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DIGITALISATION: Digitalisation on capital equipment and safety at mines and quarries

NEW EQUIPMENT: Southern African debut for Astec's SX-6EX

SKID STEERS: The versatility and enduring appeal of the skid steer in the SA market

HEAVY COMMERCIAL VEHICLES

Volvo Trucks' safety
DNA leads to innovation

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HOW BUSINESSES CAN LESSEN THE BLOW OF RECORD-HIGH FUEL PRICES

By Justin Manson, sales director at Webfleet

Despite the recent announcement of downward adjustments to the fuel price by the Minister of Mineral Resources and Energy Gwede Mantashe, South African end-users and businesses remain financially burdened and under pressure.

There's never been a greater need for businesses that operate fleets of vehicles – using two or more vehicles within their operations – to find effective ways to manage their finances and save on costs, no matter how small the saving might be. It is crucial that any business' fleet management adopts solutions that help reduce its vehicles' fuel usage and improve driver behaviour.

Although fleet managers can't control South Africa's fluctuating fuel prices,

there are a few ways to help them monitor their fleets' fuel usage more effectively.

There are countless benefits to managing driving behaviour, including reducing vehicle wear and tear, the risk of accidents, and fuel consumption. Fleet managers can help drivers operate their vehicles more economically on the road by enrolling them in driver training programmes. These programmes help educate them on fuel-efficient driving, including unnecessary idling, harsh braking and acceleration.

Fleet managers can complement this training with a driving performance monitoring solution, providing drivers with direct feedback and predictive driving advice while on the road. This level of responsible driving will help businesses reduce the total cost of vehicle ownership.

Ensuring that fleets are well-maintained helps fleet managers avoid vehicle downtime, which is a massive inconvenience for any business. In addition to late or missed deliveries, which negatively impact business profits and a company's image, unmaintained vehicles can also increase fuel expenditure.

To avoid this and increase fuel efficiency, fleet managers can integrate digital vehicle maintenance solutions, which help them closely monitor the service requirements of each vehicle.

These tools also allow fleet managers to minimise the chance of breakdowns or vehicle maintenance downtime by providing detailed insights into the vehicle's condition. These solutions can also use vehicles' odometer information to schedule fleet maintenance tasks effectively,

provide information on trouble codes, and keep vehicle costs down.

Drivers stuck in traffic congestion can severely affect productivity and fuel efficiency. By introducing driver terminals with navigation, fleet managers can access a complex network of live traffic data and advanced algorithms to help drivers avoid traffic jams, closed roads, and other obstacles that could disrupt their schedules.

Route optimisation takes the guesswork out of the order in which specific jobs should be done. Coupled with live traffic information, this is one of the best ways any fleet business can save on fuel costs.

New research published by Moneybarn reveals that South Africa is ranked the highest in producing the most transport carbon dioxide emissions worldwide. Businesses looking to reduce their carbon footprint can encourage drivers to adopt better driving habits such as avoiding harsh accelerations, ensuring smooth and slow cornering and braking, and avoiding excessive speeding.

Telematics solutions monitoring fuel usage can also report carbon emissions, allowing even more businesses to shift to eco-friendly operations without compromising fuel reduction efforts.

Fleet managers have access to a range of solutions to help them monitor and optimise their vehicles' fuel consumption, including driver behaviour like speeding and idling, route planning, and even vehicle maintenance. These measures allow fleet managers to safely and effectively navigate the fluctuating fuel price and ensure their businesses operate in the most economical way possible. 🌱



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SCANIA



SCANIA PARTNERS WITH THE SHOPRITE GROUP TO LAUNCH FIRST EURO 5 TRUCKS

Sustainable transport solutions that drive customer profitability are the driving force behind Scania Southern Africa's partnership with the Shoprite Group, which has acquired over 100 of Scania's New Generation trucks powered by Euro 5 engines.

Speaking during the handover ceremony in Stellenbosch, Western Cape, Scania Southern Africa managing director Erik Bergvall noted Scania's and Shoprite's shared commitment to the development of sustainable transport solutions.

"We were delighted to see how aligned the Shoprite Group is to Scania's sustainability objectives. Shoprite is focused on reducing fuel consumption and the use of natural resources, very much in line with our own efficiency commitments."

He says Scania does not view the sale of the Euro 5 trucks to Shoprite as a transaction but rather as a long-term partnership during which the two companies can tackle environmental impacts by creating lasting value and transformation in the southern African transport landscape together.

"The most important thing we do at Scania is to drive the shift towards a sustainable transport system. We see ourselves as leaders in this field, and we strongly believe that sustainability and profitability go hand in hand," he says.

Although Shoprite and Scania are two different companies operating in very different industries at face value, both share a commitment to driving sustainability on all fronts.

Another platform that brings Shoprite and Scania together with many of the world's sustainability advocates is the United Nation's Sustainable Development Goals.

Scania was the first major heavy commercial vehicle manufacturer to commit to these sustainability goals, and to achieving the Paris Agreement targets of limiting global warming to 1,5°C above pre-industrial levels.

"Like Scania, Shoprite aligns with many of these goals and both companies are conscious of how the way we operate in our respective industries can contribute to tackling socio-economic challenges," says Bergvall.

To strengthen its quest for decarbonisation, Scania has set science-based carbon reduction targets to commit it to reducing emissions at the scale and pace science dictates necessary to limit global warming.

"This commitment is a radical leap because the targets encompass not only emissions from our direct global operations, but also from our customers' vehicles when in use," says Bergvall.

He says every decision made at Scania is supported by its three sustainability pillars,



"The most important thing we do at Scania is to drive the shift towards a sustainable transport system."



Scania was the first major heavy commercial vehicle manufacturer to commit to the United Nation's Sustainable Development Goals, and to achieving the Paris Agreement targets



"Globally, we have over 500 000 connected vehicles as of the beginning of 2022, which increases our potential to tailor-make service solutions and deliver higher uptimes."



In the past 40 years, the Shoprite Group has grown to be Africa's biggest retailer with over 3 000 stores across 11 different countries on the continent

the first of which being energy efficiency, at the core of the business.

The second sustainability pillar is a commitment to exploring solutions made possible by alternative fuels, with the aim of reducing CO₂ emissions, while the third pillar pertains to smart and safe transport.

"Globally, we have over 500 000 connected vehicles as of the beginning of 2022, which increases our potential to tailor-make service solutions and deliver higher uptimes."

Africa's biggest retailer

Andrew Havinga, chief supply chain officer at the Shoprite Group, notes that the company has, in the past 40 years, grown to be Africa's biggest retailer with over 3 000 stores across 11 different countries on the continent.

He says the company runs a centralised sales and distribution system with a supply chain consisting of 29 distribution centres across South Africa.

"We currently have 903 trucks and 1 360

trailers in our fleet," he says. "That logistics fleet over the last year has driven millions of kilometres to distribute products. It is a very scaled supply chain, which enables us to ensure that we drive efficiencies within the supply chain. This is crucial for us because it helps us attain our group purpose, which is simply to be Africa's most affordable, accessible and innovative retailer."

Havinga says the Shoprite Group's focus is sustainability and efficiency – how to increase efficiencies across the whole



Erik Bergvall, managing director of Scania Southern Africa.

business and in the supply chain to reduce consumption of natural resources.

This efficiency drive, he says, allows Shoprite to pass any savings on to the end-user.

"In terms of our supply chain," says Havinga, "one of our key roles is to decide which product and how much of it to distribute, and how to get them from the suppliers and into the stores. We need to know how much of the product to distribute to prevent wastage.

"We then need to get the product across our whole network. For this purpose, we have the latest transport route scheduling systems which ensure that each time a truck leaves one of our distribution centres, it travels the shortest distance to get to the store. This limits fuel consumption and CO₂ emissions."

He says the Shoprite Group has spent 20 000 hours over the last year on driver training to equip the drivers to understand how best to operate the trucks, which also helps environmental sustainability.

The company also leverages its overall fleet to recycle paper and plastics back from the stores, through the distribution network.

A total of 928 of Shoprite's trailers are fitted with solar panels on top to help power their refrigeration units.

"There is always room for more improvement," says Havinga. "For us, the next improvement is the introduction of these Euro 5 Scania trucks. They will have a significant impact as they offer 10% fuel savings and greater reductions in carbon emissions. We are taking ownership of 111 of these trucks. In the next 12 – 18 months, another 140 will arrive and be added to our fleet. At 10% increased fuel

efficiency, this makes a real impact."

Five-year journey

Some five years ago, Scania and Shoprite agreed to conduct a number of demonstrations and road tests on Euro 3 trucks. This, says Johnny-Ray Basset, key accounts manager at Scania Southern Africa, was an opportunity for Scania to prove the quality and efficiency of its trucks.

"The first vehicles we tested were our Scania Euro 3 P410 and G460 6x4 truck tractors.

"Following the success of the testing of our demo vehicles, which included driver training and monitoring of the vehicle performance on our Scania Fleet Management System, Shoprite then decided to take delivery of 16 Scania PGR-410 truck tractors."

These vehicles were sent out on the road in the northern region of South Africa with its notoriously difficult roads to travel on, but even in these conditions, the tests were highly successful with excellent fuel consumption results. The trucks also proved to be reliable and comfortable for the drivers, who enjoyed the power and the absence of fatigue when driving.

Following these tests, Shoprite was fully satisfied with the results and purchased the Scania Euro 3 fleet. This was when the Scania Euro 5 G450 A6x4 discussion began, says Basset.

"Prior to the Euro 5 delivery, we conducted extensive demonstrations and road testing of the Euro 5 vehicles. The impressive data from these tests is what allowed the final decision from Shoprite to purchase the Scania Euro 5 G450 A6x4

For us, the next improvement is the introduction of these Euro 5 Scania trucks. They will have a significant impact as they offer 10% fuel savings and greater reductions in carbon emissions.

truck tractors with the complete range of safety features."

He says Scania trucks have "incredible" features that increase driver safety, such as EBS brakes, a hill hold system, lane departure warning system, and a rain sensor and adaptive cruise control.

"But having said that, the fact is our trucks are only as safe as the drivers' safety protocols. We therefore provided Shoprite's drivers with extensive driver training over the past few years, and will continue to equip drivers with the skills and knowledge they require."

Euro 5 testing

Emissions testing on the Scania Euro 5 trucks started just over a year ago and involved placing five Scania G450 Euro 5 trucks in diverse applications in South Africa. One of these trucks was placed in the Shoprite fleet and was tested in all the company's regions. At the same time, Scania also conducted extensive training for Shoprite's drivers to maximise fuel efficiency.

"We conducted these tests at Shoprite's major distribution centres at Centurion, Durban, Cape Town, Northern Cape, Eastern Cape and Western Cape," says Basset. "These trucks were used for the normal functioning of the Shoprite fleet, using their drivers and our coaching."

Shoprite drivers who had undergone Scania's driver training programme were then put on the road in Scania Euro 5 trucks. Both truck and driver performance were monitored using the Scania fleet management system, which shows driver behaviour such as harsh braking, harsh acceleration and others. The drivers then received follow-up training in a two-day



Andrew Havinga, chief supply chain officer at the Shoprite Group.

course focusing on theory and practical training respectively.

Scania spent between 12 and 14 months to conduct the extensive testing in the Shoprite fleet to look at the difference in fuel consumption and performance of the vehicles compared to the rest of the fleet.

"Emissions are very important to Shoprite, which is why they invested in these vehicles," says Basset. "Another big deciding factor for Shoprite was driver safety and the safety features on the truck. They decided on the full safety pack on the Euro 5 truck.

"These tests showed an improvement in fuel consumption of between 5% and 10%. I can say with confidence that we achieved a 10% improvement within the Shoprite fleet," he says.

There were 233 Scania trucks running in the Shoprite fleet before the recent acquisition of 111 Euro 5 trucks which are currently being delivered – 217 new truck generation (NTG) trucks and 16 PGR 410s.

"When we were successful with the road tests, driver training, safety, fuel consumption and total cost of ownership tests on our P410 truck tractor, Shoprite saw that the Scania product could work for them. They then purchased the first 16 Euro 3 P410 trucks and after that ordered 217 NTG trucks, bringing the total to 233.

Total Cost of Ownership

One of Scania's repair and maintenance (R&M) products is Flexible Maintenance where an R&M product is tailor-made for a specific customer.

"We realised from day 1 of our negotiations with Shoprite that our technicians must be on site to offer them

the best uptime," says Basset. "When a driver reports a defect on their truck, our onsite technicians tend to the truck immediately. We looked at the kilometres travelled per month by the Shoprite fleet and we put a together a product to suit their needs. We have people on site at all Shoprite's major distribution centres, 24/7."

He says the total cost of ownership (TCO) is lower on the Euro 5 G450 than on the rest of the Shoprite fleet.

"If you look at the fuel consumption we are achieving on the fleet, there is definitely a big saving. With the number of trucks Shoprite is running, a saving of 10% amounts to a huge saving, also in terms of TCO."

In addition to the fuel and emission savings afforded by the Euro 5 trucks, Scania's repair and maintenance rates are very competitive, so adding to the reduced TCO on these vehicles. With these trucks, Shoprite will have minimal downtime; in the event of a breakdown, Scania's technicians are available 24/7.

"Because of our predictive maintenance offering," says Basset, "the truck is in excellent condition when it is sold and fetches a good price, which is good for the bottom line."

Repair and Maintenance

From a fleet perspective, Scania believes it is very important to sell a repair and maintenance (R&M) contract with every vehicle.

"The reasons are uptime and our preference to look after our clients' vehicles as the OEM. We believe every vehicle must be sold with an R&M contract because we have the technology,

Because of our predictive maintenance offering," says Basset, "the truck is in excellent condition when it is sold and fetches a good price, which is good for the bottom line."

equipment and parts to maintain the vehicle to a standard where that vehicle will achieve optimal kilometres and fuel consumption."

