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A publication for and about Brandeis Machinery & Supply Company customers

J.A.D. COAL COMPANY, INC.

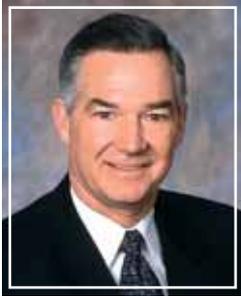
Kentucky mine meets obligations and builds stockpiles while waiting for coal price recovery

See article inside . . .



Jeff Dean,
Operations Manager

A MESSAGE FROM THE PRESIDENT



Gene Snowden, Jr.

**Taking
innovation
a step further**



Dear Valued Customer:

This year marks the beginning of Tier 4 Final implementation with the introduction of smaller engine-horsepower machines, such as utility equipment. Larger equipment begins rolling out next year. It's taken a long time and a great deal of innovative engineering to get to this point, but the efforts have been well worth it, especially when it comes to Komatsu equipment.

Not only has Komatsu met the stringent emissions standards of each new tier level, it has engineered machinery that's more productive and efficient. It's added innovative technology such as KOMTRAX, which helps lower owning and operating costs by allowing you to monitor machinery and proactively schedule service or address productivity issues, including excessive idle time. Komatsu furthered its efforts to lower your costs by introducing Komatsu CARE, which provides complimentary scheduled service on Tier 4 Interim machines.

Now, the manufacturer has taken innovation a step further with the introduction of "intelligent" machines, the first of which you can read about in this issue of your *Focusing on Solutions* magazine. We're excited about the new D61i dozers that offer integrated 3D grade control without the blade-attached mast and cables you see in traditional machine-control grading systems. Tests show this revolutionary design can further reduce operating costs and increase even the most rookie operator's productivity. Details are in the article.

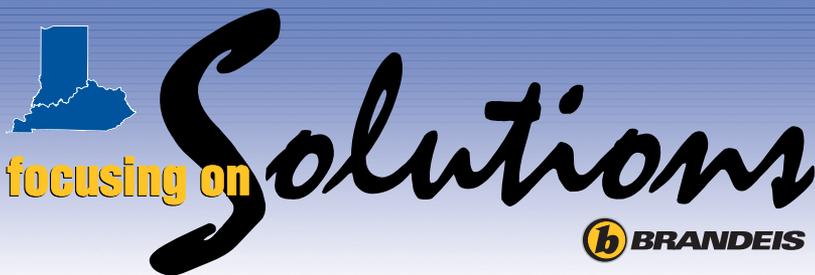
If you're interested in a D61i or any other machine, there is an advantage to purchasing this year. Enactment of the American Taxpayer Relief Act of 2012 extended the 50-percent bonus depreciation for most property placed in service before 2014. It also extended increased Sec. 179 expense levels of \$500,000 with a phase-out amount beginning at \$2 million. After this tax year, those numbers are scheduled to significantly drop. For additional information, talk with your sales representative, or call your nearest Brandeis Machinery branch.

As always, if there's anything we can do for you, please call or stop by one of our locations.

Sincerely,
BRANDEIS MACHINERY & SUPPLY COMPANY

A handwritten signature in black ink that reads "Gene Snowden, Jr." in a cursive script.

Gene Snowden, Jr.
President and Chief Operating Officer



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J.A.D. COAL COMPANY, INC.

Kentucky mine meets obligations and builds stockpiles while waiting for coal price recovery



Jeff Dean,
Operations Manager

Eastern Kentucky has some of the best coal in the world. Low in sulfur, low in ash and high in heating value. It's the reason J.A.D. Coal Company, Inc., which was originally formed in Virginia in the early 1970s, bought and leased thousands of acres in Harlan County, and began mining operations there in the early 1980s. In 2008, J.A.D. was acquired by Lexington-based US Coal Corporation, which operates it today as the J.A.D. division of US Coal.

J.A.D. Coal operates in Harlan County, Kentucky.

An operator uses one of J.A.D. Coal's two Komatsu D475 dozers to push overburden at its mining operation in Harlan County, Kentucky. The company is re-mining property to get at an estimated 33 million tons of coal reserves.



J.A.D. has access to about 30,000 acres with an estimated 33 million tons of coal reserves. The property features excellent rail transportation throughout the southeastern United States.

"When things are booming, we'll have three spreads working throughout the mine, plus a high-wall miner and an auger," said J.A.D. Operations Manager Jeff Dean, whose father, Aubra Dean, was one of the original founders of J.A.D.. "Unfortunately, we're not booming right now. Coal prices are down so we've scaled back to two spreads and the high-wall miner. We're waiting for the price to go back up so we can return to full employment and full production."

"The big question, of course, is when will coal prices return to a level where mining is profitable," said Scott Sturgill, General Manager of Surface Mines for US Coal. "It could be tomorrow or it could be further down the road. Unlike many mines in the region, we've chosen to stay open. We're meeting current sales obligations and also stockpiling for when the price does recover. We're hopeful that will occur sooner rather than later."

Currently, J.A.D. is producing about 50,000 tons of coal per month – roughly half the level of a year ago. Employment today is about 100 miners, down from about 160 in 2012.

"That's the worst part of all this," said Dean. "We're very proud of our work force. We think they're the best mining team around. When we have to lay somebody off because we don't have enough work for them, it hurts."

"Picking up the scraps"

Harlan County was one of the last Kentucky coal-mining regions to be developed, largely because of a lack of rail transportation. But all that changed when the railroad arrived in 1911. For the past 100 years, mining has been the county's primary economic driver.

▶ VIDEO





▶ VIDEO

Because of the lengthy history of mining in the region, virtually all of J.A.D.'s property has been mined previously. Dean estimates current ratios average about 20 feet of overburden to get to a one-foot coal seam.

