

Russian specialist contractor Stella-Market is using Sandvik Pantera 1500 and D1500 drilling rigs to help construct the fourth reactor of the Beloyarsky nuclear power plant, 50 km to the east of Yekaterinburg.



# Drilling drivers

**ALTHOUGH SOME KEY DRILLING** manufacturers chose to forego Intermat they are already preparing for what many consider to be the most significant of European construction equipment exhibitions – Bauma, which takes place next year.

Although the recession is continuing to squeeze the global economy, manufacturers are optimistic about the coming months saying the worst will be over by the time the German exhibition opens for business.

Andreas Malmberg, division president, surface drilling equipment for Atlas Copco Rock Drills, said the company will launch many new machines at Bauma because it believes the European construction sector will have rebounded by this time. Although he could not reveal further details of the drilling products to be introduced, he said the exhibition will also provide the first major launch pad for the company's 3D SmartRig simulator – a new approach to operator training.

He added using a simulator is an interesting way of helping customers develop their operator skills and a good way of encouraging the next generation of people into the drilling sector.

"The sector is high-end and high-tech and we are trying to wash away the picture of a very tough, dirty and dangerous job to more of a high-level profession. We have taken the simulator to schools and universities – it's a great way to attract young people into the business."

Speaking for Rockmore International, Pejman

The lack of new drilling equipment on show at Intermet this year may be a sign of the times but is in no way the start of a trend. Manufacturers are focused on future opportunities, with new products and technologies remaining top priority.

BECCA WILKINS reports.

Eghdami agrees the drilling market would be on the road to recovery by Bauma 2010.

"By the end of this year the problems in the financial markets, from the banking sector's perspective should have been filtered out," he added.

## INNOVATION

The current financial situation is not hindering the development of more efficient and productive drilling equipment.

Mr Malmberg said, "I would say even though the recession has put some restraints on all kinds of things our focus is still on the total cost of machine ownership which means we try to build products that take this concept to a new level. This becomes more and more important as our customers understand that it's not the investment

that is solely important, but also the running costs, energy efficiency and serviceability."

He added energy efficiency is one of the key areas of focus because of recent drastic increases in fuel prices.

"We are looking at the total efficiency of the rig, optimising different parts of it and optimising fuel efficiency which is an important step."

Mr Eghdami said Rockmore International has been looking at more, rather than less product innovation during the downturn.

"This is because the last three years were all about keeping up with production and meeting the requirements of the booming mining and drilling business – so maybe there was less time for innovation and for new ideas to be implemented. We are always thinking of new ideas but actually implementing and executing new ideas is difficult





in fast production periods."

Compared to some of the larger drilling manufacturers Mr Eghdami said Rockmore is weathering the financial storm "rather nicely" due to the company's diverse market and has plans for a new 7000 m<sup>2</sup> production facility in Austria.

"Being in business for 61 years we have certainly seen many downturns in the cyclical nature of the mining and construction sectors so this one isn't going to slow down our long-term plans," he added.

## Olympic order

**ATLAS COPCO HAS WON A € 10 MILLION ORDER TO SUPPLY DRILL RIGS AND RELATED equipment for the building of road and rail tunnels connecting sites at the 2014 Olympic Winter Games in Sochi, Russia.**

The order, from the Russian construction company Bamtonnelstroy, includes tunnelling rigs, remote controlled surface drilling rigs, as well as rock drilling tools and equipment for reinforcing the tunnels.

"We are proud to have been picked for a project that puts such high demands on the productivity and reliability of the equipment," said Björn Rosengren, business area president for Atlas Copco's Construction and Mining Technique division.

"Our extensive aftermarket organisation in Russia, including the Sochi region, was another key factor in winning the order."

Atlas Copco's equipment will be used in the construction of a new highway and railroad between the Adler resort in the Sochi district and the Rosa Khutor Olympic ski resort.



Although not yet available to the market, Furukawa showcased the DCR20, its first down-the-hole (DTH) machine at Intermat.

A gas pipeline project in India was completed at height with the help of two Wimmer climb drills mounted on climb excavators.