Scania has an extensive footprint which makes it easy for the customer to access workshops and to take their vehicles for service and repairs.

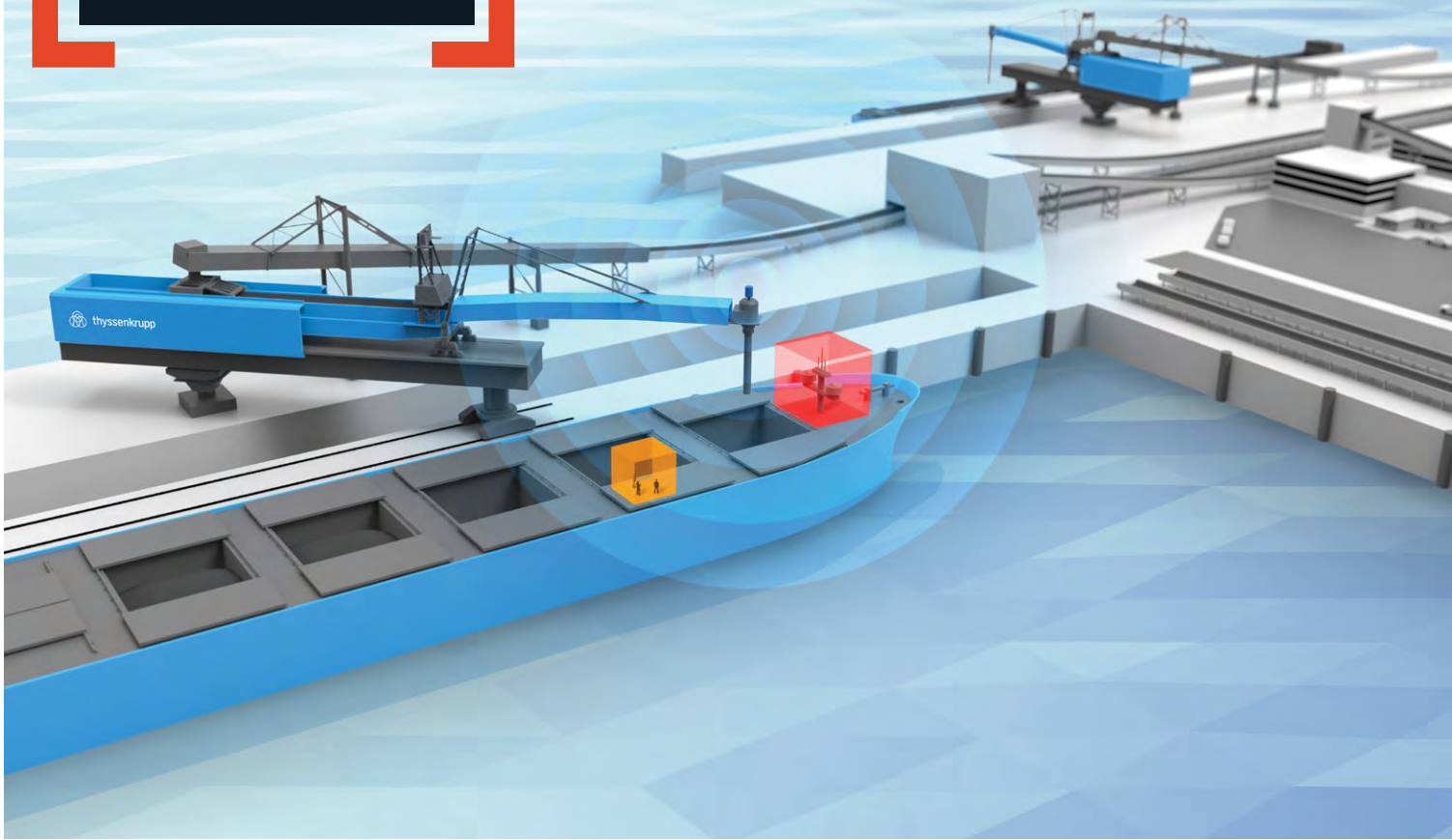
"We have other products such as our Scania Finance Solutions whereby we can finance the vehicle as well as the trailer for the customer," says Basset. "We can supply the customer with a whole combination so that they receive a truck, trailer, a full R&M contract and insurance."

Scania's Connected Services, which operates off the OEM's fleet management system, also supports the product as the company's service advisors will contact the client and notify them that a service is due in the next 2 000 km, for instance. The service is then scheduled to take place wherever in the country the truck may be at the time. The relevant workshop is forewarned and prepares in advance for parts and servicing. Once a full inspection has been done on the vehicle, the customer will be notified in advance of the work needed to avoid standing time.

G450 specifications

The Scania Euro 5 G450 features a straight 6-cylinder Scania diesel engine with a 12,7 dm³ displacement. The differential with a retarder, transmission and the Opticruise fully automatic CRS905 gearbox are also by Scania. At a maximum output of 1 900 rpm, the engine produces 331 kW (450 hp) and 2 350 Nm of torque at 1 000 – 1 300 rpm. The engine uses 6,8% Adblue. 🌱

A fully automated ship loader by thyssenkrupp.



DIGITALISATION ON CAPITAL EQUIPMENT AND SAFETY AT MINES AND QUARRIES

Digitalisation on capital equipment improves safety at mines and quarries. This feature highlights some of the digital technologies found on capital equipment today, explores how digitalisation on equipment improves safety, and takes a look at the uptake of these technologies in the mining industry. By Mark Botha

According to Willem Odendal, sales manager at Unisource, examples of how digital technologies improve safety on mines include automation and autonomous vehicles.

"Autonomous mining vehicles have been around for decades now and have been used to increase mining safety," he says. "Autonomous mining equipment works through the integration of robotic components, advanced software, GPS, and internet connectivity. When combined, these elements allow operators to control heavy machinery and other gear from a safe point above the earth's surface."

He says biometric devices are being used, as well as touchless access control workforce management for mine security.

"Regardless of what your business procedures are or where you're located, your mining operation has several unique requirements to ensure the highest productivity and, at the same time, the safety of your workers." He says the security system needs to ensure that workers can access their assigned shifts and get to work on time.

"Delays add up, costing your business money as well as time. And, due to COVID-19, ensuring that no employee shows symptoms of infection is even more pressing in mines because of how narrow miners' work areas are. This has also been assisting from a safety point of view in that all workers going underground are accounted for.

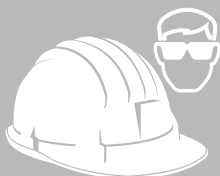
In open pit mining, accurate GPS and global navigation satellite systems (GNSS) are useful for tasks such as machine guidance, grading, dozing, drilling, collision avoidance,



Wireless Monitoring by Unisource uses reliable data to make prompt decisions that reduce risk and liability.



In open pit mining, accurate GPS and global navigation satellite systems (GNSS) are useful for tasks such as machine guidance, grading, dozing, drilling, collision avoidance, surveying, and fleet management



Artificial intelligence shifts raw materials mining from a people-oriented operation to a process-oriented one, which is critical to ensure appropriate health and safety conditions



There should be no issue more important than safety in the operation of the mine or quarry



Digitalisation on capital equipment and the resultant safety at mining and quarrying operations is an area where more development needs to be done

QUICK TAKE

surveying, and fleet management.

"GPS can be used in open cut mining operations as long as the satellites have a direct line of sight. GPS enables managers to track, for example, the status and location of dump trucks, providing information about direction, velocity and load size. Geographic Information Systems or GIS can be used to monitor and dispatch trucks and drills and to assess grade control on equipment."

The purpose of Operational Intelligence is to gather data from throughout the IT system, analyse it in real time, and present it to IT operators in a simplified format that enables them to take rapid action and make decisions based on the results.

"Artificial intelligence," says Odendal, "shifts raw materials mining from a people-oriented operation to a process-oriented one, which is critical to ensure appropriate health and safety conditions for the mineworkers, a high level of accuracy, error elimination, and a faster decision-making process."

Another example of how digital technologies can improve safety is Wireless Monitoring, whereby reliable data can be used to make prompt decisions that reduce risk and liability; promote health and safety; efficiently manage equipment, sites, or multiple assets, and ensure environmental compliance. Alarms are easily integrated so that operations can be suspended, equipment moved, the area evacuated, or so that work can be resumed. Systems can be programmed to send alarms or report site conditions by calling out to phones or radios.

Martin Krex, global product manager Automation & Digitalisation at thyssenkrupp, says all his company's machines are equipped with state-of-the-art automation solutions.

"This includes standard safety equipment. Beyond the standard safety equipment, we offer full automation packages for our machines. Some highlights are our fully automated bucket wheel stacker/reclaimer or our fully automated ship loader." He says both products reduce the manpower required for direct physical operation to a minimum, which leads to a reduction in accidents and therefore to an increase in safety.

Jonas Lindholm, head of Digital Services for Volvo CE Region Europe and International, says Volvo CE offers several features within the Assist suite of intelligent machine control systems that help improve safety, alongside productivity and efficiency.

He says On-Board Weighing helps to negate dangerous overloading.

"This system provides real-time payload information to the screen in the cab and uses external lights as a visual guide for the



"The Assist suite of intelligent machine control systems provides real-time payload information and uses external lights as a visual guide for the operator of the loading unit as to when the nominal load has been reached."

Jonas Lindholm, head of Digital Services for Volvo CE Region Europe and International.



"Fatigue monitoring of operators can be improved with wearable devices which track body vitals such as physical activity, sleep, medical condition and stress."

Mogisen Iyer, operational technology lead for Accenture Industry X.O.



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"Artificial intelligence shifts raw materials mining from a people-oriented operation to a process-oriented one."

Willem Odendal, sales manager at Unisource.

operator of the loading unit as to when the nominal load has been reached," he says.

A new tyre pressure monitoring system in Volvo CE's Load Assist and Haul Assist for wheel loaders and articulated haulers respectively gives operators an instant and safe indication that tyres are functioning within the correct parameters.

"Via the 10-inch touchscreen Volvo Co-Pilot display in the cab, operators can see real-time information on tyre pressure and temperature, both as nominal values and as percentages," says Lindholm. "They also receive visual alerts if there are inconsistencies in pressure or temperature, indicating that they should keep certain tyres under observation, and if those

inconsistencies worsen, it is time to take action."

Apart from showing the desired route, the company's Map function informs the operator of the location of other machines and personnel on site, reducing congestion and improving safety. The Map also issues speed limit notifications when necessary to remind operators to keep to the recommended speed for safer operation.

"Operator behaviour alerts transmitted via CareTrack telematics data can also help improve safety by highlighting operators that may need additional training. Customers can either manage the data themselves, have it presented to them in insight reports, or completely analysed on their behalf with ActiveCare."

Caterpillar's Driver Safety System is a non-intrusive way to manage fatigue and distraction in real time. A smart camera monitors operator inputs looking for systems of fatigue. When fatigue or distractions are detected, the seat vibrates and audio alarms sound. The system benefits include a 97% reduction of most significant fatigue events, an 80% average fatigue event reduction and a 91% reduction in distraction events.

Cat Detect – People Detection for excavators is an intelligent vision camera system that can alert an operator when someone enters within a machine's hazard zone. It reduces the risk for people working around machinery and expands machine safety distances by detecting individuals with up to 270-degree camera coverage.

Cat Detect – Object Detection combines radar and camera systems to warn operators about light vehicles or stationary hazards within the immediate vicinity of the machines. It detects moving or stationary objects without tagging, allows operators to detect objects from the cab, and boosts operator awareness and performance.

Also part of the Cat Detect technology is Cat 2D E-Fence for excavators which improves operating safety by keeping the front linkage within a predefined work area to avoid hazards such as traffic.

Cat Stability Assist for articulated trucks increases awareness of machine stability by warning the operator if the truck is approaching an unsafe angle, ultimately resulting in machine safety and uptime, while Cat Lift Assist for excavators is a safety feature that calculates the load being carried and compares it to the rated load the excavator is capable of handling.

Cat Rear Object Detection for wheel loaders is a two-part system that provides enhanced blind-spot awareness with visual and audible alerts when objects enter a safety proximity zone.



Improvements in sensor technology, data analytics and wireless communication have made it possible to enable smart safety solutions to be retrofitted.

An autonomous haulage system (AHS), Cat MineStar Command for hauling takes advantage of the most sophisticated technologies available to boost safety, productivity and availability at busy mine sites. It enhances safety by removing operators from hazardous or remote sites. There are roughly 540 autonomous trucks equipped with Command for hauling, and these autonomous trucks have hauled more than 4.5-billion tonnes of material and safely travelled approximately 170-million kilometres with zero lost-time injuries.

Caterpillar recently collaborated with Guardhat to expand safety solutions for miners with Cat Connected Worker. The technology uses wearables to provide precise location of all workers to the mine monitoring system. It also allows communication between individuals, teams and sites. The connected devices include hardhats, personnel tags, asset tags and smartphones using Guardhat applications.

Safety on capital equipment in mining

According to thyssenkrupp's Krex, there should be no issue more important than safety in the operation of the mine or quarry. On the one hand, everything must be done to protect the employees in the mine but, on the other hand, mining equipment is also expensive and must be protected.

Odendal says digital technologies have opened up a new world as we see it every day. "The modern person nowadays collects data and is very familiar with the law of averages and probability theory. Data allows auditors to analyse broader industry data sets that were previously inaccessible." He says this enables auditors to better identify informational outliers and increases their ability to generate business insights and focus on business and financial reporting risk. This is also a huge contribution to the safety of workers, he says.

Odendal says technology has enhanced the ways in which the mining industry does this through, firstly, spatial data visualisation, which helps the mining industry to steadily move toward a future where it's possible to virtually construct and deconstruct buildings, plants, and mines before even breaking ground, to create a more sustainable and truly intelligent mine.

Secondly, geographic information systems (GIS) are a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface.