"What we're doing is remining property that was mined years before," said Dean. "There's little to no virgin ground left here. Previous generations took the coal that was easy to get. We're going through and basically mining what remains."

Komatsu and Brandeis – a winning combination

Better equipment and know-how are what allow J.A.D. to be cost-effective. The company turns largely to Brandeis Machinery & Supplies for Komatsu machines and Atlas Copco drills.

"When my dad first came to Harlan County in the early 1980s, he got a Komatsu WA450 wheel loader from Brandeis," Dean recalled. "We got great service out of that machine and that experience led us to get more and more Komatsu pieces through the years."

Today, J.A.D. has two Komatsu D475 dozers along with a D155; eight Komatsu wheel loaders ranging in size from a WA450 to a WA900 and including four WA500s; four Komatsu HD785 haul trucks; and a Komatsu PC350 hydraulic excavator.

"Komatsu is good equipment," confirmed J.A.D. Surface Superintendent Harvey Henderson. "We've been very pleased with the trucks and the WA900 does a good job loading overburden for one of our spreads. And the WA500s are excellent."

"First and foremost, we need reliable, durable equipment that gives us good productivity and high uptime," said Dean. "We get that with Komatsu. The other thing I want from equipment

is longevity, and I've been very impressed with the way our Komatsus hold up. For example, three of our WA500s are now in the 25,000- to 30,000-hour range and have required very few major repairs."

While the equipment itself is very important, Dean says an even bigger factor for him is dealer support.

"I've got to be able to trust the dealer and know I'm going to get support, and that's where Brandeis shines. They stand behind their products and provide excellent parts and service. When a Brandeis technician comes out to make a repair, before leaving, he always checks in to see if we need anything else. They don't just want to charge us; they want to help us.

"The other thing is, J.A.D. was a family business for years, and in many ways, we still operate that way. Brandeis is similar. From our Sales Rep Jason Douglas and his predecessor John Estill to everyone at the Corbin Branch parts and service departments, including PSSR Dave Helton, PSSR Nick Baird and Corbin Service Manager Rob Prewitt, as well as Coal Sales Manager Robert Krutsinger and Vice President of Coal Services Chuck Mueller, they all know who we are. They know us by name and ask about our families. We're not just a number to them. With Brandeis, it's a personal relationship as well as a business one, and that means a lot to me."

PM Clinic – a "physical" for equipment

In order to better survive a down market, J.A.D. recently had Brandeis perform a PM (Preventive Maintenance) Clinic on its largest Komatsu pieces – the D475s, the WA900 and the HD785s. A PM Clinic is a full-machine inspection, similar to an in-depth physical exam you might get from your doctor.

Continued . . .

J.A.D. Coal has to remove an average of 20 feet of overburden to reach a one-foot coal seam. Komatsu machines, including this WA900 wheel loader and HD785 haul truck, play an integral role in the process. "The WA900 does a good job loading overburden for one of our spreads," said Surface Superintendent Harvey Henderson.



Go online or scan this QR code using an app on your smart phone to watch video of J.A.D. Coal machines at work.

Tough coal market doesn't deter J.A.D. Coal

... continued

"Many of those machines are reaching some thresholds hour-wise where we can start expecting some issues," said Dean. "So we asked Brandeis to come in and inspect them, front to back and top to bottom. Check oil samples, pressures, blow-by, cycle times – basically everything they do on original delivery. We wanted to know the current condition of the

machines and what we can expect down the road, specifically whether we're going to need to replace any major components in the near future. We also wanted recommendations and guidance from Brandeis about anything we can do to get longer productive life from the units.

"The results confirmed what I believed: that Komatsu is high-quality, high-value equipment," he added. "The report indicated that components were wearing well and would not need replacing anytime soon. Significantly, it also showed cycle times and pressures were nearly identical to when the machines were brand-new. It showed we weren't always greasing as well as we should, but otherwise indicated that our maintenance program is working to provide long and productive equipment life. We think the information we got from the PM Clinic was very valuable for planning purposes and peace of mind."



(L-R) Brandeis Sales Rep Jason Douglas, J.A.D. Operations Mgr. Jeff Dean, Surface Sup't. Harvey Henderson, Pit Foreman Alan McArthur, U.S. Coal Surface Operations Sup't. Scott Sturgill, J.A.D. Blasting Supervisor Russell Miniard and Brandeis PSSR Nick Baird and Corbin Service Mgr. Rob Prewitt gather for a photo at J.A.D. Coal. "Brandeis provides excellent parts and service," said Dean. "They work with us to help us get the most out of our equipment."

Using a Komatsu PC350 excavator, a J.A.D. Coal operator digs into a coal seam.



J.A.D. Coal uses eight Komatsu wheel loaders in its Harlan County mining operation, including four WA500s.

▶ VIDEO



Cautious optimism

Despite the difficult coal economy at present, Dean expects J.A.D. to survive and grow in the years to come.

"Through US Coal, we have excellent top management. CEO John Collins, J.A.D. President Malcolm Thomas, CFO Mike Windisch and Vice President Operations and Engineering Jon Salle are all smart, experienced coal men. They're also willing to think and act outside the box in search of answers. I think we're all cautiously optimistic about J.A.D.'s long-term future."

"As for the industry in general, I think we're cautiously optimistic about it as well," added Sturgill. "It seems like the coal industry often has a target on its back, but I believe we've overcome most reasonable objections with innovative reclamation efforts, stormwater runoff control measures and clean-coal programs to mitigate emissions issues.

"There is still a strong demand for our product, both domestically and overseas," he noted. "The problem for us today is an overabundance of natural gas and hydropower, which are depressing prices. We're confident that will work itself out and prices will eventually return to a level where coal mining is cost-effective. Bottom line, in a world that always needs more energy, coal is an energy source that's too good to be ignored." ■

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CLEAN DIESEL DELIVERS

New technology helps dramatically reduce emissions during the past decade

For the last decade, diesel technology has undergone a fundamental transformation to near-zero emissions, based on ultra-low-sulfur diesel fuel, advanced clean-burning engines and new emissions-control technology. These advancements have occurred across the board — from the smallest industrial engine to the increasingly popular clean-diesel cars, commercial trucks, off-road machines and equipment, maritime vessels and locomotives.

