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# Compact crushers and screens







- Primary & secondary crushing
- Scales



Compact crushers and screens

by RockRoadRecycle staff writer

On the cover:  
Due to their small size and low weight, many compact crushers are capable of getting to even the most difficult areas of a site.

Photo courtesy of Agri-World

PG 4

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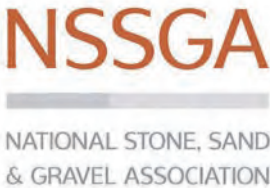


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NSSGA addresses  
aggregates staffing issues

by Larry Bernstein



Associations and affiliations:





# Metso launches a renewed, more efficient Lokotrack LT200HP

The Metso Lokotrack® LT200HP(TM) mobile cone crushing plant is designed for secondary and tertiary crushing operations such as producing aggregates for railway ballast, road construction, asphalt, and concrete fractions. Thanks to its direct v-belt drive from the gearbox, the renewed solution delivers fuel consumption savings of at least 15 percent compared to hydraulic-driven cone crushers. Furthermore, the LT200HP complies with European Stage V emission regulations.

“Fuel consumption and efficiency are always at the top of our customers’ priority lists, and reducing emissions levels has become an increasingly important issue in recent years,” says Kimmo Anttila, vice president, Lokotrack Solutions, Metso. “In this respect, the LT200HP delivers on all counts with a fuel consumption savings of 15 percent or more.”

In addition to being more efficient, the renewed LT200HP also features several safety and maintenance improvements. These include elevated service platforms to ensure safe, easy access to service and maintenance points and improvements that make daily maintenance quicker and easier.

The LT200HP is also available with the Metso ICr(TM) wireless information and control system, which allows customers to monitor and control the crushing plant from an excavator cabin. The entire Lokotrack train of Metso primary Lokotrack plants or Metso mobile screens can be controlled with Metso ICr for a complete crushing and screening solution.

“The compact transportation dimensions of the Lokotrack LT200HP combined

with its powerful Nordberg HP200 cone crusher make it a winning solution for mobile crushing and screening,” Product Manager Jouni Hulttinen concludes.



In addition to being more efficient, the renewed LT200HP also features several safety and maintenance improvements.

Photo courtesy of Metso



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# Compact crushers and screens



*Flatbed screeners have proven to be the compact solution.*

**T**he global market for compact crushing and screening has been slow to get off the ground. Finlay Hydrascreens, now part of Terex, initially launched a mini screener in the late 1990s, but there proved to be little interest in it. The technology at the time did not allow for the unit to produce enough output, nor have the right amount of throw to accurately screen material. Despite this setback, the advent and acceptance of tracked crushers in the late '90s led to advances in crushing technology that the more savvy manufacturers realized could be adapted to a smaller format.

The UK's Red Rhino was the one of the first major entrants into the market, producing compact crushing solutions ideal for the construction industry on site. The product range proved popular in segments of the industry that had not been seriously considered as potential customers for crushers, due to cost and size. The success of Red Rhino globally has led recently to other manufacturers producing equipment — often tracked — that is significantly smaller and cheaper than other tracked crushers and screeners. Developments in technology, such as the flatbed scalper/screener (which have mitigated the requirement for significant throw in screening), now mean that these compact solutions are highly productive, cost effective and easily transportable.

## Red Rhino

The current owners of Red Rhino Mini Crushers acquired the business in 2009 and have developed and refined the range with investment in manufacturing facilities and distribution channels. The Red Rhino range has been designed to enter sites where access and space are restricted, but are productive enough to make light work

of reinforced concrete, brick, porcelain and other aggregate-type products.



*Red Rhino's latest development is a highly compact 3-way split screener.*

There are now six models in the range of jaw crushers, ranging from small static machines to tracked versions. Electric versions are also available with a compact 3-way split screener being recently developed and launched. The Red Rhino 2000 and 4000 series crushers are designed to crush a full UK curbstone in approximately 60 seconds, with hydraulically adjustable jaws allowing output product sizes from 10mm to 80mm. Dust suppression is fitted as standard by means of fine water spray nozzles utilizing standard domestic hose pressure. Both these crushers have proven to be ideal for landscapers, small builders and developers. They are very simple to operate and are incredibly inexpensive to run. But what's really key is they are able to pass through a doorway or gate, which means awkward entry areas can now be accessed.

The company's larger 5000 series is more powerful and will crush a full UK curbstone in approximately 30 seconds. It has hydraulically adjustable jaws presenting an instant choice of 10mm to 100mm sized product. Being only 1660mm wide, the 5000 series

can enter sites where access and space are restricted and as with its smaller siblings, dust suppression is fitted as standard by means of fine water spray nozzles utilizing standard domestic hose pressure.

The 5000 has proven popular with civil engineering companies wanting to crush onsite or skip (dumpster) companies looking to reduce their liabilities to landfill. The tough design of the 5000 series makes light work of reinforced concrete, brick, porcelain and other aggregate-type products. Crushing with the 5000 series can save thousands of dollars on muck away and brought-in backfill. It is easily transported from site to site using a plant trailer and can be up and crushing within five minutes of arrival. Using the wireless remote control system, crushing with a 5000 series can be a one-man operation.

The 7000 Plus feeder-unit is the largest member of the range and comes complete with a hydraulically driven vibratory tray rapidly and constantly moving material into the jaw.



*Easily transportable, tough and productive, compact crushing equipment has proven to be highly valuable in many applications.*

The speed of the feeder can be controlled from the operator's handset.

Grizzly bars are fitted to separate the fines material from the material travelling to the jaw, which has been designed to optimize the crushing process as the fines are ejected down a bypass chute onto the output conveyor. A blanking plate is also available to cover the grizzly bar if the crusher is being operated in wet conditions or the material is damp. The latter feature prevents the grizzly from becoming blocked, directing the fines material through the jaw path. The feeder base is fitted with wear plates to account for abrasive materials and can be replaced during maintenance periods.

The 7000 Plus has also proven itself on heavier duty applications, such as recycling demolition and construction waste in a cost efficient manner. This helps avoid large landfill costs, enables onsite recycling and allows the reuse of demolition rubble as a product. By adding a magnetic conveyor to the crusher, there is the added benefit of removing any steel found in the rubble. The recycling of the waste steel can provide other financial value gains.

The latest development from Red Rhino is a 3-way split flatbed scalper/screener which has been developed for customers who need three screened products. This has demonstrated to be ideal for landscaping, golf courses, crushed rock, hard core and beach cleaning. The screened material can be separated exactly where it is needed on site, with oversize and undersize contamination being removed to create useable finished products from waste. It can be fed by excavator, loading shovel or directly from a crusher conveyor or larger crusher. The compact dimensions and low weight mean it can be easily transported and the conveyors are able to be folded hydraulically.





Some compact impact crushers are now equipped with material recirculation equipment.

**Terex EvoQuip**

Terex — through its EvoQuip line — is a relatively new entrant into the compact market, but now offers a comprehensive portfolio of products to address the needs of the compact crushing and screening market. User friendliness is at the heart of the range, resulting in new products being developed with a focus on simplicity, easy maintenance, fuel efficiency and ease of transport.

The smallest equipment produced is the Bison range of jaw crushers that are designed to provide productivity, versatility and fuel efficiency. The Bison 35 is the most compact mobile jaw crusher, providing a solution for construction companies and contractors who want to recycle their construction and demolition waste onsite. The ability to adjust the jaw setting and operate the plant fully from the remote control allows for a fast and simple set up. With its intuitive operation, quick set up times, compact size and ease of transport, the Bison 35 is proving to be highly popular on many small scale construction or crushing jobs.

The Bison 120 has been specifically designed for versatility, maneuverability and transportability. It is small enough to fit inside a container for transport, but strong enough to withstand the toughest of applications. The Bison 120 features a 680mm x 400mm single toggle jaw crusher that can be adjusted hydraulically using the remote control which comes as standard with the machine. The jaw is driven hydraulically, allowing the customer to reverse the crusher to clear a blockage, as well as being able to run in reverse permanently for sticky applications such as asphalt. The ability to adjust the jaw setting and operate the plant fully from the remote control allows for a fast and simple set up.

On the larger side is the EvoQuip Cobra range, with the Cobra 230 being the latest development. This new impact crusher has been designed to enhance profitability through high levels of productivity, versatility and fuel efficiency. The quick set up times, simple intuitive operation and ease of transport make the machine an ideal solution for all applications and it is able to deliver throughput of up to 250tph.

Other impactors in the range include the Cobra 230R, which has been designed to process reinforced concrete, recycled asphalt, construction and demolition waste and natural rock. The integrated after-screen system on the Cobra 230R ensures the required product specification is achieved with oversize material either being recirculated to the crusher or stockpiled. The Cobra 260 horizontal shaft impactor has been specifically designed for quarrying, recycling and demolition applications. The machine utilizes an extremely fuel efficient and powerful “direct drive” system to power the 860mm x 830mm impact chamber which provides high levels of productivity. The impact chamber incorporates a hydraulic overload protection system as standard and due to the innovative design of the crusher, it offers excellent reduction ratios as well as producing consistent product shape. The quick set-up time, ease of operation, ease of maintenance and ease of transport makes this machine an ideal and versatile solution for small to medium scale producers and contract crushing operators.

The Cobra 260R, 290 and 290R are larger variants, barely recognizable as “compact solutions.” The former featuring a 2.44m x 1.2m (8’ x 4’) single deck screen for sizing and recirculating oversize material back to the crushing chamber. The sizing screen can be quickly detached for applications that do not require resizing or recirculation of materials for further processing. The Cobra 260R features hydraulic folding of all conveyors, providing rapid set up times and easy point to point moves when operating on multiple sites.

Both the Cobra 290 and 290R are versatile and easy to use track-mounted impact crushers that can operate in the most demanding of applications, including reinforced concrete, recycled asphalt, C&D waste and natural rock.

The use of an integrated after-screen system on the Cobra 290R ensures the required product specification is achieved with oversize material either being recirculated to the crusher or stockpiled, with throughput of up to 290 tph.

**Compact Concrete Crushers**

Compact Concrete Crushers is the U.S. distributor for Italian-based Agri-World recycling products and carries the full line of concrete crusher equipment. The company was founded on the concept of providing quality compact mobile recycling equipment to contractors. Being compact, the crushers supplied by the company have been designed for use on job sites with limited space. They are



Due to their small size and low weight, many compact crushers are capable of getting to even the most difficult areas of a site, as exhibited by this Agri-World machine.



The Rubblemaster 70 Go!2 easily deals with demolition waste on a construction site.







*Compact crushers are more than capable of producing significant material stockpiles.*

available with either electrical or diesel motors, four point lift rings, remote control operation as well as many other safety features — meaning the concrete crusher units are also perfect for city demolition applications.

The range of compact equipment supplied by the company is now comprised of jaw and impact crushers, screens and other associated plants. The crushers and screens are mainly tracked, but skid mounted and wheeled variants are also available with over band magnetic separators being fitted as options.

#### Herbst

Herbst Machinery Ltd. is a family run business from Northern Ireland, with the company building its reputation manufacturing trailers for the agricultural and construction sector for transporting plant, machinery, equipment and aggregates. This expertise led the company to manufacturing compact crushing and screening equipment.

The Herbst Compac C100 is a robust, compact jaw crusher designed for a range of applications. With a 700mm x 400mm jaw aperture and variable controlled belt feed, the crusher is designed for optimal performance.

Depending on the material and the required crush size, the machine is capable of processing up to 60tph, making it ideal for any operation with low operator cost and maximum productivity are required. The discharge conveyor is set on hydraulic legs and can be easily removed from the crusher for maintenance access. The compact machine is ideal for confined working environments and can be transported easily from site to site.

The Herbst Compac S52 is a robust and versatile screener with a high performance double deck screen box, designed for a wide range of construction waste materials and aggregates. With hydraulically folding conveyors and a unique compact build, the screen can be folded up and tracked directly into a standard shipping container in just a few minutes. The forward facing, aggressive screening box is capable of processing up to 250tph, and can be adapted for a variety of applications including recycling, demolition, crushed stone, sand/gravel, soil and compost.

#### Rubblemaster

Austrian company Rubblemaster was an early developer of compact crushers and screens, although now the company has invested in larger brethren. The RM 70GO! 2.0 impact crusher is the company's most compact variant and has been designed to deliver high throughput relative to its size. It has been designed to be highly flexible when handling and processing a wide range of materials, including rubble, asphalt, concrete and medium-hardness natural rock. Capable of producing 150 tph of crushed material, it weighs in at 19t and has been designed to offer fuel economy and low emissions.

In addition to its impact crushers, Rubblemaster also produces a 17t flatbed screen. The RM HS3500M is a track-mounted scalper, which has been designed to offer high levels of throughput. Despite its lightweight and compact dimensions, it is durable and robust — capable of handling heavy-duty jobs ranging from blasted rock to demolition material.



*A Herbst crusher shown at a recent exhibition.*





# Compact Concrete Crushers

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## Prairie Dawg Practical

by Tim Holmberg, DEMI Equipment

**Hey Prairie Dawg, “What kind of crusher is a primary crusher?”**

What determines if a certain brand or model of a rock crusher is automatically classified to be a primary crusher? Do you believe any type of crusher on the market could be used or configured as your primary crusher? Are primary crushers categorized by type of geometry and mechanical crushing action? Let's take a little more in depth look that may better define the label of “primary crusher.” It is not due to the certain sized rock or hardness being crushed, but rather the process and intent of a seemingly endless list of requirements that best defines the label.

Primary crushers are typically thought to be gyratory or jaw; or something big enough to handle the largest sized material being crushed. Do these typically monster-sized crushers ever find themselves ineffective? Yes. Many times, in a shot rock quarry, the material being blasted can often become larger than anticipated. In this case, the big primary crusher will require a bit more help from its best friend the rock hammer, which is capable of breaking the material down enough so the crusher's sacrificial wear dies can bite into it.

Because of open-circuit, large scale scalping feeders and screens, we can now insert HSIs into the primary crusher category and — believe it or not — even a vertical shaft impact crusher with shoe and anvil configurations can be used. These crushers, however, may not be the best as far as wear-cost values are concerned and could virtually eat your profits in a sliver of time.

An emerging machine, growing in both size and popularity, is the high-speed hydraulic cone crusher, which has many “smart” features. These crushers can emulate a glorified computer controlled gyratory configuration right down to the highest speeds and gravitational effectiveness of interparticle crushing without making excessive fines. These cones are becoming more effective each year, as they are applied to what used to be considered off-limit applications.

What really defines a primary crusher is the first reduction it performs without recirculation; so, as one can imagine this opens the field on the definition of primary crusher. Now, we can throw the size of the machine out as a definite descriptive. We can also throw out the type or configuration of the crushing action as well, and lastly the wear media styles are really just value-based definitions that really don't truly help define the primary crusher.

In earlier times, a primary crusher was all that was required for many projects used in conjunction with a screen. But as roadways were being designed and quickly redesigned for faster production cars they had to come up with better ways to speed up the overall process of how they could make finer fractured materials — for both concrete demands and the introduction of black top roadways and asphalt superhighways.

The mining pioneer's invention of primary crushers was definitely the gateway to the forms of crushing and screening we have today and will remain the first stage of anything crushed from here on out. Primary crushing efficiency will only keep improving as time goes by. And, as the population of the world continues to grow, so will the need for more aggregate.

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

Questions or comments? Email Tim Holmberg at [prairiedawg@pdpractical.com](mailto:prairiedawg@pdpractical.com) or visit [demiequipment.com](http://demiequipment.com).

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

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



## Industry news

### Premier Equipment is Superior's new crushing and screening dealer in New England

MORRIS, MN – Superior Industries Inc. is proud to announce the appointment of Premier Equipment as its brand-new crushing and screening dealer in New England, USA.

“With a strong inventory of equipment that's backed up by a group of experienced service personnel, our new partnership with Premier Equipment should prove very beneficial to the local user market,” said Scott Gulan, Superior's sales

manager.

Premier Equipment will represent Superior's full line of crushing and screening equipment including the manufacturer's Liberty Jaw, Patriot Cone, Valor VSI, Guardian Horizontal Screen and Anthem Inclined Screen. The dealer will work side-by-side with Superior's product managers and engineering department to fulfill custom processing requirements in both portable and

stationary material processing applications.

Based in Bellingham, MA, Premier Equipment Inc. is a leading supplier of material processing systems in New England. In addition to new crushing and screening equipment, the dealer offers used equipment, rental services and a comprehensive range of after sales support services including onsite parts supply technical support.



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# The basics of crusher maintenance ~ primary and secondary

## Part I

During the CONEXPO-CON/AGG exhibition in March 2017, the schedule of professional development sessions was full and extensive. Subjects covered ran the gamut of new product reveals to basic maintenance of a variety of equipment. During one of the maintenance sessions, KPI-JCI's Resource Development Manager Erik Schmidt reviewed some of the basics of crusher maintenance – specifically cone and horizontal shaft impact crushers.

Although the session was almost two years ago, these basics can be applied to any crushing operation, whether you are a small mobile operator or large plant with multiple pieces of equipment.

Schmidt explained that all equipment needs maintenance, regardless of type or age of the plant – and as the plant ages, operators trade off depreciation value for repair costs. He suggested part of the operating budget should include 30 - 35 percent of the direct operating costs be designated for repairs and maintenance labor.

According to Schmidt, there are three types of maintenance approaches: preventative (PM), predictive (a.k.a. proactive) and reactive (repair-maintenance). Most companies are familiar with the term preventative maintenance but may not put it into practice. It is often viewed as unnecessary, since the equipment is running so well – but in the long run this can save expensive downtime because you are repairing before the failure, oftentimes preventing the domino effect of a multiple component failure. Predictive or proactive maintenance is somewhat similar; however, it involves analyzing the current conditions of the machines to determine when the PM service is needed before a breakdown. All machinery will wear or meet a service life expectation and need repair. Therefore, planning for the PM – whether repairs or component exchanges – will extend the useful life of the crusher.

Reactive or repair maintenance is just what the words imply. The repairs are made after the failure or breakdown – putting the job or operation in jeopardy – and usually causing a knee-jerk reaction to spend “whatever it takes” to get the equipment up and running again. This type of plan creates the highest repair costs and lowest operating availability, but unfortunately,

according to assorted lifecycle management studies, up to 75 percent of companies operate under the “run her till she's broke” mentality.

Some of the results listed from a poorly managed maintenance plan include reduced or poor equipment availability, high repair costs (both parts and labor), excessive air freight bills (overnighting a part can cost twice as much or more as standard freight), reduced income due to plant downtime and possible poor morale among employees.

Schmidt gave an example of how an inefficient maintenance program can affect your bottom line in a huge way. Based on his experience, the average plant (sand and gravel) produced 4,000 tons of product a day at (approximately) \$11 a ton – that's \$44,000 in lost revenue, daily. Labor and equipment expenses for the day (in general overhead values) were estimated at \$5,600, which results in a real loss of around \$49,600 per day or the average plant downtime cost of \$5,000 per hour.

Schmidt outlined his seven points of crusher maintenance best practices and spent a few minutes drilling down into each one. Going through the list, you can see that although each point is independent, they are integral to the whole program.

### • Create a team approach to maintenance

Crews need to understand their responsibilities in the overall maintenance program and should be monitored and supported by management. Schmidt suggested challenging yourself and each other, be clear about what is expected of the team and don't underestimate your workers' knowledge and enthusiasm for the job. Effectively maintained equipment increases production. Incorporate some friendly competition for daily production goals. If the actual costs associated with a shutdown are understood, informed decisions can be made regarding each situation.

### • Perform daily visual inspections

Visual walk-around inspections need to be performed daily, be documented and should involve all members of the team in some way. Problems and deficiencies need to be written down and analyzed to determine what appropriate steps to take to prevent a failure. Perhaps this means ordering

particular parts ahead of an anticipated breakage due to wear or weakness. If certain parts tend to wear faster depending on the material being processed, be sure to keep an accurate inventory of spare parts.

### • Schedule plant PM inspections

Most of the equipment on site has a suggested PM schedule from the manufacturer. Question any instructions you don't understand regarding the scheduling – ask the OEM sales rep or your dealer. That's what they're there for – to make sure you get the most out of the equipment.

You can also create your own maintenance recording documents if you have multiple pieces of equipment in order to coordinate the schedules more effectively. Lifecycle management software is useful for this purpose. Identify, document and reschedule PMs not performed due to operational commitments. Be sure to perform predictive maintenance tests, such as oil sampling, heat readings, vibration and sonic testing where possible.

### • Schedule annual inspections

If you've got a regular slow season or winter shutdown, this would be the ideal time to schedule in-depth inspections, repairs and rebuilds. Use this time to be proactive. This will include component change-outs – gearboxes, hoses, belts, etc.

### • Manage plant repair and work problems

Keep an accurate logbook. Schmidt emphasized this point throughout the presentation. He could not overestimate the importance of an up-to-date maintenance logbook. Problems and deficiencies should be listed for all known issues with the plant(s), with estimated repair man-hours. Parts should also be identified specifically and notated when ordered. If there are multiple plants onsite, each one should have a dedicated logbook which should be updated after each daily walk-around and after shutdown, noting any unusual occurrences the operators notice during the workday, such as temp differentials, vibratory discrepancies and the like.

### • Schedule and perform daily servicing and lubrication

Know your oils and greases and be sure you know what is in your grease gun at any given point. Has the person



doing the greasing really been trained properly – do they know how many pumps for what fitting? Are they sealed fittings or open? Do you know who loaded the gun last? Are the remote grease lines working well? This refers back to the daily visual walk-around inspections. Check the manufacturer's specs for each piece of equipment. Have contamination control practices and guidelines in place, starting with pre-filtering oils and lubricants at the service unit, wiping the Zerk before pumping and no open-bucket servicing.

### • Do benchmarking for the equipment

Know the normal crusher coast down times, motor amperage draw and operating temperatures. This should include bearings, oil, heat exchangers, motors and pumps. In Schmidt's opinion, the biggest benchmark you could do is to perform an oil analysis, stating that most OEMs have a standard oil-sampling interval.

If and when you experience a failure, it was recommended to perform a root cause analysis (RCA) to determine if there is potential for recurrence or whether it was an operator or lack of maintenance-induced problem.

After reviewing his list of seven best practices, Schmidt stated that proper training is key to understanding any piece of equipment. He suggested operators take full advantage of the training programs offered by the manufacturers, whether on-site or at the OEM's training facility. Employee training should be kept current and recorded so they are credited for their new skill set. The training should also be ongoing to stay fresh and current.

Next month we will continue with crusher maintenance best practices as reviewed by Erik Schmidt of KPI-JCI.



# Equipment manufacturers want Republicans and Democrats to work together

*Editor's note: the opinions and comments expressed in the association's commentary do not necessarily reflect those of Lee Newspapers, Inc and RockRoadRecycle.*

WASHINGTON, D.C. — Association of Equipment Manufacturers (AEM) President Dennis Slater issued the following statement on what the 2018 midterm elections mean for the equipment manufacturing industry.

"After a midterm election that saw record turnout and interest, there's now a renewed opportunity for President Trump and Congress to work across party lines to tackle the issues that will help grow our economy and keep our nation strong," said Slater. "Modernizing our nation's infrastructure, promoting free and fair trade and supporting a strong agriculture economy should all be bipartisan priorities for the 116th Congress. The equipment manufacturing industry stands ready to do its part by working with Congress and the administration to solve some of our nation's biggest policy challenges so that we can add to the 1.3 million good-paying jobs our industry supports."

Many of the top issues for voters in the midterm elections are issues that are also important to the equipment manufacturing industry.

## Trade

The escalating trade dispute with China and the decision to impose tariffs on imported steel and aluminum has had a negative impact on the equipment manufacturing industry. U.S. equipment manufacturers are facing higher production costs while the impact of retaliatory tariffs by trading partners hurt

the U.S. agriculture sector and threaten to reduce the domestic sales of agriculture equipment. AEM believes that Republicans and Democrats should work together to address the uncertainty and disruption caused by the administration's trade policies. This includes efforts to negotiate fair, binding and enforceable trade agreements with countries and open up new markets for U.S. equipment manufacturers.

## Infrastructure

The lack of any meaningful action on a comprehensive infrastructure bill means that expectations for Congress and the administration to act next year will be even higher. Voters have repeatedly made it clear that they want Washington to keep its promise to rebuild and invest in roads, highways, bridges, ports, pipelines and broadband networks. Equipment manufacturers will send a strong message to both Democrat and Republican members of the 116th Congress that they should start with infrastructure. That means working together in a bipartisan fashion to identify a long-term and sustainable funding mechanism for the Highway Trust Fund, connect urban and rural America through new infrastructure, ensure that projects are delivered in a cost-effective and time-efficient manner and provide job-training programs for the workforce that will help us reclaim our infrastructure advantage.



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## Agriculture

A strong agriculture economy creates a strong manufacturing sector. Farm policies have a major impact on the health of the farm economy, which in turn is a key driver of equipment manufacturing employment. Congress can and must pass a farm bill so that farmers and ranchers can keep providing our nation's food security. Republicans and Democrats should also work together to craft a comprehensive energy policy for our nation, including supporting a strong Renewable Fuel Standard (RFS) and work to advance efforts to expand ethanol fueling infrastructure and work to open up more new markets around the globe for U.S. farmers and ranchers.

## Tax

Tax reform empowered the equipment manufacturing industry to create jobs, improve the quality of life and build more in America. Many equipment manufacturers have hired more workers, created more well paying jobs, invested more in America and raised wages. Also, the industry has been given license to compete more fiercely in the global economy. Democrats and Republicans should work together to fix errors in the new tax law, which could create an opportunity to pass new, bipartisan tax legislation. Specifically, Congress should work in a bipartisan fashion to make the new tax code even stronger for equipment manufacturers, including making permanent full expensing for short-life investments and the deduction for qualified business income, as well as making the Base Erosion and Anti-Abuse Tax (BEAT) a true alternative minimum tax.

Every year, AEM's grassroots campaign "I Make America" works to engage and motivate many of the equipment manufacturers' 1.3 million men and women to get involved in the political process. This year's activities included dozens of events at equipment manufacturing facilities, including the I Make America Town Hall Tour. To get our industry's men and women more engaged this election year, the Town Hall Tour brought policy and industry experts to shop floors across the country for engaging and in-depth discussions on key policy issues — including trade, infrastructure and agriculture — and was attended by more than 500 workers and watched by thousands more online. According to post-event polls, two-thirds of attendees felt they had a better understanding of the issues impacting the industry after participating in the Town Hall Tour.

