of over thirty years in the industry to Nevada."

Bejac has provided heavy equipment for a range of projects throughout Nevada, including the demolition of the Riviera Hotel and currently for the reconfiguration of the I-15 "Spaghetti Bowl" interchange.

The new Las Vegas branch will carry the complete lines of construction equipment from Liebherr, shredders, screens and separators from Komptech, grinders from Diamond Z, Genesis attachments and



People in the industry

rock drilling tools from Epiroc to meet demands in the construction, demolition, forestry and recycling industries. Bejac also stocks an extensive inventory of parts to ensure quick deliveries. Their certified technicians are available for both routine maintenance and emergency repairs. Bejac maintains a rental fleet to provide equipment on a short or long term basis. For more information, visit their website at www.bejac.com.



This new branch offers heavy equipment for sale or rent, plus an extensive parts inventory, and on-site or in shop service for maintenance and repairs.

Photos courtesy of Bejac



The new facility will support operations with service bays, warehousing, wash rack and secure paved yard.

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RockRoad Recycle.com PG 14 July 2018

John Deere-Hitachi celebrates 30 years of joint venture by Jon M. Casey

With the fabrication plant in the background, a lineup of completed John Deere and Hitachi excavators is parked, awaiting transport to their respective new owners.

Photos by Jon M. Casey

ohn Deere-Hitachi Construction Machinery Corporation celebrated the anniversary of their 30-year joint venture by hosting a three-day event May 17-19 at their Kernersville, NC manufacturing and assembly facility. Activities included a media day, a customer appreciation day and an employee celebration on Saturday the 19th. On May 17, Deere-Hitachi President Jonathan Chase welcomed media guests for a day of equipment demonstrations followed by a plant tour. Attendees were able to see the manufacturing process from "Steel to Real" (start to finish) because the plant was in full production during our visit.



Jonathan Chase, president of John Deere-Hitachi, welcomed media representatives to the 30th anniversary celebration that featured an outdoor equipment demonstration and plant tour.



In the assembly plant, workers begin the assembly process by installing wiring harnesses into the excavator's mainframe

Chase said the 30-year Deere-Hitachi partnership is unlike any other joint venture in the industry. "It is a testament to the longstanding mutual respect and dedication of our teams. Combining the strength of Hitachi's world-leading hydraulic excavator technology with the resources and might of the 180-year-old John Deere brand, the alliance produces excavators for the world's best customers."

Chase went on to explain how the two companies began collaborating in the 1960's. In 1983, John Deere and Hitachi entered an OEM supply agreement for excavators. Five years later, they began their joint venture in Kernersville, NC. In 1998, they began building complete units at the plant rather than just supplying the booms and arms for both products. Between 1998 and 2012, the new joint venture established additional ventures including Deere-Hitachi Specialty Products (DHSP) in Lang-

ley, British Columbia, Canada. There they produce Hitachi and John Deere forestry swing machines ranging from 26 to 46 metric tons.

In 2002, the companies signed an Integrated Marketing Agreement to help simplify the sales and distribution of both lines. This agreement covers marketing in North, Central and South America. It includes construction and forestry equipment, and Hitachi mining equipment. This includes mining shovels and 200-300 ton class haul trucks, which are manufactured in Japan.

In 2011, another joint venture, DHB, was established in Indaiatuba, Brazil. At this 247,570 square foot facility, Deere-Hitachi produces mid-size excavator models for both brands in sizes ranging from 16 to 35 metric tons.

In 2012, Deere-Hitachi doubled the size of their North Carolina facility by building a new assembly





At this welding workstation, the excavator track frame is placed on a lift that allows welders full access to any part of the equipment to be welded.

plant, adjacent to the existing one. Together, the two sites encompass one million square feet, where 800 employees build excavators in the 13 to 47 metric ton range. Production of the largest models — the $47~\mathrm{MT}$ units — began in 2016. Recently, to better serve Latin American countries, John Deere and Hitachi opened a new 115,000 square foot regional parts distribution center in Miami, FL.

Plant tour

Following a morning equipment demonstration, which we will feature in future articles, the group first toured the original facility, which is laid out for receiving and cutting steel to be fabricated into basic excavator components such as chassis frames, booms and track frames. The ISO certified facility relies on a unified effort of DH-LEAN manufacturing and the KAIZEN and 5S processes, to produce quality products safely. While readers will be familiar with the LEAN manufacturing process, the Kaizen system "aims to eliminate waste in all aspects of an organization through standardizing activities and processes." Additionally, the 5S program is part of the LEAN manufacturing idea that focuses on having visual order, organization, cleanliness, standardization and safety. The Kernersville plant prides itself on its safe work environment and cleanliness.

At the end of each shift, work team members are expected to tidy up and sweep their entire work area. They are also expected to prep the jobsite for the next shift of workers. More importantly, all the tools needed for each

stage of the job are made available on clearly marked tool boards that are positioned within the worker's immediate reach. Accordingly, the workers are to make sure that all of the tools have been returned to their respective, designated spots on these boards.

Moving past one of the sites where major welding is taking place, we are told that this facility employs more than 200 welders in addition to the robotic welders that are placed in various strategic locations. Each weld joint is ultrasonically tested for quality and integrity. If any welds fail to meet the quality standards, the original welder is required to make the appropriate changes to bring the component up to Deere-Hitachi standards.

Each unit is tracked throughout the fabrication and assembly process with RFID unit tracking that gives real-time reporting to operators. This precise method of tracking provides operators with instructions specific to each unit order. With this kind of precision, Deere-Hitachi strives to build a unit to order and they are able to take a retail order and have a finished product within 30 days. While they establish a 12 month forecast and production plan, they prepare a 10-day line up in advance of the actual production. When this "build to order" process begins, the excavator goes from "Steel to Real" in just eight days.



Welders work on an excavator track frame in the fabrication plant.



This recently refurbished JD 200LC excavator is the original, first unit manufactured at the Kernersville, NC plant back in 1988. The excavator was located, acquired and restored to original condition in preparation for this 30th anniversary event.

RockRoad Recycle.com PG 16 July 2018



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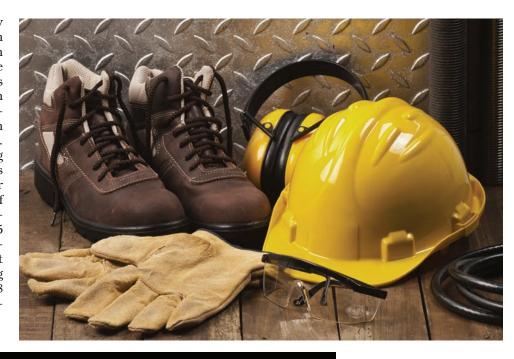
July 2018 PG 17 RockRoad Recycle.com

ABC calls for more effective and collaborative safety regulations

WASHINGTON, D.C. In testimony before a subcommittee of the U.S. House Committee on Education and the Workforce, Kwest Group President and Chairman of the Associated Buildand Contractors (ABC) National Safety and Health Committee Ryan Odendahl called for a collaborative effort between industry and the federal government to increase workplace safety and promote economic opportunity in the United States.

"Leaders in our industry are striving to drive a culture of accident prevention," Odendahl told members of the Workforce Protections Subcommittee at a hearing titled Regulatory Reform: Unleashing Economic Opportunity for Workers and Employers. "I believe that all accidents are preventable, and the right leadership and culture — those that invest in employee safety education and engagement — will lead to safer projects, increased economic output, and success in our industry."

As a member of ABC, Kwest Group participates in the Safety Training Evaluation Process (STEP), which allows firms to measure their safety processes and policies and learn how to improve safety programs already in place on their jobsites. best-performing ABC STEP participants are 670 percent safer than the U.S. Bureau of Labor Statistics industry average, with an 85 percent reduction in Total Recordable Incident Rates (TRIR), according to the association's 2018 Safety Performance Report.





"The collective goal of zero harm can best be achieved as a collaborative effort between regulators and industry professionals." Odendahl said, "Our companies and industry experts, I firmly believe, are anxious to share their valuable experiences to promote workplace safety."

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RockRoadRecycle.com PG 18 July 2018

Epiroc IPS system takes hydraulic breaker performance to new level



Epiroc introduces another first in hydraulic breaker technology. Many of the company's heavy hydraulic breaker attachments now feature the patented Intelligent Protection System (IPS). Seamlessly combining Epiroc's AutoControl and StartSelect functions, the fully automated system provides simpler, more efficient and more economical breaker operation.

AutoControl and StartSelect have been popular features on Epiroc hydraulic breakers for years. AutoControl optimizes breaker performance by automatically adjusting the piston stroke length. The StartSelect system offers manual switching between two modes. AutoStart mode enables easy positioning at the beginning of the breaking cycle, while in AutoStop mode the breaker stops automatically to avoid blank firing at the end of the breaking cycle. Epiroc has taken these features to a higher level by combining them in the Intelligent Protection System (IPS).

IPS means no manual switching

IPS ensures that the hydraulic breaker always starts in the AutoStart mode. When the contact pressure between chisel and material increases and AutoControl switches from a short piston stroke to a long piston stroke, IPS switches automatically to

the AutoStop mode. When the chisel breaks through the material, the breaker automatically shuts off and prevents blank firing.

Simpler, faster breaking with less wear and more uptime

IPS makes the breaking process even simpler for the operator by automatically adapting the breaker's operating behavior to any working condition. Uptime is increased because, with its fully automated functionality, IPS requires no operator intervention or reaction — and thus no work interruption.

The system permits more accurate and significantly faster positioning of the breaker thanks to the centering effect, and avoids blank firing that often results in tool damage. This also eliminates mechanical strain on the carrier and extends the life of all wear components. The physical load on the operator is minimized as well.

Heavy hydraulic breakers with IPS Epiroc HB 2000, HB 2500, HB 3100, HB 3600, HB 4100 and HB 4700 are equipped with IPS. During 2018 all other heavy hydraulic breakers in the Epiroc range will incorporate the unique system.

For more information, visit www.epi-roc.com.

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The system permits more accurate and significantly faster positioning of the breaker thanks to the centering effect, and avoids blank firing that often results in tool damage.

Photo courtesy of Epiroc









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New Liebherr telescopic cranes to become part of Bigge rental fleet



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People in the industry

HOUSTON, TX — Starting in July of 2018, Bigge's telescopic crawler crane count will be increasing by three. Bigge has purchased one LTR 1100 and two LTR 1220s from the Liebherr Group. This purchase allows Bigge to account for a larger share of the 245 US ton tele-crawler market and reflects their commitment to providing best in class equipment to all customers.

The Liebherr LTR 1100 has a maximum lifting capacity of 110 US tons. These cranes have fast self-assembly with no assist crane needed and possess a retractable telescopic boom. The LTR 1100 tele-crawler is equipped with a diesel engine which powers the diesel-hydraulic crane drive, and has Liccon 2 technology allowing the crane to have "load sensing control" among other simultaneous operation features.

The LTR 1220 has a lift capacity of 245 US tons and employs a self-assembly mechanism like the LTR 1100. According to Bigge Vice President, Brian Noga, "We decided to bring more of the LTR Liebherr series into our rental fleet because of their speed and efficiency at job sites. Time is money and speed of assembly saves our customers both. The ability to retract the boom, to pick and carry and ease of transport allows for maximum up time and maneuverability in projects." You can watch the LTR1220 self-erect itself in this Liebherr video. Both the LTR 1100 and LTR 1220s are expected to be available for rent in July in Bigge's California and Houston locations.

Since 1916, Bigge Crane and Rigging Co. has been the premier provider of crane rentals, crane sales, and specialized heavy lifting projects across America. Headquartered in the San Francisco Bay Area, Bigge operates a strategic network of seventeen service locations nationwide, allowing them to provide logistical and field support throughout the U.S.

Bigge offers quality new and used cranes for sale or rent, and has more than 1,000 cranes in its rental fleet. Safety, teamwork, passion, and innovation are part of Bigge's core values. To learn more about Bigge's crane rental, crane sales, and crane parts divisions please visit: bigge.com.



Headquartered in the San Francisco Bay Area, Bigge operates a strategic network of seventeen service locations nationwide, allowing them to provide logistical and field support throughout the U.S.

Photo courtesy of Bigge Crane and Rigging Co.

RockRoadRecycle.com PG 20 July 2018





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DEWALT® adds to its OSHA Table-1 compliant solutions

TOWSON, MD — DEWALT® announces the Dust Box Evacuator (DWH079D) and Stop Bit Head Nozzle Kit (DWH003SBH), two new application-based OSHA Table-1 compliant solutions for SDS Plus Rotary Hammers.

The Dust Box Evacuator empties onboard dust boxes, such as the DWH302DH, which is used with any DEWALT® on-board dust extractor, and is designed to reduce exposure to silica dust and spills, making it an easy solution to dispose of concrete dust collected with any of the DEWALT OSHA Table-1 compliant onboard dust collection systems. The Evacuator is AirLock™ connector ready, making it an easy attachment to add

to any dust extractor fitted with a DEWALT AirLockTM connector. It easily connects directly to the DEWALT 10 Gallon Wet/Dry HEPA/RRP Dust Extractor (DWV012) and 8 Gallon Wet/Dry HEPA/RRP Dust Extractor (DWV010), or any dust extractor fitted with a DEWALT AirLockTM connector. The Dust Box Evacuator can rest on top of the DWV012 and DWV010, serving as a centralized dust box emptying station.

This Stop Bit Head Nozzle Kit includes a Stop Bit Head, Standard Bit Head and Nozzle Body which work with the DEWALT® Onboard Dust Extractor (DWH-303DH) which is compatible with the 20V MAX* XR 1" SDS Plus Rotary Hammer (DCH273). This allows for tool-free bit head replacement (bit sold separately). A used or worn bit head can be replaced in seconds by removing the old one and snapping on a new one. The kit can be used with an Onboard Dust Extractor for an OSHA Table-1 compliant solution when drilling with either conventional SDS Plus Bits or Stop Bits to install virtually any concrete anchor system, including MINI-UNDERCUT+TM and Smart DI+® anchors.

Coming in summer 2018, the Dust Box Evacuator and Stop Bit Head Nozzle Kit will be available where DEWALT products are sold.



The Evacuator is AirLockTM connector ready, making it an easy attachment to add to any dust extractor fitted with a DEWALT AirLockTM connector.

Photos courtesy of DEWALT



Coming in summer 2018, the Dust Box Evacuator and Stop Bit Head Nozzle Kit will be available where DEWALT products are sold





For more information please contact us

Tel: +1 502 736 5233 Email: evoquip@terex.com



RockRoadRecycle.com PG 22 July 2018

KINSHOFER Multi-Quick Processors offers versatility and industry-leading jaw change-out times

SANBORN, NY - KINSHOFER, a global manufacturer of high-quality excavator and loader crane attachments, offers its Multi-Quick Processors (MQP), featuring best-in-class cycle times, power, jaw change-out times and power-to-weight ratio. The attachments allow demolition and recycling industry contractors to use one attachment with several jaw sets instead of buying several tools for different applications. Contractors can choose from six to eight jaw sets, depending on which of the four MQP models they choose, including dedicated concrete, steel or tank jaws, as well as combination and specialty jaws.

"We know that by enabling contractors to complete more jobs with fewer pieces of equipment, we boost their profitability and expand their businesses," said Francois Martin, KINSHOFER North America general manager. "The KINSHOFER Multi-Quick processor is the ultimate tool to do just that. Like all of our products, the processor helps customers do more with less."

KINSHOFER's MQP features the company's DemaPowerTM cylinder technology. The cylinder uses four chambers instead of two found, resulting in 20 percent more surface area within the cylinder. That allows the MQP to exert up to 25 percent more power from a smaller attachment, resulting in the best power-to-weight ratio in its size class. This means, for example, that a section of concrete that may take a competitive attachment five or six "bites" to break through only takes the KIN-SHOFER MQP one or two. Higher power in a smaller tool also improves efficiency and performance in high-reach demolition, a practice that's becoming more common in the U.S. This is both because contractors can use a smaller

carrier with a higher-powered attachment and because the attachment's light weight and superior cylinder technology improves fuel efficiency while the excavator arm is fully extended.

