NOVEMBER 2008 **ISSUE 29**

spirit

VOLVO CONSTRUCTION EQUIPMENT MAGAZINE

OLOF PERSSON

THE NEW MAN IN CHARGE AT VOLVO CONSTRUCTION EQUIPMENT

Volvo Excavators: Never before have they been so versatile
Spotlight: Safety at the heart of Volvo
Globetrotting: Vietnam, one of the fastest growing economies in Asia
Also: Product information, job reports and much more…

Volvo Construction Equipment Magazine
November 2008 **Issue 29**

contents

Being a global leader in construction equipment is of course, a Great Thing – but it does present quite a lot of challenges. Developing products that suit the (often very different) demands of countries around the world is no easy task, and planning the future needs of your customer base – when that base is in over 150 countries – is hardly straightforward either. Thankfully, there is a simple solution at hand – it's called 'Listening to the Customer'.

It is through the real life experiences of customers that the success of products can be judged. While local conditions vary from country to country, customers are united in one desire. They want high quality products that deliver results over the long term. In this issue of Spirit we hear customer opinions from the arctic conditions of the Russian Steppe to the resource rich coastline of Vietnam. We also hear from them in the mature markets of Europe and the United States, where Volvo's radical new pipelayer looks set to revolutionize the oil and gas industry.

Issues relating to quality, safety and the environment have never had higher priority in today's society. Fortunately, all three are long held core values of the Volvo Group – values deeply imbedded in every Volvo construction machine we make. But designing safer machines won't stop accidents happening alone, and this month we look at how Volvo is promoting a coordinated approach involving safer machines, highly trained operators and well planned sites.

This month also provides a chance to hear from the new President and Chief executive of Volvo Construction Equipment, Olof Persson. A keen jogger Olof has hit the ground running since taking up the reins on 1 November. He gave his first magazine interview to Spirit, where he outlines some of his past experiences, international background and desire to listen and learn as he takes the company forwards.

Designing, producing and supporting products for a global market is never easy. But it is especially difficult now as our markets are in a state of flux. Europe and the United States are slowing after years of strong growth, while Asia and other international markets continue to grow. Of course, no one can predict the future, yet by focusing on meeting customers' expectations – wherever they may be – we can show that in uncertain times there is always someone you can rely on.

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ADVERTORIAL

IT'S TIME TO GIVE GRANDAD A WELL-EARNED REST

There are lots of ways to cut down trees. Personally, we have nothing against you continuing to rely on your grandfather's axe. Axes work, they always have done. And they're nice and traditional. We at Volvo like tradition as much as the next thriving multi-national corporation. We've been going almost 100 years ourselves, after all.

But we're even more interested in looking forward than back. Progress is our lifeblood. Which is where our feller bunchers come in. We had a look at the market and felt we could do better. We thought, indeed, that we could build the best feller bunchers in the world.

So we had a go and came up with our FB3800C, FB2800C and FBR2880C. They can be configured to accommodate a feller buncher or heavy-duty harvesting head. They're equipped with our D9E Tier 3-compliant engines, load-sensing hydraulics and Volvo Care Cabs.

They're just the start but we think they're going to make quite an impression on you – as well as on our competitors. And remember. Volvo feller bunchers don't get tired. They don't creak, wheeze or need afternoon naps. Why, they're even 95 percent recyclable.

So go on… give the old guy a well-earned rest. He's hardly cutting edge anymore, to be honest. Why not give us a try? You'll never look back.

The new man in charge at Volvo Construction Equipment.

"I AM GOING TO LISTEN INTENTLY AND LEARN FAST."

WITH A BACKGROUND IN FAST TRAINS, JET ENGINES AND ROCKETS OLOF PERSSON IS DETERMINED TO TAKE THE COMPANY PLACES. BUT FIRST HE IS GOING TO LISTEN, AS BRIAN O'SULLIVAN DISCOVERS.

"I am going to have the biggest ears in the company for the next few months," laughs Olof Persson, 44 at the end of what must have been one of the most stressful weeks of his life. "I am going to listen intently and learn fast." Although a good listener, Olof is not a bad talker either. Having been unveiled earlier in the week as the new chief executive and president of Volvo Construction Equipment, he quickly found himself under the spotlight; giving speeches in auditoriums, presentations in TV recording studios and telephone interviews with journalists. Despite being the subject of fevered newspaper and internet stories, Olof is doing a good job of staying calm, appearing relaxed and being generally amused by all the attention he has been receiving.

"This excitement will all soon die down," he smiles. "My job now is to enter into Volvo Construction Equipment with a good deal of humbleness. I am going to be 100% focused on getting to know the people and the business. Before I speak I should really understand the issues."

Olof comes to us from Volvo Aero, which he joined in 2006. By focusing on developing super lightweight advanced jet engine and rocket components, he has helped maximize the benefits of the recent rapid growth in the airline industry. He is

"IF YOU LOOK AT THE GROWTH IN PRODUCTS, TURNOVER AND GEOGRAPHICAL REACH, VOLVO CONSTRUCTION EQUIPMENT HAS BEEN A TREMENDOUS SUCCESS."

also leaving Aero in good shape for the future; the company recently won two large engine orders from Rolls Royce and Pratt & Whitney that will see Volvo Aero reap over $13 billion dollars in the next four decades. "I wouldn't have minded staying on at Volvo Aero," Olof says, "but the prospect of joining Volvo Construction Equipment was too good an opportunity to miss."

Although construction equipment may be a new industry for him, he understands the Volvo culture, its core values of Quality, Safety and Environmental Care. And, as a member of the Volvo Group's Executive Committee, Olof has closely watched the phenomenal recent development of Volvo Construction Equipment. "If you look at the growth in products, turnover and geographical reach, Volvo Construction Equipment has been a tremendous success," he says.

Following in the footsteps of long term president Tony Helsham, who is taking over a new role in the Volvo Group, will not be easy, especially as the markets are cooling after the biggest growth period in living memory.

Olof grew up in a fishing village on the west coast of Sweden, the third of four children to parents who were the local dentists. He read for a bachelor's degree in finance and business administration and joined engineering giant ABB as a graduate trainee in 1988. For seven years he worked in its train business before moving to the group headquarters in Switzerland, where he helped to maximize the benefits of the company's technical research.

Via ABB's joint venture with Daimler Olof found himself in 2001, running the metro train division of Canadian

planes and trains giant Bombardier. His remaining five years with the company were spent running train businesses around the world, including spells in the UK and China. "My experience may not be in construction equipment," admits Olof, "but I do understand complex, heavy metal capital goods. I also understand businesses that have customers around the world, and ones that have facilities around the world."

Married with two boys and a girl at home, Olof ranks spending time with his family as his number one leisure pursuit. But he also likes to run, clocking up around 30 km (18.6 mi) a week. "My work schedule means I can't fit in with team sports," he smiles. "Running may be antisocial, but it keeps me fit – and is a good time to just think."

Describing himself as 'a communicator in the true sense – both listening as well as speaking', he says: "I like nothing better than a good debate with all the facts on the table. I am an eager listener and an eager learner – and I like fast execution. When a decision is taken I expect it to be executed on time and as agreed."

So what sort of a leader does Olof intend to be at Volvo Construction Equipment? "The Volvo core values of quality, safety and the environment fit in well with what I believe in," he says. "I want to build a strong culture around those values – and I intend to carry on the good work that has already been done in this regard. I have a steep learning curve ahead of me to fully understand the business, but what I have already seen in my short time with the company is very encouraging – I am really excited at the prospect!"

"I AM AN EAGER LISTENER AND AN EAGER LEARNER – AND I LIKE FAST EXECUTION."

VOLVO'S NEW BREED OF 'EXCAVATORS' CAUSE A MAJOR STIR

Tony Lawrence investigates.

Question: When is a Volvo excavator not an excavator?

Answer: When it's a pipelayer. Or, for that matter, a feller buncher. Or a specialized demolition machine, a tracked forestry carrier, or a...

The list is endless. Today's Volvo excavator simply refuses to be pigeonholed. Never before has it been so versatile. It's a machine, indeed, which has become more than the sum of its parts.

"Versatility," says Mike Rhoda, Volvo Construction Equipment's Excavator Business Line President and CEO, "is the key reason behind the unmatched growth in world-wide demand for excavators."

"If you cut everything away you have, in effect, an engine and auxiliary systems driving a high-density hydraulic power plant."

It's an exciting time for Rhoda, who was appointed in July. Everywhere you look, newly designed Volvo excavator C-Series models – tracked, wheeled and short radius – are rolling off production lines.

The company is also making a big push into such specialized segments as forestry, oil and gas, demolition and waste recycling and material handling as it develops a reputation as a provider of total solutions for its customers.

Volvo's new heavy-duty tracked feller bunchers, which will hit the market in early 2009, caused quite a stir when the first two models went on show at DEMO International 2008 in September, in Halifax, Nova Scotia. The 37-tonne, full swing radius FB3800C and the 30-tonne zero swing radius FBR2800C help complete Volvo's forestry jigsaw.