"By relating seemingly unrelated data, GIS can help individuals and organisations to better understand spatial patterns and relationships."

Thirdly, artificial intelligence shifts raw materials mining from a people-oriented operation to a process-oriented one, which is critical to ensure appropriate health and safety conditions for the mineworkers, a high level of accuracy, error elimination, and a faster decision-making process.

"Automated drones have made a huge contribution when it comes to mining," says Odendal. "Some of the functions include stockpile volumes and end-of-month reconciliation; terrain mapping and change detection; asset management and scheduling; situational awareness and emergency response; infrastructure and equipment inspection, and security and surveillance."

Lindholm says safety on capital equipment at mines and quarries is fundamental.

"These can be dangerous environments to work in and Volvo and its customers want staff to go home to their families safe and well at the end of every shift. Safety is one of the core Volvo brand values and Volvo CE has a vision of zero accidents, alongside zero unplanned stops, zero emissions, and 10 times greater efficiency. We design safety into every machine and strive for continuous improvement in this respect."

Digitalisation and mining safety

Odendal says digitalisation on capital equipment and the resultant safety at mining and quarrying operations is an area where more development needs to be done.

"South Africa is behind this development and mining companies sit on loads of good data collected from their equipment and operations, yet they hardly do anything with it." He says this data is a gold mine of insight that can help mines better manage their operations.

"The more information they have, the more they can make decisions that are tailored to their mine's specific needs."

He says data analytics can be used in practically every stage of the mining process – from extracting the ore and processing, to separating and concentrating raw materials. A digital strategy will become the basis for applying the data in a way that will improve energy usage, productivity, reliability, and safety, and reduce outages, emissions and costs.

Mogisen Iyer, operational technology lead for Accenture Industry X.O, says that, over the last few years, significant improvements in sensor technology, data analytics and wireless communication have made it possible to enable smart safety solutions to be retrofitted to both existing and new capital equipment, to make operations safer for plant personnel and to reduce the risk of damage to critical heavy mobile equipment (HME).

"Fatigue monitoring of operators can be improved with wearable devices which track body vitals such as physical activity, sleep, medical condition and stress. In addition, using complex data algorithms on real



Operator behaviour alerts transmitted via CareTrack telematics data can help improve safety by highlighting operators that may need additional training.

time HME information such as speed and location, we can determine if personnel are operating equipment under fatigue and are likely to cause an accident.”

Iyer says collision management for HMEs can also be improved by both radar and LIDAR sensor technology, where these devices can be used as proximity sensors to prevent both vehicle-to-vehicle and vehicle-to-personnel collisions.

“These are just a few examples,” he says. “Safety solutions on HMEs not only prevent loss of human life and injury, but can also assist with improved operational efficiencies, decreased maintenance costs and improvements in overall throughput, making the decision for investments into these types of technologies a no-brainer.”

Krex says there are many different ways to improve safety at mines and quarries.

“These include advanced collision avoidance systems, reduction of personnel in direct physical operations, monitoring systems of critical components such as steel structures, gearboxes, drives and many more.”

Lindholm says remote monitoring and proactive maintenance services such as ActiveCare by Volvo have the potential to improve safety, first by ensuring machines are in top, safe condition and, secondly, by reducing the movement of service technicians on site.

“An algorithm sorts through all the error codes and alarms transmitted from the machines via CareTrack telematics to the cloud, prioritising the cases according to urgency and severity and attributing probable causes.” He says this helps

the plant manager to determine whether immediate intervention is required for an issue or if the service technicians can wait until the next scheduled downtime.

“The engineers can also remedy small issues before they develop into more serious and expensive problems and always be ready with the right tools and parts.”

He says better site awareness leads to increased safety and this can be achieved via an offer such as the Map function, which gives operators better visibility of and insight into the movements on site.

Uptake by mines and quarries

Mining and quarrying operations are traditionally slow to adopt new technologies due to the scale and complexity of their operations and the perceived costs involved. On the question of whether the current climate post-COVID-19 provides a business case to start adopting digital technologies, Odendal’s short answer is “yes”.

“If there were any doubts about the necessity of digital transformation to business longevity, the coronavirus has silenced them. The interaction between people became contactless, and the vast majority of interactions with customers and employees had to take place virtually. With rare exception, operating digitally is the only way to stay in business through mandated shutdowns and restricted activity. It’s go digital, or go dark.”

He says this digital mandate isn’t new: “People just had to sharpen their pencils

and adapt to a new way of operating. Prior to the pandemic, a paradigm shift towards digitisation of the economy was already underway, but people were afraid to do it. Covid dropped us into a swim or sink position and the majority of people managed to swim.”

Accenture’s Iyer agrees: “Most definitely. We saw significant investment both pre- and post-COVID-19 by mining companies into developing and implementing digital technologies across the entire value chain of their operations. Many miners are already seeing significant benefits of these technology implementations in key areas of their operations such as mine planning, energy management and asset reliability and maintenance.”

He says digitalisation in the operational technology environment can be a very complex and challenging task, but can bring massive benefits to mining organisations.

“As such, advisory services to assist customers in taking this journey is an area where we as Accenture are experiencing a high amount of demand.”

Krex says the pandemic showed the world how important it is to rely on digital technologies to keep companies running.

“This is exactly the behaviour thyssenkrupp sees in our clients and their requests. Whereas customers were skeptical or even reluctant to embrace digital technologies before the pandemic, we are now seeing an increase in explicit customer enquiries about our digital products.”

Lindholm says connected machines is a trend that was accelerating even before the COVID-19 pandemic.

“More and more customers are seeing the value of using Volvo CareTrack telematics data on machine use, productivity, performance, and health to drive tonnes per hour production and cost per tonne improvements.

“For example, you can monitor machine idling and operator behaviour for opportunities to reduce fuel consumption through changes to the fleet set-up or operator training. Or you could keep an eye on machine health to plan maintenance and avoid any costly unscheduled downtime.

“If your machines are fitted with On Board Weighing technology, you can also monitor your fleet’s true productivity in tonnes per litre, as well as track load efficiency, number of cycles and overload percentages.”

He says being able to do all of this remotely was important during the pandemic but it’s important in Africa anyway as dealers may have a long way in terms of distance and time to travel to the machines. 🌍

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High performance screen media can offer exceptional open area – in some cases 30% more than traditional woven wire.

BENEFITS OF HIGH-PERFORMANCE SCREEN MEDIA

Choosing screen media for a screen box isn't as simple as it used to be. What once was just woven wire now includes a variety of alternative options, such as rubber, polyurethane, metal plates, high vibration wire, combinations of different materials and more. By *Serge Raymond*, manager, product technology, MAJOR

With each type comes countless new options for customisations of a screen deck to provide

enhanced efficiency and throughput – whether by using one type of media or blending multiple media.

Standard woven wire is often the cheapest option at first sight, but that's no reason for these alternative options to be passed over without careful consideration. Depending on the application, these innovative products can improve wear life; reduce pegging

and blinding; speed up the stratification process and better remove fines, increasing the overall quality of the screened product.

Following are a few reasons to consider high performance screen media.

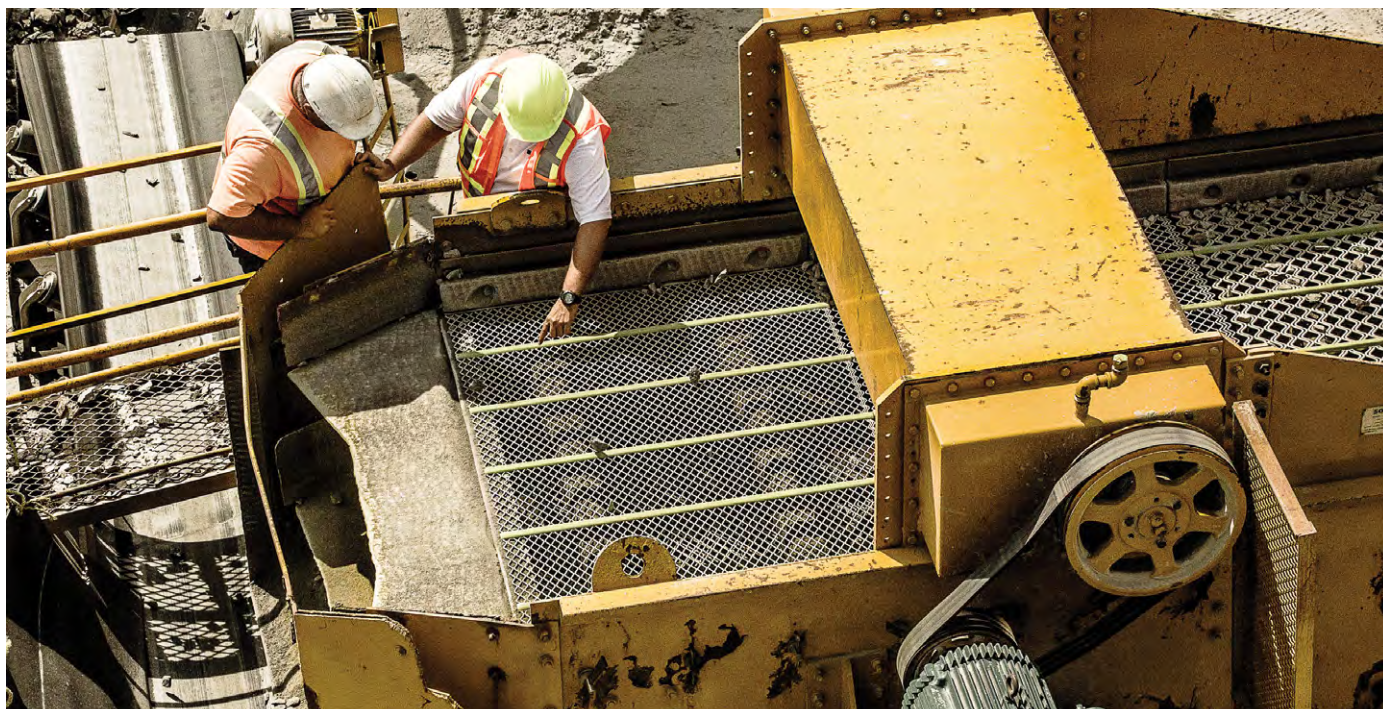
8 000 to 10 000

That frequency can be as high as 8 000 to 10 000 cycles per minute, as much as 13 times higher than the standard vibration of a screen box.

Prolong wear life

Most types of specialised screen media offer a much longer wear life than traditional woven wire. Thick rubber and steel plate media clearly mean greater durability, but sometimes sacrifice open area.

High performance media are



High performance screen media can improve wear life; reduce pegging and blinding; speed up the stratification process and better remove fines.

QUICK TAKE

Standard woven wire is often the cheapest option at first sight



Most types of specialised screen media offer a much longer wear life than traditional woven wire



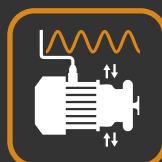
High performance screen media can offer exceptional open area – in some cases 30% more than traditional woven wire



Because screen machines are often placed at both the beginning and end of production, the right screen media can be key to the quality and volume of production



High vibration wire screens operate at a high frequency to accelerate the stratification process



High performance screen media can offer exceptional open area – in some cases 30% more than traditional woven wire and 50% more than traditional polyurethane and rubber panels.

made up of highly engineered wires held together with polyurethane strips, which eliminate cross wires with high wear spots that are common to woven wire and a few types of self-cleaning media. This results in optimal open area and a wear life as much as five times longer than wire alone.

Minimise screening issues

High performance screen media can offer exceptional open area – in some cases 30% more than traditional woven



The increased screening action from high vibration screen media spreads material over the entire screen's surface area on all decks.

wire and 50% more than traditional polyurethane and rubber panels.

It is often a good solution for issues such as pegging, blinding or material contamination. Some media are tapered to help solve these problems, while others use unique designs to allow wires to vibrate independently from hook to hook under material contact.

The result is high frequency vibrations from the wires, in addition to the vibration

from the screen box. This virtually eliminates near-size pegging on the top decks and fine material blinding and clogging on the bottom decks. It also means less risk of material contamination and cleaner retained product through the middle decks.

Improved efficiency

Because screen machines are often placed at both the beginning and end of production, the right screen media can be




key to the quality and volume of production. High performance media can offer the necessary efficiency boost because some kinds accelerate stratification and increase material separation.

High vibration wire screens operate at a high frequency to accelerate the stratification process. That frequency can be as high as 8 000 to 10 000 cycles per minute, as much as 13 times higher than the standard vibration of a screen box.



The increased screening action spreads material over the entire screen's surface area on all decks. This moves the material faster while maximising contact to ensure optimal throughput with no carryover. The result is a higher-quality end product.



This type of screen media can also be extremely effective in removing fines. The result can be less water needed to wash material or, sometimes, a complete elimination of necessary water use.

One type of screen media isn't always the option, and the answer isn't immediately obvious. Consult with a dealer and manufacturer to determine the best type of media to solve screening problems and improve performance. The right solution could mean turning a screen that was a bottleneck into a profit maker. 🌟









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The first Roadtec SX-6EX unit to arrive in South Africa.

SOUTHERN AFRICAN DEBUT FOR ASTEC'S SX-6EX

As part of its product expansion programme, driven under the OneASTEC business model, Astec Africa Middle East is launching the Roadtec SX-6EX, marking the company's first foray into the southern African soil stabiliser/reclaimer market, writes *Munesu Shoko*.

In September 2021, Astec Industries announced a major global restructuring of its business model, dubbed OneASTEC. Under the previous structure, 16 companies operated independently across a range of different market segments. OneASTEC therefore ushered in a new era for the company, with all the brands coming together under common operating systems across the entire business.

"Our company is 'Built to Connect' – that's our purpose. We are committed to connecting people, processes and products, as well as advancing innovative solutions from rock to road. OneASTEC helps us achieve that purpose," explains Johan Goosen, regional MD – Africa

Middle East at Astec Industries.