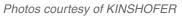
KINSHOFER's double acting speed valves and innovative cylinder technology also gives the MQP superior jaw closing and opening speed — cycle times as fast as 5 seconds. Competitive models use a single-acting speed valve that allows only for a fast opening speed or closing speed, not both. With the attachment's fast cycle times and high power, contractors can complete jobs as much as 20 percent faster, improving ROI.

Contractors can change KINSHOFER MQP jaws faster, easier and more safely than competitive models thanks to the company's DemaLink $^{\text{TM}}$ system. Operators only need to manually remove one pin from the attachment during change-out, compared to three with many competitors. The other two pins are removed hydraulically from the safety of the cab. This not only removes the hassle of pounding out three pins, but also virtually eliminates the danger of the jaw falling and injuring a worker after the last pin is removed. In addition, DemaLink allows two people, or a single skilled operator, to switch out jaws in minutes and get back to work quickly.

KINSHOFER's jaw offerings include the Combi jaw for primary demolition and a mixture of concrete and steel; the Demolition jaw for primary demolition of heavy concrete structures; the Pulverizer jaw for primary or secondary demolition, pulverizing concrete during or after the job, as well as some steel cutting; the Steel jaw for primary and secondary demolition of steel structures and scrap; the Tank Shear jaw for primary and secondary demoli-



KINSHOFER offers its Multi-Quick Processors (MQP), featuring best-in-class cycle times, power, jaw change-out times and power-to-weight ratio.





With the attachment's fast cycle times and high power, contractors can complete jobs as much as 20 percent faster, improving ROI.

tion, including demolition of tanks and cutting steel plates; and the Universal jaw for primary and secondary demolition of concrete decks.

The MQP Steel and Combi jaws feature the company's DemaGuide™ system, which uses a guide plate to provide additional stability at the pivot point. The extra stability means greater cutting efficiency and precision. The cylinder also features a trunnion design, ensuring compactness, a better center of gravity and an optimal closing force curve. Once the shims show signs of wear, maintenance crews can adjust the jaw tolerance by simply tightening the main pin. The shims are replaceable in a few simple steps, including loosening the main pin nut, taking the main pin out and removing the jaw. This design also reduces the need for contractors to buy additional bushings and pins because the components can be re-used when replacing the shims, where operations using other manufacturers' multi-quick processors have to torch out the pin and replace both pin and bushing.

KINSHOFER reinforces the MQP with twin rotation motors. This boosts rotation power and reduces the risk of the attachment shifting or rotating on its own, causing potentially dangerous situations. The MQP also includes a safety system that reduces the risk of dangerously high pressures within the rod cylinder.

To reduce replacement costs and service downtime, KINSHOFER manufactures all wear parts for easy onsite replacements and exchanges across jaw types. In addition to offering ex-

changeable cutting edges, an industry standard, KINSHOFER features crusher attachment teeth that can be quickly replaced on site. Competitive units often require putting the attachment on a truck and taking it to a shop for teeth replacement, which can take four to five days. The teeth are also highly robust, especially compared to competitive exchangeable teeth. This ease of replacement combined with KINSHOFER's performance-enhancing features delivers a low cost of ownership and fast ROI. Additionally, the company designs the tool's oil distributor to include an extra channel to allow for water spray or grease systems.

The KINSHOFER MQP also includes features to prevent carrier damage in the event of a rotation motor breaking. Engineers designed the tool with rotation circuit filters to catch small pieces of metal that can break off rotation motors and travel through the lines into the valve and then the tank, a problem that can cause \$10,000 to \$20,000 in damage.

In addition to jaws focused on demolition and recycling applications, KIN-SHOFER offers a specialty MQP-Wood jaw for quickly and safely cutting down trees in forestry applications. The manufacturer is also developing an MQP-Extreme jaw for heavily reinforced or thick concrete. The jaw features additional ripper tools for better concrete penetration. The MQP-E boasts higher closing force than any other multiquick processor jaw in the world.

The <u>KINSHOFER MQP</u> is suitable for 18- to 65-ton carriers.



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July 2018 PG 27 RockRoad Recycle.com

Cat® B-Prefix hammers feature low owning and operating costs, versatility, ease of use

Cat® B-Prefix hydraulic hammers, available in B4(s) and B6(s) silenced and B4 and B6 non-silenced versions, are designed for "plug-and-play" operation with a range of compact equipment — while delivering optimum life-cycle value. The new hammers are suited for skid steer loaders, multi-terrain loaders, compact track loaders, mini hydraulic excavators (3- to 8-ton operating weights), and backhoe loaders working in a range of construction and light-demolition applications, including site prep, landscaping, masonry, and concrete breaking. The B-Prefix hammers use a simple design that ensures reliability, versatility, ease-of-use and maintenance. As a package solution, the matching Caterpillar-designed hydraulic kits are also offered and the best fit for Cat machines providing customers a breaker package with superior design and benefits.

Quality engineered

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- Flat-top mounting enables compact working envelope and compatibility with a full complement of brackets to suit preference of coupler, linkage kinematics, or machine size
- Bushings are field-replaceable and lower bushing



The new hammers are suited for skid steer loaders, multi-terrain loaders, compact track loaders, mini hydraulic excavators (3- to 8-ton operating weights) and backhoe loaders.



Cat® B-Prefix hydraulic hammers are designed for "plug-and-play" operation with a range of compact equipment.

Photos courtesy of CAT

can be rotated 90 degrees for improved wear performance

- Included toolbox contains charging kit, hammer paste and spare parts
- Housings are designed to facilitate common maintenance items. Grease fitting and gas pressure check point are easily accessed with hammer on machine
- Gas-fired operation cycle delivers consistent, long-term high production

Major components

- Cylinder, back-head, front-head, piston and tool are manufactured with high quality materials and processes
- Heavy-duty housing construction protects against breakage and wear

- Piston transfers long shock waves into material; piston diameters are matched for maximum energy transfer; piston design and surface finish provide superior oil retention and seal life
- Inward type oil control valve has high structural integrity and low failure rate
- Interchangeability between H-prefix and B-prefix

Tool types for the new hammers include moil, cone, parallel and transverse chisel and blunt, allowing the hammer to be adapted to an extensive range of applications.

To view the top-mount product specs, visit their website.

Larson Electronics releases 30 foot 600 volt explosion proof cord reel for hazardous locations

KEMP, TEXAS — Larson Electronics recently released a 100-foot 16 AWG SOOW explosion proof cord reel with a tool tap for Class I, Division 1 and Class II, Division 2 environments that is rated for 30 amps, 600 volts for 1-4 conductors, and 250 volts for 5-12 conductors. This reel features a Twist-n-Lock plus receptacle with ground fault protection and is ideal for use with droplights and tools in hazardous locations where connection to fixed receptacle is unavailable, impractical or unsafe.

The EPLRT-100-HR-GFI from Larson Electronics is a 100-foot 16 AWG SOOW explosion proof cord reel rat-

ed at 30 amps. The cord reel features a matching Twist-n-Lock plug receptacle with ground fault protection for safety during use. This unit is rated for 30 amps, 1-4 conductors 600 volts, and 5-12 conductors 250 volts.

The cord reel is constructed of modular components and utilizes an integral spring actuated ratcheting mechanism for positive cord management housed within the explosion proof threaded slip ring enclosure. This explosion proof cord reel comes with a four-roller adjustable cable guide and ball stop. The EPLRT-100-HR-GFI is approved for both indoor and outdoor use and is

built to UL 508 table 36.1/NEC standards. The reel is NEMA 7 and NEMA 9 compliant, built with rugged fabricated steel and a cast aluminum slip ring enclosure, providing users with a durable and reliable cord reel that can survive harsh conditions.

"The EPLRT-100-HR-GFI provides operates with a cord reel that's safe to use in explosive environments," said Rob Bresnahan, CEO of Larson Electronics LLC. "The four-roller adjustable cable guide and ball stop makes the cord easy to extend and retract, and eliminates tripping and other hazards associated with excessive cord length."



The cord reel features a matching Twist-n-Lock plug receptacle with ground fault protection for safety during use.

Photo courtesy of Larson Electronics

RockRoad Recycle.com PG 28 July 2018

Preparing for and managing blasting complaints, gives blasters additional confidence



Keith Best, regional manager for Sauls Seismic, LLC, gives an overview of how to deal with and how to avoid blasting complaints.

Photos by Jon M. Casey

ow to respond to, handle and avoid blasting complaints is always something to consider when going about blasting projects, whether they be in quarry applications or at construction sites. According to representatives from Sauls Seismic, LLC and the law firm of Montgomery, Rennie & Jonson, there are a number of items to consider before and after blasting as a way to handle most problems that might arise. These ideas were presented at the 2018 Mine Blasting Safety and Application seminar Jan. 17 and 18 at the MSHA Academy in Beckley, WV.

Jeffrey Taylor, president of Sauls Seismic, LLC said that one of the best ways to help prevent blasting complaints is to fully implement a site-specific blast plan that includes the blasters, supervisors, and helpers. The planning should consider production issues and neighboring properties. Planners should recognize that conditions change with every shot. Setting a safe blast area for each blast is also very important. He said internal limits on peak particle velocity (PPV) and air blast levels should be considered at 50 percent of the legal limits or below. Blasters need to predict the PPV of every blast since flyrock damage is a primary source of complaints.

Ralph Burnham, an attorney for Montgomery, Rennie & Jonson who specializes in blasting litigation, said another important tool is a pre-blast / existing condition survey. Some states might require it, but he recommends it irrespective of what the law requires.

He said that a third party survey company is the best resource for this part of the blast project. Ultimately, taking a survey beyond the minimum required distance for the blast and doing the survey in a timely manner, is important.

Common causes of flyrock include excessive ex-

plosives, voids or mud seams, loading into or too close to cracked holes, and insufficient burden. Other causes can include improper delays on blast timing, blast hole deviation, improper hole placement and lack of communication. These are all reasons to enlarge the secured blast area during a blast.

High-risk projects like blasting around schools, hospitals, government buildings, or those in close proximity to populated areas need to be given special attention. These tend to generate more potential claimants. Not surprisingly, local awareness increases the chances of complaints after a blast.

Burnham said, "When you are drafting your site-specific blast plan, you need to do your homework. Accumulating the background research that is necessary in this community will help prepare you. Not only will you look at the geology, but there are other considerations as well. You need to know the local politics, the previous opposition to the project, were there previous companies that were working on the project that had a bad reputation in the community or had a previous incident that has created a "hornet's nest" for your company."

"A good way to head this off is to have a proactive community relations program," he said. "One way to implement this is to send out introductory letters. Another is to host community meetings. The independent third-party pre-blast survey is a good way to initiate this process. Having them as good listeners when they are out doing the survey can be extremely helpful."

Taylor added that there are new technologies that can work together with good planning to help reduce post blast incidents. Equipment such as electronic detonators, signature hole analysis giving site-specific timing and 2-D or 3-D laser profiling work, will help give good engineering specifications

for a perfect ratio of explosives to rock mass.

Other technology includes drone blast design, site security technology and new GPS drilling equipment that provides added accuracy to help eliminate human error.

Crack displacement monitors are another helpful tool. Attorney Kelly Ratliff, also representing Montgomery, Rennie & Jonson, gave an example where work near an older school provided an opportunity for the school to file a claim against a contractor. Since the blaster used monitors, he had the recorded data from the crack displacement monitors. This provided a true picture of what took place and the school dropped the claim. "Had we not had that information, there would have been no way we could have convinced them to drop the claim," he said.

Ratliff said the shot reports should be completed as soon as possible after a shot. The report should be finished before the blaster leaves the jobsite, if possible. The blaster should focus on providing a complete, accurate and legible document. A second-party review of the shot reports, whether in-house or by computer, would also be helpful. "Corrections should be made immediately," he emphasized.

Third party seismic monitoring is also desirable. This eliminates the "fox guarding the henhouse" perception. The data can be provided quickly and stored indefinitely. Following the ISEE Field Practice Guidelines to Installation of Seismographs should not be underestimated.

"In the end, challenge the claim," said Ratliff. "Do not ignore the complaint. In some states, there are laws that provide for punitive damages if it looks like the blaster is not taking the claim seriously. A complete and integrated complaint handling and

documentation process is important. A team approach that allows management, employees and contractors to consistently promote and follow proper methods and procedures is the best way to minimize problems."

Earlier in the day, Keith Best, north regional manager for Sauls Seismic, LLC, talked about ways to handle complaints that are bound to come in. He said the tendency for the media to often portray blasting and construction in a negative light tends to fuel the public reaction to drilling and blasting. He mentioned that social media is currently a hotbed of activity; bloggers who claim to be experts fuel the fire of opposition to drilling and blasting, whether in quarries or at surface projects like roads and site prep work.

Clearly, community relations is vitally important when drilling and blasting takes place. Best presented a tongue-in-cheek list of the top ten reasons why a company needs a community relations person. Some of his satirical reasons included:

- You can't see your plant through the dust
- \bullet You give directions to your plant by telling people to follow the rock dust tracked on the road
- The local news has assigned you a permanent reporter

Best outlined some basic questions to ask when a complaint comes in to a company. "Ask for their name, address and phone number. Ask for the exact date and time of blast. Ask the complainant to describe the blast and ask them to describe what happened when the blast went off. Did the china rattle?" he asked. "A blasting complaint can be based on concern over noise or vibration and may not directly or immediately indicate property damage."

"There are guidelines for speaking to the media," he said. "Establish one person for your company and refer all calls to that person. Have the call receptionist take a message and ask the nature of the call. Find out what they want to know [so that the contact person] can prepare an answer."

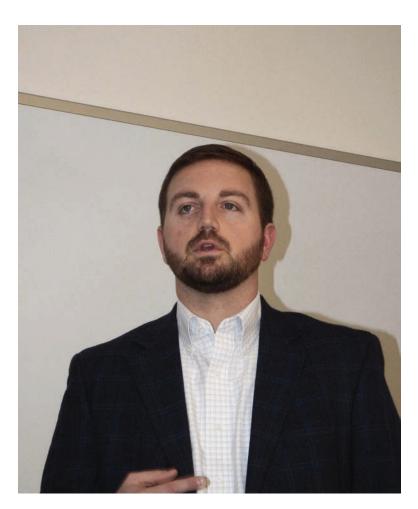
"Do not let the media intimidate you," he said. "Always have positive points to make. Never repeat negative words in your answer."

He said whenever speaking to the media, there are basic guidelines to follow. These include keeping the answers short, not rambling, remain in control (don't show anger) and don't be afraid to say, "I do not know, but I will check and find you an answer."

The spokesperson should have a general understanding of blasting. They



Ralph Burnham, attorney at Montgomery, Rennie & Jonson, offers ideas on how to minimize blasting liability risks at quarries.



Kelly Ratliff, attorney at Montgomery, Rennie & Jonson, specializes in quarry blasting complaints.

should have a detailed knowledge of company operations. They would need good oral and written skills and the ability to relate in a non-confrontational manner. An understanding of the general liability insurance policy would also be helpful. "They also should have the authority to order a seismograph reading or contact an outside blasting/vibration consultant," he said.

While ground vibration is an important component of how blasting affects the surrounding area, air overpressure is perhaps the hardest element of the blasting operation to control. "I never say it is an air blast," he said. "It is an air pressure pulse."

This pressure wave results from four basic characteristics of blasting operations. These include the air pressure pulse from the movement of broken rock, which displaces the air. It also includes the gas release pulse when gasses pass through the broken rock and into the air. Additionally, the stemming release pulse, when the blast pressure is released up through the stemming, and the rock pressure pulse, the vertical component of the ground surface moving as the seismic wave approaches a structure, are components as well.

"Most of the blast is noise, but the air pressure wave can cause the damage," he said. "Most complaints are from the air pressure. It's hard to explain that to a homeowner. Much of the recording is done in decibel levels and not in pounds per square inch."

He concluded by saying community relations is a never-ending process. He recommended that the community relations person get involved in the community.