"It's tough to approach the guys in the forestry business if all you can do is build a road into the forest without providing the feller bunchers or harvesters that they need for their front-line work," says Rhoda.

The company's development of new vehicles for industries outside the construction mainstream, he adds, was "a deliberate strategy based on research going back years.

"They are coming to fruition now and it's a very exciting time for us. Excavators took the lead to develop some of the products required to break into these segments. The hope is

VOLVO'S NEW BREED OF MACHINES ARE MORE THAN ADAPTED EXCAVATORS. THEY'RE PURPOSE-BUILT FOR THEIR TASKS.

that they will, in turn, open the door for our standard equipment."

Volvo CE's new, award-winning pipelayers are also causing a stir. A major stir. For 80 years, the on-shore oil and gas industry has relied on side-boom dozers. Volvo's patented design, however, incorporating excavator-based machines and state-of-the-art lifting technology, is a major technical advance, says Derrick Butterfield, Volvo Excavators' head of marketing communications.

"It delivers a machine offering 360 degree rotation. You look directly at what you are picking up. There's better stability, which avoids damage to pipeline trenches. They have longer reach and greater lifting capability – our biggest machine, the PL7015, has a tipping capacity up to 150 tonnes, making it the biggest pipelayer ever built.

"With the trend towards larger diameter pipes and heavier, concrete-coated pipes, that can only bode well. We're very well positioned."

Butterfield stresses that Volvo's new breed of machines are more than adapted excavators. "They're purpose-built for their tasks. They incorporate major differences. But yes, there's the advantage that they can be re-converted to excavating to ensure 100 percent utilization. If, say, your machine is not needed for high-reach demolition, you can put a standard boom and arm configuration on it for other tasks."

Rhoda, previously responsible for Volvo excavators' global product development, is as excited by the pipelayers. "My enthusiasm for this product is unbounded," he says. "I believe this is going to be a serious home run. Customer feedback has been fantastic, interest is sky high."

Volvo CE's initial foray into excavators came 10 years ago with the acquisition of Samsung Heavy Industries of Korea.

"ONE THING IS CLEAR, THOUGH – OUR COMPETITORS ARE STANDING UP AND TAKING NOTICE OF VOLVO CE IN A WAY THAT WAS NOT HAPPENING FIVE YEARS AGO."

Then, the plant in Changwon had a turnover of $300 million a year. Today the division is responsible for $2.5 billion.

That success, however, has brought its own challenges. Rhoda, who is based in Seoul, believes that the Excavator Business Line faces various issues involving its people, products and finance streams. "We have grown so rapidly for four or five years that we need to increase our people's capabilities and competencies to align with that current size," he says.

"On the product side… as an additional activity to our standard product development and maintenance, this segment-specific work further challenges our design and manufacturing infrastructure. We are committed to keeping our promises to those new market segments and customers.

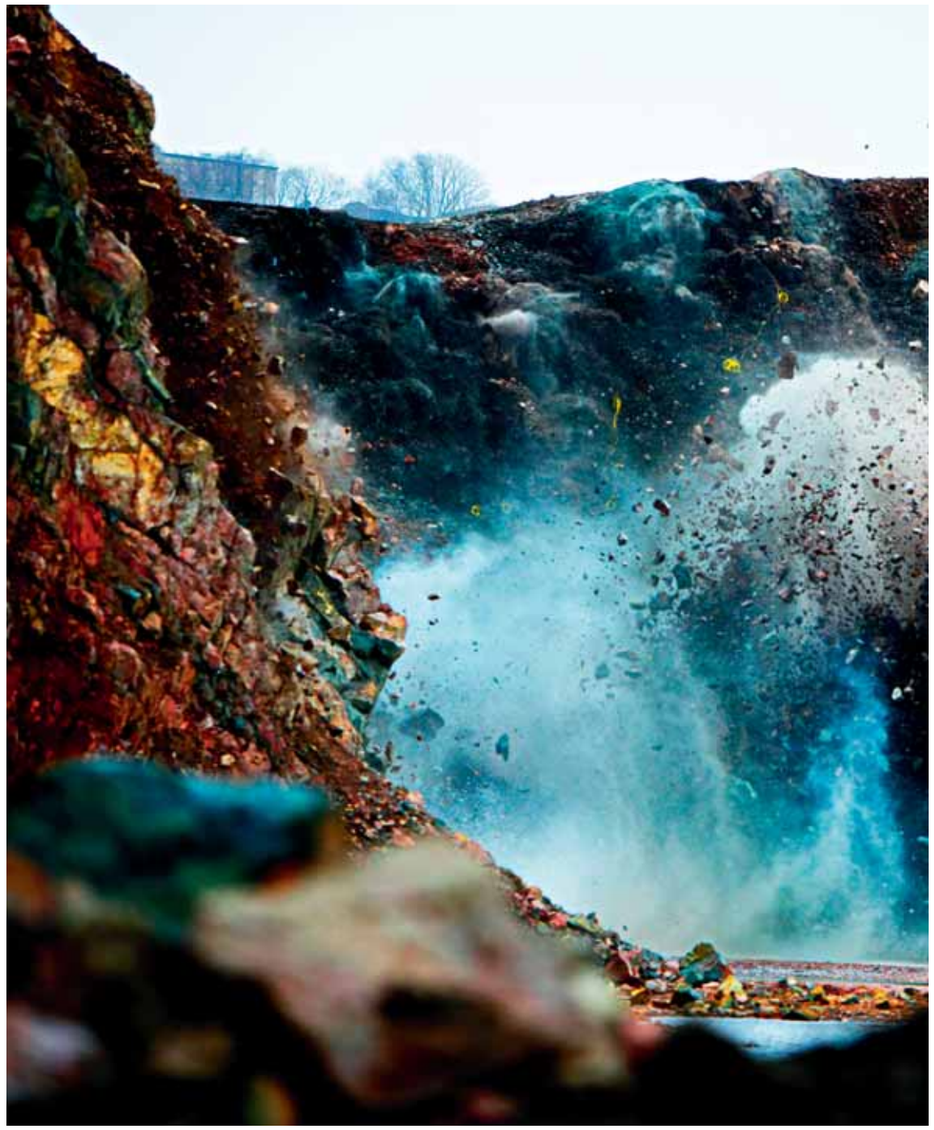
"It's going to be a very busy time. And global demand is changing. It's reducing in some areas from record levels, with North America down and Europe slowing. Some of our high-growth areas in Asia are more uncertain – they're still growing but the growth rates may be slowing. We need to monitor things and manage the business accordingly."

Of one thing, however, Rhoda is certain. "In terms of market share, Volvo's participation on the excavator side is growing. We have got a share entitlement that we need to go out and get. We don't have it yet.

"The thing that sets the excavator line apart is our global footprint. We are in the process of adding products. We are getting more complex as a business. That is a challenge for us, in terms of people and systems.

"We are not looking to make things work any old how. We are looking to make the business work smoothly, in our interests and those of our customers. Our competitors are challenging us today and they'll challenge us more tomorrow, especially as we succeed against them.

"One thing is clear, though – our competitors are standing up and taking notice of Volvo CE in a way that was not happening five years ago." ▮



Safety is at the heart of Volvo Construction Equipment as BRIAN O'SULLIVAN discovers.

ANY DANGEROUS JOB CAN BE MADE SAFER, IF EVERYONE CONCERNED DEVOTES THE PROPER THOUGHT AND TIME.

Volvo's revolutionary Care Cab - an innovative contribution to operator safety

IT'S NO GOOD IGNORING IT – ACCIDENTS HAPPEN. EVERY DAY, ALL OVER THE WORLD. AND TOO MANY ARE HAPPENING IN THE CONSTRUCTION INDUSTRY, WHERE THOUSANDS ARE INJURED OR KILLED EVERY YEAR WHILE WORKING WITH OR AROUND MACHINERY OF ALL TYPES, SIZES AND BRANDS. THERE'S NO ARGUMENT – WE ALL THINK THAT IMPROVING SAFETY ON CONSTRUCTION SITES IS A GOOD IDEA. SO WHY, WHEN CONSTRUCTION EQUIPMENT IS GETTING SAFER DO ACCIDENTS PERSIST? THE ANSWER IS THAT SAFE EQUIPMENT IS ONLY PART OF THE SOLUTION TO A LESS ACCIDENT PRONE-WORK ENVIRONMENT.

Of course, construction does involve risks, but any job undertaken carelessly can be made dangerous, and likewise any dangerous job can be made safer, if everyone concerned devotes the proper thought and time. There will always be unexpected events, such as freak weather, but even here we can learn to anticipate danger and act accordingly.

Over its long history Volvo has established a reputation as being a pioneer of safer machines – and safety is still a core value of the company today, evidenced in Volvo Construction Equipment's corporate ethos of 'More Care. Built In'. To address the issue of improving safety in and around construction equipment, Volvo has established a Safety Council. This body is taking a three pronged approach to safety that targets improvements in the areas of the Workplace, People and Machines. Central to their efforts is increasing the awareness and importance of safety in the wider construction industry. As part of its 'Safety For You' campaign the Council has produced articles, handbooks, operator training courses and

OVER ITS LONG HISTORY VOLVO HAS ESTABLISHED A REPUTATION AS BEING A PIONEER OF SAFER MACHINES.

safety videos – earning it a shortlist in the European Excellence Awards 2007.

