



WAUKESHA-PEARCE INDUSTRIES, LLC

December 2018

UPDATE

A publication for and about Waukesha-Pearce Industries, LLC customers • www.WPIUpdate.com

CALVERT MINE

See how this thriving operation harvests millions of tons of lignite to supply power to a large swath of Texas



Jason Buenemann,
Mine Manager



James Johnson,
Operations Manager

KOMATSU[®]

A MESSAGE FROM THE VICE PRESIDENT



Bruce Truesdale

**Celebrating
five years
of *intelligent*
Machine Control**



Dear Valued Customer:

Anniversaries are a cause for celebration, and some stand out more than others, such as 60-year marriages or businesses marking a half century of operations. While Komatsu's *intelligent* Machine Control technology's five-year anniversary isn't near that stage yet, it's still worthy of commemorating the revolutionary accomplishment of these dozers and excavators with integrated GPS.

This issue of your WPI Update magazine spotlights the first company in North America to employ an *intelligent* Machine Control dozer, the innovative D61i-23. Right away, the firm's owners recognized that the technology was a "game changer" and have since added several other pieces to their fleet.

Many of you are utilizing these excavators and dozers and reaping the benefits as well – no masts or cables, reduced staking, minimized overcutting and lower costs. Whether you are a large contractor, an individual working on your own or somewhere in between, we encourage you to demonstrate an *intelligent* Machine Control product and see how it can make your business more efficient and productive.

Of course, there are times when a standard machine is more appropriate to the task at hand. Inside, see articles on Komatsu's new D65PX-18 Wide VPAT (Variable-pitch Power Angle Tilt) Blade Specification dozer and PC1250LC-11 excavator. Both will quickly move mass quantities of dirt, and the dozer provides the advantage of being a good finish grader.

Be sure to read about Calvert Mine, which is using the world's first Komatsu Tier 4 Final PC4000-11. This 400-ton mining shovel is utilized for overburden removal at the lignite mine in Bremond.

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

Sincerely,
WAUKESHA-PEARCE INDUSTRIES, LLC



Bruce Truesdale
Vice President of CMD Operations



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CALVERT MINE

Thriving operation harvests millions of tons of lignite that supplies power to a large swath of Texas



Jason Buenemann,
Mine Manager



James Johnson,
Operations Manager

Deep in the heart of Texas sits what seems to be one of the Lone Star state's richest lignite deposits. According to the Texas State Historical Society, "a thorough survey on which to base an accurate estimate of Texas coal and lignite resources has never been made, but it is estimated that there are 60,000 square miles of lignite territory with a supply of probably 20 billion tons of commercially valuable lignite."

For three decades the people who operate the Calvert Mine have extracted a sizeable share of that supply. Located in Bremond, about two hours northeast of Austin and almost halfway between the Dallas/Fort Worth Metroplex and Houston, the mine's permit covers approximately 8,300 acres. Each year, mining operations uncover and move roughly 2 million tons.

The mine originally removed overburden with its 200-ton-plus PC2000 before converting it for harvesting lignite; that process included changing from an 18-yard rock bucket to a 24-yard coal bucket. Calvert Mine acquired the excavator in 2008, and it has passed the 25,000-hour mark. WPI completed a rebuild on it approximately two years ago.



Operations Manager James Johnson describes the lignite as a lower-grade coal than found in other locations around the country. "It's younger and softer than what you would get in the Powder River Basin in the northwest, for example, or the bituminous seams in Illinois and Pennsylvania. The fact that we have been here for 30 years shows that despite its properties, it's still a very valuable commodity."

Operations began in 1989, and the mine developed simultaneously with a power station that is located on an adjacent property. One hundred percent of the lignite harvested each year at Calvert Mine goes to that plant, which generates and distributes power to nearly 250,000 residential, commercial, industrial and other customers.

Blending makes the right mix

"Our target is a 6,600 to 6,800 BTU (British Thermal Unit) product that the plant uses to generate power for the grid," said Mine Manager Jason Buenemann. "We mine three seams, and the lignite in them varies. In two of the seams, the BTUs are typically in the 5,500 to 5,700 range with an ash content of 16 to 20 percent. The third seam is generally between 7,000 and 7,400 BTUs with 10 to 14 percent ash. As we extract, the materials are stockpiled and then blended in order to achieve the power plant's targeted BTUs with 16 to 18 percent ash."