"Join civic organizations," he advised. "Sponsor local sports teams. Get to know local civic leaders and politicians. Ask to speak at homeowner meetings. Offer an open house/customer appreciation day, school field trips and one-on-one visits with residents in the area." By being prepared, drilling and blasting companies can have the confidence and assurance that they are doing the best job possible. For more information, contact Sauls Seismic, LLC at $866 \cdot 527 \cdot 2477$ or visit their website at www.saulsseismic.com.



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July 2018 PG 31 RockRoad Recycle.com

Contractor cuts stump disposal time with Ransome Shark Tooth

MURPHY, NC — Thompson Brothers has substantially reduced the time required to burn tree stumps and brush because of a Ransome Shark Tooth Model RST 150 Stump Splitter/Harvester purchased from Ransome Attachments.

Thompson Brothers once focused on cleaning up and grading timbered sites in the rugged Appalachian Mountains near the border of North Carolina and Tennessee. The small, family-owned company expanded into harvesting timber with mechanical equipment in 2010 to weather the recession.

When Thompson Brothers clears a site, it cuts and extracts valuable timber and disposes of stumps and brush. The contractor cannot justify the cost of processing lumber on site with a tub grinder so it burns piles onsite instead. Thompson Brothers recognized that reducing the size of the stumps was key to accelerating the process and the Shark Tooth proved an ideal fit for ripping out and shearing stumps into pieces.

"We were extracting stumps with the excavator bucket," recalled Brian Thompson, whom co-owns the company with his brother Brandon. "That left big holes and it took a tremendous amount of time to burn."

Thompson began searching for a stump splitter on the internet. He discovered Lumberton, NJ-based Ransome Attachments and began watching its inventory of attachments in action on YouTube.

He soon found that some equipment dealers were not interested in building such an attachment for a smaller 160-sized excavator. "Nobody else would even talk about less than a 200," Thompson recalled, noting that Eric Ransome introduced him to the Shark Tooth and agreed to build the attachment for his CASE CX160 hydraulic excavator. "They (Ransome) went above and beyond," Thompson said.

The Shark Tooth is permanently mounted on the CASE CX160. Thompson deals with white pine, poplar, curly hard maple, white oak and red oak trees with stumps up to 37 inches and root balls as large as six feet, but he has yet to find a match for the Shark Tooth.

While the Shark Tooth eliminates the need for a stump grinder, this is a non-issue for Thompson since they burn brush piles. Its operation has traditionally involved lighting a pile of brush and stacking stumps on top. The challenge was that slower burning large stumps would pile up as the brush burned off more quickly. Heavy rain further complicated matters.

The jagged teeth of the aptly named Shark Tooth allow the operator to saw through stumps in the ground without leaving a massive hole that would be left by a bucket. The hydraulic thumb then closes on the dull edge of the tooth, allowing the operator to extract the pieces. The teeth can then be used to further downsize the stumps for more efficient disposal. "It will pull stumps out without busting them more than ten times faster than a bucket," Thompson said.

"The Shark Tooth has cut our burning time in half," Thompson said, indicating that his landowner customers are now saving money due to reduced permitting costs related to burning and hauling equipment. "Now I can



Brian Thompson is not only splitting and harvesting stumps, but also digging trenches for silt fence, loading log trailers, and backfilling stump excavations with a Ransome Shark Tooth RST 150 Stump Splitter/Harvester mounted on a CASE CX160 Hydraulic Excavator.

Photo courtesy of Ransome Attachments

put everything in at once because the stumps are so small they burn off like brush. It (Shark Tooth) has sped that side of it up so much that I can't keep up with it as a pile burns down. I have to get several days ahead before (I) even light a pile."

Thompson was concerned about durability since the mountainous terrain is often scattered with rocks partially disguised by leaves and brush. The Shark Tooth, made in the United States with AR 400 steel, is holding up well so far but he's prepared to sharpen it if needed.

The Shark Tooth may be designed for

stump splitting and harvesting, but Thompson has discovered added value. The contractor has used it to dig trenches for silt fence, load log trailers, and backfill excavations after stump extraction.

"Being a small business ourselves, we appreciate our smaller, owner-operated business customers like Brian Thompson just as much as our larger clients," said Ransome. "When our customers get a good deal and know they are valued, everyone wins."

Click <u>here</u> to learn more about the Ransome Shark Tooth RST 150 Stump Splitter/Harvester.



People in the industry

Hy-Brid Lifts appoints South-Central territory manager

RICHFIELD, WI — Custom Equipment, LLC has welcomed Jesus Pedraza as its South-Central U.S. territory manager. Jesus is focusing on continuing the growth and channel development of Hy-Brid Lifts, Custom Equipment's line of lightweight low-level scissor lifts.

"With a growing construction industry, we needed someone who can continue to give our current customers and prospects in that region the attention and support they need to be successful," said Dan Schneider, Custom Equipment LLC vice president of sales.

Pedraza has more than 13 years of experience in both inside and outside sales at Ahern Rentals in Texas where he used his networking and negotiating skills to average \$3 million per year in revenue. He is also a knowledgeable truck driver, having held the position for both Ahern and Jack

in the Box Distribution. Pedraza's familiarity with the South-Central U.S. helps him navigate the dealer and rental center landscape in that area.

"It is with great pleasure I join Hy-Brid Lifts," Pedraza said. "I look forward to establishing relationships and introducing our lifts to the South-Central region. I have no doubt that both our equipment and customer service will have a great impact on the area."



Custom Equipment welcomes Jesus Pedraza as its South-Central territory manager for Hy-Brid Lifts, the company's brand of lightweight, low-level scissor lifts.

Photo courtesy of Hy-Brid Lifts

RockRoad Recycle.com PG 32 July 2018

Darda Multi Cutter attachment enhances Brokk machines' versatility in steel cutting

MONROE, WA — Brokk®, the world's leading manufacturer of remote-controlled demolition machines, offers the MC200 Multi Cutter to expand smaller Brokk models' versatility for contractors in steel cutting applications. The one-of-a-kind steel cutting attachment, manufactured by Brokk's sister company, Darda®, offers a high power-to-weight ratio and sleek, compact design. The attachment addresses a need for a lightweight, economical steel cutting tool. It promotes safe and efficient steel material cutting in a variety of industries, including recycling, demolition, nuclear, process, food and construction.

The 10-by-13-inch (25-by-33 centimeter) Multi Cutter is 40 inches (102 centimeters) long and can be used on machines weighing 2,650 to 6,170 pounds (1.2 to 2.8 metric tons), including the Brokk 110, 120 D and 160 models. It brings flexibility to the jobsite with its slim profile, making it easy to maneuver in tight spaces, such as building interiors where Brokk machines excel due to their electric operation and compact size. The attachment also fea-

tures a hydraulic 360-degree rotary drive for exact positioning and an eight-inch-wide (200 millimeter) jaw opening, able to handle a variety of metals. It weighs only 265 pounds (130 kilograms), yet uses a hydraulic booster to exert 50 tons of cutting force at 3,900 psi (270 bars) to easily cut through steel. To reduce costs to the end user, Darda also designed the MC200 Multi Cutter so operators can sharpen the jaws rather than replace them.

"We developed the MC200 Multi Cutter in conjunction with Darda because there was no reasonably priced cutter or shear on the market for our smaller machines," said Lars Lindgren, Brokk Inc.'s president. "This tool opens the door to operators who need the compact size and light weight of our smaller Brokk machines, but the force to cut through steel. Plus, the attachment expands the variety of services contractors can offer by increasing the number of attachments available for our smaller models."

The MC200 Multi Cutter, combined with the smaller Brokk machines' remote capabilities and arms

that extend as far as 16 feet (five meters), allows contractors to easily cut beams, cable, supply lines and steel pipes in hard-to-reach areas. This improves efficiency and minimizes labor costs. The attachment, paired with a Brokk machine, reduces the risk of injury to laborers by eliminating the need to climb scaffolds and ladders with handheld tools. The Multi Cutter also alleviates the risk of injury from openflame torches, which are a common but dangerous method for cutting steel. This traditional approach can also create fire hazards and increase the risk of exposure to harmful emissions.

The MC200 Multi Cutter is one of nearly 20 Brokk attachments that operators can quickly interchange for greater versatility on a jobsite. Brokk supplies a wide range of remote-controlled machinery and attachments around the world to maximize productivity improve efficiency and promote safety.

For more information visit: $\underline{www.brokk.com}$.



The Darda MC200 Multi Cutter brings flexibility to the jobsite with its slim profile, making it easy to maneuver in tight spaces, such as building interiors where Brokk machines excel due to their electric operation and compact size.



The small Brokk 100, 120 D and 160 remote-controlled demolition machines can use the lightweight Darda MC200 Multi Cutter steel cutting attachment to cut a variety of steel material in industries such as demolition, recycling, nuclear, process, food and construction.

Photos courtesy of Brokk



People in the industry

John Deere extends warranty offering across compact equipment line

MOLINE, IL — Reinforcing its commitment to producing the industry's most reliable and durable machinery, John Deere extended its machine warranty on all Commercial Worksite Products to two years. This coverage includes new compact track loaders, skid steer loaders, compact wheel loaders and compact excavators.

"Extending our warranty across our entire lineup of compact machinery reinforces our confidence in the quality of the equipment we produce," said Graham Hinch, division manager, John Deere Commercial Worksite Products. "Backed by our robust dealer network, this added protection offers our customers peace of mind so they can focus on maximizing productivity and profits."

The standard warranty now promises that Deere will fix any defects in materials or workmanship for two years after delivery or 2,000 hours — whichever comes first. The previous standard warranty was for one year.

For complete warranty information, customers should visit their local John Deere dealer or visit their website.



John Deere recently extended its machine warranty on all Commercial Worksite Products to two years.

Photo courtesy of John Deere

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Top five tech to make construction safer

The complex nature of construction sites means they can be a health and safety nightmare - electricity cables, moving objects, working at height, not to mention the multiple movements of some serious heavy construction equipment. Safety is a top priority for any company and a multitude of rules and regulations are in place to ensure workers are kept free from harm, but accidents still happen. But coming to the rescue is a technology-driven safety revolution, with advances being made every day. Here we look at the ways in which innovations are helping to make construction sites a safer place to be.

1. Boost manpower with robotics

In the old days only tough strong men were thought to be able to work in construction. But even tough guys can trigger painful muscle damage from lifting heavy tools – and construction is a major offender with the rate of work-related musculoskeletal disorders 16 percent higher than in any other industry. But as automation takes off, robots are now being employed on sites to do the heavy lifting. Where once it would take six or seven workers to carry a 200kg (approx. 440lb) reinforcing rod, for example, Japanese constructor Shimizu has invented a robotic arm to take the load. This machine aims to do the job in half the time with half the effort — and cut the risk of worker injury at the same time.

As well as taking on the repetitive tasks likely to cause strain, robot workers can even be tasked with handling hazardous materials or entering dangerous work zones — all under the watchful eye of a human supervisor. Also in Japan, a team of researchers



Wearables like HAVWEAR is helping prevent hand-arm vibration syndrome.



Technology is now available to record slips and trips.

Photo credit iStock.com/gorodenkoff.



Robots are now being tasked to take on the heavy lifting. Photo credit iStock.com/dorian2013.

has created a rescue robot — a hydraulic technology that, once fully developed, could be deployed on construction sites to fully assess a dangerous situation.

2. Stay connected and avoid falls

Slips and trips are the most common source of injury on UK construction sites — causing a third of accidents. Meanwhile, across the pond, a sobering 40 percent of fatalities on site are caused by tripping or falling. Prevention is key — keeping walkways clear of obstructions, ensuring all structures are in good working order, putting equipment away after use and wearing the proper kit will help keep workers on their feet. Clever technology such as the Spot-r Clip, which can simply attach to a belt, records any trips and immediately alerts supervisors. Just a push of a button will also report a hazard without anyone having to leave the site. With a third of workers concerned that safety takes a backseat to productivity, tech like this is proving that the two are no longer mutually exclusive.

3. Keep it down!

Construction workers are exposed to high levels of noise on an almost daily basis, triggering hearing problems ranging from mild tinnitus to disabling deafness. Not only that, but exposure could also affect workers' mental health. As a comparison, an office environment may range from 40-50 dB whereas construction sites endure levels considerably greater, with 90 dB. Given that a minor adjustment of just 3 dB is noticeable to human ears, excessive noise can be a huge problem. Technology such as noise cancelling headphones has been available for years, but innovations are continuing to be developed. Volvo Construction Equipment has conceived a machine for the future where excavators, haulers and wheel loaders can generate significantly less noise. The company's concept research prototype EX2 100 percent electric compact excavator, for example, would be able to produce 10 times lower noise levels.

4. Reach new heights with mobile apps

While surface trips are the most common cause of injury, falling from a height is the most common cause of death in the U.S. And with falls from ladders costing the nation \$24 billion a year in work loss and medical bills, the safe and proper use of equipment when preparing to work at heights goes a long way to reducing accidents. Telematics like the NIOSH Ladder Safety App provide visual and audio cues to help workers know exactly when their ladders are positioned at the safest angle of 75.5 degrees. It also allows for more precise inspections of the ladder and provides tips for planning the task at hand.

5. Arm workers with vibration-busting tech

One of the most overlooked threats to construction workers is hand-arm vibration syndrome — with about 1 million U.S. workers said to suffer from the condition. It's also estimated that 10 percent of workers will show symptoms after 12 years of consistent exposure. Caused by the prolonged use of power hand tools, which damage the blood vessels and nerves, it's an incurable disease that can only be combatted through prevention. Wearable technology however can help reduce the risk. Monitoring bands such as HAVWEAR keep a record of a worker's day-to-day activity and highlights when they are at risk of exposure, allowing a supervisor to make adjustments on the ground. The added benefit is that productivity is increased in comparison to more traditional methods of data tracking.

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Three technology game changers for contractors

While the construction industry has historically had the lowest spend on IT and technology, the landscape is rapidly changing. Almost all contractors are using construction management software for scheduling, estimating, job costing and submittal reviews, and there are dozens of companies that offer such services.

What is really exciting are the new technologies enabling contractors to get more accomplished with less time, risk and error.

- Drones are quite literally taking off in construction. Drones are an inexpensive way to get a unique perspective on project progression from a bird's eye view without having to hire a manned aircraft. Drones can capture survey imagery, contribute to jobsite safety, provide time-lapse imagery and even thermal imaging to evaluate building envelopes and enclosures. While the imagery is valuable on its own, a number of software providers are offering solutions to help analyze the data and even include it back into building information modeling (BIM) models.
- Construction management software provides projects with a fully featured blueprint management solution, making it easy for users in the field to view, edit and share drawings. Punch list apps add both speed and structure to the closeout process and

alerts the team when important items are reported so they can be quickly addressed. Teams can complete a walkthrough in minutes while attaching all the pertinent details about each deficiency including photos, checklists, categories, hashtags and due dates.

• LEED construction documentation automates the collection, creation and verification of LEED (leadership in energy and environmental design) documentation, saving hundreds of hours of time while reducing the risk of missing project goals. For example, Green Badger's dashboard provides real time updates of all LEED construction credits, while the software eliminates perpetually cumbersome Excel spreadsheets and manual processes that teams have used in the past. The mobile app allows for all in-field LEED inspection reports to be knocked out from a smartphone or tablet.

From soaring the skies, to walking the site, to killing the spreadsheet, to verifying a product's sustainability with the scan of a barcode, the construction industry's adoption of technology is accelerating rapidly. Proper use can help differentiate you from the competition, win more work and get your projects completed on time and on budget. So what are you waiting for?



Drones can capture survey imagery, contribute to jobsite safety, provide time-lapse imagery and even thermal imagining to evaluate building envelopes and enclosures.

Source: Conexpo-Con/Agg 365. Tommy Linstroth (LEED Fellow) is founder and CEO of Green Badger, and a principal in consulting firm Trident Sustainability Group.