DESIGNING IN SAFETY

Volvo focus on designing and building machines that are as reliable and safe as possible. New features are constantly being developed that improve the safety of the machines, both for the operator and for the environment. And when it comes to designing new machines, it is the Volvo philosophy to start simple and only get more complicated if necessary.

As a large proportion of accidents are attributable to people slipping or falling off machines, basic things like sturdy anti-slip steps and rails can make a big difference. Rollover and falling object protection systems, seat belts, effective lighting and eradicating blind spots also help, as does reduced vibration and noise – and a clear view of the work area. There are more complex safety systems, of course, such as overload indicators, proximity sensors, full dual circuit brakes and reversing cameras. These combine with a comfortable cab environment – none more so than Volvo's own Care Cab – that reduces operator fatigue (itself a cause of many accidents) to create a reassuring package.

Construction machinery tends to have a hard life, therefore it is important that it is well maintained. If you can design in easy servicing, ideally keeping the operator or technician on the ground rather than climbing over the machine, then you increase safety on two counts: a) Improving the chances that maintenance is carried out on schedule and b) Reducing the risk of a fall. Clear and easy-to-understand operator and service manuals also play an important part in explaining how to prepare, operate and maintain the equipment safely.

FORWARD THINKING

But all of these machine safety features will be insufficient to significantly reduce the number of accidents and

injuries unless we take a coordinated approach to safety, one involving good site layout and rules. Even this won't eradicate accidents completely, but it will reduce the likelihood of them happening.

Accidents are generally the result of a chain of events and badly performed activities. Little corners cut here and there can add up to a Big accident. In fact it has been reported that up to 60% of all fatalities on sites can be attributed to choices made *before* work began. So before any work starts you should consider how best to coordinate the movement of people, materials and machinery. A large part of this is establishing a traffic management plan. The basic idea is to design routes that give the safest passage between places where vehicles and people operate.

Even when you have a well laid out site and well designed and maintained equipment accidents can still happen. Lifting too heavy a load, driving too fast, exceeding the safe work angle – or a host of other situations can put operators and those around them in danger.

PEOPLE POWER

Creating a safer site is up to everyone, so there is no point in hushing up minor accidents or 'near misses'. In fact, by encouraging a culture of 'no fault/no blame' problems can be raised openly and quickly rectified. Safety training can also help, and at every machine handover Volvo stresses the importance of carefully reading the operators' manual, which contains numerous tips on how to operate the machine safely.

The best way to visibly raise the importance of safety on site is insisting that everyone wears the right protective equipment. High visibility jackets, hard hats and steel-toed boots are not only effective in themselves; they also reinforce the message that safety is everyone's responsibility and is important.

THE HEALTH OF THE INDUSTRY

Not only are accidents a tragedy for those affected and their families, they are not good advertisements for attracting talented young people into the construction industry. But by a concerted effort by everyone involved, we can positively improve construction's safety record. And it doesn't stop there, as preventing accidents is just one element of improving the general health of those around construction equipment.

As is becoming apparent, it is increasingly difficult to separate the elements of quality, safety and environmental care. Volvo takes its leadership in these three core values seriously, and Volvo is committed not just to the development of ever safer products, but also increasing the awareness and knowledge levels of how people interact with machinery and how these, in turn, interact with their work environment.

VOLVO IS COMMITTED NOT JUST TO THE DEVELOPMENT OF EVER SAFER PRODUCTS, BUT ALSO INCREASING THE AWARENESS AND KNOWLEDGE LEVELS OF HOW PEOPLE INTERACT WITH MACHINERY.

A GRADER MADE SAFELY FOR TWO

Motor graders are complex machines that are difficult to learn. But as BRIAN LOWE reports, a new two-seat training cab allows instructors to safely accompany trainees in their early hours on the machine.

Motor graders are not easy to master. They are among the most sophisticated pieces of construction equipment – and consequently take a longer time for operators to become proficient at. A new operator is faced with an array of controls for eight functions that directly impact how the grader's moldboard or blade is positioned. Add in the operation of the differential lock, all wheel drive, inching clutch, 11 gears, the right engine speed for efficient operation – and the operator has a lot to think about. Even a slight adjustment to any control means that the grade produced by the grader could ruin the job. This, of course, means added cost and delays through rework.

Because of this complexity, trainee operators need much longer with an instructor. Here, communication between student and operator is vital, so not only the basics can be discussed, but also bad practices spotted and corrected before they become habits. While simulators do help with control familiarity (Volvo supplies an interactive DVD with each grader) stationary simulators do not – yet – allow the trainee to experience grader movement and real-time interaction as the terrain changes.

Of course, new motor grader operators can learn the fundamentals of road construction or site preparation etc in a classroom – but there is nothing so good as hands-on training.

One hard to ignore fact about modern motor grader cabs is that they are designed for a single person, seated and with the seat belt fastened – to provide the protection ensured by ROPS/FOPS (Roll Over Protection Structure/ Falling Objects Protection Structure) certification. There simply isn't room for an instructor to be located inside the cab with the trainee. 'Hanging' off the side or standing on the cab step of a moving grader is also forbidden since one slip could quickly result in the instructor falling into the path of the grader's tires. Two-way radio communication is sometimes tried with little success, as students often don't understand the instructions relayed to them. The same goes for stationary simulators. While they can certainly assist with the basic familiarization of the controls, only 'seat time' and hours of experience teaches the skills motor grader operators need to become proficient.

Because becoming a skilled grader operator is time consuming and difficult, consequently the worldwide pool of experienced grader operators is in decline. So, when designing its new G900 series, Volvo's engineers decided to continue with its established modular concept – which allows the grader's cab to be removed in under half a day, without opening or contaminating the hydraulics systems in the process.

This ability to quickly remove the cab prompted Volvo to develop a two person training cab that allows the trainee operator and instructor to sit side by side. "As an instructor, I can talk comfortably with a new operator and explain exactly what is happening," says Russell Sharpe, Volvo's grader training instructor, and a man with over 30 years of experience with these demanding machines. "I can easily relate what the operator did right and illustrate some of the tricks of the trade – all while we are moving material. You can't get more 'real time' than that!"

Ensuring the trainee operator gets a 'true' grading experience, the two person cabs are fitted with the instructor seat sited off to the left, maintaining the original operator position. The cabs are subjected to the normal standards testing for ROPS and FOPS compliance for a machine weighing 27 tonnes. They are also fitted with climate control – providing a comfortable, quiet, environment that allows easy conversation while both the student and instructor ride in a standard suspension grader seat, complete with seat belts.

WITH A GRADER EXPERT SITTING RIGHT BESIDE THE TRAINEE, IT IS EASY TO EXPLAIN THE FEATURES AND DEMONSTRATE THEM AT THE SAME TIME.

"With a grader expert sitting right beside the trainee, it is easy to explain the features and demonstrate them at the same time," says Henry Pietens, training manager for motor graders at Volvo. Being shown first-hand all of the features available in the G900 makes understanding them much easier – so the operator can truly extract the productivity and fuel economy advantages that are built into every G900 motor grader."

Pat Olney, president of Volvo's Road Machinery business, sums it up this way: "Ensuring that both the student and instructor learn and teach in a safe environment is paramount. Not only does it enhance the learning experience, but does so with a positive reinforcement of Volvo's most important core value – safety."

The ability to change from a two-person cab to a standard one in less than a day means that graders can easily be reunited with their standard cab. This is important if the grader is to be sold after accumulating significant demonstration/ training hours.

"The great thing is the new grader can also be fitted with the two person training cab, and the benefits continue for the next group of students," concludes Henry Pietens.

wave of jubilation

Dan Waddell takes a look at the amazing sport of surfing.

There are few sports in the world that are not only a hobby, but also a way of life – surfing is one. Those beguiled by the sport speak in hushed reverence of the power of nature, the ability to harness that power and the ineffable thrill of catching the right wave.

Perhaps this mystical element stems from the sports origins, almost as old as time itself. It was first witnessed by western explorers in Polynesia, where it had been practiced for centuries and was a integral part of the culture, right down to having a say in a tribe's hierarchy. The chief was often the best surfer, and was granted the board carved from the tribe's most revered tree, while those further down the chain could gain upward mobility by proving their worth on the crest of a wave.

As often happened with local customs and traditional pursuits, western missionaries and their pious ways put an end to it, believing it to be ungodly. Only a few Hawaiians continued to surf, in secret, and knew how to craft boards from raw material.

Thankfully, those skills and secrets were handed down the generations. One of them who kept the flame burning was the man widely credited with inventing the modern sport, Hawaiian Duke Paoa Kahinu Mokoe Hulikohola Kahanamoku, the original surf dude, who summed up surfing's appeal: "How would you like to stand like a God before the crest of a monster billow, always rushing to the bottom of a hill and never reaching its base, and to come rushing in for a half mile at express speed, in graceful attitude, until you reach the beach and step easily from the wave?"