Lignite seam depths also vary greatly throughout the mine. The shallowest is close to 60 feet deep from the highest point of the topography to the bottom of a seam floor, while the deepest right now runs approximately 230 feet. Each year, the mine



► VIDEO

Calvert Mine purchased the world's first Tier 4 Final Komatsu PC4000-11 and uses the 400-ton mining shovel for overburden removal. Operators R.T. Brown (top left) and Bryan Browning can fill a 150-ton truck in four passes with the 29-yard bucket. "The strength and speed are great; it's very fast," said Browning. "I really like the braking system on uneven ground." Brown added, "The cameras surrounding the machine help me spot trucks. If one pulls too close, the camera lets you know that it is potentially in a danger zone, so I can address that."

opens around 250 acres of land for new extraction, while concurrently reclaiming the same amount.

"As we uncover one cut, we're simultaneously backfilling the previous one," Buenemann pointed out. "The first step in getting to the lignite is clearing and grubbing trees and brush, followed by removing and salvaging topsoil. We are one of only a few mines that separates the topsoil from other dirt, and our goal is direct placement of it during reclamation."

After topsoil stripping, overburden removal begins. Dirt is placed and dozed in reclamation areas to predetermined post-mining topography, with slope aspects and proper drainage in mind. Topsoil is then spread out, followed by seeding. The Texas

Mining and Reclamation Association has recognized Calvert Mine with a Special Project Reclamation Award for its efforts.

Adding the world's first PC4000-11 to the fleet

Moving mass amounts of materials with high production and efficiency requires large equipment. In 2008, Calvert Mine purchased its first Komatsu machine, a 200-ton-plus PC2000 that initially performed overburden stripping and has since been converted to a lignite-extraction unit. The mine purchased the excavator with the assistance of WPI, which also helped with a conversion from an 18-yard rock bucket to a 24-yard coal bucket.

"All along we intended for it to eventually replace an older shovel at the coal face," said

Continued . . .

'PC4000-11 has great breakout force'

... continued



Gilbert Speelman,
Mine Maintenance
Manager



Wendell Johnson,
Mechanic

Mine Maintenance Manager Gilbert Speelman. "The larger bucket didn't slow it down at all; in fact, our production numbers went up. The PC2000 proved to be a perfect match for our trucks. It was a big win for us."

Calvert Mine personnel consider the addition of the world's first Komatsu Tier 4 Final PC4000-11 to its fleet another triumph. Komatsu introduced the 400-ton mining shovel at the 2016 MINExpo.

"It was moved from the Vegas show floor to the mine," said Buenemann. "We were initially looking for another PC2000, and our time line was to bring a new machine onboard in 2020. In the meantime, we were considering rebuilding what was really an antiquated competitive-brand shovel. Komatsu, Komatsu Financial and WPI talked with us about a plan to acquire the PC4000 right away, maintain our financial flexibility and drop the rebuild. This gave us immediate availability of a new, larger machine. It proved to be a game-changer."

WPI personnel assembled the machine on-site and changed out the original ground-engaging tools to ones more conducive to the mine's materials. Komatsu and WPI teamed up to provide operator training, as well as to educate the mine's maintenance personnel on preventive practices.

Calvert Mine recently added another Komatsu water truck for dust suppression.



"If we have any concerns, WPI is right there to help, whether by phone or on-site," said Mechanic Wendell Johnson. "WPI gives us added value with its vendor-managed inventory system. That involved setting up a parts-consignment warehouse at the mine and charging us only when an item is pulled from the inventory. That's especially useful and a big time-saver if we are in the middle of a shift, so we don't have to call for a technician to come out or wait to have a part shipped to us."

Calvert Mine put the PC4000-11 into production in March 2017 and utilizes it for overburden removal. Operators can load 150-ton trucks in four passes with dirt from a 30-foot face.

"Its performance is excellent in that situation," shared Johnson. "With the shovel configuration, our operators can take a much thicker lift. It has great breakout force and gives us fast cycle times. Our production numbers are outstanding, and moving forward those factors will come into play even more. Our strip ratio is expected to go up, so the PC4000 will be assigned to moving even more material. In 2020, we project it to handle nearly 8 million yards."