Bosch GSH27-26 BruteTM Turbo breaker hammer with GPS Tracking ensures real-time location anywhere

money are two of the most important commodities around and ensuring optimum use of these resources means key assets are available when needed. For many jobsites requiring concrete demolition work, a breaker, demolition or rotary hammer needs to be on hand. The Bosch GSH27-26 BruteTM Turbo is the world's first breaker hammer with GPS tracking that makes sure jobsite managers know where this powerful tool is at all times; a retrofit option (GPS25-4) brings the same capability to all current Bosch SDSmaxTM hammers.

The Bosch GPS device on the Brute Turbo and the SDS-max hammer retrofit offers "always-on location tracking". The device works for months at a time because it's powered by a Lithium-ion battery that recharges automatically as soon as the tool is plugged in. In addition, the tracking device can notify a user about various activities, including non-working hour activation and non-authorized location use. Users are notified about these actions via cellular network on a smart phone.

"If you're running a jobsite, you need to know where key assets are all the time. The Bosch Brute Turbo Breaker Hammer with GPS along with any Bosch SDS-max hammer featuring GPS retrofit represent important concrete

MT PROSPECT, IL — Time and demolition and drilling tools," said Daniel Dietsche, product manportant commodities around and ager, Bosch Power Tools. "These ensuring optimum use of these resources means key assets are available when needed. For many

The tracking feature, which reverts to cellular network coverage when GPS is not available, can be managed through the free Bosch GPS tracking app (available for AndroidTM and iOS®).

The Bosch GSH27-62 Brute Turbo Breaker Hammer with GPS Tracking offers an outstanding concrete removal rate, yet weighs only 64 pounds. With 1,000 bpm and 43 ft.-lbs. of impact energy, this versatile heavy-duty tool can tackle applications that range from outdoor asphalt work to indoor foundation removal. The breaker hammer doesn't require a compressor because it can be powered by a 115/120V AC/DC 15-amp outlet or a 2,500-watt portable generator. The breaker hammer's custom cart doubles as a hammer hauler and a hand truck. Truck rails allow the cart to be raised or lowered easily from a

The Brute Turbo's powerful impact energy improves performance, yet doesn't affect overall durability. Category-leading motor efficiency, minimal energy loss in the seals, heavy-duty springs and fasteners, and a rugged spring dampening system offer users a tool that's built for pow-

er, but doesn't forget user comfort. The Bosch Service MinderTM Brush System shuts the tool off when brush replacement, lubrication or preventative maintenance is needed and a grease-packed gearbox and hammer mechanism eliminate any potential contamination caused by jobsite lubrication.

The GSH27-26 Brute Turbo Breaker Hammer's Active Vibration ControlTM system includes a longer air cushion in the hammer mechanism that reduces vibration levels at the source. Ergonomic shock-mounted handles complete the vibration control system by providing the user with the lowest vibration level possible without adding size or weight to the tool. The Brute Turbo comes complete with a non-slip rubber cover to prevent the tool from tipping while in storage, custom cart and four chisels.

The GPS25-4 retrofit is available for 10 different Bosch SDS-max hammers that extend from 10-amp power to 15 amps with impact energy from 5.6 EPTA to 17.0 EPTA. No load BPM ranges from 900-2,900 BPM. Operation options include rotary hammer and hammer only modes.

To learn more about the Bosch BruteTM Turbo Breaker Hammer with Imbedded GPS Tracking, the Bosch SDS-maxTM hammer GPS retrofit or to find a local dealer, visit www.boschtools.com.



In addition, the tracking device can notify a user about various activities, including non-working hour activation and non-authorized location use.

Photo courtesy of Bosch

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ARTBA says Federal Highway Administration decision clears air on overreaching greenhouse gas rule

The American Road & Transportation Builders Association (ARTBA) commends the Federal Highway Administration's (FHWA) recent decision to abandon a proposal to require the measurement of greenhouse gas emissions following construction of new transportation projects. The proposal was part of larger performance measures required under the 2012 "Moving Ahead for Progress in the 21st Century" (MAP-21) surface transportation reauthorization law. In 2016 comments to the agency, ARTBA charged the proposal "exceeds both the authority of the FHWA and the intent of MAP-21.

The association urged the U.S. Department of Transportation (U.S. DOT) as far back as 2013 not to jeopardize the broad bipartisan congressional support for MAP-21 by including extraneous issues — such as climate change — in the law's implementation when an ARTBA task force cautioned:

"Focus on the goals enumerated in the law. The authors of MAP-21 had the opportunity to include a host of external goals such as livability, reduction of transportation-related greenhouse gas emissions, reduction of reliance on foreign oil, adaptation to the effects of climate change, public health, housing, land-use patterns and air quality in the planning and performance process.... the U.S. Department of Transportation should focus on implementing the goals and standards as spelled out in MAP-21."

In regulatory comments, as well as multiple meetings with congressional and administration officials, ARTBA noted that neither Congress nor the administration sought emission measurements in the MAP-21 performance management process, and that such proposals were not included in the "Fixing America's Surface Transportation" (FAST) Act reauthorization law passed in December 2015.

ARTBA also raised a variety of concerns about the proposed measurement system. Specifically, it "does not define what exactly it will measure and how it will measure it," ARTBA stated, and "[i]t is unfair to ask the regulated community to provide specific comments on such an abstract proposal." Further, the association warned that the proposal could lead to a cumbersome regulatory process that undercuts progress from both MAP-21 and the FAST Act on expediting transportation project delivery and delaying transportation improvements.

E-Z Drill expands dealer network with Mid Country Machinery

PERRY, OK — E-Z Drill has added Mid Country Machinery to its dealer network. In addition to Mid Country's Fort Dodge, Waterloo and Sergeant Bluff, Iowa, locations, customers can also purchase and rent E-Z Drill equipment from the dealer's Brewerton, NY facility.

"Mid Country shares our commitment to going above and beyond to provide unparalleled customer service and products tailored to the success of each job," said Rick Walstad, E-Z Drill president. "We look forward to helping Mid Country serve its customers the best way possible."

Mid Country rents, sells and services a variety of light- and heavy-duty equipment including cranes, excavators and wheel loaders. The dealer offers E-Z Drill's entire line of concrete dowel drills at each of its locations, including single and multi-gang models, in addition to the manufacturer's dust collections systems.

"Adding E-Z Drill products allows us to better serve contractors working on road repair projects, lane additions and airport improvements," said Dennis Ernst, Mid Country Machinery sales and rentals. "It also means we can provide even more customers with what we're most known for: Dependable equipment and services."

Mid Country Machinery is a privately owned equipment dealer founded in 1997. The company gives contractors in the Midwest and New York a one-stop source for a wide range of construction and roadbuilding equipment, including excavators, pavers, crushers, skid steers, scissor lifts and overseeders, in addition to trucks and trailers. For more information: www.midcountry.com; sales@exdrill.com; www.ezdrill.com.



In addition to Mid Country's Fort Dodge, Waterloo and Sergeant Bluff, Iowa, locations, customers can also purchase and rent E-Z Drill equipment from the dealer's Brewerton, NY facility.



E-Z Drill welcomes Mid Country Machinery to its dealer network. Mid Country has three Iowa locations as well as a facility in Brewerton, NY.

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ECA conducts first-ever BAUER drilling rig safety training

PITTSBURGH, PA — Equipment Corporation of America (ECA), a leading distributor of foundation construction equipment, held its first-ever BAUER OT-B drilling rig operator's training from May 7-11 at its Coraopolis, PA headquarters. The course comes in the wake of the 100-year-old company being designated a Regional Training Center for BAUER Foundation Equipment, a rare honor granted by BAUER Maschinen.

ECA trainers Joe Kinworthy and Jason Church tapped into 45 collective years of drilling rig experience to help operators from several respected foundation-drilling contractors improve safety and productivity. The course focused on such topics as drilling rig stability, safe operation, ground conditions, safe working platforms, productivity and new technology.

"Drilling rig accidents often bring dire consequences," said Corporate Director of Parts and Service Dave Schell. "If we can help to prevent even one tragedy for our customers, this program will be a success." ECA can host a customized training session or bring the program directly to a location of your choice. Contact Dave Schell at 301.599.1300 or mail to: dschell@ecanet.com for more information.

ECA has been a leading supplier of foundation construction equipment in the Eastern United States and Eastern Canada for more than a century. They are the exclusive distributor for BAUER Drills, Klemm Anchor and Micropile Drills, RTG Piling Rigs, MAT Grout Systems, Pileco Diesel Pile Hammers, HPSI Vibratory Pile Hammers, WORD International Drill Attachments, Dawson Construction Products, Grizzly Side Grip Vibros, ALLU Ground Improvement Equipment and DIGGA Dangle Drills. ECA offers sales, rentals, service and parts and training from nine facilities throughout the Eastern U.S. and Eastern Canadian Provinces. Visit ecanet.com for the latest information on our ever-improving specialty foundation equipment solutions.



ECA's trainers Joe Church (pictured) and Jason Kinworthy helped operators from several respected foundation drilling contractors to improve safety and productivity.



Trainers Joe Kinworthy and Jason Church are pictured with trainees at the first-ever BAUER OT-B Drilling Rig Operator's Training at ECA Pittsburgh in Coraopolis, PA

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S.E.D.D. ~ e-cycling and data destruction specialists

by Bill and Mary Weaver

On the Cover:

L-R: Chad Hayes and Bill Hanselman near an example of one of several sizes and types of secure containers Sadoff E-recycling & Data Destruction offers to their business partners. They provide a secure chain of custody to facilities in Nebraska or Wisconsin.

PG₃

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Lindner's Atlas ~ primary shredding with intelligent energy management









Associations and affiliations:

















Bill Hanselman (foreground) and Chad Hayes demonstrate the operation of their dependable Ameri-Shred Corp's AMS-300HD-SSP shredder. Shredded items move up the small conveyor, to be deposited in the Gaylord beside Hayes.

Photo by Bill Weaver

uring my 20+ years in IT work, data security has been my biggest passion," stated Chad Hayes. Hayes is currently the chief technology officer and director of Sadoff E-recycling & Data Destruction (S.E.D.D.), a Sadoff Iron & Metal company. Hayes has been in from the ground floor of the planning and development of this new enterprise — whose slogan, "Destroying your past ... to protect your future," — meshes perfectly with his passion. Less than a year old, the electronics recycling company held its grand opening in December 2017.

The new company already has an impressive record of certifications, with plans to complete the difficult industry standard R2 certification in-house by October. "We're completing the entire R2 certification in-house rather than outsourcing the work, because we want to be sure everything is done correctly," Hayes explained. "We have already completed — with the help of our parent company — the industry certifications ISO 9000, 14,000 and 18,000. We will be one of a very few electronics recycling companies in the US to have completed all these industry certifications, plus the soon-to-be completed R2 certification. "

Backed by the reputation for integrity of its 70-year-old, family-owned parent company, the new electronics recycling business has been growing rapidly, attracting corporate clients in finance, education, health care and IT who are concerned about secure destruction of data on old cell phones, hard drives, tablets, card readers and other electronics equipment. "Our customers appreciate the alternative we represent for environmentally responsible, transparent recycling of e-scrap," Hayes continued. "Every month we get new customers." Currently, SEDD's two electronics recycling centers — in Oshkosh, WI and La Vista, NE — have 11 full-

time employees.

One might expect that a company with two midwestern e-recycling centers would be strictly regional in nature. Not so, in this case. Through its



Gaylord box partly filled with shredded data bearing devices that have been wiped clean and shredded by Sadoff's Ameri-Shred AMS-300-HD-SSD shredder. Photos courtesy of Chad Hayes

parent company's fleet of trucks and the trucking fleets of its business partners, Sadoff electronics recycling can offer a secure chain of custody from "almost anywhere in the US" to its facilities in Nebraska or Wisconsin.

Their prices are attractive both to large companies needing many devices recycled, as well as to smaller companies watching the bottom line. Both Sadoff's data destruction and their electronics recycling services are less costly than many would expect. "If you bring in a tower to have the data destroyed, we'll pay you for the value of the materials, which can help to offset the costs of the hard drive shredding."

Sadoff E-Recycling and Data Destruction Co. also offers the service of coming to businesses that have, over time, accumulated older electronic devices in storage. Sadoff specialists can advise the company what could be remarketed and what is best to recycle.

Recognizing that no two businesses are the same, Sadoff E-Recycling provides the services of their dedicated recycling and data destruction specialists, who can work with a company to create a customized and reliable solution to fit each company's specific needs. Equipment handled, in addition to items already mentioned, includes computers, networking equipment, monitors and TV's, computer accessories and parts, media/storage devices, batteries, audio-visual equipment, printers, gaming consoles, industrial machinery/robotics and tools and equipment

In their secure, windowless work room— accessible by badge only — workers will disassemble old computers and other electronics equipment, separating their components for recycling, after shred-

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Sadoff's secure electronics recycling work room, where workers disassemble electronics equipment and big hang-up is the high cost of getting the plastic from 'here to there.' remove parts from circuit boards.

ding the hard drives. "Everything is reduced, reused and recycled in a secure, environmentally responsible manner," explained Hayes. "Less than 1 percent of a computer currently goes to the landfill." Gold, silver, copper and palladium present in very minute amounts will be separated from the rest, painstakingly collected and responsibly recycled. "Even some memory card strips contain a microscopic amount of precious metal which can be recycled."

Customers are given a certificate of destruction with the item's serial number on it, backed by Sadoff's guarantee that the data is gone. "We shred every hard drive that comes in to ensure 100 percent digital data destruction," noted Hayes. Sadoff contractually owns liability for the data destruction, and is backed 100 percent by insurance that adheres to NAID requirements. The parent company's 70-years-long reputation for paying close attention to each and every detail is carried on in the new Sadoff e-recycling company.

Sometimes banks request that Sadoff's mobile data destruction service be brought to their facility, so they can view the process. "We also encourage customers to drop in any time to watch what we're doing and ask questions. We give tours. We want to be transparent. We're very proud of what we do," added Hayes.

Every item in every load that enters either of Sadoff's facilities is automatically inventoried by their ERP (Enterprise Resource Planning), "which is the backbone of our computer system," running both the inventory and the financial system. Nothing is left to chance at either of Sadoff's companies.

"Each delivery is met by one of us personally, and escorted by us through our facility, which is camera monitored throughout, to our secure work room or our secure metal cage storage for devices awaiting recycling," explained Hayes. The data chain of custody remains unbroken until the data bearing devices are reduced by the shredder into a pile of unrecognizable shards of metal. "No data leaves our secure room. Everything that enters is shredded.

"We're audited yearly by R2 and we self-audit. We want Chad Roeder holding motherboard removed from data-wiped, disto be sure we can prove to our customers and partners assembled computer.

that we do what we say we are doing. Trust is a very important element with our customers and business partners."

For refining, Sadoff e-recycling partners with a US refining company who takes Sadoff's large accumulations consisting of miniscule amounts of gold, silver, palladium and copper from recycled devices and melts it into ingots of mixed metals.

To recover the individual precious metals, the next step is smelting. Smelting metals is a dirty business, and a start-up requires costly environmental and air quality safeguards," explained Hayes. As a result, after the refiner has paid Sadoff for the accumulated metals in the ingots, the ingots are sent to trusted smelting partners in Europe who have been extensively vetted. "We are currently also in the process of vetting some smelters in Japan as potential partners, but that vetting process is not yet complete," noted Hayes.

Sadoff's legendary attention to detail in all their transactions is a huge plus in finding trustworthy smelting partners. "We want to make sure that all our recycling partners are good stewards of the environment, and are following the law." Unfortunately, as recent news stories have indicated, this does not always happen with some less detail-oriented companies.

Currently, the most troublesome part of a computer to recycle is the plastic case. "Although we have partners who will recycle plastic for reuse in new computer cases and in other products — some of which are required by law to contain a certain percentage of recycled plastic - and we have other partners who will recycle plastic into pellets," the

The economy has been growing, leading to a shortage of both trucks and labor. As a result, trucking prices have gone up. Add to that the current steep increases in fuel costs that must be passed on. When trucking lightweight materials, even full loads of plastic can be problematic from a trucking cost perspective. Hence the logistics department's eagle eye on the bottom line for all trucked materials. "It is not practical to pay 13, 14 or even 15 cents a pound for

> shipping part-trailer loads. Shipping a load has to make economic sense," Hayes explained.