The results of these efforts are clear because, according to the EPA, diesel engines account for only a small portion of the national particulate matter (PM) emissions inventory — less than 6 percent.

These last 10 years were truly the decade of clean diesel and the results are visible today. New highway diesel truck engines have near-zero emissions of particulate matter and oxides of nitrogen (NOx) — a remarkable 98 percent less than 1988 models. It is also noteworthy that truck and engine manufacturers are not only producing near-zero level emissions, but these vehicles are also consuming on average 5-percent less fuel.

Just how significant is this accomplishment? Consider that it now takes 60 of today's clean-diesel, heavy-duty trucks to equal the particulate emissions of one 1988 truck — a 60-1 ratio.

Similar reductions in emissions of particulates and NOx are well underway and will be completed by 2014 for the wide range of off-road engines found in everything from small construction equipment and farm machinery to freight locomotives, marine vessels, work boats and very large off-road machines and mining equipment.

The new generation of clean-diesel technology is not only meeting its emissions-reduction targets but is also exceeding them. Further contributions will come as more new-technology engines and equipment are put into service in the years ahead.

Just as the EPA's March 2012 Black Carbon Report to Congress stated that new diesel technology will play a role in helping reduce black-carbon emissions by 2030, new diesel technology will play a major role in helping meet the Clean Air Act standards for soot. ■



Allen Schaeffer,
Executive Director
of the Diesel
Technology
Forum

New engine technology in equipment, such as Tier 4 Interim machinery, helped reduce emissions of particulate matter to near zero during the past decade, a 98-percent reduction since 1988, according to Diesel Technology Forum Executive Director Allen Schaeffer.



DETERMINING OPERATING COSTS

How to get a better picture of your total costs for more accurate bids and profitable projects

Industry estimates put owning costs at 25 percent to 30 percent of the total machine owning and operating picture. These costs, which include finance, interest, depreciation and tax, tend to be fairly straightforward. The remaining balance – 70 percent to 75 percent – includes labor, fuel, parts, repairs, operator expenses and other related items that make up the operating component, which is more variable and more comprehensive.

Figuring operating costs is the more difficult of the two because so many factors go into them. For example, an excavator may be used in several applications, each of which probably causes costs to fluctuate. The same machine may be used in performing demolition and running attachments, such as hammers, shears and thumbs. It may not take any more power or fuel than digging, but the conditions put more

Labor, fuel, parts, repairs, operator expenses and other related items make up operating costs, which are considered the largest part of owning and operating a machine. It's essential to know these costs to create accurate bids.

stress on a machine and may require added maintenance and repair.

Even digging isn't so straightforward. Ground conditions can vary greatly within one particular geographic area, and even on a jobsite itself. A trench could have different types of soils, as layers of topsoil, clay and rock could be encountered at varying depths.

Finally, where a machine is in its life cycle makes a difference. A new machine is going to cost little in repairs, therefore, more of its production time is going to profit. An older unit that's paid for may seem like it's more profitable. However, it could be more prone to breakdown and run less efficiently. There's a chance it's making money, but not as much as the owner thinks, if it needs frequent repair.

Factor in the operator

The person running the machine has to be figured into the operating costs as well. A more experienced operator will obviously be more productive than a rookie, but will also likely cost more per hour in wages.

Another item to consider with operators is how they operate and take care of a machine. While many of today's machines have several working modes designed to match applications for maximum efficiency, longtime operators may be accustomed to always running at full power and idling during nonproductive times. That adds to maintenance and repair outlays.

Applying history, modern technology for savings

Experience plays a valuable role in getting to true operating costs. Factoring in historical trends and data from past projects is a good starting point for determining how to approach the next estimate and final bid. Accurate records





Figuring operating costs can be challenging because a particular machine may perform multiple tasks, such as an excavator that's used to dig and set pipe. Contractors must consider how each application affects production and fuel usage, and use other critical information to better calculate accurate operating costs.

of conditions and information on how operators and machines have worked and been used under similar circumstances provide a solid reference point.

Relying strictly on past project costs has shortcomings, however. For example, if personnel don't provide information, such as fuel usage, hours of production versus idle time and maintenance records, it's difficult to get a true cost picture. It's not always feasible for an owner to visit a jobsite, especially if multiple projects are spread out over a large area. Fortunately, during the past few years, improved technology, such as Komatsu's KOMTRAX system, allows owners and their personnel to monitor information remotely, including the mode a machine worked in, how often a machine idled, fuel usage, production factors and other critical information. Reports from these systems, along with other records, can be very useful for future reference.

Having this information allows contractors to address cost-saving practices such as shutting a machine down during nonproduction times or training operators to use a more efficient working mode. Over time, operating costs may be lowered, profit increased and more competitive estimates produced.

Technology, in the form of bidding and estimating software, can help produce accurate bids. Programs designed to work with jobsite plans allow users to trace existing and proposed elevations, then the programs will calculate the amount of earth to move by cut, fill or both. Users should take into account that calculations can be off by a few percentage points and programs don't always factor in types of soil, obstructions or other items that may affect production. A site visit should be made to evaluate those factors.

On a visit, users can set up a GPS system to create a picture of the existing site. That information then goes into a design file of the proposed project to create a model used to estimate how much earth to move. That file can also be used with a 3D machine-control system, which provides accurate grading and reduces costs associated with material overages, staking and surveying.

