

CAT MAGAZINE

ON LOCATION: CHELOPECH, BULGARIA

**A MINE AND VILLAGE SHARE
COMMUNITY VALUES**

**WHAT YOU DON'T KNOW COSTS MONEY:
OPERATOR TIPS & BEST PRACTICES**

**TAKING CONDITION MONITORING FROM
SCIENCE FICTION TO SCIENCE FACT**



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Learn about the unique relationship between a mine and the neighboring village in Chelopech, Bulgaria.



We look at three successful landfill gas conversion sites powered by Cat generator sets.



For greater worksite and equipment sustainability, these operator tips make a big difference.



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Dear reader,

Sustainability is a hot topic across the globe. At Caterpillar, we see it as an opportunity to have a positive influence on our bottom line and on the world in which we live. And, thanks to our extensive line of products, our efforts have far-reaching affects in areas such as power, infrastructure, construction, mining and marine.



We also strive to provide work environments, products, services and solutions that make efficient use of the world's natural resources and reduce damaging impacts on the planet. In this issue, you'll find articles that focus on the many ways we are helping our customers work more sustainably.

For example, you'll read about how Caterpillar innovations are providing significant fuel savings without sacrificing machine power and how biodegradable hydraulic fluid is being used to help protect sensitive environmental areas. When it comes to energy, you'll learn how Cat generator sets are helping convert landfill gas to electricity. We have also included an intriguing story about how a mine in Chelopech, Bulgaria is taking social and environmental responsibility to the next level.

With an emphasis on creating healthy communities, we strive to always move forward. We are committed to constantly improving our products and services with the goals of minimizing or eliminating waste and environmental impacts. It's crucial to keep our focus firmly on these endeavors. They not only enhance competitiveness, but also contribute to our own sustainability.

Man-made systems associated with the management of energy, materials, water and land do have an environmental impact. Together, however, we can minimize that impact by maximizing efficiency and working to create a truly sustainable world.

Paolo Fellin,
Vice President Caterpillar

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A MODEL MINING COMPANY THAT IS ALSO A MODEL CITIZEN

LOCATION:
CHELOPECH,
BULGARIA



Cat Magazine recently travelled to Chelopech, Bulgaria to learn not only about how Cat machines are helping Chelopech Mining's operation, but also about the close knit relationship between the mine and the surrounding communities. What we discovered is an inspiring example of social responsibility and sustainability. We invite you to join us on our travels 70 kilometers from Bulgaria's capital city, Sofia, and into the Balkan Mountains.

On the morning of our visit, the sun was out, and so was the rush-hour traffic. Soon, however, we were cruising along a perfectly smooth, winding road that guided us by old world homes, vast green pastures and beautiful mountain pine forests.

We arrived after a little more than an hour. Right away, you could tell that Chelopech Mining is different. Here, they take pride in caring for neighboring villages and communities. After all, many of the 1,050 people who work in the mine live with their families in those villages. So doing what it takes to ensure everyone thrives and prospers just makes sense.

Our first point of business, however, was to speak with Master of Engineering Stoyko Peev. He's in charge of tons of stuff – literally. His official title, though, is Mine Maintenance Superintendent. Without missing a beat, we were knee-deep in Cat® equipment operations and maintenance details.

WHY DID YOU CHOOSE CAT EQUIPMENT?

Peev: "Mainly for the equipment's serviceability. Second, but no less important, are the working conditions for operators. Cat machines have ample

space, air conditioning and the machines are easy to handle. There is also a good supply of Cat equipment in Bulgaria. We have no problem with getting spare parts and our dealer Eltrak is good with providing preventative maintenance training."

WHAT KIND OF TRAINING IS INVOLVED?

Peev: "We have a training center on site and are constantly carrying out training. The first aspect teaches people how to use the equipment. Then we concentrate on maintenance."

Master of Engineering Plamen Stoichev was also in the room. Stoichev is the CEO for Eltrak Bulgaria and offered some insightful information.

HOW WAS ELTRAK INVOLVED WITH THE CAT MACHINE TRAINING?

Stoichev: "We developed a pioneering training program several years ago. We started with a half-day equipment presentation and safety operations, then 1 to 1.5 days training onsite with individual operators to ensure they understood how to operate safely and productively."

WHAT ABOUT MAINTENANCE?

Stoichev: "We also showed the people at Chelopech Mine how to service their own machines. It was the best way to give them the most uptime."

We gave them testing software and everything else they needed, and not just because they wanted to save money. An Eltrak representative still visits every week. It's a good example of how both parties can be profitable. Now we do this for every customer. It's the most comprehensive training program in Bulgaria."

Stoyko Peev, Mine Maintenance Superintendent.



TELL US ABOUT CHELOPECH MINING'S 966K WHEEL LOADER

Stoichev: "When we first showed them the Cat 966K, Ivan Mihov, Process Plant Production Superintendent, wasn't sure operators would learn to use it. But, thanks to proper training and the intuitive nature of the controls, now they can't imagine operating a wheel loader with a steering wheel again."

With that in mind, we were eager to see the Cat 966K in action and hear what the operators had to say. Ivan drove us along the outskirts of Chelopech village and up a dirt road. About one kilometer, and one security check later, we were at the stockpile where the 996K and a Cat 725 articulated truck were busy loading and hauling huge chunks of ore in the search for gold, copper and other precious metals. Ivan filled us in about what was going on.

Mihov: "This is the stockpile of ore that comes from underground. Each machine handles 100,000 tons of ore each month. The 966K is the first in the region and the first Stage IIIB engine with automatic regeneration. It's much easier to operate. When you use a machine with a steering wheel you are constantly pulling yourself up. Using joysticks is much better and makes you more relaxed."

As Mihov headed back to work, we went into the village for our appointment at the Chelopech Mining English Language School, which Chelopech Mining fully supports. It was here where we realized just how committed the company is to social responsibility and sustainability in the area.



We arrived at a shaded courtyard filled with kids playing and a larger-than-expected school. Inside, and up two flights of stairs, we found a classroom full of students and Principal Nikolay Krustev at the head of the class.

WHAT IS THE CHELOPECH MINING ENGLISH LANGUAGE SCHOOL?

Krustev: "The school has been operating since 1995 and is the only company-run private school for foreign language in Bulgaria. Chelopech Mining provides the funding, and since this is a private school, the cost to attend is kept low. We have about 115 students ranging in age from 14 to 19 or from 7th to 12th grade."

Bulgaria's only 996K (operated using a joystick) digs into the Chelopech mine stockpile.

Plamen Stoichev, CEO, Eltrak Bulgaria.





Nikolay Krustev, principal at the Chelopech English Language School.

WHY DOES CHELOPECH MINING FUND THE SCHOOL?

Krustev: "I'm amazed by what they are doing. It's very unusual, but they provide funds because they truly care about the community."

We finished speaking with Mr. Krustev as students were let out for the day. While they ran toward the doors, we spoke with history teacher Dimitrinka Arnaudova.

WHAT KIND OF DIFFERENCE DO CHELOPECH MINING'S CONTRIBUTIONS MAKE?

Arnaudova: "They support us financially so we don't depend on the state budget. This makes a huge difference because it's not necessary to ask for additional help."

WHAT SUBJECTS ARE TAUGHT HERE?

Arnaudova: "We are a secondary language school. The first year students study mainly English. During their second year, they study different subjects in English such as history, geography and biology as well as German and Spanish."

The school has an amazing success rate, too. Currently, 98 percent of the school's students go on to higher education and 25 percent study abroad in countries such as the United States, The Netherlands, France and Italy.

Leaving the innovative school behind, our next destination was more peaceful – the St. Nikolay Mirlikiisky the Wondermaker Church. Built in 1835, the small church had fallen into complete disrepair. Even historic iconostasis, painted in 1856, had been covered in a thick layer of brown oil-based paint.

Showing once again their dedication to the area, Chelopech Mining had taken it upon itself to renovate this important village landmark. We spoke with Antonii Marchev, the church's priest and caretaker.



Antonii Marchev, the church's priest and caretaker.

WHAT WAS THE CHURCH'S CONDITION BEFORE THE RENOVATION?

Priest Marchev: "The church needed thorough reconstruction. The roof was in very bad condition, and the bell tower was leaning so much it was dangerous. Everything had to be reconstructed, including the fence and the yard."

