Mining makeovers

Rebuilds and refurbishments play a vital role in today's mining industry, helping users maximise existing fleet life but also enabling a thriving market in rebuilt equipment sales and rentals – Paul Moore reports

Aerial view of Amalgamated Mining & Tunnelling facilities in Edmonton, Alberta, Canada

Rebuilds often form just one part of a diverse offering from specialists in this field and this year, 2025, is the 35th year in business for one of these - **Amalgamated Mining and Tunnelling**, based in Edmonton, Alberta. What started out as a simple rebuild/refurb facility in 1990 has become a global player in underground machine rebuilds, new equipment sales and rentals, parts supply and other services. ***IM*** Editorial Director Paul Moore sat down with President Colin Elson for some insight into how AMT got to where it is today and the unique value proposition it brings to the market.

So what enabled AMT to grow and expand to such as extent? "We started out as a rebuild facility for end users like mine owners and contractors. Even then a real source of pride was being able to move upgrade older equipment with newer technology. At that time, going from air brakes to hydraulic brakes was a big deal. Both then and today when we do rebuilds we want to stay competitive, so we look at why using us is beneficial for the end user. One of the things that makes a lot of sense is that we have the ability and the experience to understand what the new technologies entail. We don't incorporate any technology that is still being trialled, and we only use proven technology that has already been in the market for at least four or five years."

When AMT started incorporating new technologies, the founders and owners of Amalgamated including Tom Flanagan, realised that it had to have a diverse set of capabilities to be able to manufacture and remanufacture equipment instead of just rebuilds. This included the Cobra man carrier which was based on a Caterpillar platform and over time became very popular. The IP for that was eventually sold to a US company.

Elson told ***IM***: "The next natural step to meet demand in the market was to offer new equipment but not where we would be competing with the major underground OEMs in the market. We looked instead at how we could work with them. We decided that the new machine rental business was the missing piece of the puzzle that we could get into – as it wasn't competing with them, rather it was involving them and giving the end user another route when seeking new machines."

Colin Elson, President, Amalgamated Mining and Tunnelling

Elson points out that if you look at a major OEM quoting a mine owner for a fleet of new equipment, there are not that many options – the customer can purchase or lease through the OEM finance houses – but AMT saw that it could pre-order new machine inventory based on its knowledge instead of waiting for orders. "We hold our inventory so that it is readily available at any time. The other side of that is that when the mine owner looks to upgrade and buy new machines, they are still left with their old machines. Do you take those and rebuild them and bring them up to newer standards? Or reuse them in a different market whether overseas or in other territories where there is still demand for it? Or third you recycle the engines and other major hardware components to support already running fleets. Amalgamated can offer solutions for all aspects of this three-tiered decision. So we say to the mine owner – we can offer you the same new machine that you would get from the OEM with the newest ratings and technologies – but we also give you options for your old machine asset. And because the new equipment is ready to go, there is no lead time or wait time."

In tandem with all of this was ensuring this growth of the business was matched with the right people with the right experience and personality to implement and drive these new options for customers. Elson: "Just as an

example, Tom hired me and I come from a long background of underground contract mining. And the same is true of all our other managers – they either come from an underground contract mining background, a mine owner-operator background or from an OEM supplier. So he made the company experience level matched all the customer options. This means we can walk into a customer mine and say – OK you have a 16,000 hour machine – we know it will last 17,000 hours so we have a bit of a gap. Here is a value we can put on that equipment and here are the options on refurbishment, rebuilding or replacing and in the case of replacing finding a home for that asset."

This new equipment rental (and purchase) market really flourished – and today is AMT's fastest growing business. Elson: "A part of that is that we have the OEM backing as well. To give you an example, someone looks to take a new Sandvik jumbo from Amalgamated, and we give them a value for the old equipment it is replacing. We normally have units in the stock of the model that is needed plus the customer still gets full OEM support on training, parts and service. So we haven't taken anything away from the OEM partner."

What about the options for the old machine? "There are scenarios where we can take that equipment out of their operation and refurb or rebuild it with new technology addition, and they use a rental machine from us as a stop gap until we return their machine. But probably the most common situation is where we replace the old machine with a new machine and then it is up to us what we do with the old asset."

Then Amalgamated also buys used equipment on the open market to refurb/rebuild and repurpose. "South American and African markets are big equipment supply chains for us – as is Australia. And we have the buying power to look at full packages – so we would come in and not just look to buy one or two units. We would buy all or most of the fleet – say 50% of it we can rebuild and remarket; 25% of it we know it has another home as is in another location whether to a mine or to another rebuilder; and the remaining 25% we can recycle by using parts where we can – often the parts once rebuilt can end up being worth more than the whole core's initial value. And this business has really thrived in recent years due to the supply chain crisis."

