

# CAT MAGAZINE

**ON LOCATION: YATAGAN, TURKEY**

**TRIED, TESTED,  
TRUSTED**

**CAT CERTIFIED USED EQUIPMENT**

**ACCUGRADE AT WORK IN LATVIA**

**SERVICE MAKES  
THE DECISIVE DIFFERENCE**

**Teknoxgroup**



# CLEARED FOR TAKE OFF

## CAT PAVERS PUT AIRPORT PRODUCTIVITY FIRST

For International airports and the airlines that use them, flight punctuality is critical. So when runways and taxiways need renewing, with no delays tolerated, clearly it's time to call in Cat PM200 cold planers.

Cat Magazine takes a look at the PM200 paving the way for take off at two International airports.



### BOLOGNA AIRPORT, ITALY: RELIABILITY TO DEPEND ON

Bologna Airport is ranked 3<sup>rd</sup> in Italy and has a runway authorised to handle flights travelling up to 5,000 sea miles. It is used by around 20 million passengers a year, so uninterrupted passenger service is vital.

Commissioned to repave a runway link and sections of taxiway without disruption to flights, Bologna-based contractor Cooperative Costruzioni turned to the Cat PM200. "It was essential to finish on time and without any hitches," says Coop Costruzioni's Nicola Guidetti. "To be absolutely sure of this we knew we needed two Cat PM200 cold planers. We had already put this model to the test many times and knew that it delivered what we needed: top performance and productivity, reliability and the capacity to work without breaks. Since we only had one PM200, we contacted CGT, our local Caterpillar dealer, to rent a second machine."

The work was completed in two 6-hour night shifts, with three hours dedicated to removing the worn paving using the two cold planers in tandem. By 5 a.m. at the end of each night's work, the airport was returned to full service. In total 670 tonnes of material was milled from a 10,500m<sup>2</sup> surface area.

### MUMBAI AIRPORT, INDIA: PERFORMANCE FOR PRODUCTIVITY

Mumbai's Chhatrapati Shivaji International Airport is India's largest, with four terminals spread over an operational area of 1,450 acres (5.9km<sup>2</sup>). Each year it handles over 25 million passengers and over 500,000 tonnes of cargo.

Faced with the demands of larger aircraft like the Airbus A380, upgrading and extending the runways was essential. Chosen contractor Ashwini Infra Developments (A.I.D.) turned to Cat dealer Gmmco to supply a new PM200 to complement the PM102 they already operated, figuring that running the two cold planers in tandem would allow them to meet the project's stringent deadlines.

As A.I.D. jobsite foreman Rajesh Ghanekar discovered: "The PM200 responds to all types of cuts and handles them easily. The milled surface texture was excellent and enabled easy binding tack operation, and the paving that followed. Levels were maintained, resulting in very few or almost no second passes for the same cut."

Thanks to PM200 productivity, over 130,000m<sup>2</sup> of asphalt have been removed to date in this ongoing project. ■

#### PM200 COLD PLANER

Cat® C18 Engine with ACERT™

Power at 1900rpm

**Gross:**

429kW/583hp

**Net:**

415kW/564hp

**Operating Weight:**

30,100kg

**Rotor Width (max):**

2010mm

**Rotor Depth (max):**

320mm



PM200 in action:

[www.mycattv.cat.com/PM200](http://www.mycattv.cat.com/PM200)



**AL-HALLABAT, JORDAN**  
Service makes the decisive difference



**MONTE CENERI, SWITZERLAND**  
Ingenuity at work



**YATAGAN, TURKEY**  
Cat Certified Used Equipment



**MUNICH, GERMANY**  
Instant attraction

**Dear reader,**

As we go into the new year, at long last it looks like the recent tough times are almost behind us. So now we can look forward to a brighter future together.



You can be sure that Caterpillar is ready to face tomorrow's challenges with you. We are better equipped than ever to listen to your needs and meet them – to support you with great products, services and unique solutions that will deliver the lowest owning and operating costs.

However, as you'd expect, our support goes much further. For example, we're ready, too, with a comprehensive selection of quality used Cat equipment, and with equipment rental options to extend your operating capabilities, helping you make the very most of each and every new business opportunity as it arises.

In this issue we highlight some of those facets of our business. So in the following pages you'll discover how Caterpillar customers internationally have profited from our determination to provide them – and you – with solutions that add business value throughout the lifecycle, whether you are the first or second owner of Cat equipment. Enjoy your read.