HOW DO YOU FEEL NOW THAT THE CHURCH IS RESTORED?

Priest Marchev: "I am part of this process even though Chelopech Mining carried out the renovations. It is difficult to reconstruct the church because it takes a lot of resources. But it is more difficult to restore the temples inside people's hearts."

HOW LONG DID THE ROOF, BELL TOWER AND FAÇADE RENOVATIONS TAKE?

Priest Marchev: "Starting in 2008, the repairs took place in stages. First, the roof was replaced along with restoring the façade to its original look. In 2010 the bell tower was completely rebuilt."

The future looks good for the church though. Chelopech Mining is helping with additional



At the ore stockpile, Ivan signaled operators, Hristo Delov and Lyubomir Rakov, to come down and speak with us about the 966K wheel loader. It was hot, dusty and loud, but the operators seemed right at home. They had sealed, air-conditioned cabs, after all.

HOW DO YOU LIKE THE CAT 966K?

Lyubomir: "We like the new joysticks very much. I wasn't sure I would be able to operate it properly. But my doubts quickly disappeared. The controls

renovations including the floor and improvements for the garden, the churchyard fence and continuing restoration work on the iconostasis.

From the church it was another short drive to meet with Christina Paneva and Nikola Berberov in Chelopech village. Paneva, a retired radio/telecommunications specialist, and Berberov, a retired economist, have spent most their lives in Chelopech. They have witnessed the changes and transformations Chelopech Mining has brought to the area.

WHAT DO YOU THINK OF YOUR NEIGHBORS?

Berberov: "The mine not only provides the salaries, it provides bread and also self esteem. This is something we should not underestimate."

Paneva: "Thanks to the mine, we have a very good school, kindergarten and pensioners club. All the things the mine does for our community help the image of our village."

WHY DO YOU THINK CHELOPECH MINING IS SO GIVING?

Berberov: "Goodwill and compassion is in their nature. They can't do everything or honor every request, but they give enough and we can only say a very big thank you."



are easy to use and there is less of a load on your waist and back so you can work faster.”

Hristo: “It’s easier to operate and the cabin is much more comfortable. The seating is better. You simply don’t get tired. I thought I would have to change my style and that going from a steering wheel to joysticks would be difficult, but it was easy.”

Operators Hristo Delov (left) and Lyubomir Rakov.



Paneva: “The company supports the health of the community by organizing free medical check-ups and even a karate club. And, they also support two Koukeri clubs by purchasing masks and helping the clubs participate in festivals. It’s a special tradition for Bulgaria, especially in this area.”

HOW DOES CHELOPECH MINING COMMUNICATE WITH THE VILLAGE?

Berberov: “They have selected people who work well with the community. They are down to earth, approachable and easy to contact. They understand the needs of those living in the village and we always receive support and understanding regardless of whether it’s a complaint or just to say thank you.”

Both Paneva and Berberov are grateful for what Chelopech Mining does for them and the surrounding communities. But what perhaps stood out most about Christina and Nikola was the sincerity in their voices and the appreciation they have for where they live.

Our final interview of the day was with Irena Stambolieva. She is the Director of Health, Safety, Environment and Community Relations for Chelopech Mining and oversees a 50-person team.

WHY DOES CHELOPECH MINING HELP THESE LOCAL COMMUNITIES?

Stambolieva: “We, and our mining neighbors, know the lifespan of a mine is limited. It’s because of this that we feel obliged to give back to the community. We want people to develop skills they can use after the lifespan of the mine. Ensuring the sustainability of this area is very important to us.”



Christina Paneva, retired radio/ telecommunications specialist, and Nikola Berberov, retired economist.



WHY DO YOU CONSIDER CHELOPECH A LEADER IN THIS AREA?

Stambolieva: "We have very stable social and environmental programs. I think it's good practice to show people we don't think only about profits, but also for the environment where people live."

Our apprenticeships help students learn valuable skills they can use in the future. We have very strong programs directed toward education, culture, sports and infrastructure. In fact, there is a lack of funds for road reconstruction in Bulgaria – especially municipality-owned roads – so we dedicate lots of resources toward roads and infrastructure."

HOW DO YOU BECOME INVOLVED IN THESE DIFFERENT PROJECTS?

Stambolieva: "We want to be involved with projects that will have positive effects. Normally, we ask municipality councils to tell us what's most important. This is how we decided to help with infrastructure, a drinking water treatment plant and the restoration of a church."

We also know traditions are very important. The villages are small, but they keep Bulgarian traditions alive. We want children to grow up learning local folklore, to know how their grandparents dressed and to keep traditions alive for Easter and Christmas."

WHAT ARE SOME PROJECTS YOU HAVE PLANNED FOR THE FUTURE?

Stambolieva: "We have two projects to improve water supply pipes on two streets, which will also be paved. We'll be further renovating the St. Nikolay Church by adding some new construction and continuing the restoration of the iconostasis."

We are very proud of what we do. Not just because of the funds we provide, but because our employees are also engaged. It's important for them to be part of these activities."

OUR DEPARTURE

Our long day was at an end. After a few group photos, we retraced our route back to Sofia. Along the way, we couldn't help but think about how our first impression was reflected in everyone we met. Chelopech Mining isn't just extracting precious metals, they are cultivating pride and sustainability.

We'd like to thank everyone we met during our visit to Chelopech and the Chelopech mine. Everywhere we went we received warm, friendly welcomes. We'd also like to say thank you to our hosts Radostina Ganeva and Petia Yoncheva from Cat dealer Eltrak Bulgaria as well as our translators Ivan Tortorochev and Gergana Todorova, who is also the PR manager for Chelopech Mining. ■



Irena Stambolieva, director of Safety, Environment and Community Relations for Chelopech Mining.

"Ensuring the sustainability of this area is very important to us."
Irena Stambolieva



PIHOURC LANDFILL

Eneria France created a three-meter-wide enclosure for the generator sets with an opening in the front to make the G3512 interchangeable with the G3516.

A VISION OF FUTURE GENERATIONS CONVERTING WASTE TO ENERGY



We all know newspapers can come back to life as boxes, or that glass bottles can reincarnate into kitchen countertops. But what happens to the millions of tons of organic garbage that ends up in landfills? Where does that go? Well, with the help of Caterpillar® and specialized Cat® equipment, it's turned into electricity and goes to power thousands of homes and businesses.

Creating electricity from garbage is called waste-to-energy (WTE) or energy-from-waste (EFW), and the process, using methane, is a relatively simple one. As organic waste decomposes, it emits methane gas. That methane gas is captured by a series of wells drilled into the landfill and drawn to a collection facility where it's filtered. Then, the gas is pumped into combustion engines, which power generators that make electricity.

With unmatched flexibility, expandability and cost effectiveness, Cat generator sets are turning methane gas into 1,500 MW of economically viable electricity across the globe. That's enough to power 1,000,000 homes.

CAT EQUIPMENT GENERATES ELECTRICITY AND SUSTAINABILITY

Caterpillar continually researches, develops and delivers products specifically designed to operate using landfill gas. As part of our own efficiency and environmental goals, we're proud to provide equipment that produces environmentally friendly power efficiently while helping reduce greenhouse gasses.

The ability of Cat equipment to deliver that kind of performance and reliability is paying off for customers too. Extended equipment life and maintenance intervals help lower operating and maintenance costs. And, Caterpillar offers plug-and-play containerized power modules that are re-locatable to follow fuel resources. The ability of Caterpillar to provide customized high-performance equipment means you can trust Caterpillar as the go-to experts when it comes to transforming waste to energy.



THREE CASE STUDIES, THREE SUCCESS STORIES



BIFFA POPLARS LANDFILL

Biffa Poplars is expected to produce methane for 20 to 25 years.

Converting 3,000 cubic meters per hour of landfill gas, the five generator sets run 24/7 and produce about 6 MW of electric power in 70 to 80 percent load capacity.

BIFFA POPLARS LANDFILL

Today, turning landfill gas into electricity isn't as uncommon as it once was. The Biffa Poplars Landfill in Cannock, UK (20 kilometers north of Birmingham) decided to do their part by installing five Cat generator sets with low-energy fuel packages.