There are lots of scenarios where an equipment package might become available – a mine comes to end of its life, or a contractor loses a contract or looks to sell off excess fleet. Or a mine has been mothballed and receivers are looking to sell off machines. AMT even has partners that can look at taking stationary processing equipment as well. So it can in some cases buy everything and find a home for it.

Before and after rebuild of Sandvik DD321 development jumbo by AMT

AMT is becoming increasingly global – 10 or even five years ago its home Canadian mining market still represented a majority of its business – today it has significantly grown its US business to almost equal its Canadian market, while its equipment repurposing business has significantly grown in Australia. North America and Australia together make up about 75% of AMT's business today with other countries and regions the remainder.

What's driving this global growth? "If you look at the values that we are carrying in our business, a big one is that we can and do work with everybody. We don't set out to own or dominate any markets but to work with everyone in it. To give some examples – we work a lot with other rebuilders like QME in Ireland to give an example; we work closely with the major underground mining contractors in Australia; and we work well with the OEMs and contractors in Africa. And we work with mine owners, contractors and suppliers in South America."

Taking QME as an example, the relationship covers equipment supply both ways – it buys from AMT and vice versa. And in some cases the two companies help market each other's equipment.

Back to OEMs and AMT's major alliance partner today is Sandvik followed by Getman and Kovatera. "With Sandvik we act as their rental arm in North America. This involves buying from them but also selling back to them based on supply and demand considerations. We bring the customer a full set of offerings. We can take their existing asset and replace with new with the options of purchase or rental, whichever fits their financial needs. When metal prices are low or for example during Covid, miners and contractors didn't want to invest millions in a new machine – we were available with the rental option."

AMT also deals with Sandvik on a global basis in terms of used equipment. "We've given them an outlet for any used equipment trade-ins of any brand that anyone wants to apply as part of a purchase or rental of a new Sandvik machine. Otherwise its a difficult proposition for them to see the value in the used machines. We can see the value, especially in terms of hard to get parts, plus we have our rebuild facility, parts facility and sales facility in-house to the point where we have the ability to put a new value on that older machine."

For Getman and Kovatera AMT is a full dealer in certain regions. For Kovatera it is the US plus Western and Northern Canadian dealer and for Getman all of Canada and certain US states. In both cases this covers buying, selling, parts and support.

What are AMT differentiators versus others offering rebuilds, mid-life services etc? Elson: "As stated before our background and experience means a lot – we have a lot of people that used to operate underground machines in contracting and mining companies so they know how the machines tick. But another important point is the sheer value of machines that we run through our shops and deploy, redeploy and purchase back – in 2023 we deployed close to 180 underground units. Of those about 40% were used units, and these are mainly of the same type we have rebuilt in previous years – so the experience level from a shop point of view is key as well in terms of repetition of work."

With new equipment buys being a big part of AMT's business to create a stock for new sales and rentals, how can it predict annually how many units and what types to buy from the OEM? "Our sales group is very engaged with our customer base and spend a lot of time on the road so we have a great feel for what projects are coming up and what is being permitted, plus what funding is out there for different projects. And watching what is happening with commodity pricing in the background. Of course we never get it 100% right but we are at that point where whatever we order we know is going to be deployed, and we have the used equipment line to fill any gaps that do come up."

AMT says it carefully considers the unique needs and readiness of each customer when introducing the latest technologies. "We understand that not every operation currently has the facilities or workforce to fully integrate and maintain these advanced technologies. For example, while there is significant interest in BEVs, we recognise that not all operations are ready to transition at this moment. BEVs are still accumulating real-world operating hours, especially in production environments. Plus all the other questions around infrastructure – is the mine set up with the right electric supply; does it have the right ventilation requirements; are the right technicians available to support the machines; and does the OEM have the right support in place?"

With conventional equipment there is still a lot of room to improve it, such as with more efficient and higher Tier engines in particular. "But of course as a company we are keeping abreast of what is happening in the BEV space. Plus We offer the Kovatera battery machines – and lots of mines are in a position to use that because it isn't a primary fleet machine so the risk and cost involved is lower for us and for the customer but it gets them experience with a high quality BEV machine."