More value from WPI

Close to the same time as when Calvert Mine put the PC4000-11 into action, it asked WPI to complete a major rebuild of the PC2000, which recently passed the 25,000-hour mark. Some of the rebuild tasks were performed at WPI's Houston branch shop, while others were done on-site at the mine.

In addition to the PC4000 and PC2000, Calvert Mine owns Komatsu water trucks as well as a PC360LC excavator, which is used for clearing and grubbing. It also rents dozers and other equipment as needed from WPI. Purchases and rentals are handled with the help of WPI's Director of Major Accounts Frank Pagura and Major Accounts Representative Tim Nice.

"Komatsu's Firm Future Order program provided some guaranteed pricing as we developed our budget and planned for the rebuild with WPI," stated Speelman. "Service



(Above L-R) Calvert Mine Manager Jason Buenemann meets with WPI's Chief Accounting Officer Robert Shaffer, Major Accounts Representative Tim Nice and Director of Major Accounts Frank Pagura. (Left) Mine Manager Jason Buenemann and WPI personnel discuss the vendor-managed inventory system at the Calvert Mine. "We consider WPI a great partner," said Buenemann. "They give us outstanding support through machine sales and rentals, parts and service as well as training."

really stands out to us; and Komatsu, WPI, Frank and Tim have been outstanding in that regard. Every quarter we meet to address any topics that need attention and make sure we are on the same page. We are very happy with the relationships that have been built."

"That extends to Komatsu Mining," added Buenemann. "The recent acquisition of Joy Global strengthened the Komatsu brand on our site. Komatsu Mining is the primary support for our dragline. It takes care of major outages, manufactures parts and does welding and non-destructive testing for us. Without Komatsu Mining's support for the dragline, our downtime would be significantly higher."

Reserves for at least another decade

In an era when many coal and lignite operations have closed or are now shuttering operations with the rise of renewable energy

and natural gas, Calvert Mine continues to thrive. Buenemann credits a focus on implementing solid practices and a staff of close to 100 employees who are willing to do whatever it takes to make the mine successful.

"Our team is cross-functional," said Buenemann. "Operators perform preventive maintenance, and/or mechanics will run equipment, if needed. That team atmosphere keeps us competitive and is essential to a 24-hour-a-day operation."

That teamwork will remain vital to Calvert Mine's future. We have permitted reserves that will last through 2030, and we are actively looking for additional reserves to extend that further," said Buenemann. "Right now, we're also planning for maximizing production as our strip ratios increase. That may involve larger trucks that are a better match for the PC4000. It is something we will proactively address going forward." ■

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INVESTMENT INCENTIVE

New tax law expands Section 179, allows bonus depreciation on used equipment acquisitions

Used equipment buyers are the recipients of expanded benefits with the passage of last year's tax law, including the ability to combine Section 179 Expensing and first-year bonus depreciation. Previously, bonus depreciation was limited to new purchases only.

Section 179 Expensing by itself can be significant, and generally companies use this deduction first. The Tax Cut and Jobs Act doubled the deduction limit to \$1 million on qualifying equipment purchases, including previously owned machinery. It also raised the spending cap to \$2.5 million. Once that amount is reached, the deduction begins to decline on a dollar-for-dollar basis. Companies that spend more than \$3.5 million lose the Section 179 Expensing deduction altogether.

To qualify for the deduction in the current tax year, machinery must be purchased or financed between January 1 and December 31 and placed into service by the end of the year. The latter is an important component and should factor into the timing of buying decisions. The machinery must be delivered and working before the clock strikes midnight and a new year begins.

Taking a closer look

For illustration, here are some Section 179 Expensing scenarios, which assume that used machinery is acquired and put into service:

1. You purchased outright or financed up to \$1 million worth of previously owned equipment this year. You can fully deduct that amount for the 2018 tax year. This will be the case through the end of 2022.

2. Your acquisition was between \$1 million and \$2.5 million. You can still take a deduction of \$1 million.

3. The purchase exceeds \$2.5 million. The deduction is lowered dollar for dollar. For instance, if the total purchases were \$3 million – you can only claim \$500,000, instead of \$1 million.