UK Cat dealer Finning was more than happy to take up the challenge. Initially, three Cat G3516LE generator sets were installed. Each can continuously produce 1,100 kW of power. Two years later, two Cat G3520C generator sets were put to work, each producing 1,950 kW of power. The Cat G3520C's 20-cylinder engines provide even higher levels of efficiency than their predecessors, with electrical conversion rates exceeding 40 percent. In addition to generating electricity, heat recovery was an additional benefit.

Now that all five generator sets are in operation, they can take 3,000 cubic meters of landfill gas each hour, transform it into 6 MW of electricity and sell it to the UK's national grid. It's a much more sustainable practice than sending methane up in flames.

The Cat generator sets at the Biffa Poplars Landfill run 8,000 hours a year and are monitored around the clock. But perhaps it's more appropriate to say 8,000 efficient hours a year. That's because the generator sets operate efficiently even when using landfill gas with variable methane content. The Biffa Poplars site operates at an average of 50 percent methane.

PIHOURC LANDFILL

Officially known as a Non-Toxic Waste Containment Landfill, the Pihourc Landfill is a 70-hectare facility located 90 kilometers from Toulouse. Intercommunity Multi-Purpose Syndicate (SIVOM) is responsible for collecting, sorting and treating the more than 85,000 metric tons of solid household waste produced every year by the 463 communities (35,000 people) the landfill serves.

Of course, not all of that waste goes to waste. SIVOM literally generates 50 percent of its €19 million in annual revenue by creating electricity from methane gas.

The generator sets of choice to convert that gas into electricity are a Cat G3516, capable of producing 950 kW and a G3512, which can create 650 kW. Together, they produce a whopping 1,600 kW of power and the facility can produce more than 12,800 MWh of electricity at full capacity.

Cat dealer Eneria France beat out five other competitors' proposals and won the project to install the two generator sets. Laurence D'Anterrosches, head of SIVOM's Household Waste Department says, "We chose

"We enjoy a true spirit of teamwork with Eneria France, as we join forces to serve the public good."

Laurence D'Anterrosches, head of SIVOM Household Waste Department

the Eneria France solution as the best of six proposals received after only six months of negotiations. The main reasons for this choice were Eneria France's excellent grasp of our needs, the solid technical guarantees they offered and their ability to come up with technical and commercial solutions that were always right on target."

The results speak for themselves. As SIVOM requested, for example, Eneria France substantially revamped the production site in 2008. The purpose was to optimize the gas feed to the two generator sets, rather than to flare, thus improving methane conversion efficiency with more powerful blower. Today, the economical gain is significant. Methane collection is more stable, and as a result, the generator sets annually achieve 98 percent up time.



DARGAN ROAD LANDFILL

Giant's Park is an innovative 220-acre public park in Belfast, Northern Ireland's capital, but not because it has sports fields, a nature reserve, an educational facility and festival space. The park is innovative because while visitors enjoy the park's green grass, Belfast residents are using the green electricity the park produces.

That's because Giant's Park is built on the now-closed Dargan Road landfill. When Belfast City Council identified the former landfill as an opportunity to create a new park, they also saw the opportunity to use methane gas, still given off by decomposing waste, to produce green electricity that could be exported to the local grid.

To turn that decomposing waste into green energy, City Council hired Renewable Power Systems, Ltd. (RPS). RPS is a world leader in renewable and sustainable energy creation. Their job was simple; capture the landfill's methane gas and use it as an environmentally friendly energy source that would have otherwise gone to waste, so to speak.

To find the equipment needed to efficiently and effectively turn methane into electricity, RPS approached UK Cat dealer Finning (UK) Ltd. Finning has extensive experience and expertise in this area and can supply, install and maintain the specialized, heavy-duty power generator sets, ancillary equipment and remote monitoring capabilities needed.

Each methane-powered generator is operated through a floor standing synchronization control system. The system can synchronize with the local power grid manually or automatically. It can also monitor, control and protect Cat generator sets through Human Machine Interface, either on site or remotely. And, because landfill gas has lower methane content than natural gas, Finning supplied specific generators specially

designed and fitted to accommodate the fuel's Lower Heat Value and respond to fluctuations in fuel quality.

Yves Bornet, project engineer for Caterpillar SARL says, "The Cat G3516A generator set has an excellent reputation for reliability and performance. Power can be consistently generated, 24/7, using methane-rich landfill gas to provide enormous environmental and economical benefits to Belfast City Council."

The former Dargan Road landfill will generate green electricity from methane gas for up to 20 years and generate up to five million watts of green electricity for the local grid to power many as 6,000 households. ■



DARGAN ROAD LANDFILL

Each generator set can produce 1,150 kW. When combined, output can be a massive 5.6 MW of continuous power that can be exported to the local grid.

The 16-cylinder engine in each of the landfill's G3516A generator sets provides 37.9 percent engine efficiency at full load.



TALKING ABOUT THE FUTURE OF E



Condition monitoring experts analyze volumes of data on a daily basis to help keep customer equipment running smoothly.

Anticipating customer needs is tough in any business. And when it comes to the extreme variables of the heavy equipment industry, keeping up with the maintenance and repair needs for a fleet of hard working, giant yellow machines can be a daunting task.

But what if Cat equipment could talk to computers? If live satellite and GPS feeds instantly relayed machine health? And information-rich downloads were taken directly from equipment operating systems?

It's almost like a scene from one of the Transformers movies – without all the destruction and chaos. It's not science fiction though. It's called Condition Monitoring. And while the term isn't new, Caterpillar is the first to introduce this kind of customer support to the industry.

CAT EQUIPMENT IS SO PREDICTABLE

The idea behind Condition Monitoring is to provide Cat customers with an advance warning of potential failures or breakdowns. But how does Caterpillar make it possible to predict the future? It is all about Equipment Management (EM).

Developed by Caterpillar, there are three core elements of EM; Condition Monitoring, Equipment Health and Fleet Performance.

The Condition Monitoring component of EM consists of gathering and monitoring thousands of pieces of information from a multitude of sources, including inspections, fluid sampling, electronic data, machine history, component tracking and site studies. The data is then analyzed to give customers

an in-depth understanding of their Equipment Health and Fleet Performance. This way, they can take care of problems before they occur.

IN THE WORLD OF CONDITION MONITORING, THE FUTURE IS HERE

Cat dealer Finning has already taken Condition Monitoring to the next level. They call it "Finsight." And it's an appropriate name for the concept behind this revolutionary customer service tool.

That's because at Finning, Condition Monitoring is more than just looking after customers' equipment. The clever nomenclature communicates the fact that the people behind Finsight are a highly trained group dedicated to digging deeper and analyzing information. This steadfast dedication means customers are receiving more than facts and figures about their fleets, but also expert insights into how equipment is performing and what can do done to improve efficiency.

"Previously, we had to look in a number of places to gather the information and history needed to evaluate the condition of a machine. Now, all that information is in one place. It's a customer service tool that's ahead of its time and a huge advantage for our clients," says Derek Batt, Finning Service Manager (Southeast).

The seven-member team, based in Staffordshire, focuses on industries such as construction, mining, waste and recycling. They use cutting-edge technology from a space-age room lined with flat-screen monitors to track, process and analyze an abundance of information. Equipment telemetry is constantly monitored. Environmental factors that can affect a



EQUIPMENT HEALTH, TODAY

LOCATION:
CANNOCK
UNITED KINGDOM



machine's performance are checked. Hydraulic fluids, engine oils and coolants are examined. And, data from vehicle history inspections is scrutinized.

MEASURABLE RESULTS, IMMEASURABLE CUSTOMER BENEFITS

The ability to predict and identify potential problems before they become more serious is a considerable advantage. Technical experts, always at the ready, have access to a wide range of supporting information to identify the best possible solutions quickly and cost effectively.

Thanks to this kind of holistic approach, customers can make more informed, timely and accurate decisions about the health and performance of their equipment.

"This is a great initiative that clearly differentiates us from the competition."

Iain Carpenter, Finning Head of Operations, Strategic Development

Unscheduled downtime can be prevented. Service life can be prolonged. Operation and repair costs can be lowered. And, efficiency and productivity can be increased.

Plus, customers who buy or rent Cat equipment have reassurance knowing they are receiving daily support long after the initial sale.

James Ashbrook, Managing Director of J.K. Ashbrook, Ltd. agrees, "We are sure that Finsight will further benefit our business by the fact that the team will be watching

and monitoring our machines and helping us to better understand the information we receive. This all means we can get the fitters out and do preventative maintenance rather than having the downtime and breakdowns."