It is clear that AMT has a special position in the market and one that is likely to continue to grow with the market and evolve with its needs. Underlying it all is a great value proposition for both customers and OEMs; and ulitmately one that is sustainable as it is finding new homes for used equipment instead of it being idled or scrapped.

QME's commitment to quality

Quarry & Mining Equipment Ltd (QME), based in Navan, Ireland, is a world leader in supplying top-quality rebuilt and remanufactured surface and underground mining equipment to the mining industry worldwide. Its component division supplies and rebuilds heavy-duty transmissions, differentials, converters and drivelines for all mining and tunnelling equipment. Spare parts are also supplied to support all equipment. QME has supplied underground and surface mining equipment to Tara Mines (Boliden), Lundin Mining, Barrick, De Beers, Vedanta and many others.

QME recently completed a full frame up rebuild of a Sandvik LH514

The company states: "Our workshops can offer from basic equipment repairs up to full frame up rebuild to OEM specifications. We strip the machine down to the frame, crack test, strengthen where required and then fully rebuild the machine back to OEM specifications using new or refurbished genuine OEM components and spare parts depending on end user requirements. We create a bespoke offering based on our clients requirements offering flexible rebuild and refurbishment options to suit end users budgets."

The QME rebuild process allows the end user to schedule the rebuild at an appropriate time in the equipment life cycle and then extend it's life span to get a second life at a fraction of the cost of a new machine. The time for rebuild will also be significantly less than the current lead times for new machines thus allowing an increase in production rates.

Recently completed projects include a fully rebuilt Sandvik LH514, with zero hour components and warranty; this loader has been completely rebuilt from the frame up.

And in a similar way to AMT, QME also offers rental and ownership opportunities for new and used mining and tunnelling equipment. "As a result of industry involvement QME has established close associations with globally recognised OEMs, allowing us to offer the end user the equipment of choice with lowest possible total cost of ownership. Our full range of new mining & tunneling equipment are backed with full factory warranty, technical support, OEM parts and a network of local and regional service centres."

Various business models are designed with mining companies & tunnelling contractors in mind, as well as start-up mining operations which may wish to defer spending capital on expensive equipment for use in another area until positive cash flow is realised. Fixed rental payments simplify budget planning and can be 100% tax deductible against business income.

Rent & return is an option that allows the customers to return the equipment with no commitment to purchase; while rent & purchase allows the customer to rent with an option to purchase the equipment following a minimum one year rental period with a percentage of the rental payments deductible from the pre-agreed purchase price. A rolling replacement allows the customer to return equipment to QME following a three year rental, and replace it with new equipment for another three year term or pre-agreed period. Finally, QME offers offer bridging units & used equipment for outright sale on an AIWI basis, or can negotiate a rental-purchase program to suit individual requirements.

HIMESA – leading the way in underground equipment battery conversions

Another European specialist is Hidráulica y Mecánica Sallentina (HIMESA), based in Sallent, near Barcelona in Spain. It offers full rebuild and refurbishment services but it has also been leading the charge in Europe for underground mining equipment conversions to battery electric in recent years, working closely with OEM partner Epiroc.

From a small workshop, **HIMESA** has rapidly expanded to become a leading company in the mining sector and the driver behind the conversions is partly due to its key partnerships with local mines, including the ICL-owned Iberpotash operation for which HIMESA is the Epiroc dealer. A major factor in conversion demand has also been that the Spanish and wider European governments have mandated that all underground mines have to reduce the emissions from larger machines such as loaders and trucks by 2030.

HIMESA says it is committed to the repair, adaptation and electrification of mining machinery in order to give it a second useful life

HIMESA battery converted MT2010E from original Epiroc MT2010 Minetruck

and contribute to the improvement of the working environment in a significant way. Of course, a battery conversion is a more expensive prospect for a customer than a standard Midlife services rebuild but still comes in at less than a new zero emissions machine – as a rough estimate 60% of a new BEV machine cost. Plus due to market demand the lead times for new BEVs are now getting quite long; added to which mines want to get the most out of the equipment they already have.

Battery converted models so far by HIMESA completed include the ST14E Scooptram and ST1030E Scooptram. The latest successful project is a battery electric converted Epiroc Minetruck MT2010 to MT2010E, an articulated truck for underground mining with a capacity of 20 t. HIMESA: "Designed to optimise every work cycle, it prioritises safety in challenging environments and ensures maximum durability and performance. This development reinforces our commitment to a sustainable future in mining."

HIMESA added: "The Minetruck MT2010 is designed to provide maximum peace of mind in every operation. With an integrated fire protection system and continuous insulation monitoring, it ensures a safer and more reliable working environment. These innovations not only protect equipment but also safeguard operators from potential risks. Safety is our priority because we understand that exceptional performance must be paired with trust and protection."

