

Unique utility



The new Getman A64 HD Water Cannon at a mining customer site in Indonesia

Paul Moore finds once again that dedicated underground utility machines have more than caught up with primary mining fleets in terms of technology, productivity and safety

Mining utility equipment includes a vast range of machines from scalers to shotcrete sprayers, scissor lifts to man carriers, explosives chargers and water cannons. But mining utility is no longer just an afterthought or a workhorse fleet bought to be run into the ground. These machines are getting cleaner, more advanced and more productive but perhaps most importantly, safer, as they play a crucial role in the safety of today's mines. Mine operators and contractors are less willing to take chances with just adapting general construction machines to these tasks, they want dedicated and specific machines. And it is no longer the mines in the developed world and the tier 1 mines wanting them – from China to central Africa miners are investing in modern, dedicated utility machines for mining. And in the OEM market, new players are emerging as a result, while there has been some consolidation among existing big names.

Getman continues its charge forward

Global player **Getman**, based in Bangor, Michigan has long been at the forefront of innovation in dedicated mining utility vehicles, exemplified by new product development for 2021 across three major product areas of water cannons, emulsion chargers and concrete sprayers.

First up, its new Getman HD Water Cannons evolved as a custom solution to a critical challenge. “Designed specifically to address the dangerous task of clearing drawpoints, water cannons create a safer environment for miners, improve mine efficiency and keep operations up and running.”

The water cannon is a drawpoint workhorse in

a block cave mine, with a specific job to do. Critical components are built to safely break away, ensuring that damage to high-risk parts can easily and quickly be replaced. Getman says its HD Water Cannons can clear blockages within hours instead of days, increase first pass success rates, and minimise personnel risk.

The machine has a high pressure, high volume discharge pump with 6,800 l tank with spray capacity of 750 gal/minute and positioned to allow for remote fill. It also has a 6 m remote boom with an industry-leading range of motion designed to maximise stream integrity and velocity.

It has a low profile for easy accessibility and a tight turning radius for smaller spaces.

Getman Product Manager Christopher Warner told *IM*: “There are three operation possibilities – line of sight with operator-guided remote control, directing the vehicle and boom visually. Control distance is up to 60 m, but varies based upon conditions.

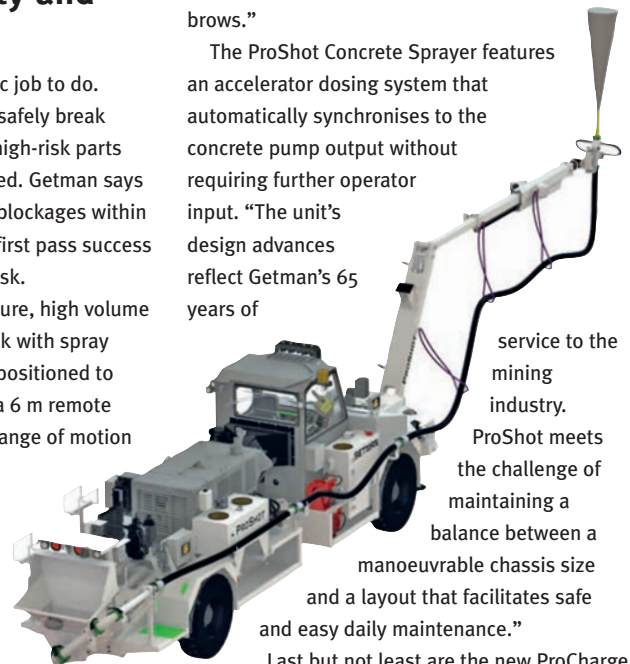
Then in tele-remote mode, the machine and monitor cameras on the tele-remote station are active for full control beyond line-of-sight. If a wireless network system is not available, a wireless kit contains a signal amplifier, antenna, and associated hardware to provide tele-remote operation.”

In this mode the operator has access to give different camera views – nozzle head, cab forward facing, rear-centre, rear-driver's side and rear-cab.

Moving on to rock reinforcement and shotcreting, Getman's new ProShot™ concrete sprayer is designed to apply a consistent, quality layer of sprayed concrete in all mines and medium sized tunnels. The ProShot spray boom is purpose designed to position parallel to the spray surface for the most effective coverage with minimal rebound. Coverage is enhanced when spraying around corners and under brows.”