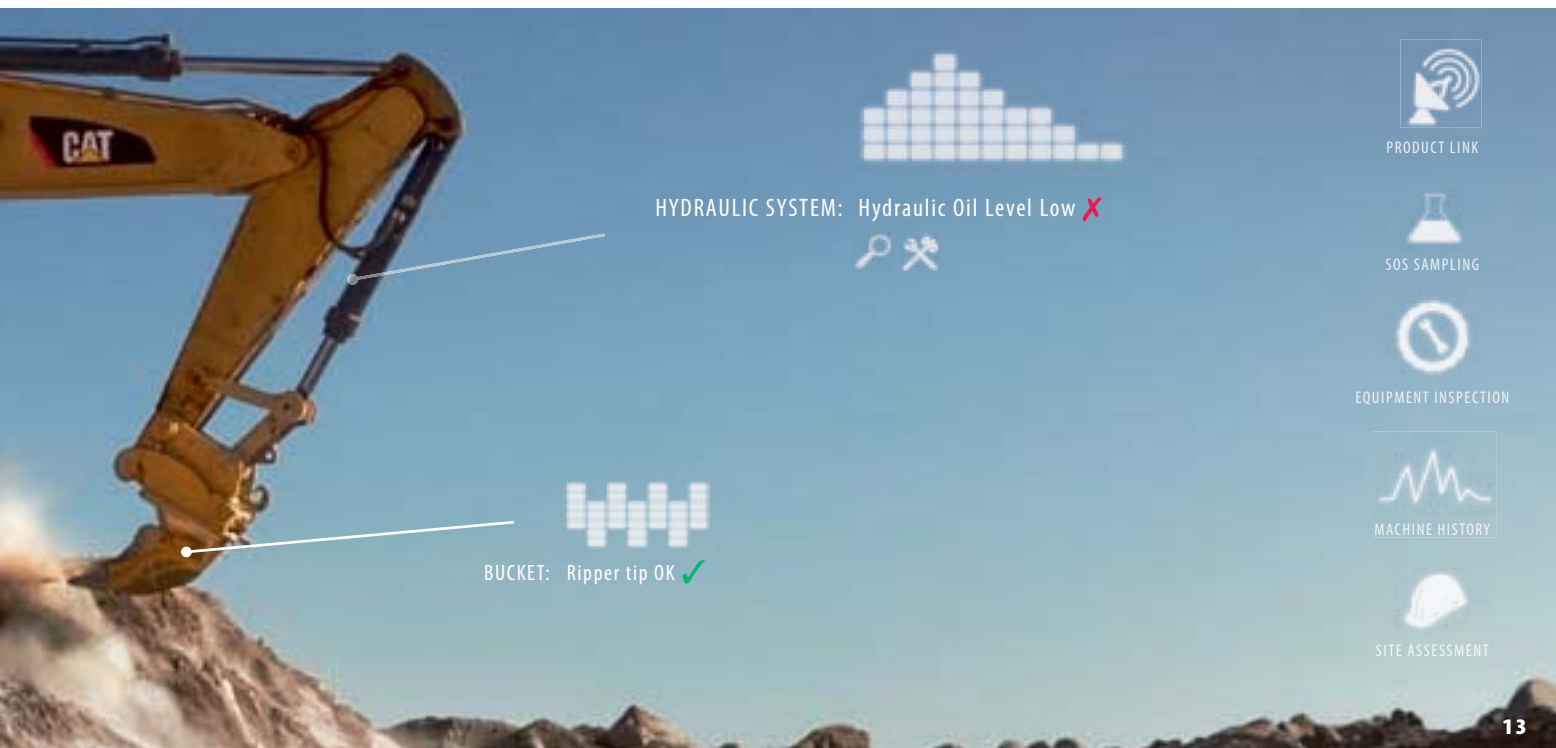
TECHNOLOGY AND PEOPLE WORKING TOGETHER

There's more to Condition Monitoring than equipment health checks though. Detailed quarterly reports are prepared so customers can see key information that will help keep their equipment operating at peak performance.

The human element is also still vital. In-person, visual inspections by Finning field engineers are, and always will be, an indispensable part of evaluating Cat equipment.

Whether it's investigating alerts, analyzing warning codes or an in-depth personal equipment inspection, Condition Monitoring improves equipment reliability and gives customers peace of mind knowing that their investment is being supported well after the sale. ■

» Find more about maintenance and service on:
www.uk.cat.com/parts-service



OPERATOR TIPS FROM EMMANUEL "SKINNY" CHATELAIN

SHARP SKILLS DELIVER EFFICIENCY AND SAVINGS



EMMANUEL CHATELAIN, AKA 'SKINNY' earned his nickname after fellow demonstration team members compared his slender build to that of a larger colleague.

Meet Emmanuel Chatelain, the Chief Demonstrator at Caterpillar's Demonstration and Learning Center in Malaga, Spain. He and his seven-member team give dealers, operators and product support staff in-depth training that focuses on operator techniques and jobsite set-up.

The purpose behind teaching these best practices is so they may be passed on to dealers and customers. Each can then take that knowledge and elevate their operations to the highest levels of productivity and fuel efficiency while lowering CO₂ emissions and other environmental impacts – including owning and operating costs. Fuel efficiency improvements from 10 to 20 percent are possible in tons moved per liter of fuel used.* And some customer results show up to 30 percent fuel savings.

LOADING AND HAULING

A good pass match with adequate dump clearance is very important. When loading a truck with a wheel loader or excavator, you want the equipment to complement each other. Having two machines that work well together

reduces the time it takes to load and haul materials. Plus, it doesn't over or under work either machine.

For example, using a 966 wheel loader to load a 771 truck is the wrong configuration. The 966 has insufficient reach to efficiently dump the last bucket when the 771 is near capacity, making good load distribution difficult to achieve. The 966 operator will spend extra time and fuel spreading the load before being able to fully empty its bucket. A better pass match is a 980 High Lift wheel loader with the 771.

LOADING TECHNIQUES: PREVENTING WHEEL SPIN

On job sites we often see wheel loader operators spinning the wheels excessively when loading the bucket. This is because they're not using the right technique. When penetrating the pile, the operator should slightly raise the bucket. What happens, is that the load of what's being lifted puts pressure, or down force, on the tires and provides better traction. Then continue to lift and curl in at the same time. This technique will reduce the wear of bucket, ground engaging tools, tires and provide better bucket fill factors.

*Based on a theoretical calculation from measured and recorded on-site data.

OPTIMUM TRUCK POSITION: THE 45-DEGREE ANGLE

When loading a dump truck from a stockpile using a wheel loader, the position of the two machines can make a big difference in production. First, the wheel loader should have a full, raised bucket and be at a 45-degree angle to the stockpile. Then the truck driver should reverse and align the bodyrail under the bucket pin. It's the job of the person operating the wheel loader to guide the dump truck into that angled position.

Ideally the wheel loader should not exceed 1.5 to 2 tire revolutions. Known as the V-pattern, this is the best loading configuration. It reduces cycle time, wear on the machines and operating costs. Ideal loading time is around two minutes in four or five buckets.

on the loading configuration) to reduce the chance of this expensive part being damaged by debris.

TRACK-TYPE TRACTORS: THE DOWNHILL PUSH

When it comes to dozing, Cat makes some powerful machines and tools to make the job easier. But there's one tool you can use that doesn't come standard or as an option on any Cat dozer, and that's gravity. Using gravity to help push material, and the dozer, downhill is a great way to increase productivity. Yes, every job site has its challenges and dozing downhill might not be an option. But when it is, you can gain 2 percent in production for every 1 percent of favorable slope, up to 20 percent.



1 TRUCK = 5 LOADER BUCKETS X 10 METERS = 50 METERS
1 HOUR = 20 TRUCKS LOADED
50 METERS X 20 TRUCKS = 1 KM TRAVELED EACH HOUR
1 DAY = 8 HOURS X 1 KM = 8 KM PER DAY
1 MONTH = 26 DAYS X 8 KM = 208 KM
1 YEAR = 12 X 208 KM = 2,496 KM

This is a for-example-only scenario that clearly shows how even just five meters can add up to lots of extra costs.