Calculating true operating costs that accurately reflect what to charge for individual machines on each job takes practice, but it's a business component that every contractor needs to master in order to produce accurate bids that result in profitable projects. ■

SLIGHT IMPROVEMENT

ASCE raises infrastructure grade to D+, says increased investment is a critical need

America's infrastructure grade only marginally improved, according to the latest Report Card issued by the American Society of Civil Engineers (ASCE). Issued every four years, ASCE gave the nation a D+ this year compared to a D on its last report in 2009.

The ASCE Report Card is a comprehensive assessment of current infrastructure conditions and needs with assigned grades and recommendations for improvement. It's based on criteria such as capacity, condition, funding, future need, operation and maintenance, public safety, resilience and innovation.

The American Society of Civil Engineers' most recent Report Card graded the nation's infrastructure a D+, a slight improvement from the D it gave in its last report in 2009.

"A D+ is simply unacceptable for anyone serious about strengthening our nation's economy; however, the 2013 Report Card shows that this problem can be solved," said ASCE President Gregory E. DiLoreto, P.E. "If we want to create jobs, increase trade and assure the safety of our children, then infrastructure investment is the answer."

Six of 16 sectors measured saw some improvement: solid waste, drinking water, wastewater, roads, bridges and rail, with rail showing the biggest jump from a C- to a C+. Bridges also received a C+, which was the highest ranking for any sector except solid waste with a B-.

ASCE cited efforts by cities and states to address roads, bridges, drinking water and wastewater system upgrades, as well as private investment and short-term federal funding increases as reasons for improvements in some areas. It added that investment in funding infrastructure overall falls far short of what's needed.

According to the report, an estimated \$3.6 trillion investment by 2020 is necessary for significant improvement. Based on current funding levels, there would be a shortfall of \$1.6 trillion.

"We must commit today to investing in modern, efficient infrastructure systems to position the U.S. for economic prosperity," said DiLoreto. "Infrastructure can either be the engine for long-term economic growth and employment, or it can jeopardize our nation's standing if poor roads, deficient bridges and failing waterways continue to hurt our economy."

The full report can be found online at www.infrastructurereportcard.org. ■



LOADERS

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The WA380-7 Tier 4 Interim Wheel Loader is a class leading performer with improvements in production, fuel efficiency, operator comfort and serviceability.

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INNOVATIVE PRODUCTS

D61i-23: A REVOLUTION IN DOZING

New *intelligent Machine Control* dozers maximize production, lower costs with fully automated blade control



Jason Anetsberger,
Product Manager,
Intelligent Machine
Control

Komatsu's exclusive intelligent Machine Control (iMC) is a fully integrated, factory-installed, 3D machine control system. It provides automatic grading from start to finish and is designed to increase productivity while reducing material costs.

When contractors started using 3D machine control, they quickly realized the efficiency and productivity advantages the systems provided, including reduced operating and material costs. Komatsu takes the technology to the next level with the introduction of its first *intelligent Machine Control* dozers, the D61EXi-23 and D61PXi-23.

"Dozers equipped with conventional aftermarket 3D machine control are easy to spot on the jobsite, because they're the ones with a mast or masts attached to the blade and cables running from a mast to the cab," explained Jason Anetsberger, Product Manager, Intelligent Machine Control. "Komatsu eliminated those by integrating the 3D machine control technology into the machine, with sensors located in the cylinders and a cab-top antenna. Unlike traditional machine control systems, Komatsu's *intelligent*

Machine Control is fully integrated and factory-installed."

Components of the integrated *intelligent Machine Control* system include robust stroke-sensing hydraulic cylinders and a chassis-mounted enhanced inertial measuring unit, as well as the cab-mounted antenna and in-cab control box. Designing the GPS components into the machine improves durability, and the cab-top antenna provides accurate surface data by measuring actual elevations as the dozer continuously tracks during operation. The system measures progress in real time.

Seamless mode switches

The *intelligent Machine Control* D61i-23 dozers provide automatic blade control from rough cut to final grading. Inside the cab, an easy-to-use operator interface uses design files and interacts with the dozer's machine-system controls, including blade control – the D61i comes standard with a power-angle-tilt blade – and tractive-effort management. As the dozer approaches final grade, it automatically and seamlessly switches from rough dozing to finish grading.

"Typically, users rough cut to within a few inches of final grade before turning on the automatics of their machine control system to get to final grade," said Anetsberger. "That's because if the operator uses traditional machine control in automatic during rough cut, the machine tries to push or cut too much material, and, inevitably, the tracks slip. That can reduce productivity, cause unnecessary wear on the tracks, increase fuel usage and increase overall owning and operating costs.

"We're reducing or eliminating those issues with the D61i," he added. "During rough cut, if



The integrated *intelligent Machine Control* system features stroke-sensing cylinders and a cab-top antenna that eliminate the traditional mast(s) and cables associated with 3D machine control. Operators can also select modes to match material conditions.



▶ VIDEO

Brief Specs on *intelligent Machine Control* Dozers

Komatsu's new D61i-23 dozers provide grade control from rough dozing to finish grading. The integrated 3D machine control system automatically raises and lowers the blade to provide maximum production with reduced track slip and better fuel efficiency.

Models	Net Hp	Operating Weight	Blade Capacity
D61EXi-23 D61PXi-23	168 hp	39,441-41,381 lbs.	4.5-5.1 cu. yds.

the system senses the blade has excess load, it automatically raises to minimize track slip and maintain forward momentum. The blade also automatically lowers to push as much material as possible, so it's designed to maximize production under all situations."

The advantages of the new Komatsu *intelligent Machine Control* dozers are significant, with field tests showing efficiency improvements of up to 13 percent compared to conventional aftermarket machine control systems, depending on factors such as operation and conditions.

"Machine owners can realize those benefits even with less-experienced operators," said Anetsberger. "Operators can make changes through a simple touch-screen control box. To ensure maximum productivity and efficiency, they can adjust machine control settings from presets to allow for material conditions. Four dozing modes – cut and carry, cutting, spreading and simple grading – are available, along with light, normal and heavy load modes."