As part of the restructure, Astec Africa Middle East (AME) has embarked on a product expansion programme across all market segments. One area where this is taking priority is the Infrastructure and Process Solution division, where a number of products that were previously not available to the local market are being rolled out.

The latest to find its way to the southern Africa market is the Roadtec SX-6EX soil stabiliser/reclaimer, which marks Astec AME's grand entrance into the soil stabiliser/reclaimer market. The first unit has already arrived in South Africa, with more expected in due course, confirms Calvin Fennell, regional sales director Infrastructure Solutions, Astec AME.



The SX-6EX's durable frame is built from strong A656 grade 80 steel, which has twice the yield strength of the mild steel in other competitor machines on the market.

QUICK TAKE

As part of its product expansion programme, Astec Africa Middle East is launching the Roadtec SX-6EX stabiliser/reclaimer in southern Africa

With the Roadtec SX-6EX soil stabiliser/reclaimer, the company believes it has the right tool to launch a challenge for a sizeable share of the market, currently in the region of five to eight units a year

A major feature that sets the Roadtec SX-6EX soil stabiliser/reclaimer apart from the competition is the parabolic machine's drum housing, which is integrated into the mainframe

Powered by a 447-kW Cummins QSX15 engine, the SX-6EX weighs in at 33 112 kg, offering a combination of power and mobility in road rehabilitation, cold recycling and soil stabilisation applications

Right tool

With the Roadtec SX-6EX soil stabiliser/reclaimer, Fennell is confident that Astec AME has the right tool to launch a challenge for a sizeable share of the market, currently in the region of five to eight units a year. While the annual sales volumes remain low, Fennell believes that the soil stabiliser/reclaimer market is set for a substantial growth in the next few years, largely driven by the environmental focus and the need for expanded road infrastructure across southern Africa.

"We see great opportunity for these solutions in southern Africa. Soil stabilisation is efficient in terms of time, money and natural resources," explains Fennell.

Asphalt reclamation, also known as full depth reclamation (FDR) – a cost-effective method of pavement rehabilitation – is growing in popularity due to the state of the roads across the continent, says Fennell. During FDR, the full thickness of the asphalt surface and a portion of the underlying base is uniformly pulverised and graded to serve as the base for a new road. Additives such as cement or asphalt emulsion are often incorporated to increase strength. The result is a homogenous layer with improved structural capacity.



A full-view cab gives the operator an excellent view of the cutting edge and any obstacles that may be in the way.

Key differentiator

A major feature that sets the Roadtec SX-6EX soil stabiliser/reclaimer apart from the competition is the parabolic machine's drum housing, which is integrated into the mainframe. This is in direct contrast to competitor machines, which often come with free floating drum housing.

"On most competitor offerings, the drum housing is hydraulically pushed into the ground, whereas on the SX-6EX, the machine lowers down with the drum and 100% of the machine weight is over the drum balanced between the wheels for maximum down force which also allows for bi-directional cutting," explains Fennell.

The SX-6EX's durable frame is built from strong A656 grade 80 steel, which has twice the yield strength of the mild steel in other competitor machines on the market. The custom-made frame is designed to perform in all terrains by providing substantial ground clearance. The wheels are suspended by four independently controlled, hydraulically adjustable leg assemblies that are bolted to the mainframe.

Machine in detail

Powered by a 447-kW Cummins QSX15 engine, the SX-6EX weighs in at 33 112 kg, offering a combination of power and mobility in road rehabilitation, cold recycling and soil stabilisation applications. The machine can cut up to 508 mm deep and 2,44 m wide. Fennell says this machine size constitutes about 80% of the local stabiliser/reclaimer market.

Weight balance and power allocation are critical in all stabilisation and reclamation applications. The weight of the SX-6EX is perfectly distributed between the two axles, allowing the machine's engine to work as efficiently as possible with maximum tractive effort. With ideal weight placement and a balanced four-wheel drive, the machine is better equipped to consistently perform in arduous job environments.

Commenting on further key features and benefits of the machine, Fennell highlights the SX-6EX's cooling system, which introduces air from the top of the machine at the cleanest possible area, before it is exhausted away from the machine and engine through the rear radiator package. "By pulling air from the top of the machine, the amount of dust travelling through the cooling system is limited," explains Fennell.

Operator in mind

Based on Astec's understanding that a comfortable operator is a key to productivity and safety on site, the new machine is designed with operator comfort and visibility in mind. The operator station's seat, for example, slides laterally and swings 90 degrees to help create the perfect vantage point for which to work. The operator platform also slides 457 mm past the right of the machine for additional visibility. A full-view cab gives the operator an excellent view of the cutting edge and any obstacles that may be in the way.

A standard backup camera system provides additional visibility while the machine is operated in reverse, thus maximising safety on site. A screen inside the cabin conveniently displays the area directly behind the stabiliser when reverse is selected and can also be viewed during operation allowing the operator to check

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The wheels are suspended by four independently controlled, hydraulically adjustable leg assemblies that are bolted to the mainframe.

his work. This adds a level of comfort and convenience when navigating the machine around a busy site.

The machine's controls and display screen are conveniently arranged and move with the seat to allow for safe and ergonomic machine operation. Joystick controls and four different steering modes increase the machine's manoeuvrability and ease of operation.

Our company is 'Built to Connect' – that's our purpose. We are committed to connecting people, processes and products, as well as advancing innovative solutions from rock to road. OneASTEC helps us achieve that purpose.

"The ergonomic design of the cabin ensures maximum operator comfort and safety. An air conditioning and heating system, along with a cab pressuriser, give the operator a comfortable and dust-free environment in which to work. The cabin is also built with soundproofing and is rubber-isolated to keep noise levels down," concludes Fennell. ☺


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THE VERSATILITY AND ENDURING APPEAL OF THE SKID STEER IN THE SA MARKET

Skid steers are arguably the most popular compact construction machines on any job site due to their versatility, compact size, manoeuvrability, ease of operation, competitive pricing and the vast array of attachments that they can use. This feature takes a look at the size of the market for these machines, their applications, and ranges available in the local marketplace. **By Mark Botha**



"A skid-steer loader is truly a 'jack of all trades'. With their various attachment options, these units can be found performing many tasks on different types of jobsite."

Warren Alexander, branch manager
Isando at CASE Construction SA.



"As a tool carrier, the skid steer is at home in most if not all industries, adding value to most applications."

Clayton Sadler, Bobcat sales manager at
Goscor Earthmoving Equipment.

In recent years, Skid steer loaders have become commonplace in a multitude of industries within the diverse South African market, says Keon Kardolus, national sales manager (EMC) at ELB Equipment. This, he says, can mainly be attributed to features such as compact size, lifting capacity and manoeuvrability.

"In addition, customers are finding that skid steers are often a good investment over more expensive, single-purpose equipment." He says part of the reason for the growth of skid steer loaders is their versatility.

"We find that we are selling these machines into new and exciting applications because of the extensive range of attachments being developed for skid steer loaders – most of these attachments are hydraulically driven which adds to their appeal."

Warren Alexander, branch manager Isando at CASE Construction SA, agrees, saying that skid steers are among the most popular compact construction machines found at job sites due to their versatility, ease of operation, ability to tackle a wide range of jobs, and their low cost compared to larger machinery.

"Skid steers are also compatible with a



GEHL skid steer loaders by ELB Equipment feature PowerView® Boom Lift Arm, the Radial, Hydraloc™ System and ROPS/FOPS cabs, among others.

large number of attachments that increase the diversity of the machine,” he says.

Clayton Sadler, Bobcat sales manager at Goscor Earthmoving Equipment, says that, as a tool carrier, the skid steer is at home in most if not all industries, adding value to most applications. He says skid steers are popular for the large range of attachments giving the end-user added value as one machine can be applied in many different applications.

“Some say that versatility equals appeal when it comes to machinery,” says Mishen Naidoo, engineering/solutions manager at Manitou Group. “With this in mind, the skid steer is seen as one of the most appealing machines locally due to the various tools and implements that can be driven by the machine.” He says the combination of excellent traction, speed, manoeuvrability, and competitive pricing makes the machine a valuable commodity to any industry within the local market.

According to Wim Farmer, business development manager at New Holland Construction Equipment, skid steer loaders are “super universal machines able to carry almost any type of attachment, and with hundreds of attachments to choose from, they can transform into power work horses capable of rock cutting, planning and mulching, to mention a few.”

Thinus Botha, Senior Sales and Dealer Consultant at Revaro, notes that skid steers are widely used by contractors, farmers, landscapers, construction companies and more.

“Firstly,” he says, “they can be easily transported on a truck together with other equipment items, which cuts back on transport costs. In addition, they can also be easily manoeuvred in small or compact spaces like between trees, on small paths, and between buildings. Along with lower operating costs, this makes them a popular choice in the South African market.”


He says the increased demand for skid steer loaders is due to an increase in the number of infrastructure and building projects and the ever growing agricultural industry where skid steers are used for cleaning out chicken coups and driving feed or fertiliser around on site where they are manufactured for use in agriculture.

“Skid steers are useful in construction tasks where larger trucks cannot reach or are difficult to operate. Another factor that makes these loaders so sought after is that they can be furnished with various attachments for specific functions such as forks, buckets, hydraulic hammers, augers, stump grinders, trenchers, and landscape rakes.”


The local market

According to Manitou’s Naidoo, the skid steer is a popular machine and the market

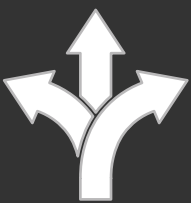
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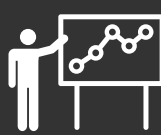
Customers are finding that skid steers are often a good investment over more expensive, single-purpose equipment



Skid steers are among the most popular compact construction machines found at job sites due to their versatility, ease of operation, ability to tackle a wide range of jobs, and their low cost compared to larger machinery



Skid steers are popular for the large range of attachments giving the end-user added value as one machine can be applied in many different applications



The increased demand for skid steer loaders is due to an increase in the number of infrastructure and building projects

TALKING POINTS

“Skid Steer loaders are usually the first machines to show up at a new build. They are the perfect machines for earthmoving, land preparation and concrete flatwork and are applied in construction, mining, agriculture, plant hire, quarries, the public sector and industry.”

Keon Kardolus, national sales manager (EMC) at ELB Equipment.

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CASE Construction SA's skid steers include two platforms, the small platform units SR130B and SR150B, and the large platform units from the SR175B to the SV300B models.



"Skid steers' flexibility and durability make them ideal for rugged sites with limited space. They are also extremely manoeuvrable and lightweight."

Mishen Naidoo, engineering/solutions manager at Manitou Group.



"Skid steers can be easily transported on a truck together with other equipment items, which cuts back on transport costs."

Thinus Botha, senior sales and dealer consultant at Revaro.



"Skid steer loaders are super universal machines able to carry almost any type of attachment, and with hundreds of attachments to choose from, they can transform into power work horses."

Wim Farmer, business development manager at New Holland Construction Equipment.

in 2022 so far and New Holland expects this to continue.

"This product segment is not the largest segment but an important segment showing continued growth," he says.

ELB Equipment SA's Kardolus notes that full year results show 252 skid steer loaders sold for the year ending 2021.

Goscor Earthmoving Equipment's Sadler says that, until April this year, sales across all classes were at around 150 units sold.

"Based on this good start to the year, we at least expect to exceed 2021 sales which were around 230 units."

Applications

"A skid-steer loader is truly a 'jack of all trades'," says Alexander. "With their various attachment options, these units can be found performing many tasks on different types of jobsite – from earthmoving on a construction site to landscaping a golf course and cleaning stalls on a farm."

The GEHL Skid steer loaders from ELB Equipment, says Kardolus, are extremely versatile machines with manoeuvrability and lifting capacity at their core.

"Skid Steer loaders are usually the first machines to show up at a new build," he says. "They are the perfect machines for earthmoving, land preparation and concrete flatwork and are applied in construction, mining, agriculture, plant hire, quarries, the public sector and industry."

Goscor Earthmoving Equipment's Sadler adds that skids steers can be found in most industries, from mining to agriculture, construction, road works and many more.

"This is due to a large extent to the attachments available, taking the skid steer from just a loader to a specialised machine or tool carrier."

Naidoo agrees on the versatility of the skid steer and the numerous attachments that it can carry.

"Their flexibility and durability make them ideal for rugged sites with limited space," he says. "They are also extremely manoeuvrable and lightweight."

"Some of the functions which can be performed by a skid steer include earthmoving, excavating, levelling, digging and trenching (with a backhoe or auger attachment), as well as transporting and dumping materials. When fitted with a sweeper attachment, skid steers can also be used to clean debris."

Farmer says New Holland has sold skid steers for use in construction digging, cleaning and materials handling; agricultural fence post hole digging with augers and loading animal feed and mulching material, as well as in infrastructure trenching and

is reasonably large in South Africa.

"The skid steer market has remained relatively stable over the past few years. There are some applications that are partic-

ularly suited to skid steers, so this market is expected to remain constant," he says.

In 2021, says Farmer, this product segment took a small dip but has bounced back

New Holland's skid steers feature a patented Super Boom, a vertical linkage offering great lift height and reach perfect for loading trucks and hoppers.



Skid steers are also used to drive into houses, warehouses, office blocks and shopping centres and remove building rubble among others during and after construction. Due to the size of skid steer loaders they can work inside buildings and other small areas.

Skid steers are also very popular with building supplies companies as they load small quantities of their sand and stone for clients, so a building supplies company can sell their sand to builders by the truckload at 0,33 or 0,5 of a cube. The skid steer loader can then load the sand onto the bakkie's body. The 0,33 or 0,5 m³ depends on which skid steer model you use.

Many building supplies companies have small yards, and the skid steer is of course ideal for that.