LOCATION:
MALAGA
SPAIN



LOADING DISTANCE

We said a travel distance of 1.5 to 2 tire rotations is ideal. Why is that so important? Just have a look at the sample here to see what a difference it makes if the truck is positioned an additional five meters from the loader, causing the loader to travel an extra 10 meters per cycle. (Refer to calculations in the image to see what a difference loading distance can make.)

EXCAVATOR LOADING TECHNIQUES: BENCH HEIGHT

Another important site variable is bench height. It might not seem like it, but this can play a major role in work site efficiency – especially when it comes to excavators. When the bench is too high, the excavator will not have sufficient reach to clean the floor and to distribute the material in the front of the truck. When the bench is too low, it's difficult to have an optimum bucket fill factor and reduces visibility into the truck body.


The perfect bench height should be the same as the length of the excavator's stick and/or the height of the truck body. This way, the excavator can reach the floor to keep the loading area clean, allowing trucks easy access. The excavator should also be properly positioned on the bench with the final drives facing away from the loading area (depending

Another useful technique is what we call slot dozing. With this technique, the operator creates a slot (trench), starting at the front, and then works toward the back of the cut. This way, a wall is created on each side of the blade, which will contain the material in front of the blade.

In the next issue of Cat Magazine, Operator Tips focuses on worksite safety. ■

'SKINNY' EXPLAINING V-POSITION

The team's example of how just five meters can add up to incredible inefficiencies is a real eye opener.



The way you work is changing. As fuel costs continue to rise, so does the demand for powerful equipment that's more mechanically effective and fuel-efficient. In response to those needs, Caterpillar has just the machine you've been looking for, the Cat 966K XE wheel loader.

PROOF THAT PERFORMANCE AND EFFICIENCY CAN



French operator Noël Boulé, appreciates the 966K XE's smooth operation, ease of use and excellent visibility.

The 966K XE has evolved to surpass the demands of the modern worksite to give you a productive, efficient machine with up to a 25 percent increase in fuel efficiency – without sacrificing power. And, because the 966K XE is based on the 966K, it inherited many of the 966K's improved features such as:

- A new, low-effort speed-sensitive joystick for fast, efficient loading
- A new cab, curved glass, rearview camera and no steering wheel for better 360-degree visibility
- New performance buckets, which load better, retain more material and thus save fuel
- Better serviceability through new clamshell hood

The integral piece behind that efficiency is the Cat continuously variable transmission. Operated by a hydraulic pump and motor/variator unit, this advanced powertrain component creates a smooth, seamless gear ratio change between engine and machine speeds.

While the variator allows for gear ratio flexibility, it simultaneously reduces the heat generated by the drivetrain when the 966K XE is under heavy load. The variable gear ratio and variator also play another role by enabling the 966K XE's engine to run more efficiently, independent of ground speed.

Even though the continuously variable transmission shifts automatically, the changes are transparent for operators, who also have the ability to control maximum ground speed by using virtual gears. That means operators don't have to worry about gear changes and can concentrate on productivity.

DISTINCTIVE OPERATIONAL FEATURES, AND THE BENEFITS TO BACK THEM UP

A fuel-saving, continuously variable transmission isn't the only attribute you'll appreciate on the 966K XE. There are some ingenious features engineered in that work in conjunction with each other to make the front loader easier to operate while reducing operating costs.

Some of those features include:

- Advanced, on-board diagnostics to aid troubleshooting
- Smoother, more efficient directional changes without the need to modulate the brakes and throttle or coast in neutral, which increases tire life
- Easy grade maneuverability thanks to smooth retarding and anti-rollback

"We no longer have to change gears, and when I go uphill, it doesn't lose power."

Noël Boulé, Operator, Vieux-Vy-sur-Couesnon, France

- Improved machine balance for easier operation at lower speeds for increased productivity and less fuel consumption

Reducing operating costs is what the Cat 966K XE is all about. Everything from fuel efficiency and hydraulic systems to mechanical components and driver comfort are all linked.



» Read more about all our K Series wheel loaders on: <http://www.catallday.eu/>



The Cat 966K XE has many new, advanced features that add up to one big benefit, sustainability.

WORK IN TANDEM

For example, when the 966K XE decelerates or changes direction, it recovers and uses engine friction for power, rather than fuel. Machine momentum can also be used to create free energy to power implements as well as the fan. And, because heat loads are reduced, fan operation is correspondingly lower, which also saves fuel.

With only two pedals, the 966K XE's throttle and braking is simplified. Using the right pedal, operators can set their desired speed without the need for further pedal input. On the other hand, or foot, the left pedal has three different progressive "settings". Initial pedal travel reduces rim pull. Press further, and the transmission continuously and smoothly downshifts. A final push applies the service brakes.

AS SUSTAINABLE AS IT IS TOUGH

Sustainability isn't normally a term you might associate with heavy equipment. The Cat 966K XE is an exception, however. This machine is all about sustainability and has several built-in advances that lower operating costs and increase efficiency. Its new Cat C9.3 ACERT engine gives you excellent performance and fuel efficiency while meeting Stage IIIB regulations. Lower engine speeds also reduce fuel use, emissions and increase the time between regeneration cycles while integrated retarding and modulated torque control help increase tire and brake life. Plus, when it comes to maintenance, convenient ground level service areas give you easy access to engine checkpoints to increase uptime.

Why is all that important? Because having the right sustainability credentials is becoming more and more

essential in today's world. Reducing your carbon footprint while significantly reducing costs can mean the difference between winning and losing a contract.

MEETING THE DEMANDS OF THE MODERN WORKSITE HEAD ON

The Cat 966K XE wheel loader is truly an all day, every day piece of equipment. With a new, advanced powertrain that works in harmony with other innovative components, you can take advantage of up to a 25 percent increase in fuel efficiency and no sacrifice in power to meet today's worksite and productivity demands. ■

LOCATION:
VIEUX-VY-SUR-
COUESNON
FRANCE



HARD AT WORK SAVING YOU MONEY

- 25 percent less fuel
- 100 percent power
- Advanced powertrain = automatic shifting
- Two-pedal operation
- The Cat CVT consumes about half the energy as a conventional transmission
- The hydraulic variator means reduced heat
- Consistent grade-climbing capability
- Directional change is powered by engine friction, not fuel
- Faster learning for novice operators

THE PURSUIT FOR PRODUCTIVITY IS OVER

LOCATION:
MILAN,
ITALY



When's the last time you used a paper map to find your way around a new city or to take the fastest route to an address? Today, even taxi drivers are using portable electronic navigation systems to reach destinations quickly and efficiently.

The Productivity Expert Team at Cat dealer CGT (Milan, Italy) is encouraging their customers to do the same and fold up those paper maps for good. In other words, the team is proving just how much more accurately and productively operators can work using technology rather than staking and surveying. "When you can show a customer they can save €500,000, or even up to €2 million, it really gets their attention," said productivity team manager Climaco Monti.

WHO SAYS YOU CAN'T OPERATE AT MORE THAN 100 PERCENT?

That kind of productivity and savings are thanks to technology called AccuGrade™. Simply put, AccuGrade is a digital road map operators can use to dramatically increase onsite productivity while decreasing costs.

"We looked at 100 case studies and the average increase in production, thanks to AccuGrade, was 107.8 percent. That means customers can more than double their production when using AccuGrade. On top of that, fuel savings were as much as 50 percent," said Climaco.

CGT customers are also impressed. "When AccuGrade was presented to me by CGT, I immediately realized the potential gains in terms of productivity and fuel savings for major projects. But in a just a short time, I was also surprised at how many benefits there are for managing small jobsite costs," said Roberto Tedeschi, Technical Director of Impresa Tedeschi.

A PRODUCTIVITY TEAM THAT'S SECOND TO NONE

While AccuGrade is raising the bar when it comes to productivity, it's the CGT Productivity Expert Team that's also making a real difference.

Climaco, the team manager, has 20 years' experience as a site manager and has been in the construction business for more than 28 years. Marco Misani, a digitization pro

Cat dealer CGT's Productivity Expert Team with a Cat hydraulic excavator equipped with AccuGrade. From left to right are Marco Misani, Climaco Monti and Lorenzo Citterio.



with more than 10 years of experience in the field. His focus is on site visits and equipment customization. Then there is Lorenzo Citterio, a Product Specialist with 12 years under his belt. He concentrates on the technical aspects and installation of the AccuGrade system.