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## News from: **NSSGA** NATIONAL STONE, SAND & GRAVEL ASSOCIATION

*Editor's note: the opinions and comments expressed in the association's commentary do not necessarily reflect those of Lee Newspapers, Inc and RockRoadRecycle.*

# How America voted on infrastructure

Source: [NSSGA](#)

On Nov. 6, voters across the country decided on hundreds of ballot measures to invest in infrastructure.

A majority of California residents voted against repealing the Road Repair and Accountability Act, which is known as Senate Bill 1. The bill was passed in 2017 and raised the user fee on gasoline by 12 cents per gallon. Last year, there was opposition to the increased rates, leading to a ballot measure for its repeal. However, as the repeal was voted down, Californians will see an estimated \$5.4 billion annual investment for California's transportation systems over the next 10 years and funding for more than 6,500 bridge and road safety projects currently underway across the state. It also provides for 68,000 jobs per year and \$183 billion in economic growth. Drivers in the state should expect to see additional savings, despite paying more at the pump, since the funding will help fix potholes across the state, reduce annual vehicle repair costs and improve traffic congestion.

Connecticut chose to create a lockbox for transportation funds that will ensure revenue generated for transportation projects and initiatives is used exclusively

for transportation-related purposes.

Voters passed dozens of ballot measures in counties and Congressional districts throughout the country. According to the Eno Center for Transportation, a vast number of transportation related ballot measures were for local roads. Two similar measures in Florida's Hillsborough and Broward Counties will raise the sales tax in each county by a penny to generate funds for transportation improvements were approved by voters. In many counties, voters approved the sale of bonds for transportation infrastructure that will go towards various projects.

The outcome of this year's ballot measures reflects a concerning and growing trend seen over the past few years. NSSGA members have supplied the materials for many local and state level infrastructure projects enacted despite shortfalls in federal funding. According to a recent poll, 72 percent of Americans support greater investment in infrastructure and believe that infrastructure spending stimulates the economy. NSSGA anticipates further action on infrastructure investment in the new Congress.

# What a Democratic house means for the aggregates industry

Source: [NSSGA](#)

The results of the midterm elections are in, and significant changes are coming to Congress, especially to the House Transportation & Infrastructure (T&I) Committee.

After a record number of voters turned out for the 2018 midterm election, and with 20 races still undecided as of the morning of Nov. 7, Democratic candidates won a majority of seats on Tuesday in the U.S. House of Representatives. The U.S. Senate saw Republicans increase their majority to 51 seats over 45 Democratic and two Independent senators, with four races yet to be called including Arizona and Florida.

With a new majority party in control of the House, new committee chairs will be appointed.

Rep. Peter DeFazio, D-Ore., is first in line to chair the T&I Committee under the new Democratic House majority. ROCKPAC is a longtime supporter of DeFazio and NSSGA has a great working relationship with the new majority committee staff. An advocate of increasing funding for the Highway Trust Fund, DeFazio has vowed that a top priority will be making the Trust Fund solvent. "We've got to get back to being No. 1 in the world again, and you're going to be a key part of that," DeFazio said to NSSGA members at the 2018 Legislative & Policy Forum. "If you look at Congress and it seems dysfunctional, it is. It looks incredibly partisan, it is. But if you watch our committee you see that in fact we can come to agreement on substantial bills. The last two bills that will

be done in this congress of any significance are our Water Resources Development Act and FAA authorization bills."

He will lead a committee that will see sizable turnover as members and subcommittee chairs are sworn into office in January.

DeFazio and Democratic leaders are planning to pursue a major U.S. transportation and infrastructure measure in the 116th Congress. Nancy Pelosi, D-Calif., has said it may be something Democrats can do with the Republican president. "One of my things is build, build, build," Pelosi said at an Oct. 22 event hosted by CNN. "Build the infrastructure of America from sea to shining sea. Not only surface transportation but broadband and water systems."

President Trump said in an Oct. 17 interview on Fox Business News that "infrastructure is going to be starting after the midterms and we think that's going to be an easy one."

With bipartisan interest in infrastructure, NSSGA will continue to build on advocacy efforts over the past two years.

"An infrastructure bill is something that President Trump and lawmakers seem to agree on, and we will continue to advocate for a serious and sustainable investment in our country's infrastructure. Fixing the funding mechanics of the Highway Trust Fund and improving our aging roads will allow goods and services to move faster and safer, create jobs and allow people to travel to work more safely. When you do all of that, our economy can grow," said Michael

W. Johnson, NSSGA president and CEO. "That is why we encourage all lawmakers to work together, because better infrastructure leads to a better America."

A Democratic majority in the House could mean additional hearings for committees with oversight of the Mine Safety and Health Administration and Environmental Protection Agency. Johnson explained that people from aggregates companies have an opportunity to educate about the importance of aggregates and the costs of overly burdensome regulations.

"In September, hundreds of people came to D.C. to show lawmakers the ways that many regulations, which are not based on common sense or sound science, delay or derail critical infrastructure improvements. We have an opportunity, as an industry, to keep making our voice heard loud and clear on Capitol Hill this year."







Travis Vance

# On the front lines with Fisher Phillips:

by Travis Vance and Pamela Williams

## Appeals Court upholds decision limiting the right of OSHA to expand inspections



Pamela Williams

An accident at your workplace occurs and OSHA comes to investigate. Once at your facility, however, OSHA tells you they want to expand their inspection to cover your entire facility — top to bottom. What authority does OSHA have to expand the inspection and under what circumstances?

In a significant victory for employers, on Oct. 9, 2018, the United States Court of Appeals for the Eleventh Circuit (with jurisdiction over Alabama, Georgia and Florida) limited OSHA's ability to expand inspections in *United States v. Mar-Jac Poultry Inc.*

### Background

On Feb. 3, 2016, an employee at Mar-Jac Poultry Inc. ("Mar-Jac") was injured at the company's poultry processing facility in Georgia while trying to repair an electrical panel. Mar-Jac reported the injury to OSHA because the employee was hospitalized and OSHA sent an inspection team to the facility within a few days.

While Mar-Jac was subject to a Regional Emphasis Program (REP) for poultry-processing facilities — and thus subject to random inspections based upon neutral selection criteria — OSHA's investigation stemmed only from the accident. Nevertheless, OSHA requested to inspect not only the accident area but also the entire facility for hazards. Mar-Jac refused to permit an expanded inspection.

As a result of its limited inspection, OSHA found three potential violations relating to the accident. Mar-Jac also produced its OSHA 300 logs for three years as required. OSHA concluded that the injuries reported on those logs suggested possible violations of OSHA standards related to ergonomic hazards, biological hazards, struck-by hazards and more.

### OSHA seeks a warrant to expand the scope

In March 2016, OSHA sought a warrant from a federal magistrate judge to expand the inspection to Mar-Jac's entire facility. OSHA argued that probable cause existed and the warrant should be granted because 1) OSHA inspectors had personally witnessed hazards related to the electrical accident, and review of the OSHA 300 logs showed hazards common to poultry processing facilities and 2) the REP granted it the right to conduct the inspection. The magistrate judge granted the warrant.

Mar-Jac moved to quash the warrant and the federal court held an evidentiary hearing. As a result of the hearing, the magistrate judge recommended

the warrant be quashed because probable cause did not exist to expand the scope of the inspection based upon the injuries reported in the OSHA 300 logs and because OSHA had not selected Mar-Jac for an inspection according to the randomized, neutral criteria set forth in the REP. The federal district judge upheld the magistrate judge's recommendation to quash the warrant. OSHA then appealed the case to the Eleventh Circuit Court of Appeals.

### The Appeals Court affirms and finds that the warrant lacked probable cause

In its decision on Oct. 9, 2018, the Eleventh Circuit affirmed the district court and found that probable cause did not exist to expand the inspection. There are three important aspects to this decision.

First, it is notable that OSHA did not appeal the district court's finding that OSHA did not have grounds for a warrant based upon the REP. In other words, even OSHA recognized that simply because an employer is subject to an REP (or the national emphasis program, NEP), OSHA does not have grounds to expand an accident-based inspection solely because of the REP or NEP.

Second, the Eleventh Circuit held that hazards and violations are distinct. OSHA argued that the existence of injuries on the OSHA 300 logs indicates the presence of hazards at the worksite, which in turn indicate the possibility of violations of the OSH Act. The Eleventh Circuit rejected this argument, holding that it "is simply not the case that the existence of a hazard necessarily establishes a violation." In coming to this conclusion, the court noted that, whether proceeding under the General Duty Clause of the OSH Act or under a specific regulation, OSHA must prove more than the mere existence of a hazard to prove a violation occurred. In the case of the General Duty Clause, OSHA must prove not only that a hazard existed but that the hazard was recognized, that it was likely to cause death or serious physical harm and that the hazard was preventable. Similarly, in order to prove a violation of a specific regulation, OSHA must prove that the standard applies, that it was violated, that an employee was exposed to the hazard and that the employer knew of the hazard.

Finally, and perhaps most importantly, the Eleventh Circuit held that the existence of recorded injuries on OSHA 300 logs do not per se demonstrate that the employer likely violated the OSH Act. OSHA argued

that the number of injuries recorded in the OSHA 300 logs showed that Mar-Jac was failing to take adequate steps to prevent workplace injuries. The Eleventh Circuit correctly noted, however, that OSHA 300 logs provide little detail about the cause of the injury and thus, the "existence of injuries ... does not necessarily mean that the injuries were caused by OSHA violations or justify the issuance of an administrative warrant for evidence of OSHA violations."

Additionally, the Eleventh Circuit found that whether injuries recorded in OSHA 300 logs can lead to reasonable suspicion to support a warrant based upon the logs is a fact-intensive inquiry because the logs "can be relevant to whether hazards exist." In the Mar-Jac case, however, the court found that the logs did not support such a finding. For example, the court found that 25 recorded injuries related to possible ergonomics hazards over the course of three years and, in a facility of 1,112 employees, did not create reasonable suspicion that ergonomics violations were likely to exist.

### Takeaways

The Mar-Jac decision is a significant victory for employers. Employers should take away the following points from the decision:

- OSHA cannot expand an accident-based inspection simply because the employer also is subject to an emphasis program. Rather, there must be probable cause for the expansion.
- The existence of a hazard does not necessarily imply the existence of a violation.
- OSHA cannot expand an inspection simply because of injuries recorded in OSHA 300 logs. Rather, OSHA must provide sufficient evidence that the recorded injuries demonstrate not only that hazards exist at the workplace, but that violations are likely to be found as well.

If an employer is faced with an OSHA request to expand an accident-based inspection, it should contact counsel to determine its legal rights.

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## Ruppert joins TelSmith as regional sales manager

MEQUON, WI – TelSmith Inc. is pleased to announce its recent hire of Don Ruppert, who joins as regional sales manager covering New York, Pennsylvania, New Jersey, Maryland and Delaware as his primary focus.

"We're excited to have Don join our sales team," stated Jeff Gray, VP of sales and marketing, TelSmith Inc. "Don joins TelSmith with over 25 years of extensive experience and deep expertise in all phases of aggregate production processes, both dry and wet. He will be a great addition to the overall sales team and application group."

Ruppert has a strong background from crushing and screening to sand manufacturing, specifically wash plants, to fines management and complete pond elimination systems.

said Ruppert. "I look forward to this new opportunity and working with both long-term relationships and new customers within the industry."

Ruppert resides just west of Buffalo, NY, where he enjoys spending time with his family and friends as well as fulfilling his passion for the outdoors with both fishing and hunting.

TelSmith Inc. provides a full range of minerals processing solutions to the aggregate, mining, industrial and recycling industries with cone crushers, jaw crushers, vibrating equipment, portable plants and track plants as well as full-scale modular processing facilities. Solutions from TelSmith include product lifecycle support with parts availability and factory-trained service technicians.



## People in the industry



Telesmith, Inc. welcomes Don Ruppert as new regional sales manager.

Photo courtesy of Telesmith





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## The new Sandvik CH800i series – a revolution in connected crushing

This new series of premium connected cone crushers includes a range of performance upgrades. Together with My Sandvik they bring digital transformation to mines and quarries.

The Sandvik CH800i series of connected cone crushers is the first to offer intelligent crushing based on actionable information via the My Sandvik portal. This enables managers and operators to make decisions based on facts and see areas for improvement, directly increasing uptime and availability. Learn more about the connected crusher revolution at [rocktechnology.sandvik/CH800i](http://rocktechnology.sandvik/CH800i).

### Advanced automation

My Sandvik is the latest innovation in Sandvik crushers. Other automation features continuously measure and compensate for crusher liner wear,

while Hydroset™ and the electric dump valve automatically provide overload protection to let tramp iron or other uncrushable material pass through. ASRi™ automatically adapts crushers to variations in feed conditions.

### Tougher crushing

Sandvik CH800i comes with a range of upgrades, including a 65 percent stronger main shaft and top and bottom shells that are up to 50 percent stronger than previous models, offering more reliability and higher availability.

"New digital technologies will transform the way mines and quarries work. My Sandvik is the first major step in gaining insights into productivity and predictive maintenance that will drive our industry forward. It's great to offer our customers a service



The Sandvik CH800i series of connected cone crushers is the first to offer intelligent crushing based on actionable information via the My Sandvik portal.

Photo courtesy of Sandvik

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that will truly make a difference to their profitability," said Mats Dahlberg, vice president, lifecycle service stationary crushing and screening, Sandvik Mining and Rock Technology.

### Greater safety

CH800i has bolted rather than welded top and bottom shell liners to reduce maintenance time and add greater safety. Since no welding is needed when changing liners, the process is up to 90 percent faster.

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The new CH800i crusher system can be purchased as a completely new crusher or you can choose a Sandvik Reborn solution – replacing an existing crusher for a new one and reutilize existing auxiliaries and infrastructure. This plug and play installation minimizes disruption and maximizes productivity while offering up to 40 percent cost savings compared to a complete crusher system.

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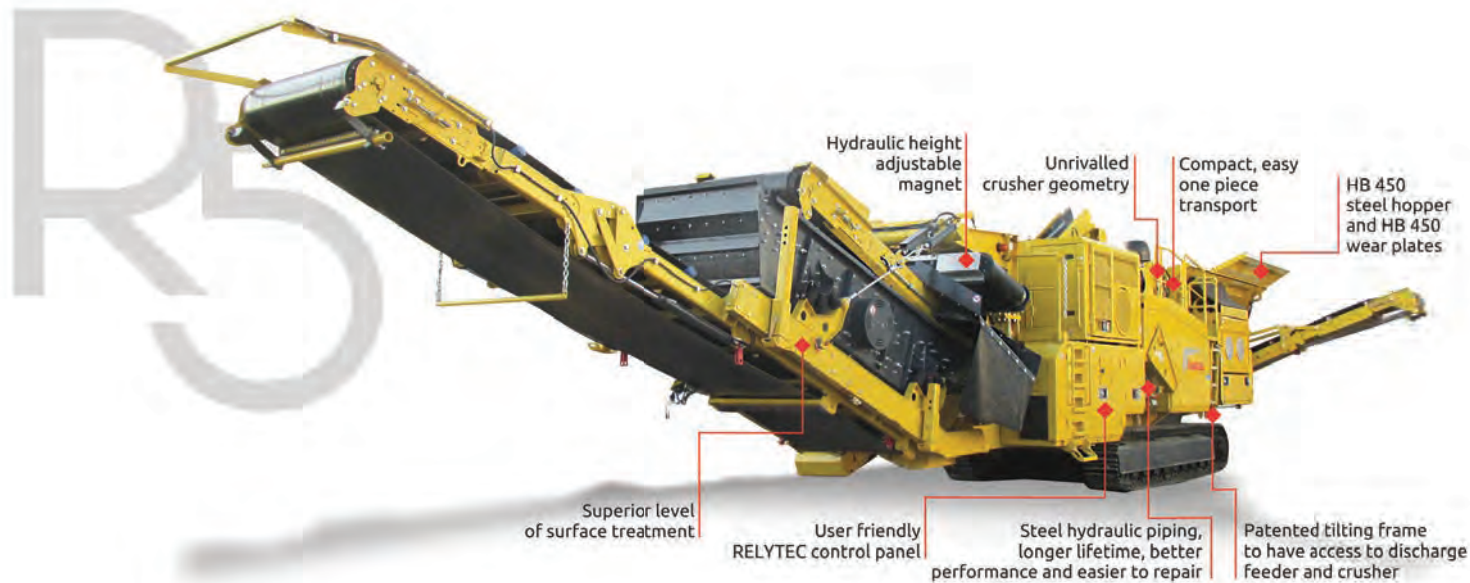
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# NSSGA addresses aggregates staffing issues

by Larry Bernstein

**I**t seems like reports about low unemployment come out weekly. According to a recent Wall Street Journal article, Job Openings Exceed Unemployed Americans Again in July as Employers Feel the Pinch, the gap between the number of available jobs in the U.S. to job seekers has been growing through the spring and summer of 2018. While this is obviously good news in many ways, it makes for difficulties as employers try to find quality and qualified employees for job openings.

Retail, hospitality and construction are just a few of the industries where employers are struggling to hire and retain employees. The insufficient number of employees has caused some companies to turn work down, extend the time it takes to complete work, double shift and more.

Recently, the NSSGA hosted a webinar on this issue titled "Solving staffing issues in the aggregates industry recruiting and retaining entry level employees." Christopher Hopkins, managing principle with River Landing Solutions, served as a moderator for the webinar. The panel was made up of four people: Joel Galassini, regional president, Texas and New Mexico for Cemex USA; Mark Helm, president/CEO of Dolese Brothers Construction and a board member of the NSSGA; Jill Reeder, VP of Human Resources Southwest Division of Martin Marietta and Karen Hubacz Kiley, COO for Bond Construction.

Hopkins was pleased with the diversity of the panel — a reason they were chosen. He said, "Our intention was to include different size companies and different geographic regions so that the discussion would apply to as many members of the association [NSSGA] as possible." Despite the variety in companies represented, many of the challenges overlap, indicating they are industry wide.

Those challenges start with the fact that the quarrying industry is in great need of employees. Hopkins noted that according to the Bureau of Labor Statistics 2017 survey, there were 95,000 employees in the quarrying and non-metallic mineral mining industry. Of those 95,000 employees just 1,000 are in the 16-19 age range and 8,000 are in the 20-24 age bracket. On the flip side, there are 7,000 employees that are aged 65 and over. The range with the highest amount of employees is 55-64 with 25,000. The median age in the industry is 46.5.

While recruitment for the industry is difficult, the issues go beyond the labor shortage in the United States. One major issue is image. Galassini noted society has pivoted away from trade and skilled labor. Instead, people have been pushed toward a

four-year college education and into an office. This has been seen as the ideal situation and blue-collar jobs have been looked down upon.

With people looking down on blue-collar jobs, schools have cut out trades and vocational schools are disappearing. This leads to a shrinking labor pool. Meanwhile, the booming economy means many industries are growing, so those individuals who are interested in a blue-collar job have more options. Therefore, employers in the aggregate industry are competing against not just those in the industry but other industries looking for vocational workers.

In tight times when employees/job seekers have more power, salaries go up. After all, if skills are transferrable to a host of jobs, potential employees will naturally seek out the best circumstance for themselves. Yet the panel found raising salaries was not necessarily the answer. Helm noted he does presentations and when talking about positions and short supply, the question of salary comes up. People are surprised there are openings when they learn about the salaries. Kiley, who noted her company is in a rural area, finds younger people are showing less drive compared to more mature workers. When they realize that the work is tough and the hours are long, they lose interest.

Galassini also recognizes a difference in younger employees. He believes they are more socially conscience. To get them to buy in and pique their interest, employers need to stress the positives that the industry does for society such as providing the materials to build homes, schools, infrastructure, etc. There's a need to change the narrative. Reeder concurred and added, "We need to get back out there and tell our compelling story."

When it comes to solving the hiring and retention crisis in the aggregate industry, each of the panelists agreed there is no single silver bullet. It's also all hands on deck and an issue that is taking up more and more of their time. However, one key factor in the quest for gaining and retaining employees that seems to be emerging is communication.

Kiley's Bond Construction is a small family-owned outfit. She goes out of her way to be involved with the employees. She thanks employees every day, maintains an open door policy and acknowledges when something is done. She and the company strive to do little things to show they truly care, so the employees will not feel like they are coming to work to simply collect a paycheck.

At Helm's company, Dolese Brothers Construction,

they are striving to communicate to employees what the company does and why they do it. The goal is to communicate the why so that employees can recognize the impact. In addition, when new employees are hired, they are brought to the company's headquarters as part of their orientation. Once there, they can get a sense of the company's culture, emphasis on safety and be part of the atmosphere. Finally, as part of management supervisor training, Dolese Brothers tracks positive contacts and encourages it to be given whenever reasonable — as it helps morale and retention.

According to Galassini, Cemex USA found there are three aspects of hiring and retention: compensation, culture and future. However, it is the former two which are particularly important. Some of the goals at the company are to make employees feel part of something bigger — they have a future with the organization — and there is a long-term plan. In addition, employee concerns are both listened to and acted upon.

At Martin Marietta, Reeder noted they have found it's important to find out what employees are thinking and to build on culture. So, they are trying to build relationships. One way Martin Marietta is doing this is via trade school scholarships. Some students come back multiple summers and ultimately join the firm.

While there are glimmers of hope in meeting the demands of the industry, there is much work to be done to get the aggregate industry fully staffed and make it a destination young people want to go to and stay in. Each of the panelists agreed that to reach that place, the story of what the industry is and does needs to be changed and clearly communicated. Getting the word out on a widespread basis requires educating everyone such as local government, educators and more.

Spreading the word and solving the worker shortage also requires efforts from all walks of the industry. It's not simply a company problem. The webinar was just the beginning of the conversation as NSSGA strives to help further the discussion. Hopkins, who says there will be a larger version of this topic at the NSSGA's annual AGG1, felt the webinar was an example of the industry coming together to address one of its most critical problems and included give and take and brainstorming. It will take this and much more to ensure the industry is able to continue its role in building the foundation of the United States.



# Peak performance from Metso's new Superior MKIII primary gyratory crusher

The Metso Superior™ MKIII provides a significant performance leap in gyratory crushing. Based on Metso's industry-leading crushing technology, the MKIII is the first high-speed primary gyratory crusher to deliver up to 30 percent higher capacity and 70 percent lower downtime in a comminution circuit.

"Our mining customers are facing increasing pressure to optimize capital expenses and improve the efficiency of their comminution circuit. With the new MKIII, we are addressing these challenges directly by offering peak performance and maximum throughput, while reducing the cost of primary stage infrastructure," said Guillaume Lambert, vice president, Mining Crushers at Metso.

Designed for the most demanding primary crushing conditions and with the new, patented SmartStation for optimized production, the Metso Su-

perior MKIII brings whole new level of cost-effectiveness and reliability to operations. The MKIII is the first high speed primary gyratory crusher on the market, surpassing traditional primary gyratory crushers by up to 30 percent in speed, thus having a 30 percent higher capacity. The rotatable top shell ensures safe maintenance and reduces downtime by up to 70 percent. In addition, the MKIII can be paired with the Metso Metrics solution for predictive maintenance and online asset management.

"The MKIII is the third generation of our trusted primary crushing technology and it has been developed in close dialogue and cooperation with our customers. With the Superior MKIII, it is possible to use smaller machines to achieve the same highest-duty performance, making it the most capex-efficient technology on the market for the primary stage," Lambert concluded.



The Metso Superior™ MKIII provides a significant performance leap in gyratory crushing.  
Photo courtesy of Metso

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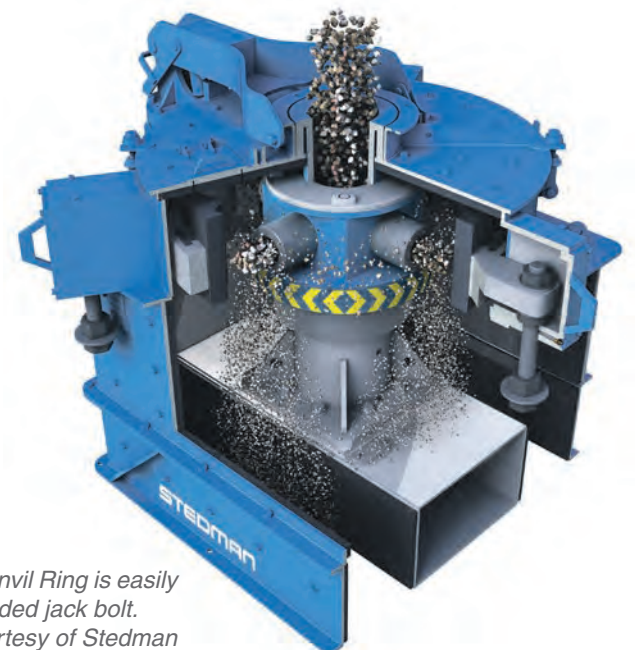


## Industry news

## New Stedman VSI Anvil Ring design

New externally adjustable and visually indicated anvil ring for Stedman vertical shaft impactors. The new, patent-pending VSI Anvil Ring is easily adjustable by an external threaded jack bolt. The anvil ring position is verified externally by an integral position indicator. Internal access to the crusher is not required for anvil ring adjustment, increasing safety and lessening downtime. Adjusting the anvil ring position up and down, allows for even wear across the entire wear surface, nearly doubling the life of the anvil ring in many cases. The anvil ring can be re-positioned with common hand tools in half the time previously required.

For more information, visit [www.stedman-machine.com](http://www.stedman-machine.com).



The new, patent-pending VSI Anvil Ring is easily adjustable by an external threaded jack bolt.

Photo courtesy of Stedman



## Loadscan launches new product

Loadscan announces the launch of its highly anticipated conveyor volume scanner (CVS) — a reliable tool to tell you how much material is moving across a conveyor belt.

Like the successful load volume scanner before it, the newly released Loadscan CVS system is set apart by its uniquely clever software and friendly web-based user interface. Unlike other optical belt scales, which provide some data but don't integrate easily, the Loadscan CVS has been designed to provide you with hassle-free, insightful reporting.

The CVS is an above-belt lidar laser measurement system making it perfect for production management to understand inventory production rates in volume and tons in real time or for the accurate measurement of contract crushing quantities.

The CVS has loads of functionality with an onboard API that enables setting up a list of jobs from your

dispatch system to deliver the specified job quantities which can be reported direct to the loader operator's cab allowing the starting of a job run to be initiated by the loader operator.

