

A quiet revolution



Smart, silent type ... the Atlas Copco ROC D9C Silenced Smart Rig at work on a section of the \$A2 billion Brisbane North-South Bypass Tunnel project.

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What's a Kalgoorlie mining contractor doing working on Brisbane's major urban tunnel project?

The company, Avko Mining, is quietly adding a new and potentially very significant string to its bow.

Widely recognised in Australia for its innovative approach and performance in the mining industry, Avko is diversifying strongly into the civil construction and quarrying markets. And it is doing so with the aid of advanced drilling technology from Atlas Copco.

Working with the Leighton Contractors/ Baulderstone Hornibrook Bilfinger Berger Joint Venture on the \$A2 billion Brisbane North-South Bypass Tunnel (NSBT) project, Avko is using the first Atlas Copco ROC D9C Smart Rig, with silenced mast, to start work in Australia. The unique "silenced drill" enables Avko to work longer during the day in a built-up

urban area than it would be able to with a conventional drill rig.

It is using the ROC D9C Silenced Smart Rig to drill-out rounds for explosive charging in a vertical shaft development, and subsequently for ground stabilisation drilling. Avko is working closely with Orica to ensure that not only drilling, but also rock blasting is carried out with maximum accuracy and speed, and minimal disturbance – particularly noise and vibration disturbance – on the Brisbane tunnel project.

The two companies have already collaborated to produce excellent results during completion of the tunnel portal works near Shaftston Avenue, Kangaroo Point, where electronic detonators and low-energy explosives were used to achieve a range of production, safety and environmental benefits.

The NSBT project includes a 4.8km tunnel



Much quieter drilling is going to open up numerous inner city work opportunities, according to Avko Mining.

and associated road connections within about 6.8km of overall development. It is scheduled to open in the second half of 2010.

Avko Mining project manager Dougal Guthrie said the company saw technology, coupled with the company's preparedness to adopt innovative practices, as a means to develop a competitive edge in niche areas within the growing Australian civil engineering market. In Brisbane alone, more than 20km of underground tunnels are planned over the next decade as the city refocuses urban transport network planning with a view to using more "underground space".

The Atlas Copco Silenced Smart Rig can work up to 1km closer to population centres than other similar rigs.

"Avko bought the silenced rig with the aim of getting ourselves more into the inner city construction and quarrying market where noise is obviously a consideration," Guthrie said.

"I think it will definitely give us an edge on anything in a built-up or residential area.

"You haven't been able to use these types of drills in the middle of residential areas. In civil construction you normally saw the ground or you rock hammer it. Drill and blast has become a poor cousin I suppose because of the amount of noise generated by drilling and because people are obviously a bit wary about explosives as well. But there are a lot of situations where it's a better option and having this up our sleeve, a drill that's a lot quieter, is going to make it a lot easier to break into those markets as well."

Guthrie said it was "remarkable how much less noise comes from the Atlas Copco unit".

"All you can now hear really is the noise of the compressor and the motor, which in itself is not that loud.

"Another positive we're seeing is that people working in close proximity to the drill are able to communicate more effectively. The boys from Orica have certainly been impressed by the fact that they can work, not necessarily without earplugs, but they can hear each other now without having to use hand signals as they were before. So there's a significant safety aspect.

"We've been using this drill for ground support holes too. There is a lot of call for that, and the same benefits are generated there – when you drill the hole you're making half as much noise.

"It's also a lot better for dust collection, because it's a fully enclosed steel unit. There are some good dust collectors on the market, but the design of the silenced rig does improve on that as well."

Atlas Copco delivered Avko Mining's ROC D9C Silenced Smart Rig in November last year. It is due to finish work on the current tunnel campaign in the middle of February.

Atlas Copco Construction and Mining Australia Queensland regional manager Craig Marsh said as well as reducing noise by 10dB(A) or more compared with conventional drills, the ROC Silenced Smart Rig used substantially less

energy (up to 30% fuel saving) and featured a Hole Navigation System that allowed automated hole drilling after initial set-up.

"The Smart Rig's Measure While Drilling (MWD) feature allows a number of key parameters to be logged at nominated intervals while drilling, providing data that can be analysed in ROC Manager drill planning and control software," Marsh said.

"We've been using this drill for ground support holes too. There is a lot of call for that, and the same benefits are generated there – when you drill the hole you're making half as much noise."