**Paolo Fellin,**  
**Vice president Caterpillar**

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Above is just a taste of what's in this issue – you'll find plenty more news and views inside. If you have an idea for a story for a future issue, contact our publishers on [CatMagazine@cat.com](mailto:CatMagazine@cat.com)

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# SERVICE MAKES THE DECISIVE DIFFERENCE

**Jordan's leading quarry operator is in the process of replacing his entire fleet of machines with equivalent Cat models. The reason? Only the local Cat dealer delivers the kind of service he needs to keep his machines – and his business – running at peak efficiency 24/7.**

Site manager Amer Mbeideen stands at the highest point of the Al-Sweimeh quarry, 45km west of the Jordanian capital Amman, from where you can see the Dead Sea shimmering in the midday heat on the horizon. "That's beautiful," he says. His eyes aren't on the landscape, though, but on what for him is an equally captivating sight – a Cat 988H wheel loader working at full stretch in the quarry below to fill a waiting off-highway truck with yet another load of limestone. It's a sight he never tires of because, he says, "Each load represents another promise kept, another customer satisfied, one more step towards another day of productive, profitable operation. And in this business that's what counts."

The Al-Sweimeh quarry is operated by Developed Crushers Company, established in 2002 and part of Jordan's Manaseer Group of companies, owned by Engineer Zaid Al-Manaseer. Along with Al-Sweimeh, Developed Crushers Company operates two others – one in the south near Aqaba, and the Al-Hallabat quarry, 60km east of Amman. The company's products are sold throughout Jordan, 70 percent of them destined for use in the concrete industry and 30 percent going for road construction and other applications.

*"Each load represents one more step towards another day of productive, profitable operation. And in this business that's what counts."*

The Al-Hallabat quarry, opened in 2008, produces high quality basalt and, according to site manager Omar Al Serdi, is the first of its type in Jordan. "There was another basalt quarry in the country," he says, "that operated between 1975 and 1985. It produced basalt for use as insulation material. But we are the first in the country to produce high quality crushed basalt suitable for mixing with asphalt. Our product is used for road construction throughout Jordan, and it's helping make a substantial improvement to the quality of the country's highways. We currently operate 20 hours a day for six days a week, producing around 350 tonnes of crushed product per hour, and will further be expended to reach 900 tonnes by year end upon operating the new 550 tonnes Crusher."

The Al-Sweimeh quarry was opened earlier, in 2002. Occupying a one million m<sup>2</sup> site, with 300,000m<sup>2</sup>

currently being worked, and employing 220 people, it is Jordan's largest – and one of the biggest in the Middle East. Production of aggregates currently also runs at around 900 tonnes per hour of grades ranging from 0-2mm to 16-25mm. Silica sand for the concrete industry is also extracted at the site and there is some marble production too.

## THE CRITICAL INGREDIENT

Turn up at Al-Sweimeh and you'll quickly understand why effective servicing of the machines in use there is key to keeping the business profitable. Situated 150 metres below sea level (but still 272 metres above the nearby Dead Sea shoreline, the planet's lowest dry land surface), midday temperatures routinely exceed 40°C and in summer can rise as high as 55°C. Add to that the harsh, sandy, abrasive nature of the terrain and it's no surprise that the machines operated there take a beating as a matter of routine.

More ▶





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[www.uk.cat.com/maintenance-and-support](http://www.uk.cat.com/maintenance-and-support)



Engineer Zaid Al-Manaseer, owner of Jordan's Manaseer Group of companies

It's the same story at the Al-Hallabat quarry. Although situated 500 metres above sea level – and therefore benefiting from slightly cooler temperatures (though you'd be hard pressed to notice), the nature of the rock extracted there – a very high quality basalt – means that a fine abrasive dust permeates the environment, clogging filters and subjecting equipment to the possibility of high rates of wear. At both sites you'll find Cat machines supplied by local Cat dealer Jordan Tractor hard at work, seemingly unaffected by the conditions, but it wasn't always so.

Christie Janho, chief executive officer at Jordan Tractor, takes up the story: "Before 2008 there were no Cat machines at any Manaseer Crushers site. We had, however, previously supplied a Cat generator set to them for use at Al-Hallabat. It turned out that we were arriving on-site to check and service that single piece of equipment more often than did the dealer who had sold them all their earthmoving machines back in 2005. They noticed this and began to wonder why they weren't getting that level of service from their major equipment supplier.

"As we do with every customer and potential customer, we kept visiting them regularly and even offered advice and help when it was needed on the maintenance and repair of their non-Cat machines. And then, one day, they finally turned to us and said something like 'Would you be able to supply us with 40 Cat machines?'. And of course you can guess what our answer was. It turned out that they were fed up with the levels of productivity achieved with their machines and had decided that Cat machines, with their high performance backed by the kind of maintenance and repair service they were convinced we could offer, would make a significant difference to their business. It was the beginning of what is turning out to be a great partnership. So far we have supplied them with 29 Cat machines and the changeover process is still continuing. Currently, for instance, there's a joint study underway that's looking

at the possible benefits of replacing the company's large fleet of Russian-built off-highway trucks with Cat machines – probably 770s and 772s. So it's an ongoing process and Manaseer's commitment to Cat machines looks set to grow as time goes on. As long as we continue to do our job properly," he adds with a smile.