With the correct size frame, the CVS can run on any belt from 400mm to 2000mm wide and can be custom mounted for larger belts including deep belts to measure even greater quantity of product.

The CVS continues the tradition of high-build quality; it is robust and will withstand a wide temperature range in harsh environments.

Carey West, owner and director of Loadscan commented, "I am excited about the release of the CVS product as it is a complementary product to our LVS truck scanner that our customers have asked about for a long time to complete their volumetric production tracking on their conveyor belts. The development team has done a great job in making the sys-

tem [a] simple design, so it is easy to install and the software interface is stacked with functionality and is super user friendly."

Loadscan has earned industry credibility by manufacturing an innovative superior product with the original load volume scanner (LVS). With success worldwide, the LVS system utilizes laser scanning technology combined with proprietary Loadscan software to measure the exact volume of the material loaded in a truck or trailer bin. With this system you'll measure actual volume, not a converted weight estimate while also recording a 3D color profile of every load. It means you don't pay for water content, you can eliminate customer and/or supplier disagreements over quantity, and you can easily track material movements.



The CVS is an above-belt lidar laser measurement system making it perfect for production management.



With this system you'll measure actual volume, not a converted weight estimate while also recording a 3D color profile of every load.

Photos courtesy of Loadscan

## Hitachi Construction Machinery Loaders America Inc. to offer next generation of Trimble loader onboard scales

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

Reengineered from the ground up, Trimble's innovative next-generation loader scale platform features smarter weighing, smarter data management and a smarter operator interface. Intelligence in the weighing software and new hardware gives operators of all skill levels the ability to load faster and more productively than ever before.

"The Trimble-Hitachi collaboration is a demonstration of our customer focus and dedication to bringing Hitachi wheel loader customers the latest construction technology," said Al Quinn, vice president, Operations, HCMA. "Combining the strength of Hitachi's world-leading wheel loader technology with the accuracy and usability of Trimble LOAD-

RITE scales enables customers to improve loadout productivity and efficiency."

"Leveraging the collaboration between Trimble and Hitachi for advanced construction technology, this new program brings Trimble technology and Hitachi machinery together, helping the customer maximize productivity from their wheel loader," said Johan Smet, general manager of Trimble's Aggregates Division. "Together, Trimble and Hitachi make it easier for contractors and aggregate producers by streamlining the order process for Hitachi machines with Trimble weighing systems."

### Smarter weighing

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

### Smarter data management

The L3180 now offers in-cab key performance indicators (KPIs), including ton/hour, tons and truck count to enable operators to monitor performance and achieve daily targets. When using Trimble's cloud-based InsightHQ quarry reporting portal, per-

sonnel can gain access to site production and operator performance KPIs on desktop or mobile devices. Data is presented in dashboard or graphical formats, including a new loadout performance heatmap, powered by built-in GPS. The system caches data locally and then syncs it with InsightHQ.

### Smarter interface

The L3180 features a 5.7-inch touchscreen display, which is twice the size of previous generation scales. Colorful graphics, cleaner interface design and the new touchscreen allow for faster menu navigation and interaction. New loading information detail, including customer and product, for each job can be customized on the interface by each operator to match their workflow and make it easier to see the right information for maximum productivity.

### Availability

The Trimble LOADRITE L3180 SmartScale is available now as an option from Hitachi Construction Machinery dealers across the U.S. for ZW220-6 to ZW550-6 wheel loaders. To locate a nearby dealer, visit [www.hitachicm.us](http://www.hitachicm.us). LOADRITE scales are installed and supported by local LOADRITE dealers.

For more information on LOADRITE products, visit [www.loadritescales.com](http://www.loadritescales.com).





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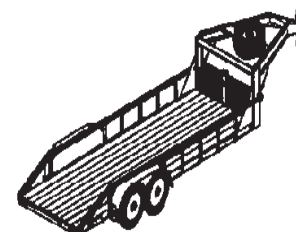
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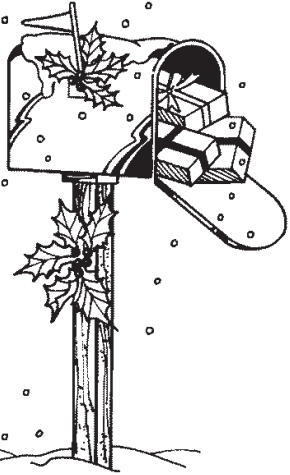
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## Barford Equipment launches three new machines and its international distributor network is also expanding rapidly

Barford Equipment, the UK based manufacturer of track, mobile and stationary screens, wheeled and tracked conveyors and trailers recently announced three new equipment models meeting demand from global customers for high specification and competitively priced solutions.

“The world’s construction machinery, aggregate, quarrying and mining markets have long appreciated the equipment available under the Barford banner and over recent months we have significantly expanded both the range of machines on offer as well as the global distributor base from which they can be sourced,” explained Stephen Murphy, distribution manager for the Barford product range. “Barford is a well-known brand in the UK and across Europe, having built an enviable reputation and possessing a long and illustrious history, but it was relatively unknown in the U.S. market; but that’s changing.”

The new Barford models being introduced this summer are comprised of the TR8048 track mounted stockpile conveyor, the BF7042 tracked mounted bin feeder and the SM312, a single axle mobile double deck screen.

- TR8048 has an 80-foot reach and a 48-inch wide belt. It also includes a twin-drive discharge belt complete with hydraulic slew hubs and a Cat 2.2 turbo engine with hydraulic oil cooler and a remote control movement.

- BF7042 has a 42-inch wide belt and an extended reach of 70 feet. Other features include a twin-drive discharge belt complete with hydraulic slew hubs and a Cat 4.4 elect automation control movement. It also ships with a mulch option that has an agitator attachment to break up material before it goes onto the belt and there is a larger BF7048 mulch variant.

- SM312 is a single-axle mobile 12 by 4 foot double deck screen complete with double drive pump to

suit auxiliary, extended folding fines conveyors and incorporates a CAT 2.2 37kw engine and removable towbar.

Earlier this year Barford successfully entered the U.S. market by launching the SR-124 and the S-104 — two new track mounted screener units — to meet local demand. Both were previewed at the Spring Sale in Kissimmee, FL, in February, coordinated by top auctioneers Yoder & Frey and proved to be the perfect event to develop brand awareness among prospective distributor representatives and buyers. As a direct result it has signed up a number of Barford Equipment distributors and the objective is to have one in each U.S. state.

Further afield, several new distributors have also been signed up in Australia to cover both Perth and Sydney. The European network is also undergoing expansion with new distributors being signed up in several of the key EU markets but others are still being actively sought particularly those with direct mining, aggregate, recycling and construction sector knowledge and experience.

The two robust and refined Barford screeners launched earlier this year are:

- SR-124, a tracked three way split heavy duty screener with a 12 x 4 screen box.
- S-104 a tracked three way split inclined screener with a 10 x 4 screen box.

Both screeners are able to fit into their own 40-foot HC container for ease in shipping. This is a key feature of the Barford range that has been incorporated into the design from the outset.

The SR-124 is built around a Caterpillar power unit. While renowned British manufacturer JCB produces the engine on the S-104, it is also available with a Deutz engine.

In addition to the two tracked screeners being

launched, Barford Equipment also manufactures a range of straight and radial tracked and wheeled stockpile conveyors. Other products include: the D16 — a 16 ton, twin axle dump trailer; the R15 — a 15 ton twin axle rock trailer and the L22 — a 19 ton, 22 foot long chassis twin axle low loader.

There is also a range of screen boxes including the popular US40 with its 40ft2 (3.75m2) total screening area. Other models provide 20ft2 (1.8m2) or 70ft2 (6.5m2) screening areas.

For more information regarding the equipment or distributor inquiries, visit the [Barford](http://Barford.com) website.



Barford Equipment recently announced three new equipment models for high specification and competitively priced solutions.

Photo courtesy of Barford

## Superior introduces two new track-mounted conveying solutions

MORRIS, MN – Superior Industries Inc., a U.S.-based manufacturer and global supplier of bulk material processing and handling systems, says it’s ready to debut two new tracked conveyor models. Joining the manufacturer’s top-selling line of portable conveying solutions are a 75-foot (23m) tracked stacker and an 8-by-16-foot (2.4 x 4.9m) tracked feed hopper.

Following Superior’s reputation for heavy-duty designs, the tracked stacker will be one of the heaviest models available in its class at 34,000 lbs (15,420 kg). Each stacker is capable of handling up to 1,000 tph (907 mtp), while hydraulic power controls the tracks, folds and discharge height. Cross bracing designed and built into the undercarriage of the tracked stacker ensures structural rigidity and stable track travel.

The 8x16 tracked portable feed hopper processes up to 800 tph (725 mtp) from an 8-cubic-yard, reinforced hopper. A bi-directionally dumping grizzly is equipped with adjustable grizzly bars and can be tilted at one of five preset angles. The hopper’s drive and backstop are hydraulically controlled in addition to the discharge conveyor’s fold and raise features.

Both the stacker and the feed hopper are equipped with Superior brand conveyor components like off-the-shelf idlers, pulleys and Exterra primary belt cleaners. Several units are now in stock and available for immediate delivery from Superior or one of its many conveying equipment dealers.



The hopper’s drive and backstop are hydraulically controlled in addition to the discharge conveyor’s fold and raise features. Photos courtesy of Superior



The tracked stacker will be one of the heaviest models available in its class at 34,000 pounds.



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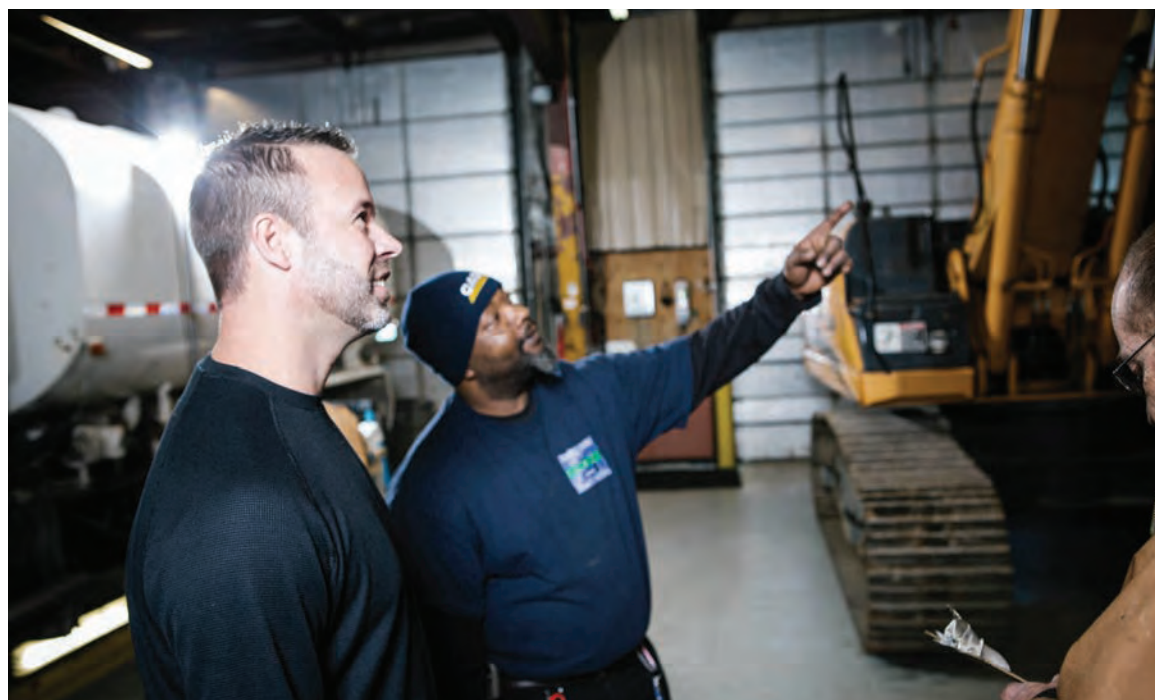
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Bland's biggest challenge is trying to contain costs for maintenance and operation of the fleet.

Photos courtesy of CASE CE

**I**magine maintaining 300 pieces of rolling stock plus 200 pieces of equipment spread across the entire United States, U.S. Virgin Islands and Puerto Rico. That's the challenge Tim Bland, assistant operations manager at Environmental Restoration, LLC, faces every day. For 20 years, Bland and his staff have provided emergency response services, site remediation, government services and industrial cleaning to various commercial, state and federal clients. With 600 employees working from 23 offices across the country, Environmental Restoration is the largest EPA contractor in the United States.

#### Fleet management challenges

The Environmental Restoration fleet ranges from mini excavators to large pieces of iron and includes some non-traditional construction equipment elements such as boats. Although each piece of equipment has its own life cycle, the general age across the fleet is less than seven years. Bland's biggest challenge is trying to contain costs for maintenance and operation of the fleet.

"With such a large footprint, our equipment gets spread out all over the place, so, it's not always in a location where it's easy to get service," he says. "We rely on servicing some of our equipment in-house, which is sometimes a challenge. We rely on people in every office and job site to help us. We try to funnel a lot of the decisions through our corporate office here in St. Louis. We have a head mechanic who handles all of our maintenance across the country and works out of our corporate office here in St. Louis. He does do a lot of traveling, but he also tries to locate dealers or service stations that can work on the equipment from afar. He manages the estimates and makes sure that we are getting what needs to be fixed for what we are paying for it."

#### Changes in fleet management

Bland has seen a lot of changes in how large fleets are managed over the last 20 years. New technology, such as telematics has made a big difference in management capabilities.

"We own several pieces of equipment with GPS monitoring on them [for] maintenance services, alarms or alerts that may be going on. With 600 people on the payroll, not everybody is a mechanic. Not every operator is mechanically inclined or as

good at maintenance as others. Telematics allow us to manage some of that from our corporate office. The company relies on GPS technology for many large cap jobs, big excavations and earth moving projects. Bland adds, "The cost savings by using those electronics are just unbelievable, so we do quite a bit of that."

The switch to Tier 4 technology fits with Environmental Restoration's green initiative. "A lot of the newer pieces are Tier 4," Bland says. "It hasn't affected us greatly. We know we have to supply large volumes of DEF to a lot of job sites. We usually buy it in 325-gallon totes for larger projects or 55-gallon drums. For some of our rolling stock — like dump trucks and over the road trucks — we buy it at truck stops. It really hasn't been that big a change for us."

#### Start with new equipment and follow the recommendations

Bland believes cost control begins with new equipment. "We start the process with buying good equipment. The cheapest piece of iron is not always the best piece of iron. If you want something to last at least seven years, then you want to start with a good product. We are huge about following manufacturers' recommendations as far as service intervals [and] recommended filters, such as CASE filters on CASE equipment. We use nothing but full synthetic oils on all our equipment."

Although the average age of fleet equipment is about 6-7 years, Bland does not have a set timetable for replacement. "We don't have anything set in stone on what we do. It depends on the application of the machine. Certain equipment we purchase may be on a project that is getting 50-60 hours a week on it and other pieces we buy, we might buy the same piece of equipment on a different project that gets 10 hours a week on it. It's all done on a case-by-case basis. We do that based on looking at maintenance records and repairs. Are we starting to spend too much money on a particular machine? For example, when it starts getting up to 5,000 hours [and needs repairs], then we make that determination back here."

#### Better records mean higher resale value

In addition to following manufacturers' service schedules, Bland has found that keeping complete

## How America's largest EPA contractor stays ahead of downtime and expense

and accurate records makes a big difference in resale value. "We keep detailed files on every single piece of equipment we own from a \$2,500 plate tamper up to a \$500,000 excavator... and on every piece of service from an oil filter to a hydraulic pump or undercarriage changing. When we rotate our fleet and sell it, the payback [on that activity] is huge."

#### Training is critical

One of the keys to keeping equipment in peak condition is training the operators. Although Environmental Restoration has a training center at their St. Louis corporate headquarters, the bulk of operator training is done with the manufacturers and local dealers.

"We're working with dealerships around the country where we purchased the equipment — working with the service department, sending some of our guys to go over and work in their service departments. We have had 20-50 of our operators at a time go over equipment and basic maintenance and checks that you can do on your machines daily. CASE sent us up to their proving grounds and that was very informative. We all learned a lot — even guys who have 35 years in the business. Just keep training your personnel. Make them follow a policy and don't let things slip through the cracks," Bland said.

#### Dealers make a difference

"Usually we buy a large amount of equipment. We may buy 10 skid steer loaders or something at one time. Usually when you do that and it's a new machine or new model, the dealerships are always happy to send someone over to go over the operation and go over the features, some of the things to check and look for. Luby Equipment for example, is just a mile away from our corporate office. They are always willing to send over their service techs and go through some maintenance with us and check track tension and give do's and don'ts on servicing. Again, we purchase here in St. Louis — it hits our office and could be shipped to Libby, Montana the next day. It is important to get our group of mechanics and our operations department familiar with our equipment, so we can pass that down to our employees in the field, operators, managers on the site," said Bland.

After 20 years of maintaining a growing fleet of diverse machinery, Bland has a simple formula for success, "Don't cut corners. Start with a core group where everyone follows a policy and let it flow to your employees. If you start correctly at the top, people below have to follow suit and you get a good product at the end."

Source: [CASE CE resource articles](#)



# The ALL Family of Companies expands all-terrain fleet with 15 new Liebherr units for 2019

The ALL Family of Companies has dramatically strengthened their mobile all-terrain crane fleet for 2019 with a blockbuster package consisting of six Liebherr AT models ranging from 70- to 600-US tons capacities – 15 units in all – scheduled for delivery throughout 2019.

The package bolsters ALL's workhorse taxi fleet with 14 units in the low- to medium-capacity range – and on top of that adds a huge-capacity boost with a 600-US ton LTM 1500-8.1, the fourth one in the ALL Family's AT fleet. The new Liebherr machines bring not just a range of lifting power but also the on-site mobility, roadworthiness and technical features to strengthen an already solid stable of lifting equipment for infrastructure work, commercial construction and more.

The 600-ton LTM 1500-8.1 is Liebherr's third largest AT. It features a seven-section boom that extends to 276 feet and with a luffing jib can reach a hoisting height up to 476 feet at a radius of 354 feet. Its huge capability and reach, along with its agile mobility, provides the muscle for both on- and off-road construction and industrial applications, including bridges and highways, power plants, refineries and more. The 1500-8.1 is also a workhorse for erecting and disassembling tower cranes, and its big boom can be invaluable on wind farms.

"A prime reason for adding this group of machines for 2019 is that Liebherr equipment offers many thoughtfully designed technologies that help meet our customers' everyday challenges," said Michael L. Liptak, president of the ALL Family of Companies. One of those is Liebherr's innovative VarioBase crane support system. VarioBase allows the operator to customize each of the crane's outrigger extensions independently, providing the ability to take advantage of every inch of available working space. That greatly reduces site prep, but it also increases machine stability and lifting capacity.

"The VarioBase feature is proving really valuable to our customers, particularly in urban construction, where we are seeing a huge uptick," added Liptak.



The new Liebherr machines bring a range of lifting power and on-site mobility, roadworthiness and technical features. Photo courtesy of ALL

"But whether these ATs are working on an urban core renewal project or a tight power plant site, VarioBase allows them to fit where cranes of similar capacity never could before. Our operators love it, but it also makes the machines safer and more cost effective as bare rentals."

Besides the LTM 1500-8.1, the package also includes the 70-US ton LTM 1060-3.1 (two units), featuring high load capacities, a long boom system and compact dimensions; the new 100-US ton LTM 1090-4.2 (four units), with environmentally friendly technology that reduces fuel consumption and noise; the 143-US ton LTM 1130-5.1 (four units), offering a long, variable boom system with outstanding load capacities in a compact size with a state-of-the-art chassis and drive technology; the LTM 1100-5.2 (one unit), one of the most compact five-axle cranes in its class; and the 220-US ton LTM 1200-5.1 (three units), providing outstanding lifting capacities and reach with its seven-section, 236-foot telescopic boom that can be extended with a 23-foot lattice jib and a swing-away jib up to 118 feet long.

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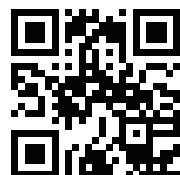


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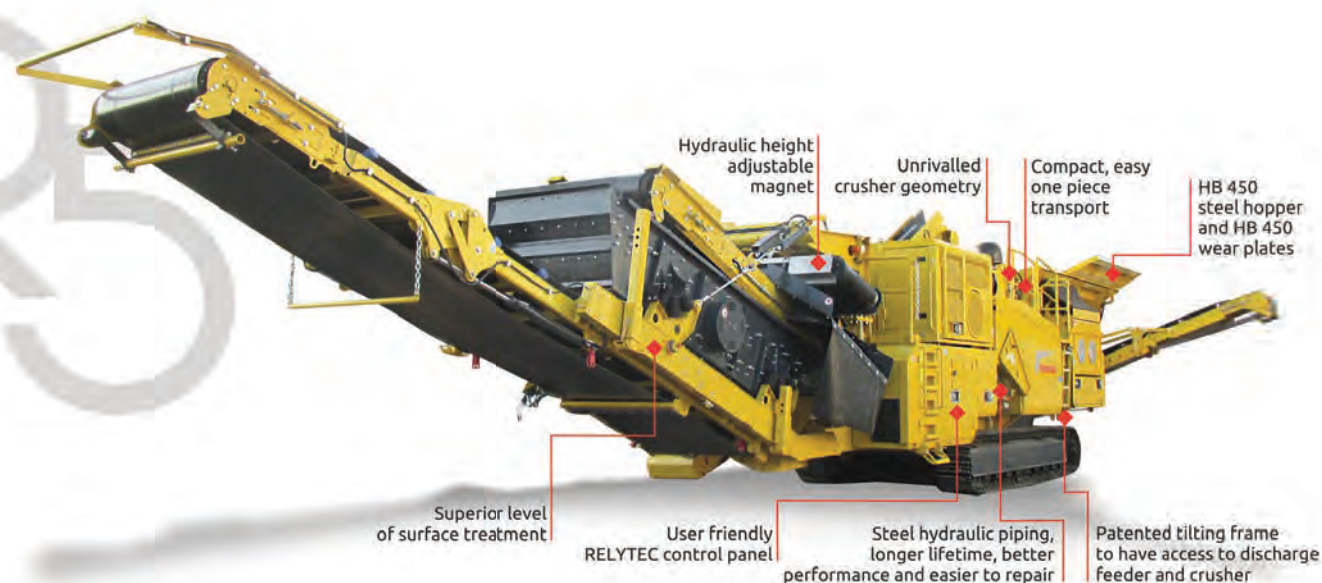


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# Roadheader solutions in focus



**RockRoadRecycle staff writer**  
*All photos courtesy of the specified OEM*

*One of Antraquip's impressive range of roadheaders.*

**T**unnel and mine excavation using roadheaders has become increasingly more popular and widespread due to the high precision and relative cost effectiveness of the equipment, especially when dealing with soft to medium strength rock. Effectively this has meant that there are now tunneling projects that prefer the use of roadheaders due to the high cost of TBMs or when the use of drill and blast is restricted due to operating conditions, especially in urban areas or below buildings — wherever the danger arises of damage due to blasting shock waves.

A roadheader generally consists of a boom-mounted cutting head, a loading device usually involving a conveyor and is predominantly mounted on a tracked chassis. The technology is actually a lot older than many people realize, with the first roadheader patent being applied for by Dr Z. Ajtay in Hungary in 1949. The first roadheaders were originally developed as a remotely operated miner for exploitation of small seams and close-walled deposits for use in wet conditions, but in recent years have become increasingly popular with tunneling contractors.

Tunnel excavation using roadheaders has become more widespread and popular due to the high precision and relative cost effectiveness of the equipment. This has proved especially so when dealing with soft to medium strength rock, as the equipment is able to excavate without weakening the surrounding structure.

## Continuous cost effective alternative

Costs factors have increasingly become prevalent when choosing the tunnel excavation method to use. In areas where the rock may be less than 100 MPa, tunneling with a roadheader may provide cost savings even when compared to drilling and blasting. The other significant advantages of a roadheader is that its use is continuous:

- the material is cut, it falls down at the face
  - it is picked up by the loading mechanism
  - and transported from the machine and hauled away.
- Compared to a drill and blast operation for example, which is discontinuous:
- the rock is drilled
  - the explosives are loaded
  - charges are set
  - then the material needs to be loaded and transported away.

Developments in equipment design now mean roadheaders are increasingly providing tunneling contractors with a flexible, mobile, safe and environmentally friendly solution. They are able to successfully excavate the various sizes, shapes and types of tunnel openings required by projects worldwide. As excavation by roadheader has become more popular, the global market has seen two companies develop expertise: Antraquip from the U.S. and Swedish company Sandvik Mining and Rock Technology (SMRT). However, they are not the only companies servicing this increasingly buoyant market with many established and new companies providing equipment.

## Rock properties

The use of roadheaders in tunneling (and mining) projects is often limited by the properties of the material being cut. SMRT has used some of the latest technological devel-

opments to provide roadheaders designed to economically excavate rock with compressive strengths up to 130-140 MPa.

SMRT's roadheaders are based on a design and development philosophy focused on continuous tunnel excavation without the use of explosives. This has meant they have been particularly commonplace in urban construction projects since no harmful vibrations arise, which often precludes the use of drill and blast in urban areas. Powered electro-hydraulically, the roadheaders also emit no fumes and come equipped with state-of-the-art profile control, automatic sequence control system and online data processing possibilities.

SMRT's roadheader range is based around the MT-series, which is comprised of four models ranging from the 57 t MT360 to the 135 t MT720. They are all equipped with powerful, geometrically optimized transverse cutter heads proven to give excellent cutting performance in a wide range of rock formations. Subway tunnels, road tunnels, shaft sinking, rehabilitation of existing tunnels and excavation of underground caverns are just a few applications where these machines have successfully demonstrated their great flexibility. Variations have also been used extensively in mining.

Among Sandvik's latest developments is the MT520 tunneling roadheader. Claimed to be a new concept roadheader in the 100 t class, easily interchangeable modules makes the MT520 basic machine easy to adapt for a large variety of applications. An 8-meter cutting height module makes this machine suitable for large road tunnels, but should the machine be required to operate on softer conditions, the cutter head is easily exchanged. The full cutter motor power of 315 kW is available on both the transverse and inline type cutter head, while an integrated dust extraction system provides a healthy work environment.