Anetsberger noted that the new technology has similarities to traditional aftermarket machine control systems. "Customers' base stations and project design files are still necessary to operate the new D61i dozers. In addition to the unique

benefits of the D61i-23, all of the key benefits of conventional machine control remain, such as less staking and lower surveying costs."

100-percent Komatsu supported

Not only does the customer benefit from the improved efficiency and durability of the D61i-23's integrated machine control system, but also from the service and support aspect. Komatsu and the local Komatsu distributors fully support the factory-installed *intelligent Machine Control* system. The customer can rest assured that Komatsu is 100-percent behind both the base machine and the on-machine *intelligent Machine Control* technology.

"As with other Tier 4 Interim machines, the D61i-23 dozers are backed by Komatsu CARE, which provides complimentary scheduled maintenance and complimentary KDPF exchanges. In addition, each Komatsu distributor will have a dedicated Technology Solutions Expert (see related story) whose responsibilities include initial calibration of the machine and ongoing support. Our extensive field testing shows these intelligent dozers can make any user productive and efficient, and we encourage anyone looking for that to demonstrate one." ■



Go online or scan this QR code using an app on your smart phone to watch the D61PXi-23 dozer in action.

Komatsu distributors' staff support new technology

... continued

Technology Solutions Experts ready to help you deploy 3D machine control systems

When buying a new machine, confidence comes in knowing that the distributor and manufacturer will stand behind it with strong support. That's always the aim of Komatsu, and it's taken additional measures with the introduction of its new *intelligent Machine Control* D61i-23 dozers.

"The D61i dozers feature fully integrated, 3D machine control components that Komatsu factory installs," said Ron Schweiters, Product Marketing Manager of Komatsu's recently formed Intelligent Machine Control Division. "Our iMC Division goals include making equipment owners and operators aware of technology, such as 3D machine control systems, that is proven to lower owning and operating expenses by increasing productivity and reducing material costs."

Komatsu's new *intelligent Machine Control* dozers build on those attributes with an integrated system that eliminates the mast, or masts, and cables associated with conventional, aftermarket

3D machine control grading systems. The D61i-23 dozers instead have a cab-top antenna, stroke-sensing cylinders and a chassis-mounted, enhanced, inertial, measuring unit, among other items. All were designed to exacting standards with durability in mind.

"Whenever new technology is introduced, there's a bit of trepidation, and we want to take that away by letting customers know we're fully prepared to back those machines," said Mike Salyers, Product Marketing Manager, iMC. "One way we're doing that is through dedicated Technology Solutions Experts (TSE). The TSE plays a key role in helping customers understand the technology and how they can implement it into their fleets."

Part of the support they provide is the initial calibration of the new *intelligent Machine Control* machines. TSEs have spent numerous hours training to make this critical step go smoothly. Once calibrated, the machines are ready to work,

providing automated blade control from initial rough cut to final grade.

"From that point, the D61i dozers work much like traditional dozers, communicating with the user's own machine control base unit and design files," said Salyers. "The TSEs can help with these steps, too, by working with operators to dial-in the project, select proper modes based on site and material conditions and maximize productivity and fuel economy. They can also support traditional machine technology." ■



Komatsu distributors now have Technology Solutions Experts, whose role is to provide initial setup of the new D61i-23 dozers, along with ongoing support. They've spent many hours training to ensure customers' technology needs are met.

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D61i-23

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No Cables

No Connections

Factory installed Intelligent Machine Control – standard on the new D61i-23. Automated dozing – 1st to last pass with finish grade performance. Intelligent blade assistance minimizes track slip and improves efficiency.

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New dozers take center stage at Komatsu event



Peter Robson,
Director of Intelligent
Machine Control

Customers and Komatsu distributor personnel got an up-close look at the future of *intelligent Machine Control* technology during a recent iMC experience event focused on the new D61i-23 dozers (see related articles for more detailed information) at the Komatsu Training & Demonstration Center in Cartersville, Ga.

During the event, attendees had the opportunity to see the innovative technology that provides fully automated blade control from rough cut to finish grade, as well as operate the D61PXi-23 models. The new dozers feature

factory-integrated 3D machine control that functions without the blade-mounted mast(s) and cables associated with conventional aftermarket systems.

Additionally, Komatsu highlighted the latest Topcon technology for productivity reporting and remote machine monitoring at the Training & Demonstration Center. In it, attendees could see software designed to work with GPS systems to track production in real time.

"In my many years with Komatsu, I've seen the development of numerous innovative machines and new technology, but I believe this is the most exciting product I've ever been involved with," said Peter Robson, Director of Intelligent Machine Control. "The efficiency improvement, greater value and simplicity of operation of the D61i-23 exemplify the leading innovations that customers have come to expect from Komatsu. It was a pleasure to see so many interested in this new machine and the technology behind it. The feedback we received was very positive, and many who attended saw how the D61i-23 could be a valuable asset to their operations." ■

Komatsu demonstrated the latest Topcon software designed to work with machine-control systems so users can track production data in real time.



Attendees had the opportunity to see and operate new D61PXi-23 dozers with integrated 3D machine control technology that requires no blade-mounted mast(s) or cables running from mast(s) to cab.



NEW PRODUCTS

NEW MATERIAL HANDLERS

Robust design provides excellent lift capacity, maximum efficiency in heavy-duty applications

Just because you're working in tough applications, you shouldn't have to sacrifice fuel economy or productivity. You don't have to with Komatsu's new PC390LC-10 and PC490LC-10 material handlers that provide excellent lift capacity and efficiency for scrap yards, terminals and other bulk-material-handling applications.