The search for that thrill is the reason why surfing is no longer a secret but one of the most popular leisure pursuits on the planet, boasting a clothing and fashion industry worth billions of dollars, while surfers have their own language and expressions, much of which has filtered into modern usage.

Becoming tribal chief by showing the best moves on a board is no longer a viable career option, but surfing professionally is – competition and contests have sprung up across the globe, sponsorship has followed, and wherever there is surf and sand it's likely you will find men and women paddling valiantly against the tide in the hope of cruising back to shore.

When done well, surfing appears easy. Yet, as all those who have tried to stand up on a board on even the most placid of water will tell you, it is incredibly hard to master, and falling off – or wiping out to use the technical term – is a common experience.

For those gainly few who are capable of not only getting up on their boards, but also able to remain standing while a wave comes their way, the holy grail of the sport is to 'catch a tube.' This is when the surfer manages to maneuver in to a position whereby the top of the wave curls over them, forming a tube or barrel, with the rider lost from sight inside the wave as it breaks over him. This privilege is granted to only the best riders and is spoken about with awe.

As for equipment, it's all about the board. But a surfer takes his board extremely seriously. If he's not comfortable with the feel, then chances are he won't be able to catch the waves he would like. While the boards appear simple, the technology behind their design has come a long way since they were carved from tree wood. Those boards were heavy and laborious to transport, though the switch to balsa wood in the 1950s and 60s eased the surfer's burden.

Modern surfboards consist of polyurethane foam, fiberglass cloth, and polyester resin and are unbelievably light compared to their predecessors. Designers continue to innovate. The latest board to emerge is an 'epoxy' surfboard, stronger and lighter than traditional fiberglass.

THE HOLY GRAIL OF THE SPORT IS TO 'CATCH A TUBE'.

It is not only at the top end that where the design is cutting edge. As a result of the sport's boom, boards have been designed for surfers of all ages, shapes and skills, such as 'Boogie Boards' which allow the surfer to remain lying down, or boards that allow the surfer to kneel.

Such innovations mean the sport continues to grow. There are surf schools for beginners, surfing holidays for the more advanced, and surfing communities with restaurants and bars for those who want to live the life completely. Given all you need is a board and a wave, there can be few more sports more ecologically sound, or that encourage such respect of nature.

DEBBIE HADWEN

NIALL EDWORTHY went to meet the Chief Duty Officer of the Volvo Ocean Race.

Photography: Julian Cornish Trestrail.

WHEN THE EIGHT BOATS IN THE VOLVO OCEAN RACE SET OFF ON THEIR GRUELLING NINE-MONTH VOYAGE AROUND THE WORLD, THE CREWS WILL BE REASSURED TO KNOW THAT BACK IN THE OPERATIONS CENTRE IN ENGLAND, WATCHING THEIR EVERY MOVE, WILL BE THE UNFLAPPABLE FIGURE OF DEBBIE HADWEN.

The Volvo Ocean Race presents one of the toughest challenges in world sport as the boats battle against each other over 37,000 miles of ocean in often punishing conditions that push the crew members to the outer edges of their mental and physical endurance. Only those who have put themselves through the emotional shredder of sailing round the world can fully understand the challenges and hardships involved.

Hadwen, the Chief Duty Officer of the race for a second time, is one of the few who know.

Eleven years ago, the young Englishwoman decided to give up her dreary job in her local government finance department and pursue her dream of sailing around the world. After completing the mandatory three-year training course, she joined the 18-strong crew of VERITAS for the BT Global Challenge in 2000-01 and set out on a voyage of a lifetime.

"It was the most incredible experience of my life," she recalls. "I came back a different person. It was incredibly hard at times, but you are rewarded with a real sense of achievement that you can treasure forever. It also turned out to be a great career move because it helped

THE OPS ROOM REPRESENTS THE EYES, EARS AND NERVE CENTRE OF THE COMPETITION.

me get a job as one of the duty officers for the 2001/02 Volvo Ocean Race."

By the time Debbie stepped back onto the quay at Southampton Marina after nine months at sea, she had become an expert in onboard communications and had also gained valuable experience in crisis management.

"We were sailing through the Bass Strait off the Australian coast when we were hit by a freak wave during a storm," she remembers. "I was harnessed into my bed when the wave hit and it felt so solid that I was convinced we had hit a transport container. One crew member had a finger severed from his hand while another broke the tibia and femur bones in both legs. It was a full-blown emergency but the cool, professional way the skipper and crew dealt with the situation taught me the importance of keeping a level head in a crisis – a quality we really need down here in the Operations Room."

The 'Ops' room, located in the heart of the Volvo Ocean Race HQ in Whiteley on England's south coast, represents the eyes, ears and nerve centre of the competition. Debbie and her three duty officers, Lisa-Marie, Tamsin and Bonnie, will monitor the race from beginning to end, 24 hours a day for nine months, using a bank of screens and computers to chart the boats' progress and keep an eye out for any problems.

"If one of the boats is in trouble, we will be the first to know, wherever they are in the world. If it's a major emergency we contact the Maritime & Coastguard Agency in Falmouth who launch an international rescue plan," says Debbie. "We know the exact height of the waves, the direction and speed of the boats, even the angle of the keel they're sailing at. When you speak to the crews on the phone, you can hear the crash of the waves and the roar of the winds."

The 10-leg race, which sets off from Alicante, Spain on October 11, will travel through Asia for the first time, with legs in India, Singapore and China, before the boats cross the finishing line in St Petersburg next summer. "The Asian element is really exciting, but it is uncharted territory for the race and presents a whole set of new challenges including the threat of piracy in the Indian Ocean," she adds.

"But 'Man overboard!' is the call I dread most, and that's what happened in the 2005-06 race. I was woken up at 2:30 in the morning to be told that a crew member on *ABN Amro 2* had been swept overboard in mid-Atlantic, but we had to stay focussed because a fresh crisis soon erupted. The boat behind them, *movistar*, began to sink after damaging its keel, so *ABN Amro 2* had to turn round and pick up the crew from their lifeboat."

"I love my job more than I can describe. Sitting here, with all the live feeds coming in from around the world, is incredibly exciting. But I'm sure that, just like last time, when the race is finally over, nine months on and three years after the preparations began, I will walk through my front door at home and the floodgates will open. It will feel as if I have sailed the world myself."

"I LOVE MY JOB MORE THAN I CAN DESCRIBE. SITTING HERE, WITH ALL THE LIVE FEEDS COMING IN FROM AROUND THE WORLD, IS INCREDIBLY EXCITING."

THE FUTURE OF DEMOLITION'S IN SAFE HANDS

Tony Lawrence reports.

Stéphane Ayrault's career, it seems, has turned full circle. He used to build things. Now he tears them down.

He laughs at the idea. "I suppose you could put it that way, yes," he says. "I began my career in construction and I'm now in the demolition business."

Ayrault – or rather, Palardy TP, the company he works for – is currently dismantling a Michelin tire factory in the city of Poitiers in west central France.

The world is currently facing a shortage of industrial, large-vehicle tires, exacerbated by China's industrial boom. Demand is currently outstripping supply, and this situation is expected to last until 2012. Michelin's response has been to restructure its operations and maximize its production efficiency to meet the challenge.

Manufacturing at Poitiers thus ended last year. The city, close to the Atlantic coast, is as historic as it is picturesque. It even housed the country's royal parliament way back in the 15th century. The emphasis now, though, is on redeveloping the Michelin site to create new employment and new commercial opportunities.

"It's a major job," says Ayrault. "In all, there were 40,000m² (47,840 yd²) of buildings at ground level. Most of it was warehousing but there was one office block, with a basement and two floors.

"The project will last about five months. By the end, we will have dealt with about 70,000 tonnes of concrete."

Palardy, based in the Sud Vendée region and one of a group of companies involved in the scheme, is responsible for the demolition of the buildings and the initial concrete pounding.

It has four demolition excavators on site in Poitiers, three of them Volvos. The biggest is a 46-tonne EC460CLD, with a six-tonne pulverizing attachment. Then there are two EC360s, one a standard machine and the other capable of being equipped with a high-reach boom configuration.

Volvo's line of high reach excavators have booms of between 17-32 meters and can handle tools of between two to 3.5 tonnes.

"We first looked at Volvo machines almost two years ago," says Ayrault. "Our equipment was getting old and needed upgrading so we tested one. Now we have six Volvo excavators and one wheel loader. We used to have a wide variety of machines but now they are mainly Volvo or Hitachi. We'll be sticking with them in future."

Not so long ago, demolition sites were characterized by noise, dust and dirt and – of course – massive wrecking balls swung from cranes. Things have changed, however.

"The industry has been transformed in recent years and is continuing to evolve rapidly," explains Ayrault. "Demolition sites are nothing like battle zones today. It's not like the wild old days. On the contrary, in fact – demolition sites are very clean and not really very different from your average construction site.

"Everything is very controlled and done in stages, the new Volvo engines make a lot less noise and consume less fuel. There's no comparison to the vehicles we had before. And for the guys in the cab, there's the extra comfort of the seating and the space and the layout. It's simply a much more pleasant environment to work in, which can only be good for everyone. You work better in better conditions – it's simple.