## Growing American company

Founded in 1985, Antraquip manufactures roadheaders that are of an advanced design and deliver extremely powerful rock cutting capabilities. Its roadheaders come in a variety of sizes, covering the weight class of 13 – 80 t. They have been specifically designed to excavate roadways, tunnels and chambers continuously without using explo-



*Developments in equipment design now mean roadheaders are increasingly providing tunneling contractors with a flexible, mobile, safe and environmentally friendly solution.*





*Herrenknecht AG's partial-face excavation machines are able to excavate any soil encountered through the use of two different cutting tools.*

sives. Being electro-hydraulic powered, the machines emit no fumes and offer interchangeable cutter heads, which are customized for each project. Their ability to excavate the desired profile without causing harmful vibrations is highly valuable for both environmental and safety reasons.

All the roadheaders share similar features and capabilities, being capable of cutting very hard rock economically and using an integrated high pressure pick flushing system, which delivers improved levels of operational safety and pick life. Additionally, the low rotation speed of the cutter head and the high, installed power ensures minimum dust emissions, while low ground pressure crawler tracks and no movement of crawler chains during sumping leads to limited deterioration of ground conditions following work.

The Antraquip range has many leading features, including the AQM 50 weighing in at 13 t, claimed to be the world's narrowest roadheader. This means that it is ideally suited for tunneling/excavation projects where size and operating weight are major issues. The other roadheaders in the Antraquip arsenal range from the 25 t AQM100 right up to the impressive 85 t AQM260.

#### Eastern promise

Although an American and a Swedish manufacturer have dominated the roadheader market, Chinese and Japanese manufacturers have not been slow to develop their ranges of roadheaders. The Mitsui Miike Machinery Co., Ltd. launched its first machine way back in 1968 — the first roadheader to be manufactured in Japan. Their first model weighed 15 t and since then its roadheaders have become more powerful and heavier to satisfy developing customer requirements. Its premier model, the SLB-350S, has a 350kW cutting motor and weighs 120 t, making it one of the world's largest.

All members of the roadheader range have been designed with highly efficient tunneling and high-speed soft rock excavation being key to the design ethos. Most

are deemed suitable for diverse geological conditions ranging from soft to medium-hard rock up to 100MPa, providing a low vibration tunneling solution. The MRH-S300, however, is capable of working on medium hard rock up to 130MPa.

The Chinese SANY Group has, since its formation in 1989, grown to include five industrial complexes in China as well as four R&D and manufacturing centers in the United States, Germany, India and Brazil, employing around 40,000 people in more than 150 countries. As with many Chinese equipment manufacturers, SANY has placed an emphasis on R&D, with between five and seven percent of annual sales being reinvested. This has allowed the company to develop a limited range of roadheaders aimed at the "heavier" end of the market. Its EBZ260H roadheader weighs in at 91 t, with cutting power in the region of 260 kW. It also possesses a three-stage vibration dampening system, integrated dust removal and wireless remote control operation.

Xuzhou Construction Machinery Group Co., Ltd (XMCG) is now China's largest construction equipment manufacturer, and the fifth largest in the world. As such, it comes as no surprise that the company now manufactures an impressive range of roadheaders ranging in weight from 23 to 120 t. Unlike most manufacturers, its heavier duty equipment has been designed to also work on hard rock. The flag ship 120 t EBZ 320 comes with a cone-cutting head, purpose-designed for hard rock and possesses a stronger drilling force and optimized pick structure delivering what is claimed to be "excellent" rock breaking capacity and low consumption rate of picks.

Other features found on the range include a spraying system for reducing the effects of dust that adopts a double trapezoid angle structure and a three-layer water curtain partition. The equipment's hydraulic system delivers constant power and load sensitive control ensuring that all the roadheaders are energy efficient and maximize the machines' environmental credentials.

#### Engineering expertise

There are also lesser-known European manufacturers who have developed a reputation for equipment excellence, drawing on long histories of engineering know-how. German company Deilmann-Haniel Mining Systems GmbH (DHMS) is one such firm with a proud 125-year history. Currently, the DHMS roadheader family consists of three weight classes ranging from 61 to 130t, and cutting power ranges from 200 kW to 400 kW.

The new, compact design DHMS roadheaders of the lower and middleweight class have been adapted to the challenges posed in coal mines. However, customized versions of these roadheaders are also used in tunneling projects. Its 60 to 130 t roadheaders have been developed primarily for tunnel excavations possessing excellent cutting performance through a combination of high machine weight and the use of an automatic stabilization system.

All DHMS roadheaders are steered using separate radio control consoles ensuring reliable, accurate and ergonomic handling. An automatic profile display and recording system is used to maintain the accuracy of the cutting profile, while all relevant status conditions are displayed and monitored by an on-



*IBS Industriemaschinen-Bergbau-Service GmbH has been producing equipment for the tunneling industry since 1971.*





Right:

Tunnel excavation using roadheaders has become more widespread and popular due to the high precision and relative cost effectiveness of the equipment.



board data acquisition and diagnosis unit that also relays the signals to the control room and to an online data system.

IBS Industriemaschinen-Bergbau-Service GmbH has been producing equipment for the tunneling industry since 1971. Its roadheaders come in the 30-50 t range and now come complete with state of the art control and powertrain systems delivering what is said to be enhanced performance and efficiency with improved ease of maintenance. These new features also enable the machinery to be used in conjunction with the company's recently developed Outburst Management Package (OMP). According to IBS, this will enable for the first time, a roadheader to be safely be operated "man-free" from more

than 200m away.

Another German manufacturer is the BBM Group, which was established in 1990, specializing in equipment purpose-built for the mining and tunneling industries. Its roadheaders range from 55 to 100t models, with features designed to ensure efficient, productive and safe excavation. Power ranges from between 160 kW to 300kW (with an option for 400kW on its 100t model) with all the different models being equipped with distinct features to suit specific applications.

Interesting features on the equipment include a cutting arm equipped with an articulated boom and two cutting heads fitted with round shaft bits. This may be swiveled horizontally and vertically enabling selective ex-

traction with dimensionally accurate cutting of the roadway profile. Targeted sprinkling of the cutting heads provides efficient cooling of the cutting bits, thereby reducing their wear and the production of dust. Cutting performance of the machine depends on the properties of rock to be excavated, with compressive strengths of up to 120 MPa being reliably achieved in continuous operation. The robust cutting arm gear provides enough reserve even if the rock becomes harder. Further improving efficiency, the electro-mechanical cutting drive is water-cooled and if required, could be equipped with its own water air cooling circuit.

#### Effective but different

Herrenknecht AG, the company that has become synonymous with TBMs, also manufactures a range of roadheaders that are slightly different from the norm — but just as effective. Its partial-face excavation machines present an economically interesting solution in homogeneous and near-stable ground conditions with little or no groundwater. This tunneling technology is easily adapted to changing geological conditions — both in loose soils and hard rock — due to its strikingly simple design.

The equipment is able to excavate any soil encountered through the use of two different cutting tools. The universal excavator boom is equipped with a shovel, a ripper tooth or a hydraulic jackhammer depending on the soil conditions. Roadheader booms are used when rock of 80 MPa or more is encountered. Both boom types enable rapid and easy replacement of worn parts. The excavated material is transported by belt or chain conveyors to the conveying system located at the rear of the operation.

One major advantage of Herrenknecht's partial-face excavation machinery is the workplace of the operator. Located just a few meters away from the open tunnel face makes it possible to control the excavation precisely, react swiftly to changes in the ground and take appropriate measures if necessary — during excavation and removal of large boulders or other obstructions without having to create additional shafts, for example. Direct visual contact with the geology is also seen as an advantage for the steering process.

Herrenknecht's shaft boring roadheader (SBR) was developed specifically for the mechanized sinking of blind shafts in soft to medium-hard rock. The SBR has been equipped with a roadheader boom and a rotating cutting drum thereby enabling the cutting of variable shaft diameters from 8 to 12 meters. Based on the proven technology of the Herrenknecht vertical shaft sinking machines (VSM), this new development delivers higher occupational safety compared to conventional processes while improving tunneling excavation.

#### Horses for courses

TBMs, drill and blast and roadheaders; each method of tunnel excavation has its pros and cons, enabling tunneling contractors to use the method best suited to budget, rock, local operating conditions and a host of other factors. Given the broad range of roadheaders now available on the market from all corners of the globe, there is little doubt that this method of tunneling offers many advantages helping to ensure the method of tunnel excavation matches the geology, geography and inhabitants of the area.



Founded in 1985, Antraquip manufactures roadheaders that are of an advanced design and deliver extremely powerful rock cutting capabilities.



# Tips for winter operations from E Tip, Inc. ~ avoiding hydraulic lock

Hydraulic lock is often overlooked when starting diesel engines in cold weather. Equipment designed with the hydraulic pump directly connected/coupled to the engine will turn over less easily and at a slower RPM because of the increased drag from the cold oil in the hydraulic system. The result may be the diesel engine does not spin fast enough to start readily.

Improve cold weather starting by installing a Universal Preheater™ (sized for the tank capacity) on the outside of the hydraulic reservoir, as close to the pick-up tube inside the tank as possible. This position provides the heated oil as the first oil available to the hydraulic pump — reducing drag on the engine at startup — making starting easier.

To improve cold weather starting and operations even more, install the Universal Filter Preheater™ on the hydraulic filter housing to avoid filter bypass and supply even more hot oil directly to the hydraulic pump. Available in 12v, 24v and in dual grid voltages in the same Preheater™ 12v/120v, 24v/120v and in regular voltages 120v and 240v. Two springs and nylon ties hold it in position.

Diesel engines need a fast spin to create the compression in the cylinders that cause efficient combustion of the

fuel. Heating the oil pan (lube oil) using the Universal Preheater™ installed on the outside bottom or side of the pan helps the starter and battery achieve the fast spin for easier cold weather starting. With injectors and the injection pump in good shape the engine will be ready to work soon after starting. Preheated engine oil shortens the wait time to achieve operating temperature, leading to profitable operations. Take a look at our battery heaters too.

During cold weather operations engines achieve operating temperature shortly after starting and is maintained continuously until shutdown. At shutdown, the hot internal components are suddenly exposed to cold temperatures causing condensation, which drips down inside the crankcase and into the oil pan. This cycle repeats itself each time the engine runs up to temperature and is shut down. The accumulation of the condensation in the oil pan can combine with the byproducts of combustion to form acid. This can lead to etching of the bearings.

The best practice here is to plug in the Universal Preheaters™ for the hydraulic reservoir and the engine oil at shutdown allowing them to heat continuously until start up again. This helps to

maintain heated oil and avoids the formation of condensation in the oil. Water (condensate) in engine oil does not lubricate, but instead creates excessive wear throughout the engine especially in the crankshaft and bearings.

By starting with hot oil there is a much shorter warm up time for the engine and the hydraulic system. Getting to work faster is an economic benefit. Universal Preheaters convert the metal of the pan into a large heat transfer element with low watt density per square inch. The low watt density insures that the oil is not “burned”, as happens with other types of engine warmers.

E TIP, Inc. offers a wide range of sizes of Universal Preheater™, designed to deliver the heat necessary to make winter starting easier and to deliver several other features that help extend engine and hydraulic system life. Take a look at our diesel fuel filter preheaters that prevent plugged fuel filters from gelled diesel fuel.

Permanently mounted on the outside of the housing (no leaks) “Peel N Stick” Universal Preheaters™ are thin silicone pads designed to deliver heat directly to the engine oil pan or the hydraulic reservoir. These are available in 120v and 240v and should be sized according to

the capacity of the oil pan or the hydraulic reservoir. Exclusive flexible ceramic insulation pads are added on top of the Universal Preheater™ to drive more heat into the housing. Universal Preheaters™ do not burn the oil.

The “Peel N Stick” kits offered by E TIP, Inc. deliver easier, faster starting and allows warming-up to operating temperature quicker. When the Universal Preheater™ is continuously energized even after engine shut down the formation of condensation inside the engine and the hydraulic reservoir is controlled/prevented because the hot temperatures are maintained until operations are started again. The continuously heated oil in the pan and reservoir (without burning the oil) drives out any moisture to atmosphere through the breather. Universal Preheater™ users have reported icicles forming at the engine breather in very cold weather as the condensation escapes.

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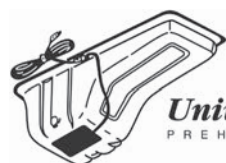
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## People in the industry

# CM Labs makes all-season training available for IUOE Local 158 thanks to Vortex simulators

CM Labs Simulations, developer of Vortex® training simulators, is pleased to announce that all-season training is now possible for Albany, NY-based IUOE Local 158, thanks to its adoption of a Vortex simulator.

IUOE Local 158 represents heavy equipment operators, mechanics and surveyors in Upstate New York's construction industry, as well as stationary engineers who work inside buildings performing all types of facility maintenance.

Previously, Local 158 was restricted to classroom learning from November to February – but now it has a virtual training yard available 365 days a year, snow or no snow. What makes this year-round training possible is the Vortex simulator from CM Labs Simulations.

With software for training excavator, rough terrain crane, crawler crane and flat-top tower crane operators, a single simulator helps the Local to provide training for a full fleet of equipment throughout the winter.

Bill Gray, Training Director for Local 158 District 106 in Albany, NY, says that training on the Vortex simulator is also more convenient during heavy rain days, as an alternative to digging in the mud. "It's opening up new training possibilities, and resulting in faster, more effective training for apprentices," he adds. "You're not just putting them in a piece of machinery and hoping for the best. On the Vortex simulator, you get immediate feedback from the instructor. The turnaround time of learning is half of what it was."

CM Labs' full catalogue of cranes and heavy equip-



Previously, Local 158 was restricted to classroom learning from November to February — but now it has a virtual training yard available 365 days a year — snow or no snow.

Graphics courtesy of CM Labs

ment training packs can be run from a single simulator. This includes training packs for mobile crane, flat-top tower crane, luffing tower crane, crawler crane, excavator, wheel loader, backhoe, motor grader and more.

"We have seasoned operators that are some of the best in the country get on this thing," Gray says, "and they can't believe how useful these learning exercises are for trainees in terms of complexity. That says a lot for what CM Labs has done."

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# Voters across the nation demonstrate support for transportation investment

*Editor's note: the opinions and comments expressed in the association's commentary do not necessarily reflect those of Lee Newspapers, Inc. and RockRoadRecycle.*

Source: ARTBA Newsletter/Nov. 8, 2018

WASHINGTON, D.C. – On Nov. 6, voters in 31 states once again showed their support for transportation infrastructure investments, approving 272 (79 percent) of 346 state and local ballot measures. In total, the approved initiatives are expected to generate over \$30 billion in one-time and recurring revenue, according to the analysis conducted by the American Road & Transportation Builders Association's Transportation Investment Advocacy Center™ (ARTBA-TIAC).

The 2018 preliminary results reaffirmed the trend of recent years, demonstrating strong voter support for investments to maintain and improve state and local transportation networks. Including 2018, voters have approved 78 percent of nearly 1,700 transportation investment ballot measures tracked by ARTBA-TIAC since 2009.

In the most closely watched initiative of 2018, California voters turned back Proposition 6, an effort to repeal an increase in the state gasoline and diesel motor fuels tax that had been approved by the legislature as part of a 2017 transportation funding law. The 55 percent to 45 percent decision by voters will help preserve more than \$50 billion for urgently

needed highway, bridge and transit improvements in California over a 10-year period.

"By soundly rejecting Proposition 6 and re-electing 95 percent of the state legislators who voted in 2017 to increase the state gas tax to fund needed transportation improvements, California voters showed the public continues to support a user-funded approach to infrastructure investment. That's a message the Trump Administration and new Congress should heed as they consider a bipartisan infrastructure package and permanent revenue solution for Highway Trust Fund programs next year," said ARTBA Acting President and CEO William D. Toohey Jr.

The California repeal attempt was part of a larger effort by Congressional leaders to increase Republican voter turnout in several key California Congressional districts. "In ginning up and funding the Prop 6 repeal initiative as a 'get out the vote' ploy, the U.S. House Republican leadership nearly deprived California citizens and businesses of over \$5 billion a year in transportation congestion relief projects. That was both wrong and short-sighted," Toohey added.

Additional highlights of the TIAC report include:

- A proposed state gas tax increase in Missouri met unexpected resistance at the polls, with voters rejecting the measure 54 percent to 46 percent.

• In Colorado, voters rejected two measures to provide new transportation investments. Proposition 109, a measure to provide one-time funding with a \$3.5 billion bond, was rejected 39 percent to 61 percent. Proposition 110, which would have increased the state sales tax by 0.62 percent for 20 years and provided an initial jumpstart with a \$6 billion bond, also failed, 40 percent to 60 percent.

Statewide measures to protect transportation funds from being diverted to non-transportation purposes passed in Connecticut and Louisiana.

Earlier in the year, voters approved 192 measures for an additional \$6.4 billion in transportation revenue. The market impact of these ballot measures is difficult to project as revenue approved ranges from immediate one-time investment to a contribution made annually for as long as 30 years.

The complete report and an interactive map showing the state-by-state results can be found at the [ARTBA-TIAC](http://ARTBA-TIAC) website.

TIAC operations are supported by ARTBA's "Transportation Makes America Work" program.



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& Transportation  
Builders Association**

## U.S. Department of Labor issues final rule on crane operator certification requirements

WASHINGTON, DC – The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) published a final rule Nov. 7, that clarifies certification requirements for crane operators, and maintains the employer's duty to ensure that crane operators can safely operate the equipment. The final rule will maintain safety and health protections for workers while reducing compliance burdens.

Under the final rule, employers are required to train operators as needed to perform assigned crane activities, evaluate them, and document successful completion of the evaluations. Employers who have evaluated operators prior to December 9, 2018, will not have to conduct those evaluations again, but will only have to document when those evaluations were completed.

The rule also requires crane operators to be certified or licensed and also receive ongoing training as necessary to operate new equipment. Operators can be certified based on the crane's type and capacity, or type only, which ensures

that more accredited testing organizations are eligible to meet OSHA's certification program requirements. The final rule revises a 2010 requirement that crane operator certification must specify the rated lifting capacity of cranes for which the operator is certified. Compliant certifications that were already issued by type and capacity are still acceptable under this final rule.

The final rule, with the exception of the evaluation and documentation requirements, will become effective on Dec. 9, 2018. The evaluation and documentation requirements will become effective on February 7, 2019.

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to help ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit [osha.gov](http://osha.gov).



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# Construction gets ready for the clean tech rush



Drones are set to be one of the largest markets in construction.

**T**echnology has the power to make construction cleaner, smarter and more efficient – yet progress has been slow. How can the industry take full advantage of intelligent automation? Alastair Hayfield, Research Director at Interact Analysis, shares his insights.

## Is construction ahead or behind the game when it comes to technology?

Construction typically lags three to five years behind the automotive sector, for example. The technologies that are happening now in construction were first seen in these segments a number of years ago. But we are seeing a pretty strong adoption of them in construction now that these technologies are becoming more robust and proven.

## Which technologies are having an impact right now?

We are starting to see drone adoption ramping up. At the Intermat exhibition earlier this year, there were a much larger number of companies offering aerial surveying software and drone services than we've seen before. In fact, this sector is forecast to be one of the largest applications for drones, with commercial unmanned aerial vehicles (UAVs) used in construction set to be valued in excess of \$2 billion by 2022. Electrification, meanwhile, is a big trend – but it will take longer to bring to market. The introduction of urban low emission zones (LEZs) will supercharge this process. There are now around 200 LEZs, particularly in Europe, so if manufacturers want to continue to operate in major construction cities then they really need to focus on low emission vehicles.

## So, manufacturers need to be prepared for a shift in machine design?

Absolutely. A great example is the Volvo prototype excavator EX2. Although still a working concept, it completely replaces the hydraulic system with electric actuators and that's quite a big departure because every other piece of construction equipment relies on hydraulics. A move towards electrification like this does bring with it some design challenges, but as we solve some of these issues it frees up engineers to be far more creative with machine design. It stands to reason that a smarter machine with no cab adds more value in terms of space, productivity, fuel efficiency and maintenance costs. It's exciting to see where we go from here.

## What are the challenges for our electric future?

Rightly or wrongly there will be questions about reliability, particularly around the battery as customers look for reassurance that the battery will last the lifetime of the vehicle or have an acceptably long use cycle before replacement. And then there'll be questions around durability, as these vehicles get used in harsh environments. To answer this, manufacturers need to be able to see the overall picture and factor in a number of challenges, such as getting power to the site, particularly for remote areas. Likely to be most important for the customer, electrification tends to be more expensive at

the time of purchase, so moving the conversation towards total cost of ownership, introducing new business models and proving the quality of the machine will be important.

## And how will intelligent automation impact the role of the operator?

There are a lot of scare stories about jobs being replaced by machines, but actually over the next 5-10 years, what we will see is the augmentation of people's jobs as machines are used to assist rather than replace site activities. For the commercial vehicle market, the driver still has to get out of the cab in many instances and do a job and we'll see the same for construction, where automation will free them up to do the things they don't have time for. It is more about increasing safety and productivity than about replacing operators.

## You've mentioned the commercial vehicle market. Will construction be following the same path?

It is certainly a good example. Last year there were three or four companies announcing electric solutions, but in the last few months that market has exploded. Now almost every major company is showcasing its electric capabilities, with major investment in battery production. It is likely that construction will follow a similar path, as market competition and increased regulation sets the tone.



Intelligent automation is more about boosting safety and productivity, than it is replacing operators.

Photos courtesy of Volvo CE

## Do you see a difference in attitudes to automation and emissions across the regions?

Europe is having the strongest push on emission-free zones for individual urban areas, but China is taking a more widespread national approach to incentivizing electric vehicles. In terms of the commercial UAVs, China is also set to corner a quarter of the drone market over the next five years. In the USA, there is less of a focus on LEZs and more of a focus on how electrification can be used to lower freight costs. [Roughly] 80 percent of freight in North America is moved by road, so there's a keen

understanding of connecting fuel efficiency with total cost of ownership and profitability. Japan has an 'i-construction' initiative to increase the use of technology in the construction industry, including the use of UAVs. This initiative is driven by a need to increase productivity through automation and an ageing construction workforce, which may lead to a shortage of labor in the coming years.

## How will the Internet of Things (IoT) allow us to make full use of these new technologies?

The IoT will help bring all these technologies together. We need seamless integration of data between machines and applications so that everyone can access relevant information both on-and-off the site. If customers' financial teams can get live data directly from the machine or from a construction/mining site in terms of how much material is there, its worth and asset costs – then that will provide real value. If we start employing smart machines on construction sites, then their real value comes when we use connectivity and cloud computing to help us get meaningful information from them.

At a corporate level, what should companies be doing to prepare themselves for the future?

Companies can no longer develop technologies in isolation. It is all about being able to migrate technologies across different divisions and operational groups. Volvo is a good example of a group of business areas that has done a lot with electric buses and is now taking a more strategic look at electrification across all its businesses, including trucks and construction equipment. After all, there's no point developing electric solutions at great time and expense and not sharing that insight and technology in areas where it may also have benefits.

For more information on Interact Analysis's research on electric off road machinery, visit this [web-site](#).

Alastair Hayfield has over 10 years' experience leading research activities in scaled, high-growth industrial and technology markets. Most recently, Alastair led IHS Markit's automotive technology and mobility practice, where he oversaw research activities for a team of 20 focusing on two automotive megatrends: vehicle autonomy and the emergence of mobility as a service. At [Interact Analysis](#), Alastair is responsible for a variety of topics including commercial and agricultural drones.



Research Director Alastair Hayfield, of Interact Analysis.



# Equipment manufacturers want Republicans and Democrats to work together

*Editor's note: The opinions and comments expressed in the association's commentary do not necessarily reflect those of Lee Newspapers Inc. and RockRoadRecycle.*

WASHINGTON, D.C. — Association of Equipment Manufacturers (AEM) President Dennis Slater issued the following statement on what the 2018 midterm elections mean for the equipment manufacturing industry.

"After a midterm election that saw record turnout and interest, there's now a renewed opportunity for President Trump and Congress to work across party lines to tackle the

issues that will help grow our economy and keep our nation strong," said Slater. "Modernizing our nation's infrastructure, promoting free and fair trade and supporting a strong agriculture economy should all be bipartisan priorities for the 116th Congress. The equipment manufacturing industry stands ready to do its part by working with Congress and the administration to solve some of our nation's biggest policy

challenges so that we can add to the 1.3 million good-paying jobs our industry supports."

Many of the top issues for voters in the midterm elections are issues that are also important to the equipment manufacturing industry.

## Trade

The escalating trade dispute with China and the decision to impose tariffs on imported steel and aluminum has had a negative impact on the equipment manufactur-

ing industry. U.S. equipment manufacturers are facing higher production costs while the impact of retaliatory tariffs by trading partners hurt the U.S. agriculture sector and threaten to reduce the domestic sales of agriculture equipment. AEM believes that Republicans and Democrats should work together to address the uncertainty and disruption caused by the administration's trade policies. This includes



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efforts to negotiate fair, binding and enforceable trade agreements with countries and open up new markets for U.S. equipment manufacturers.

## Infrastructure

The lack of any meaningful action on a com-

prehensive infrastructure bill means that expectations for Congress and the administration to act next year will be even higher. Voters have repeatedly made it clear that they want Washington to keep its promise to rebuild and invest in roads, highways, bridges, ports, pipelines and broadband networks. Equipment manufacturers will send a strong message to both Democrat and Republican members of the 116th Congress that they should start with infrastructure. That means working together in a bipartisan fashion to identify a long-term and sustainable funding mechanism for the Highway Trust Fund, connect urban and rural America through new infrastructure, ensure that projects are delivered in a cost-effective and time-efficient manner and provide job-training programs for the workforce that will help us reclaim our infrastructure advantage.

## Agriculture

A strong agriculture economy creates a strong manufacturing sector. Farm policies have a major impact on the health of the farm economy, which in turn is a key driver of equipment manufacturing employment. Congress can and must pass a farm bill so that farmers and ranchers can keep providing our nation's food security. Republicans and Democrats should also work together to craft a comprehensive energy policy for our nation, including supporting a strong Renewable

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Joseph A. Hardick,  
CPA, CCIFP

# Getting to the bottom line

*With Dannible & McKee, LLP*

## Small business owners get unprecedented tax break — make sure your company gets theirs

There is a whole host of new tax rules designed to lower the tax burdens for all companies. It is important that you are aware of the changes to ensure you get the benefits.

The larger corporations (C-corporations) that pay taxes themselves, rather than passing the tax burden onto their shareholders, received a big tax rate reduction this year. But the small businesses got a huge reduction as well in the form of a new, special deduction just for them.