"The Automatic Feed Alignment and Automatic Rod Adding System features set the feed to pre-defined angles and drill automatically to a given depth, increasing rig productivity. A laser receiver can be used for depth control."

The Smart Rig also has 30% fewer hoses, and hose length, 10% less cable and 60% fewer conductors than the predecessor Atlas Copco unit, significantly reducing downtime potential. **■**

Viper leads coal market strike

The strong outlook for thermal coal markets and growth in Hunter Valley coal production is not the only business positive Atlas Copco regional manager Rob Swan takes into 2008. He will also soon have a reference site for two production drills he believes can make Atlas Copco the market pacesetter in one of the world's major energy coalfields.

Orders for the Pit Viper PV 275 and DML 60 from Rio Tinto Hunter Valley Operations will see the units delivered around the end of March and June, respectively, this year.

"It's a particularly big step forward for Atlas Copco because these sorts of machines haven't been sold in New South Wales for a lot of years," Swan said.

"It's going to create great exposure for these

drill rigs in the Hunter."

Atlas Copco's acquisition of Ingersoll Rand Drilling Solutions in July 2004 (now known as Atlas Copco Drilling Solutions) was followed by the transfer of sales and support responsibilities for the product to Atlas Copco Construction and Mining Australia. The long period of distributor sales and service inactivity has ended.

"One of the rigs, the Pit Viper PV 275, is new to Australia," Swan said. "There are no units currently running in Australia. I believe it will be the first of many to be sold.

"Once people see it in operation and get some faith in our ability to back the machine, which is always the biggest thing, I expect a lot of positive things to happen. Competitors have

got machines in the field; we've got some very old machines, up to 10 years old, still in the field. But I believe with these new rigs we will become a force to be reckoned with, no doubt at all."

The PV 275 multi-pass rotary blast-hole drilling rig is ideally suited to overburden drilling. A track-mounted unit with tophead-drive, it can drill to about 60m and deliver bit load force up to 311.4kN. The standard drill pipe diameter is 180mm and rotary bit size 270mm.

The Atlas Copco DML is a crawler mounted, hydraulic top-head drive, multi-pass rotary drilling rig specifically designed for production blasthole drilling to depths of 55m with a 9.1m drill pipe change. A versatile unit, the DML can be configured as a high pressure drill for DTH drilling.

A diesel engine on the standard DML drives the air compressor and hydraulic system. Operation of the drill is performed using electric over

hydraulic controllers ergonomically located so that the operator faces the drill centraliser while drilling.

Swan said strong thermal coal demand and the prospect of higher prices was driving new investment in Hunter Valley projects despite the well documented capacity issues at the port of Newcastle.

"I believe with these new rigs we will become a force to be reckoned with, no doubt at all."

"Capital equipment sales are still on the go, which I believe will increase," he said. "Mines are being approved and there is a lot of expansion happening."

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A step back; two steps forward

A year ago Barry Luttrell, 58, was preparing for an early retirement after more than 40 years in trades and teaching. He was persuaded to shelve his plans though when an opportunity came along to be involved in an apprentice training program he saw as exciting – for him as a program architect, and for participants – and one with the potential to re-set the best practice bar in the mining service industry.

Luttrell is well placed to judge this.

He spent 14 years in Australia's technical college system (TAFE) in New South Wales. Prior to that he worked in the equipment supply sector and mining industry after finishing an electrical trade apprenticeship. He was with building materials group Boral for about 13 years leading up to the time he thought he was about to retire.

"Then this came along and it looked really good," he said.

"I saw this as an organisation that was looking to put in place best practice in the way training is delivered [and] best practice in the way a company developed its people."

Atlas Copco Australia has launched an apprentice training scheme that may well become a template for recruitment and

retention of generations X, Y and "i" in the mining/construction supply sector. Luttrell believes its appeal goes beyond these all-important demographics, but admits prospects of rapid skills and knowledge advancement along a competency-based assessment path, coupled with earlier, clearer career signposts and Atlas Copco's global position as a technology-driven market leader, will hold

"In this apprenticeship we also expect the apprentices to be productive in three months. Traditionally they've probably spent the first 12 months following the tradesmen around, carrying the toolbox, sweeping floors and generally doing mundane work."

special appeal for the youth market.

"The traditional apprenticeship is four years," he said. "You go off to TAFE one day a week, and you pass your exams at TAFE and at the end of the year if you pass TAFE you go on to the next stage of your apprenticeship, or the next year. It was always based on time and always four years.