The ProShot Concrete Sprayer features an accelerator dosing system that automatically synchronises to the concrete pump output without requiring further operator input. “The unit's design advances reflect Getman's 65 years of service to the mining industry. ProShot meets the challenge of maintaining a balance between a manoeuvrable chassis size and a layout that facilitates safe and easy daily maintenance.”

Last but not least are the new ProCharge MAXX 4000 & 3000 integrated explosive emulsion chargers. They can be used for full ring loading & benching (production) using loading from a basket using Getman's Hose Handling System (HHS), and for lateral or face loading for



Two of Getman's latest utility offerings – the ProShot concrete sprayer and ProCharge MAXX 4000 integrated emulsion charger

development using manual loading with a string loading hose pusher and controller.

Getman provides the equipment to enhance productivity in explosives charging operations including high-capacity emulsion tank, high-capacity water tank, a system allowing easy and effective tank filling from ground level, water pump and drive, gasser (chem-adds) pump & drive plus hydraulic supply and valves. For their part, the explosives supplier offers the control panel, J-Box power in & distribution, including open-ended cables connected to the terminal blocks, emulsion pump and drive plus radio remote transmitter & receiver as an option. They also supply discharge piping including all components for thickening or injection of additives & water ring, an end of hose nozzle for up-hole loading, and all safety devices.

The ProCharge design maximises the use of available space on the truck with the EP tank capacity maximised per model. This means a higher capacity, less trips to the magazine, so reduced traffic in ramps as well as improved productivity.

The machines offer integrated components and ease of access with approved centre of gravity and stability plus a clear delineation between mechanical systems and explosives systems clarifying what the customer can work on.

Lastly, Getman's ProRide™ Active Suspension System is an available option on all A64 Getman machines, including the Water Cannon and ProCharge MAXX units.

Merged Timberland & Marcotte meet the latest challenges

Timberland Equipment was established in 1947, and is based in Woodstock, Ontario. It provides purpose-built mobile Underground Utility Vehicles (UUVs) for the mining industry, with the Minejack being one of its principal product lines. Other lines include tensioners, mine rescue systems, pullers, hoists, sheaves, and winches custom designed for shaft sinking and underground projects.

Timberland Equipment has owned Marcotte Mining Machinery Services since the mid-1990s, but at the end of 2019, a decision was made to bring the companies together instead of operating then as separate entities. Steve Dunlop, Timberland General Sales Manager told *IM*: "By doing so, we synergised our team in one location, utilising the current experience and the larger Woodstock manufacturing facility to handle the upcoming equipment demand. The company has also become more streamlined, we enhanced our engineering capabilities, and have maintained a robust aftermarket support service office for mobile equipment sales in Sudbury, Ontario. Timberland has an excellent reputation, and although the Marcotte name has changed,



A Timberland Minejack RAM40EV all electric shotcrete hauler

the Minejack trademark will remain."

Timberland says Marcotte's M-Series, built on the highly successful multi-purpose Minejack carrier, is always in high demand amongst mining operators and contractors, particularly the M-30 and M-40 models. It has recently received multiple requests for machines including scissor lifts, crane trucks, cement haulers, ANFO loaders, and fuel/lube carriers and systems. Dunlop adds: "At Timberland, we are focused on electrification and digitalisation and seeking to expand our Battery Electric Vehicles (BEV) to operations with additional requirement of clean air. The second part of our growth strategy is offering the base product lines with leading-edge technology including but not limited to scissor lifts, crane trucks, ANFO loaders, secondary egress systems, winches, and hoists."

Timberland Equipment it says "provides high-quality products and has leading-edge technology. We also manufacture under one roof, which gives us more control over product quality. We have a great team of engineers, product managers, customer service technicians, and our history speaks for itself. Our product line is still as good, robust, and reliable as anything out there."

Recent deliveries include a Minejack RAM40EV all electric shotcrete hauler for a customer in northern Ontario and a Minejack M60 shotcrete carrier for another customer in northwestern Ontario.