"The first phase of our work is to clear out and clean buildings. A lot of that is done manually or with small machines. There is what is called 'selective deconstruction' before the big excavators are brought in.

"There is a huge emphasis nowadays on recycling and on the environment. Everything which can be recycled we recycle. There's not just the concrete, which is crushed and then used in civil engineering projects. There are also companies which specialize in re-using wood and plaster and other materials."

Neither, says Ayrault, is demolition work dangerous, as some people imagine. Wrecking balls, indeed, have been replaced by careful planning and sophisticated step-by-step demolition. Safety is a paramount concern, an emphasis which has also highlighted the Volvos' advantages.

It is not just a matter of special reinforcement and guarding on the outside of the vehicles. Their safety package of operator features include seat belts, effective lighting, reduced blind spots, reduced vibration and noise and a clear view of the work area – all contributing to make the machines ideal for this type of work.

"THERE IS A HUGE EMPHASIS NOWADAYS ON RECYCLING AND ON THE ENVIRONMENT. EVERYTHING WHICH CAN BE RECYCLED WE RECYCLE."

There's the industry-leading FOGS (Falling Object Guard Structure) cab protection. The strength, durability, safety, ergonomics and comfort of the innovative Volvo Care Cab, indeed, make the machines ideal for demolition work.

Their versatility closes the deal for Ayrault. "With our range of attachments, like grapples, concrete pulverizers, clearing rakes and metal shears, we can do pretty much everything nowadays."

The Poitiers project has gone well for Palardy.

"It's a big site, so there's been plenty of space to operate in. We've needed big machines but there have been no real complications. There have, of course, been some breakdowns – there always are with excavators in this demanding line of work – but they have all been minor problems and there are Volvo service agencies everywhere so things have been sorted out quickly."

As the head of Palardy's demolition arm, Ayrault, aged 40, married and with two children, stresses he is better at paperwork, evaluating projects and finalizing contracts than working out in the field.

"I'm not sure anybody would be too impressed with my skills as an excavator operator!" he says.

"There's no special emotion when you demolish buildings. Mostly, they're industrial units in bad states of disrepair. It might feel a bit different if I had to demolish something which I helped build, in my former career when I was in construction.

"Perhaps that will happen eventually, when I'm about 60. Hopefully not before!"

"THERE ARE VOLVO SERVICE AGENCIES EVERYWHERE SO THINGS HAVE BEEN SORTED OUT QUICKLY."

BRIAN O'SULLIVAN and NIALL EDWORTHY report.

VIETNAM IS NOW SECOND ONLY TO ITS NORTHERN NEIGHBOR CHINA IN THE ASIAN ECONOMIC GROWTH LEAGUE.

VIETNAM IS A DENSELY-POPULATED, RAPIDLY DEVELOPING COUNTRY, AND IS ONE OF THE FASTEST GROWING ECONOMIES IN ASIA. ALL THE SIGNS ARE THAT IT IS WELL ON COURSE TO MEET ITS GOAL OF BECOMING A FULLY DEVELOPED NATION BY 2020.

Since the late 1980s, the government has made impressive strides in dismantling an inflexible, centrally-planned, agriculture-based economy. Investment has been pouring in since the country opened up its markets to the rest of the world and it is now second only to its northern neighbor China in the Asian economic growth league. The economy grew 8.5% in 2007 and the government in Hanoi has targeted a similar growth rate for the next four years.

It is also to the country's economic advantage that over 50% of its 86 million people are under the age of 35. Its main trading partner is now the United States, with exports there increasing over 900% from 2001 to 2007. After 12 years of negotiations the country joined the World Trade Organization in January 2007.

Vietnam is intensifying its mining production in order to keep pace with its burgeoning economy. The country's power demand is expected to grow between 18-20% annually and there are plans to build at least seven new coal-fired power plants.

Such is the domestic demand for fuel that the country has had to cut coal sales abroad, although it remains a major exporter of the fuel, mainly to China and Japan.

"WE BELIEVE THAT THE VOLVO MACHINES ARE BETWEEN 15-17% MORE EFFICIENT THAN OTHER VEHICLES."

Much of the country's coal comes from the large opencast mines of Halong Bay, an area of outstanding beauty that has quickly become one of Vietnam's top tourist destinations. Situated in the northeast, Halong, which means 'Bay of the Descending Dragon', is a UNESCO World Heritage site, as rich in natural resources as it is beautiful on the eye. The bay has a coastline of 120km (75mi) and features over 3,000 monolithic islands draped in vegetation that rise from the ocean to form a breathtaking spectacle.

The coal mined by the Ha Tu Coal Joint Stock Company in Halong Bay is sold to both domestic customers and overseas customers in Japan, Korea, China, Malaysia and Indonesia, amongst others. Each year, 25 million m^3 (32.7 million yd^3) of overburden and between 2.5 million and 3 million tonnes of coal are excavated from Ha Tu's Halong Bay site. Troung Thanh Xuan, the chief of Ha Tu's transport department, says that reliable, high power machines are needed to transport the coal and overburden (waste) throughout the site.

"We first tested two Volvo A35C articulated haulers in 1997 and today we have 45 Volvo articulated haulers, three Volvo motor graders and one Volvo wheel loader," states Troung Thanh Xuan. "The Volvo machines meet all our requirements."

Ha Tu also has 25 Volvo A40D models, 10 Volvo A30D models and eight Volvo A35D's and, according to Troung Thanh Xuan, there are three main reasons why they opt for Volvo machinery over competitor's vehicles.

"Our site is already 125m (410ft) below sea level so we need vehicles with the capacity to handle high angles and elevations," he says. "They are a great choice for areas with tough road conditions. The vehicles also have low fuel consumption – we believe that the Volvo machines are between 15-17% more efficient than other vehicles – and they are environmentally friendly because the carbon dioxide emissions are very low. This

is important for us as Halong Bay has a lot of natural resources which greatly benefit Vietnam so we have to take care of the environment."

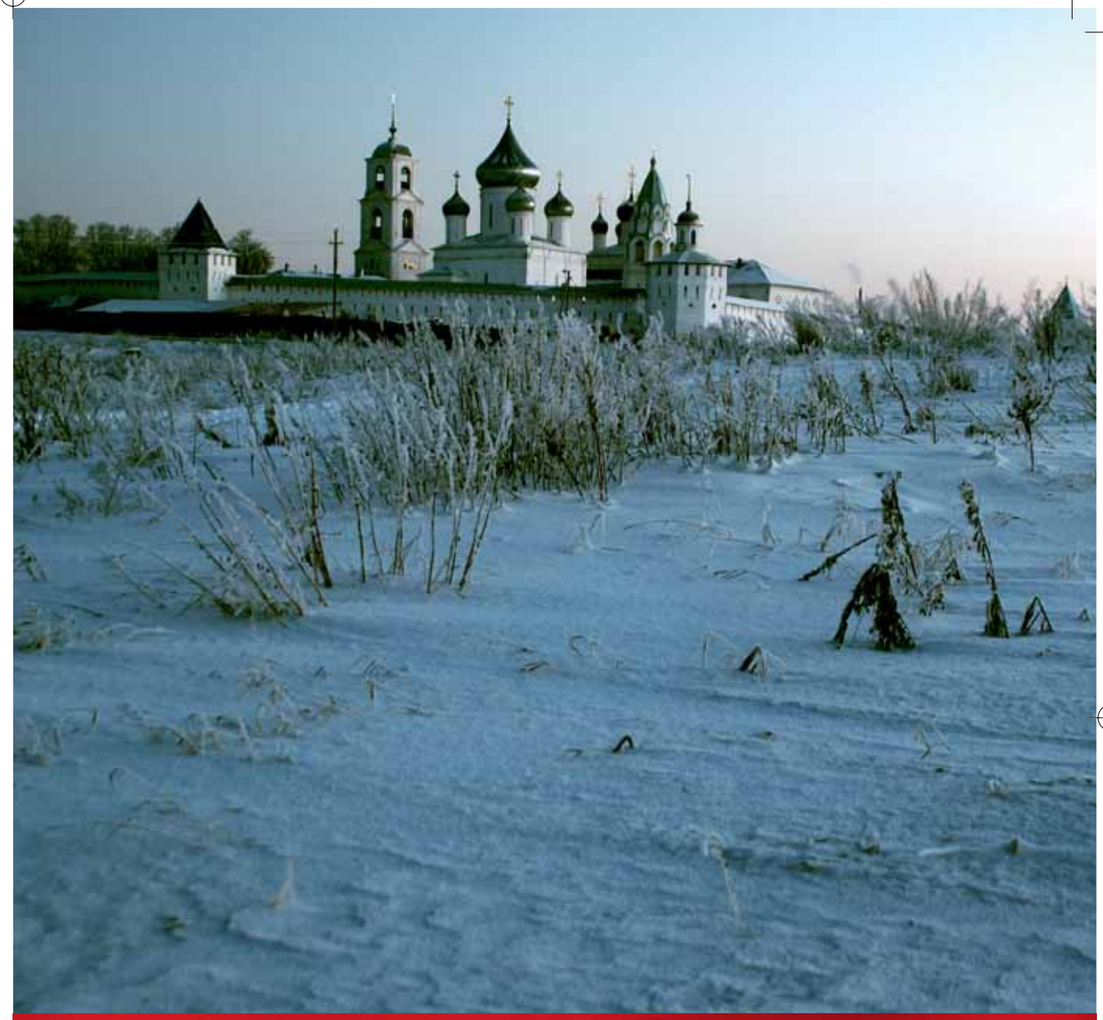
Ha Tu's machinery is used 16.5 hours a day with three or four drivers for each vehicle working on shift patterns in tough terrain and often wet, slippery conditions, especially in the Monsoon season. When it is dry, the air at the mines is often filled with thick clouds of dust. The safety of the Volvo machines, together with the quiet, the comfort and the clean environment of the air-conditioned cabs, have thus become important factors behind the decision to invest in them.