"We've changed from years to stages, so years no longer count. Someone may finish all stages of the apprenticeship in three years, while someone else takes five years.

"The key is demonstrated reliable application of competency in the workplace.

"In this apprenticeship we also expect the apprentices to be productive in three months. Traditionally they've probably spent the first 12 months following the tradesmen around, carrying the toolbox, sweeping floors and generally doing mundane work.

"Ours is a flexible apprenticeship, it's competency based, there are four stages and each stage has a basket of competencies required and when the basket of competencies has been assessed and there's reliable application in the workplace, then the person progresses on to the next stage.

"In the first three months we are targeting the competencies required to get the apprentices up and productive quickly and effectively. So the first group of competencies they'll do are those that will enable them to be productive."

Atlas Copco's first dedicated training and development manager in Australia believes the merit-based assessment and reward approach "fits with Gen X and Y's values".

"They don't want to hang around for four years to finish an apprenticeship if they've completed their training," Luttrell said. "To say to a person your training program is as long as you need to make it provides them with the flexibility to say, okay I'm an intelligent young person – or





Atlas Copco Australia training and development manager Barry Luttrell ... flexible apprenticeship suits the needs of new generations of workers.

older person as the case may be – let's get on with it."

Atlas Copco is aiming to more than double its service/maintenance apprentice intake this year. Luttrell said the initial group of invitees was a mix of younger people who had some TAFE course exposure, and more mature individuals with experience in industry. Several females were among the youth contingent.

"We've recruited for quality rather than quantity and we will take a lesser number unless we've got the right people," he said.

The apprentices will undertake a customised TAFE program, developed exclusively for Atlas Copco by a Perth TAFE college for national implementation. They will also gain experience at different company sites around the country.

"One of the things we really don't want to happen is to have people, for example, sitting in a classroom twiddling their thumbs saying, I've done this before, I know about this, let's move on. It will stay interesting and challenging. I believe I'm taking all the best parts of TAFE from my previous teaching experience, utilising those, and removing the other parts," Luttrell said.

He said the flexibility of the Atlas Copco apprenticeship program was a key selling point in a competitive market. The company's intake group would also be well paid by industry standards and, because of the emphasis on fast-tracking trainee progress, individuals would find themselves better positioned to move into high-paying jobs sooner than they would in other programs.

"Our apprentices are probably going to be three years hands-on on the equipment, then spend time as qualified technicians, then have the option of slotting straight into product specialist roles. With professional management knowledge and experience, they can progress further from there.

"It's a seamless career structure on offer. It's interesting that we have attracted a couple of people who currently hold a university degree, or a portion of a uni degree, because they see the career path.

"They also see a company with global reach, and one that has displayed technological leadership and strong growth in recent years."

Luttrell believes a targeted apprentice retention rate of 80% or more can be achieved. He cited faster trainee development as a positive in this regard: it gave the company increased scope to elevate staff within the organisation more readily.

"Currently in the mining industry the churn rate is more than 60% per annum, which is a particularly high cost to businesses," he said.

"As soon as our people finish the apprenticeship component they will have an opportunity to advance to four different service technician levels, so there's a continuous career path.

"It effectively means that if someone is looking

to headhunt these guys the competitor will have to pay a premium to attract them because they're going to be looking two-to-three years ahead and seeing where they will be and matching that up against the alternative path being offered by another organisation, one which perhaps doesn't offer a career path."

Luttrell said stopping the debilitating "churn" was a catalyst for the expanded and rejuvenated apprentice training program. Other drivers included, naturally, the pervading skill shortages in Australia and elsewhere – "we can no longer collect people off the shelf"; and the increasingly fruitless search for people overseas.

"But it's basically about getting the best people, and reducing the time that it takes to get them from the entry level to being a productive member of the workplace," he said.

"The other thing we're doing is participating in school days in the senior school system, because what we want to do is position Atlas Copco as an employer of first choice for intelligent young people." h

A new and valuable reference

A second edition of Atlas Copco's technical reference book "Mining Methods in Underground Mining" has been released on CD.

Used by the mining industry as well as by universities and consultants worldwide, the book draws on the extensive experience and knowledge of Atlas Copco operatives, and their customers, around the world.