4. You bought more than \$3.5 million in used equipment. The Section 179 Expensing deduction is no longer available.

In scenarios 2 and 3, you can now use bonus depreciation in addition to Section 179 Expensing to lower your tax bill. As an example, if you purchased \$2 million in equipment, you can take the \$1 million Section 179 deduction and use bonus depreciation to fully deduct the other \$1 million. Your tax bracket determines your final actual cash savings. ■

For additional information, check with your territory manager, consult your tax adviser and see the online calculator at www.section179.org.

The Tax Cut and Jobs Act doubled the Section 179 Expensing deduction limit to \$1 million on qualifying equipment purchases, including previously owned machinery. It also raised the spending cap to \$2.5 million, and companies can now use bonus depreciation for used equipment as well. A calculator to check tax savings is available at www.section179.org.



RECRUITING A NEW GENERATION

Creating a sense of community and belonging can attract, retain millennial workers

Construction companies are facing a critical time. An abundance of available projects is unquestionably a good thing, but the industry's positive momentum is exposing one of its most serious issues – the lack of skilled workers.

While company owners are beginning to invest in recruiting measures, keeping new staff members will be the next challenge. That may be especially true for millennials. Hiring and retaining them is a growing concern, especially considering that they now comprise the majority of the workforce. According to a Gallup poll, six in 10 millennials are currently open to exploring new job opportunities.

Part of the reason is the ability to easily search for a seemingly infinite number of jobs at any time. There are thousands of positions listed

across hundreds of online job sites, so why would employees limit themselves to one career for the rest of their lives? Society fosters the perception that the next employer will pay more or will offer other attractive features.

Some of the blame lies in the culture of instant gratification, but a majority of the issue stems from a disconnect between employer and employee. Many young workers would like to stay at a job long term, if only their companies did a couple of things differently.

Cracking the code that is the millennial workforce will make or break businesses throughout the next decade, notes Iluma Learning, Inc. Founder Amy Parrish. “Millennials are looking to be a part of something; they crave a sense of community and belonging,” she writes. “The idea of working for a faceless corporation is not always appealing to millennials – they want to be welcomed and appreciated for their efforts, regardless of the industry. A company’s culture goes a long way toward helping it transcend a workplace and become something more meaningful that employees can really buy into and commit to.”

Match practices to your culture

Taking concrete steps can help your company understand how to hire, develop and retain this generation of young, ambitious workers. According to Parrish, every organization has a culture, whether it defines one or not.

“The way a company runs its daily operations, values employees and works with customers shapes its culture,” she writes. “Making a concerted effort to delineate and develop a positive culture goes a long way toward attracting and retaining employees. While rules and regulations can create the outline

Companies can attract and retain millennial employees by creating a positive culture. “The real culture is what happens at the workplace every day,” said Iluma Learning, Inc. Founder Amy Parrish. “If a company says it values employees’ opinions, staff members should feel like their input matters. Talk to employees and managers to truly determine if your company’s practices are matching up with your culture.”





for a company, the culture colors, shades and highlights the areas that reside outside the lines. Policies and procedures may tell the what, but culture provides the who, why and how.”

Parrish points out that a culture is about more than buzzwords on letterhead or a website. “The real culture is what happens at the workplace every day. If a company says it values employees’ opinions, staff members should feel like their input matters. If it says it cherishes time away from work, then an organization should not require 80-hour workweeks or shame workers into forgoing their vacation days. It is important for owners and leaders to monitor the real culture of their workplace continuously. Talk to employees and managers to truly determine if your company’s practices are matching up with your culture.”

Avoid the turnover trap

Millennials want to be pushed and challenged to do more. Creating a culture where employees feel welcome and encouraged to test their resolve from day one will entice new hires to join your team and also stay longer. You will be rewarded with hardworking, long-term employees who are invested in the company.

Winning over millennial talent has less to do with offering hip perks or remodeling the office than it does with showing millennials that they have a future at your organization where they can learn, grow, achieve and lead, according to a recent Gallup poll. Providing opportunities for

career growth as well as personal development plays a major role for millennials when deciding where to work and how long they are willing to stay with one company.