Sadoff is also preparing ahead for another major recycling opportunity that will be arriving three to five years in the future, when the first of the growing number of large lithium ion electric car batteries in use wear out and will need to be replaced. "We would like to be ready with a workable plan to recycle the future flood of lithium ion batteries safely and completely. We have a couple of downstreams we are evaluating now for lithium ion battery recycling."

There are inherent dangers in simply handling lithium ion batteries. "They can burst into flame or explode if punctured."

"We need to look at ways to make it easier and cheaper to recover and reuse these materials, rather than simply mining fresh product at a high social cost." Much of the lithium used in the US currently comes from three countries high in the Andes Mountains in South America. Much of the world's cobalt, also used in the existing technology for producing lithium ion batteries, comes from the politically unstable Democratic Republic of the Congo. Recycling these valuable metals will help to ensure that adequate amounts remain available as our need for them surges in coming years.

Sadoff is well positioned be in the forefront of that effort.





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New Doosan DX225MH-5 material handler



Machine features such as dual-boom cylinders and under-mount arm cylinder placement provide excellent lifting capabilities for Doosan material handler operators

perators who work in a variety of scrap-handling applications, including scrap yards, recycling facilities and solid waste centers and transfer stations will appreciate the new Doosan® DX225MH-5 material handler.

The durable, Tier 4-compliant DX-225MH-5 material handler is designed for a long life with a sturdy steel-track undercarriage and features enhancements in fuel efficiency, versatility and productivity. Manufactured from a tested and proven Doosan excavator model, the DX225MH-5 material handler is factory fitted with cab risers for increased visibility, straight boom and droop nose arm for peak perfor-

mance, and additional machine guarding for boosted uptime protection. The material handler's straight boom improves reach and lift height for better material placement. Droop nose arms provide enhanced grapple and magnet access into containers, trucks and railcars, with either a grapple or magnet attachment. Machine features such as dual-boom cylinders and under-mount arm cylinder placement provide excellent lifting capabilities for Doosan material handler operators.

Increased visibility

Operators have enhanced all-around visibility to the attachment and work area from the material handler's cab riser. The DX225MH-5 material han-

The durable, Tier 4-compliant DX225MH-5 material handler is designed for a long life with a sturdy steel-track undercarriage and features enhancements in fuel efficiency, versatility and productivity.

dler has a 4-foot standard fixed cab riser with an optional 6-foot cab riser or 6.5-foot hydraulic cab riser. The cab riser allows operators to raise or lower the cab to match the specific task. Raising the cab can be beneficial when an operator is loading debris in a truck or container and wants to ensure the material is being distributed equally to maximize the space.

Product enhancements for DX-225MH-5 material handlers include the following:

- Floor pedal: adds optional way for operators to activate two-way auxiliary hydraulics
- Ergonomic joystick: improves operator comfort and ease of use
- Rear camera: enhances rear visibil-
- Camera monitor: allows operators to monitor machine information while camera is on

Alternator upgrade: provides 80 amps for improved performance

Emergency stop relocated: makes it easier for operators to reach on the seat base

Auto shutdown: saves valuable diesel fuel when the machines are not working

Options available for DX225MH-5 material handlers include:

- V-Shape side guard: adds extra protection to the doors and exterior of the machine
- Generator set: generates power for use with a magnet attachment

Photos courtesy of Doosan

Maximum attachment productivity

A 5/8-cubic-yard grapple is approved for use with the DX225MH-5 and features a semi-closed tine design for a firm grasp on most materials. The 360-degree hydraulic rotating fourtine grapple helps maximize machine versatility and productivity in material-handling applications. The tines are designed with AR400 high-strength, abrasion-resistant steel for increased durability, and the tine tips are replaceable for easier maintenance. Connecting grapples to Doosan material handlers is fast and easy with a hose kit and mount. Two-pump hydraulic flow provides power to operate the grapple.

A Winkle magnet is also approved to pick up and place smaller scrap metal. The magnet is powered by an optional generator, which energizes power to the magnet when picking up metal.

Multiple power modes

The DX225MH-5 allows operators to manage the balance of fuel consumption and machine power to working conditions with four selectable power modes, including:

Power+ mode: delivers the fastest workgroup speeds and greater power for demanding material moving applications

Power mode: provides exceptional power and superior performance for tough heavy- lifting, quick truck-loading and fast travel speed

Standard power mode: enhances the machine's fuel consumption while de-

RockRoad Recycle.com PG 6



Operators have enhanced all-around visibility to the attachment and work area from the material handler's cab riser.

livering high performance in everyday lifting and moving of material

Economy mode: helps reduce fuel consumption for low-demand applications and slows down machine movement for conditions that require more precise movements

In addition, the new DX225MH-5 material handler features a Lifting work mode. The Lifting work mode provides increased pump torque, low engine rpm and an automatic power boost to improve precision when lifting and placing materials.

DoosanCONNECT telematics system

Doosan DX225MH-5 material handlers come with a standard three-year subscription to DoosanCONNECT® telematics management system which allows equipment owners and fleet managers to remotely monitor machine location, hours, fuel usage, engine idle versus work time and error codes, as well as engine and hydraulic temperatures. Machines can be monitored via an online Doosan telematics account. In addition, Doosan dealers can provide improved customer support using the system by responding to machine warning messages and alerts, troubleshooting machine issues, and then sending a field service vehicle to help with repairs and deliver the proper parts.



Operators who work in a variety of scrap-handling applications will appreciate the new Doosan® DX225MH-5 material handler.



Manufactured from a tested and proven Doosan excavator model, the DX225MH-5 material handler is factory fitted with cab risers for increased visibility.



Ask the Grinder Guy:

by Dave Whitelaw

Hey Grinder Guy,

how do I process to reduce my waste stream?

I am assuming you are trying to reduce your processing, hauling or disposal costs, so I will answer accordingly. This also applies to any operation that has to dispose of a lot of other materials, like auto shredding, metal scrap or C&D.

The first thing I would do is evaluate the composition of the residue.

• Have you done a composition study?

- What is the weight of the material per yard?
- What is the majority of material in the waste stream?
- What are the other materials in the waste stream? Next, I would ask: What is your major objective? Is to generate revenue, reduce disposal cost or eliminate 100 percent of waste?

How do you pay for disposal, by weight or by the

volume? Most MSW landfills are by weight and most C&D landfills are volume.

Do you have the space or money to add more equipment?

I am assuming processing or grinding at your location is not an issue and permits are already held.

Let's use an example of a waste stream, which you can change the name of each material to suite your current products. Take C&D material in general, which can be easily sorted and recycled.

- Dirt Used for fill, but need to truck somewhere if you cannot get enough customers to pickup
- Metal Magnets are readily available, easily used and are automated
- Concrete Crush it yourself with your own or a rental crusher or ship to concrete recycler
- Drywall Easily reduced, can be ground and screened and used on farms but not many options
- Cardboard Bailed or sent to cardboard recycler
- Wood Ground and used many ways
- Plastic Various types but easily ground and there are many different recyclers
- Other Try to make this 10 percent or less So what do you do?
- Dispose? Depends on volume and cost
- Recycle? Depends on how much equipment purchase cost for the return on product

The costs are easily figured as well as the returns, but you would need several avenues for each product just in case.

I always say when purchasing a grinder, make the size sufficient to handle 90 percent-plus of your materials. The other 5-10 percent, large stumps or large diameter logs for example, may need a much larger or additional separate piece of equipment to handle recycling and the cost of purchase versus the return is not justified. So disposal may be much easier and less costly decision.

So what do you do? — Begin a composition study. Identify each material disposal options. Do you need to reduce weight or volume?

Are you looking to generate revenue or reduce costs?

• Identify cost of Recycling equipment

What materials can be processed with automated equipment like a magnet?

What are the returns for each product?

What is the majority of materials that can be processed and will this be sufficient?

Spend the time to find more disposal options, processed or unprocessed and decide if more people and equipment can generate enough revenue to provide a return. Just breaking even does not provide you with a rise in future costs or dip in material sale revenue.

Before you purchase any equipment, get a demonstration and find out exactly what your process recovery or reduction will be. Try to find any new specialty equipment for your waste stream. There is always a company that caters to your type of waste that may give you different ideas of processing, material sales or disposal. You need exact numbers for cost and processing as well as disposal, reduction and recovery.

You can always call the Grinder Guy for help. Good

Dave Whitelaw The GrinderGuy GrinderGuy@AsktheGrinderGuy.com





2012 SANDVIK QE340 Screening Plant, 1,755 Hrs., Stk # CE257

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Screener, 2,738 Hrs.,

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2007 ROTO-SCREEN R450 Trommel, 3,879 Hrs., Stk # CE332



2002 WILDCAT RHC-5-140 Trommel, 2,127 Hrs., Stk # CE317



2012 MCCLOSCKEY Impact Crusher 4,449 Hrs., Stk # MCC137



1996 EAGLE 1000-15CC Portable Impact Crusher, Stk # CE327



2009 TRACKSTACK 36X60 Conveyor, 2,304 Hrs., Stk # CE322



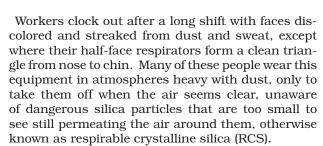
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What is the future of silica dust control?

Edwin Peterson, CEO **BossTek**



Emissions of silica dust have been topic of focus at the U.S. Occupational Safety and Health Administration (OSHA) for years, leading to testing, data and debate that has resulted in the standards issued in the 2016 Final Rule on RCS. This regulation establishes strict guidelines for the permissible exposure limit (PEL) of workers to RCS with the goal of reducing the risk of silicosis, chronic respiratory issues, lung cancer and kidney disease, which have been tied to prolonged and concentrated airborne silica dust exposure.

OSHA Final Rule took effect on June 23, 2016, giving industries one to five years to comply, with the construction industry first on June 23, 2017, followed by general industry, hydraulic fracturing and maritime on June 23, 2018. Engineering Controls (such as water or ventilation) are scheduled to follow in 2021. The rule was recently upheld by U.S. Court of Appeals (District of Columbia) after it was challenged by construction and mining industries.

To control emissions of these minuscule particles and achieve compliance, many companies are still engaging in traditional dust control methods involving surface suppression using hoses and sprinklers. However, field tests and experience have demonstrated that these methods do not adequately suppress most types of fugitive airborne dust, including RCS, exposing workers to potential health risks and resulting in expensive and often disruptive violations. Applying as much as 500 gallons per minute (GPM) of water depending on the application and equipment, the volume of traditional dust suppression efforts can lead to compliance issues beyond RCS rules, such as wastewater runoff, standing water slip-and-fall hazards and water usage violations. Silicon dioxide is formed into a crystalline structure over millions of years. Thirty percent of all minerals are silicates (minerals containing silica), and geologists estimate that they could comprise up to 90 percent of the Earth's crust. "You can find crystalline silica all around us, in roads, buildings, soil; it's everywhere," explained Mike Lewis, Dust Suppression Specialist at Dust Control Technology (DCT). "It's a common component of cement, concrete, brick, block and mortar. The amount of RCS in any specific dust emission is based upon the silica concentration in the material you're working with and the application."

The potential for crystalline silica dust exposure is also common to operations that handle, store, cut, drill or crush substances like limestone, coal, ore, stone, rock and other bulk materials. Applications

that involve sand such as glass manufacturers, or in some way control airborne particles." foundries, sand blasting and hydraulic fracturing, are likewise prone to emissions of silica dust.

Testing for airborne silica particles

One of the traits of RCS that makes it so dangerous is the size of the airborne particle and how long it can linger and travel on air currents, even indoors. According to the National Institute of Environmental Health Services, the size of dust emissions from substances containing silica, from sand to clay, varies from .01 micrometers (μm) to 100 μm in diameter. For perspective, the diameter of the average human hair is about 100µm. Depending on their weight, dust particles must typically be 200µm or smaller to become airborne and linger, while 50µm and smaller particles are nonvisible to the naked

When testing for RCS in the air, personal dust monitors (PDMs) and gravimetric monitors record levels of PM10, the approximate size threshold for particles to be able to penetrate the body's natural defenses (mucus membranes, cilia, etc.) and reach deep into the lungs, potentially causing serious health issues

Unfortunately, the reality is that respirators can be cumbersome and uncomfortable to wear over long periods, so when working in seemingly clear air, personnel who are unaware of the presence of nonvisible particles tend to remove the apparatus. This makes suppression at the point of emission and proper control of airborne dust particles critical to creating a safe work environment.

Regulating silica dust emissions

The final rule sets a PEL of 50 micrograms (µg) of respirable crystalline silica per cubic meter (m3) of air (50 μg/m3) as an 8-hour time-weighted average. The previous rule of 250 µg/m3 was considered too high and a possible contributor to worker health issues. The Final Rule also gives requirements for exposure assessment, methods for controlling exposure, respiratory protection, medical surveillance, hazard communication and recordkeeping.

To control these levels, OSHA provides very general instructions regarding methods of compliance, advising companies to:

- Use engineering controls to limit worker exposure to the PEL.
- Provide respirators when engineering controls cannot adequately limit exposure.
- · Limit worker access to high exposure areas.
- Develop a written exposure control plan.
- Offer medical exams to highly exposed workers.
- Train workers on silica risks and how to limit

"The Final Rule proposes some very general ideas for dust control that mostly involve surface suppression, ventilation and the use of chemical surfactants," Lewis continued. "Since regulators are testing for concentrations in the air, the application of these methods must be highly effective at preventing fugitive silica dust at the point of emission



Compliance

Complying with regulations often involves a combination of workflows, ventilation, respirators, surfactants, sprayers or atomized mist technology. The effectiveness of these technologies varies based upon the application and the scale on which they are applied.

- Workflows This is when a company identifies dust-causing processes and limits the activities to prescheduled time slots in a shift, allowing the utilization of proper safety equipment and dust control measures for shorter periods to minimize exposure. This is not possible for some industries, particularly outdoor operations with material that is exposed to wind and unpredictable environmental conditions.
- Ventilation Ventilation includes HVAC, air cleaners and dust bags. For HVAC ventilation to be effective, dust-causing operations must be contained in an enclosed room or area that is only occupied by workers wearing protective gear. Air cleaners and dust bags are commonly attached to enclosed conveyor transfer chutes or vessels. Routine monitoring, changing and clearing of filters or dust bags is an important component within this solution, which may require regularly scheduled downtime.
- Respirators Highly effective with a relatively low per-unit cost, respirators can be cumbersome for long-term use and may be removed by workers at ill-advised times. The unit must be NIOSH (National Institute for Occupational Safety and Health) approved for the specific environment. Filters must be checked and changed regularly, and OSHA requires employees to be trained in the proper operation and maintenance of the equipment. An improper fit can



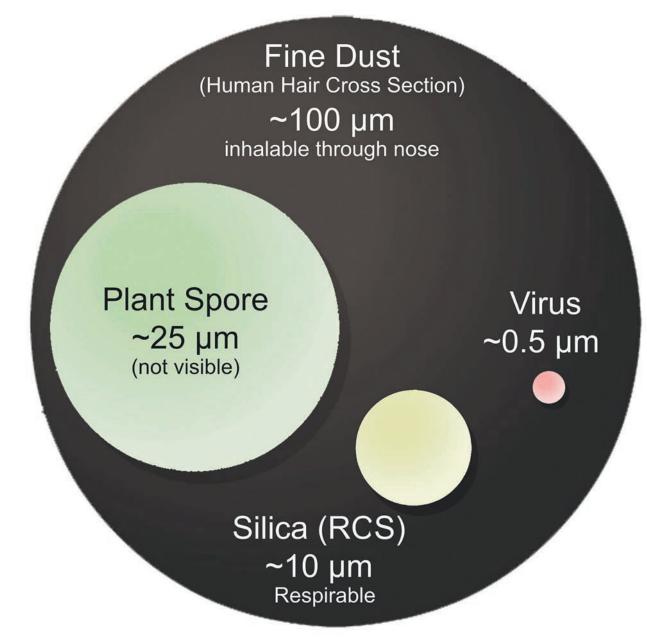
Silica dust ranges in size and is characterized by its jagged crystalline form.

render them less effective, so the agency also requires periodic fit checks.