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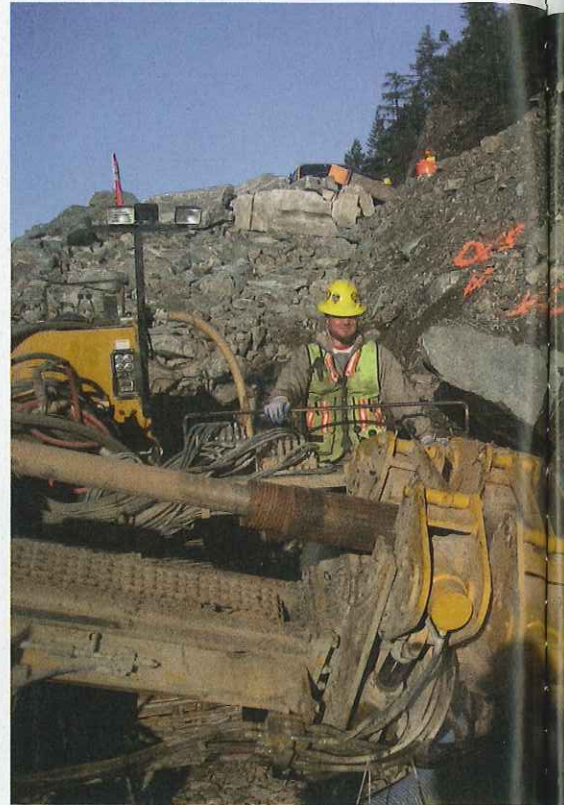
# Quieter rigs

**FINNISH CONTRACTOR, LEMMINKÄINEN HAS SEEN A "SIGNIFICANT" – 10DB REDUCTION** in noise since fitting Sandvik's NoiseGuard muffler system on its Sandvik DX780 topammer rig (previously called the Ranger 780).

An operator of this rig, Esa Romu, said the drilling noise muffled by the NoiseGuard system is clearly more pleasant and is especially appreciated by other workers. In particular, the muffler suppresses the high frequencies and makes the sound easier on the ear, he added.

"Thanks to NoiseGuard, the rig makes less noise than the engine's start-up," he said.

Jouko Kivimäki, in charge of Lemminkäinen's quarrying in south and southwest Finland, said the company bought the muffler in anticipation of increasingly stringent environmental regulations. He added in future there will be more machines fitted with the NoiseGuard mufflers because jobsites are more frequently located nearer to urban areas.



The slowdown in the market is forcing drilling contractors to focus more on drilling productivity and efficiency according to Mr Egdhami. "They are certainly not focused on new capital equipment and acquisition – but when it comes to the tooling and consumables they need to keep that equipment going so they're looking at costs per metre and the longevity of the product."

This is the reason why the company introduced the MultiPoint carbide insert design for its button bits at Internat.

According to Rockmore trials show the company's button bits with MultiPoint inserts last up to +20 % longer than the standard hemispherical design, and increased penetration rates by +10 %. With the new design, there is better transfer of energy, imparting more effective rock fracture, button wear is reduced and overall bit life enhanced in even the most abrasive and hardest rock conditions.

Meanwhile, the company is also focusing on developing its down-the-hole (DTH) hammers including one for exploration drilling which could be presented at Bauma, Mr Egdhami said.