"Komatsu material handlers are built using the best features of our PC390 and PC490 base excavators, which are proven performers," said Senior Marketing Engineer Sue Schinkel. "For example, the engine pumps, valves and cylinders work together for maximum efficiency and productivity. There's also a material-handling package built into the base machine for superior lift capacity, speed and balance."

Several features contribute to maximum lift capacity, including heavy counterweights; reinforced revolving and center frames; and larger boom and arm cylinders. Load-holding valves are also standard for added protection on the boom and arm cylinders. Two- or three-piece fronts are available, and both incorporate a reinforced box-section design that uses high-strength alloy steel.

"We beefed up the X-frame assemblies, making them very robust," said Schinkel. "The material handlers can pick up as much over the side as they can from the front, and carry that load a full 360 degrees. That's a distinct advantage in a scrap yard where the working area may be very tight. In applications not involving maximum lift, the operator can use a Smooth boom-mode setting for more precise positioning operations."

High-efficiency pumps

For greater efficiency, the PC390LC-10 and PC490LC-10 material handlers have large-displacement, high-efficiency pumps that

provide higher flow output at a lower engine speed. Optimized Hydraulic System valves adjust work equipment speed – boom raise, arm in and grapple/bucket open-close – for smooth, precise operation.

Controlling the work equipment is easy, using the multifunction buttons on the operator control levers for grapple open-close-rotate and magnet discharge-charge. Operators can improve visibility to the application with a 78-inch cab riser that has manual tilt for transportation.

"When Komatsu designed its Tier 4 Interim machines, it took the opportunity to look beyond meeting emissions requirements and build machines that offer a combination of greater horsepower and fuel economy," said Schinkel. "We've brought that same intent to these new material handlers, and the results and feedback have been very positive." ■



Sue Schinkel,
Senior Marketing
Engineer



Go online or scan this QR code using an app on your smart phone to watch the PC490LC-10MH in action.

www.BrandeisSolutions.com

Brief Specs on the Komatsu Material Handlers

Model	Net Hp	Operating Weight	Reach
PC390LC-10MH	257 hp	92,940-95,010 lbs.	46-48 ft.
PC490LC-10MH	359 hp	126,530-128,940 lbs.	54-55 ft.



▶ VIDEO

Beefed up X-frame assemblies, along with other robust features, allow Komatsu material handlers to pick up as much over the side as they can from the front, and carry that load a full 360 degrees. That's a distinct advantage in a scrap yard where the working area may be very tight.

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SHIFT IN PRACTICE SAVES MONEY

Initiative changes contractor's view of idle time, its effect on bottom line

When Wade Williams bought his first piece of equipment eight years ago, he didn't put much thought into starting an excavation business. He just wanted to clean up around the farm.

"Neighbors saw I had an excavator and started coming to me asking if I'd do some work for them," said Williams, who is a one-man operation with Wade Williams Dozer Service. "The next thing I know, I'm cleaning up fence rows, clearing timber, ditching and building pads. I still do a lot of that private farm work, as well as working with farmers and the NRCS (Natural Resources Conservation Service) on soil-conservation projects that are put out for bid. Things really took off."

Williams quickly began adding equipment, including a Komatsu excavator. He currently owns a PC240LC-10 excavator and a D51 dozer. "I've run other brands, but what I've found is that Komatsu is hands-down the leader when it comes to both equipment and support. They've shown me ways to increase my bottom line, including bringing idle time to my attention. I really never gave it much thought before."

Komatsu and Williams' local distributor contacted him about participating in Komatsu's No Idle Initiative, which was designed to increase awareness of excessive idle time and easy ways to reduce it. Starting from a baseline idle time, Komatsu tracked participants over several months to chart and reward their progress. Williams earned a "Best of the Best" award, given to companies that reduced their overall idle time to 15 percent or less.

"My distributor sent me monthly reports showing a breakdown of idle time versus run time and documenting how much idling dropped," said Williams. "It makes so much

sense, and I'm grateful they brought it to my attention. It opened my eyes to how much excessive idling was costing me in terms of wasted fuel, unproductive hours that contributed to more frequent service intervals, and unnecessary wear and tear.

"Participating in the initiative changed my way of thinking long-term," he added. "As a one-man operation, I'm moving back and forth between machines, and I'd often leave one machine running while I worked in another. Instead, when significant nonproduction time is coming, I idle a machine for a few minutes to let it cool down, then shut it off, as opposed to just leaving it idle until I come back to it. Now, idle time is always on my mind." ■

Wade Williams, Owner of Wade Williams Dozer Service, said participating in Komatsu's No Idle Initiative changed his practices when it comes to idling. "It opened my eyes to how much excessive idling was costing me ... now, idle time is always on my mind."



Wade Williams,
Owner, Wade Williams
Dozer Service



COMPLIMENTARY TIER 4 SERVICES



Komatsu CARE for Komatsu Tier 4 Interim models is a new, complimentary maintenance program designed to lower your cost of ownership and improve your bottom line. It provides factory-scheduled maintenance on the machines for the first three years or 2,000 hours, whichever comes first. This includes up to two exchange Komatsu Diesel Particulate Filters. Be sure to contact your Komatsu distributor for all the details.

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KOMTRAX GOES MOBILE

New Komatsu smart-device app revolutionizes fleet monitoring

During the past decade, technology in fleet management has gained prominence, and Komatsu has led the way with KOMTRAX. The remote machine-monitoring system allows users to log onto a secure Web site and track their equipment. Komatsu has now taken the next step with an app that lets users see critical machine information on their Apple or Android smart phones or tablet devices.

“Construction has always been a highly mobile field, and the KOMTRAX Mobile app plays right into that,” said Rizwan Mirza, Manager, KOMTRAX. “Similar to traditional KOMTRAX, users can find information that helps them make decisions that can potentially help reduce their owning and operating costs without being tied to an office or laptop. Many equipment users now carry a mobile device, so we evolved KOMTRAX to the mobile world.”