- Surfactants This type of chemical additive is distributed in water by industrial sprayer or atomized misting system, and is particularly helpful for the suppression of dust emitted by naturally hydrophobic materials such as coal. Materials are hydrophobic when the interaction between the water molecule and the material is negative, causing the water molecules to bond to themselves rather than the material. This creates beaded droplets that roll off the surface rather than wet it, like a water resistant jacket. Surfactants promote ionic bonds that spread the droplet across the material, allowing hydrophobic particles to cling and cake.
- Sprayers Commonly found in the form of misting hoses, water cannons, sprinkler systems and water trucks, this method distributes water on the surface of a material to seal in dust at mines, material transfer points, on storage piles and in open transport vehicles. In some cases, one or more workers are required to operate or reposition the equipment. Due to droplet sizes of 200µm to 1000µm, sprayers have been found to be ineffective in controlling airborne fugitive dust emissions.
- Atomized Mist A fine engineered mist is distributed using a powerful fan-driven cannon design or strategically placed misting bar / ring. Nucleating nozzles fracture pressurized water into millions of tiny droplets between 50µm and 200µm in size, preferably applied at the point of emission. The tiny droplets raise the humidity of the target area, float on atmospheric air currents with dust, capture particles and drag them to the ground. Settling droplets provide surface suppression evenly across material using less water, drastically reducing the volume of runoff and lowering the chance of pooling.

Misguided regulation and the slipstream effect

According to OSHA's final rule, "For outdoor dust suppression, the PEA (preliminary economic analysis) determined that workers must often spray



water over storage piles and raw material receiving areas. The methods by which water is provided for these tasks can vary widely, from water trucks to hoses and sprinklers. It was judged that most facilities would make hoses available for spraying and that spraying requires a materials-handling worker to devote part of the workday to lightly spray the area for dust control." This is incomplete and potentially expensive instruction that requires extra labor and does not take into account several operational factors such as water evaporation, disruption of

material, wind and the 24-hour work cycle. More important, sprayers of any kind (hoses, water trucks, etc.) are incapable of offering airborne dust suppression due to the large droplet sizes they produce. This is because of the "slipstream effect."

When the size and velocity of a moving droplet causes air to rapidly flow around it — that is called a "slipstream" - acting much like air around a plane's wing. Though small, the airflow around a falling droplet 200µm to 1000µm in size is strong enough to deflect airborne PM10, and in some instances, actually lifts the particle. In contrast, atomized mist droplets ranging between 50 and 200 microns in size — linger in the air and create virtually no slipstream, facilitating collisions with airborne particles and driving them to the ground. Atomized mist also settles lightly on material surfaces, offering ground-level suppression as well. When used in tandem with a surfactant and dosing pump, the technology is effective on an extremely wide range of applications and materials.

Operators are discovering that atomized mist technology can create a safe and compliant workplace by providing both airborne and surface dust control. The mist from a single machine can cover an area as large as 280,000

square feet (31,000 square meters), while at the same time minimizing water consumption by using 39 GPM (147.6 lpm) or less. Once the hoses and power are attached, automated operation reduces labor costs considerably. Programmable controls and remote operation can improve suppression efficiency even further, particularly in high-volume production operations. Some manufacturers even supply roadworthy trailer-mounted designs equipped with their own generator sets, water tanks and other options for remote locations without available water or electrical sources.

"It's one of those technologies you can just turn on and walk away from, minimizing water consumption and labor hours," said Lewis.

"This is a workplace safety issue that not only has a long-term consequence to workers' health, but also directly affects a company's bottom line. And it's important for staff morale; modernizing current dust control procedures is smart business," Lewis added. "Atomized mist technology for bulk handling has been around for more than a decade, ample time to prove its effectiveness and the return on investment in a wide range of bulk handling industries and applications."



Atomized mist creates a wide area of airborne and surface dust control at the point of emission.

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Fuchs continues to drive momentum in North America

LOUISVILLE, KY — FuchsTM recently exhibited the MHL340 F2 and MHL350 F2 material handlers at ISRI 2018. Commenting on the line up Todd Goss, general manger for Fuchs in North America, said the features and solutions on these machines enable customers in the four core segments of scrap, waste, forestry and port industry to operate efficiently and boost return on investment.

Fuchs has continued to focus on growing distribution globally, to ensure customers experience more responsive service and parts support locally. Currently, there are 23 Fuchs equipment dealers throughout North America.

MHL 340

Even heavy recycling loads requiring precise handling within a specific work radius are easily dealt with using the mobile material handler, MHL 340. The particularly solid undercarriage, with its larger outrigger cylinders and a stabilization footprint measuring 16'9" x 14'1", ensures stability when heavy ton-loads are to be handled, utilizing a reach of up to 41'11". So that in such situations neither speed nor precision is compromised, slewing motors and slewing gears are fine-tuned, and the lifting and stick cylinders come equipped with special end-position damping.

MHI.350

Cutting-edge engine technology combined with intelligent hydraulics make the MHL350 one of the fastest and most sensitive material handlers in scrap handling. With an operating weight of up to 78,263 lbs, a reach of 52'6" and an undercarriage width of 9'10", the MHL 350 is a particularly stable machine, with its statistics conclusively bearing out its performance. The high-output 215hp turbo diesel engine and powerful hydraulics operating in a notably efficient dual-circuit system ensure that even heavier loads are handled with precision and speed. Alongside its near legendary ruggedness, state-of-the-art technology and maximal occupational safety are further advantages offered by this machine.

"These are exciting times for the Fuchs business," comments Goss. "We have significantly strengthened the Fuchs team, increased local support by growing our distribution network, broadened and updated our purpose-built handler line for the market, and customized our equipment to meet specific application needs for our customers. It's a good time to be a Fuchs material handler customer."

For more information, www.terex-fuchs.com.



Slewing motors and slewing gears are fine-tuned, and the lifting and stick cylinders come equipped with special end-position

Photo courtesy of Fuchs

RockRoadRecycle.com

Robust scrap processing performance and improved sustainability with Metso's recycling solutions in North America

Metso presented its extensive metal the Year for 2017 and being named as recycling product offering at the recent ISRI Convention and Exposition 2018 in Las Vegas, NV.

Metso experts at the event advised on how to choose the most suitable equipment for different types of metal recycling needs to secure optimal process efficiency, sustainability and

At ISRI, Metso intended to address "key trends in the metal recycling industry in North America. We are committed to driving sustainable improvements in performance and profitability in our customers' businesses," said Keith Carroll, vice president, metal recycling North America, Metso.

The common denominator among all Metso processing equipment solutions is the high efficiency and low energy consumption, and they are globally recognized as the benchmark for their product types. Likewise, their stateof-the-art technology, comprehensive service setup and the highest safety standards are appreciated and acknowledged by the industry. This is exemplified in Metso being named as AMM's Scrap Equipment Provider of

Machinist

Pipefitter

 Insulator Millwright a finalist again for 2018.

Metso's installed base continues to grow in North America and globally

In the last year and during the first quarter of 2018, Metso has continued to grow its installed base in North America and globally.

In North America, for example, a customer in the Midwest commissioned their new Texas ShredderTM equipment. Several customers in Texas have chosen Metso N-SeriesTM products, including two NIS Incline Shears and the first US-installed NCS Shear/Baler/Logger. Orders are in production to deliver and install new shears in the Western and Midwest U.S. as well as the first Lindemann EtaRipTM Pre-Shredder this fall. Internationally, the company has sold three new shredders to China, multiple shredders, shears and balers in Europe and Asia, and approximately two dozen Metso N-Series products all over the world.

In total, over 150 Metso shredders are currently in operation in North America alone, which represents about half 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.

Metso N-series for smaller and mid-market operators

To better serve smaller and more price sensitive mid-market operators, Metso introduced the N-Series line of shears and balers in 2016. These machines offer many of the same features and benefits as the Metso Lindemann line of shears and balers and are fully supported by Metso's global engineering and service teams.

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



To better serve smaller and more price sensitive mid-market operators, Metso introduced the N-Series line of shears and balers in 2016.



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The common denominator among all Metso processing equipment solutions is the high efficiency and low energy consumption.

Photos courtesy of Metso

Age awareness

by Ben Dobbs Technical Manager at the Lifting Equipment Engineers Association (LEEA).

ifting gear failure can have dramatic consequences for both those directly affected and those held responsible. To ensure safe practice it is crucial that users are fully aware of issues surrounding Design Working Period (DWP) and maintenance responsibilities.

The sad litany of in-service failure of cranes and other lifting gear has many causes, from criminal negligence downwards. One recurrent, and to the uninitiated rather baffling, theme is the failure of equipment that appears to be operating well within its 'safe working load' and 'design life'. Such incidents are seen both in ageing and in relatively new equipment, and suggest that those responsible for safe maintenance and operation do not always fully understand the 'life cycle' of the crane and its implications for safety.

To concentrate directors' minds it is worth noting that recent crane-related fatalities have resulted in multi-million pound fines, corporate failure, disbarment from being a director and in some cases jail sentences. Age-related failures are entirely avoidable provided everyone in the chain of responsibility performs their role, and understands that unlike their Victorian forebears, the modern finely engineered crane does not necessarily last for ever – you have to



To ensure safe practice it is crucial that users are fully aware of issues surrounding Design Working Period (DWP) and maintenance responsibilities.

look after them.

Part of the problem may be that the simple concepts of 'design life' and 'safe working load' are not really valid in modern practice. The whole approach to the design of cranes has changed in relatively recent times

Greater understanding, combined with the ability of Computer Aided Engineering to enable a less conservative evaluation of stress and strain calculation, has enabled engineers to design close to the 'limit state', not just in terms of static loads but in terms of cyclical or fatigue loading, and in the effects of wear and tear. That has yielded great benefits in terms of initial cost, ease of transport and assembly, and indeed the giant tower cranes seen on construction sites would not have been possible under the old design approach.

However this also means that cranes are designed, and classified, for particular patterns of duty. Structures are designed for a lifetime measured not in calendar years but in working cycles (and mechanisms similarly for a life in running hours). Working cycles are related to the load spectrum – the average load handled by comparison with the nominal rated load.

So, for example, a crane rated at 11 tons and intended to perform occasional maintenance tasks will be designed differently, and have different vulnerabilities, from [an] 11 ton crane intended for continual use on a production line. If the inspection, maintenance and use of the crane takes due account of what is now a quite complicated specification – not a 'design life' but a 'Design Working Period' (DWP) – all should be well, but there is little margin for error.

This does not just apply to structures – there are similar considerations around motors, brakes, wire ropes and other elements. Various components and assemblies may have DWPs, which are not the same as that of the crane as a whole.

It is easy to see how things can go wrong. The intended usage may have been inadequately defined when it was bought or hired; usage may change, perhaps because production increases; it may be used for purposes it wasn't intended for. It becomes very important to maintain a history of usage and to relate that to the design parameters: that may not be easy, for example with a hired crane, or when a new owner takes over a site or factory with cranes already installed. It isn't enough to depend on the periodic inspections and examinations specified under LOLER (Lifting Operations and Lifting Equipment Regulations) – incipient failure, whether in structural members or for example in wire rope cores, may



Technical Manager at the Lifting Equipment Engineers Association (LEEA), Ben Dobbs.

not be readily visible.

BS ISO 12482 describes a method of monitoring the actual duty of bridge and gantry cranes relating it to the original duty envisaged in the classification. That then enables the prediction of when design limits are being approached and, in turn, the timely targeting of special inspections, maintenance and refurbishment. The philosophy of BS ISO 12482 should apply to all cranes.

The duty holder

Where does the responsibility lie? In the first instance, of course, with the 'duty holder', but there are many other parties that also carry responsibility. Nor does appointing a duty holder let the company's owners and directors off the hook. Safety inevitably carries commercial costs, although nothing like the costs of a fatal accident. Even minor injury or near misses can also be expensive, depending on the extent of the negligence. The company owners are responsible for ensuring that the financial and other resources, and the 'corporate culture', required for safe operation are in place.

Formally, the duty holder's responsibilities include:

- Ensuring that cranes brought in (bought or hired) are fit for purpose
- Creating a risk assessment using manufacturer's data, environmental details, usage information to identify critical or vulnerable components and determine maintenance and inspection intervals
- Ensuring that cranes are maintained, inspected and thoroughly examined to ensure they are safe to use
- Ensuring that they are not unduly susceptible to foreseeable failure modes
- Keeping records of crane use, maintenance, inspections, repairs, modifications, exceptional events and so on so that the history of the crane and thus its remaining safe life can be determined. The duty holder also has to keep and supply information required so that anyone modifying or upgrading the crane can calculate a revised DWP
- \bullet Ensuring that cranes are overhauled or replaced before they reach their DWP.

Unless the company is actually a crane specialist itself, the duty holder will probably not have the required level of knowledge to carry out all of the above adequately and so will delegate to Persons competent for the required task. But the duty holder is responsible for ensuring that the necessary level of competence is possessed.

It shouldn't really need stating, but the duty holder is of course responsible for ensuring that any remedial actions that are flagged up – whether they be $\frac{1}{2}$

2018





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OSHA seeking to limit injury records employers must submit electronically

OSHA has begun rulemaking efforts that could limit how much injury and illness information employers must submit electronically under a 2016 rule. Under the proposed changes, employers would only have to submit to OSHA the annual summary of injuries and illnesses, rather than also submitting logs and reports detailing each incident.

In the recent Spring 2018 Regulatory Agenda, OSHA said that it "proposes to amend its record-keeping regulation to remove the requirement" for employers with 250 or more employees to submit Forms 300 (injury and illness log) and 301 (incident reports). "Under the proposed rule, these establishments would be required to electronically submit only information from the OSHA Form 300A (Sum-

mary of Work-Related Injuries and Illnesses)."

OSHA will also ask for comments about "the costs and benefits of adding the Employer Identification Number (EIN) to the data collection." OSHA may do so to better match OSHA-collected data with data from the Bureau of Labor Statistics (BLS) and to "potentially reduce the burden on employers who are required to report injury and illness data" to both agencies.

On May 23rd, OSHA sent this proposal to the Office of Management and Budgetfor review. OSHA hopes to issue a Notice of Proposed Rulemaking as early as July 2018.

Source: Safetylawmatters.com by Avi Meyerstein

AGE AWARENESS from 13

special inspections, parts replacements, changes in usage – are fully and promptly acted upon.

Examiners, inspectors and maintenance staff

The 'thorough examination' by a 'competent person' is carried out in accordance with statutory requirements. Routine inspections of critical features may be carried out in-house, perhaps by maintenance staff, to a frequency determined by risk assessment – which they may have been responsible for creating.

In accordance with statutory requirements a competent person will take into account the age of the crane using will be using actual or estimated information on the DWP expended to decide what actions to take or recommend, from deeper inspections to partial or complete disassembly, or precautionary replacement of parts. But the duty holder needs to realise that, unless specifically contracted for, the competent person isn't responsible for assessing how much of the DWP the crane or its components have remaining. Obviously, records of inspections, actions and recommendations need to be kept and passed back to the duty holder. Planned and preventative maintenance may reset the DWP clock for particular components or assemblies.

Manufacturers, modifiers and resellers

Suppliers have the responsibility of providing all the information necessary for classification and assessing DWP. Modifiers are responsible for assessing and informing the duty holder of the remaining DWP.

Procurement

Logically, purchasing should come at the head of the list. Those bringing in – whether buying, hiring, or letting a contract for crane services – have a responsibility for ensuring that the specifications they issue, and the bids they accept, properly reflect the likely usage of the crane, and that it will be able to perform safely under all foreseeable conditions of use, for the specified classification of crane duty, as determined by risk assessment. They must ensure that

equipment meets, and is marked and documented for, all relevant safety requirements and standards.