Ranges in the market

Alexander says CASE Construction SA's skid steers range from 2,3 t to 3,2 t and includes two platforms, the small platform units SR130B and SR150B, and the large platform units from the SR175B to the SV300B models. The company currently brings eight variations of its skid steer range into South Africa.

ELB Equipment supplies skid steers from 0 to 1 100 kg which, Kardolus says, comprises the smallest to largest skid steers available in the market.

Bobcat, supplied by Goscor Earthmoving Equipment, currently has 15 models ranging from 1,2 t to 4,5 t. Bobcat SA imports a total of 11 of these models into South Africa.

Naidoo says Manitou South Africa currently imports five major categories of skid steer that are suited to the local market.

"These machines are available in both open and closed cab configurations to ensure that the machine suits the application," he says. "This is not the complete range, and special orders for different types of skid steer machine can be placed if the customer requires."

Farmer says New Holland offers seven skid steer models and three compact track loader models.

"For skid steer loaders, we start off with the L313 with a rated operating capacity (ROC) of 590 kg, all the way to our largest skid steer, the 1 360 kg L330.

"On our compact track loaders (skid steers on tracks) we start with the C327 with an ROC of 1 225 kg through to the largest, the C338, at 1 723 kg."

Botha says Revaro offers a range of skid steers including the S440 which features an operating load of 730 kg with a dumping height of 2 266 mm with radial lifting; the S460 with an operating load of 860 kg and dumping height 2 068 mm with radial lifting; the S550 with an operating load of 830 kg



Bobcat, supplied by Goscor Earthmoving Equipment, currently has 15 models skid steer ranging from 1,2 t to 4,5 t.

the laying of fibre optic cables, cold planning and circular saw cuts.

Botha says choosing the right skid steer and attachment is highly dependent on the task at hand. In demolition, the skid steer, equipped with demolition shears, can help demolish flooring, concrete, drywall and other materials. On roadwork projects, the skid steer can be fitted with a cement mixer or pavement miller and other attachments can be used for demolition, grading, paving and patching.

Grappler attachments feature retractable claws for gripping and grabbing on construction sites and in agricultural applications. For excavation, digging and trenching, there are a variety of attachments such as backhoe, auger, trencher and wheel saw attachments. Sawtooth bucket attachments for skid steers are effective for digging in rocky landscapes and hard-packed soil.

In grading and backfilling, the skid steer

can fill in holes, level out the ground and aerate it using a bucket attachment. A rake attachment or grading bar works even better when levelling the ground. Bucket attachments also enable the skid steer to carry equipment and materials around the job site.

Rotary brush cutter attachments allow skid steers to cut down tall grasses and other growth to efficiently clear an area. Mulching heads, brush cutters, heavy-duty mowers and other hydraulically powered attachments are also very effective for converting skid steers and compact track loaders into land clearing machines. Where the primary application is clearing brush, a rotary cutter or flail cutter would be a good choice.

Skid steers can also be useful in warehouses. A fork attachment allows the skid steer to move pallets and other materials. Vertical lift rather than radial lift skid steers are ideal for lifting materials and placing them in a warehouse.



A 1650 R skid steer from Manitou.



The S550 skid steer from Revardo has an operating load of 830 kg and dumping height of 2 266 mm with radial lifting.



New Holland offers seven skid steer models and three compact track loader models.

and dumping height of 2 266 mm with radial lifting, and the S770 with an operating load at 1 600 kg and a dumping height 2 540 mm with vertical lifting.

"The S550 model is the most popular as it is a tight radius skid steer loader combining excellent manoeuvrability in tight areas with the reach and visibility needed for applications such as dumping materials over walls, back-filling or loading flatbed trucks."

Features and benefits

Kardolus says the GEHL range of skid steer loaders sold by ELB Equipment are great value for money machines with features such as PowerView® Boom Lift Arm, the Radial, Hydraloc™ System and ROPS/FOPS cabs, among others.

Sadler says Bobcat offers a range of original attachments and provides solutions for most applications in the range. Skid steers from Bobcat offer an impressive lift capacity versus machine weight.

Naidoo says skid steers from Manitou come with a range of safety features including the Hydra-loc feature which locks the machines' brakes in the event of the operator bar being raised, or of engine power loss. "This ultimately prevents a machine runaway that seems to be a common occurrence with many users."

The operator cabin is also rated for roll over protection (ROP) and fall on protection (FOP), which gives users surety of operator safety in the event of a site accident.

"Aside from this, there are the standard features which include air conditioning on closed cabs, and high-flow hydraulics for attachments that require additional pressure and flow. "Our machines also come standard with a 2-year complementary telematics subscription for Easy Manager, to assist users in obtaining maximum productivity and keeping cost of ownership low."

Farmer says New Holland's skid steers feature a patented Super Boom, a vertical linkage offering great lift height and reach perfect for loading trucks and hoppers.

"Our hydraulic pumps are directly mounted to engine, which means they deliver more power with fewer wearing parts, so reducing maintenance and machine downtime," he says. "With our easy access flip-forward cabs and large rear door, we provide quick and easy access to all components and maintenance items. We offer a full line up of hydraulic packages to suit any application or attachment."

Botha says Revardo offers a completely re-engineered cab providing operator comfort; superior power and hydraulic performance to do more, faster and better; simplified maintenance and serviceability, as well as a newly engineered design with improved durability. 🌟

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When someone is in the blind spot zone, Side Collision Avoidance Support informs the driver via a red light on the relevant side mirror.

VOLVO TRUCKS' SAFETY DNA LEADS TO INNOVATION

Some would argue that Volvo is synonymous with the word safety. Safety is built into the brand's heritage, and it is a central part of the company's identity.

"We innovate and produce solutions that prevent accidents from happening – and reduce the consequences if an accident does occur," said Waldemar Christensen, MD of Volvo Trucks South Africa. "In addition to making our trucks as safe as possible, we promote safe driving and raise awareness about traffic safety."

Decades of safety research

Since 1969, the Volvo Trucks accident research team has compiled and analysed data about accidents involving their vehicles. These results provide valuable input when creating trucks for the future.

Globally, more than 1.3-million people die each year in road accidents. Aiming for safety for all road users is crucial if these numbers are to be reduced.

"We look at safety from different perspectives, inside as well as outside the truck. It's this approach that enables us to create systems that go beyond what's required by authorities. And it guides us towards our vision of zero accidents with Volvo trucks," says Christensen.

For Volvo Trucks, developing safer trucks has always been about more than protection. Utilising the advances in technology, the company creates smart safety systems that are designed to monitor the truck behaviour and surrounding traffic to predict safety hazards and intervene to prevent accidents from happening.

The systems may be out of sight, but they are engineered to activate, to support the driver in many different situations, making the trucks as safe as possible for the driver and all other road users.

According to Volvo Trucks' research, more than 90% of all accidents are caused by the human factor.

"It's true that in most accidents the human factor plays a role – which includes all road users, not only truck drivers. I would say that most truck drivers are very skilled," says Anna Wrige Berling, traffic and product safety director at Volvo Trucks.

"And it's important to remember that there is also a positive side to the human factor. Truck drivers – as well as other road users – avoid many more accidents than they cause, thanks to their actions and reactions. Having said that, things like driver training, an increased safety mindset, and risk awareness among all road users are very important in reducing the number of accidents."

Traffic safety

Traffic safety is a complex puzzle, and the biggest pieces of that puzzle are safe vehicles, safe roads and safe road users. Volvo Trucks' main contribution is to develop safe vehicles, but the company



The Volvo Trucks Accident Research Team's findings guide the company to develop technology and collaborate with policy makers that eventually make roads safer.

QUICK	TAKE
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is also dependent on investment in an improved traffic environment and, not least, efforts to achieve a better safety mindset among all road users.

Vehicle safety will remain the company's focus and they are committed to constantly develop new systems to address more traffic situations and accident types. One of the easiest ways to avoid accidents and injuries is for operators to use the truck's safety systems in the way they are intended.

The seat belt is probably the clearest example that this is not always the case. It is far from used all the time – leading to fatal consequences. Sadly, the same applies to other safety systems – they are not used to their full extent and sometimes used incorrectly. This is a problem that needs to be solved.

Designed for safety

The Volvo Trucks Accident Research Team's findings guide the company to develop technology and collaborate with policy makers that eventually make roads safer, one step at a time.


The details of the investigated accidents provide input for the development teams so that they can make design improvements to reduce the risk of these accidents happening. For each type of accident, the team can identify what safety features can mitigate or completely avoid the accident that a specific scenario is describing.

One such example is adaptive high beam headlights. The system improves safety for all road users by automatically disabling selected segments of the LED high beam when the truck approaches oncoming traffic or another vehicle from behind.

"This ground-breaking feature gives drivers far better night-time driving conditions, especially on rural South African roads," says Christensen.

Another example is Volvo Trucks' side collision avoidance system. When someone is in the blind spot zone, the system, called Side Collision Avoidance Support, informs the driver via a red light on the relevant side mirror. If the driver indicates a lane change via the turn signal, the red light starts to flash, and a warning sound emits from the side of the potential collision. The driver is alerted and can brake the truck allowing, for example, a cyclist to pass.

"We envision a sustainable future where transport solutions are safer and more efficient for the positive development of society. As long as there's a risk of accidents occurring, Volvo Trucks will continue to lead the way for safer transportation. More than 90 years of dedication to safety has taught us that requirements keep changing," says Christensen. 🌱



Today's clients want to choose how they purchase and consume business insurance products.

EMERGING TRENDS IN BUSINESS INSURANCE

Like many other sectors of the economy, the insurance market is experiencing rapid transformation. *Capital Equipment News* unpacks some of the emerging trends in the business insurance space. By Munesu Shoko.

By nature, the business of insurance entails defining, evaluating and mitigating risk. For better risk mitigation in such a complex and ever evolving environment, insurers are increasingly adopting a customer-centric approach in order to provide solutions which speak directly to customer needs.

According to Jason Mellow, MiWay head of Business Insurance, clients are increasingly looking for products that are easy to understand and suited to their unique business requirements.

Clients also want to choose how they purchase and consume business insurance products. As an example, some clients prefer telephonic quotations and sales, while others prefer a more personalised face-to-face or broker experience. Insurers, urges Mellow, should be able to tailor their services to meet clients where they are at, not only in terms of their personal, but also their business journey.

"At MiWay, emerging trends are the drivers behind the products we design and continue to offer the local market. And we go to great lengths to ensure that our policies are presented with simplified wording that is less 'insurance-speak' and more 'people-speak'. What I mean by this is that our products and services, including

the way in which we talk about them, are all about the person's experience of business and the world in their everyday lives," says Mellow.

He adds that when you talk to clients about "their assets rather than the equipment they need to protect to sustain their business, it's a language they understand". In this way, he adds, clients have the freedom to choose products that speak to their individual business, without the pressure of paying premiums for services they may not need.

Advancement of fintech





One of the emerging trends, says Brandon Saunders, director of Short-term Insurance at ASI Financial Services, is the advancement of fintech, with more people wanting to acquire insurance in their own time and through their mobile devices. They also want a lot more flexibility with their customised insurance policies, including the ability to add or remove specific items or vehicles to their profile.

"However, we see a different approach on the commercial and corporate side, where clients prefer consulting with a professional. Many clients still prefer face-to-face consultations," says Saunders

This hybrid approach, adds Saunders, accommodates



Insurers should be able to tailor their services to meet clients where they are at, not only in terms of their personal, but also their business journeys.

QUICK TAKE	
For better risk mitigation in such a complex and ever evolving environment, insurers are increasingly adopting a customer-centric approach in order to provide solutions which speak directly to customer needs	
Clients are increasingly looking for products that are easy to understand and suited to their unique business requirements	
A 'digital first' urgency is seemingly sweeping across the insurance landscape. Post-COVID, says Mellow, there has been increased demand for technology to enable clients to manage their own insurance portfolios	
Another notable trend is the rise of IoT devices and telematics. This technology allows customers to remotely monitor their big-ticket assets	

both these preferences – where if someone doesn't want a telephonic conversation to address their query, they still have the option to go onto an app on their mobile phone and add another vehicle to the policy, for example. While there is definitely a big digital migration, insurers must be able to accommodate both preferences.

"In addition to the hybrid approach, insurers still work in a highly regulated industry, which protects the interest of the consumer. Part of this omnichannel approach is therefore to ensure that when we use digital tools like chatbots or autonomous channels, the customer still gets the best service and advice they require," he adds.

Another notable trend is the rise of IoT devices and telematics. This technology allows customers to remotely monitor their big-ticket assets – they can see whether their big machinery or vehicles are being treated with care or not, what they are being used for and the rate of wear and tear, among other important parameters.

There is also a different generation of buyers in the marketplace. "On the one hand, there is a generation of 'Baby Boomers' who still will want face-to-face engagements for their insurance queries. On the other, millennials entering the market want to engage in a more digitised way, while the Generation Z also procures differently," says Saunders.

To respond to these trends, ASI is digitising its customer journey. Traditionally, says Saunders, the business always regarded customer lifecycle as a traditional channel. However, the company is now looking at offering those traditional solutions in digital form, like rolling out WhatsApp chatbots, talking to providers that can offer cutting-edge digital solutions and providing those products over digital channels.

ASI is also looking at consolidating its operations so that these innovations happen on one streamlined system. This forms part of the company's efforts to digitise the customer journey and lifecycle and look at which parts of the insurance model would become more efficient if they were digitised. ASI is also focusing on hyper-personalisation, where aspects of its offerings are tailored for its clients and can work hand in hand with the technological part of the business.

Digital first

A 'digital first' urgency is seemingly sweeping across the insurance landscape. Post-COVID, says Mellow, there has been increased demand for technology to



Jason Mellow, MiWay head of Business Insurance.