#### SUPPORT IN ACTION

The intensive support offered by Jordan Tractor under a service agreement with Developed Crushers Company covering maintenance and repair for all the Cat equipment is evident at both sites. In both workshops a resident team of two Jordan Tractor technicians is on hand 24 hours a day to undertake routine checking, maintenance and repair. They are backed by a 'flying' team of technicians based at Jordan Tractor's Amman workshop, who are on standby 24 hours a day – even at weekends – ready to go to either site should a problem occur that requires more expertise and manpower to solve it than the resident teams can provide. And should major work prove necessary, machines can be transported to Jordan Tractor's workshop in Amman – though only once so far has this been necessary.

So do the challenging conditions at the two sites lead to abnormal demands being made on the resident technicians? "No," says technician Faris Deges, based at Al-Sweimeh, "it's just the normal procedures, nothing special, we don't face any special challenges." But it's noticeable that he and his colleagues are kept constantly busy and he admits to working long hours, sometimes from 5 a.m. to 8 p.m. "Ah," he says, "but that's only because that's what it takes to do our job properly, not because there are any special problems with the Cat machines working here."

The job he and his colleagues do is, as you'd expect, a thorough one. Because of the hard working conditions, monitoring of the machines' condition is constant, with regular checking, reporting and analysis of mechanical, electrical and hydraulic systems. Plus, under the Cat S•O•S<sup>SM</sup> oil analysis service, regular oil analysis



Jordan Tractor's parts and service manager, Amin Amireh

*“When it’s 50°C,  
maintenance matters”*



is carried out, with the samples analysed at Jordan Tractor’s own laboratory in Amman. Established in 1982, it was the first to be opened in the Middle East.

“All in all it’s an intensive program,” states Jordan Tractor parts and service manager Amin Amireh. “But the aim is simple – to keep the Cat machines earning money for their owner rather than sitting in a workshop costing them time and revenue. In order to achieve that we operate a policy we call ‘repair before failure’ and its success is critical to maintaining the machine productivity our customer requires.”

#### **A MEETING OF MINDS**

Helping to co-ordinate all the support activity is Jordan Tractor CSA administration supervisor Reyad Batah. “If you want to keep everything running smoothly,” he says, “nothing beats regular face to face communication at every level. So we hold weekly meetings with all the relevant people from Manaseer Crushers and Jordan

this has become a true partnership, a meeting of minds, working together for our mutual benefit. And surely this is the best way of all to do business.”

Standing at the top of the Al-Sweimeh quarry site in the hot afternoon sunshine, looking down at his Cat machines still working at full swing below, site manager Amer Mbeideen would surely agree. ■



Al-Hallabat’s site manager,  
Omar Al Serdi

*“Nothing beats regular face to face  
communication at every level.”*

Tractor. It means that I’m on the road between Amman and the two quarry sites a lot, often three times a week. But the result is effective communication, which leads to prompt action wherever necessary, which in turn leads to a satisfied customer. It’s intensive work, but it brings us closer together and the results are worth it for both sides.”

At one of these meetings, at the Al-Sweimeh site, both Jordan Tractor CEO Christie Janho and Manaseer Crushers general manager Abdelghani Al-Manaseer are present, and it’s clear that their business relationship has advanced way beyond the formal dealer/customer pattern. Mr Manaseer confirms this: “We are not simply customer and dealer, two linked but separate organisations,” he says. “Over the past few years

#### **CAT MACHINES IN USE AT AL-SWEIMEH**

8 x 966H wheel loaders  
3 x 988H wheel loaders  
4 x D10T track-type tractors  
1 x 329C hydraulic excavator

#### **CAT MACHINES IN USE AT AL-HALLABAT**

4 x 966H wheel loaders  
2 x 988H wheel loaders  
2 x D10T track-type tractors  
1 x 365C hydraulic excavator



See for yourself in this video  
[www.mycattv.com/totalsupport](http://www.mycattv.com/totalsupport)

# PEACE OF MIND IS ALL PART OF THE DEAL

In a massive infrastructure development in the Latvian capital of Riga and on one of the country's major road renewal projects, a rented AccuGrade 3D GPS-equipped Cat D6K track-type tractor has been boosting work rates to unprecedented levels for local contractor SIA Roadeks.

Uldis Klaperis, Chairman of Riga-based construction company SIA Roadeks points to traffic streaming along the highway overpass that runs almost above his company headquarters: "Latvia may not be a big country with an enormous population," he says, "but as you can see it is a busy country. And as it has grown busier over the past decade, the more urgent it has become to improve the country's

infrastructure. It is our good fortune as a company that we have been chosen to be part of that process."

SIA Roadeks began life in 1997 as a small road maintenance and construction company, activities which are still the company's core business. Following a successful start, growth began to accelerate in 2001 and has continued to this day, despite the recent downturn in the country's economy. "We now employ between 100 and 180 people, depending on the time of year," states Uldis, "we're currently the fifth largest construction company in Latvia, and..." he smiles here "...we're aiming to improve on that as quickly as possible." He also emphasises that the company's rapid growth has not simply been in staff



and turnover, but in experience as the range of projects undertaken has expanded. "And experience counts," he adds, "especially when times are not easy and you're under pressure to work ever more efficiently."