They also bear responsibility for ensuring the safety of bought-in spares and replacement parts, the competence of any contract maintenance or service firms, of contracted examiners, of trainers and so on.

It is particularly important that procurement is not exposed to undue financial pressures that might lead to the acquisition of equipment underspecified or unsuited to the task. This is ultimately the responsibility of the company's owners and directors to ensure.

Finally, it is always worth remembering with these issues the importance of seeking out a LEEA member. Members are fully audited and trained to ensure they offer excellence and compliance to standards and legislation.

Further information can be found in 'Guidance on roles and responsibilities for crane Design Working Periods (Document Reference LEEA 074) and 'Roles and responsibilities for ensuring continued safety of in-service lifting equipment (Document Reference: LEEA 072) and are available to download on www. leeaint.com .

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Lindner's Atlas -

primary shredding with intelligent energy management

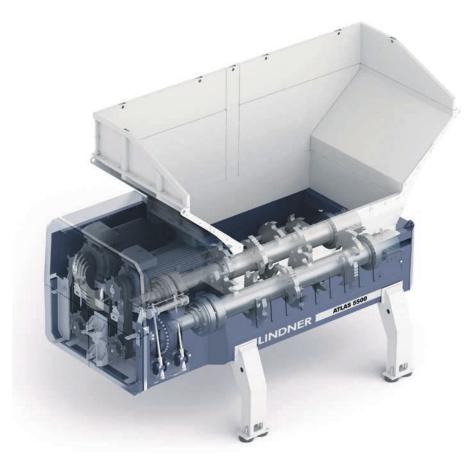
This stationary 'ripping' twin-shaft primary shredder perfectly complements the tried-and-tested Jupiter series: the newly developed ripping system ensures very high throughputs and little downtime: it is (cost)-efficient, energy saving, environmentally friendly and produces little noise.

Optical sorting systems, such as those following primary shredders in modern SRF lines, can sort out recyclables more effectively and thus better comply with legal regulations and requirements if the discharge conveyor is evenly filled with material. Furthermore, coarser particles are often an advantage. Film, for example, should be the size of an A4 sheet.

In response to greater demands on recycling sorting processes and the growing need for coarser output in SRF production, Linder has developed the Atlas: the ideal primary shredder complemented by the outstanding secondary shredders in the Komet series.

Shredding with intelligent energy management - the perfect output

With the new Atlas twin-shaft shredder (a slow-speed, high torque solution), both shafts of the shredding unit can rotate independently while featuring a particularly sturdy frame: perfect for asynchronous and synchronous operation. If one of the two shafts stops due to foreign objects, bulky or tough input materials, the second shaft can still be used in asynchronous operation, ensuring continuous and uniform material discharge. As Lindner Product Manager Stefan Scheiflinger-Ehrenwerth shredding takes place in both directions, enabling a peak throughput of 40 to 50 metric tonnes per hour depending on the input material - even in reverse mode. The robust machine



With the new Atlas twin-shaft shredder, both shafts of the shredding unit can rotate independently while featuring a particularly sturdy frame.

The Atlas provides the perfect output for sorting technologies and thus the best possible dosage for secondary shredding.

Photos courtesy of Lindner

also does not require a pusher/ram: the shafts powerfully pull in material. Optical sorting systems can then recognize and separate significantly more recyclables from the coarsely pre-shredded, evenly discharged material and take it out of the material flow. The Atlas provides the perfect output for sorting technologies and thus the best possible dosage for secondary shredding.

What makes the Atlas shredder so unique and innovative - asynchronous, ripping shaft systems have long been available on the market - is the machine's electric drive concept. Lindner, as a leader in shredding technology, further developed its well-established asynchronous motor belt drive and is now introducing a first: a twinshaft shredder with intelligent energy management. Stefan Scheiflinger-Ehrenwerth enthuses when describing the company's latest development: "As a result, the machine consumes up to 40 percent less energy than shredders with conventional hydraulic drives and has even faster reaction times." What is more, a container for the oil tank is no longer required: "A hydraulic power pack as large as the machine itself is no longer needed." Compactly built, the Atlas takes up little space in the client's facilities.

Independent and virtually maintenance-free

Although hydraulic drives have the advantage of allowing the pressure to be altered quickly, they also generate a lot of heat. The energy loss is there-

fore considerable and hydraulic fluids might also escape. Additionally, oil must be refilled regularly and the engine serviced periodically. An electric drive does away with all of these tasks, and produces far less noise than a hydraulic system.

The Atlas is thus very quiet and virtually maintenance-free. 'Apart from the regular maintenance intervals with the obligatory hard facing after a certain number of operating hours, virtually zero maintenance is required," says Stefan Scheiflinger-Ehrenwerth. No cutting gap needs to be readjusted, the machine simply operates up to the next scheduled maintenance. Lindner has developed an independent system that is designed for continuous operation — 24 hours a day, 7 days a week. "The Atlas stands for maximum productivity without downtimes," summarizes Stefan Scheiflinger-Ehrenwerth. "You power up the machine on Monday morning and let it run all week long."

The Atlas features a torque-limiting safety clutch, which protects the drive unit from damage in the event of blockages caused by non-shreddables. When developing its stationary primary shredder, Lindner considered it vital that tried-and-tested technology was reflected in innovation. Another key example is the proven robust sensors, which ensure a controlled machine shutdown and therefore protection for all components. The shredder is conveniently controlled by remote control from the loading vehicle (wheel loader, excavator) or the control room.



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US Composting Council launches key projects to grow facilities across U.S.

RESTON, VA — Data collection, research and stakeholder meetings are underway in a series of initiatives by the US Composting Council intended to help close gaps in regulations across the U.S. where regions are lagging in development of robust compost facilities and organics collection.

The USCC projects focus on state permitting regulations, contradictions or omissions for compost facilities in zoning ordinances and local solid waste plans as obstacles for entrepreneurs who seek to open or expand compost facilities or compost sales.

The organization, which has been in existence more than a quarter century and has trained hundreds of compost facility operators and certified thousands of cubic yards of compost for proper use, wants to connect consumer demand for organics collection and more facilities to compost organics, from green materials such as yard and landscaping waste, to manure, to food scraps. The demand is being driven by consumers and municipalities seeking increased recycling.

Local regulations and zoning codes are often behind the curve when it comes to demand.

"When states consider organic waste bans it is critical to include all of the stakeholders in the planning process," said Frank Franciosi, USCC executive director. "It's important to have GIS data collection on all aspects of the waste process flow: the generation locations, the haulers and existing per-

mitted composting facilities."

In one project, a USCC committee is focusing on updating the Model Compost Rule Template, developed several



The USCC projects focus on state permitting regulations, contradictions or omissions for compost facilities in zoning ordinances and local solid waste plans as obstacles for entrepreneurs who seek to open or expand compost facilities or compost sales.

Photo courtesy of Compost With Me

years ago and used by many states to put in place tiers for permitting compost facilities. As the industry develops and changes, the template must reflect that; USCC is working with US EPA regions to gather data from states and local governments about changes in their permitting environments.

Another project being tackled by US-CC's Strategic Alliance Committee is the Target Organics project, which will produce a step-by-step guide for counties and other municipalities to add compost facilities and compost sales (both public, private and public-private partnerships) to their solid waste planning documents. Other tools under the Composting Council's Research and Foundation that address contamination include the Compostable Plastics Toolkit, and introducing food scrap collection into municipal recycling programs, the Curb to Compost Toolkit, will be updated in months to come as well.

"If compost manufacturing infrastructure is developed strategically in areas of high generation and the compost product market is in place, it's clear from our growing industry that jobs and economic opportunities are the result," Franciosi said.

The effort in the coming year will be driven by USCC members; to help develop these tools or learn more about USCC: www.compostingcouncil.org.



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Dust control cannon manufacturer introduces longest parts warranty in the industry

PEORIA, IL — Having previously set the industry standard with 3 year/3000-hour coverage, BossTek_has increased the term to a 5 year or 5000-hour replacement warranty on the direct drive fan motor of its entire product lineup. For over a decade, BossTek® (formerly Dust Control Technology) has built the DustBoss® line of atomized mist cannons, widely considered the most reliable equipment of its type on the mar-

ket. Many of the early units sold by the company are still in service, delivering excellent surface and airborne particle control. As industrial dust emissions become more heavily regulated, the improved warranty offers customers peace of mind and reflects BossTek's commitment to superior durability and return on investment from its products.

"When we follow up with past customers, more often than not, instead of re-

placing their DustBoss, they're adding to their fleet as they expand," said BossTek CEO Edwin Peterson. "With so many of our oldest units still in the field cranking out wide area dust suppression, extending the warranty was an easy decision. Our product quality hasn't changed from day one."

The demand for atomized mist dust suppression technology has increased since air quality inspectors now test for smaller, non-visible fugitive particle sizes (<10 microns in diameter or roughly the size of pollen). These particulates can leave the site line and expose the surrounding community to potentially hazardous respiratory issues. Previously, industries like demolition contractors, bulk product storage (coal, ash, scrap metal, etc.) and ports have controlled dust by applying surface suppression using water sprayed from hoses, which create droplets from 200 – 1000 microns in size. But over time, operators have discovered that in order to control dust emissions, droplet sizes must roughly match the size of airborne particulates, which hoses cannot accomplish.

Available in four sizes depending on the needs of the application, a single Dust-Boss® unit can cover up to 5 American football fields with billions of mist droplets approximately 50 to 200 microns in diameter. Using a powerful industrial fan in the back of the cannon, engineered droplets are shot from a misting ring on the front in a cone-shaped pattern, reaching up to 100 meters. The huge coverage area is achieved by using the vertical adjustment and optional 359° oscillator. The tiniest droplets are small enough to travel with dust emissions, collide with particles too small to see and drag them to the ground. The larger droplets deliver surface suppression, without excessive pooling or saturation of material.

Hoses can pump out more than 100 GPM of high-pressure water and need to be controlled manually. At that volume, without extra steps taken to control pool-

ing and runoff, operations can face workplace and environmental violations.

DustBoss units are a one-touch operation, allowing workers to turn them on and walk away. The water pressure emitted from the mist nozzles is harmless, the maximum amount of water used is 39 GPM (average around 17 GPM) and the fans are guarded against reach-in injury, creating a safe and cost-effective operation.

The cannons can be mounted on a tower, steel skid or wheeled frame. They can also be purchased as Fusion™ units that feature an enclosed tank and gen set on a roadworthy trailer for applications that lack easy access to water and power or require exceptional portability. Able to be heat traced and insulated for cold climates, the Fusion line has quickly become a popular choice in a wide range of industries. The direct drive motor in those designs is also covered under the new parts warranty.

"This warranty demonstrates commitment to our customers," Peterson concluded. "When they revisit their dust control plans in the face of changing regulations, we want them to be confident that they are getting the highest quality product on the market, with the best return on investment."

BossTek is an innovator in dust suppression, with a wide range of equipment and accessories that enable atomized mist technology to control fugitive particles for applications in demolition, construction, bulk material handling, waste and scrap processing, recycling and landfills. Recently the company has extended its expertise to odor management solutions using similar technology, which distributes safe and environmentally friendly topical and airborne deodorizers. Headquartered in Peoria, IL (USA), the company's dust and odor control units are designed and manufactured in the USA and delivered to customers around the world, with its equipment sold to users in 40 different countries to date.



BossTek is an innovator in dust suppression, with a wide range of equipment and accessories that enable atomized mist technology to control fugitive particles for applications in demolition, construction, bulk material handling, waste and scrap processing, recycling and landfills.

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BossTek has increased the term to a 5 year or 5000-hour replacement warranty on the direct drive fan motor of its entire product lineup.

Experience in material handling equipment brings Van Keppel Company to SENNEBOGEN

LITTLE ROCK, AR — A long-time commitment to the material handling industry (scrap, recycling, waste, ports, etc.) has led the G.W. Van Keppel Company to take on the SENNEBOGEN line of purpose-built material handlers.

Constantino Lannes, President of SENNEBOGEN LLC, announced Van Keppel's appointed as authorized distributor of SENNEBOGEN equipment for the majority of the state of Arkansas. "We are pleased to have the Van



Brian Loderhose (L) & Kevin Kientz review SENNEBOGEN material.

Photo courtesy of G.W. Van Keppel Company

Keppel family as part of our network," said Lannes. "They share our family values and ongoing commitment to customer service."

Kevin Kientz, executive vice president of Van Keppel, notes that SENNEBO-GEN offers his customers a premier line of proven material handling machines, backed by unparalleled parts & service support.

"Scrap and metal recycling have long been a key sector for our business," Kientz says. "When we needed to find a line of material handlers, the SEN-NEBOGEN name was at the top of our list. We're very pleased to now offer the industry-leading machines, plus the resources to support our commitment to customer service."

Sales and service for SENNEBOGEN machines in Arkansas will be centered from Van Keppel branches in Little Rock. According to Kientz, SENNEBOGEN has already been onsite in the location to train Van Keppel's specialists in their material handling equipment. "As part of our ongoing commitment to assist our customers in every step of their machinery acquisition, we will

have material handling specialists on our team." Says Kientz. Plans are also in place for Van Keppel technicians to attend the SENNEBOGEN Training Center near Charlotte, NC, for additional hands-on training and troubleshooting instruction.

"First Class" parts & service support

SENNEBOGEN'S 100,000 sq. ft. head office and warehouse complex, located in the town of Stanley, NC, was a key factor in Van Keppel's decision to represent the line.

"SENNEBOGEN really understands how to support our service philosophy," Kientz says. "Having a complete parts inventory for every machine they have in the field, ready to ship here in North America, is critical."

Kientz believes that providing top-ofthe-line machines for customers' mission-critical operation will also open doors for the firm's secondary lines of equipment. "Once you've proven that you can do the job to keep the yard up & running, customers are comfortable with relying on us for their other equipment as well."

Midlantic machinery proves that "working the plan" really works as SENNEBOGEN dealer of the year

At this year's ISRI Conference and Exhibition in Las Vegas, Midlantic Machinery was announced as Dealer of the Year by SENNEBOGEN LLC President Constantino Lannes. With five branch locations supporting SENNEBOGEN in eastern Pennsylvania and Delaware, Midlantic may not be the largest distributor in SENNEBOGEN's nation-wide network. However, according to Senior Vice President Pat Sherwood, the firm's winning sales record in 2017 can be attributed to nothing more complicated that the old saying: "Plan to work and work the plan."

"When we became the SENNEBOGEN distributor in this territory, in 2009, there were only a few SENNEBOGEN machines in the field. We didn't have a large territory but have been steadily building our base. This year, when our regional sales manager sat down with us to discuss a business plan for the region we were anxious to get started. They recommended an optimum inventory we should stock, given our territory and potential. I think that's a big reason why we were so successful."

Each branch is staffed by a sales specialist who had been trained in material handling applications at the SENNEBOGEN Training Center near Charlotte, NC. "We had our staff take the training before and have decided this year that we're going to send them to SENNEBOGEN again for a refresher. All our mechanics go down there regularly, as well. The factory training and facility are first class."

To complete the plan, each branch is well-stocked with SENNEBOGEN service parts, ensuring immediate delivery for customers' most common needs. According to Pat Sherwood, sales branches are equipped with flexible financing and lease packages from SENNEBOGEN Capital, to help seal the deal.

Sherwood notes that sales and service for SEN-NEBOGEN customers is a team effort. Along with working together to develop the business plan, SEN-NEBOGEN specialists join Midlantic's sales staff to meet with the customer, review the application and make a recommendation for what the customer needs. "As SENNEBOGEN's top dealer today," Sherwood explained, "Midlantic will continue to 'work the plan' to top 2017's performance. That's our goal."



L-R: Tim Hyland, Bill O'Keefe from SENNEBOGEN, Eric Marburger (Sales Manager), Barry Talley (Territory Manager), Pat Sherwood (Executive Vice President) from Midlantic Machinery, Constantino Lannes and Erich Sennebogen from SENNE-BOGEN.