"If the individuals controlling decisions are not comfortable with a new digital start-up in the industry, they will buy it out, so they don't have to compete with it. But things will change because those people won't always be making those decisions, and the market will determine what it wants at the end of the day – the modern market will either find what it wants or create it," he adds.

Looking ahead, Mellow believes that industry players will continue to simplify their offerings and approach and make the user experience far more pleasant. As much as technology is going to be key, good old fashioned personal empathy and assistance will never date, he says.

"Although the industry has legacy systems, insurance companies are now employing the services of digital companies and getting them to redesign and revamp products. Companies are now also employing younger staff who are comfortable with technology and the efficiency that can be created through automation. Companies no longer want to do things the old way, they want new ways of thinking," says Saunders.

He believes that the appetite for digital adoption among insurance companies is high. While international markets have already rolled out highly advanced products, Saunders says some of these advancements are still to find their way to South Africa.

“For example, insurance clients in the United States and Europe can take a few pictures of a motor vehicle accident scene and a voice recording of a witness, and artificial intelligence (AI) will determine the speed the vehicles was travelling at. Added with sentiment analysis, this can determine exactly what happened, where the damage is, what parts need to be repaired, and where the nearest part shop is, before approving that claim in seconds and deploying crucial Value-Added Products. This is the efficiency and effectiveness a South African customer will expect in the near future.” concludes Saunders. 🌐

Information derived from technologies such as telematics can also help clients improve their risk profiles by responding constructively to information about their driving behaviour; by the same token, technology can also help insurers assess an individual's risk more accurately, leading to fairer premiums.

At the same time, he adds, greater reliance on technology still needs to be complemented by good, old-fashioned personal interaction. "In fact, one could argue that technology frees insurers up to build long-lasting relationships with clients."

For Saunders, a digital-first approach is about going to where the customer is going and anticipating their needs. Digital solutions are a way to get that done. For digital disruption to exponentially accelerate, however, it requires investment in technology and a commitment from leaders within the insurance industry.

"Of concern is that the industry is still often led by people not comfortable with technology or the rate of change, which impacts how they interact with customers. That creates a gap

Brandon Saunders, director of Short-term Insurance at ASI Financial Services.

TALKING POINTS

Volvo Group starts process to establish battery production plant



To meet the growing demand for battery electric heavy-duty vehicles and machines, the Volvo Group has initiated the process to establish a large-scale production plant for battery cells in Sweden.

"We aim to lead the transition to a decarbonised transport system and have the long-term ambition to offer our customers solutions that are 100% fossil free. There is a strong demand from our customers already today, and by 2030, it is our ambition that at least 35% of the products we sell are electric. This ramp-up will require large volumes of high-performing batteries, produced using fossil free energy and it is a logical next step for us to include battery production in our future industrial

footprint. We aim to do this together with partners and the journey starts now," says Martin Lundstedt, president and CEO of the Volvo Group.

An extensive site localisation study has been done, which indicates that the Skaraborg region in Sweden is an ideal location for the plant. The proposed site in the municipality of Mariestad is situated close to the Volvo Group's current main powertrain plant in Skövde and will benefit from the region's existing industrial and logistics infrastructure and build on a strong heritage and world-class competence in advanced, high-volume manufacturing, while having access to Sweden's rich supply of fossil-free energy. The Volvo

Group's R&D centres and headquarters in Gothenburg are only two hours away.

The Volvo Group plans to gradually increase capacity and reach large-scale series production by 2030. The battery cells will be designed specifically for commercial vehicle applications, supporting the global roll-out of electric trucks, buses, construction equipment and electric drivelines for different applications.

Establishment of the production site is subject to approvals from relevant authorities. The final localisation will be determined after the public consultation has been conducted and operations are subject to environmental permit approvals. 🌱

Bridgestone collaborates with Microsoft to accelerate advanced tyre analytics integration

Bridgestone Corporation (Bridgestone) has announced a collaboration with Microsoft to use Microsoft Azure to accelerate development and go-to-market strategies in support of Bridgestone's digital transformation and sustainable solutions portfolio. "Since our first collaboration announcement in 2020, Microsoft has been a valuable partner in both our European and Americas markets," says Paolo Ferrari, joint global chief operating officer, Bridgestone Corporation, and president & CEO, Bridgestone Americas. "We are excited to build on this collaboration with enhanced and expanded offerings that allow Bridgestone globally to develop new innovations and quickly deliver them to our customers aligned with the Bridgestone E8 Commitment."

Advanced and predictive maintenance analytics deliver greater productivity and efficiency for customers. Using Azure will enable Bridgestone to create value for customers, primarily global fleet and OEM customers, by integrating advanced tyre

analytics to better understand tyre wear and casing health to maximise tyre re-treading and inform when tyre maintenance may be needed. Both companies will continue to use the Microsoft Connected Vehicle Platform to capture and analyse tyre data in real-time as part of a fully integrated vehicle ecosystem.

"We know that uptime, driver safety and total cost of ownership are paramount for fleets, for example," said Ferrari. "The Connected Vehicle Platform allows us to provide insights through each of these lenses, as well as others, using data directly from the tyre to unlock value that otherwise remains trapped." Bridgestone will also build new cloud capabilities using Azure that further streamline and modernise the company's core tyre business and IT operations, including workplace productivity. Bridgestone will use Microsoft solutions to strengthen operational effectiveness and deliver increased flexibility and scalability across enterprise tools and platforms. Improved agility across core infrastructure will result

in quicker expansion of tyre-centric solutions to the customer, improved efficiencies and collaboration across the enterprise, more robust governance and security, and overall operational cost savings.

"As the world becomes more digital and data driven, it's exciting to see how Bridgestone is working to provide new solutions and data analytics to their customers," said Sanjay Ravi, general manager, Automotive Mobility and Transportation for Microsoft. "Our long-standing relationship with Bridgestone has led to many successes and we look forward to supporting their journey in delivering new solutions that result in improvements, fleet management and overall business efficiencies." The Bridgestone E8 Commitment consists of eight values that Bridgestone has committed to creating together with employees, society, partners and customers to realise a sustainable society. The initiative with Microsoft will help Bridgestone deliver its "Efficiency," "Extension" and "Economy" values.

John Deere introduces new articulated dump truck to southern African market

John Deere has introduced the new 460E-II articulated dump truck (ADT). This John Deere designed machine delivers ultimate productivity with a redesigned wider dump body, electrical and hydraulic systems, and new drive modes to help you get the job done in various conditions.

The E-II Trucks combine the most popular features of the E-Series line with customer-driven performance and operation enhancements, resulting in a machine that is easier and more cost effective to operate.

A vital feature of this machine is the redesigned dump body, which is wider and has a lowered and levelled rail height to improve material retention and allow it to be loaded easily. The bin rail features an angled top, helping to reduce material spillage while travelling. The 460E-II model is also available with a new ejector body solution. This solution allows operators to spread a load over a given area and can be used in areas with overhead powerline concerns or where the risk of rollover is high due to steep grade unloading. The three drive modes available on the 460E-II ADT help optimise the drive-train, reduce inputs from the operator, and enable easy customisation.

Normal Mode for everyday operation reduces fuel burn by up to 7% compared to existing models. In contrast, Eco mode,

when conditions allow, conserves fuel by managing engine power delivery and optimising transmission response for those conditions, improving fuel consumption by up to 12% compared to Normal Mode. Traction Mode optimises differential lock for maximum tractive effort in soft and slippery ground conditions.

The John Deere 460E-II Articulated Dump Truck axles are designed for heavy-duty and longer life. They are lubricated, filtered and cooled to extend their service life, while the spring-applied, hydraulic-released park brake is also highly reliable.

The inboard wet-disc brakes run cool, clean and unexposed. The braked axles are each force cooled and filtered separately. The cooling oil is separate and not shared, ensuring that cross contamination is never possible. The hose and wire routing on the ADT has been simplified to reduce rubbing and improve reliability, while the factory-installed auto lube further boosts uptime and reliability.

Whether you're operating at a mine, quarry or aggregate operation, safety comes first. The John Deere 460E-II ADT features



a number of safety features that help keep operators out of harm's way, such as remote park-brake release, rollover protection, ground-level service, and auto horn.

With rollover protection, operators can set limits for the rear-chassis level when unloading. If the limit is exceeded, the dump body will not raise, and an alert message will appear on the monitor.

This model's updated operator station includes features that promote increased productivity and all-round comfort. One of the most notable features is the single switch model, reducing the number of switches by 25% compared to previous models. 🌟

Level 1 B-BBEE is big step in FLSmidth's transformation journey

The recent earning of Level 1 Broad-Based Black Economic Empowerment (B-BBEE) status was not an end-goal but a step in FLSmidth's transformation journey in South Africa. Deon de Kock, FLSmidth president for Sub-Saharan Africa, Middle East and South Asia, emphasises that diversity, inclusion and engagement are imperatives for good business. "As we drive success through productivity enhancement, we draw on the best available human and technological resources," says De Kock. "This includes not just our staff but all stakeholders in our supply chain." Investing in its talent pipeline was particularly important in promoting diversity, he says. This has included skills development through apprenticeships, learnerships, scholarships and graduate programmes. The success of these candidates has ensured solid progress in employment equity, as one B-BBEE element within its integrated approach.

"B-BBEE is not a once-a-year event for FLSmidth, but rather a long-term business strategy," says Estelle Steytler, head of People and Organisational Development and Transformation at FLSmidth. Steytler

highlighted the important role of dedicated champions within the business to implement B-BBEE policy. "Each of these champions focuses on a particular aspect of B-BBEE," she says. "These include management control, skills development, ownership, socio-economic development, and enterprise and supplier development."

Structures have also been set up to support the FLSmidth board, keeping transformation as a top priority on the agenda. A social and ethics committee reports to the board. This committee in turn receives input from an employment equity and skills development committee, an enterprise and supplier development committee, and a corporate social responsibility committee.

"It has always been our aim to deliver transformation through a focus on shared value, with clear aims and intent," she says.

She also emphasises the success in building the talent pipeline. Many university students supported by FLSmidth bursaries are now employed in roles such as mechanical engineers, technology specialists and HR experts. De Kock points out the vital importance of taking young graduates and



trainees into the business.

"It is one thing to support students, apprentices and learners in their studies, but it is also necessary to have uptake capacity," he says. "We pick the cream of the crop to start their careers with us, and to grow with the company." The same applies to FLSmidth's supplier development programme. He emphasises that small businesses are not only given capacity-building support, but they are also contracted to supply goods and services to the company. The direct benefit to FLSmidth's Level 1 status is that customers receive 135% recognition for their expenditure with the business – higher than many competitors. This helps customers meet their preferential procurement targets. 🌟

Weir Minerals integrates key brands in Mudflo™ pump



Integrated solutions are what separates equipment suppliers from solution providers, says Marnus Koorts, general manager pump products at Weir Minerals Africa – and the recently launched Multiflo® Mudflo™ pump shows how this is done. This dredge/excavator-mounted mud-pumping innovation was launched last year, after being developed in response to a challenge which a customer faced, says Koorts. It is a heavy duty hydraulic submersible slurry pump designed for abrasive applications and large particle handling. Its application is primarily in reprocessing and relocating tailings ponds, maintaining water retention dams and managing slimes and sludge ponds.

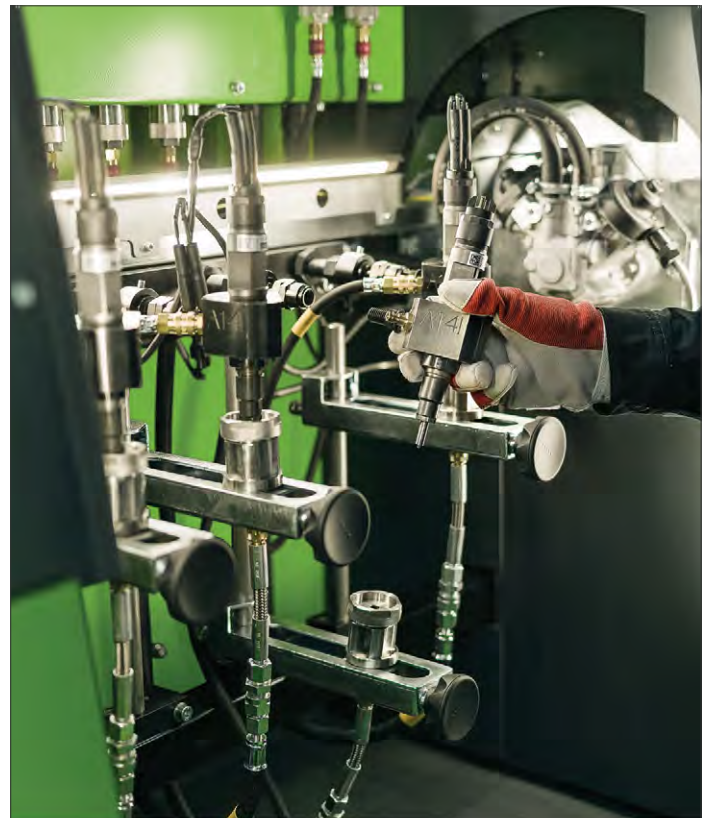
“The Multiflo Mudflo pump successfully combines elements of the Warman MGS submersible slurry pump-end, and a custom Multiflo designed bearing assembly coupled to a hydraulic motor,” he says. “Another key ingredient is the pairing of twin Multiflo CB33 hydraulic cutters with Weir ESCO excavation teeth.”

The cutters mechanically agitate the settled solids, allowing abrasive and highly charged slurries and mud to be pumped efficiently. He emphasises that the components making up the Multiflo® Mudflo™ pump are drawn from Weir Minerals proven brands, and are carefully combined to produce an integrated solution that saves customers time and money. It also reduces environmental impact, by avoiding the costly and energy-intensive process excavating and trucking the material off site. “The pump design includes Weir Minerals’ Ultrachrome A05 chrome alloy casting for high wear resistance,” he says. “There is also a suction strainer to prevent excessively large particles clogging the pump.”