#### "WE CAN'T AFFORD TO BE UNPRODUCTIVE"

It can't be denied, though, that in the road construction business size matters. So the fact that SIA Roadeks now owns a total of around 30 machines, including trucks, dozers, graders, backhoes, paving machines, and soil and asphalt compactors, counts in the company's favour when tendering for bigger projects. Of these 30 machines, no fewer than nine bear the Cat logo. "You could say that they are our key machines in the road construction side of the business," states Roadeks director of manufacture Janis Ansviesulis.

Why Caterpillar? Janis gives a pragmatic answer: "We bought our first new Cat machine – a D5 track-type tractor – in 2005, along with another, non-Cat machine. In 2006 we had minor problems with the Cat machine and with the other machine too. Our local Cat dealer, SIA Witraktor, fixed the D5 immediately, with no downtime. We didn't get the same response for the other machine, so we decided to replace it with another Cat machine. We can't afford to be unproductive."

There were other factors, too, that convinced SIA Roadeks that an investment in Cat machines was the right route to take. Janis says: "We keep a close eye on machine efficiency, reliability and productivity. We measure and judge one machine against another, so we know which machines are pulling their weight and which aren't. Quite simply, the Cat machines give us the performance we're looking for. Our operators like them too. They tell us they have more usable power than comparable non-Cat machines."

He adds that turning to Cat dealer SIA Witraktor meant that he could also benefit from a machine demonstration before deciding to buy. "And not just a few hours, but a week in order to evaluate the machine fully. No other dealer offered us that."

#### TAKING FULL ADVANTAGE OF THE RENTAL OPTION

Like Cat dealers throughout Europe, Africa and the Middle East, Latvia dealer SIA Witraktor offers a rental service for Cat machines. It's an option that SIA Roadeks has taken full advantage of by renting PM102 and PM200 cold planers, an AP655D asphalt paver, and a D6K track-type tractor equipped with a complete 3D GPS AccuGrade system. All of these machines are being used in two major ongoing road construction projects, with the AccuGrade-equipped machine in particular delivering performance and productivity that have kept SIA Roadeks up to speed in difficult circumstances.

#### THE SOUTHERN BRIDGE – CONNECTIONS FOR SMOOTHER TRAFFIC FLOW

Riga's Southern Bridge project has a long history. First drawings for a road bridge to the south of the city over the river Daugava south were first drawn up in the 1930s. However, they remained merely 'a good idea to be put into action one day'. Then, with the growth in business and tourist traffic followed by Latvia's accession to the European Union in 2004, the need for the Southern Bridge – now seen as a major element in a planned ring road round Riga – became urgent. Construction started in 2005 and the bridge was opened to local city traffic in November 2008. But work on the access road system connecting it to the major highways south of the city continues, with completion scheduled for the end of 2011.

SIA Roadeks is one of the major contractors on this project, responsible for construction of a 2.5km stretch of access road consisting of nine separate carriageways in all – a total of 22.5km of construction work, to tight deadlines. "It's a difficult task," says Uldis Klaperis, "because we must build short sections of road simultaneously, in co-ordination with other contractors building other, connected, sections. So speed and accuracy are vital. That's why we decided to rent the Caterpillar 3D GPS AccuGrade system. We had first seen it at the Cat demonstration centre in Malaga and realised it would be ideal for this project."

More ►



**ARTURS DEGROVS**

is "the company's best operator", according to his boss, with third place in Operator Challenge Latvia 2008 and second place in operator competition CATBALL 2010 to his credit. "I had never used AccuGrade before," he says, "so I expected it to be a headache. But it wasn't. I spent two days training with Edgars Dambergis, SIA Witraktor's technical communicator, and then, after about two weeks in the field with it, I found it extremely easy to use – I had no problems. It makes my life simpler and my work easier. And best of all, when I'm up there in the cab working with AccuGrade, I'm the boss. I don't depend on others, they depend on me – and that's a great feeling!"

The AccuGrade 3D system uses GPS technology to compare the blade position to a computerized site plan and signals the operator or hydraulic system to raise or lower the blade.

According to Janis Ansviesulis, AccuGrade 3D GPS has exceeded their expectations, proving even more productive than anticipated. "It's faster and cheaper, and because there's no need for constant optical surveying, it eliminates the human factor and saves on personnel costs. And it lets us keep working in the dark, a real benefit in winter; you can't do that with an optical surveying system. The system has even helped us prove to government inspectors, who believed that we had made a 5cm mistake in level on one section, that this wasn't the case. In fact it turned out that they had made a human error in their own checking process. Without AccuGrade we might have spent time and money trying to rectify a mistake that wasn't, in fact, a reality. So when anyone asks us about the benefits of AccuGrade, I have to say that, as well as cost-saving, a major plus point is peace-of-mind; quite simply, you can trust the system to deliver the goods."