GHH and Titan – a total solution offering

Germany's **GHH** has a strategic partnership with the Turkish mechanical engineering company **Titan Ltd** based in Ankara, and through this partnership GHH is able to offer the mining and tunnelling market a total solution offering. The utility vehicle range includes concrete spraying machines, transmixers and pumps as well as passenger transporters, light crane trucks, scissor lifts, material, fuel and lubrication transporters and ANFO charge trucks in either a rigid or articulated design.

The entire range of products all have CE Certification, ROPS & FOPs level 2 certified closed cabins and powershift transmissions (hydrodynamic), 4x4 all-wheel drive and articulated steering for superior manoeuvrability. GHH told *IM*: "With over 1,000 active units in the field, and a constant drive to develop new and competitive equipment and an intense focus on



The GHH BEC100 emulsion charger truck

Cannon Mining builds on experience & reputation

Oldenburg Group and its Cannon brand machines were quite famous in underground mining drilling and utility – in 2016, CEO and owner Wayne Oldenburg sold its mining and defence divisions to private equity firm JF Lehman & Co and its was renamed Lake Shore Systems Inc, but keeping the Cannon product brand as new division **Cannon Mining** and with production remaining in Claremont, New Hampshire. The product line includes underground drifters (jumbo drills), scalers, bolters and articulated frame utility machines such as ANFO trucks, lube truck and man baskets.

So what has been happening since then? **IM** spoke to Vice President – Mining Matt Jacobs. “We now make up about 25% of the Lake Shore Systems business through our Cannon Mining location in the US but also Cannon Mining Latin America in Guadalupe, Zacatecas in Mexico. We reverted to the Cannon name and the Omaha orange colour scheme. Our strengths in the US remain underground rock room and pillar quarrying plus metallic underground operations including lead and zinc mining. In Latin America we have about 25 people and after the acquisition centralised our team and facilities. We have seen a lot of growth in the Latam markets, which has only been stalled by the Covid pandemic.”

On the products themselves, Jacobs said that versus the global giants “our machines are very robust in design – we have units that are still operating at over 25,000 hours. The very first SV26 scaler and first UV11 utility machine we ever produced back in 2000 are still operating. Our products are very maintenance friendly and the ease of operation plus longevity is what makes customers stay with our products. That said, our machines are evolving with the times and we will be offering upgrades such as angle detection systems to assist the drill operator with consistency and hole patterns. Another ongoing project is roof mapping to optimise the type of explosive delivery. We are also offering a wider range of scaling options from mechanical pick, rotary pick to breaker hammer.” The robustness of the machines is reflected in a five year or 10,000 hour frame warranty across the range.

Cannon Mining is also set to reintroduce its very large room and pillar scalers with scaling at up to 56 ft (over 17 m), building upon the previous SV45 line. The SV11 is at the other end of the scale – a compact scaler for the narrow vein market which has been very popular in Latam markets. It is equipped with a space saving turntable boom.

Other general updates on the Cannon line of course have been on high Tier engines up to Tier 4, and updated axle designs. Diesel or electric cable is offered on the drilling and bolting rigs. The company has also had battery machine R&D projects in the past and is looking at these again.



Cannon Mining has seen demand growth for its products in Latin America

customer feedback to continuously review the range of options available, the product offering readily meets the needs for mining and construction market segment.”

The articulated BIS20 concrete spraying machine, targeted for mining applications, has a 34 m³/h concrete spraying capacity, with a spraying head with 360° rotation, +135°/-135° tilt & 8° oscillation. The robust manipulator has an 8 m vertical and 8.5 m horizontal spraying reach at a 4 m distance from the working face. These together provide for superior versatility and coverage. “The BIS20 is equipped with a Titan concrete pump with cast body hopper and

hydraulic vibrator. Thanks to its high degree of articulation, BIS20 is easily able to carry out tight turns on underground mining ramps. It is supported by either the low profile BYM4.5 (tramming height of 2.45 m), or the BYM6 articulated concrete transmixers, which yield 4.5 m³ and 5.6 m³ respectively. They both have a hydraulically controlled shutter & chute with drum tilt up to 13° as well as a 135 bar, 16 l/min high pressure washer with a 75 litre water tank.