This ensures that the unit delivers optimal uptime alongside high performance levels: the Mudflo™ 200 pump is capable of pumping between 150 m³/h and 1 200 m³/h, up to a head of 82 metres. The pump can handle a maximum particle size of 80 mm, and a maximum liquid temperature of 35°C.

“While our integration of products has grown organically over the years, it has become more systematic and deliberate as our product range has grown and become more diverse,” says Koorts. “The way we have developed this solution shows the progress in recent years toward integrating our product lines to add value to our offerings.”

He notes that the process of ETO ensures that solutions developed by Weir Minerals’ engineering teams deliver more value than the sum of their component parts. In this case, the company’s dewatering experts were able to draw on the best technology from Weir Minerals’ Multiflo®, Warman® and Weir ESCO® brands – combining them with advanced hydraulics to create an innovative result. “Our extensive footprint in the field and our close collaboration with customers on a daily basis gives us a detailed understanding of their specific requirements,” he says. “We can therefore ensure that our innovations are fit for purpose, being based on our considerable ETO capability and technical



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New Lokotrack ST4.10 for large-scale screening

Latest from Pilot Crushtec International is Metso Outotec's Lokotrack® ST4.10™, the largest model in the Lokotrack® mobile screen range. With a nominal capacity up to 600 tonnes per hour (tph), it is ideally suited for high-capacity aggregate screening in a closed-circuit crushing process.

While static plants have always been preferred in high-volume aggregate applications, mobility and flexibility have become principal factors for aggregate producers, prompting the migration to mobile screens at several operations.

A major talking point is the plant's extensive 9 m² screen area with three 6 060 mm x 1 520 mm screen decks producing up to four end products. The wide feed box with an 8 m³ capacity and the 10 m side conveyors with adjustable angles and speeds enable the unit to be deployed as part of a multi-stage crushing process in closed circuit with large-scale crushing plants such as the Lokotrack LT120™ or LT300HP™.

The wide grizzly rock box also makes loading with a wheel loader easy when using the Lokotrack® ST4.10™ as a stand-alone unit in sand and gravel applications. Despite its large size and its 33 000 kg weight, the new mobile screen is fast and easy to set up. With its 19 650 mm (length) x 3 040 mm (width) x 3 560 mm (height) transport dimensions,



it can be transported between sites as a single unit on a low bed truck.

The screen is equipped with a diverter chute that enables blending of products from different decks. Side tensioned top and middle decks make changing screening media quick and easy, so maximising uptime on site.

As all Lokotracks, the Lokotrack® ST4.10™ can be equipped with the optional Metso Outotec IC™ process control system, which offers a safe single-button start-up and the possibility to interlock the screen with other Metso equipment in a train.

The new mobile screen is powered by a 106 kW CAT C4.4 106 engine.

Key features

- The machine comes with an extended grizzly feed hopper for easy closed-circuit production.
- Despite its large size, the Lokotrack® ST4.10™ can be transported between sites as a single unit on a low bed truck.
- Side tensioned top and middle decks make changing screening media quick and easy.
- The optional Metso Outotec IC automation system allows for easy and safe process control and connectivity to other Lokotracks.

Masslift Africa celebrates three decades in materials handling

Over the last three decades in material handling, Masslift focused on three important principles: great partnerships, service excellence and community investment to make South Africa a better place for all who live in it. It was therefore fitting that they celebrated their 30th birthday honouring all of the above. Masslift Africa is the sole distributor of Mitsubishi Forklift Trucks in southern Africa. As a substantial player in the materials handling sector, they have made a real impact on job creation and retention in the region.

The company celebrated its 30th birthday with all the stakeholders who have helped it grow into an industry force by hosting a golf day followed by a gala dinner.

"I'm very proud of how Masslift has grown over the years to become an important partner to Mitsubishi Logisnext," said Lim Sim Beng, deputy managing director of Mitsubishi Logisnext.

The evidence of Masslift Africa's success as an industry leader in service excellence was recognised at the Top Empowerment Awards. The company recently received the

Top Empowered Company: Customer Focus accolade.

"This award belongs to all our staff, as it showcases our ability to work together as a team with a joint vision," said Masslift CEO Marco Caverni.

"It serves as further recognition for all the Masslift ninjas who work tirelessly to look after our most valuable asset – our client base. "With 30 years of experience under our belts, we are still going strong, and if we continue to work together, the awards will be a by-product of our continued commitment to service excellence."

As Masslift Africa continues to build meaningful and impactful partnerships and relationships, they were able to give back to the community while promoting the legacy of former President Nelson Mandela.

Marking the moment on this milestone anniversary, a joint donation was made to the Nelson Mandela Children's Hospital from Masslift Africa and its stakeholders at



Masslift Africa's golf day and gala dinner event. "The need to protect and support the children of South Africa is as important as it has ever been, and it is crucial that we all play our part to keep them safe and help lay the path to a bright future for our youth," said Dr Stanley Maphosa, Interim CEO of the Nelson Mandela Children's Fund.

"We are determined to make a difference across the country, but this fight cannot be won alone, which is why we are truly grateful to companies like Masslift who are throwing their immense weight behind our cause." 🌟

Two years on, Multotec pulping chutes excel at Ekapa

The solid performance of Multotec's pulping chutes at Ekapa's diamond treatment operation in Kimberley over the past couple of years has opened the door to quicker and more cost-effective fines scrubbing.

According to John Britton, technical consultant at Multotec, the two pulping chutes have achieved outstanding results, helping the customer's facility to increase the throughput of its Combined Treatment Plant (CTP) cost effectively.

"At our recent two-year inspection of the plant, we found that the wear rate on the ceramic lining of the wave generator was only 20 mm over that 24-month period," says Britton. "Each chute was processing 380 tph of recrushed kimberlite product with 380 m3 of water, rushing down a 28 degree incline."

Multotec's patented wave generators use gravity to create a constant turbulent mixing action in the slurry flow that releases the mud, clay and slime sticking to the kimberlite particles. The chutes are positioned to receive material from the High Pressure Grinding Rolls (HPGR) interparticle tertiary crushing circuit.

"The chutes exceeded our expectations in how well they separated the clay from the kimberlite ore and broke up clay balls in the material stream," he says. "This has really demonstrated the long-term capacity of our design to deliver results with hardly any



maintenance or operator intervention."

He says the chutes are stationery structures which rely on the kinetic energy being created by the inrush of slurry flow over the wave generators. This makes the solution much simpler and less energy-intensive than traditional rotary scrubbers with motors, drives and gearboxes. The chute can also achieve its results much quicker, as the material flow passes through in just three to four seconds.

Ekapa CEO Jahn Hohne says he has been impressed by how well the chutes have performed as an alternative to a considerably more costly scrubber circuit and having delivered a 20% increase in throughput through the plant and making a positive

economic contribution to overall efficiency. Hohne says he admired Multotec's innovation capability and looked forward to even further improvements in the design.

Britton notes that, after conducting the wear inspection of the chutes, there were indeed constructive modifications that Multotec was planning. One of these related to the retarder bars, which slow down and divert the slurry flow.

"We believe we can achieve even better results if we remove some of the retarder bars and install another set of wave generators," he says. "Our results suggest that this will get the ore material even cleaner before it reports to the screen, the conveyor belt and finally the dense medium circuit." 🌟

Weba takes the lead in sustainable development

Weba Chute Systems' commitment to transformation, skills development and corporate social investment is rooted in the company's understanding that the business is not separate from society, but inextricably bound to the fortunes of its employees and the communities in which it operates.

Denise Abrahams, director of Marketing & CSI at Weba Chute Systems, says transformation, skills development and CSI initiatives should not be driven by legislation, but by the company's desire and commitment to the well-being of its employees and the society in which it operates.

In many organisations, she says, compliance to Broad-Based Black Economic Empowerment (B-BBEE) legislation is deemed a "box ticking" exercise. At Weba Chute Systems, the B-BBEE scorecard is not treated as a simple checklist, but an instrument to facilitate real transformation.

For its transformational strides, Weba Chute Systems won the B-BBEE Acquiescent Award at the B-BBEE Commission's annual conference held on 1 April 2022, becoming

the only private company to be acknowledged at the event. This category recognised the entity that had adhered to the advice of the B-BBEE Commission and had taken significant effort to comply to the B-BBEE Act. Apart from transformation, Weba Chute Systems sees skills development as an essential means of bridging the widening skills gap. Consequently, the company has introduced a number of training programmes for its employees.

The company now offers a Weba SA Leadership Support Programme, which commenced on 17 November 2021. This is being offered to the administration team, casting the spotlight on the role of administration staff in the smooth running of the company.

"We also encourage our staff to take N3 to N6 engineering courses, for which we pay. We also have mentorship and training programmes in the design and drawing office, where the most senior personnel are responsible for training junior staff," says Abrahams. "We support members of staff seeking to switch roles by paying

for the studies and creating opportunities to allow them that career change. It's all about listening to our staff and understanding their needs." In terms of CSI, Weba Chute Systems provides support to several charitable organisations on a monthly basis. These include the Avril Elizabeth home for the mentally handicapped, the Siyazigabisa Children's Home, the United Cerebral Palsy Association, the Manger Care Centre, SPCA Boksburg, Salwing and the National Sea Rescue Institute.

In future, more support will be directed towards mining communities. "For example, last year we provided masks and sanitisers to schools in the mining communities where we have our chutes installed. We also want to focus on the girl child, especially in the rural areas where issues such as sanitary pads remain a challenge," she says. "It is in the interests of Weba Chute Systems to be a good corporate citizen, taking sustainable development as the starting point, and continuing to drive efforts to unify economic, social and environmental development."

The new and improved heavy-duty Volvo L350H wheel loader

Complete with a host of upgrades, the Volvo L350H wheel loader is ready to tackle a range of applications from mining and quarrying to heavy infrastructure – but now with greater productivity and fuel efficiency, all with lower service costs.

The flagship of the Volvo wheel loader range, the L350H, comes prepared for heavy-duty applications as standard from the factory thanks to the proven Z-bar lifting arm with double sealing on each of the pins, and strong frame structure, which is joined by a reinforced upper centre hinge and new Volvo axles. Whether it be log loading, rock loading, rehandling, block handling or slag handling, Volvo CE has the specialised package (of machine features, tyres and attachments) needed to achieve maximum performance.

This heavy-duty upgrade is built on the success of its forerunners with a few notable improvements. A more responsive hydraulics system, featuring new lift and tilt cylinders, and an increased hydraulic working pressure allows for 10% faster work.

Meanwhile, the upgraded driveline features new Volvo axles and an all-new Volvo transmission which enables the third generation OptiShift to be equipped as standard. Already found on Volvo L150H – L260H wheel loaders, this technology integrates the Reverse by Braking function and the lock up function in transmission to boost fuel efficiency by up to 15%.

Customers can keep working with the



updated L350H for longer and reduce costs thanks to extended service intervals – doubled to 4 000 hours for an axle oil change, made possible by an axle oil cooler with filtration fitted as standard.

Customers can further minimise machine downtime and increase component life with features including heavy-duty axles with fully floating shafts, planetary hub reduction and maintenance-free rear axle trunnion bearings. Telematics connectivity and established features such as the Load Assist suite of apps accessed from the in-cab Volvo Co-Pilot display further improve efficiency and uptime. The optional Tyre Pressure Monitoring System enables the pressure and temperature of tyres to be checked from the cab. Customers can make overloading, underloading and waiting times a thing of the past with the On-Board Weighing app, providing real-time insight into the load of the bucket and payload of the load receiv-

er. The Operator Coaching Advanced app will support customers in using the L350H to its full potential. It provides real-time information and guidance to operators, helping them to work in a way that delivers optimum productivity and fuel efficiency, as well as reduced machine wear. A portfolio of complementary Volvo Services also provides valuable insights into ways to lower cost per tonne and make impactful changes to the way the machine is run.

The upgraded L350H provides the same operator experience with top quality comfort, convenience and safety to help operators achieve optimum results. As well as its standard remote-controlled door opening, air-conditioning and secondary steering system, there is also outstanding visibility complemented by the optional electrically adjusted, heated rear-view mirrors, along with the rear-view camera and radar detect system. 🌟

Manitowoc to show Grove GMK6400-1 at bauma 2022

Visitors to the Manitowoc booth at bauma 2022 will be able to see the Grove GMK6400-1 all-terrain crane in public for the first time. Andreas Cremer, vice president of product management for all-terrain cranes at Manitowoc explains:

“The GMK6400-1’s predecessor, the GMK6400 was hugely successful and broke the mold for what was possible with a six-axle crane in terms of lifting power. So, with the new and upgraded model, we’ve kept that power that customers love and added more speed and flexibility. Visitors to bauma 2022 will get to see that for themselves and fully appreciate the expanded capabilities of the new crane.”

Like the GMK6400, the new GMK6400-1 has a maximum capacity of 400 t and a main boom of 60 m. Manitowoc has packed the GMK6400-1 with new innovations, including an improved hydraulic system with faster flow to provide quicker operating speeds and even smoother movement. Also added to the new 400 t machine is the

Crane Control System (CCS) and MAXbase variable outrigger positioning system.

“We knew we wanted to add CCS and MAXbase in the 400 t class and our Voice of the Customer discussions confirmed this,” said Cremer. “It was a complex process to incorporate these upgrades into the new design, along with the latest emissions-compliant engine. The result is an impressive heavyweight performer that delivers greater productivity and profitability for our customers.”

The new engine on the GMK6400-1 conforms to the latest requirements for both Tier 4 Final Emissions Standards and EUROMOT 5. Driving both on and off-road is efficient, thanks to a driveline that features a MEGATRAK® suspension system and MegaDrive™ hydrostatic drive. As with the original GMK6400, the new GMK6400-1 includes the optional capacity-enhancing MegaWingLift&trade.