Prior to buying Volvo machines in 1997, Ha Tu had bought rigid haulers, such as the Belarussian-made Belaz 7522 and 7542, and Japanese Komatsu HD 320-3 and HD 325-5. "Since testing the Volvo A35C model on site, we have proved that there are a lot of advantages over rigid haulers of the same capacity, especially in tough road conditions," says Nguyen Hong Son, Ha Tu's Vice Director in charge of technical issues.

Machine availability for Volvo vehicles is also 20% better than competitors in the same class, according to Ha Tu. Nguyen Hong Son is also impressed with Volvo's technical support, maintenance services and speed of supply of spare parts from Cosh Company, Ltd, Volvo Construction Equipment's authorized dealer in the area.

"The on-time maintenance and quick repair we get from our enthusiastic, hard-working service engineer at Cosh is of great benefit to us," he says.

HA TU'S MACHINERY IS USED 16.5 HOURS A DAY IN TOUGH TERRAIN AND OFTEN WET, SLIPPERY CONDITIONS, ESPECIALLY IN THE MONSOON SEASON.



COLLECTIVE HOPES

The Gurovo Beton quarry 130km (81mi) south of Moscow has survived tough economic conditions. But as BRIAN O'SULLIVAN reports, new investment is set to help it benefit from Russia's ambitious building program.

The Ministry for Industry established the Gurovo Beton quarry in the Tula region south of Moscow in 1951 and employed workers using only hammers and chisels to extract and crush limestone for use in asphalt and cement production. (Beton means 'Cement' in Russian.)

DESPITE BEING OIL RICH, FUEL IS NOT CHEAP IN RUSSIA.

The 1960s and 1970s were periods of boom for the quarry but the late 1990s saw severe recession in Russia, with limestone output falling to very low levels. "We never actually closed," says general director Nikolay Nikolaevich Polnikov, "but a lack of investment meant that we faced real problems."

In 2006 Heidelberg Cement acquired a majority stake in the company. Heidelberg is a global market leader in aggregates and a prominent player in the fields of cement, concrete and other downstream activities, making it one of the world's largest manufacturers of building materials. The company employs 68,000 people in over 50 countries. Having this corporate muscle behind it has been a revolution at Gurovo Beton, and the 123 hectare, 330 employee quarry has not looked back since.

The whole quarry is being modernized. In addition to a new Austrian crusher, a Chinese cement plant is currently being built, new conveyors will be installed and offices upgraded.

But key to its long term success is a comprehensive modernization of the quarry's mobile machinery. A new fleet of Volvo equipment has arrived, comprising wheel loaders (L90E, L110F, L150F, three L220F and L220E), an EC210Blc excavator, a giant EC700Blc excavator – and three A40E articulated haulers.

These new machines are not replacing older machines like-for-like, they are fundamentally changing the way the quarry works. One of the biggest problems the quarry faces is how to remove the extremely thick overburden (waste) covering the limestone, which ranges from 40 to over 50m (131 to over 164ft) thick. In the past the quarry has used an ancient high voltage electric powered excavator, which cut away at a face 11m (36ft) high. "The old 6,000kV power line is inconvenient," says assistant director Victor Oskarovich Albertin. "It goes out of service in a storm and takes a day to move it from one bench to another."

The electric excavators will be replaced over the next year by Volvo's 70 tonne excavator, fitted with a 5m³ (6.54yd³) bucket and cutting at a smaller 8m (26ft) high face. The smaller EC210Blc is fitted with a hydraulic hammer for breaking up the daily blasted rocks that are too big to go into the crusher.

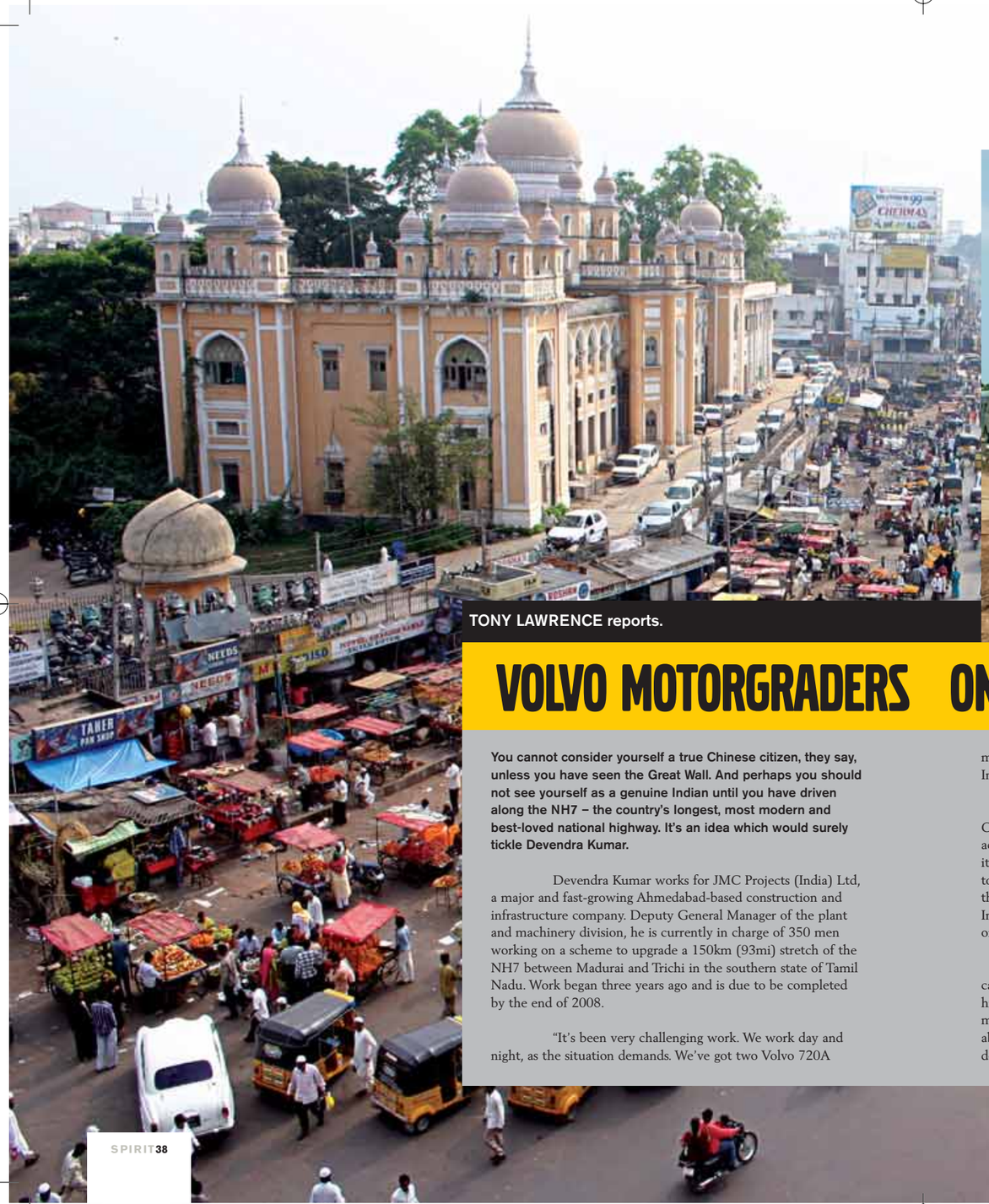
The EC700Blc feeds either one of the dozen 30 and 45 tonne Belorussian-made Belaz rigid haulers – or the 39 tonne A40E Volvo articulated haulers. The Volvos are proving efficient at removing the overburden, as their underbody heaters are better able to dislodge the wet and sticky red/black clay, and avoid 'carry-back'. "The Volvos have better operating capabilities in the slippery conditions of spring and winter, meaning that we can maintain production," says Alexander Sergeevich Bobkov, who is responsible for the equipment. "The Belazs get stuck easily, so we decide where we use each type of machine based on the haul road surface."

Alexander Sergeevich Bobkov, is responsible for the equipment.