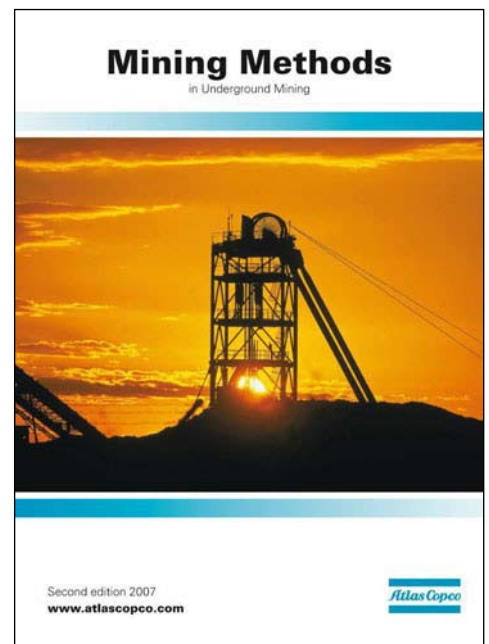
Atlas Copco for many decades has had the ambition of providing the underground mining industry with interesting and educational articles describing various underground mining methods.

"Our main aim with these publications is to stimulate technical interchange between all people with a special interest in this fascinating business," said Hans Fernberg, Atlas Copco Rock Drills AB senior advisor.

Divided in two parts, the book presents technical issues as well as case studies from underground mines around the world - from the far north of Sweden, where LKAB's Kiruna and Malmberget mines supply about 4% of the iron ore requirements of the world's steel industry, to the richest silver mine in the world, Industrias Peñoles' Proaño mine in Mexico, with 450

years of operating history.

The book's first part includes a contribution by Magnus Ericsson from Atlas Copco's Raw Material Group with an article covering today's general trends in underground mining. The reality that mines are getting deeper is one of many factors presented as driving the



development of new mining technologies, and which affect all stakeholders.

The book also has articles covering the whole spectra from geology, mineral prospecting and exploration, mining infrastructure, principles of raise boring and different mining methods, the book presents a number of case studies gathered from around the world.

The CD, which includes the other six references in the series (Face Drilling, Rock

and Soil Reinforcement, Surface Drilling in Open Pit Mining, Surface Drilling in Quarry and Construction, Loading and Haulage in Underground Mining and Underground Mining Equipment) can be ordered through Tiffany Alderson (02) 9621 9727, email: tiffany.alderson@au.atlascopco.com and costs \$25, which includes postage and handling. It can also be ordered at www.miningandconstruction.com. **h**

At last, a real vision of the future

By Richard Roberts*

In the 1990s Western Mining Corp was going to lead the mining industry's charge into a new technological era. Former WMC boss Hugh Morgan said automation would make mining safer and help it shed its "old world" image, boosting its appeal in the labour market.

The charge faltered before BHP Billiton's 2005 takeover of WMC, but the new owner effectively wound back WMC's automation program. Some key WMC technology personnel joined BHPB's rival Rio Tinto, which has now well and truly taken up the automation leadership cudgel.

It was Rio Tinto that led its bigger adversary in signing on with Australia's world-leading centre for field robotics research in Sydney for a long-term, exclusive research and development partnership in the middle of last year and now, amid growing anticipation of a formal takeover offer by BHPB for Rio, it is the latter laying down a bold plan to automate key parts of its iron ore production chain as it embarks on a proposed three-fold expansion of the business.

The recent announcement by Rio Tinto boss Tom Albanese that the company wanted to be the "global leader in fully integrated, automated operations" signals a seismic shift in an industry major's attitude towards using technology to deliver significant competitive advantage.

For years automation has been seen by people in the mining industry worldwide as the technology that can deliver a quantum leap in mining productivity and safety, and help sustain mineral production costs at competitive levels. Export-focused mining such as in Australia and Canada has made use of technology to advantage, but the industry generally has been on an evolutionary path with technology.

"In my office I have a 400-year-old book on display," Albanese said at a conference in Kyoto, Japan, in October last year. "The book represents a compilation of mining technology in those days. It is a fascinating book, being one of the world's first engineering treatises with innovations such as hoisting, hydraulics, water pumping etc. There is even a section on the environment.

"The good news is that our industry was a true leader in technology and innovation.

"The bad news is that I recognise in the illustrations of this book many mining practices still in use today.

"By the nature of our industry, we are not an aggressive innovator. Our product lines and investments are measured in decades."

However, automating machines and overseeing their operation from control centres in major cities is a revolutionary step that could transform the mining industry in a number of ways.