The articulated BKS9 concrete spraying machine (dry mix) has a 7-9 m³/h concrete spraying capacity and is equipped with a Titan dry concrete pump. It has a spraying head with

360° rotation, +135°/-135° tilt and 8° oscillation with a robust manipulator with 8.5 m vertical and 9 m horizontal spraying reach at a 4 m distance from working face. Thanks to its high degree of articulation, the BKS9 is also very effective in performing sharp-turns underground mining ramps. The BTM6 concrete agitator also forms part of the concrete product offering with a two-person cabin and 6 m³ concrete carrying capacity.

When it comes to explosive charging vehicles the utility range includes the BAC2x350 ANFO charging truck and the BEC100 emulsion charger truck. The BAC2x350 has 2 x 250/350/500 litre ANFO tank options and a 500 kg lifting capacity with 5.8 m maximum reach. It has a basket swing ±35° with automatic parallelism and also a foldable canopy with hydraulic lift. The BEC100 has a basket of 1.59 m x 0.79 m and also a 500 kg lifting capacity. The basket and boom has a swing of ±35° with a maximum boom angle of 60°. It also provides for two explosive storage boxes for caps and primary explosives as well as an on-board hydraulically driven 3.6 m³/min screw air compressor.

The crane and lifting equipment range of machines includes the BMP2x3 Scissor Lift which has a 3.2 m x 2 m platform with 1,500 kg lifting capacity and 3.5 m reach. Other dimensions and lifting capacities are optional. It also has the additional benefit of a ±50 cm optional side shift function adding to its applicability to specified operations. There is also the BVK05 Crane Truck which has a 50 kNm lifting capacity and 2.43 t crane lifting capacity with a total 8 t load carrying case capacity. It also has a 6.75 m vertical and 5 m horizontal reach.

The utility vehicle range also offers various material and personnel transport vehicles including the BIA100 Fuel and Lube Truck which is designed with diesel, hydraulic oil, engine oil, transmission oil tanks and has various service modules & tank capacities which can be designed according to specific customer needs. Then there is the BKPT7 Material Transporter with a 7,000 kg carrying capacity in its 2.32 m x 2 m pick-up box and the BPT24 Personnel Carrier which has a 24-person capacity personnel compartment and a 2-person driver cabin.

“Thanks to its high degree of articulation, the BPT24 has a really competitive turning radius enabling it to navigate sharp turns in underground haulages.”

And last but not least, the newest edition to the range, the MUV5 Light Duty Multipurpose vehicle is a diesel driven small utility vehicle, which offers a wide range of options to suit customer specific needs. The design and development of an electric version of the MUV5 is currently underway and it is expected to launch late 2021.

“Overall the GHH utility vehicle range is

GETMAN

PURPOSE-BUILT MINING EQUIPMENT

BUILT IN THE U.S.A.

WORKS ALL OVER THE WORLD

LEARN MORE AT GETMAN.COM

PURPOSE-BUILT

With 65 years in mining, Getman understands the subtle nuances required to design products equipped for the exact task at hand.

RELIABLE

Getman products outperform the competition in the most punishing environments imaginable, day after day and year after year.

SERVICEABLE

Easy to service – from small repairs to total rebuilds, Getman vehicles are appreciated by maintenance teams everywhere.

GETMAN



GETMAN CORPORATION
59750 34th Avenue
Bangor, MI 49013 USA

Tel +1 (269) 427-5611
info@getman.com
getman.com

CUSTOMER-FOCUSED SOLUTIONS

EXPLOSIVES CHARGERS



NEW PROCHARGE MAXX

Two models, five sizes. Fully integrated systems with optimized emulsion capacity.

GROUND SUPPORT



NEW PROSHOT CONCRETE SPRAYER

Consistent, quality layer of concrete. Unparalleled boom coverage extends spray treatment in drifting situations.

MATERIAL TRANSPORT



A64 CRANE TRUCK

Versatile, high-capacity payload package; offers 180° of slewing.

PRODUCTION SUPPORT



A64 HD WATER CANNON

Expertly clears blocked drawpoints; creates improved efficiency and a safer environment.





The DUX SL6000 scissor lift has a 2,720 kg lift capacity and 4.7 m reach with optional double scissor mechanism. The platform features side shift for maximum width coverage and less set-up time. DUX is currently building a unit to be mounted on a rail car, having first built a similar module in 2006, followed by two more in 2011

extremely comprehensive and competitive able to support all primary mining equipment in their operations, with the ability to provide tailor made, customer specific adaptations making them ideal to suit all customer's needs."