Despite being oil rich, fuel is not cheap in Russia. "Diesel is more expensive than gasoline here – we pay more than in the US for our fuel," continues Alexander Bobkov. "It was an important factor when choosing the Volvo machines, which have a reputation for being very fuel efficient." Fuel efficiency is just one area where Heidelberg is trying to drive down costs. Were it not for the quality of the limestone, removing such a large amount of overburden would be hard to justify on cost grounds alone.

The new Volvos are proving reliable, and are covered by a 'blue' customer support agreement, meaning that the quarry need only carry out routine daily maintenance. The machines are also efficient – helping the quarry to produce more than it currently needs. While the quarry's main product today is aggregates between 5-20mm (0.2-0.8in), which is used for concrete production, the over-production will cease when the new cement plant comes on line in a few months, its 1.85 million tonnes a year capacity demanding much of the quarry's output.

The timing could not be better. Concentrating on increasing productivity and driving down costs, with a modern fleet of mobile equipment and the latest in crushing and cement production, Heidelberg and Gurovo Beton are ready to capitalize on oil-and-gas rich Russia's ambitious expansion plans. With 54 million m³ (71 million yd³) of limestone in reserve Gurovo Beton has many years of efficient production to look forward to. With the latest technology and machinery at its disposal, it's come a long way since hammers and chisels did the work. ١٨١



TONY LAWRENCE reports.

VOLVO MOTORGRADERS ON THE RIGHT ROAD TO INDIAN SUCCESS

You cannot consider yourself a true Chinese citizen, they say, unless you have seen the Great Wall. And perhaps you should not see yourself as a genuine Indian until you have driven along the NH7 – the country's longest, most modern and best-loved national highway. It's an idea which would surely tickle Devendra Kumar.

Devendra Kumar works for JMC Projects (India) Ltd, a major and fast-growing Ahmedabad-based construction and infrastructure company. Deputy General Manager of the plant and machinery division, he is currently in charge of 350 men working on a scheme to upgrade a 150km (93mi) stretch of the NH7 between Madurai and Trichi in the southern state of Tamil Nadu. Work began three years ago and is due to be completed by the end of 2008.

"It's been very challenging work. We work day and night, as the situation demands. We've got two Volvo 720A motor graders, which operate for about 12 hours a day. This is India. It's tough. But they've performed excellently."

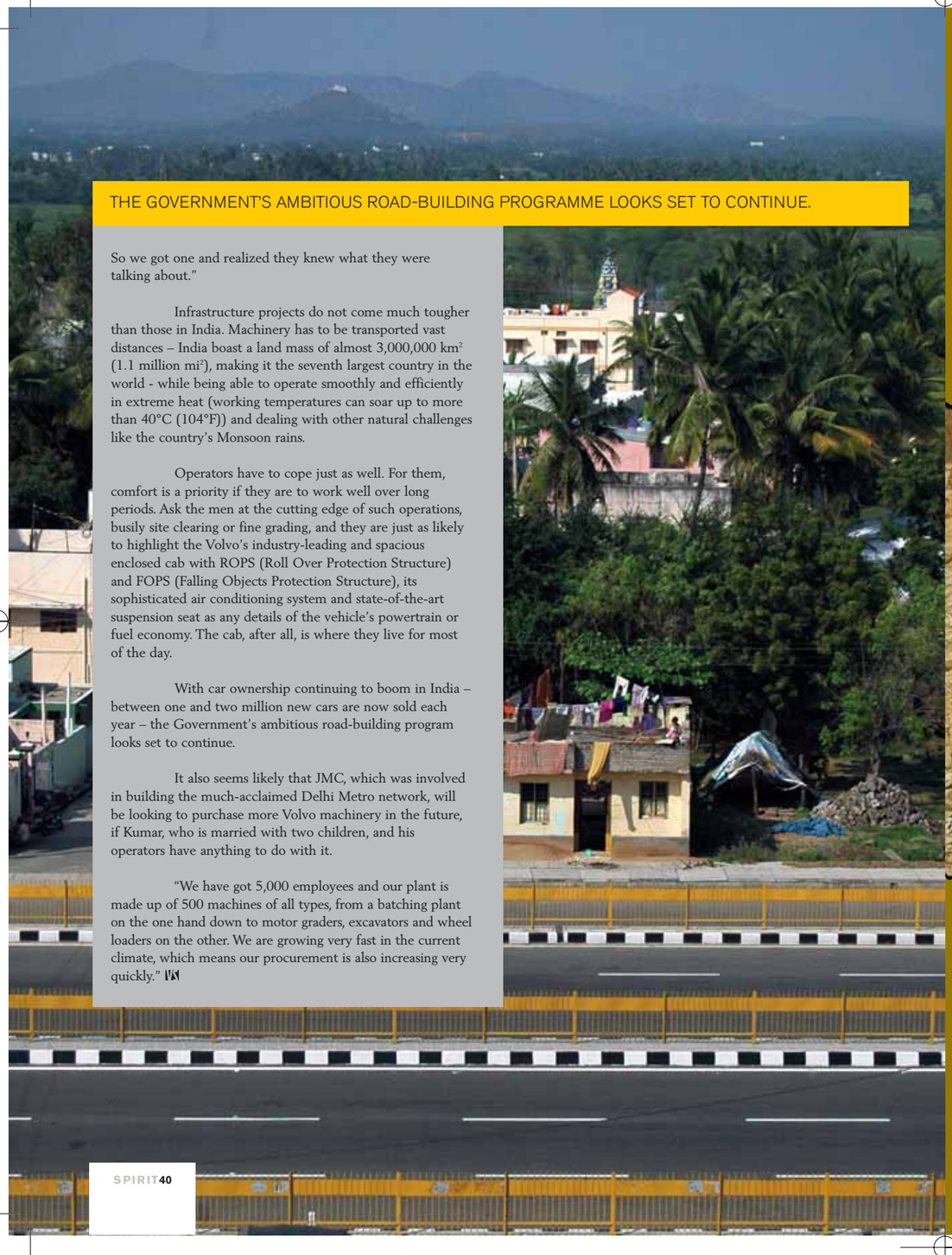
You cannot, apparently, really see the Great Wall of China from the moon, despite it snaking 6,400km (4,000mi) across the country. You can't see the NH7 either, although it is itself an impressive 2,369km (1,500mi) in length. It links the town of Kanyakumari, perched on the southern-most point of the Indian mainland where the Arabian Sea, Bay of Bengal and Indian Ocean meet, with the north-eastern holy city of Varanasi on the banks of the river Ganges.

Once, India's roads were clogged not so much with cars but bikes, scooters, rickshaws and cows. India's national highways, however – they make up just two percent of India's massive 3,300,000km (2,000,000mi) road network but carry about 40 percent of all freight and passengers – have nothing to do with that cliché. Most boast two lanes in each direction, with four lanes around major cities. They represent vital lifelines, along with the rail system, of the country's economic health. As the economy booms, so has vehicle ownership. And so has road building.

"JMC bought its first Volvo in 2002," says Kumar, a mechanical engineer by training. "It wasn't a big name in India at the time, compared to some of the other major foreign manufacturers and joint ventures.

"Things, though, have begun to change as customers have become increasingly aware of the value of long-term quality, minimum downtime and fuel economy over initial purchase costs.

"JMC was about to start working on a project and the client demanded that a Volvo motor grader should be used. Simple as that. They said it was the best machine on the market.



THE GOVERNMENT'S AMBITIOUS ROAD-BUILDING PROGRAMME LOOKS SET TO CONTINUE.

So we got one and realized they knew what they were talking about."

Infrastructure projects do not come much tougher than those in India. Machinery has to be transported vast distances – India boast a land mass of almost 3,000,000 km² (1.1 million mi²), making it the seventh largest country in the world - while being able to operate smoothly and efficiently in extreme heat (working temperatures can soar up to more than 40°C (104°F)) and dealing with other natural challenges like the country's Monsoon rains.

Operators have to cope just as well. For them, comfort is a priority if they are to work well over long periods. Ask the men at the cutting edge of such operations, busily site clearing or fine grading, and they are just as likely to highlight the Volvo's industry-leading and spacious enclosed cab with ROPS (Roll Over Protection Structure) and FOPS (Falling Objects Protection Structure), its sophisticated air conditioning system and state-of-the-art suspension seat as any details of the vehicle's powertrain or fuel economy. The cab, after all, is where they live for most of the day.

With car ownership continuing to boom in India – between one and two million new cars are now sold each year – the Government's ambitious road-building program looks set to continue.

It also seems likely that JMC, which was involved in building the much-acclaimed Delhi Metro network, will be looking to purchase more Volvo machinery in the future, if Kumar, who is married with two children, and his operators have anything to do with it.

"We have got 5,000 employees and our plant is made up of 500 machines of all types, from a batching plant on the one hand down to motor graders, excavators and wheel loaders on the other. We are growing very fast in the current climate, which means our procurement is also increasing very quickly." ١٢٨

MAKING THE BEST OF A ROCKY LANDSCAPE

DANIEL C. BROWN reports.

When an economic downturn starts to bite and work is harder to find, landscaping specialist Cameron Stevens doesn't sit around admiring some of the beautiful vistas his company has created – he and his team get in their vehicles and start scouring the land for more jobs.