The MT2010E battery pack has a nominal voltage of 729V and uses NMC chemistry. It is equipped with integrated cooling to allow operation safely at temperatures up to 55°C, and ensures maximum performance while in a compact format. The MT2010E combines integrated cooling and continuous insulation monitoring, optimising its performance and protection and enhancing safety by detecting issues in advance. This comprehensive approach ensures that operators can work confidently in demanding conditions.

HIMESA as a group has extensive infrastructure and equipment, which includes six large warehouses and workshops equipped with specialised mechanical technology. It maintains a large stock of over 10,000 parts to ensure efficient service delivery. Its machining workshop features state-of-the-art machinery for precision manufacturing. Additionally, its welding area is equipped with specialised technology for chassis and component modifications. A recent addition was new hydraulic house workshop. Situated in a more spacious facility, this workshop has been tailored to enhance our handling of parts and components through the integration of smart cabinets.

Another option from HIMESA for customers to reduce emissions is installing emission reduction systems, allowing engines compliant with Euro 3, 4, and 5 standards to be updated to Euro 6, ensuring compliance with European regulations. This enables extended reuse of the vehicle, leading to significant cost savings for companies in the sector.

The selective catalytic reduction (SCR) system comprises a ceramic particle filter with a cell structure that traps harmful particles in the exhaust line. It includes an SCR system that converts nitrogen oxide (NOx) particles into nitrogen and water particles. Additionally, a diesel particulate filter (DPF) collects and burns particles from exhaust gases, utilising the thermal factor of the engine and SCR to incinerate the collected particles.

The installation of these systems allows for substantial reductions, such as over 90% for NOx, 98% for hydrocarbon particles, and 90% for carbon monoxide and dust produced by the engine's combustion. As an example, HIMESA offers the NOxBUSTER® system, a leading technology in reducing NOx.

This results in environmental benefits in the workplace and ensures an extended machine lifespan. Optimisation occurs due to the improved efficiency of the engine, which works more effectively, and avoids the transmission of particles to filters, extending their lifespan. This, in turn, allows for reduced investments in equipment maintenance or replacement.

Maximising value with Getman solutions

In an era where ongoing cost pressures continue to push mining operations to carefully scrutinise every dollar spent, rebuilding equipment has emerged as an efficient and sustainable alternative to new purchases. **Getman Corporation** says its rebuild and repair services provide mining operators with a reliable path to extend the life of their underground equipment, reduce costs, and adopt new cutting-edge advancements.

As a US-based OEM, Getman told ***IM*** that it "combines technical expertise with a unique understanding of its machines, offering a level of performance and quality that independent rebuild specialists often cannot match. From comprehensive overhauls of complex scalers to targeted repairs on more simple utility vehicles, Getman's service solutions drive peak performance and reliability."

It adds that the advantages extend beyond just cost savings. "Rebuilding with Getman allows operators the opportunity to integrate many of the latest technological upgrades resulting in enhancing safety, efficiency, and sustainability in line with modern mining

Before and after Getman rebuild of ANFO loader truck

demands. For example, incorporating new hardware or emission-reducing systems during a rebuild can help companies align with increasingly stringent ESG requirements."

Moreover, Getman's commitment to customer care doesn't stop at the rebuild process. Through comprehensive service and support programs, including on-site assistance and tailored maintenance plans, Getman "ensures that rebuilt equipment continues to operate at OEM standards long after the initial rebuild. Getman stands behind its work by offering a generous warranty program to match the rebuild level."

As the mining industry looks to navigate challenging markets and meet ambitious operational goals, rebuilds offer a way to maximise the value of existing assets without sacrificing performance. With Getman's expertise and OEM-backed quality, it says mining companies can confidently keep their fleets running longer, safer, and more efficiently.

Low profile improvements - Komatsu

Komatsu manufactures, sells, rebuilds, services and supports all of its equipment with the aim of ensuring the products comply with legislation and support low downtime and maximising productivity. It provides a number of services like training, parts support, field service, component repairs and service exchange as well as vendor managed inventory and machine rebuilds enabling for customer support through the lifecycle of the equipment on site. Komatsu says it also strives to continuously improve maintenance practices together with customers and ensure the equipment supports this philosophy as much as possible.