Paus helping scaling reach next level

For an effective scaling process, loose rock has to be detected and removed. To date, this process has not yet been successfully automated. Instead a mine worker taps on the roof with a bar and decides, based on the sound, whether the scaling process has to be performed at the appropriate place or not. Hence this process is highly dependent on human decisions. Further, according to the National Institute for Occupational Safety and Health (NIOSH), manual scaling is very labour intensive while mechanical methods can be too powerful or produce a less stable roof.

In the new ScaleSense project, a sensor-based system will be developed for the detection of loose rock during the scaling process and will be integrated into a scaler. The objective of this project is to assist the operator in identifying loose rock to make the scaling process safer and more efficient. The project is funded by the German Federal Ministry of Economic Affairs and runs from May 2020 to April 2022.

Within the ScaleSense Project, the Institute for Advanced Mining Technologies (AMT) at RWTH Aachen University is responsible for developing the sensor-based system for the detection of loose rock. For this, a combination of Long Wave Infrared Thermography and Acoustic Emission technology will be used. This will lead to a more robust sensor system, in case of failure of one system, with higher reliability and a more complete detection of the loose rock.

Hermann Paus Maschinenfabrik GmbH is responsible for integrating the sensor technology

into a scaler and also for developing a visualisation concept. Since the scaling process is related to the safety aspect of the mine, the two partners believe that the resulting system will be highly relevant for the mining industry and will also contribute to digitalisation of the scaling process.

Elphinstone WR810 water cannon exceeds expectations

Elphinstone has developed and released six new underground support vehicles in the last 24 months with the first production units already operating in North America, South America, and Australia. In 2020, Elphinstone identified an opportunity to trial an Elphinstone WR810 Underground Water Cannon in a mine in Victoria, Australia. Exceeding expectations, the dual application machine has significantly increased the recovery of high-grade ore at the mine. The operators were very impressed with the ergonomically designed, spacious 3-person ROPS/FOPS cabin, access to controls, ease of operation, and the lighting arrangement, reported by the customer to be "the best they have ever seen on an underground machine." The machine's primary purpose is to wash down valuable ore fines by reaching into the stope using a high-pressure water cannon mounted to a telescopic boom. In addition, the machine's rear and side sprays are used for dust suppression and maintenance of haul roads. "The trial was so successful it secured a sale for Elphinstone through William Adams and potential opportunities for future orders," says Tim Waller, Elphinstone Regional Sales and Support Manager for Australasia.

The optional wireless controller allows the operator to position the 8 m telescopic boom from a safe remote location. The operator controls the side and rear sprays for

dust suppression from the cabin. Other features include a proven Caterpillar power train, all-wheel drive, oscillating hitch, heavy-duty axles and fingertip-controlled electromagnetic brake retarder for downhill haulage. The WR810 10-t nominal base platform is highly configurable with applications comprising a 6 m³ agitator, water cannon, scissor lift, fuel & lube, and delivery configurations.

Elphinstone also identified an opportunity to expand its growing range of underground support vehicles by including a haul road maintenance vehicle, based on the Caterpillar 120K and 120M surface grader platforms. "The role of the underground grader is to create safe, consistent access throughout the underground tunnel network and ensure adequate drainage. Quality haul road maintenance ensures all production, support and light vehicles can move freely in a safe and controlled manner with optimal efficiency. The added benefit is increased production equipment tyre life and speed on grade."

Elphinstone acquired the IP for the UG20M and UG20K underground graders from Ground Force and further refined the existing platforms to ensure compliance and performance in the harsh and demanding environment. In addition to Elphinstone's renowned operator safety and ergonomic features, a robust rearguard provides rear protection whilst a front counterweight balances the machine. An optional shortened gooseneck frame and moldboard improves the operation and manoeuvrability of the machine. This adjustment increases the turning radius with the standard articulation features of the grader. The redesign of the moldboard lift cylinders and exhaust complete the conversion to a low-profile configuration.

Units are operating on the ground in Canada, Argentina, Chile, Democratic Republic of Congo, India, Mali, Mexico, Mongolia, Peru, Russia, Saudi Arabia, South Africa and the US. 



The WR810 Water Cannon washes down valuable ore fines by reaching into the stope