**ON THE ROAD TO A BETTER TRANSPORT INFRASTRUCTURE**

SIA Roadeks have found the same benefits when using the rented AccuGrade 3D GPS system on another large road project, the renovation of a 200km A IV category State Road P33. Contracted to renovate an 8km section of this project, SIA Roadeks are involved in digging out the old road to a depth of between three and four metres before constructing a new, straighter and smoother road in its place. The task involves moving around 170,000m<sup>3</sup> of different types of soil, rock, gravel and old asphalt.

"Again," says Janis, "different parts of the project were being undertaken at the same time, each at a different stage, and using AccuGrade made the transition from one section to another much simpler than it would otherwise have been."

**RENT OR BUY? THE ANSWER IS 'YES'**

On both projects, claims Uldis, renting the AccuGrade 3D GPS system was the most attractive option. "AccuGrade really provides the best advantage on big projects, and currently these two are our only big ones. And perhaps, too, the technology will evolve further over the next few years, so – by the time we really need a permanent system of our own – renting now leaves us free to buy the most up-to-date equipment later."

So will they turn to AccuGrade again in the future? "Of course," insists Janis, "where we can't use it, the need to employ more people makes it more expensive not to have the system than to have it. That's particularly relevant in difficult times when you need to 'think more' in order to be efficient. The AccuGrade 3D GPS system certainly makes a significant difference!" ■



Find more customer testimonials here  
[www.mycattv.com/accugrade](http://www.mycattv.com/accugrade)

# MAINTENANCE TIPS TO MAXIMISE MACHINE LIFE AND PRODUCTIVITY

## HYDRAULIC SYSTEM

Regular inspection and maintenance of your hydraulic system and following contamination control practices will lower your owning and operating costs and maximise your machine's productivity and uptime. In this article we offer some essential advice to maximise the life and performance of your machines' hydraulic systems.

### INSPECTION TIPS

#### 1. PERFORM REGULAR VISUAL INSPECTIONS

Look for leaks in cylinders or hoses, worn or damaged hoses, missing bolts, damaged cylinder rods, worn wiper seals, etc. in order to prevent a small problem from becoming big and contamination from entering the hydraulic system.

#### 2. HYDRAULIC SYSTEM PERFORMANCE CHECK

Hydraulic system efficiency can drop by as much as 20 percent before the machine operator detects there's a problem. Cat dealerships can perform Hydraulic Service inspections to help keep your hydraulics in peak condition.

### MAINTENANCE TIPS

#### 1. CHANGE FILTERS REGULARLY AND CAREFULLY

Hydraulic filters should be changed as per the Operation and Maintenance Manual. It's also important to keep new filters and other parts packaged until they're ready to install and to remove old filters carefully.

#### 2. SELECT THE RIGHT OIL

Ensure your hydraulic oil contains the needed additives, like oxidation and foam inhibitors, and zinc to provide maximum protection to pumps, motors, cylinders and valves. Caterpillar HYDO™ Advanced oil contains the necessary additives and extends your hydraulic oil change interval.

#### 3. KEEP HYDRAULIC TANKS FILLED

Always keep the hydraulic tank between the "Full" and "Add" marks. Insufficient fluid levels are the leading cause of pump cavitation and can also result in high oil temperatures, causing oil to degrade.

### CONTAMINATION CONTROL TIPS

75 percent to 85 percent of hydraulic pump, motor, cylinder and valve failures can be traced to contamination. Due to the extremely small clearances in today's hydraulic systems, even particles you cannot see can damage pumps, motors, cylinders and valves by causing abrasive, adhesive and fatigue wear.

#### 1. USE TIGHT-FITTING BARREL COVERS

Tight-fitting covers can help prevent dirt, water, airborne particles and other contaminants from entering oil barrels. It's also wise to store barrels inside.

#### 2. MONITOR BULK FLUIDS

Check the condition of the oil in your bulk tanks periodically. Make sure the tank has a 4-micron air filter breather as oil is dispensed.

#### 3. USE HIGH EFFICIENCY FILTERS AND KIDNEY LOOPING AFTER REPAIRS

Contaminants invade the hydraulic system whenever it's open for a repair. We recommend Kidney Looping and the use of Cat High Efficiency Filters following any system invasion in order to remove contaminants.



Learn more  
[www.cat.com/parts/hydraulics](http://www.cat.com/parts/hydraulics)

**SIEGFRIED PENZENSTADLER**

owner of Munich-based German construction company Penzenstadler GmbH



## INSTANT ATTRACTION

When Siegfried Penzenstadler, owner of Munich-based German construction company Penzenstadler GmbH, visited the Bauma trade fair in April last year he had no immediate plans to buy a wheel excavator. Yet just a couple of hours later he was the proud owner of an immaculate four-year old Cat M318C with only 3,000 hours on the clock. Here's how it happened.

Penzenstadler GmbH has been in business since 1940, first as a transport company and then subsequently expanding into the construction, earthmoving and recycling fields. The company bought its first excavator in 1954 and its first Cat machine – a D4 track-type tractor – in 1980 following Siegfried Penzenstadler's takeover from his father as head of the business in 1976. The company now has an annual turnover of €20 million a year, employs between 70 and 100 people (depending on the level of business) and operates a total of 35 earthmoving machines.