So, machine design changes can also extend life by optimising maintenance. As an example, the mid-size Komatsu SLP loader, the SLP-6 (WX06LP), formerly part of the GHH line-up, with GHH Group becoming part of Komatsu in July 2024, has recently been facelifted to optimise maintenance with the aim to improve MTTR and MTBF, increasing availability to ultimately increase productivity and drive lower life cycle costs. The SLP-6, available in both air- cooled and water- cooled versions, has a bolt off/bolt on rear engine frame to swap between Tier 2 or Tier 3 engine packages.

Komatsu told ***IM***: "By removing the t-link and implementing the direct link design, we see a reduction in operating costs without compromise to the tipping angle, says the company. The added benefit is a lower profile on the front side of the load frame due to lower linkage system, making it easier to navigate in the low profile mining environment. With key focus on simplicity around maintainability, the LHD allows for easy access to service items by optimising component placement to maximize space and improve access, and having centralised lubrication points to drive productivity, better access for maintenance driving improved availability."

The SLP-6 comes with a 24V analogue electric system, which is easy to maintain. With the unique option of having an overlayed condition monitoring system, to help with performance management, maintenance and serviceability. The machine is designed with a 'zero breakdown philosophy' with the full electrical system and harnesses being plug and play with the option of an overlaid condition monitoring system.

Other improvements like updated transmission cooling for increased cooling capacity have been implemented. Plus there is now the option of bigger tyres for improved traction requirements and improved ground clearance with tyre life improvement. All the hoses, fittings and pipes are available 'off the shelf' for improved maintenance planning.

Komatsu concludes: "Overall, the new WX06LP plans to maximise productivity and lower running costs, making it your number one partner in low profile mining."

Thiess rebuilt mining trucks from Indonesia to Australia

Moving from underground to surface, global mining services company **Thiess** recently successfully exported its first fleet of rebuilt trucks – five Cat 789 trucks – from Batam Island in Indonesia to Perth, Australia, with more enroute to support the ongoing demand for hauling fleet.

It states: "Our Thiess Rebuild Centre team in Indonesia resets the usage clock on each truck to zero hours, extending each truck's service life by 40,000 to 60,000 hours, with a full rebuild that includes overhauling all major components and refurbishing the chassis and electrical systems." A total of 31 trucks were expected to be completed and exported by the end of 2024.

Thiess Group Executive Chair and CEO Michael Wright said: "Our truck and component rebuilds underscore Thiess' commitment to sustainable solutions and innovation in mining. The rebuilt equipment and components will result in improved machine productivities, incorporating product updates and technology improvements, delivering reliability and enhanced mining efficiencies at lower costs for our clients."

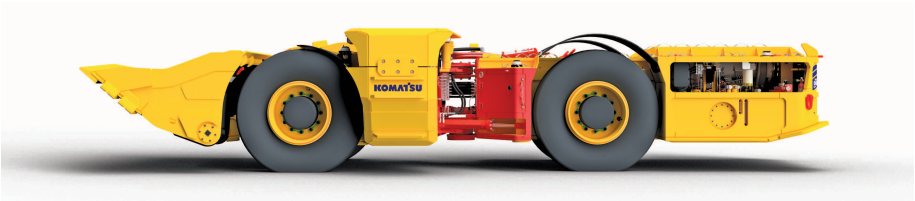
He adds: "The centre also serves as an incubator, allowing us to explore decarbonisation and alternative fuel technologies, with future opportunities to offer these services to our clients. Our rebuild team has successfully developed innovative solutions such as building diagonal stairway control boxes from piece parts, helping circumvent global supply chain issues."

Strategically located near Singapore to service Thiess operations in Asia and Australia, the centre showcases the role Thiess can play in the future of sustainable mining, which includes creating opportunities in the communities where the company operates.

Thiess Engineering Indonesia General Manager Daryl Albury said: "Thiess has invested in several local programs across the Batam region. We've partnered with Batam State Polytechnic and vocational schools across Batam to provide work experience programs and sponsored local youth to take part in our leading Apprentice Program at our Balikpapan Training Centre, providing valuable skills in mechanics and auto-electrical trades. These contributions ensure we're helping to build a robust workforce and pipeline of skilled local workers that supports economic growth and innovation across the region."

Further strengthening Thiess' community impact, the Thiess Rebuild Centre team has also worked closely with local government on various initiatives aimed at promoting environmental sustainability and public health.

Thiess concludes: "With our Rebuild Centre, we reaffirm our commitment to sustainable practices, community support and technological advancement, setting a new standard for sustainable mining services and asset management." IM



Old and new designs - the old SLP-6 and new WX06LP