Generally, the income, losses, deductions and credits of an S-corporation, partnership or LLC are passed through to the owners — to be reported on their tax returns. Sole proprietors also report business income and deductions on their personal tax returns.

A new 20 percent income tax deduction for companies (other than C-corporations) comes into play. With the Tax Cuts and Jobs Act, pass-through entities receive this new deduction beginning in 2018 and expiring after 2025. It is measured by 20 percent of their business income.

This is a new concept, so it is worth understanding. The rules themselves become rather complex at times, even calling for the taxpayer to distinguish the income or loss of each separate trade or business. There is also an emphasis on projecting one's taxable income for the year.

The business generally needs to be an active one, but passive investors with flow-through income from an active business may benefit. Wage income to the owners doesn't qualify for this deduction, but within the complex new rules, it helps to weigh owner wage payments and/or capital expenditures in the context of their impact on this deduction. Wage payments and/or capital expenditures are sometimes necessary to maximize this new deduction.

Sub-chapter S income from an active business may qualify, but payments out of the S-corporation to owners can affect the computations, depending

on whether they are wages to the owner-employees or just dividends. Wage levels of owners or guaranteed payment levels to partners can be important planning aspects of this new deduction. The ability to achieve the largest deduction is directly tied to good, timely planning.

With the new deduction, decisions about electing to expense capital expenditures (Section 179) need to be weighed in the context of the impact on this new deduction. The 20 percent deduction may focus on taxable income rather than business income, when taxable income is less. So, the expensing of purchased equipment will reduce taxable income, but it will also reduce the new deduction.

This deduction is available whether or not one itemizes or uses the standard deduction.

There is a lot of math and complicating factors involved in considering this new rate reduction. Even itemized deductions, such as charitable contributions, can at times impact the measurement of this new deduction.

A 20 percent reduction in your taxable business income is an incredible benefit, so it is worth it to spend the time to ensure you maximize the savings.

Please contact your tax professional to make sure they are fully informed about this tax saving opportunity including the recently issued, and very extensive IRS regulations covering the requirements and limitations. Getting a 20 percent discount on your company's tax is a great benefit. Make sure you don't miss out on it.

*Joseph A. Hardick, CPA, CCIFP is a tax partner with Dannible & McKee, LLP, a Syracuse, NY-based public accounting firm with more than 90 professionals. The firm has specialized in provided tax, audit and accounting service to the construction industry since its inception in 1978. For more information on this topic, contact them at 315.472.9127 or visit [www.dmcipas.com](http://www.dmcipas.com).*

### Equipment from 13

Fuel Standard (RFS) and work to advance efforts to expand ethanol fueling infrastructure and work to open up more new markets around the globe for U.S. farmers and ranchers.

#### Tax

Tax reform empowered the equipment manufacturing industry to create jobs, improve the quality of life and build more in America. Many equipment manufacturers have hired more workers, created more well paying jobs, invested more in America and raised wages. Also, the industry has been given license to compete more fiercely in the global economy. Democrats and Republicans should work together to fix errors in the new tax

law, which could create an opportunity to pass new, bipartisan tax legislation. Specifically, Congress should work in a bipartisan fashion to make the new tax code even stronger for equipment manufacturers, including making permanent full expensing for short-life investments and the deduction for qualified business income, as well as making the Base Erosion and Anti-Abuse Tax (BEAT) a true alternative minimum tax.

*Every year, AEM's grassroots campaign "I Make America" works to engage and motivate many of the equipment manufacturers' 1.3 million men and women to get involved in the political process. This year's activities included dozens of*

*events at equipment manufacturing facilities, including the I Make America Town Hall Tour. To get our industry's men and women more engaged this election year, the Town Hall Tour brought policy and industry experts to shop floors across the country for engaging and in-depth discussions on key policy issues — including trade, infrastructure and agriculture — and was attended by more than 500 workers and watched by thousands more online. According to post-event polls, two-thirds of attendees felt they had a better understanding of the issues impacting the industry after participating in the Town Hall Tour.*



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# How to be productive: tips for the overwhelmed

A worker is only as good as his or her productivity. Without the ability to consistently produce quality work, a person's skillset is useless. To arrive at a perfect medium of low stress and good work, careful steps must be taken by both employee and management to create an environment that encourages productivity.

Ron Black spoke at CONEXPO-CON/AGG 2017 to try to mend this common workplace problem and give some insight into why productivity can feel so far away.

## Don't work harder

The most common reaction to a need in greater productivity is to simply increase workload. Common methods are both multi-tasking and excessive overtime, pushing workers beyond their standard 40-hour workweeks. Employers will quickly realize over-straining employees leads to a sharp downtick in productivity, by nearly 60 percent. Overworking accomplishes much of the same, with 16 weeks of overtime landing employees at around 60 percent of their average productivity.

Strategic planning is one of the key tools in promoting productivity minus the backfiring of traditional methods. The first strategy can be simply to acknowledge that overtime and multi-tasking do not work, a process that can prove surprisingly difficult. In an environment where success is traditionally measured by working harder and faster, breaking the cycle of unproductive, unhealthy habits can be tough and often requires specific instructions and schedule adjustments.

Understanding exactly how to prioritize can give a big advantage in the workplace. Black gives a system for organizing deadlines by focusing on only the SNLT (Start No Later Than) dates. With the proper start date, additional time can be allocated at the end of a project for fixing problems or offsetting setbacks. But a late start cannot be made up and restricts future options, a crucial tool to possess.

## Establish measurable goals

Organizing by goals can also be helpful, especially with massive, yearlong projects (i.e. next year's budget). By establishing daily, weekly, monthly and quarterly goals, a ladder is built, which leads to the year goal, by breaking the process down into more manageable, digestible pieces. Another organizational method of Black's is to place all tasks on a grid, ranking them by their importance and urgency: tasks that are both important and urgent get done first, while unimportant and non-urgent tasks can be ignored completely.

While bad stress exists to hurt productivity, there's something to be said for good stress. A small amount of worry can be created with a deadline, manifesting as healthy levels of focus, determination and drive. Stress is supposed to motivate, not incapacitate. More to this effect, Forbes.com writes about a series of different practices to reduce destructive stress in the workplace, the first of which is delegation. Understanding when to pass off tasks that can eat up valuable time is the beginning to healthily balancing a schedule.

## A little self-care goes a long way

Other items from Forbes include making sure to take frequent breaks, which can help to avoid eyestrain and ward off weight gain triggered by inactivity. Exercise in general, in or out of the office, can go a long way in helping to fight stress. Perhaps to continue the reward cycle, small, self-given presents are also recommended after achieving important goals, such as going to bed earlier for more sleep or setting aside time to watch a favorite TV show.

Finally, Forbes asks that workers simply be honest with themselves. Asking the question, "Am I being productive?" can be all that it is needed to snap out of a daydreaming haze or get off Facebook. Being realistic can also help: accomplishing a month's worth of work in a day maybe isn't the best goal to set. Instead, aiming to do a small portion of each project before leaving could generate satisfaction without causing unneeded anxiety as the day winds down.

Many tools exist to battle anxiety and promote productivity, but the real measure comes from the employee. Without drive to truly perform well and do a quality job, no amount of tips or tools will accomplish anything. There must first be a desire to improve and the rest will follow.

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# Crane Industry hosts open house and Power UP workshop

Crane Industry Services LLC (CIS) recently held an open house for its new 8,892-sq. ft. Centered on Safety Training Center, located in Carrollton, GA. Representatives from Maxim Crane Works, a CIS customer, assisted with cutting the ribbon on the new facility. About 40 customers, vendors and members of the local business community and Carroll Chamber of Commerce attended.

CIS's primary focus is training and certification for the crane and rigging industry. However, CIS also invests in the future of the industry by inviting area students to learn about careers in construction. The open house was followed by a one-day workshop for local eighth grade girls, providing an opportunity for the students to learn about various construction professions.

"The girls really got into it," said Debbie Dickinson, CEO of CIS of the Power UP workshop. They learned how to tie rigging knots and worked on crane operator simulators. "They were working pretty hard and

they kept at it," said Dickinson. Approximately 10 students participated in the workshop and several parents and educators observed. CIS intentionally kept the number of participants low in order to track how much they could accomplish in a day and give them a meaningful learning experience. Though the participants didn't have a written test, at the end of the day they were administered an oral test with an emphasis on safety. "They made connections about thinking through decisions and being aware of their decisions and surroundings," Dickinson added.

Workshop participants were given personal protection equipment (PPE) including a job-approved hard hat and a safety orange T-shirt. "We talked a lot about safety – jobsite safety, PPE and why you should wear this. We talked about how the construction world has changed. Once upon a time jobs were only for men because it took brute strength to do the job. That's not necessarily true anymore because equipment is more sophisticated today. There was

lots of interest in careers that the girls heard about during the workshop," said Dickinson.

"I learned how to tie a bowline knot, hand signals, how to control a crane and rigging. I would recommend this to my friends," said one student on her evaluation. "It's a little place with so much to offer. It exceeded my expectations," said another. A third participant said she is "going to keep the craning career an option for when I'm older."

While the event "was all about the girls," said Dickinson, she reported how important it is for parents to hear the message also – construction is a field with great opportunities for everyone. "They too were hearing about careers they'd never considered and they were happy their daughters were being exposed to careers and great opportunities," added Dickinson.

Learn more about [Power Up](#) at their website.



Representatives from Maxim Crane Works, a CIS customer, assisted with cutting the ribbon on the new facility.

Photos courtesy of CIS



The one-day workshop for local 8th grade girls provided an opportunity for them to learn about various construction professions.



CIS also invests in the future of the industry by inviting area students to learn about careers in construction.



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# Work zone safety for pedestrians is essential at today's jobsites

*Right: Corner work zones like this one need to be totally blocked off and an alternative mid-block crossing be put into place.*



*by Jon M. Casey*  
*Photos provided by*  
*Plastic Safety Systems (PSS)*

**W**hen it comes to doing a construction project safely, not only should the project workers be the focus of a contractor's attention, pedestrian safety near or through a construction area must also be considered. In an effort to fulfill compliance requirements that meet the Americans with Disabilities Act (ADA-1990) and the current Manual on Uniform Traffic Control Devices (MUTCD-2009), contractors need to pay particular attention to pedestrian needs — especially when it comes to those who are physically impaired. Whether pedestrians have mobility or visual issues, safety precautions must be taken to ensure that they are able to have a convenient, safe path to travel during all phases of construction.

According to MUTCD regulations, there are three main considerations when designing and implementing temporary traffic control (TTC) plans. According to MUTCD Chapter 6D.01, the first consideration is that “Pedestrians should not be directed into conflicts with worksite vehicles, equipment or operations.” Secondly, “Pedestrians should not be led into direct conflicts with mainline traffic moving through or around the worksite” and third, “Pedestrians should be provided with a reasonably safe, convenient and accessible path that replicates as nearly as practical, the most desirable characteristics of the existing sidewalk(s) or footpath(s).”

The importance of these requirements was emphasized during a 2017 Roads and Bridges webinar presentation given by David McKee, national sales manager for Plastic Safety Systems (PSS) and by Benjamin Gascoigne, product development manager for PSS. During their presentation, they offered four examples of proper pedestrian protection for construction projects that in some way restricts passage on sidewalks or at intersections.

## Corner closures

The first example of pedestrian protection, presented by McKee, was the corner worksite application. Here, McKee pointed out various hazards typically found at a corner crossing replacement. The misplacement of signage, inadequate perimeter protection, unsecured materials and unsafe walking surface conditions were among the noteworthy aspects of this job that needed additional attention.

Ultimately, McKee recommended that the entire corner be closed and pedestrian traffic be re-routed around the jobsite in a safe manner as prescribed by state DOT standards. In this instance, a closure combined with a designated temporary crosswalk was the answer.

## Mid-block closures

Gascoigne focused upon mid-block closures in a second presentation. He began by outlining the requirements for sidewalk closures. Sidewalk closures must be continuous and detectable. They must extend the full width of the sidewalk and they must give written or audible guidance as to the



*Mid-block closures: While some provision for pedestrian safety had been made in the before photo (top), the work site was made much safer by removing the trashcan and putting continuous barriers and signage in place.*

route of the alternative path. The surface of the alternate path must be firm, stable and slip resistant. Pathways should be four feet wide at a minimum — preferably five feet wide. If the lanes are less than five feet wide, there should be passing spaces of five feet by five feet every 200 feet. The walkway should also be intrusion free.

Temporary ramps for egress on and off sidewalk curbs onto a parking lane should be a minimum of four feet in width with a slope ratio of 1:12. They also should have a weight capacity of 800 pounds with a preferred yellow color. They also need side guards to prevent wheelchairs from falling off the sides.

Sidewalk closures should be designed with consideration for schoolchildren, elderly and disabled individuals. The temporary paths should replicate existing facilities as closely as possible. Taking pedestrians off a sidewalk, around the jobsite and back onto the sidewalk on the other side of the work zone needs to be done with adequate planning and with approved guidance materials. Proper signage and audible warning equipment, interlocking side barriers to delineate the channelizing of the route and approved ramping is essential. Where necessary, nighttime illumination is also important.



*Before: In instances where sidewalk work is relatively small in size, but has hazards on both sides of the walkway, barriers on the left and right sides should be in place.*





After: The left side of the hazard is protected with a continuous barrier.



Right: There are trip and fall hazards (sandbags) at the base of the security fencing installed on the right hand (jobsite) side of the walkway.

Cane and/or dog use by the visually impaired pedestrian needs to be accommodated with alternate routes that do not present tripping hazards. They need handrail capabilities with side structures that ensure safe cane usage for boundary detection. Particular importance is given to areas near schools, senior centers, transit stops and shopping centers.

#### Partial closures

Where partial sidewalk closures are in place — common in urban environments — care needs to be taken to protect pedestrians from hazards on either side of the walkway where applicable. Longitudinal channeling devices work to keep pedestrians safe. Drop-off areas, holes and other trip and fall hazards are shielded to prevent mishaps.

#### Whole block closures

Finally, when whole-block work areas need to be protected, pedestrians are directed past an entire project. McKee gave one example where work was being done on a street where a number of businesses were remaining open for business. When work was taking place between the businesses and the sidewalk, adequate access to the shops needed to be provided.

BoardWalk Ramp outfitted with additional side rails is installed across the uneven hazard. When fencing is used as a security measure, tripping hazards at the base of the fence need to be cordoned off to prevent falls. Tripping hazards along the base of the security fencing is also prevented with interlocking barriers along the sidewalk for the entire block and up to the ramps that pass over the uneven ground.

Ultimately, correct implementation of ADA-compliant temporary traffic control devices helps make these work zones safer. Most notably, the PSS's SafetyRail™, a true ADA-compliant barricade introduced in 2009 and the company's SafetyWall™ (unveiled in 2011) meet these requirements to help give contractors portable, reusable guidance barricades for these applications. The PSS BoardWalk™ Ramp (as seen in the store-front example) is a recent addition to their product line. It is a modular, easy to install ramp that can provide an approved ramp of varying lengths with an 800-pound rated capacity. These devices give contractors an idea of what can be done to keep passersby safe. For more information on PSS safety equipment, visit their [website](http://www.rockroadrecycle.com).



Continuous interlocking barriers are installed on the right-hand side of this temporary walkway to prevent trip and fall accidents.

In the accompanying storefront photos, a PSS



Where ongoing work allows for pedestrians to come and go from businesses that are open during working hours, the need for passage through the jobsite needs to be adequate. The sidewalk and ramp over the excavation are not up to ADA or MUTCD standards.



Proper barricading and ramp access is shown in place, providing safe access to and from the open businesses on this city street. PSS BoardWalk RAMP — a temporary pedestrian modular ramp — provides the necessary guidance for use of canes and walking devices.



# CASE announces new C Series motor graders

New motor graders provide feature-driven solutions for municipalities and small-to-mid-size site prep contractors.

CASE Construction Equipment introduces the all-new C Series motor graders. Two new models deliver a wide offering of new weights, horsepower ratings and feature-driven grading solutions for municipalities, as well as small-to-mid-size site prep, road maintenance and general construction businesses. These new motor grader models feature a variety of standard features designed to maximize productivity and performance. Available in both standard and all wheel drive (AWD) configurations, the 836C and 856C achieve Tier 4 Final compliance with SCR engine technology that increases fuel efficiency, keeps exhaust temperatures down and eliminates the need for regeneration.

The new models include:

- 836C: (138-156 hp; operating weight: 24,466 lbs)
- 836C AWD: (138-156 hp; operating weight: 27,128 lbs)
- 856C: (173-190 hp; operating weight: 33,966 lbs)
- 856C AWD: (173-190 hp; operating weight: 34,848 lbs)

## Precision performance

The 836C and 856C motor graders include several innovative features that help simplify operation and allow operators to focus on precision and jobsite safety. An Ergopower transmission and torque converter provide smooth automatic shifting and a 100 percent automatic differential lock combined with automatic no-spin power splitting instantly transfers torque from a slipping tire to one with more traction without any operator intervention.

The AWD models feature a “creep mode” that engages just the front wheels at the push of a button, allowing the machine to move at extremely slow speeds for finish grading and applications with exceptionally tight tolerances.

## Advanced hydraulics

The 836C and 856C motor graders feature one of the most intelligent high-precision load-sensing hydraulic circuits available on the market. A direct-activated axial piston pump delivers only the required amount of hydraulic pressure where it is needed. The control valves provide pressure compensation, allowing the moldboard to be lifted or lowered in parallel, when both at full stroke, preventing unintended slope loss due to hydraulic flow/pressure differences from side to side. A high-flow floor switch allows the operator to obtain maximum output from the hydraulic circuit at any time during operation.

Direct-mounted hydraulic controls increase lever rigidity and reduce play in the system, giving the op-



CASE C Series motor graders feature a high-carbon steel moldboard and a new moldboard mount and slide system.

Photos courtesy of CASE CE

erator positive feedback and better control from the hydraulic system during precision applications.

## Innovative design

An exclusive A-frame drawbar provides superior stability due to its heavy-duty boxed frame design. The roller-mounted encapsulated circle is activated by internal gearing, which minimizes wear and increases the lifetime of its components.

CASE C Series motor graders feature a high-carbon steel moldboard and a new moldboard mount and slide system, with minimized opportunity for play and fewer grease points. The moldboard is designed to pitch, tilt and move laterally. It can also be expanded with available horizontal and bilateral extensions which further expand material retention capability for super fine grading applications with optional precision machine control. A hydraulically controlled five-position saddle allows operation at over 90 degrees.

## Machine control and other options

The C Series motor graders are available machine control-ready from the factory for all major suppliers of machine control technology, including CASE precision partner Leica Geosystems, as well as Topcon and Trimble. This allows the 836C and 856C to be deployed straight from the dealer into any fleet-wide precision or machine control solution an owner/operator/contractor may deploy on their worksites.

Additional options include heavy-duty tires, a dozer front blade and rear ripper and an automatic lubrication system for simplified maintenance. A heavy-duty circle drive motor and moldboard float actuation are also available from the factory.

## Operator comfort

A low-profile rear-mounted cab with wide tinted floor-to-ceiling windows and external mirrors offers superior visibility of the moldboard and surrounding area.



All maintenance checkpoints are located at ground or fender level — making service and daily maintenance as straightforward as possible.

ceiling windows and external mirrors offers superior visibility of the moldboard and surrounding area. The cab also features a standard heated air-ride seat and smooth, ergonomic controls. An available rear-view camera with 7-inch LCD monitor, as well as an advanced lighting package, further improves safety and jobsite visibility.

## Easy maintenance

CASE C Series motor graders are designed for groundline and tandem catwalk serviceability. All maintenance checkpoints are located at ground or fender level — making service and daily maintenance as straightforward as possible.

All C Series motor graders also come standard with CASE ProCare, which allows C Series owners to fully plan for and understand total operating costs of the machine for the first three years of ownership. ProCare is a suite of product assurances that includes a three-year Advanced CASE SiteWatch™ telematics subscription, a three-year/3,000-hour full-machine factory warranty and a three-year/3,000-hour planned maintenance contract.

For more information on the all-new C Series motor graders, please visit [CaseCE.com](http://CaseCE.com).



A low-profile rear-mounted cab with wide tinted floor-to-ceiling windows and external mirrors offers superior visibility of the moldboard and surrounding area.



## DICA partners with IUOE to provide crane setup products at new training center

When the International Union of Operating Engineers (IUOE) opened its new International Training Center on 237 acres in Crosby, Texas, earlier this year, it was designed to feature the latest equipment and product technology, according to Chris Trembl, IUOE director of construction training. DICA partnered with the IUOE by supplying multiple sets of SafetyTech® outrigger pads and TrainSmart® pole barrier systems.

"It is essential that operators be trained on equipment that employers in the construction industry are using," Trembl said. To that end, IUOE sought manufacturer partners to provide state-of-the-art equipment for the facility. Crane operators have access to the latest models of mobile, crawler, tower and overhead cranes. "As a leader in the outrigger pad and crane pad industry, we are very pleased to have DICA involved at the International Training Center," he said.

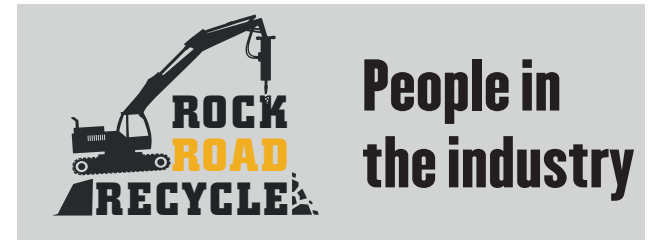
"The new state-of-the-art IUOE training center is a first class operation run by first class people. Working with Chris Trembl to have DICA products on site has been a great experience. Chris is a tremendous advocate for the mission of IUOE and we are proud to

have partnered with such an excellent training organization and facility," said Kris Koberg, CEO of DICA.

"Rather than use wood, we liked that DICA outrigger pads are made using their engineered thermoplastic that won't ever break, wear out or need maintenance," said Trembl. "Because the center was purpose built with training in mind, the ground conditions for crane setup are excellent," said Koberg. "Based on the information provided by IUOE, we provided product recommendations for outrigger pad area and pad thickness requirements for their everyday operational needs."

Crane training at the International Training Center includes Level 1 fundamentals; Level 2, which includes crane setup, operations, techniques like catching the load, rigging and signaling; and Level 3, which is advanced operations such as dual crane picks. For Level 2 training, operators will be required to handle outrigger pads as part of the proper crane setup procedures.

To meet future OSHA requirements, the International Training Center also offers third-party accredited crane operator certification testing. NCCCO and OECF practical exams are conducted on pre-



set courses marked by barriers. For this testing, the IUOE uses DICA's TrainSmart pole barriers to create the courses. "We really like that DICA's TrainSmart pole barriers are lightweight and will never need maintenance. They really take the wear and tear of repeated use," said Trembl.

Thousands of IUOE members from around North America will come through the International Training Center per year. The world-class facility includes more than 8,000 square feet of conference space, 15 classrooms and labs, a 12-pad crane field, simulators and much more. "We didn't want our Locals to have to reinvent the wheel when it came to training," said Trembl. "This facility augments the great work they are doing."

As part of DICA's partnership with the IUOE International Training Center, DICA will further support Local IUOE training efforts with its products and training materials.

For more information about the IUOE International Training Center, visit their [website](http://www.iuoe.org).



DICA partnered with the IUOE by supplying multiple sets of SafetyTech® outrigger pads and TrainSmart® pole barrier systems.

Photos courtesy of DICA and IUOE



NCCCO and OECF practical exams are conducted on pre-set courses marked by barriers.

## Custom Equipment appoints Northeast territory manager

RICHFIELD, WI – Custom Equipment LLC has welcomed Paul Allen as its Northeast U.S. territory manager. Allen will provide support to customers in the Northeast region, where the company has a growing presence. He will focus on continuing the expansion and channel development of Hy-Brid Lifts, Custom Equipment's line of lightweight low-level scissor lifts.

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

Allen has more than 10 years of sales experience selling and renting into the construction industry, including positions at Altec Industries, NES Rentals and most recently Admar Supply Co. Allen has a bachelor's degree in marketing from State University of New York at Plattsburgh.

"I am very excited to join Custom Equipment," Allen said. "It's great to be part of a team that builds high quality American-made equipment that provides solutions to contractors' construction challenges."



Custom Equipment welcomes Paul Allen as its Northeast territory manager for Hy-Brid Lifts, the company's brand of lightweight, low-level scissor lifts.

Photo courtesy of Custom Equipment





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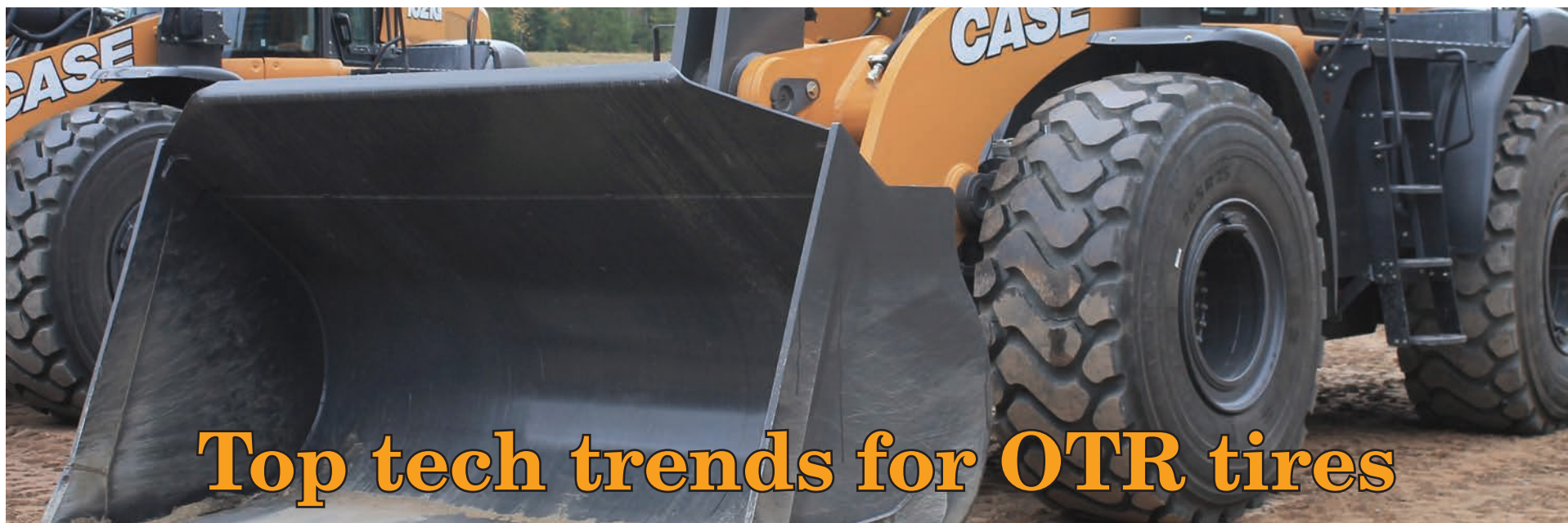
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## Top tech trends for OTR tires

As construction equipment has grown in the last couple of decades, in terms of size, power, weight and speed, so too has the need for off-the-road (OTR) tires that can keep up with the increased demand.