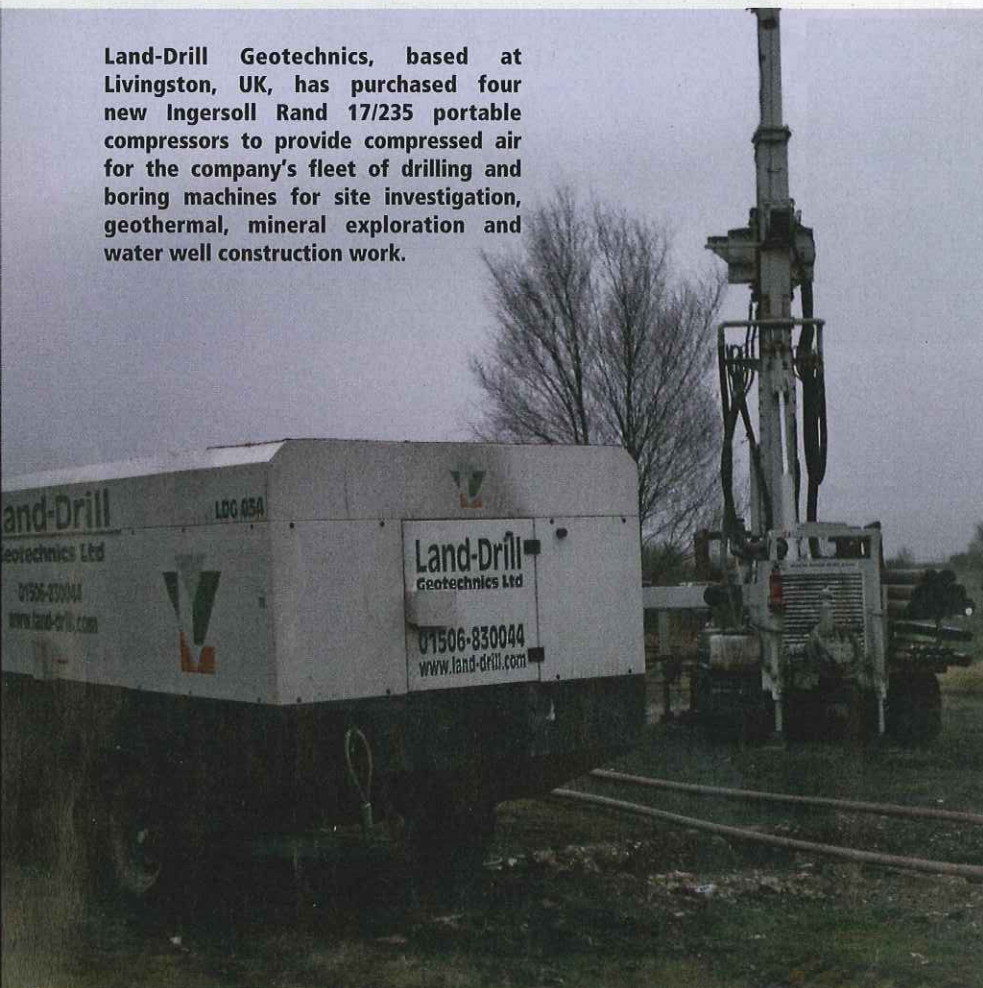
## ELECTRONICS

Electronic controls are playing an increasingly significant role in drill rig technology and development, according to Kevin Tomaszewski, director of global product marketing for Boart Longyear.

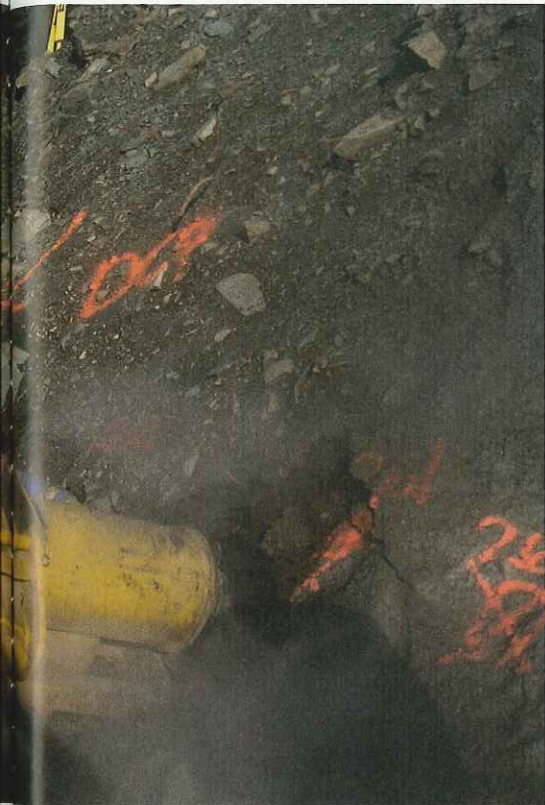
"Boart Longyear has begun using CANBUS technology to help drillers more accurately and efficiently manage rig operation as well as better monitor drilling to ensure optimum performance based on conditions, ground formation and other parameters."

He added electronic controls provide power on demand, improved management of rig performance, fuel consumption and emissions while meeting application demands. He said electronic systems

**Land-Drill Geotechnics, based at Livingston, UK, has purchased four new Ingersoll Rand 17/235 portable compressors to provide compressed air for the company's fleet of drilling and boring machines for site investigation, geothermal, mineral exploration and water well construction work.**







**The Non-Stop system from Robit Rocktools is a casing advance system where the complete drilling cycle is achieved with a single pass of the drill string.**

also make it possible to provide remote offices with real-time data acquisition so that trends can be shown more easily. Onsite, electronics can provide self diagnostic capabilities and guide operators to make appropriate corrections when necessary, Mr Tomaszewski added.

Mr Malmberg said electronic devices can be useful in applications such as major mining operations to co-ordinate the drilling, collect the parameters and maybe steer more than one rig at a time.

Atlas Copco's latest electronic system is its Hole Navigation System (HNS) – a satellite controlled device which directs the rig to the drilling position. The main benefit of this system according to Mr Malmberg, is being able to see the exact configuration of the drill pattern.

"The contractor can do interactive things with this system like obtain certain data including where you have drilled and how you have drilled," he said.

Meanwhile, the company's rig control system (RCS) adjusts drilling power to suit the ground condition and also controls some of the components in the rig.

Elsewhere, Furukawa's Dick Van der Starre said the company has used electronics to enhance the operator's working environment.

"For the operator we automatically try to supply the best possible comfort – to reduce the noise and vibration levels, to make the controls as easy to use as possible. In recent years we have worked on simplifying the handling of the machine – so there are as few arm movements as possible and this is achieved via electronic controls," Mr Van der Starre explained.