Ironically, it is only now during a record-breaking run of commodity demand, prices for most metals, and investment by the industry, that real need has overtaken the industry's propensity to talk about, but not progress with, technology that is already relied upon in industries such as petroleum, manufacturing and defence – and even in mineral processing today. Apart from its desire to tap mine automation benefits, Rio Tinto can see a day

when there are not enough skilled machine operators to drive the dump trucks, shovels, drills and other equipment used to extract and transport iron ore, coal and other resources. The factors shaping this view are many, but in general terms the pool of available skilled labour is under unprecedented demand pressure and the cost of drawing people to remote areas is producing diminishing returns, particularly with the debilitating level of workforce turnover that has become the norm for large and small operators.

Albanese believes Rio Tinto has "at least a three year start on the rest of the industry", which he says has focused on discrete technologies rather than modernising the whole mine-to-port operation.

"Remote control intelligent trains, drills and trucks will be operational within Rio Tinto Iron Ore during 2008," he said.

"Humans will no longer need to be hands on as all this equipment will be autonomous – able to make decisions on what to do based on their environment and interaction with other machines."

By 2009 operators would oversee the equipment from a new remote operations centre, which Albanese described last year in Kyoto as an "urban mission centre", in Perth, more than 1500km away from its Pilbara mines and rail network.

Rio Tinto's "mine of the future" vision had "openpit mines, with the largest trucks in the world, but with no drivers", teleremote-controlled drills, and driverless ore trains. "This could be with us within 3-5 years if we push hard," Albanese said.

"It will allow for more efficient operations and directly confront the escalating costs associated with basing employees at remote sites, giving us a competitive advantage as an employer along the way." **▶**



Mission control ... coming soon to a mine near you.

Rio Tinto's Perth remote operations centre (ROC) under construction near the city's domestic airport would house at least 320 employees who would work with Pilbara-based colleagues to oversee, operate and optimise the use of key assets and processes, Albanese said, with operational planning and scheduling functions based in the Perth centre.

ROC-based management would oversee pit and plant control, as well as manage the most effective use of power distribution and support activity such as maintenance planning. Remote operation of Rio iron ore mines and plant in the Pilbara had already been successfully trialled.

“The recent announcement by Rio Tinto boss Tom Albanese that the company wanted to be the “global leader in fully integrated, automated operations” signals a seismic shift in an industry major’s attitude towards using technology to deliver significant competitive advantage.”

A key to Rio Tinto's declared position as pacesetter in the mine automation race is its partnership with The University of Sydney, formalised last year with the creation of the Rio Tinto Centre for Mine Automation. Albanese said the alliance gave the company exclusive access to world renowned robotics experts dedicated to addressing Rio Tinto's "mine of the future" opportunities.

“Automation will bring about superior performance, reduced use of energy and water, a smaller environmental footprint, and alignment with the lifestyle aspirations of our employees,” he said in Kyoto.

“Tremendous computing power and precision in global positioning systems offer a future in which our capital equipment is used with unparalleled safety, efficiency and productivity.”

They are similar words to those used by Hugh Morgan a decade or so ago. Ready now, it seems, to be converted into reality.

*Richard Roberts is editor of www.highgrade.net



Mancala, Atlas Copco forge new links

After doubling its turnover last year Victorian-based mining and construction contractor Mancala is seeing further significant expansion on three fronts. Each new direction has a common element: Atlas Copco equipment.

Mancala's mining alliance with Bass Metals at the Que River zinc-lead openpit project in Tasmania, and shaft development work at Baal Bone colliery in the western coalfields of New South Wales, have in recent months added a new chapter to the Mancala-Atlas Copco relationship, forged over nearly two decades.

An Atlas Copco ROC D9 rotary blasthole rig started work at Que River in September last year. Traditionally focused on underground mining and construction, Mancala is stepping up its opencut work. With Bass it is mining through remnant underground workings at Que River. Underground mining is a longer term possibility.

At Baal Bone, a refurbished Atlas Copco Robbins 71R raiseboring unit was pilot-hole drilling within days of arriving on site.

Meanwhile, at the Costerfield gold-antimony project in Victoria, Mancala will use Atlas Copco Boomer M2D and 104 jumbos in development.

Mancala executive director (and a founder) Bill Lannen said the 17-year-old company's equipment fleet had probably trebled in size in the past 2-3 years. Staffing had gone from 45 to 130 personnel in that time frame. Lannen sees more growth opportunities in 2008.