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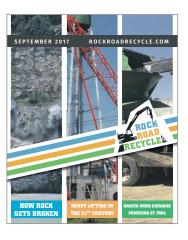
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Pettibone introduces Extendo 944X telehandler

BARAGA, MI — The next generation Extendo 944X telehandler builds upon Pettibone's traditional rock-solid design, delivering the same ruggedness and dependability while providing several new design enhancements for contractors and rental operators working in construction, masonry, supply

vards and more

The Extendo 944X is powered by a 74-horsepower Cummins QSF 3.8 Tier 4 Final diesel engine that features a DOC muffler and requires no DEF. Mounted on a side pod, the engine offers easy service access while allowing excellent curbside visibil-

ity and ground clearance of 18 inches. A 117-horse-power option is also available.

With its newly designed boom, the 944X offers maximum lift capacity of 9,000 pounds, max forward reach of 30 feet, and max lift height of 44 feet, 6 inches. Featuring formed boom plates, the struc-

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ture offers greater strength while reducing weight. The design also minimizes boom deflection for better control and accuracy when placing loads.

Boom overlap has been nearly doubled from previous models to provide smoother operation and reduce contact forces on wear pads, thereby extending service life. A bottom-mounted external extend

cylinder further reduces the load on wear pads by up to 50-percent. This cylinder location also provides greatly improved service access to internal boom components. A single extension chain eliminates the need to balance dual chains. Another new introduction is fastener-less wear pads for simplified service. Pettibone's leading hydraulics continue to deliver exceptional controllability and overall operating feel, while enhancing efficiency and cycle speeds. Cylinder cushioning has been introduced to dampen the end of strokes – both extending and retracting – to avoid the wear-and-tear of hard, jarring stops, while also helping prevent the potential spilling of a load. The telehandler also uses a single lift cylinder that improves operator sight lines, and has twin non-tensioned hydraulic lines for tilt and auxiliary plumbing.

Drivetrain and axles have been optimized to provide greater tractive effort with minimal tradeoff on top end speed. A pintle hitch mount adds versatility for towing. Built for use on rough terrain, the unit offers full-time 4-wheel-drive with limited-slip front axle differential. Tight steer angle capability provides an efficient turning radius of 14 feet, 1 inch. The Dana VDT12000 Powershift transmission offers three speeds, forward and reverse.

The Extendo operator cab maintains Pettibone's ergonomic seat, pedal, joystick and steering wheel positions, while optimizing line of sight in all directions. A new analog/LCD gauge cluster comes standard. An optional 7-inch digital display with integrated back-up camera is also available. The cab also offers enhanced climate control, flat bolt-in glass, split door design, openable rear window, USB accessory plug, lockable storage under the seat, and water-resistant components for easy interior washdown.

All-steel fuel and hydraulic tanks are built to resist damage. The 30-gallon fuel tank offers ample volume for a full day's work, and the lockable fuel-fill is in a clean, accessible location. Other features include non-tensioned boom hoses, split-system electrical circuit panels, a 12-volt accessory plug in the engine bay, and heavy-duty bright LED lighting. Additional options include a sling hook for additional load security and a wide variety of attachments.



The next generation Extendo 944X telehandler builds upon Pettibone's traditional rock-solid design.

Photo courtesty of Pettibone



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Texas' Stanley Equipment and Parts Inc. joins Bandit's authorized dealer network

ISABELIA COUNTY, MI — Channelview, Texas-based Stanley Equipment and Parts Inc. joins Bandit Industries' ever-expanding network of authorized Bandit dealers, expanding their ability to better serve customers.

Stanley Equipment and Parts, located at 16127 Market Street in Channelview will offer sales, service and parts for all Bandit hand-fed chippers, stump grinders and skid-steer loader attachments.

"Bandit is excited to have Stanley Equipment and Parts join our Bandit dealer network," said Bandit Sales Manager Jason Morey. "Their customers are already aware of their commitment to providing the best service possible, and we're excited that they'll be able to bring that level of dedication to Bandit customers in southeastern Texas."

Like Bandit, Stanley Equipment and Parts is a family-owned business. Founded in 1974 by Harry Baxter Stanley, they forged business relationships with their loyalty, honesty and integrity. Today, Harry's son, Baxter Stanley, runs the company.

Learn more about Stan-

ley Parts and Equipment by visiting their website at www.stanleypartsinc. com . Check out Bandit's complete lineup of handfed chippers, stump grinders, skid-steer attachments and more at www.banditchippers. com .





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- 1145 Training
- Truck Parts & Equipment
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2018

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Trailers

Trucks

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Trucks



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\$11.80	\$12.10	\$12.40
\$12.70	\$13.00	\$13.30
\$13.60	\$13.90	\$14.20
\$14.50	\$14.80	\$15.10

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(MM/YY)

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Metso Metrics solution for waste recycling launched at IFAT 2018

The digital solution enables further optimization of shredder capacity, efficiency and reliability with near real-time data.

"Tracking the performance and condition of a mobile shredder can be challenging. With Metso Metrics, our customers will have the right information at the right time to make the decisions that allow them to get the most out of their equipment. Added intelligence helps achieve improved utilization rates and operational efficiency," says Henning Lindbjerg, head of strategic projects, business development, recycling at Metso.

The cloud-based, remote monitoring and data visualization service gives customers near real-time access to the critical data and insights to shredders' operational performance and maintenance needs. Optionally, Metso's expert service can analyze the data and provide recommendations for further improvement of the shredder's operation and reliability in its operating environment.

Metso Metrics will be integrated with all mobile M&J pre-shredders from August 2018 onward.

Metso Metrics Services was launched in 2017 and helps in optimizing aggregates production in the quarries and contractor sites. Since then, the service has been integrated with more than 500 Metso mobile crushing plants. The knowhow and experience from the aggregates business has been used in the development of a digital solution for waste recycling. Metso is also working on a similar solution for minerals processing. The intelligent solution retrieves, processes and stores data, which is accessible to customers through user-friendly dashboards. Algorithms guide the user in increasing shredder uptime and lowering operating costs.



The digital solution enables further optimization of shredder capacity, efficiency and reliability with near real-time data. Photo courtesy of Metso

ASV adds Columbia, SC dealer to network



ASV added Thompson Rental Services to its dealer network. The dealership serves the Columbia, SC area, offering ASV's full line of skidsteers and compact track loaders Photo courtesy of ASV

GRAND RAPIDS, MN — ASV Holdings Inc., an industry-leading manufacturer of all-purpose and all-season compact track loaders and skid steers, has added Thompson Rental Services to its dealer network.

The Columbia, South Carolina-based dealer will offer all ASV Posi-Track compact track loaders, featuring best-in-class rated operating capacity, cooling systems and hydraulic efficiency. Among those machines are the new RT-40, an industry-leading small-frame CTL, the VT-70, ASV's first mid-frame vertical lift model, and the RT-120 Forestry unit, the industry's most powerful CTL. The company will also carry ASV's full line of skid-steer loaders.

"Thompson Rental Services has a long history in the area's construction market," said Matt Sawyer, ASV district sales manager. "This experience, paired with ASV products, positions the business to successfully serve customers in the region."

Thompson Rental Services has provided construction project rentals, including skid-steer loaders, scissor lifts, portable toilets and more, for over 35 years. More recently they have started to expand into construction equipment sales and service.

"Thompson Rental Services is a family-owned company focused on providing the very best customer service," said Mel Love, sales manager at Thompson Rental Services. "ASV has a great product line, with smooth-riding, reliable equipment that is well liked and well respected."

In addition to its Columbia location, Thompson Rental Services has showrooms in Irmo and Lexington, SC. To learn more about Thompson Rental Services, visit their website.

Impressive separation results and sampling tests are driving demand for Eriez® Ultra-High Frequency Eddy Current separators

ERIE, PA — According to Eriez®, an escalating demand for the company's innovative Ultra-High Frequency (UHF) Eddy Current Separators correlates with an increasing number of prospective customers who are taking advantage of Eriez' sample testing capabilities. Material testing and existing installations are proving the Eriez UHF Eddy Current Separator typically

recovers an additional three percent of previously unrecovered zorba, which would be otherwise missed by existing upstream equipment.

Introduced in 2016, the Eriez UHF Eddy Current Separator generates significant new revenue for scrap metal processors by recovering valuable aluminum, copper and other nonferrous fines as small as 2-3 mm from auto-



Introduced in 2016, the Eriez UHF Eddy Current Separator generates significant new revenue for scrap metal processors by recovering valuable aluminum, copper and other nonferrous fines.

Photo courtesy of Eriez

mobile shredder residue (ASR), without the requirement for expensive sensor based or optical sorting equipment.

Leading-edge scrap metal processors, including Illinois-based Scrap Metal Services (SMS) and Ohio-based Garden Street Iron & Metal, utilize Eriez UHF Eddy Current Separators to recover thousands of additional tons of premium zorba annually. These units feature a state-of-the-art rotor and revolutionary design, which creates high frequency changes. This results in a recovery rate that is impossible to match with traditional eddy current technology.

Recycling Product Manager Chris Ramsdell explains, "When it comes to upgrading and improving metals recovery, challenges vary from application to application. That is why we encourage processors to send their material samples to us for testing in our Central Test Lab." He said, "Recovery results using a customer's own sample effectively demonstrates the potential profit that customer can gain by implementing Eriez solutions." He adds, "When dealing with the fines waste fraction, the UHF Eddy Current Separator often proves to be the ideal equipment choice."

According to Eriez, the typical input to the UHF Eddy Current Separator is the fines waste fraction from a customer's existing nonferrous processing line. The product off the UHF Eddy Current Separator is a high-grade zorba package with considerably higher-than-normal copper content. Typically this fine zorba product is comprised of 20 percent or more red metals content, which can be sold at a premium.

Tests performed in the company's Central Test Lab, located in Erie, PA, often begin with around five to 10 gallons of material. Ramsdell said, "If the smaller scale tests look promising, we usually arrange a larger scale test at an existing installation to validate the recovery data."

To find out how to send samples to the Central Test Lab, contact Eriez and ask to speak with a recycling product specialist.

The company's magnetic lift and separation, metal detection, fluid filtration, flotation, materials feeding, screening, conveying and controlling equipment have application in the process, metalworking, packaging, plastics, rubber, recycling, food, mining, aggregate and textile industries. Eriez manufactures and markets these products through 12 international facilities located on six continents. For more information, visit: www.eriez.com .

Bobcat Company introduces rear camera kit for skid-steer and compact track loaders

WEST FARGO, ND — Bobcat Company has added a rear camera kit to its list of available options for Bobcat® skid-steer and compact track loaders. The kit offers the operator a continuous rear view of the machine to prevent contact with obstacles that may damage the loader and its components.

Specifically designed and developed for compact loaders, the rear camera kit includes a 4.3-inch LCD color monitor with a LED backlit screen, wiring harness, mounts and a tailgate-mounted camera that offers a 118-degree horizontal viewing angle and an 89-degree vertical viewing angle. Multiple screen

and developed for rear camera kit play image for optimal viewing in both light and dark conditions.

The system is integrated into the load-trillegate mounted or activated when the ignition is turned.

er, activated when the ignition is turned on, and runs continuously as the loader moves in both forward and reverse motions. The display's integrated circuit protects the system against over and under voltage, spikes, ripples and load dumps.

Shock and vibration resistant, the camera and display are qualified for all applications, including construction, and the kit provides heavy-duty metal housing and a rubber backlit keypad to protect components from hazards.

An anti-glare, scratch resistant screen gives operators an optimal display image month after month. The system is rated for both dust and water exposure, and the camera's internal heaters remove condensation, snow and ice from the lens so operators have a clear view in all weather conditions and temperatures ranging from -40°F to 185°F (-40°C to +85°C).

The kit is compatible with any M-Series or newer Bobcat loader model. Customers can order a rear camera kit through Bobcat Parts and then visit their local Bobcat dealer for a quick installation (two hours or less) or install the kit themselves.



The system is integrated into the loader, activated when the ignition is turned on, and runs continuously as the loader moves in both forward and reverse motions.

Photos courtesy of Bobcat



An anti-glare, scratch resistant screen gives operators an optimal display image month after

July



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Bandit Industries to go 100 percent employee owned



Under the ESOP, Bandit will retain its current leadership and key management personnel will remain in place.

Photo courtesy of Bandit Industries

Bandit Industries owners Mike Morey Sr., Dianne Morey and Jerry Morey announced on June 7 they would sell 100 percent of the company to their employees in an employee stock ownership plan (ESOP). Under the ESOP, Bandit will retain its current leadership and key management personnel will remain in place. It will also allow Bandit to always remain Bandit.

The announcement comes after two previous attempts to sell Bandit Industries – once to another manufacturer and once to a private investment firm.

"We realized neither was a good fit for Bandit, so we made the decision to sell to our trusted employees," said Dianne Morey.

"It will be fun to watch our crew take it to the next level," said Mike Morey, who developed the very first Bandit chipper in 1983 and founded Bandit Industries. Bandit is growing rapidly with 20 percent growth per year with two plant expansions currently underway and several new products being introduced later this year.

Bandit also recently entered into an

agreement with ARJES GmbH, a leading slow speed shredder manufacturer from Germany. Bandit will sell and distribute the ARJES products in the Americas, Australia, New Zealand, South Africa, Indonesia and other parts of the world. The product line is amazing and will shred almost anything, including cement with rebar, asphalt, steel belted tires and complete cars and trucks.

Bandit will celebrate its 35th anniversary this September with a dealer meeting and a field day open to the

public. All of the Bandit products will be shown, including the new products that are about to be released and the ARJES line of shredders.

"We are a leading supplier in all of the markets that we are in," said Jerry Morey. "We have a very strong, dedicated dealer organization and a great crew, which is the key to our success. Our employees are experienced, smart and loyal to us. That is why we are so confident that an employee owned company is the right fit for Bandit. All our employees will have a stake in the company."

Pettibone welcomes Palmer Johnson as West Coast dealer

BARAGA, MI — Pettibone/Traverse Lift, LLC announces the addition of Palmer Johnson Power Systems to its dealer network. Palmer Johnson will carry Pettibone Extendo and Traverse telehandlers and Cary-Lift pipe and pole handlers for Southern and Central California, while focusing strictly on the Extendo and Traverse product lines in the state of Washington.

"We are thrilled to have Palmer Johnson aboard to represent Pettibone on the West Coast," said Kyle Rubin, director of sales and marketing for Pettibone. "We are in the midst of launching

our next generation telehandlers, including the re-introduction of our traversing boom units, so the timing couldn't be better to establish this tremendous partnership." Founded in 1977, Palmer Johnson is a family-owned business under second-generation management with roughly 120 employees. The company has seven service centers and a network of dealer locations to provide sales, service and support for their customers working in construction, oil and gas, and mining. Palmer Johnson also had a pre-existing relationship with Pettibone involving various parts, components and tech support.

"Pettibone has been a great company to work with over the years, and we are extremely excited to take our relationship to the next level," said Susan Schuster, OEM and service programs manager for Palmer Johnson. "With their new products and long-standing name in the lift industry, we look forward to overall success serving new and existing customers."

In addition to equipment distribution, Palmer Johnson Power Systems specializes in servicing and supplying components for heavy-duty, off highway transmissions and axles.



Pettibone/Traverse Lift, LLC announces the addition of Palmer Johnson Power Systems to its dealer network.

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FORESTRY RESIDUE (stumps, branches, tree tops)	BEST	BETTER	GOOD
WHOLE LOGS (clean logs)	GOOD	GOOD	GOOD
SCRAPWOOD (pallets, demo material)	BEST	BETTER	GOOD
CONSTRUCTION & DEMO (storm cleanup, building demolition)	BEST	BETTER	GOOD
MUNICIPAL SOLID WASTE (garbage, landfill waste)	BEST	BETTER	GOOD
ASPHALT SHINGLES (tear off roofing shingles)	BETTER	GOOD	NOT Recommended
INDUSTRIAL RECYCLING (plastics and wood composites)	GOOD	GOOD	GOOD

3200 WOOD HOG

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