"Tire manufacturers have developed more enhanced compounds and design characteristics to adapt to a jobsite's specific environment," explains Johni Francis, global OTR product manager, Titan International. "If necessary, tire manufacturers will work with contractors to develop custom tread compounds."

This is in line with predictions coming from many of the market reports today. For instance, ResearchandMarkets suggests the OTR tire market is projected to grow in construction. One big trend cited is that due to the advancements in construction and mining equipment, such as automation and electrification, fleet operators use the equipment in multiple shifts. This has led to decreased tire replacement duration, leading to increased demand for aftermarket tires.

At the same time, the transition to bigger and faster equipment has also led to advances in tires, both in the tires themselves, as well as the technology associated with the tires.

### Advances in tires for equipment

Throughout the years, various tread designs and solutions for tires were born out of the need to address flat tires, traction, productivity, driver comfort, longevity, and cost of ownership. Often, the goal is to increase productivity and decrease maintenance costs.

"Tires are being relied on as a more critical part of the equipment," explains Justin Brock, B2B construction segment manager, Michelin North America. "Equipment is advancing at a rapid pace. Tires must also advance with the equipment. It is the connection the machine has to the ground."

As such, the tires for the construction equipment are advancing in several fundamental ways in recent months to help meet the needs of the industry.

- **Solid Tires:** Many construction companies are looking for a solution that prevents flat tires and the downtime associated with changing out a flat tire, especially in remote locations, according to Brock. Enter solid tires, which became a solution for some in these circumstances, but many times with a tradeoff of decreased operator comfort, trac-

tion, and an increase in equipment stress when compared to a pneumatic tire, says Brock.

- **Radial vs. Bias:** The production of bigger and faster equipment has led construction to shift to predominately using radial tires, explains Francis of Titan International. However, he says, while radial technology outperforms bias in many instances, bias tires, when used in proper application, can provide significant cost savings and performance benefits.

- **Tread Siping:** Another growing trend is tread siping, which is a feature that helps with head dissipation and even wear across the tread base. Francis explains that when siping first became popular, most sipes were deep and large designs, but today they have evolved into smaller, narrow strips, which based on tread design may take the form of a zig zag or straight line pattern.

- **Airless:** Airless technology will continue to play an important part of the evolution of tires, according to Brock of Michelin. One example is the MICHELIN X TWEEL airless radial for skid steers, which has the ability to offer the benefits that a solid tire provides in flat protection, but also provides great traction, operator comfort, and longevity due to its airless radial design.

- **Multipurpose Tires:** Today, machines are being used in multiple applications every day. One of the reasons for this is the growth of the rental segment in which the equipment is rented to different customers to be used in various applications, according to Brock. "The end users in the construction segment face an array of different environments. Many times the equipment is used on hard surface one moment and off road the next moment," he says. "These application changes mixed with the various environmental conditions are driving customers to seek a more versatile/multipurpose tire solution."

- **Low Sidewall Technology:** This is a concept inspired by the automotive market, with larger rim diameter and shorter sidewall, which allows for less sidewall flex, ultimately easing stability concerns and improving breakout force. Francis says this has proven successful in agriculture and mining and is currently being tested in smaller construction equipment applications.

- **Accelerate Change Technology:** This wheel technology eliminates the need for the outside wheel to be removed when changing the inner tire. All the bolts stay on and there's no need to torque

the wheel. This reduces downtime associated with tire changes and rotations by up to 50 percent, according to Francis.

### Tire monitoring technology

One of the biggest advances for tires in recent months is the use of tire management software and tire pressure monitoring systems. Technology is more often-keeping track and managing tires for the operators.

"As the top wear-part expense on the fleet, tires offer one of the greatest opportunities to reduce costs, but only if properly managed," says Francis of Titan International.

There are a few key ways that technology and connectivity are aiding in the management of construction tires.

- **Tire Management Software:** One way fleet managers can reduce tire costs is by using tire management software. Most fleets already have access to technology that can improve their tire management practices. Telematics and fleet management software are two staples in aggregate and mining operations, according to Francis.

- **Tire Pressure Monitoring System:** This system monitors real-time inflation pressures and internal operating temperatures and is installed internally on the tires and set to integrate with the machine's telematics system. The benefits include: longer lasting tires, less variances in tread wear, increased stability, and the ability to retread a tire if necessary. According to Market Research Future, this is expected to grow seven percent through 2023.

- **Intelligent Tires:** In general, tires are becoming more intelligent, as they become connected. Good-year recently unveiled an intelligent tire prototype, which will connect fleet operators to the tire. This will allow for continuous connectivity and real-time data sharing. The end result is safer and more cost-efficient mobility and maximized uptime.

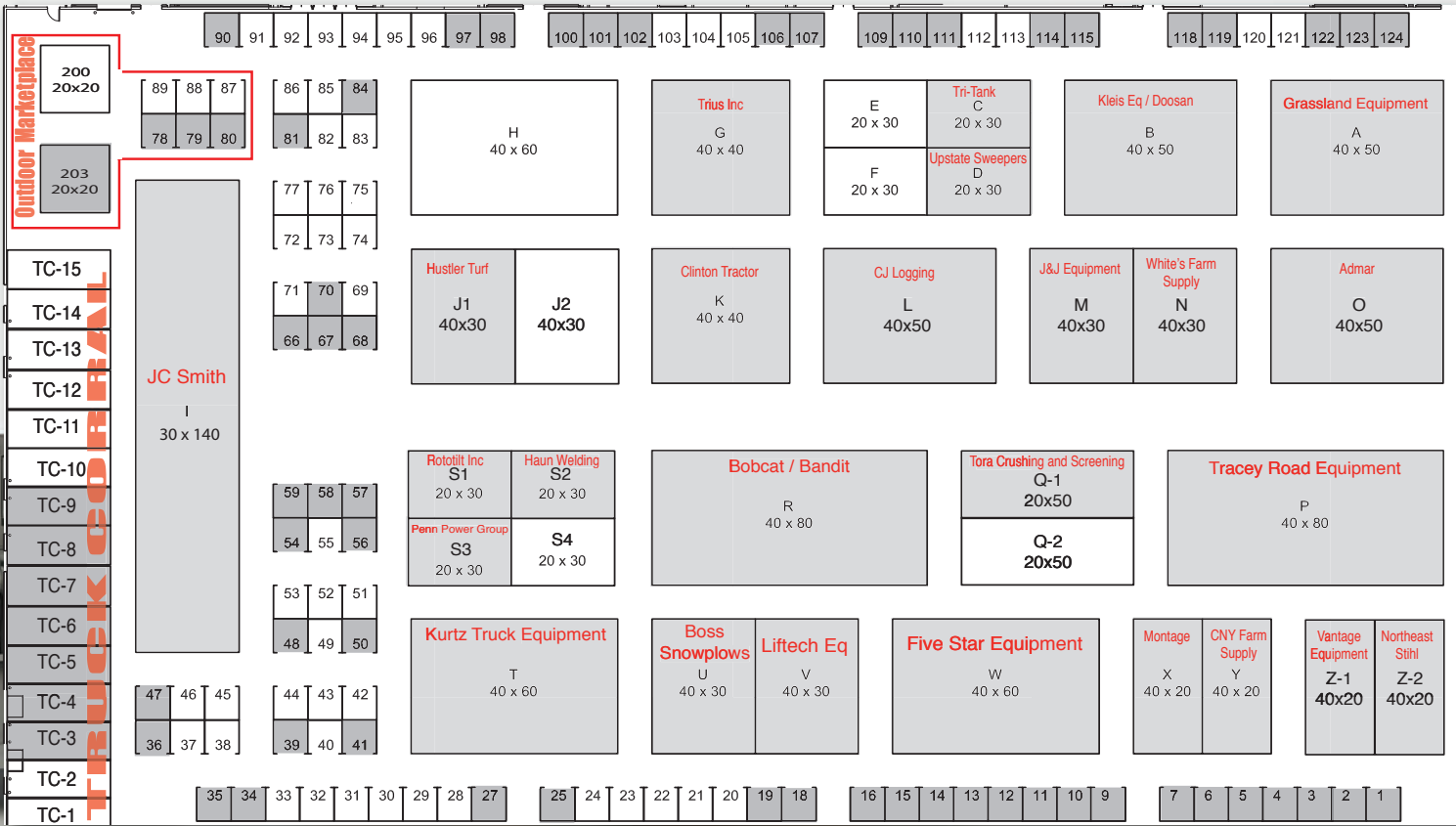
Equipment used in the construction industry is constantly evolving—with new technological and innovative advancements for the jobsite. As Brock of Michelin explains, "As the demand of these machines increases so do the requirements of the tires."

Source: [Conexpo-Con/Agg 365](https://www.conexpo-conagg.com/agg-365)





# Don't Miss Your Chance to Exhibit



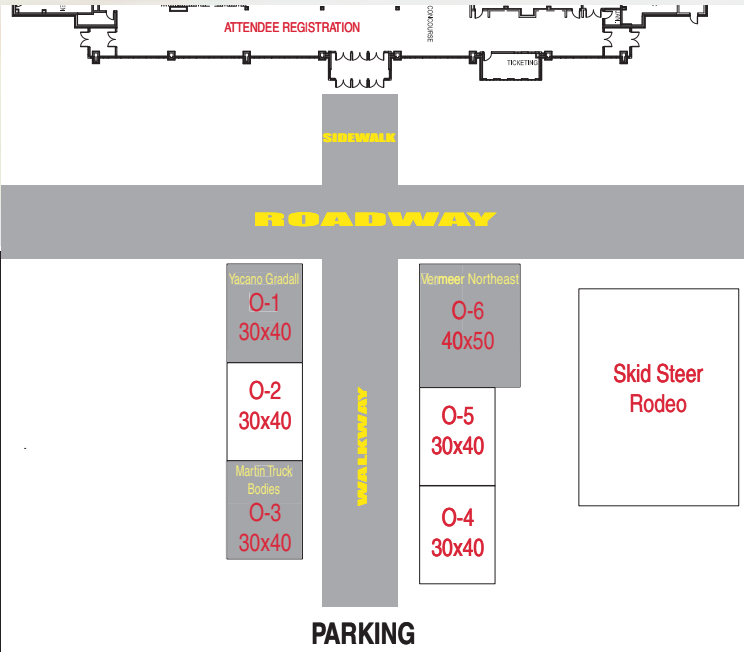
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# The five rules of global parts distribution

If construction machines are the moving hands and feet of a contractor's operation, then its elaborate distribution network of spare parts is its backbone. For any construction equipment owner, machine uptime is at the core of keeping their business running smoothly. So when a helping hand is needed, Volvo CE steps up to complete the seemingly impossible task of providing all the right parts at the right place at the right time.

Jannicke Serneberg, logistics director, EMEA, at Volvo CE, said, "Nobody has a crystal ball – you simply cannot know where in the world and when a component might break down. But at Volvo CE, we have created a virtual crystal ball and taken a proactive approach to distribution."

Here we look at the five rules to ensure all these moving parts are kept on track.

- Design high quality parts

The first step to securing optimum uptime for customers is to ensure parts don't break down in the first place. By designing extremely high-quality parts that stand the test of time, customers don't have to worry about their machines failing on them in the middle of the job. Volvo CE tests and develops its own parts and products, including the engines, so almost every aspect of the machine is manufactured in-house to ensure top quality and easy availability.

Access to these quality parts is also made easy, even in the most remote locations. Mobile service stations containing spare parts and on-site technicians have been set up on far flung construction



Volvo CE's Uptime Center oversees strategy meetings with warehouse, material management, purchasing, planning and transport teams.

Rules 26



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## Rules from 25

sites so when even the most reliable parts reach their sell-by date, no time is wasted in replacing it.

- Set up a strong network

To handle every potential distribution need, Volvo CE has implemented a strong logistics network with the largest supply of world-class spare parts to deliver to time and to budget. The organization oversees an international network of suppliers, parts purchasing, aftermarket purchasing, regional and local market logistics operations, warehouse managers, transport planning, material management and finally dealers and sub-dealers.

Take the EMEA region (Europe, Middle East and Africa) as an example. The region's storage facilities in Ghent, Belgium, are as large as 16 soccer fields. Each day, 60 trailers and 14 containers are loaded and sent out to up to 550 locations worldwide. With 345,000 spare parts available, there are over 1.2 million order lines handled each year. Torben Volder, IT and logistics manager of the Volvo Entreprenör-maskiner A/S, Denmark, said, "For us, parts availability and the possibility of order and distribution are the most important things. It's the only way for us to deliver the high service our customer expects and securer uptime for our customer's Volvo machines."

- Be smart with technology

Over time, distribution has become a lot more sophisticated than just physically moving something from point A to point B. Once that network is set up, it needs to be able to handle huge amounts of data and communicate that data in the most efficient way possible. Virtually integrating the whole supply chain – and aligning all departments with the same stock management systems – enables Volvo CE to have real-time insights into production times, analyze the quickest transport routes and track each delivery through connected GPS systems.

Access to Big Data can help with that virtual crystal ball. Jannicke added, "We look at the market and machine population, analyze machine utilization trends and make calculated assumptions about what parts might be needed where and when based on all this information."

- Prioritize every order

Each customer request for a spare part is classed according to need. A first class "machine down" order, where a machine is taken out of action until the part can be replaced, is considered the top priority. In these cases, parts can be delivered in as little as 12 hours. Next in line are second class orders where customers are preparing for a bigger overhaul, followed by discounted classes where customers do not require parts to arrive as soon as the next day.

The process of prioritizing every order is not possible without strong channels of communication – both with the customer and with other departments. Every week the logistics team based at Volvo CE's Up-time Center – based in Eskilstuna, Sweden, for the EMEA region – oversees strategy meetings with warehouse, material management, purchasing, planning and transport teams in order to plan its overall service. This allows distribution centers to more easily plan the comings and goings of parts, reducing costs for everyone involved.

- Plan low-carbon transportation

Anyone involved in logistics is well aware of the environmental challenge of delivering parts to the most remote locations. But for a company like Volvo CE, where sustainability remains one of its core values, it is able to reduce its carbon impact by calling upon its sprawling network of storage facilities across the world. The company's huge global footprint means customers do not have to travel far to find local replacement parts. But if longer haul transport is required, Volvo CE will opt for the most low-carbon transportation routes.

"The world is evolving fast and the demands on

distribution are growing every day," says Jannicke. "But these demands are what push us to be more innovative with the way we work. Distribution has been under the radar in the past but it really is the heart of a business' operation. After all, you don't call up when you get your parts on time, but you do when you don't."



Over time, distribution has become a lot more sophisticated than just physically moving something from point A to point B.  
Photos courtesy of Volvo CE



# COMMONWEALTH EQUIPMENT

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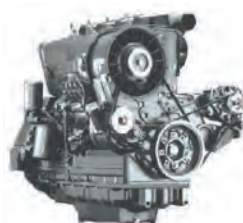


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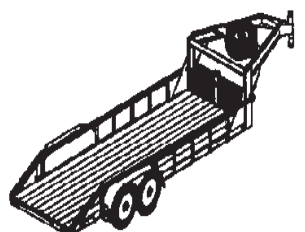


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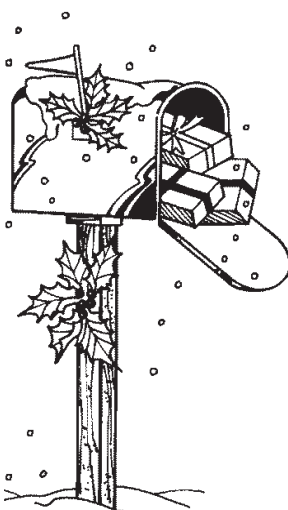
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## People in the industry

# R. A. McClure Inc. expands to offer Render Safe services for commercial and bulk explosives

POWELL, OHIO — Offering vast experience working with explosives, R. A. McClure Inc. (RAM Inc.) recently announced the expansion of its business to include render safe services for commercial and bulk explosives. Specializing in unique, one-of-a-kind remediation applications for improperly stored, damaged, discarded, misfired and abandoned explosives, RAM Inc. offers the expertise and specialized tools necessary to safely identify a wide range of explosive materials — from TNT to nitroglycerine to ammonium nitrate — and rendering safe potentially dangerous and deadly situations.

RAM Inc. provides complete turnkey render safe service from initial situation consultation with industry and government agencies to final explosive neutralization and issue resolution. The team offers a dynamic range of expertise for accurately identifying the explosive compound and associated risks. "Because of our extensive experience, we can identify safer and more economical ways to eliminate the risk," comments Robert McClure, president of R. A. McClure, Inc. "We work on behalf of the client with all necessary local, state and federal agencies to obtain the necessary regulatory approvals."

RAM Inc.'s qualified team employs a variety of tools at its disposal to analyze and neutralize the explosive materials present. Technicians rely on field explosive detection kits to distinguish the type of explosive present and use portable X-Ray systems for identifying the condition of the explosive material. Borehole cameras detect unexploded materials from blasting operations at manufacturing and storage facilities, mines, and oilfields, while video and closed circuit TV are used to safely identify explosives at a distance. Rated up to 6.5lb of TNT equivalent, the company's explosive containment trailer gives RAM Inc. the flexibility to contain and move sensitive explosive material.

RAM Inc. offers several methods for explosives removal and site remediation and selects the best solution, based on the individual application. "We want to fully solve the problem by rendering the site safe, but we don't take

one hazard in turn it into another during the process," says Carlton Lehman, P.E., project manager for RAM Inc. "Our services include environmentally safe options for destroying commercial and bulk explosives."

RAM, Inc.'s exclusive, environmentally safe chemical neutralization process offers faster site remediation, little danger to the user and community for disposal and reduces the time to achieve complete response by eliminating pricey hazardous disposal costs. "The Environmental Protection Agency is transitioning away from burning to chemical neutralization for a more ecofriendly, biodegradable and bio-stable method of destroying explosives," adds Lehman.

For more details about RAM Inc.'s new render safe program, contact Robert McClure at [r.mcclure@ramets.com](mailto:r.mcclure@ramets.com).



The RAM team offers the expertise and specialized tools necessary to safely identify a wide range of explosive materials and rendering safe potentially dangerous and deadly situations.

Photos courtesy of RAM Inc.



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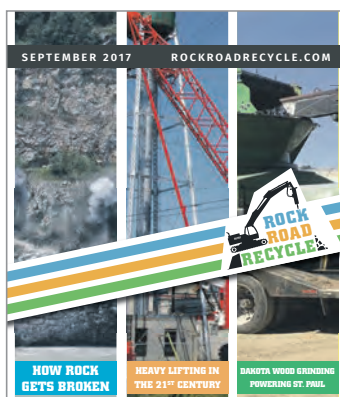
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## GCSWA serves regional recycling customers

by Jon M. Casey

On the Cover:  
Todd Riggs, recycling coordinator, routinely oversees the cardboard system and the overall daily material processing.

Photo by Jon M. Casey

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Jeff Jeffers, Lewisburg, PA, brings in magazines that have accumulated over the past several weeks.

For solid waste recyclers in Greenbrier and surrounding counties in southeastern West Virginia, households and businesses look to the Greenbrier County Solid Waste Authority (GCSWA) facility located in Ronceverte (pronounced, RONC-A-VERT), WV, to recycle their unwanted municipal solid waste. Bob J. Bennett, executive director of GCSWA, said customers come from Greenbrier and surrounding counties, including Allegheny County in Virginia, to recycle a variety of plastics, paper, cardboard, alumi-



Magazines are baled separately for shipment to a regular customer.



Shredded paper is baled in a separate baler and shipped to a customer who deals in this material.

num, computer components and hardcover books. He noted that at this time, they are not equipped to handle wood waste but may consider it sometime in the future.

“We no longer accept televisions and computer monitors,” he said as we began to tour the facility at their 2018 open house event held October 19. “We have developed a self-sorting way of taking in customer’s materials with the use of specific ‘drop-off only’ openings in a series of closed garage doors, with each portal designated by samples of the materials collected at each opening.”

This clever method of receiving gives customers clear and easy access for depositing their unwanted materials. Larger loads of specific materials can be dumped onto the tarmac of adjacent door openings in the rear of the building, which is a complex that was donated to the county by the Coca-Cola™ Company for this purpose.

Bennett said that he came onboard at GCSWA in July 2000 when the operation



was all but set to shut down. He said that with a lot of hard work and dedication, he and his crew were able to work to make today's recycling center a success. Bennett recalled how he and his staff worked to design the layout of the current equipment that includes four compactors, the associated infeed conveyances and the innovative materials intake accommodations that make use of the garage space that houses six full-sized bays, each with two material openings. Another separate opening is devoted to larger cardboard items.

He said that this year's open house was held to thank the community for their recycling efforts and willingness to use the facility on a regular basis. He said they are still looking for new customers like schools and businesses who want to recycle paper, plastic and cardboard in an effort to reduce the amount of solid waste that is currently going into West Virginia landfills. With no mandated recycling or recycling pickup, material collection is a joint effort between local area citizens and businesses that will bring recyclables to GCSWA.

Todd Riggs, recycling coordinator for GCSWA, led us on the remainder of our tour of the operation, beginning with the cardboard compacting. Riggs said that he not only oversees the daily work that goes on at the site, but he is also the primary operator of the American baling system that handles the cardboard recycling stream. Other team members include Harry Hudnall, a 27-year veteran at GCSWA, and Eddie Bowyer. Hudnall works mostly with the aluminum cans and plastics, baling each of them with dedicated Ver-Tech®, Inc., Harmony Enterprises, System Ten Sixty balers, while Bowyer operates an International Press and Shear baler to bundle shredded paper and magazines.

As an interesting side note, but an integral part of the open house tour, Riggs made it a point to show us their new office restoration that followed the 2016 Greenbrier River flood — an event that made national news when it flooded the Greenbrier Resort in White Sulphur Springs, WV. This disaster not only affected businesses and residential properties along the Greenbrier River, it prompted the cancellation of the PGA Greenbrier Open Championship Golf tournament that year. Riggs said that the water damage was extensive, but together, the crew was able to build a new office area as well as restore the machinery that needed extensive attention once the water and debris receded.

Interestingly enough, the name of the town, Ronceverte, is French for "Bramble Green," and is the Gallic translation for "Greenbrier." GCSWA is located directly across the street from the Greenbrier River, which is significant because the Authority's facility has been flooded on three different occasions, in 1985, 1996 and most recently in 2016, as mentioned above.

Most of the material that passes through GCSWA is donated to the facility; however, the facility does pay for scrap aluminum and copper. Since GCSWA is self-supporting and not a segment of the county's regular municipal waste disposal operations, finding profitable markets for their various materials is an ongoing concern. Regional participation in this voluntary recycling program goes a long way in helping GCSWA to continue operations.

For more information about GCSWA, contact Bob Bennett via the [website](http://www.greenbrier-swa.com) or [bobjbennett@greenbrier-swa.com](mailto:bobjbennett@greenbrier-swa.com).



Harry Hudnall has served the Greenbrier County Solid Waste Authority for almost 27 years. Hudnall oversees the aluminum recycling as well as other regular responsibilities.



Large loads of cardboard are dropped on the tarmac outside the facility door, where workers use this skid steer loader to put material into the baler's infeed hopper.



Computer equipment is still being recycled at this location; however, televisions sets and monitors are no longer accepted.





# Equipment manufacturers want Republicans and Democrats to work together

*Editor's note: the opinions and comments expressed in the association's commentary do not necessarily reflect those of Lee Newspapers, Inc and RockRoadRecycle.*

WASHINGTON, D.C. — Association of Equipment Manufacturers (AEM) President Dennis Slater issued the following statement on what the 2018 midterm elections mean for the equipment manufacturing industry.

"After a midterm election that saw record turnout and interest, there's now a renewed opportunity for President Trump and Congress to work across party lines to tackle the issues that will help grow our economy and keep our nation strong," said Slater. "Modernizing our nation's infrastructure, promoting free and fair trade and sup-

porting a strong agriculture economy should all be bipartisan priorities for the 116th Congress. The equipment manufacturing industry stands ready to do its part by working with Congress and the administration to solve some of our nation's biggest policy challenges so that we can add to the 1.3 million good-paying jobs our industry supports."

Many of the top issues for voters in the midterm elections are issues that are also important to the equipment manufacturing industry.



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### Trade

The escalating trade dispute with China and the decision to impose tariffs on imported steel and aluminum has had a negative impact on the equipment manufacturing industry. U.S. equipment manufacturers are facing higher production costs while the impact of retaliatory tariffs by trading partners hurt the U.S. agriculture sector and threaten to reduce the domestic sales of agriculture equipment. AEM believes that Republicans and Democrats should work together to address the uncertainty and disruption caused by the administration's trade policies. This includes efforts to negotiate fair, binding and enforceable trade agreements with countries and open up new markets for U.S. equipment manufacturers.

### Infrastructure

The lack of any meaningful action on a comprehensive infrastructure bill means that expectations for Congress and the administration to act next year will be even higher. Voters have repeatedly made it clear that they want Washington to keep its promise to rebuild and invest in roads, highways, bridges, ports, pipelines and broadband networks. Equipment manufacturers will send a strong message to both Democrat and Republican members of the 116th Congress that they should start with infrastructure. That means working together in a bipartisan fashion to identify a long-term and sustainable funding mechanism for the Highway Trust Fund, connect urban and rural America through new infrastructure, ensure that projects are delivered in a cost-effective and time-efficient manner and provide job-training programs for the workforce that will help us reclaim our infrastructure advantage.

### Agriculture

A strong agriculture economy creates a strong manufacturing sector. Farm policies have a major impact on the health of the farm economy, which in turn is a key driver of equipment manufacturing employment. Congress can and must pass a farm bill so that farmers and ranchers can keep providing our nation's food security. Republicans and Democrats should also

work together to craft a comprehensive energy policy for our nation, including supporting a strong Renewable Fuel Standard (RFS) and work to advance efforts to expand ethanol fueling infrastructure and work to open up more new markets around the globe for U.S. farmers and ranchers.