“We've expanded in opencut, underground and raise drilling, and in all three areas

the expansion has involved Atlas Copco equipment,” he said.

“In the raise drilling area we've now got three rigs in the country and we've stepped that up to a new level. We've got an Atlas Copco Robbins 71R that's been rebuilt in Peru and it's just started its first hole at Baal Bone. That's a 230m hole, 3m-diameter with steel lining in the

“We – Mancala and Atlas Copco – have worked together through the good times and the bad. We're certainly in the good times now. But the product we know is a good product, it's well supported, and that's what you need in this business.”

top 100m. Considering the machine has been rebuilt and converted to 1000V, I was fairly pleased that within four-five days of reaching the site it was pilot-hole drilling.”

A former mine superintendent and registered manager of the Hellyer zinc-lead mine near Que River, Lannen co-founded Mancala and says he has enjoyed the support of Atlas Copco regional manager John Stanton “through thick and thin” since the contractor's inception.



Mancala's equipment fleet has trebled in size in the past 2-3 years.



Mancala bought Atlas Copco Boomer M2D and 104 jumbos for mine development work at Costerfield in Victoria.

"We – Mancala and Atlas Copco – have worked together through the good times and the bad. We're certainly in the good times now. But the product we know is a good product, it's well supported, and that's what you need in this business."

Stanton described Mancala as a "small contractor that has grown through the ranks".

He said the outlook for the Tasmanian and Victorian markets in 2008 was particularly robust, with gold, iron ore and base metals mining investment strong.

A green light for the restart of the Renison and Mount Bischoff tin mines near Zeehan provided a further boost for a Tasmanian minerals sector seeing a resurgence in exploration and development.

Operator Metals X has placed the first orders in Tasmania for Atlas Copco ST1520 underground loaders, and will also use two Boomer M2D development jumbos.

"They've ordered four bidders and two drills," Stanton said.

"The first loaders have arrived. The Boomers are the M2D 18SP cabin version drills. We're waiting now to see what will happen at Bischoff, where the mining and drilling is likely to go to contractors." h

Pump will fill local market need

A grout pump that has become a fixture at tunnelling projects, construction sites and mines throughout Europe is set to make a big impact in Australia this year if the response to its recent introduction is a good guide.

Atlas Copco Construction and Mining Australia product manager Ground Engineering and Exploration, John McCubben said the Austrian-made MAI pump was an extremely compact, low-maintenance unit that was particularly easy to clean and use.

"Over in Europe they've been a huge success," he said.

"We're now starting to sell quite a few of them here as well. I've got a mining company that's purchased one looking at purchasing another three already. It's a product that is likely to be very well suited to mining applications here."

McCubben said the MAI M400 had been used successfully around the world in tunnel construction, civil engineering, mining and shoring of building excavations, slopes and hill sides. The proven mixing and pumping technology was well suited to injection work, re-injection grouting, drill-hole filling, back filling, and for anchor mortar injection.



Atlas Copco MAI grout pump.

The unit's sturdy, modular design features a corrosion-resistant galvanised frame and steel charging hopper. It is easy to dismantle and therefore quick to clean and maintain.

MAI grout pumps can deliver flow rates of 400-2400 litres per hour over up to 60m, with maximum delivery pressure of 40 bar. The 1800mm-long, 790mm-wide units weigh about 235kg and use a 400V (50Hz) power supply for standard output of 6.125kW.

"It's a really compact, high-pressure unit that is easy to look after," McCubben said.

"Normal grouting gear can take forever to clean out. This design makes cleaning very simple and easy and takes the stress out of that process." h

Cluster drill creates new openings

A unique drill developed to help progress a major Australian water desalination project could have wider application in the construction industry.

The \$A1 million-plus Atlas Copco CD 88 "cluster" drill assembled at Newcastle and barge-mounted for offshore drilling by the Bluewater Joint Venture is the largest unit of its type produced by the manufacturer, according to national down-the-hole (DTH) drill product manager, Ron Reece.

The cluster drill features 19 eight-inch-diameter Secoroc DTH hammers with 10-inch DTH bits assembled in a 2.2m-diameter drill head-casing purpose designed for the underwater work. Drilling from a jack-up barge, the unit will complete a series of 20-30m-deep holes in the ocean floor, transferring all material from the holes for onshore storage.