All three team members share one passion – technology, especially when it comes to AccuGrade. Before offering this money-saving service to customers in 2009, the three spent a year studying and working with the system. Marco says, “It’s important for us to have a complete understanding of AccuGrade. This way we can pass that knowledge on to our customers.” That knowledge comes in many forms and the team takes a total approach in everything they do. “From client meetings to site digitization, training and follow-ups, we’re involved from beginning to, well, there really is no end,” added Climaco.

CREATING THE DIGITAL ROADMAP OF EFFICIENCY

Integrating AccuGrade into a site plan isn’t difficult or too time consuming. First, though, the Productivity Expert Team meets with customers to learn as much as they can about the project. Then, it’s back to the office to create a

“We had a customer doing a €5 million project and they saved €750,000, thanks to AccuGrade.”

Team Manager, Climaco Monti

digitized image/map of the site so when the team makes recommendations, they are clear and easy to understand.

The team then meets with customers again to report their findings and explain how many machines will be needed, what the total cost will be to integrate and operate AccuGrade and, most importantly, how much they will save by following the recommendations. “When we provide a productivity report to customers, we concentrate on how much time and money can be saved. Sometimes it’s hard to look past costs, but when you’re talking a cost that can be as little as one-tenth of what they’ll save, it’s a no brainer,” says Lorenzo.

PLUG AND GRADE

Perhaps one of the most impressive attributes of the AccuGrade system is this clever advantage. Besides providing a full report with recommendations and productivity calculations, customers also receive digital images of the worksite along with a USB drive. What’s clever is that operators can simply take that USB, plug it into the AccuGrade system and immediately go to work. All the operator needs to do is follow the topography of the digital images provided since the drawings appear on a screen inside the machine.

This digital roadmap is easy to follow and also helps improve safety by eliminating the need for staking

and surveying. There is also less strain and stress on the driver, contributing to productivity even more.

TAKING PRODUCTIVITY PERSONALLY

That’s not to say that the team drops off a productivity report and says good luck.

“After we go over the report with customers, they are sometimes hesitant to use and trust new technology. That’s why we’re sure to provide plenty of on-site training for operators, and even owners. We’ll stay as long as it takes to make sure operators are comfortable with the new system,” says Climaco. He also went on to say that the team also provides personal mobile numbers so operators can call anytime. “And, of course, we always follow-up the next day to make sure everything is running smoothly.”

The team stressed that owners and operators shouldn’t be afraid to embrace the new technology. “We have customers that will never go back to doing it the old way,” said Marco. Emanuele Giacomini, a Technical Employee with Ponterosso Asfalti, agrees, “What surprised me the most about AccuGrade is its ease of use. Even an inexperienced operator can become great.”

IN A CLASS ALL THEIR OWN

The Productivity Expert Team at Cat dealer CGT certainly has the organization, experience, know-how and the technology to make a significant difference in productivity for their customers. In Caterpillar, CGT is regarded as the best in class Cat dealer when it comes to productivity and AccuGrade in Europe, Africa and Middle East. That translates to lower costs and increased profits in any language. ■



By eliminating the need for staking and surveying, AccuGrade creates a much more productive and safe worksite.



An AccuGrade control system in the cab of an excavator. Operators are supported with a range of information including jobsite topography, vehicle location and a worksite road map, all to increase efficiency.



A 40-TON EXCAVATOR WITH A MUCH BIGGER ATTITUDE

From the moment you start the engine and begin to operate the new Cat® 340D L, it's obvious Caterpillar® designed the hydraulic excavator to do the work of a much bigger machine.

Developed for the Africa/Middle East and CIS regions to complement the Cat 36-ton 336D L and 49-ton 349D L excavators, the 340D L is an affordable alternative. Thanks to its upgraded features and lower fuel consumption, the 340D L can easily keep up with the competition's 45-ton machines, and in most cases, outperform them. Plus, with proven D Series resale potential and the low cost of owning and operating a 340D L, it's an exceptional value.

NEVER UNDERESTIMATE THE IMPORTANCE OF AN UNDERCARRIAGE

The 340D L features a noticeably expansive Heavy-Duty High Wide (HDHW) undercarriage, compared to the 336D L. Purpose-built just for the 340D L, this new architecture significantly increases digging and lifting performance (over-end and over-side) while enhancing stability and providing more ground clearance on rocky terrain. That means increased operator station height, which is important for applications such as crusher feeding or same-level truck loading.

The HDHW undercarriage also features multiple reinforcements in the track roller frames and frame to ensure remarkable durability.

The 340D L's augmented undercarriage increases digging and lifting capabilities while enhancing stability.

THE ATTENTION TO DETAIL MAKES THE CAT 340D L STAND OUT

The 340D L was also designed to be one of the most user-friendly excavators available. Owners and operators will appreciate the 340D L's accommodating features and the benefits that go along with them.

For instance, when it comes to maintenance, the 340D L has convenient access to filters and check/fill points. A water separator keeps fuel moisture-free for dependable

The 340D L can more than handle itself, even when put up against the competition's toughest.

operation, and self-lubricating bearings in the front linkage extend greasing intervals to 1,000 hours.

Then there are all the details that make operating the Cat 340D L enjoyable. For example, a large color monitor gives you a comprehensive, intuitive machine interface, including a pre-start check and display of critical fluid



levels. A suspended mechanical and highly adjustable seat is standard, and low-effort joysticks mean operators can work comfortably with their arms on the armrests.

There's also the pressurized cab that resists dust intrusion and uses a positive air-filtration system. And, a higher seating position and frameless windows (except the rear) enhance all-around visibility and safety.

WHAT ABOUT PRODUCTIVITY AND EFFICIENCY YOU ASK?

Just because the 340D L is comfortable and easy to operate doesn't mean performance and productivity have been compromised. The 340D L can more than handle itself, even when put up against the competition's toughest.

It's available with two boom options (reach and mass-excavation) and two stick options to ensure maximum flexibility as well as a 336D L-based hydraulic system for speed, agility and precision. Caterpillar also offers Heavy Duty and Severe Duty buckets equipped with Cat K Series™ ground engaging tools.

The wider and more robust undercarriage (1.6 tons heavier and 330mm wider) means the 340D L can match the performance of the competitions' 45-ton excavators, and lift over the side has been improved by 20 percent.

A recent study in Dubai also helped establish that fact. It concluded that the Cat 340D L is more productive than a major Asian manufacturer's 40-ton machine in truck loading – while using about 15 percent less fuel. But don't take our word for it, have a look at customer and operator Mikael Hagglund's comments.

"This machine is really great to operate. You can truly take full advantage of these fast implements on such a stable platform."

"Another nice feature is its height, which gives you a very good view over the trenches and the trucks."

POWER AND EFFICIENCY WORK TOGETHER

When it comes to efficiency, the Cat 340D L has a lot going for it.

Its power comes from a 209 kW, 285-hp six-cylinder Cat C9 engine that incorporates Cat ACERT™. This technology effectively controls emissions and delivers maximum fuel efficiency. The 340D L also has a best-in-class hydraulics system. That means increased versatility and highly responsive controls for faster implement operations so tasks are completed quicker. And, even key maintenance intervals are significantly longer than the competition, meaning you can run the 340D L longer without the need for downtime, which also helps lower operating costs.

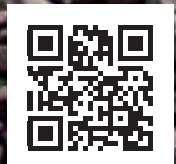
THE PERFECT FIT

If you're looking for everything in an excavator, look no further than the Cat 340D L. Power, precision, productivity and efficiency are all part of the package. From bucket to back end, the 340D L is truly a do-it-all piece of equipment that's perfectly suited for the Africa/Middle East and CIS regions. ■



The 340D L has convenient access to filters and check/fill points.

» Watch the 340D L video on: www.youtube.com (key words = Caterpillar 340D)



AN OUT-OF-THE-ORDINARY REQUEST BECOMES ROUTINE BUSINESS



*"More importantly, they have excellent fuel economy.
That's extremely important to our customers."*

Patrick Emmerson, Sales Representative for Finning

In the world of heavy equipment, there's no such thing as "routine" – even when it comes to mini excavators. That is, unless you're Staffordshire-based, UK dealer, Finning. As the only dealer serving the UK, Finning received a request from rental specialist Flannery Hire in Leeds. The order was for four new Cat 308D SB RT Mini Excavators, with one specific modification. Each was required to be equipped with biodegradable oil for all hydraulic systems, and with good reason.