Mirza said Komatsu worked directly with KOMTRAX users to pinpoint information that would be most helpful to them through a mobile platform. Valuable data available through the KOMTRAX app includes machine usage, idle time, fuel consumption, cautions, locations and much more. “Most important, our customers will have the ability to directly contact their distributors,” Mirza explained. “The app features ‘hot keys’ for customers to contact their PSSR, sale rep, service manager, parts counter and local KOMTRAX coordinator.

“Just like traditional KOMTRAX, our distributors and customers can see if a machine has any health issues or is idling too much,” Mirza noted. “They can then make a phone call to schedule the service, or talk to the operator about better operating practices, such as shutting off during nonproduction. Wherever cell coverage or Internet access is available, users at one jobsite can see what’s happening with their machines at other jobsites via the KOMTRAX Mobile app.”

Getting the app is easy

Getting the app for an iPhone, iPad, Android phone or tablet is as simple as downloading it free from the app stores. Users can then request access by filling in basic information such as name, title, company name, email address and phone number. Komatsu then verifies and sets up an ID and password that let users enter the world of KOMTRAX Mobile.

“Smart devices became a necessary part of the construction industry because they made information more accessible and allowed better and faster business communication,” Mirza pointed out. “Smart phones have increasingly become popular because they allow easy access to valuable information through the Web or via apps, so users can get information about their business needs. Now, with our KOMTRAX app, business owners, or anyone they give their permission to, can track their equipment’s overall performance and health. We encourage all those who are interested to contact their local Komatsu distributor.” ■



Rizwan Mirza,
Manager, KOMTRAX



Apple App
Direct link to
download and
connect



Android App
Direct link to
download and
connect

Komatsu’s new KOMTRAX app for smart phones and other mobile devices provides fleet management information, such as machine usage, idle time, fuel consumption, cautions, locations and much more.

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AN INTEGRATED APPROACH

Komatsu Exec VP Manufacturing says customer input, strong engineering result in better machinery

QUESTION: During the past few years, several new machines have been introduced, and many more are coming soon. Where does the manufacturing of these machines begin?

ANSWER: It starts with ideas from our engineering teams as well as input from our customers. Building a new model begins with a goal in mind to improve upon the previous base machine's already-proven performance and incorporate enhancements customers tell us they believe would make our equipment better. From that, we build a prototype and test it extensively, looking for further ways to provide more efficiency and productivity. By doing that, we ensure that when a machine goes into production, it will certainly meet and, we hope, exceed customer expectations.

As an example, our customers told us they would like machines that are plug-and-play ready to accept GPS machine-control systems. We have several models equipped with that as standard. We're now taking it a step further with our new *intelligent Machine Control* D61i-23 dozers, which feature integrated 3D control and a cab-top antenna that eliminates the masts on the blade and cables to the cab. Our thorough testing shows significant improvement in efficiency and productivity, even from operators with little or no experience.

QUESTION: It seems technology like this continues to play a greater role in machinery. Why is that?

ANSWER: It does, and we recently put together a new ICT (Intelligent Control



Ken Furuse,
Executive Vice President,
Manufacturing

This is one of a series of articles based on interviews with key people at Komatsu discussing the company's commitment to its customers in the construction and mining industries — and their visions for the future.

Ken Furuse joined Komatsu 31 years ago and has worked extensively in production planning and plant management, spending much of his time in Japan and throughout Europe. He was named Executive Vice President, Manufacturing, Komatsu America Corp., in January 2013 and is responsible for overseeing manufacturing operations, including U.S. plants in Peoria, Ill., Chattanooga, Tenn. and Newberry, S.C.

"One of Komatsu's greatest strengths is listening, especially to our customers who have guided many positive changes to our machinery throughout the years," said Furuse. "Our world-class engineers incorporate customers' input into building what I believe are the most efficient and productive machines in the construction and mining industries. It's why Komatsu has become a top equipment manufacturer with an ever-growing presence. I'm very pleased with how far we've come, but I'm equally, if not more, excited about where we're going."

One aspect Ken is especially enthusiastic about is increased technology. "Komatsu remains keen on developing and integrating new technology into our equipment, such as our new *intelligent Machine Control* dozers and KOMTRAX monitoring system. Both are shown to directly improve production while reducing owning and operating costs, which, in turn, improves the user's bottom line."

Ken and his wife, Ikuko, celebrate 28 years of marriage this year, and they enjoy playing golf together and taking nature walks. Ken is also an avid mountain hiker and has scaled about 70 peaks in his native Japan.

Komatsu: a leader in technology that benefits users

... continued

Komatsu has manufacturing plants in Illinois, Tennessee and South Carolina that build construction and mining equipment for U.S. and world markets.



Executive Vice President, Manufacturing Ken Furuse said talking and listening to customers helps drive improvements in new Komatsu machinery.

Strong engineering practices and customer input not only help Komatsu meet emissions standards, but they make machinery more efficient and productive in the process, according to Furuse.



Technology) Division designed to promote and help customers implement these types of technology into their fleets and practices because it's proven to improve productivity and reduce owning and operating costs.

Komatsu continues to be very proactive when it comes to technology, and we're seeing benefits both for customers and for us as a manufacturer. KOMTRAX plays a major role, and we've continued to expand upon it from the perspective of customers, again, with their input. Now customers can use that information to track production, such as idle time and work load.

QUESTION: How else is Komatsu working for greater efficiency in the manufacturing process?

ANSWER: We've increasingly engineered genuine Komatsu OEM components and systems into our equipment. These systems work in harmony and increase efficiency. Even with that approach, we still partner with outside suppliers for a variety of items, and this is a good thing because they also bring us new ideas that lead to improvement. Our goal is to use the highest-quality local and regional suppliers as this reduces environmental impact and costs associated with transportation.