This self-rigging attachment can be deployed in less than 20 minutes and

does not require an assist crane. It increases lift capacity by up to 70% on the main boom and by up to 400% when using the luffing jib. It makes the crane well-suited to applications such as bridge construction, wind farm work, or tower crane assembly. Manitowoc expects the crane to prove popular in infrastructure, general construction, energy and industrial projects.

Maximum tip height for the GMK6400-1 is 136 m when fitted with its full complement of jib. With its impressive capacity and reach, the GMK6400-1 outperforms the competition in every category. Like the GMK6400, the GMK6400-1 can take on jobs that usually require a seven-axle (or even eight-axle) crane but inside a smaller overall footprint. It is an all-terrain crane that can lift up to 64 t on its 60 m main boom with MegaWingLift™. This delivers a clear competitive advantage and ensures an accelerated return on investment for owners. 🌟

Wacker Neuson RD7 machines to help roll out sustainable community growth

Wacker Neuson, recently delivered 90 RD7 pedestrian dual-vibration rollers to a state-owned enterprise based in Pretoria. The machines will be distributed at the customer's discretion to selected members within society in a bid to empower them to be able to grow economically and promote sustainable community growth.

"Wacker Neuson is renowned for quality and reliability, making us a preferred supplier with our customers who can rely on us to deliver on our brand promise," says company sales representative Dennis Zuma. "It is this reputation of trust and professionalism that made us the supplier of choice for this particular project too.

"Furthermore, owing to the value-adding features of the Wacker Neuson RD7 walk-behind roller, this compact machine will undeniably offer the most simple and economic solution for the end-user," says Zuma. The roller delivers best-in-class performance in the compaction of soil, gravel, concrete and asphalt in the construction of roads and foundations. The RD7 is easy to operate, manoeuvre and service. For enhanced operator safety and comfort, all control elements are located directly on the guide handle, giving

the operator complete control of the machine from his operating position, so removing any need to move around the machine.

"We also accredit the choice of the machines to our excellent partnership with KT Squared who is the premium agent for large OEMs in South Africa," says Zuma, who adds that KT Squared facilitated this order and ensured a smooth deal.

This project is a proud accomplishment for Wacker Neuson, given the large number of compacting machines ordered, the tight time frame as well as the challenging logistics. "As a customer-service oriented company, we are particularly proud of the fact that we successfully completed this project in five months, meeting our customer's deadline," states Dennis Vietze, MD of Wacker Neuson Sub-Saharan Africa.

Full support in terms of service, maintenance, repairs, and spare parts will be available to the end-users at Wacker Neuson's fully equipped workshop at its West Rand, Johannesburg, headquarters, as well as through its strategic network of 36 dealer partners across South Africa. The end-users will be able to have their RD7 rollers serviced, maintained, and repaired at a Wacker Neuson dealer closest to them.



Zuma also confirms that Wacker Neuson will be providing practical and theoretical training to the RD7 operators upon the rollout of the project.

"Training will be provided both at our brand new Training Academy based at our South African offices, as well as off-site as required, with training certificates awarded to successful delegates. The advanced facility, which was officially opened on 1 July 2022, can accommodate up to 80 delegates. An external demonstration area adjacent to the Academy further enhances the customer experience, offering them a unique opportunity to operate a range of Wacker Neuson machines, including skid-steers, excavators, wheel loaders and dump trucks. 🌱

Criterion Equipment's TCM forklift trucks comprise machines for handling goods in all sectors

TCM heavy-duty FD160-2, FD180-2, FD200-2 and FD230-2 machines, with capacities up to 23 t, have been designed for high power, easy maneuverability and enhanced safety.

"We have many heavy-duty TCM forklifts currently in use in various industries around the country, that cope safely and efficiently with loads between 16 and 18 t," says Brenton Kemp, MD of Criterion Equipment, exclusive distributors in southern Africa of the TCM range. "Typical applications of our heavy-duty range are mostly in mining and related functions, as well as in general port yards and for moving heavy equipment and tooling during manufacturing. These flexible machines have also been well received locally for use in heavy-duty logistics applications, container yards and in warehousing and storage facilities.

"Advantages of using a heavy-duty forklift to handle heavy loads, rather than the investment in overhead or mobile cranes, include the efficient total cost of ownership over the economic useful life of the forklift and greater flexibility in terms of application and ease of mobility. An important benefit of using forklifts over other equipment is that these machines are easily transportable to

other locations."

The most popular units in the TCM heavy-duty forklift range (FD160-2, FD180-2) have a 900 mm load centre, a maximum fork height of 3 000 mm and a mast tilt angle of 6° forward and 12° backward.

The high power, internal combustion 6BG1T diesel engine (125 kW at 2 200 rpm) meets emission levels required in Tier 2 emission control standards.

FD180-2 machines have a drawbar pull of 119 kN (12 100 kgf) at full load and gradeability with load at 1,6 km/h of 20% (11,3°) slope. TCM heavy-duty-forklifts have a three-speed automatic powershift transmission for easy control of the machine. Features include a finger touch shift lever, interchangeable easy drive selections between power modes, a dial switch to control, the safest travel speed and a combined type switch lever for turning and light signals. Fully hydrostatic power steering enables precise control of the machine.

Notable features for improved visibility include a cabin with a newly designed counterweight and no front or rear pillars, as well as a soft touch electric parking brake for added security.



Other features include a newly designed fuel tank with increased capacity from 300 litres to 400 litres, which extends operating time without the need for re-fueling.

Apart from Criterion Equipment's technical advisory and support service, the company also offers a refurbishment service. This comprises cosmetic overhauls and general maintenance and repairs to ensure optimum performance, enhanced safety, low maintenance and extended service life of every machine.

The company's national workshops are able to completely refurbish an existing machine according to OEM specifications and also adhere to industry specific customisations for standards in heavy-duty applications, including mining, refineries and furnace installations. 🌱

FIVE TRENDS THAT ARE SHAPING THE FUTURE OF SA'S FLEET MANAGEMENT

By Justin Manson, sales director at Webfleet

The future has never been more exciting. New technologies continue to shape the connected world, enabling us to communicate virtually, work remotely, and even access telehealth. Similar innovations are shaping South Africa's fleet management industry, driving the adoption of electric vehicles, Mobility-as-a-Service (MaaS), and countless other cutting-edge trends enabling the sector to operate efficiently, safely, and more environmentally friendly.

"Although technology like The Internet of Things (IoT), MaaS, and Artificial Intelligence (AI), has been around for some time now, the last two years accelerated its adoption," says Justin Manson, sales director at Webfleet. "Fleet managers have been able to use this technology to improve the customer experience, optimising transportation and creating opportunities to monitor their vehicles better. And this trend will only expand over the coming years."

The Internet of Things

Internet-connected devices are everywhere, from smart watches to smart home appliances, and the list of devices continues to grow. The Ericsson Mobility report estimates that there will be around 29-billion connected devices this year and that IoT will power approximately 18-billion of them.

The Internet of Things is critical in fleet operations, such as vehicle tracking, tyre pressure monitoring, and refrigerated monitoring systems. However, this technology will play an even more prominent role in the future of transportation, where fleet managers and drivers can monitor vehicle conditions in real time, accurately route vehicles to different lanes to minimise traffic time, and enhance automated alerts. For example, the technology will let fleet managers and drivers know what's about to break down or proactively alert emergency services and operators if a driver enters a danger zone, creating strategic alternatives to reroute and safeguard drivers and cargo.

Mobility-as-a-Service

MaaS has solved countless transportation problems, and its benefits will only continue to expand in the future. This service is considered the future of mobility, and reports predict it will become a \$22,18-billion market by 2028. While initially focused on ride-sharing, MaaS is now spilling into traditional fleet operations, allowing services such as Uber Eats and Courier Butler to enter the market.

This service will undoubtedly gain much more traction in South Africa in the coming years and will eventually transform traditional fleet management into MaaS management.

Artificial Intelligence

Fleet management is one of the many areas that AI is disrupting – allowing fleet managers to prioritise driver safety without compromising cost or efficiency.

For example, in the past, fleet managers would need to sit and view endless hours of in-cab video footage to pick up if the driver was on the phone. However, fleet managers can now create safer driving conditions by pairing telematics technology with AI-based vehicle video cameras to identify risky driving. They can receive real-time audio and visual warning alerts when the driver speeds, brakes or steers harshly or when the driver engages in distracted driving behaviour, like using a phone.

As this technology advances, fleet managers can use it to monitor drivers' following distance, lane deviations, and similar risky driving behaviour.

Electric vehicles

End-users have predominantly driven electric vehicles' success abroad because they want to be more environmentally conscious and reduce their carbon footprint or are just looking to reduce the rising fuel cost. For South Africa, however, the fleet sector will drive the electrification of vehicles.

"The reason we'll see fleet management power this innovation in the country is that, on the end-user side, we don't have a lot of charging ports, and there's the issue of load shedding, which has a serious impact if a driver is trying to recharge their vehicle. So even though solar solutions are available, it can still be quite costly for people to install and use them for their vehicles," adds Manson.

For fleet management, however, charging vehicles is in the fleet manager's control. So, for example, managers who know how many kilometres their vehicles travel can charge them overnight. Additionally, most businesses throughout the country have generators, inverters, or solar systems set up. They can use those to charge their vehicles overnight, knowing that those vehicles are ready for however many kilometres they need to travel the next day.

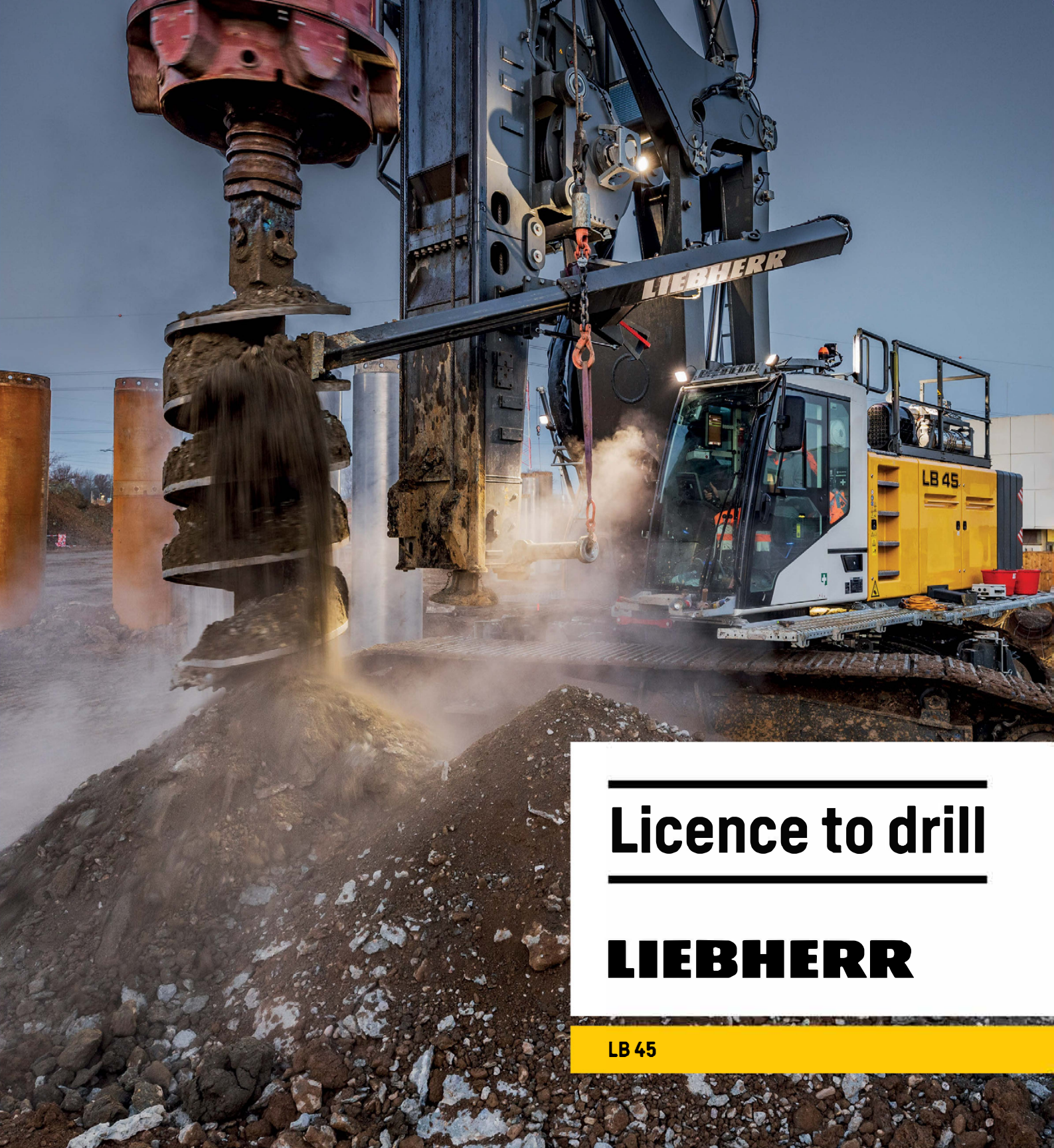
Companies like Aevers are already pushing the electric vehicle model in the fleet business by reducing the total electric fleet ownership costs for organisations.

Telematics

Telematics technology has experienced astronomical evolution over the years, allowing vehicles to sort and analyse vast asset data that businesses and drivers can use to schedule maintenance and address other issues smarter and faster than ever.

The sector is now seeing an environmental push where fleet companies take their carbon footprint more seriously. That's where telematics technology can help businesses drive down their carbon emissions and fuel costs.

"More businesses now realise the value behind investing in solutions like telematics, IoT, and AI, which has seen this technology grow exponentially, and we're going to see a lot more buy-in from businesses than before in coming years," says Manson. 🌱



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