Of these, no fewer than 25 are Cat machines, so why is the Cat brand so popular with Penzenstadler? "They are not the cheapest machines you can buy," says Siegfried, "but in my opinion they are quite simply the best. Parts availability is good, and when the time comes you know you'll be able to sell them anywhere on the planet."

### LOVE AT FIRST SIGHT (AGAIN!)

However, neither selling nor buying was on Siegfried's agenda when he visited the Caterpillar stand at Munich's Bauma trade fair for construction machinery last April. "I merely went to see what was on show, what was new, as I always do," he claims. "Although at the back of my mind I may already have had the thought that the business might be able to use another wheel excavator at some time in the future. But not necessarily right away."



The Cat M318C on show on the Caterpillar stand at Bauma, complete with a 'sold to Penzenstadler GmbH' sign.



And then on the Caterpillar stand he saw a Cat Certified Used M318C wheel excavator, built in 2006 and with 3,000 hours on the clock. Within an hour or two the decision to buy it was taken and the deal completed. "For us that was a smart move," says Siegfried with a smile. "Not only did we get a great machine, but throughout the rest of Bauma it was on show on the Caterpillar stand with

*"The price was OK, everything was OK and I love it."*

a 'sold to Penzenstadler GmbH' sign on it, and that meant good publicity for our company! But more seriously, the price was OK, everything was OK and I love it."

### CAT CERTIFIED USED FOR PEACE OF MIND

For local Cat dealer Zeppelin sales representative Marko Gaspar, Siegfried's lightning decision wasn't such a big surprise. "After all," he says, "he did the same thing three years ago. That time he turned up at Bauma and bought a used 950 wheel loader simply because he fell in love with it; he admits now that he had no real need for it at the time. But it's given him outstanding service on every job site, so we knew he liked the Cat Certified Used concept."



Jens Schrader, Caterpillar's used equipment consultant for Central and Eastern Europe explains: "If you're going to buy second-hand equipment there's always a perception that you're taking a risk. How can you be sure you're getting good value? It's like buying a used car; you can get a good used Mercedes, say, for a particular sum of money, but you're taking a risk because you don't know its history. So you end up buying a new Fiat instead for the same money."

"The Cat Certified Used concept overcomes that obstacle. It provides an up to two-year Cat Certified Used warranty, plus a low interest finance package and a service contract. And the used machine itself is prepared to a high standard, with up to 140 different inspection points covered before it's put up for sale. It's a program that's now offered by every Cat dealer in Europe, Africa and the Middle East, and the overall result, for every buyer of a used Cat machine, is peace-of-mind that you won't find elsewhere."

#### A CLEAR ADVANTAGE

For Siegfried Penzenstadler the benefits are clear: "The price/performance equation was right, reliability's good, and in our pipe laying and road construction work, which is where it's been used so far, the M318C is doing

everything we ask of it. And our operators like it better than other makes of machine, particularly because the hydraulics provide them with a superior response."

"Usually we buy new – only 10 percent of our machines were bought second hand – but we have no worries about this machine. It went straight from Bauma to a construction site and it's still performing as expected. And because we have had a strong relationship with Cat dealer Zeppelin ever since 1980, we know the back-up will be there to keep it working should that ever become necessary. For us it's a no risk solution." ■

#### PENZENSTADLER GMBH'S CAT FLEET

- 5x 325DLN
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# INGENUITY AT WORK

When you are faced with extending and updating a complex transport infrastructure in an environment as challenging as Switzerland's, it takes imagination, superior skills and total dedication – along with Cat machine versatility and reliability – to get the job done. Here we focus on two examples.

1: MONTE CENERI



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## THE SWISS ALPTRANSIT LINE GOES UNDERGROUND AT MONTE CENERI

Cat machines, specially customised for tunnelling, at work underground at Monte Ceneri.



In spring last year work began on the 15.4km long Ceneri Base Tunnel in the Swiss canton of Ticino. This tunnel, comprising two single-track bores, continues the Swiss AlpTransit line south of the Gotthard Base Tunnel.

Commercial operation of the tunnel is planned to start at the end of 2019. It will carry high-speed rail and heavy freight trains, neither of which can operate on the existing steep track over the Monte Ceneri mountain.

To meet machinery needs, the tunnel contractor consortium Condotte Cossi turned to Swiss Cat dealer Avesco, working – for this project – in collaboration with Italian Cat dealer CGT and German Cat dealer Zeppelin.

The Cat 314D LCR and 328D LCR excavators in use on the project have been customised by the dealer for tunnelling. Booms and dippers are unconventional in both shape and size, and heavy-duty dozer blades are fitted to the car body. Strong covers protect the top of the blade cylinders. These modifications ensure outstanding stability and enable any type of levelling work to be undertaken. While clearing the tunnel crown and vertical face from loose rock, the blade at the rear prevents the machine from creeping backwards. Like all machines at the site, the eight compact radius excavators are equipped with two fire extinguishers, one in the cab and one on the exterior of the excavator.