QUESTION: Where is Komatsu in terms of meeting Tier 4 Final emissions standards?

ANSWER: Our approach with each emission standard was not only to meet it, but design and manufacture machines that improve upon previous models. Because we're a strong engineering company, Komatsu has done that and our data proves it.

Initial Tier 4 Final machines begin rolling out this year with smaller engine-horsepower models, and larger machines are coming in subsequent years. As with past standards, we're on track to meet or exceed the deadlines of Tier 4 Final. ■



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MORE INDUSTRY NEWS

Innovative infrastructure bank bill introduced with bipartisan support

Thanks to its innovative way of establishing funding, a new congressional bill to establish an infrastructure bank is in the works and has bipartisan support. If passed, the Partnership to Build America Act would create the American Infrastructure Fund with an initial \$50 billion investment from selling bonds. Issued bonds would have a 50-year term with a fixed interest rate of 1 percent, and bonds would not be guaranteed by the government.

Introduced by John K. Dalaney, D-Md., and cosponsored by 13 Republicans and 13 Democrats, the bill would provide an option for local governments that have been searching for long-term financing. They could apply for loans to fund transportation, energy, water and

other infrastructure projects, paying back the loans at market rate.

The bill is designed around a public-private partnership that would encourage corporations based in the U.S. to purchase bonds in exchange for tax-free repatriation of overseas earnings. At least a quarter of the projects funded must be of a public-private partnership, with at least 20 percent of funding from the private sector.

Sponsors and supporters see the bill as a way to address infrastructure funding shortfalls. A recent report by the American Society of Civil Engineers estimated that a \$3.6 trillion infrastructure investment is needed in the United States by the year 2020. ■

AGC study highlights work-zone vehicle crashes and their costs

An Associated General Contractor's work-zone crash study showed 38 percent of work zones experienced a vehicle crash last year, with 21 percent forcing a temporary shutdown. A third of those lasted two or more days.

Eighteen percent of crashes injure construction workers and 8 percent are deadly, according to AGC's report. More than two-thirds of those surveyed believe tougher penalties for moving violations in work zones would reduce those numbers. ■

Use of recycled asphalt materials on roadways brings big savings to taxpayers

Taxpayers saved more than \$2 billion, thanks to the use of reclaimed asphalt pavement (RAP) and shingles (RAS) in new pavement, according to a survey by the National Asphalt Pavement Association and the Federal Highway Administration. It showed that about 67 million tons of RAP and 1.2 million tons of RAS were put back into the pavement mix.

The study said the use of RAP and RAS saves millions of barrels of liquid-asphalt binder, reducing the need for that product as well as aggregates. It also allows pavements to be produced at lower temperatures, which results in lower energy demands and fewer emissions. About 19 percent of all asphalt produced in the U.S. in 2011 was made using warm-mix technology. ■

CONEXPO 2014 to feature new exhibits and awareness campaign

The triennial CONEXPO-CON/AGG will feature new exhibit options during next year's event, scheduled for March 4-8 at the Las Vegas Convention Center. Among them is a Demolition & Recycling Pavilion geared toward products specific to construction and demolition recyclers and demolition contractors.

Also on the docket is a new Platinum Lot with a reconfigured show footprint and better

defined concentration areas to make it easier for attendees and exhibitors to connect with the people and companies they want to see.

CONEXPO-CON/AGG already has a campaign underway to raise greater public awareness of the accomplishments of the construction industry in improving quality of life by publicizing the positive benefits of projects across the country. For more information about the 2014 show, visit www.conexpoconagg.com. ■

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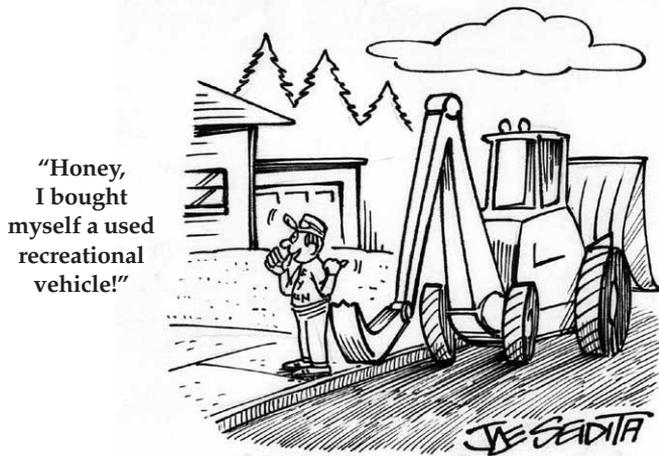
On the light side



"Can you put in an elevator?"



"How will all this 'fiscal cliff' and 'debt ceiling' stuff affect my allowance?"



"Honey, I bought myself a used recreational vehicle!"

Did you know...

- Men who kiss their wives in the morning live five years longer than those who don't.
- The Sahara Desert expands at about one kilometer per month.
- The state with the longest coastline in the continental U.S. is Michigan.
- In Japan, watermelons are grown into the shape of a square so they are easier to stack and transport.
- Oak trees do not have acorns until they are 50 years old or older.
- By weight, bone is five times stronger than steel.
- The word "news" is actually an acronym standing for the four cardinal compass points - North, East, West, and South.
- The distress code "Mayday" comes from the French word, M'aide, which means "help me."
- Coconuts kill more people in the world than sharks do. Approximately 150 people are killed each year by coconuts.
- Europe is the only continent without a desert.

Brain Teasers

Unscramble the letters to reveal some common construction-related words. Answers can be found in the online edition of the magazine at www.BrandeisSolutions.com

1. B J O _ _ _ _
2. H P S O _ _ _ _ P
3. R R E A B _ _ _ B _ _ _
4. L E R L O R _ _ _ _ L _ _ _
5. E M N O A R F F _ _ _ _ _ N

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