Reece said the massive final assembly would weigh about 15 tonnes and be 2m high.

"It will take about 10,600cfm of air to drive the cluster drill," he said. "There will be banks of compressors on the barge."

"It's the largest cluster drill that we have ever manufactured."

"The design of ... the shanking and indexing arrangement of the bits within the hammer is unique itself. It will contribute to contaminant-free collection and transfer of the drill cuttings, which is an essential part of the project."

Reece said cluster drills were generally used in bridge piling.

"This project might expand the range of applications in the construction industry," he said.

The Bluewater Joint Venture, consisting of John Holland and Veolia Water, last year signed a \$A960 million contract to design and construct the Sydney Desalination Plant. It will also operate the proposed plant at Kurnell for 20 years.

It is expected to provide 250 megalitres of fresh water a day, using reverse osmosis technology to convert saltwater into drinking water. Construction work will include inlet and outlet structures and tunnels, more than 16km of pipework, a drinking water storage facility and administration building.

The desalination plant is expected to come online by the summer of 2009-10. h

Trucks will soon be parked in mining's e-bay

The quiet revolution in mining is not linked to a seismic shift in safety standards, or robotic removal of ore. Seven years after the dot.com boom came and seemingly went, the internet has shifted the war on purchasing inefficiencies and costs – up to 15% of mine operating expenses – online.

"Electronic ordering is the future for the industry," said Andrew Goodwin, Atlas Copco Construction and Mining Australia's national parts marketing and logistics manager.

"Many of the world's biggest mining companies have targeted that 15% operational cost – in purchasing systems, database management, and inventory cataloguing – which is a significant sum of money when you look at a company the size of BHP Billiton, Rio Tinto, Newmont and Xstrata. They are implementing various electronic means by which they can handle their purchasing, and all the back-end systems to do with cataloguing of parts, etc ... and make buying faster and simpler. Each of the companies wants to have at a corporate level better control of the [purchasing] spend. In other words, they want to have contracts in place for pricing, supply, terms and conditions of supply, freight terms and quality, and they want to transact online."

Having just received what is thought to be the biggest order placed via the multi-billion-dollar Quadrem mining e-marketplace – for two surface drill rigs – Atlas Copco is at the forefront of an e-procurement movement which was initially linked to mining consumable and smaller capital purchases. While these still accounted for most of the estimated \$US16 billion of business transacted through 2.5



Atlas Copco Construction and Mining Australia's national parts marketing and logistics manager, Andrew Goodwin.

million Quadrem purchase records last year, the large capital equipment orders reflect a maturation of the marketplace, related resource management system implementations, and growing general acceptance of e-procurement.

The value of orders processed through Quadrem last year also reflects the buying power of the major mining and mineral processing groups which established the platform and business in 2000.

Quadrem said late last year its procurement network connected more than 1100 buyer locations worldwide and over 55,000 suppliers.

"You have in many cases governing global supply agreements between the main manufacturers and suppliers of mining equipment and parts, and the major mining groups, and you have the preferred means of transacting business, which is electronic," said Goodwin.

"Someone on the shopfloor opens a work order, which is opened against the equipment – an Atlas Copco drill rig, for example - and they put a part in on the work order which is on their back-end system and that part is ordered straight away. The pricing, terms, etc, are already in place through that global fixed agreement for the year.

"If the part they want isn't on their catalogue they can go to an external catalogue using OCI, or open catalogue interchange software, which takes them from their back-end system to our website. If it's a Caterpillar machine it's directed to the Caterpillar website. On our website, AC Connect, they can create lists of parts and once they've done that they've got all the price, availability and other information sitting in the background that will enable that product to be automatically catalogued on their computer.

"Once they're [parts] catalogued they can buy them straight away. It imports those parts, prices, etc, back onto their work order, so they don't even have to re-key anything.

"Unlike the early days, when the whole process was like having a conversation via text messages or email – in other words too slow and painful – the process is now really fast, and it's available 24-7. There is no leakage as far as the customer is concerned.

"There are [mining] companies using this that

want to get 90% of their supply base onto this type of structure. From our point of view, the bigger mining companies make up 80-90% of our total business volume. So in that sense it is progressing along a fairly predictable path.

"But certainly the front-end of the buying process is in general terms being replaced in the industry by OCI."