The Cat 308D SB RTs were to be used by UK water authority Yorkshire Water, which was working on different asset management programs such as reservoir projects. Appropriately, biodegradable hydraulic fluids were required for equipment working in and around this precious resource.

Without missing a beat, Finning knew they already had the perfect solution on hand – Cat Bio HYDO™ Advanced biodegradable hydraulic fluid.

99 PERCENT BIO-BASED, 1 PERCENT FOSSIL-BASED

Cat Bio HYDO Advanced is an environmentally friendly hydraulic fluid. Developed for use in any environment, this non-toxic, EU Flower eco-label certified fluid provides superior performance across a wide temperature range.

Besides being readily biodegradable, one of the major advantages of Cat Bio HYDO Advanced is its long drain interval. Previously, switching from mineral-based, or even synthetic bio-fluids, meant draining and replacing fluids every 2,000 hours. That meant additional downtime and higher operational costs.

Using Cat Bio HYDO Advanced, however, means draining only needs to take place every 6,000 hours, with S·O·SSM Fluid Analysis. Plus, this long-life fluid also provides you with superior wear protection, corrosion resistance, fast air release and best-in-class seal compatibility.

GOING GREEN IS SMART BUSINESS

Priding itself on customer service and Cat equipment expertise, Finning was able to deliver the four Cat 308D SB RTs, equipped with Cat Bio HYDO Advanced biodegradable hydraulic oil, in just two months.

"When it came to our request that the Cat 308D SB RTs' hydraulics systems operate using biodegradable oil, I knew Finning would be able to provide the equipment with the required specifications. Finning has a reputation for going that extra mile to fulfill customer requirements and they did not disappoint," said Director of Flannery Hire, Pat Flannery.

As a result, because Flannery Hire can offer these versatile machines as part of their overall fleet (30 excavators are equipped with biodegradable hydraulic oil), they can tap into additional market segments that require more environmentally friendly equipment.

Flannery agrees, "From a business perspective, the Cat 308D SB RTs are perfect for rental specialists like us. Because these machines are versatile enough for almost any sized job and application, they are an ideal green offering for our customers and their diverse projects."

CLEARING THE AIR

Besides the green aspects of Flannery Hire's 308D SB RTs, there are other criteria the mini hydraulic excavators

can fulfill for your customers. If you're looking for a small, maneuverable piece of equipment that can access places larger hydraulic excavators can't, the Cat 308D SB RT is the right machine for you. Plus, its impressive reach and surprising power mean the 308D SB RT can easily load large tipper trucks.

Flannery went on to say that, "Not only are the machines reliable and highly productive, they also have many other plus points, such as good operator comfort and easy operation. More importantly, they have excellent fuel economy. That's extremely important to our customers."

That's no surprise. The Stage IIIB engine in each Cat 308D SB RT is designed to be a durable, high-performance power plant. And, to help maximize customer value, fuel efficiency has been improved and emissions have been reduced. The Stage IIIB can be up to five percent more fuel-efficient and emit 90 percent fewer particulates and 50 percent less nitrogen oxide (NO_x).

FLUIDITY AND CHOICE, JUST WHAT THE CUSTOMER ORDERED

This once unusual request for biodegradable oil is now routine for Flannery Hire. Today, 75 percent of their operating fleet uses Cat Bio HYDO Advanced biodegradable hydraulic fluid. Add that to the fact that Cat 308D SB RTs use efficient Stage IIIB engines, and the combination means customers have real green choices for jobs and projects that require equipment that's kinder to the environment. ■



Part of Finning's 308D SB RT fleet, equipped with biodegradable hydraulic fluid, stands at the ready.

Developed, tested and approved by Caterpillar, Cat Biodegradable Hydraulic Oil supports Sustainable Development:

- Reduced impact on environment
- Extended drain intervals
- Improved regulatory compliance
- Biodegradability >80 percent in 28 days



WORKSITE PRODUCTIVITY ROLLS ON AND ON

Cat® machines are known for their brute strength, dependability and technological advancements. Now, Caterpillar® can add one more component to their long list of innovations – tires. More specifically, new generation “vented” solid tires.



Flexport tires are perfect for multiple applications and can be used on a number of surfaces.

The word “solid” may be somewhat of a misnomer, however. Flexport™ tires are built to be the missing link between the ride of air tires and the reliability of solid tires, including several advantages that set them apart from the competition.

The first advantage is the unique Flexport sidewall design. Unlike solid tires with round sidewall ports, Caterpillar designed Flexport tires with elliptical ports. When placed under load, the elliptical ports compress to become round, reducing stress points, improving ride and increasing wear life. The puncture proof, yet supple design, can handle all kinds of surfaces with no need for downtime spent fixing flats.

After learning that Kettanah Construction Plant Manager Jihad Mohana had someone dedicated to only fixing flats on skid steer loader tires, Yazan Haddad, PSSR at Cat dealer Al-Bahar, suggested Flexport tires. “We were suffering every day from tire problems and decided to try a set of Flexport tires. Once installed, we didn’t need to worry about them. The average life of the normal pneumatic tires we were using was three to four months. The average life of Flexport tires is two to three years,” said Mohana. “These Flexport tires are literally ‘money in the bank’ for us.”

A DIFFERENT BREED OF SOLID TIRE

Caterpillar is the only heavy equipment manufacturer that produces its own tires. Designed for wheel loaders and skid steer loaders, these one-piece replacement tires are available with three different tread patterns – Construction, Smooth and Off-The-Road (OTR). Each design provides the right balance of ride, reliability, durability and increased stability that make operators feel safer running machines under heavy, uneven loads.

Because they absorb much of the shock that standard solid tires pass on to operators, Flexport tires provide a more comfortable ride and improved traction performance. As a result, drivers are less fatigued and can be more productive, increasing your bottom line.

Mr. Yousef Ghadban, Plant and Equipment Manager of Al Jaber and Makhoul WLL, also gave Flexport tires a test run. After only a few months, he ordered sets for the rest of his equipment. “I did a cost per hour comparison

between Flexport tires and the normal pneumatic tires we were using. I found that Flexport tires greatly surpassed the pneumatic tires. Now there are no more complaints from site supervisors regarding punctures,” said Ghadban. “We simply install them and forget them.”

Flexport tires have a tread that is up to two times deeper than comparably sized pneumatic tires. But simply adding rubber doesn’t necessarily mean longer life. That’s why Flexport tires are made using only 100 percent natural rubber. It means you get the highest quality, most durable tires with extended wear life.

INFLATE YOUR UP TIME WITHOUT INFLATING YOUR TIRES

The best equipment, most skilled operators and meticulous machine maintenance can be rendered useless if a machine is unable to operate because of downtime due to tire failure. Cat Flexport tires are made to perform more consistently than competitive tires and to meet or exceed the service life of other solid tire alternatives – all thanks to the legendary Caterpillar commitment to giving customers the tools they need to get jobs done and some cleverly engineered ellipses.

Ask your dealer for more information on Flexport tires for either OE option or aftermarket replacement. ■



CAT MAGAZINE

READERSHIP SURVEY - YOUR OPINION COUNTS

Just as we are working to improve Cat equipment, we also work to enhance Cat Magazine and want this publication to be a valuable tool for you. So to help shape the magazine to your interest, could you please answer the few questions below. It only takes five minutes, and **the first 20 respondents will receive a new Cat hat.**

The choice is yours:

1. Fill in the survey online at www.catmagazinesurvey.com
2. Scan the survey and email it to Baudrion_Laetitia@cat.com
3. Print and mail this questionnaire back to Caterpillar SARL, Attn to:
Laetitia Baudrion, 76 route de Frontenex, PO Box 6000, 1211 Geneva, Switzerland

YOUR PROFILE

1. PLEASE TELL US MORE ABOUT YOU

COMPANY NAME: _____

FIRST NAME, LAST NAME: _____

COUNTRY: _____

EMAIL: _____

2. WHAT BEST DESCRIBES YOUR PROFILE AND POSITION?

- Owner operator (small enterprise)
- Operator
- Service technician
- Fleet manager
- Solution provider / Designer
- Managing director / Purchaser

If you are not part of an enterprise (customer of Caterpillar), please tick "Not relevant" below and go directly to question 5.