For loading and shovelling within the narrow connecting galleries, Avesco modified four Cat 938H wheel loaders. Fenders have been shortened and parts of the rear fenders removed. The maximum width of the loader is now 2.6m. To better protect the operator, a second roof and a front windshield guard have been added to the cab. A moving cover prevents damage

to the dump-cylinder and heavy steel beams on the counterweight protect the radiator from side-impacts.

When drill and blast operations are in full swing, crews drive the two tunnels simultaneously to the north and south. After each blast a 328D LCR tunnelling excavator clears the crown and the face of any loose rock and finishes off the tunnel profile with the hydraulic hammer. The cleared area is then secured with rock bolts, steel meshes and shotcrete before a wheel loader removes the muck at the tunnel face and dumps it into a mobile crushing plant. The broken material leaves the tunnel on an extendible belt conveyor system. About 20 percent of the excavated rock can be reused for onsite concrete production. The rest will be disposed for landscaping the area around the construction site.



## FROM TUNNEL TO BRIDGE IN THE KNONAUER AMT

In the second half of the 19th century trains from Lucerne to Zürich passed through the “Knonauer Amt” area because the line along the shores of lake Zürich was not yet built. The single track railway crossed a main road in a 10 metre deep man-made cut between the villages of Hedingen and Bonstetten/Wettswil. Instead of building a bridge across the cut, the owner of the railway line decided on a tunnel to fill the gap for the road. Masons used solid sandstone blocks to construct the tunnel, with a crown measuring 70cm and walls at the bottom on both sides 150cm. Afterwards they backfilled the cut to the level of the road, creating the 21 metre long Chrüzachertunnel.

As more people leave the big cities to live in surrounding villages, public transport capacity needs to increase to take them to work in cities like Zürich. Which is why in the near future the Swiss Federal Railways (SBB) decided to add a second track to the railway line in the “Knonauer Amt”. So in 2009 the fill above the tunnel was excavated and a new concrete bridge replaced the road across it. Consequently the tunnel lost its purpose and was scheduled for removal.

After the last train passed the Chrüzachertunnel late on a Friday night in July last year, SBB-workers removed the overhead power-lines. Then a special train with conveyor belts covered the tracks with 60m<sup>3</sup> of crushed stones. At 04:00 the first 51 tonne Cat 345C L, suspended from a 200 tonne capacity crane, was lowered onto the covered tracks. At 04:30 the first sandstone block at the northbound side of the tunnel fell to the ground. 28 minutes later a second Cat 345C L excavator was in position at the southbound side. Attacked with a hydraulic hammer and a concrete crusher, the tunnel crown started to crumble.

At 07:38 the tunnel crown was gone. While the southbound excavator broke down the side walls with a hammer, two other 345C's moved stones and fill material to the road level. Around 08:30 the first road-going trucks appeared. A Cat 973C kept them busy all day, loading 2600m<sup>3</sup> of material which was hauled to a dumpsite for recycling. And by Saturday evening the Chrüzachertunnel was history.

### 2: KNONAUER AMT

Moving stones and fill material at the site of the former Chrüzachertunnel.



## CAT CERTIFIED USED EQUIPMENT

# TRIED, TESTED, TRUSTED



**MUHAMMED ERCAN,**  
owner of Ermas Mermer

**How an extended on-site demonstration helped convince a Turkish marble producer of the economic benefits of turning to Cat used equipment.**

From its headquarters near Yatagan in western Mugla province, marble producer Ermas Mermer operates a total of five quarries – two in the Yatagan area and three further south near the city of Antalya. Three associated factories handle the output from the quarries. In business since 1985, total annual production of marble runs to 150,000 tonnes a year, which, thanks to its high quality, is in growing demand worldwide. Of this total, some 75,000 tonnes is excavated at the Yatagan quarries, where the company currently uses earthmoving equipment that includes hydraulic excavators, wheel loaders and articulated dump trucks – some 28 machines in total, no fewer than eight of them bearing the Cat logo.

It wasn't always this way though. Company owner Muhammed Ercan confesses that before 2008 you would have been hard pressed to spot a single Cat machine on site. "We had in fact bought an old Cat machine back in 1997," he says, "and that was still in use – in fact it still is today. But for some reason a myth had grown in the company that fuel consumption on Cat machines was higher than with other brands. As far as I can tell now, this myth wasn't based on solid evidence, but the result was that we were no longer really interested in the brand and were mostly operating other makes of machine."

### BACK-TO-BACK EVALUATION

By 2009, though, growth in the business meant that Ermas Mermer needed to expand its fleet and was considering buying one, or perhaps two articulated dump trucks – probably second-hand machines. At this point Izmir-based Turkish Cat dealer Borusan Makina, in regular contact with the company, saw an opportunity to overcome the company's reluctance to consider the Cat brand. The Cat dealer's offer of an extended on-site demonstration was accepted and a used Cat 725 articulated dump truck, built in 2005 and with around 4,600 hours on the clock, was delivered to the Yatagan quarry site for extended evaluation, back-to-back with another maker's equivalent model of a type already in use at the site.