Mining's global merger and acquisition frenzy is causing some hiccups, with mismatched ERM systems, among others, having to be aligned before maximum efficiencies and cost savings can flow through an organisation. This, said Goodwin, was often taking considerable time and resources.



"You have in many cases governing global supply agreements between the main manufacturers and suppliers of mining equipment and parts, and the major mining groups, and you have the preferred means of transacting business, which is electronic."

"For buyers though the trend is overwhelmingly positive because they can control the leakage, the quality, the terms of sale, the freight cost – everything. They reduce their cost," he said.

And for suppliers?

"We get the sale automatically. The smaller players are probably missing out, but so too are the pirate suppliers in the market.

"But they [pirate suppliers] are shut out of the trading loop only in the first cut [annual supply tender]. They may win a tender thereafter. If the part is catalogued on their computer ... whoever the vendor is, if they can supply it, they can get an order."

Western Sequel

ATLAS Copco's long-standing relationship with a Queensland-based drilling contractor has moved west, with six crawler-mounted ECM blasthole drill rigs working mainly at two Perth quarries now under service and maintenance contracts.

Sequel Drill & Blast picked up a contract with Maxim Explosives about a year ago and moved into the WA quarry market with two Atlas Copco ECM 660 Mark IV rigs. The company now has a third unit working for Maxim and has three ECM 720 machines drilling for Hanson Australian Construction Materials, mainly at its Red Hill quarry east of Perth.

Managing director Steve Payne said Sequel, which has about a dozen mainly Atlas Copco rigs working in eastern Australia, had progressed solidly since entering the WA market.

"We are looking for more work in WA," he said.

Sequel has appointed a WA manager, Ian Gammen, to oversee the growth of the business in the west.

"We are still very strong in Queensland," Payne said.

"We have a New South Wales presence as well, and we are looking at overseas projects at the moment. We've not done any overseas work to date, but we're looking at some opportunities in mining.

"All of our rigs in WA are under a service and maintenance contract, so Atlas Copco is looking after our fleet in the west.

"We have a fleet of three 660 ECMs Mark IV and [now] three 720 ECMs."

Payne told Headway previously, after taking delivery of the first Mk IV ECM 660 in Australia, if he was going to standardise on a single blasthole drill, it would be the ECM 660.

"It has been progressively improved over the years and they've proved themselves," he said.

"The number of machines sold here [in Australia] probably shows they've proven themselves.

"The ECM 660 is a simple, reliable drill. Its simplicity enhances its reliability."

And it works extremely well in combination with the Montabert drifter.

The hydraulic top-hammer drill rig is typically equipped with a Montabert HC-120 drifter and IR air compressor, and is used to drill three-to-4.5 inch holes.



One of Sequel Drill & Blast's ECM 660 blasthole drill rigs.

Headway is produced bi-monthly. All enquiries to Sue Goć, Communications Manager, Atlas Copco Australia. Ph: 02 9621 9707. Email: sue.goc@au.atlascopco.com

Atlas Copco Construction and Mining Australia

New South Wales

Sydney 3 Bessemer Street
BLACKTOWN NSW 2148
02 9621 9700

Newcastle 71-73 Enterprise Drive
BERESFIELD NSW 2322
02 4949 4242

Cobar 28 Dapville Street
COBAR NSW 2835
02 6836 4892

Orange 9 Scott Place
ORANGE NSW 2800
02 63691027

Muswellbrook 72 Blakefield Road
MUSWELLBROOK NSW 2333
0265413566

South Australia

Adelaide 3 Magna Court
LONSDALE SA 5160
08 8382 5566

Queensland

Brisbane 88 Stradbroke Street,
HEATHWOOD, QLD 4110
Ph: 07 3723 7181

Mackay 50 Enterprise Street
PAGET QLD 4740
07 4968 1300

Mount Isa 41-43 Commercial Road
MOUNT ISA QLD 4825
07 4743 4233

Townsville 17 Langton Street
GARbutt QLD 4814
07 4729 4700

Victoria

Melbourne 66 Old Geelong Road
BROOKLYN VIC 3025
03 9316 9316

Western Australia

Perth 33 Reid Road
PERTH INTERNATIONAL
AIRPORT WA 6105
08 9262 9700

Kalgoorlie 21 Broadwood Street
WEST KALGOORLIE
WA 6430
08 9080 6333

Tasmania

Burnie 26 Besser Crescent
CAMDALE TAS 7320
03 6435 1503

National Customer Service 1300 366 880