### Tax

Tax reform empowered the equipment manufacturing industry to create jobs, improve the quality of life and build more in America. Many equipment manufacturers have hired more workers, created more well paying jobs, invested more in America and raised wages. Also, the industry has been given license to compete more fiercely in the global economy. Democrats and Republicans should work together to fix errors in the new tax law, which could create an opportunity to pass new, bipartisan tax legislation. Specifically, Congress should work in a bipartisan fashion to make the new tax code even stronger for equipment manufacturers, including making permanent full expensing for short-life investments and the deduction for qualified business income, as well as making the Base Erosion and Anti-Abuse Tax (BEAT) a true alternative minimum tax.

Every year, AEM's grassroots campaign "I Make America" works to engage and motivate many of the equipment manufacturers' 1.3 million men and women to get involved in the political process. This year's activities included dozens of events at equipment manufacturing facilities, including the I Make America Town Hall Tour. To get our industry's men and women more engaged this election year, the Town Hall Tour brought policy and industry experts to shop floors across the country for engaging and in-depth discussions on key policy issues — including trade, infrastructure and agriculture — and was attended by more than 500 workers and watched by thousands more online. According to post-event polls, two-thirds of attendees felt they had a better understanding of the issues impacting the industry after participating in the Town Hall Tour.

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## CASE introduces all-new TV450 compact track loader

CASE Construction Equipment introduces the all-new TV450 compact track loader (CTL), a new 10,610-pound vertical-lift machine with a rated operating capacity of 4,500 pounds at 50 percent tipping load. The newest and largest CASE CTL ever built features an industry leading 9,188 pounds of breakout force and optional high-flow (3,450 psi at 39.5 gpm) and enhanced high-flow

and operators are able to switch between H and ISO patterns via a simple rocker switch.

CASE has also made a number of premium features standard on the new CASE TV450, including heavy-duty front and side lights, front cylinder guards, a heavy-duty rear door, remote oil and fuel filters, as well as debris ingestion sealing to prevent material from entering the engine com-

partment. It also offers optional hydraulic one-way self-leveling and ride control for a smoother ride and greater material retention.

The new loader retains the hallmark CASE operating environment, with one of the industry's widest cabs and lowest entry thresholds for easy access to the cab and greater visibility to the front of the machine. The cab-forward design provides industry leading 360-degree visibility and site lines down to the bucket edge. A large, rounded rear window delivers excellent rear visibility — and an all-new standard in-cab rearview mirror further improves operational awareness.

The CASE TV450 meets Tier 4 Final emissions standards with a selective catalytic reduction (SCR) system that only requires diesel exhaust fluid — no maintenance or lifetime service related to diesel particulate filters is required. Operators can quickly access all routine service points, including the engine, filters, fill points and all other service points through a single point of access at the rear of the machine. The compact track loader also offers CASE's easy-tilt cab for easy access to the drivetrain compartment and features reinforced structures for enhanced machine durability and reliability to meet the demands of harsh working environments.



The newest and largest CASE CTL ever built features an industry leading 9,188 pounds of breakout force.

Photos courtesy of CASE CE

(4,000 psi at 35 gpm) hydraulics for high-power attachments such as mulching heads, stump grinders and cold planers.

"The CASE TV450 provides lifting and earthmoving performance that will meet the demand of general contractors, landscapers, roadbuilders — and the 4,000 psi with enhanced high-flow makes this an excellent platform for attachments," says Deborah Townsley, product marketing manager, CASE Construction Equipment. "It's a powerful, large-frame loader that handles heavy materials and still provides the advantages of low ground pressure for jobsites where finished lawns and underground utilities may exist."

The CASE TV450 is available in either standard mechanical (H Pattern) controls, or optional electro-hydraulic controls (H and ISO pattern interchangeability), as well as optional mechanical hand and foot controls. CASE electro-hydraulic controls (EZ-EH) provide adjustable speed and control sensitivity settings that can adjust to meet the needs of each application and attachment



The new loader retains the hallmark CASE operating environment, with one of the industry's widest cabs and lowest entry thresholds.



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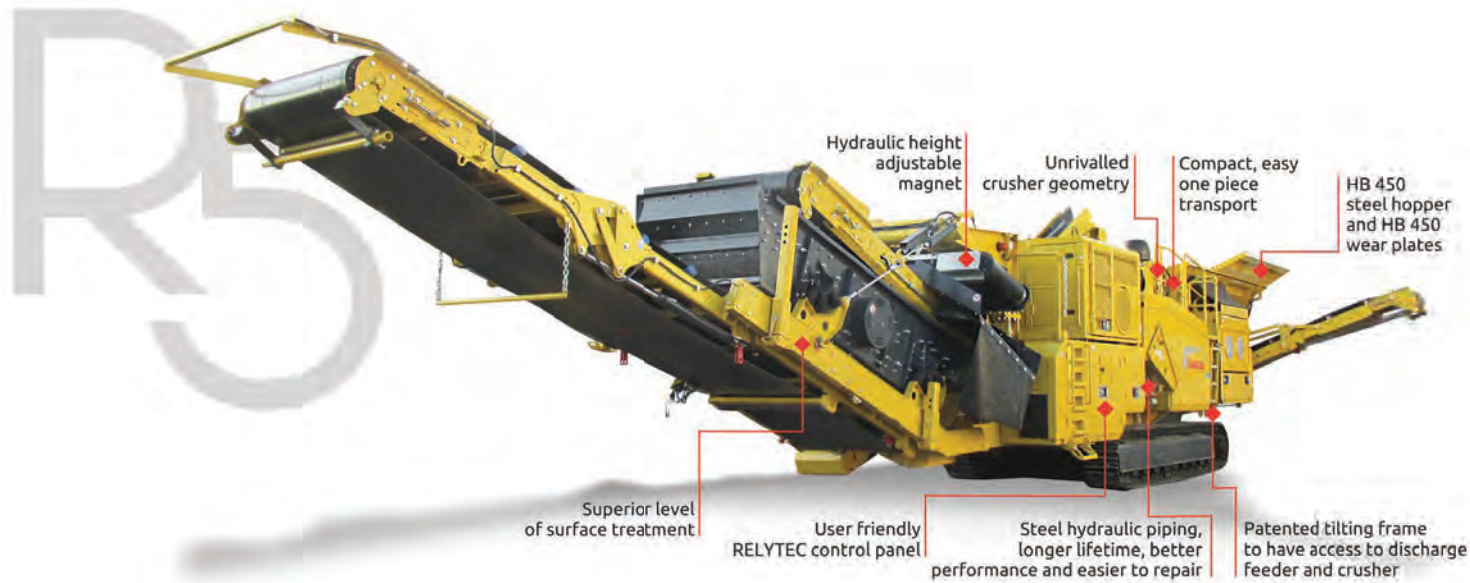
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## Fuel use - how low can you go?

The diesel engine has become a highly efficient power source — but how much further can it be developed? In this article Dr. Staffan Lundgren discusses whether the humble engine has a future and if so what it looks like.

Despite being developed constantly over the last century to become a highly fuel-efficient power unit, the diesel engine is now under threat like never before. So “what is the future of the diesel engine?” was the theme of questions asked of Dr. Staffan Lundgren, senior technology advisor for powertrain at the

Volvo Group.

### Why has diesel remained such a popular power source?

Diffusion combustion — where the combustion is concentrated around the ignition and oxygen is diffused around the combustion area — is very efficient. It has minimal energy losses to the walls of the engine through radiation or convection — much lower than a gasoline engine. The basic diesel engine is very strong and can withstand very high pressures.

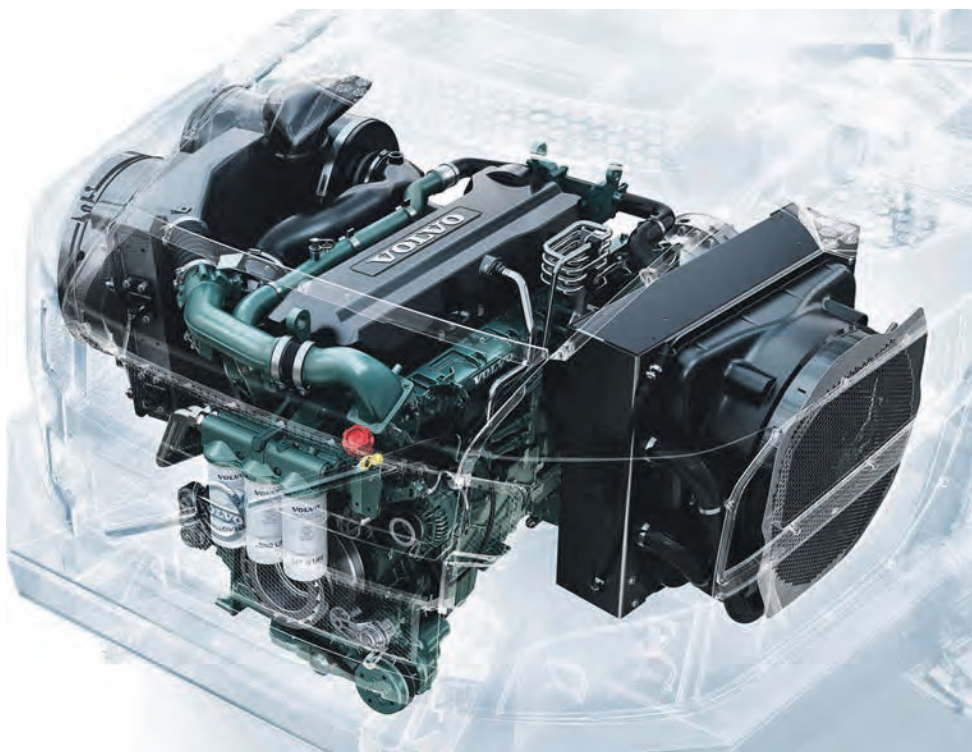
### How efficient is it?

There have been big improvements — jumping



Making diesel engines very clean is possible and is something the heavy-duty industry has made progress in.

Photos courtesy of Volvo Group



Good fuel efficiency is the most important element, but customers also require good engine performance and durability.

from around 35 percent efficiency in the 1980s to today's 50 percent efficiency. That means half of the fuel is now being put into useful mechanical work. For reference, a gasoline engine is around 35 percent efficient. These gains have come from high-pressure common rail fuel injection systems, turbo-charging and the introduction of computing power to control precisely the combustion and the after-treatment management systems.

### Is increasing fuel efficiency customers' no.1 demand?

Yes, good fuel efficiency is the most important element, but customers

also require good engine performance and durability. Then it has to be durable and meet emissions requirements — and these are sometimes in competition with one another.

### Are engines also becoming more powerful?

There is an upside trend — customers are moving larger loads and that requires greater power. The Volvo Group's largest output is now 1,000 hp. But compared to passenger cars, all heavy-duty applications are still (relatively) underpowered.

### The diesel engine is accused of being environmentally

### unfriendly. Can it clean up its act?

Making diesel engines very clean is possible and that is something that the heavy-duty industry has made greater progress on than the light duty sector. Part of the reason for this is that the efficiency demanded by customers in the heavy-duty sector is much higher.

### How hard has it been to increase efficiency while at the same time lowering emissions?

It has been a challenge to refine the thermodynamic process to compensate for the burden of having added the SCR after-treatment system. But now we are back on track to increase efficiency step by step.

### How much further can you go — zero emissions?

It depends on what you mean by emissions. If you propel the engine with fuel that has no carbon and couple it with an efficient combustion process that creates no soot, then zero emissions is possible. We have been working on using methane and DME (dimethyl ether) as clean alternatives to diesel. This is not a new idea; in 1900 the diesel engine was successfully run on peanut oil. The problem isn't with the technology of making the clean fuels work, but rather their availability. But if

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the supply issue of renewable fuels can be solved, then it is possible for diesel engines to run 100 percent CO2 free.

#### Don't clean fuels also have their own environmental challenges?

Bio-fuel production shouldn't compete with food production — but there are other fuels where this isn't a problem. Electro-fuels (E-fuels) use solar or wind power to 'crack' water and combine it with CO2 from methane — and these fuels feature quite high efficiency — up to 80 percent claimed. This could be an interesting complement to electrification.

#### How do different fuels affect the combustion?

From an efficiency point of view the engine doesn't care if the fuel molecule comes from a fossil or a renewable source. So with investment in the right type of renewable fuels, the transition to renewables

should be straightforward.

#### So how do we lower fuel consumption further?

The next big step in increasing engine efficiency/ lowering fuel consumption is its combination with electromobility. The demand on engines in the future will not be so varied as it is today. There is a difference between how efficient an engine is at its 'sweet spot' and how efficient [it is] across the whole real-world operating range. Partnering engines with electric motors, as in parallel hybrids, allows the engine to run at its most efficient level. Without doubt, electrification will form part of the future combustion driveline solution.

#### Can other technology help lower fuel bills?

Examples are stop/start technology and 48V electric systems that power ancillaries electrically, rather than mechanically. These may all have future uses

in heavy-duty applications, once their robustness is proven. But another important source of greater efficiency is heat recovery. This is not an easy task on heavy-duty engines, as they run relatively cold exhausts, but there is still hope to capture it and make it commercially viable.

#### What is the maximum efficiency an engine can achieve?

The diesel engine has a theoretical system efficiency of between 55-60 percent. For reference, the best power stations operate at 50-55 percent efficiency, and fuel cells are also around 50 percent+ efficient — so diesel engines can be incredibly efficient. This, added to the fact that engines working with electrification will often have a lower power demand, will mean fuel use is set to decline in the future.

#### How long can the diesel engine survive?

The diesel combustion engine remains a very cost-efficient solution for creating mechanical energy. That said, legislation, especially in Europe, is pushing towards electrification quite strongly and that may impact directly on the combustion engine's longevity. Our feeling is that its use will be application-based and that it will continue for a considerably time in long distance uses, such as ocean-going ships and long-haul trucks. But even here there will probably be a blend of technologies in use.

#### Is diesel part of the future?

The diesel engine — in a modified form — can be very clean and efficient. It also plays well with electrification. As a manufacturer we need to find the best solution, based on the decisions society makes. Whatever they are, we need to be prepared.

## ASV RT-120 Forestry compact track loader brings leading size, power and durability to the forestry industry

GRAND RAPIDS, MN – ASV Holdings Inc. features the RT-120 Forestry Posi-Track™ Loader, the largest and most powerful compact track loader in the industry. The large-frame RT-120 Forestry features more power and productivity with less ground disturbance than any other machine in its class.

Maximum power and torque, along with unparalleled cooling capacity, make the RT-120F capable of using the largest attachments for long periods of time without bogging down or overheating. The rugged machine makes mulching, brush cutting and highway and utility work faster and easier. Like all ASV equipment, the RT-120F includes maximum efficiency hydraulics and innovative, high-capacity cooling systems that allow for more work done in less time. In addition, the machine achieves versatility on all surfaces — from mud and brush to ice and snow — using ASV's patented Posi-Track undercarriage. It provides industry-leading serviceability, ground clearance, ground pressure, traction and track life.

ASV optimized the RT-120F for forestry work that can be too demanding for other machines. The unit includes metal guarding against brush and debris around key areas, such as lights, the AC condenser and the rear screen. A full rear brush guard is also available as a factory-installed option.

The RT-120F also incorporates an additional level of durability with a heavy-gauge, falling object protective structure (FOPS) level 2 cab, improved rollover protection (ROPS) and reinforced windows for impact resistance. The machine blows debris from mulching applications out of the engine

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## Doosan will display its heavy equipment during World of Concrete 2019 in Las Vegas

*Left: Operators can choose between three power modes — power, standard and economy — that adjust the maximum engine rpm.*

**D**oosan Infracore North America, LLC, will display a variety of heavy equipment in its booth – C5577 – in the Central Hall at the Las Vegas Convention Center during the annual World of Concrete in Las Vegas, Jan. 22 – 25, 2019.

On display will be a Doosan® DL200TC-5 tool carrier with a quick coupler and pallet fork. Also in the exhibit will be a DX140LCR-5 reduced-tail-swing crawler excavator with a quick coupler and DXB100H hydraulic breaker. The excavator will be configured with optional rubber track pads, a dozer blade and the window guarding package for enhanced uptime protection.

### **DL200TC-5 tool carrier**

The DL200TC-5 is designed for loading and carrying, and it has a parallel-lift linkage system. With increased visibility down the center of the parallel-lift arms, operators can clearly see the ground, truck or work area in front of the machine when placing loads. In addition, the parallel-lift linkage system keeps the work tool flat as it is lifted rather than rolling back, an advantage when lifting pallets and other loads that need to stay level.

The machine features a hydrostatic transmission, giving operators more power, improved fuel efficiency and better precision while working. Operators can choose between three power modes — power, standard and economy — that adjust the maximum engine rpm. Unique to the hydrostatic drive system, the engine rpm is not directly correlated to the machine's travel speed, so the maximum travel speed remains unaffected.

In addition, wheel loader operators can choose from three traction modes — max, traction control and S-Mode — to easily adjust traction force to match jobsite conditions for more efficient operation in digging, stockpiling and loading applications.

The machine is available in a high-lift option for additional lift height and reach to more easily load materials such as cement into high-sided trucks.

Doosan DL200TC-5 (tool carrier) wheel loader specs:

- Horsepower (net): 142 hp
- Operating weight: 26,224 lb.
- Bucket capacity: 2.6 cu. yd.
- Dump height: 8 ft. 9 in.
- Breakout force: 21,357 lbf.
- Approved attachments: general purpose, light material and multi-purpose buckets; pallet fork; and quick coupler.

### **Attachment: Pallet fork**

Lift, carry and place a variety of materials with the pallet fork attachment. The attachment helps in a variety of construction applications and offers multiple carriage widths and tine lengths.

Other features include:

- Open carriage: Provides good visibility for picking up and placing materials
- Manual adjustable tines: Allows forks to be adjusted depending on material
- Quick coupler mount only: Quickly attaches and removes from machines equipped with a quick coupler, allowing the attachment to be used on multiple machines



*DX140LCR-5 excavators are designed for long life with an extra-sturdy frame and reinforced superstructure.*

*Photos courtesy of Doosan*

### **DX140LCR-5 crawler excavator**

The DX140LCR-5 excavator offers a shorter tail swing, allowing operators greater flexibility where space is a premium without sacrificing performance. DX140LCR-5 excavators are designed for long life with an extra-sturdy frame and reinforced superstructure. They come standard with permanently sealed and lubricated track links, and the workgroup bushings and hard-wear disks are designed for reliability as well as extended service intervals to increase uptime.

A standard 7-inch LCD screen allows operators to continue monitoring the excavator parameters while viewing the rearview or sideview camera image. Critical machine data appears next to the camera view. With an available side camera, a split screen allows both camera displays to be viewed at once.

Doosan DX140LCR-5 crawler excavator specs:

- Horsepower (net): 113 hp
- Operating weight: 34,987 lb.
- Maximum digging reach (ground): 27 ft. 11 in.
- Maximum digging depth: 19 ft. 7 in.
- Maximum loading height: 23 ft. 2 in.
- Bucket digging force: 24,471 lbf.
- Arm digging force: 13,288 lbf.
- Four power modes: Power+, Power, Standard, Economy
- Four work modes: Dig, Lift, Breaker, Sheer
- Paired with a hydraulic quick coupler and a DXB100H hydraulic breaker during World of Concrete 2019.





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## ASV from 9

compartment screens with a hydraulically driven, auto-reversing cooling fan. The RT-120F works with all standard attachments, including mulching heads, brush cutters, backhoes, tooth bars, buckets, snow blades and pallet forks.

ASV builds its machines from the ground up, starting with the undercarriage. The RT-120F ensures maximum operator comfort, speed and traction with the company's patented Posi-Track rubber-track suspension. The dual-level suspension includes both suspended wheels and axles, allowing it to travel quickly over all types of terrain. The machine achieves maximum traction in the roughest conditions with a fully-flexible track and suspended wheels that conform to the ground. ASV maximizes the RT-120F's performance on steep slopes by manufacturing it with multiple wheel contact points and four guide lugs – compared to many machines with only one or two guide lugs. The unit comes standard with 20-inch-wide tracks, resulting in a ground pressure of only 4.3 psi. The features, combined with the machine's 15 inches of ground clearance, allow operators to comfortably operate it in more places and conditions for longer periods of time than competitive models.

ASV took its previous closed design – similar to what's used on competitive steel-embedded undercarriages – and transformed it to an open-rail and drive-sprocket design. The conversion results in easier and faster undercarriage cleaning as well as improved sprocket and bogie life. ASV builds all rollers with mechanical face seals, eliminating the need for maintenance for the life of the machine. The tracks are manufactured with embedded co-polymer cords for extra strength and are produced using a single-cure process, eliminating cure-point weaknesses in the track that can lead to premature breakage. These features allow for a 1,500- to 2,000-hour track life – 30 percent more than competitive steel-embedded track units. ASV stands behind that with an industry-leading two-year, 1,500-hour track warranty.

The forestry machine's 120-horsepower Cummins 3.8-liter, turbocharged engine produces 360 foot-pounds of torque – about 8 percent more than the machine's 111-horsepower predecessor, the RT-110. The RT-120F transfers torque to the ground through

direct-drive hydraulic motors. ASV builds the machine without planetary drives, eliminating the need for servicing those components. Highly efficient motors transfer maximum power to the patented internal-drive sprockets, and internal rollers prevent friction loss in the undercarriage, transferring all power to the track regardless of drive speed. The RT-120F meets Tier 4 Final standards using a diesel oxidation catalyst that, unlike DPF systems, requires no additional maintenance or replacement filters.

ASV builds all its models with a priority that they be easy to service. The RT-120F gives operators easy access to the reliable Cummins engine through a three-panel hood and tilting cooler arrangement. The rearward tilting cab provides easy accessibility when additional service is required. Sight gauges for both hydraulic oil and coolant, combined with the design, simplify regular inspections of oil, filters and normal service items.

The RT-120F's highly efficient auxiliary hydraulic system includes 45 gpm high flow and 4,060 psi. The attachment receives more hydraulic flow and pressure because the machine uses larger line sizes, hydraulic coolers and direct-drive pumps rather than belt-driven pumps. This means operators maximize horsepower efficiency even while using demanding attachments, such as brush cutters and mulching heads. Belt-drive pumps and restrictions on competitive machines' hydraulic systems result in many losing as much as 30 percent of the horsepower shown on their spec sheets. Conversely, the RT-120F achieves 16 percent more actual hydraulic horsepower than the PT-110 compact track loader it replaces.

The RT-120F beats competitive machines' performance in every category. The unit features a rated operating capacity of 3,745 pounds and a tipping load of 10,700 pounds – greater than the RT-120. It is 73 inches wide and has a 125-inch lift height. Machine operation is easy and intuitive as a result of standard joystick controls. The unit's cab is pressurized for a clean operator environment. An optional all-weather cab that includes heat and air conditioning is also available.

The RT-120F is also available in dirt and road profiling configurations.



The machine's durability, strength and innovative undercarriage make easy work of demanding tasks such as mulching, brush cutting and highway and utility work.

Photo Courtesy of ASV



## National Recycling Coalition announces 2018-2019 board members

LAFAYETTE, CO — The National Recycling Coalition (NRC) has voted nine members on to the NRC Board of Directors. Elections for the Board were held during the 2018 Resource Recycling Conference in St. Louis, MO. Election of officers occurred at the first meeting of the Board.

The new and re-elected board members, listed below, will each serve 3-year terms:

Richard Anthony, Zero Waste San Diego  
 Stephen Bantillo, NRC Vice-President, Recycling Certification Institute  
 Nina Butler, More Recycling  
 Susan Collins, Container Recycling Institute  
 Chantal Fryer, South Carolina Department of Commerce  
 Mary McClellan, Carolina Recycling Association  
 Frances McPoland, Paper Recycling Coalition  
 Lynn Rubinstein, Northeast Recycling Council  
 Bill Turley, Construction & Demolition Recycling Association

The recently voted-in individuals join the following active Board Members:

- David Keeling, NRC president, Steel Recycling Institute
- Mick Barry, NRC chair, MidAmerica Recycling and M2B2 LLC
- Charlotte Pitt, NRC treasurer, City and County of Denver
- Sarah Pierpont, NRC secretary, New Mexico Recycling Coalition
- Leslie Lukacs, at-large executive committee, SCS Engineers
- Kerrin O'Brien, at-large executive committee, Michigan Recycling Coalition
- Susan Attridge, City of Buffalo, NY
- Maggie Clarke, Maggie Clarke Environmental
- Barbara Eckstrom, Tompkins County, NY
- Wayne Gjerde, Minnesota Pollution Control Agency
- Susan Gordon, City of Fort Collins, CO
- Antonio Rios, Puerto Rico Recycling Coalition
- Robin Wiener, Institute of Scrap Recycling Industries

Honorary lifetime members include Mark Lichtenstein, SUNY College of Environmental Science and Forestry.

"I am so thrilled with the election of these candidates to carry on the great work that the NRC is doing," said NRC Board President, David Keeling.





Used primarily to separate rocks and large debris from soil and sand, Cat® skeleton buckets feature heavy duty construction and find application in a number of industries.

*Photos courtesy of CAT®*

### **Cat® skeleton buckets feature heavy duty construction and design elements facilitating efficient separation of rock and debris from soil**

Used primarily to separate rocks and large debris from soil and sand, Cat® skeleton buckets feature heavy duty construction and find application in a number of industries including agriculture, construction, land clearing, demolition, landscaping and scrap handling. Designed for use with skid steer loaders, multi-terrain loaders, compact track loaders and compact wheel loaders, Cat skeleton buckets incorporate a number of structural elements that ensure efficient operation and long-term durability.

In basic construction, Cat skeleton buckets use heavy steel rods, 1.25 inches (31.75 mm) in diameter on 3.75-inch (95-mm) centers, to form the floor and back of the bucket. Thick plates with rectangular openings form the sides of the bucket, and a rectangular frame, fabricated of heavy duty steel and incorporating two steel plate rock dams, strengthens the back of the bucket. The rock dams serve to retain material, reducing spillage and increasing production.

For added durability, steel gussets are welded between the outermost rods in the bucket floor and the sides of the bucket. The forward ends of the rods in the bucket floor are secured in a heavy-duty support beam positioned between (and welded to) the bucket sides. This beam not only provides support, but also allows the bucket to be used for grading. Welded to the forward tips of the rods and support beam are heavy steel tines that enhance breakout force by initially separating rock and debris from soil more effectively than a solid cutting edge could.