Ten day's of extensive performance evaluation, with performance recorded and evaluated at the end of every day, convinced the company that their reluctance to consider Cat machines was misplaced. Muhammed

explains: "Over the course of the demonstration it became clear that the Cat machine was delivering more usable power than the other machine for the same fuel consumption. So it was able to work faster for the same fuel use, and would therefore offer us higher productivity. Provided, of course, that we could depend on it to function reliably. There was another plus point, too," he adds. "Our operators preferred working with the Cat machine. Its extra power meant that it was easier for them to use and made their work simpler – an important factor for us to consider."

[More ▶](#)



A large block of marble is carried away from the quarry face for processing in the nearby factory.



Smaller blocks of marble are carried away from the quarry site by a Cat 725 articulated dump truck.



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Teamwork: A Cat 330B L,  
980H BH (Block Handling)  
and 725 at work in the Ermas  
Mermer quarry at Yatagan



All Cat Certified Used equipment is less than five years old, has low work hours and includes:

- Minimum 6-month power-train warranty
- Like new appearance
- Up to a 140-point inspection
- Less than 50 percent wear on tires, undercarriage, and ground engaging tools
- Scheduled maintenance completed by a Cat factory trained technician
- Financing available with competitive interest rates
- Extended service coverage options

Inspection points cover:

- General condition
- Boom / stick
- Safety items
- Electrical system
- Operator station
- Transmission
- Engine brakes
- Cooling system
- Hydraulics
- Final drives
- Undercarriage
- Attachments

Cat machines in use at Ermas Mermer:

- 2 x 980 HBH wheel loaders
- 3 x 725 articulated dump trucks  
2002 model with 9,300 hours  
2005 model with 4,600 hours  
(CAT Certified Used)
- 2006 model with 4,900 hours (CAT Certified Used)
- 2 x 330BL excavators



#### A COMPLETE PACKAGE FOR TOTAL SUPPORT

However, Muhammed still hesitated before committing himself to buying the used Cat machine. "We were already using the non-Cat machines in our quarries," he states, "so we knew their capabilities, whereas the Cat machine, although it performed brilliantly in the trial, was still an unknown in terms of reliability, maintenance and durability. Would it continue to work

*"The warranty package dispelled all our worries about reliability, servicing, everything."*

for us as effectively as it had during the demonstration period? And, it has to be said that the second-hand Cat machine would still be more expensive to buy than an equivalent second-hand model of our usual brand. So we needed reassurance that we would be making the right decision by going with Cat."

That reassurance came in the form of the warranty package offered by Borusan Makina. "It dispelled all our worries about reliability, servicing, everything," claims Muhammed, "particularly the 3,000 hours warranty. On a four-year old machine that's a good deal – as good as some brands offer on a new machine. Consequently we made the decision in favour of Cat and put the 725 straight to work."

And has it performed up to expectations? "Yes," says Muhammed emphatically. "When we bought it we added 2,000 hours on the clock. By the autumn last year it had already clocked up 7,000 hours with no real problems and we're now expecting to use the machine for another five years – that will be around 15,000 hours in total." And for further proof of his satisfaction, he points to the fact that Ermas Mermer has now invested in more Cat equipment – a mixture of

new and used machines that brings the company's Cat equipment inventory to a total of ten machines so far.

#### WHY BUY USED?

For Ermas Mermer, the decision to invest in used Cat equipment makes sound economic sense. It's a simple matter of cost versus performance and reliability. "For instance," says Muhammed, "take the trucks we use to transport marble from the quarry face to the processing sites. Like every other marble producer in Turkey, we've used on-road trucks. Though they're not ideal, they're cheap to buy compared with quarry-specific off-road trucks. But if you can buy a used Cat articulated dump truck instead, with the kind of back-up we're getting from Borusan Makina as part of the deal, you can guarantee that it will work harder, longer, and in all conditions, whereas an on-road truck simply can't do that. So the cost/productivity equation changes in favour of the used Cat truck.

"That's why we've invested in Cat used equipment, and it's why we intend to keep doing so." ■





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# 1959 CAT FLASHBACK



## The 944 wheel traxcavator, Caterpillar's first wheel loader.

Introduced 50 years ago, with a 1.5m<sup>3</sup> bucket and either a 78kW petrol or diesel engine, it was the culmination of seven years of development – and the beginning of Caterpillar's leadership in the worldwide market for mid-size wheel loaders.



Originally bought by the Norwegian Army, this 922B wheel loader is now owned by the Norwegian Railway Club, and is still in regular use for loading track ballast, moving equipment and clearing snow.



Greek builder Nikos Kotelides owns this 1960 944A. Previously owned by his uncle for about 24 years, it is still fully operational and is now used for small landscaping projects.



This 1960 922A is the property of Swiss farmer Waldy Beney, who uses it for around 150 hours a year for snow removal, distributing food to his animals, and general load carrying.



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