- Not relevant (Please specify) I am:

3. DOES YOUR COMPANY HAVE CAT MACHINES IN ITS FLEET?

- Yes, Cat machines represent more than 50 percent of the fleet
- Yes, Cat machines represent less than 50 percent of the fleet
- No

4. WHAT WOULD BEST DESCRIBE YOUR COMPANY'S MAIN AREA OF BUSINESS AND ACTIVITIES?

- Small scale construction
- Heavy machinery / Large earthmoving or road works
- Quarry & aggregates
- Waste and industrial applications
- Paving
- Mining
- Plant hire / Rental
- Power Systems customers (electric power, marine, oil & gas, etc.)
- Other industries (Please specify)

INFORMATION VALUE

5. DO YOU TAKE WHAT YOU'VE LEARNED ABOUT NEW MACHINES, ENGINES, SERVICES OR TECHNOLOGIES IN CAT MAGAZINE AND SHARE THAT KNOWLEDGE WITH YOUR LOCAL CAT DEALER?

- Yes
- No

6A. HOW MANY PEOPLE IN YOUR COMPANY READ YOUR COPY OF CAT MAGAZINE?

- Just me
- Me and one other person
- 3 to 4 people
- 5 or more

6B. IF OTHER PEOPLE READ YOUR COPY, WHO ARE THEY?

(MULTIPLE SELECTIONS POSSIBLE)

- Owner operator (small enterprise)
- Operator
- Service technician
- Fleet manager
- Solution provider / Designer
- Managing director / Purchaser
- Other (Please specify)

7. ARE YOU HAPPY WITH HOW MANY CAT MAGAZINE ISSUES ARE PUBLISHED PER YEAR?

- Yes, 3 times per year is just right
- No, I would like Cat Magazine to be published more often

- 8. WHEN YOU READ AN ARTICLE IN CAT MAGAZINE, IS IT TYPICALLY THE FIRST TIME YOU HEAR ABOUT THAT STORY (NEW PRODUCTS, TECHNOLOGIES, OTHER CUSTOMER PROJECTS, ETC.)?**
- Yes
 - No, I usually have discussed the same subject with my local dealer
 - No, I usually have discussed the same subject with other business partners (word of mouth)
 - No, I usually read about the stories on the Internet (cat.com, dealer website, press circle, etc.)

- 9. HOW WOULD YOU LIKE CAT MAGAZINE DELIVERED TO YOU?**
- Printed magazine
 - On-line interactive PDF or flipbook
 - Printed magazine and on-line magazine

- 10. HOW WOULD YOU ASSESS THE ONLINE MAGAZINE?**
- Easy to read and user-friendly
 - Added value offered by web links and videos
 - Difficult to read the text
 - Difficult to view the pictures
 - No usage of web links and embedded videos
 - Never read the magazine online

ARTICLES AND SUBJECTS

- 11. DO ARTICLES AND SUCCESS STORIES COVERED IN CAT MAGAZINE INFLUENCE YOUR PURCHASING AND REPURCHASING DECISIONS? (MULTIPLE SELECTIONS POSSIBLE)**
- Yes, they have an impact on my decision to:
- purchase new products, used products or to rent equipment.
 - buy equipment management solutions (maintenance or service contracts, Product Link, etc.)
 - buy genuine Cat parts (batteries, drive trains, etc.)
 - buy advanced technologies to improve productivity (AccuGrade, Flexport tires, etc.)
- Or
- No, they do not influence my purchasing decisions

- 12. LOOKING AT THE TYPE OF ARTICLES COVERED IN CAT MAGAZINE TODAY, WHICH ARE OF GREATEST INTEREST TO YOU? (PLEASE TICK)**
- 1 = Not interesting
2 = Average
3 = Interesting
- Local, onsite projects and customers**
- 1 2 3
- Projects and customers in other countries**
- 1 2 3
- Projects in industries other than the one you belong to**
- 1 2 3
- The short stories in "Cat in Brief"**
- 1 2 3
- Operator or maintenance tips**
- 1 2 3

New product introductions

1 2 3

Service and maintenance success stories

1 2 3

Caterpillar, dealer and customer profiles (people, in-depth interviews)

1 2 3

- 13. WHAT OTHER TOPICS WOULD YOU LIKE TO SEE COVERED IN CAT MAGAZINE? (MULTIPLE SELECTIONS POSSIBLE)**

- New technologies
 - Sustainability progress
 - Local dealer initiatives
 - Corporate initiatives (e.g., Caterpillar building a new factory)
 - Behind the scenes at Caterpillar
 - Other (Please specify)
-

- 14. DO YOU READ MAGAZINES PUBLISHED BY OTHER MANUFACTURERS? IF SO, WHICH MANUFACTURER?**

- Volvo (Volvo Spirit)
 - Komatsu (Komatsu Times)
 - Hitachi (Ground Control)
 - JCB (Terrain)
 - Other (Please specify)
-

- No, I do not read magazines from other construction equipment manufacturers

- 15. IN A FEW WORDS, HOW WOULD YOU DESCRIBE AND QUALIFY CAT MAGAZINE?**
-
-
-

THANK YOU FOR YOUR TIME. LOOK FOR THE RESULTS IN CAT MAGAZINE 1/2013.

CAT IN BRIEF

VEOLIA'S BIOGAS BICYCLE



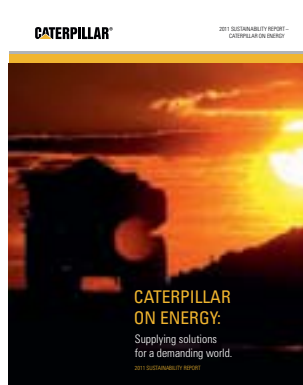
At waste disposal site Septèmes les Vallons in the south of France, it takes 10 heavy-duty machines to handle, spread and bury waste, including two Cat® 836H compactors, two 973C track loaders and an M318 wheeled excavator. There's also one Veolia electric bicycle that helps make sure everything runs smoothly.

The deterioration of organic waste produces methane gas, which is converted to electricity – 2.2 MW to be exact. Some of that electricity is used to charge the Veolia bicycle's batteries. With a full charge, it can travel up to 75 kilometers. The bicycle is ridden throughout the 30-hectare facility to maintain and fix the biogas network. Previously, this took three to four days because workers had to walk back and forth. Now, thanks to the bike, problems can be fixed in only one day.

CAT® CERTIFIED REBUILD, A SUSTAINABLE SOLUTION

We all know re-using everything from bags to car parts cuts down on the energy and resources needed to produce new ones. The same holds true when it comes to Cat® Certified Rebuild (CCR) machines. Developed by Caterpillar, Certified Rebuild is a solution that returns old equipment/ power train components to the exact specifications of when they were new for a fraction of what new machines cost.

In fact, the process of rebuilding Cat equipment to like-new condition **uses 85 to 95 percent (by weight) of the materials from the original machine** and requires **50 to 60 percent less energy**. That means Cat dealers can minimize waste while making high-quality, cost-effective machines available to customers. It's good for business and for the environment. No wonder **CCR sales increased by 130 percent** worldwide over the past five years to **nearly 1,000 units in 2011**.



READER SURVEY

Everyone deserves a Cat hat. And if you're one of the first 20 people to submit a completed reader survey, we'll give you nice Cat hat. Besides, it might be time to replace the well-worn one you already have.

The survey can be found on pages 25 and 26. It only takes about five minutes and will help us know what topics and stories are of most interest to you for future issues.

LOCAL DENTAL CARE HAS COMMUNITIES SMILING



In South Africa, many children who live near our customers' mines have never had their teeth checked by a dentist. That's why Caterpillar® sponsors a free mobile dental care service. Each unit provides examinations and hygiene tips as well as a gift pack with a toothbrush, rinse cup and toothpaste so children can better care for their teeth in the future.

In 2011, more than 2,000 children were screened. Approximately 60 percent were suffering from painful tooth decay. Of that 60 percent, half needed fillings and 49 percent required tooth extraction.



GROW YOUR BUSINESS. NOT YOUR INVESTMENT.

Whatever your project, at The Cat Rental Store® we have the equipment to get the job done. Our complete range of Cat equipment and other leading brands helps to grow the capacity of your business with maximum flexibility and minimal investments.
The Cat Rental Store, you've got it.



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