He added there is a limit to the amount of



**Designed for drilling in restrictive conditions, Boart Longyear's DB102 provides a double head drilling system, a rotating slewing jib boom and an extendable mast for added flexibility.**

electronic controls that can be used in future.

"There was a tendency 10 years ago to make the machine like a robot – 100% electronic but that is not what the customer wants. If there is a problem he cannot do anything to fix it. So certain machine functions have to remain mechanical and hydraulic for maintenance purposes and to avoid long periods of downtime."

Emerging markets are more interested in older style machines which have less electronics, Mr Van der Starre said. However, countries like Russia, which used to prefer simpler machines, now require machines with electronics because of improved efficiency and performance, he added.

The importance of electronics should not be over-exaggerated in emerging markets as

some are still in the early stages of mechanisation according to Mr Malmberg. "So for these territories electronics can be an obstacle," he said.

### NOISE AND VIBRATIONS

As well as enhancing efficiency via electronic controls manufacturers are looking closely at making drilling equipment more operator-friendly by reducing noise and vibration levels - which in turn can improve drilling performance.

Mr Malmberg said, "We have the correct levels of vibrations according to the legislation but we are always trying to supersede that because operators constantly increase their perception of what is good. They want the best rig with the least noise and vibrations."

Ergonomic considerations always play a significant part in Boart Longyear's new product development, Mr Tomaszewski stated.

"New Boart Longyear rigs are being designed with engine and pump enclosures that provide significant acoustic muffling, in some cases allowing operators to talk at a conversational level without noise interference while next to ▶



## Drilling developments

**BASED ON THE SAME TECHNOLOGY AS THE SECOROC MAGNUM SR UNDERGROUND drilling system, the new Secoroc TC35 from Atlas Copco offers the same advantages to bench drillers – straighter holes, longer rod service life, quicker bit changes plus extension drilling from 51 mm holes.**

Meanwhile, the company's new Secoroc RC 50 for the reversed circulation drilling market is designed for "superior efficiency even in the toughest conditions."





**Rockmore International introduced the new MultiPoint carbide insert design for the company's button bits at Intermat this year.**

the rig. We've also greatly improved our drill head technology so that the drill will run more quietly, increasing ease of communication onsite," he said.

He added, "Rigs and tooling have come a long way. While noise levels will be increasingly regulated on construction sites, there will continue to be greater challenges in manufacturing ergonomic drills that are still productive. Building quieter, safer drill rigs that better utilise state-of-the-art sound deadening techniques will continue to be a focus for the industry."

Meanwhile, manufacturers continue their discussions with the EU about its outdoor noise directive, which is forcing construction equipment manufacturers to guarantee certain sound levels by 2014.

Mr Malmberg said, "Our discussions are on-going and we are of course focusing as much as possible on this area. We think that the targets that they (the EU) have set are extremely tough and there has to be a very transparent and frank discussion about what is reachable and what is not. They are pushing the technology limits and sometimes you get the feeling that the targets are set for totally different machines other than ours, but we are in the drilling business and drilling means you have hit something to make it break and that creates a noise."

Meanwhile, Mr Van der Starre said the discussion between manufacturers and Brussels about noise and vibration levels remains a very difficult one.

Furukawa's technical manager, Jo Schmidt said,

"We as a drill rig manufacturer have to make a counter position because what they (the EU) want from us is unachievable...We have to make clear what's possible and what's not – but they can still over-rule us."

## OUTLOOK

Manufacturers are increasingly enhancing the productivity and efficiency of their drilling equipment with the help of electronics. By controlling their drilling processes more accurately with electronic systems contractors will ultimately

save money – vital during these uncertain times.

According to Atlas Copco and Rockmore International reducing the total cost of ownership is a key focus for product development.

Meanwhile, Mr Tomaszewski said, "Like all companies, we have focused on reducing costs and paying very close attention to expenditures. "While rig utilisation is down industry-wide, we have put an aggressive aftermarket and product spares programme in place that allows operators to minimise downtime by performing routine maintenance work right from the jobsite." **ce**

# Improved model

## ITALIAN DRILLING SPECIALIST

Fraсте has introduced a more powerful, 75 kW version of its 51 kW Multidrill ML, a compact crawler mounted drill.

Fraсте's sales manager, Cristiano Marchioro said, "It's a bigger machine so it can be used for bigger jobs, but it is still compact in its design."

He added the operator's control panel, which is positioned on a moving arm, improves drilling visibility and accuracy, therefore saving time. The new 4 tonne version of the Multidrill ML rig is mainly used in soil investigation and waterwell applications, Mr Marchioro said.