### **Cat® side discharge buckets provide controlled flow of loose materials in varied applications**

Cat® side discharge buckets — designed for use with skid steer loaders, multi-terrain loaders, compact track loaders and compact wheel loaders — collect and transport loose materials such as sawdust, sand, mulch and topsoil and then discharge these materials via a belt-type conveyor from adjustable openings (doors) on either side of the bucket. A rotating agitator works to keep material flowing to the conveyor. Adjusting conveyor speed and door openings control the volume of material discharged and the area covered. Features of the Cat side discharge bucket suit this attachment for varied applications including



*Cat skeleton buckets incorporate a number of structural elements that ensure efficient operation and long-term durability.*

agriculture, construction, landscaping, road maintenance and material handling.



The manually adjustable discharge doors, one on each side of the bucket, regulate the volume of material discharged.



*Two externally mounted, reversible hydraulic motors power the conveyor directly, eliminating any intermediate drive mechanisms.*

agriculture, construction, landscaping, road maintenance and material handling.

### **Conveyor**

The rubber conveyor belt — featuring a heavy duty, raised chevron tread design and equipped with an adjustable tensioning device — is engineered for long-term durability and functions efficiently whether discharging material left or right. Two externally mounted, reversible hydraulic motors power the conveyor directly, eliminating any intermediate drive mechanisms. Specially designed openings in the bucket floor allow any material remaining in the bucket to escape, preventing material build-up beneath the conveyor. Side discharge buckets designed for consistent use in sand or other heavier materials, feature an internal baffle to reduce belt strain.

### **Agitator**

The agitator assembly is directly powered via a third, high-torque hydraulic motor and functions to reduce material bridging in the bucket to ensure consistent material flow to the conveyor. Agitator paddles are available in sand and sawdust configurations. The sand style features a straight design that exerts added force to push through dense material and the sawdust type features an aggressive design that uses prongs to assist in breaking up material and reducing weight on the conveyor.

### **Discharge doors**

The manually adjustable discharge doors, one on each side of the bucket, regulate the volume of material discharged. The doors are built with thick-plate reinforcing for durability. As an added safety feature for Cat side discharge buckets, a welded, serrated step facilitates entering and exiting the cab.





## Komatsu XT-5 series track feller bunchers

CHATTANOOGA, TN – Komatsu America Corp. recently previewed its new XT-5 Series of track feller bunchers. Models include the XT430-5 (non-leveling), the XT435L-5, the XT445L-5 and the XT465L-5, which replace the prior XT-3 Series machines. Newly designed with more power, increased lift and KOMTRAX®, the feller buncher delivers advances in productivity, reliability and durability.

The XT-5 Series ranges in operating weight from 66,359 lbs (30,100 kg) to 74,516 lbs (33,800 kg) and features a new, more powerful fuel-efficient EPA Tier 4 Final engine, gull-wing style engine hood, increased lift capacity, heavy-duty undercarriage, redesigned and relocated cab, new hydraulic and cooling systems, forestry-specific guarding and KOMTRAX® telematics system technology.

“We have been systematically gathering and analyzing voice-of-the-customer input to define our next generation of feller bunchers,” said Mitsuhiro Utsumi, vice president, forestry product marketing, Komatsu America. “This new XT-5 Series represents the culmination of translating that entire input into feller bunchers which truly meet the needs of today’s demanding loggers. Shipments of the XT445L-5



Boom, arm and rear hydraulic tubes and hoses have robust forestry-specific guarding that improve protection and shed debris.

*Photos courtesy of Komatsu*

model will start in the fourth quarter of 2018, with the other models to follow.”

### Performance and productivity

The new 310 peak hp (231 kW) Cummins QSL9 9-liter engine provides more horsepower, torque and displacement and lowers fuel consumption by as much as 10 percent due to advanced engine and hydraulic system control designs. Lift capacities at full reach lift have been increased by 77 percent on the XT430-5, the XT435L-5 and the XT445L-5 and by 15 percent on the XT465L-5. The XT465L-5 now readily operates the Quadco 24-in (610-mm) cutting capacity disc saw heads.

### Operator comfort and convenience

The state-of-the-art, fully certified Komatsu forestry cab has been relocated to the left of the boom for industry commonality. Cab design changes provide superior lines-of-sight to each track. Standard rearview and optional right-side view monitoring systems further enhance the operator’s view. Eleven LED lights provide superior visibility for night operations.

Komatsu’s highly intuitive IQAN-MD4 digital control system programming allows up to three different operators to program their individual control patterns for increased multi-operator productivity. An IQANsync mobile phone app is available to allow remote access to perform IQAN system functions.

### Reliability and durability

New Komatsu heavy-duty undercarriages significantly increase service life, including:

- Rugged, 8.5-in track chain links, with thicker and stronger bushing strap, to resist “twist”
- New high-density track roller and idler bushing material extends wear cycles
- The XT445L-5 and the XT465L-5 have larger track guard roller side openings to minimize mud packing and facilitate cleaning
- The XT465L-5 has 9 vs. 8 rollers for improved load distribution. Track length has been extended to the rear by 5.3 in (135 mm) for improved steep slope stability
- The XT445L-5 and the XT465L-5 have a reduced track slider angle that produces 30 percent lower contact pressure for reduced wear
- All final drives have a triple labyrinth floating seal housing to protect the seal against mud packing
- Larger capacity hydraulic piston pumps for the implement; attachment and disc saw now operates at 500 rpm lower speed while providing high flow. Each pump has pressurized suction inlets to reduce cavitation risk. Boom, arm and rear hydraulic tubes and hoses have robust forestry-specific guarding that improve protection and shed debris.

The totally new cooling system features a larger radiator, charge air cooler and a single hydraulic cooler. All coolers have been relocated to the rear of the machine to minimize debris buildup. Separate radiator and hydraulic oil cooler fan controls provide the cooling needed to maintain the required temperatures. Both fans have an auto-reversing function to help purge debris and maintain cooling efficiencies.

### Ease of maintenance

A new gull-wing-style engine hood folds down to provide an elevated service work platform. Four other service doors swing wide to provide excellent service access. An innovative new hydraulic tank design features two tanks which require 55 percent less total hydraulic oil (a refill requires only 45 gallons/171 liters). The attachment control valve has been relocated from the main control valve to the arm for ease of service.

Komatsu’s exclusive KOMTRAX remote equipment monitoring and management telematics system is standard. It utilizes highly reliable satellite-based technology to transmit valuable information such as location, utilization and maintenance records to a website. KOMTRAX provides advanced machine troubleshooting capabilities by monitoring machine health and issues caution and abnormality alerts. This information serves as a valuable tool for scheduling preventative maintenance and service. There is no subscription fee for the life of the machine.



The state-of-the-art, fully certified Komatsu forestry cab has been relocated to the left of the boom for industry commonality.



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## Caterpillar expands next generation mini excavator range with six new 7 to 10-ton models

The Caterpillar range of Next Generation mini hydraulic excavators has been expanded with the addition of six new models in the 7-to-10-ton category. The new models provide a selection of basic configurations, allowing customers to choose the machine that works most efficiently in applications routinely encountered. As with all Cat® Next Generation mini excavators, the new models feature heavy duty main structures, fuel efficient engines, load sensing hydraulics, spacious cabs and the exclusive Cat stick-steer system. The overall design goal for Next Generation models is to ensure optimum value for the customer in terms of performance, operator experience, serviceability and affordability.

The new-model lineup includes the 307.5 — a standard tail swing model with a fixed boom; 308 CR — a compact radius model with a swing boom; 308 CR VAB — featuring a variable angle (two-piece) swing boom; 309 CR — a new model in the mini range featuring a compact radius, swing boom, and high flow auxiliary hydraulics; 309 CR VAB — which expands the 309 CR's capability with a variable angle boom; and 310, also new to the range — featuring a fixed boom, standard tail swing, and twin blade cylinders for handling heavy duty dozing chores.

The new models range in maximum operating weight from 18,152 to 22,447 pounds and in standard dig depths from 13

feet 5 inches to 17 feet. Three models — 307.5, 308 CR, and 309 CR — are available with a long-stick option that increases dig depth by approximately 22 inches. The variable angle boom, available with the 308 CR VAB and 309 CR VAB, enhances digging capability in congested work areas. Powering the 307.5 is the Cat C2.4 turbo diesel engine rated at 55.9 net horsepower; the five larger models use the Cat C3.3 diesel engine rated at 70.3 net horsepower.

### Operator environment

The design of Cat Next Generation mini excavators emphasizes operator comfort, convenience and safety. The six new models are fitted with cabs, sealed and pressurized to ensure a clean environment and featuring a redesigned heating/ventilating/air conditioning system that ensures all-weather climate control. Suspension seats, with a retractable 3-inch-wide belt are standard and the operating consoles feature adjustable wrist rests. In-cab sound levels are a quiet 72 dB(A).

Intuitive controls include the Next Generation LCD monitor that provides easy-to-read machine information and features a jog-dial for easy navigation, including setting personal operating preferences. For added convenience, a standard control-pattern changer allows operators to quickly adapt the machine to favored joystick movement. A machine security system is standard (numeric



Intuitive controls include the Next Generation LCD monitor that provides easy-to-read machine information.

code) as is a radio with Bluetooth capability. The large front window slides upward and stores conveniently overhead, and expansive glass areas on the sides and rear of the cab, plus a skylight, provide all-around visibility. A rear camera is integrated into the monitor.

An exclusive feature for new Next Generation models is the standard Cat stick steer system, which allows the operator to switch (with the touch of a button) from conventional lever/foot-pedal steering controls to low-effort joystick control. Automatic two-speed travel is standard, as is a cruise

control system that further simplifies machine travel.

The cab's protective structures — ROPS (ISO 12117-2:2008); TOPS (ISO 12117:1997); and top guard (ISO 10262:1998 Level II) — are designed to promote a safe working environment for the operator; and controls are protected via a hydraulic lock-out. Halogen boom lights help illuminate the work area, and optional LED lights — front and rear — help to further enhance visibility. The easy-to-transport Next Generation models also feature tie-down points on the track frames to facilitate securing the machine.

### Premium performance

The new Next Generation mini excavators use an efficient, fuel-saving, load-sensing hydraulic system with an electronically controlled variable-displacement piston pump capable of oil flows to 44 gpm (167 L/min) in the 307.5 and 308 models and 62 gpm (233 L/min.) in the 309 and 310 models. Generous flow rates, coupled with high main-relief pressures, provide the new models with the hydraulic capacity to generate increased travel performance and higher digging and lifting forces, as well as to handle powered attachments. High flow on the 309 model provides dedicated flow to the auxiliary circuit for operating the most demanding hydromechanical attachments.

For added versatility, the standard auxiliary hydrau-

lic system (complete with quick-disconnect lines) provides one-way, two-way and continuous flow. Manual and hydraulic couplers are available and the new models are available with a thumb-ready package and a certified lifting eye. Front-shovel operation — a capability that lends an extra measure of precision when digging around utilities — can be accomplished with both pin-on and coupler-mounted buckets.

The 307.5, 308 CR, and 309 CR come equipped with a standard undercarriage length, while the 309 has the option for a long undercarriage. The 310 is available with a long undercarriage only, which is designed for added stability.

A dozer blade further expands the capability of the new models, allowing the machine to handle backfilling and grading tasks. The blade features ample travel, above and below grade and has a float function. Major structures for the Next Generation mini machines — upper and lower frames, track frames, boom and stick — are patterned after their larger Cat excavator counterparts and designed for long-term durability.

Routine maintenance checkpoints are accessible at ground level through the side doors and the battery is maintenance-free. Side panels are flat and recessed to protect them from damage and have also been designed for easy replacement.



For added versatility, the standard auxiliary hydraulic system (complete with quick-disconnect lines) provides one-way, two-way and continuous flow.

Photos courtesy of CAT



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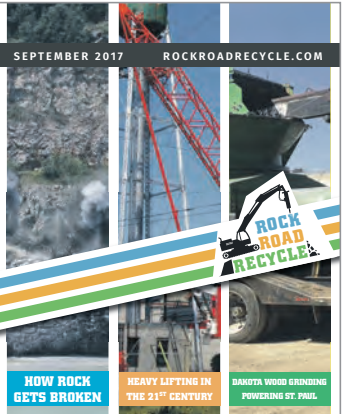
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## Black Splitter boosts safety, productivity for shade tree commission

PARAMUS, NJ — The Paramus Shade Tree & Parks Commission has transformed its tree removal operation to improve worker safety and productivity by purchasing a Black Splitter Model SB Cone Splitter from Ransome Attachments.

Paramus, located eight miles west of Upper

Manhattan, is an urban borough with 27,032 residents packed into 10 square miles. The commission is responsible for 35,000 street trees — in addition to 10 parks, nine sports fields and the grounds of eight borough buildings.

Paramus takes its trees seriously. It has earned the National Arbor Day

Foundation's Tree City USA designation for 42 years. Paramus must meet several standards, but generally speaking, it means that an in-house crew is dedicated to maintaining its tree population.

Superintendent Ken Raschen recognized that their tree removal process was inefficient and

unsafe for his crews. The roving operation would travel to a site, shut down a lane of traffic, extract the tree, and process it into 24-inch sections before loading them into a truck bound for its compost facility. The negative impacts to workers, traffic and residents were clear.

It was early summer 2018 when Raschen spotted the Black Splitter in a trade publication. He reached out to Ransome Attachments. Raschen and his colleagues were impressed after watching an extensive on-site demonstration of the cone splitter in June. Eric Ransome, owner of Ransome Attachments advised the team that the Black Splitter Model SB was the best option for mounting on a skid steer loader. They purchased the attachment in July.

Acquiring the Black Splitter allowed the commission, in conjunction with the DPW, to change its tree removal policy to improve safety and productivity. The lion's share of the work is now done at the compost facility because of the Black Splitter.

"We're now taking one 16-foot-long stalk and loading it onto a truck versus eight 24-inch pieces," explained Raschen. "We can also remove it from a roadway, a resident's property or a business owner's property more quickly."

The tree stalks are hauled to the borough's compost facility for processing by the Black Splitter. "We take all the wood from our removals and split it into fireplace lengths," Raschen said. "We then offer it to residents free of charge."

The log splitting technique to quarter the stalk is specific. The operator drills into one end to begin the split. The rotating cone then sweeps along the break toward the middle, cutting any remaining fibers as it goes. The operator repeats these steps

***"The big item here is one person is able to do it (log splitting). And instead of tying up traffic with a large operation on the road, we get that stalk off to a safe location where we then continue to process it so that it can be given out to the residents."***

*~ Ken Raschen*

from the opposite end to finish the log.

Prior to purchasing the Black Splitter, three of the commission's workers would brave the elements using power saws and hand tools to take apart a stalk in proximity to heavy traffic. The operation was time- and labor-intensive and exposed workers to unnecessary safety risks.

"Nobody wanted to rip those stalks because it's labor intense," recalled Raschen. "Now we only need one operator in an air-conditioned or heated machine. And as long as he has fuel, he's going to be productive."

The Black Splitter has reduced the time required, eliminated safety risks and freed up two workers to be assigned to other tasks such as grinding stumps or planting trees.

"The big item here is one person is able to do it (log splitting)," said Raschen. "And instead of tying up traffic with a large operation on the road, we get that stalk off to a safe location where we then continue to process it so that it can be given out to the residents."

Raschen has yet to find a tree that can hold up against the Black Splitter. He's watched the Model SB rip seamlessly through hardwood trees like Oak and stringy

species like the Linden Elm.

Raschen plans to start tracking productivity in January 2019 when the winter tree removal season gets underway. He will do a side-by-side comparison of productivity metrics to demonstrate to borough management that the Black Splitter was a good investment — and he is confident that the results will be positive.

"The operator is getting comfortable with the unit and there's no question productivity is up," Raschen said. "We're getting more done than we did the other way and one man is doing more than what three men did."

Paramus works under a community forestry management plan that documents the quantity and species of its trees. Most planting is done in the spring and fall. Removals are done in winter.

He expects the Black Splitter to stay especially busy this year due to storm-damaged trees and an ongoing battle with the Emerald Ash Borer. Based on what he has seen from the Model SB, he feels the attachment is up for the challenge. "This is still new for us, but I'm impressed with it."



The Paramus Shade Tree & Parks Commission is seeing improved worker safety and productivity since acquiring a Black Splitter Model SB Cone Splitter from Ransome Attachments.

Photo courtesy of Ransome Attachments



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## Bandit offers remote controlled Kesla loaders on larger hand-fed chippers

Bandit now offers extending Kesla loaders with radio remote controls on its Intimidator™ 21XP hand-fed chipper, giving land-clearing professionals, tree care companies and right-of-way contractors a powerful all-in-one



*Using intuitive controls, the operator can guide the material quickly into the chipper to be processed in a fraction of the time it would take operators to winch.*

tool to dispose of limbs and even whole trees.

“Rated as a 21-capacity chipper, the 21XP is the largest hand-fed chipper in Bandit’s fleet, so it’s built to chip heavy, large-diameter trees. Those can be difficult to quickly get to the chipper, even with a winch,” said Bandit Sales Manager Jason Morey. “The Kesla loader option increases the productivity of this machine in virtually any application.”

The Kesla loader can extend to 21 feet and grab large bundles of limbs, large individual limbs and even downed whole trees. Using intuitive controls, the operator can guide the material quickly into the chipper to be processed in a fraction of the time it would take operators to winch.

“This option can eliminate the need for additional workers on the ground or additional equipment brought to the jobsite,” Morey said.

When not in use, the Kesla loader folds up on the front of the chipper where it’s out of the way, never impeding the discharge chute or limiting access to common maintenance items.

With a rated chipping capacity of 21 inches, a huge 24.5-inch by 26-inch chipper throat opening, Bandit’s Slide Box Feed System and engine options up to 350 hp, the Intimidator™ 21XP is simply the ultimate hand-fed chipper. This machine has no problem processing large whole trees and is designed for tree services specializing in large tree takedowns, land clearing operations or any projects requiring

the highest levels of production and performance.

Learn more about Bandit Industries at [www.banditchipper.com](http://www.banditchipper.com) or by calling 1.800.952.0178.



*Bandit now offers extending Kesla loaders with radio remote controls on its Intimidator™ 21XP hand-fed chippers.*

*Photos courtesy of Bandit*

## CM Labs sets industry benchmark with new dozer simulator training pack

CM Labs Simulations has announced the release of a state-of-the-art Dozer Simulator Training Pack that allows trainees to experience the unique feel of pushing soil and aggregate material from the seat of a virtual dozer.

Trainees can perform both heavy excavation and fine grading with the simulator’s six-way blade, and dozer tracks even slip based on operator behavior. This enables trainees to learn precision techniques – and efficiency – in an environment that poses no risk to them or to the equipment.

The realism is based on the training solution’s unique

ability to engage a simulated transmission and engine the moment the virtual blade touches virtual soil. “The simulator virtual equipment has been engineered from the ground up,” explained Drew Carruthers, CM Labs’ Construction Line manager. “The blade, the transmission, the engine, the controls – if it’s somewhere between the operator and the dirt, it’s been simulated.”

“Many simulators treat machine behavior as a kind of special effect that’s scripted into a training session,” Carruthers said. “This results in unrealistic performance and overconfident trainees. But

when operators train on a Vortex simulator, they’re not experiencing special effects. They’re experiencing the laws of physics.”

The exercises that are built into the dozer training pack are designed to address common beginner challenges such as setting the blade angle correctly and learning how to maintain material in front of the blade. In addition, the Training Pack includes advanced exercises, such as excavating a drainage inlet and transversal ditch, and trailer loading/unloading.

Training exercises come complete with on-screen tips, best-practice hints and per-

formance indicators that enable trainees to learn at their own pace or as part of an instructor-led training curriculum. All exercises have multiple possible solutions, leaving it to the operator to exercise skills, creativity and good judgement – just as in the real world.

The Dozer Simulator Training Pack is part of CM Labs’ extensive product line of earthmoving and lifting crane training packs, all of which can be run from a single Vortex simulator. Solutions range from training packs for crawler crane, flat-top tower crane, luffing tower crane and mobile crane to excavator, backhoe,

wheel loader, motor grader and more.

When the dozer training pack is paired with CM Labs’ Instructor Operating Station, trainers can set conditions that include inclement weather and night-time operations. A customizable scoring system delivers an objective score to instructors whenever a trainee completes an exercise.

The Dozer Simulator Training Pack leverages the same innovative soil simulation technology featured in CM Labs’ recent release of its Excavator Simulator Training Pack, the world’s first commercial application of this advanced new method of soil visualization.



*Like all CM Labs solutions, the machine inside the Dozer Training Pack has been engineered from the ground up.*

*Graphics courtesy of CM Labs*



*Dozer Training Pack Exercises are designed to gradually build precision and confidence.*





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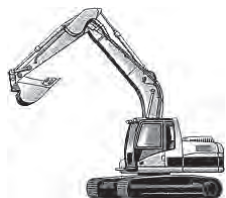
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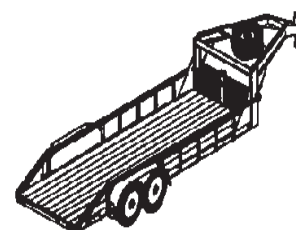


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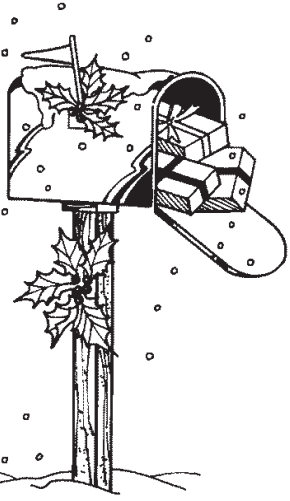
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## Solesbee's excavator stump puller features replaceable wear tips

WINSTON, GA – Solesbee's stump puller offers efficient stump removal and land clearing. Solesbee's manufactures the attachment with high-strength alloy steel and replaceable wear tips for extended service life. The powerful attachment, known as the "Stumper," fits 15- to 40-ton excavators and can increase production by as much as 30 percent compared to other land-clearing methods, such as bucket attachments, bulldozing and forestry mowing. This speed allows contractors to complete jobs in less time and generate fast ROI.

"The stump puller is an extremely versatile and efficient piece of equipment for clearing land," said

David Jenkins, president of Solesbee's Equipment & Attachments LLC. "It allows contractors to extract stumps of all sizes in a fraction of the time it would take using other methods and with minimal soil disruption, so backfill and leveling take less time as well."

The attachment's two shanks easily cut through roots so operators can remove stumps without displacing a large amount of soil. The shank's curved design significantly increases breakout force for slicing through tough surfaces when extracting forestry material. Additionally, the shank's replaceable wear tips extend the attachment's service life by allowing

operators to simply change out the tips as opposed to purchasing a new stump puller.

The Stumper can be paired with Solesbee's excavator thumbs to lift and stack stumps, limbs and debris. It also features claws on the back of each shank to push stumps away from the excavator. This enables operators to better position stumps and other materials to grab and pick up using the attachment and excavator thumb. The stump puller is also compatible with Solesbee's Quick Coupler, making attachment changes fast and easy.

Solesbee's offers an industry-leading two-year warranty on all products, including the Stumper.



The attachment's two shanks easily cut through roots so operators can remove stumps without displacing a large amount of soil.



The Stumper also features claws on the back of each shank to push stumps away from the excavator.

Photos courtesy of Solesbee's

## Loftness introduces Battle Ax™ mulching attachment for skid steers

HECTOR, MN — Loftness has introduced new models of its Battle Ax™ horizontal drum mulcher designed specifically for skid steers. Featuring a new rotor, tooth design and exclusive two-stage cutting chamber, the heavy-duty Battle Ax is designed for highly efficient

vegetation management, including right-of-way maintenance, land clearing, forestry applications and more.

The Battle Ax is available with 61- and 71-inch cutting widths for skid steers with 50 to 120 hydraulic horsepower. Its 17-inch-diameter rotor

features built-in depth gauges, which function similarly to raker teeth on chain saws to prevent the attachment from engaging too much material at one time. This unique design is more ideal for managing the amount of material being fed into the attachment than

competitive ring-style rotors, which many operators find to be overly limiting.

The Battle Ax rotor is optimized for use with all cutting tooth styles. Customers can choose from Quadco planer blades, hard-surface Quadco blades and carbide teeth. The cutting teeth are mounted to the rotor with a single hex bolt for easy removal on the jobsite.

To further maximize performance, the Battle Ax features a two-stage cutting chamber, which allows material to be cut twice by the rotor and helps produce some of the smallest particle sizes in the industry. The primary shear bar is adjustable for customizing the particle size.

The Battle Ax is available with two hydraulic motor options. A fixed-displacement gear motor operates at a constant RPM that provides an optimal balance between speed and torque. Customers may also choose a variable-displacement piston motor, which automatically shifts the rotor RPM from the highest speed

to a lower range for increased torque, as needed. The piston motor results in less stalling and a shorter recovery time, helping operators to concentrate on the job instead of power settings and continuous head repositioning.

Other standard features include universal skid-steer mounting, premium strength steel housing, adjustable skid shoes from 0.5 inches to -1.5 inches for below-grade mulching, a machined anti-wrap bearing protector, an adjustable push bar with welded claw hooks, an integrated pressure gauge and a staggered tooth pattern to ensure single-tooth contact with the work surface at all times.

Loftness manufactures the VMLogix line of vegetation management equipment, which includes hydraulic oil coolers, the Kwik-Trim compact mechanical tree trimmer and high-performance mulching heads for a variety of equipment ranging from excavators, skid steer loaders and up to 400-horsepower prime movers.



Featuring a new rotor, tooth design and exclusive two-stage cutting chamber, the heavy-duty Battle Ax is designed for highly efficient vegetation management.

Photo courtesy of Loftness



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# RENEW & REGENERATE

## COMPOST 2019

USCC Conference & Trade Show



January 28-31, 2019 | Phoenix/Glendale, AZ

**GATHER WITH THE NATIONAL COMPOSTING COMMUNITY** for the Premier Show on Compost Manufacturing and Organics Collection, with a special focus this year on *Compost's Role in Regenerative Practices and Climate Change, Composting on Campus.*

**Plus Educational Sessions on:**

- Facility management, compost marketing and education
- Trade Show with Leading Vendors of Compost Facility and Collection Equipment and Compostable Products
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