"When things dry up here in Albuquerque, we hit the road," says Stevens, owner and president of Accent Landscape Contractors. "We work all over the state of New Mexico, southern Colorado, eastern Arizona and west Texas."

Revenues have climbed steeply in recent years at Accent but in the last year or so, in step with the slowing economy in the United States, nailing down new business has

"VOLVO EQUIPMENT HAS DEFINITELY HELPED WITH OUR GROWTH."

Cameron Stevens

"IF A MACHINE GOES DOWN, THEY GIVE US A LOANER. WE DON'T MISS A BEAT."

been a little harder. Tackling the problem head on, Stevens has instructed his two estimators to increase their number of bids for projects 15 to 25 projects a month, roughly 25 percent more than usual.

"A year ago, if we would see a $100,000 job in Clovis, New Mexico, we might not have bid for it because we were too busy. This year, we'll bid on it," adds Stevens, who launched his landscaping business as a sophomore at Texas Technical University 30 years ago, as a way to make a bit of spending money. He opened his first office in El Paso, Texas in 1982, and three years later opened another over the state border in Albuquerque, New Mexico.

Today, Accent employs 12 landscaping crews that range in size from five or six workers up to 12 or more. Between them, the crews will be working on as many as 15 projects at any one time and there is virtually no type of landscape or building that is beyond their expertise to overhaul and leave in a far more attractive state than the way they found. Offices, industrial sites, streets, athletic fields, parks, cemeteries, churches, schools and other academic facilities, residential developments, highways, utility projects, golf course irrigation systems, retail outlets, military housing… all have been given the Accent beauty treatment.

Stevens says his biggest business challenge these days is the rapid escalation of costs. Prices for PVC irrigation pipe, for example, have climbed rapidly because PVC is derived from petroleum.

"I got a quote for steel rebar the other day, and the supplier told me he could hold that price for 48 hours," adds Stevens. "After that he said, 'Who knows what it will do?' A year ago, if you told me I'd be paying $5 a gallon for diesel fuel, I'd have said you're crazy. But here I am, paying that much for diesel."

One solution he has found to the challenge of escalating prices has been to pre-purchase materials. Early in 2008, predicting further hikes in cost, Accent purchased two truckloads of PVC pipe and stored them away for later use. The pipe cost about $50,000 but buying it when they did and in such a large quantity, Stevens saved about 21 percent.

Stevens has been delighted with the Volvo Equipment in which he has been investing for the past three years. The company currently has five Volvo BL70 backhoe-loaders and 10 Volvo skid steer loaders – both MC90 and MC90B models.

"Volvo equipment has definitely helped with our growth," says Stevens. "The machines help us get more work done faster. The guys seemed to like them better than Case or the Bobcats, so we made a decision to stick with the Volvo machines.

"We standardized on Volvo for a couple of reasons. For one, you can operate and train people on the same equipment. For another, we have one dealer, Golden Equipment. We show them loyalty and expect the same loyalty in return. And they deliver for us. If a machine goes down, they give us a loaner. We don't miss a beat. And that's a key to success in our business."

What's more, Accent's operators have been enjoying the performance of the Volvo machines. "I like the breakout power on the Volvo backhoes," says Neal Tanner, a project manager for Accent. "I like the all-around strength of the hydraulics. The hydraulics are responsive and they're fast. I like the push-button to control forward and backward motion. That control is all on the joystick for the front loader boom. You don't have to take your hand off the stick."

Tanner also likes the fact that one joystick controls the excavator boom and swing, while another controls the dipper stick and the bucket. With the flick of a switch, he can change those controls from right hand to left hand and back again. For Tanner skid-steer loaders have been a revelation, especially the MC90B models. "They have plenty of lifting power," he says. "Plus, they have to stand up to a certain amount of our abuse, and despite that, we've had no problems with them. We keep the oil changed, and the filters changed, and they run like a champ."

Model employees

Making an exact working scale model of an asphalt paver may seem like – and is – fun. But as BRIAN O'SULLIVAN reports from Germany, the apprentices at Volvo's Hameln factory also do a tremendous amount of hard work in order to complete their studies.

Engineering excellence is central to the German psyche. Only the highest quality is acceptable, whether that be for a car, a clock or a simple screw. In the German mindset, everything should be well made, work efficiently and last forever. And the men and women that make this possible – the engineers – are also highly respected. Children don't grow up dreaming to be lawyers or accountants in Germany – they want to be engineers…

But with a resurgent economy, it is often difficult to find qualified engineers in Germany today, and creating skilled tradesmen from scratch is not easy. By its nature, engineering is as much about what you do with your hands as about what you know in your head. Luckily, Germany has not abandoned its custom of offering apprenticeships to aspiring young people, and few are better than the schemes run at Volvo's asphalt paver and compactor factory in Hameln, Germany.

Hameln may be better known for its infamous Pied Piper, but the Volvo facility is also a centre of excellence in the manufacture of paver screeds, exporting them around the world. Maintaining that level of competence is the primary driver behind the range of courses that are currently offered. The core apprenticeship scheme, involving the biggest numbers, is 36 months long and involves a year in the in-house 'apprentice shop' and then two further years on the factory floor, with one day each week spent at college. Added to this is a demanding scheme that involves combining an apprenticeship with a bachelors or masters degree.

This latter scheme has been running since 1989 and its first ever student – Dirk Heusing – is now the director of

operations. Rising from apprentice level to senior management is still rare in Germany, but the affable 39 year old Heusing credits the apprenticeship as being a great foundation for his subsequent success. Because of his background, Heusing is a strong supporter of the today's apprentices. With them noisily working away all day it would be hard to ignore them anyway – his office is directly above the apprentice shop!

"When practical hands-on experience is coupled with college and university theory, it makes for a very effective combination," says Heusing. "The apprentices get trained in many different disciplines. Hydraulics, machining, electronics and assembly are all covered – so when they start work full time in the factory they are immediately operational and can be put to work in manufacturing, quality control, service – almost anywhere. This gives us great flexibility."

"WHEN PRACTICAL HANDS-ON EXPERIENCE IS COUPLED WITH COLLEGE AND UNIVERSITY THEORY, IT MAKES FOR A VERY EFFECTIVE COMBINATION."

There are currently 24 students studying at Hameln, with six working towards the integrated apprenticeship and degree qualification. This latter course makes great demands of the student, combining both a compressed apprenticeship with university tuition. In the first two years the young men (no women so far) spend from Monday to Wednesday in the apprentice shop learning the essentials; how to use a drill, a lathe, a milling machine etc. Then from Thursday to Saturday they go to the University of Applied Science in nearby Hanover where they study towards their mechanical engineering degree. "That just leaves Sunday," smiles Heusing, "when of course they have to do their homework!"

"It *is* tough going," says Alexander Schmidt, who graduated last year and now works in the factory. "But when you finish the programme you know how everything works from first-hand experience – not just the theory." Torsten Muscharski, director of human resources agrees. "The first two years are extremely stressful for the students," he says. "It's a seven day a week commitment. But on the positive side, their qualifications are sponsored by an employer who pays them a salary, they have gained invaluable experience of a real factory environment – and they stand an excellent chance of finding employment at the end of their studies."

Head of the apprentice shop is the likable and respected Hans-Wilhelm Zeddies. Over his 25 years in the role he has supervised the training of several hundred engineers. "Enough for a large company," he laughs. "After 10 years of compulsory schooling the young people come to us with no real understanding of the world of work – and it is our job to fill in these 'blank pages' with the right training. Children may be less practical at home than in previous generations – but when shown how to make things they are just as capable."

Core to the apprentices' time in the 'shop' is the building of a scale model of a paver. Don't mistake this for a toy though, they are exact working replicas of the real machine, and

take the whole class a full year to create each one. "The students are given the original drawings and have to shrink the machine down to 1/8th size," says Heusing. "Knowledge of our products is central to the model making, as the students have to look at each component in such close detail. Not only do they have to scale each part down, they also have to find a production process to make it, work out the technology required and prepare a bill of materials."

At the time of writing, the latest Volvo paver was almost ready to roll off the mini production line. Having taken 1,700 hours to build at a notional cost of some 20,000 euros, the apprentices' pride in creating it is plain for all to see. Using electronics and tiny hydraulic valves and piping, the pavers are remotely controlled and fully operational, as Mr. Zeddies readily demonstrates. "Building the models is not just about understanding engineering," he says. "Getting along as part of a team and learning how to be a good employee are just as important skills."

Despite the considerable investment the company makes in each apprentice, they are not forced to join Volvo at the end of their studies. The qualifications are recognized nationally, and they could go anywhere to work – but virtually all choose to stay. Incredibly, 70% of all students who have ever taken the integrated apprenticeship and degree are still at work in the factory at Hameln.

Volvo has ambitious plans to increase production and sales of its road machinery products in Europe. And while the apprenticeship scheme is also going to be expanded, Dirk Heusing and his team are going to do this very cautiously. "These people need a tremendous amount of support while completing their studies," Heusing concludes. "We don't want to spoil a Good Thing."