Like any employee, as millennials learn and grow, they want opportunities to provide input and the ability to work independently when appropriate. Show a candidate that there is genuine mutual trust between employer and employee to accomplish a task without micromanagement. Once a millennial is hired, create a monthly review to show progress and areas of improvement. The review should be a two-sided equation. When you involve millennials in the process and define their aspirations, you will create a stronger connection between the company and the work that millennials are doing.

“Employers will be relying on millennial talent for decades to come,” writes Klyn Elsbury, CEO & Founder of Landmark Makers in an article that appeared on Forbes.com titled “Five Proven Tactics for Hiring and Retaining Millennial Employees.” “If you want your new talent to stay with you, you have to give them unique reasons to. Only the organizations that understand how talent wants to be treated will avoid the turnover trap.” ■

Note: Information in this article was gathered and compiled from various sources, including an interview with Amy Parrish, M.Ed., MBE, a Professional Management Leadership Specialist for the heavy equipment industry. She has 15 years of experience in the industry and has worked with the Association of Equipment Distributors as well as several heavy equipment manufacturers.

A recent Gallup poll found that six in 10 millennials are currently open to exploring new job options. You can attract and keep millennials by giving them opportunities to grow and learn.

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COMMUNITIES AT RISK

Additional federal infrastructure investment is critical to ensuring safe drinking water

When news of the Flint, Mich., water crisis made headlines, nearly 21 million people across the country relied on water systems that violated health standards. Low-income communities, minority populations and rural towns disproportionately deal with barriers to safe water.

Drinking water challenges are complex: failing infrastructure, polluted water sources and low-capacity utility management are all part of the issue. Declining investment in water infrastructure throughout the last several decades has exacerbated the problem.

Access to safe water is essential for our survival and our economy. Without serious investment in water infrastructure, we will continue to put communities at risk. As a country, we must support existing funding sources for water infrastructure, develop new and innovative funding mechanisms and more effectively prioritize the water needs of underserved communities.

Investment in water infrastructure has decreased. An analysis from the Value of Water Campaign shows that combined federal investment in drinking water and wastewater infrastructure declined from 63 percent of total capital spending to 9 percent since 1977. State and local governments have also decreased their capital spending on water infrastructure in recent years. The EPA estimates that the United States needs to invest \$472.6 billion in the next 20 years, the majority of which can be attributed to rehabilitating, upgrading and replacing existing infrastructure.

Essential for health, economy

Safe water is essential to our health – and if we're not healthy, we can't work. Businesses

and industries rely on water to support worker productivity and as a raw resource for goods and services. According to the Economic Policy Institute, \$188.4 billion spent on water infrastructure investment in five years can yield \$265 billion in economic activity and create 1.9 million jobs.

Federal investment in water infrastructure must continue to grow. The reality is that Flint is not an isolated incident. Communities across the country struggle to provide safe water. People are working hard to address these issues, but more effort is needed. Everyone can play a role by making our failing water systems and the communities that rely on them a priority. Safe water must no longer be a luxury. ■

Sara Schwartz holds a master's degree in environmental management from the Yale School of Forestry and Environmental Studies. This article is excerpted from a blog post. For the full version, visit blog.ucsusa.org. Connect with Schwartz at www.linkedin.com/in/saraschwartz1/.



Sara Schwartz,
Union of Concerned
Scientists, Early
Career Scientist
Mentor Program
Participant

Investment in the nation's water systems is critical, and we must put more money toward existing infrastructure, especially in underserved communities, says Sara Schwartz, Union of Concerned Scientists, Early Career Scientist Mentor Program Participant.





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A 'GAME CHANGER'

First contractor to use revolutionary *intelligent* Machine Control is more efficient, productive than ever



Joe Liesfeld III,
Vice President



Kelby Morgan,
Project Manager

Liesfeld Contractor takes pride in being at the forefront of construction technology. The Richmond, Va., earthwork contractor was one of the first in its community and surrounding area to use a dozer with an aftermarket GPS grading system.

"It was awkward, but it was cool; and, at times, it would grade by itself using an indicator system," recalled Vice President Joe Liesfeld III, who along with his father, Joe Jr., own and operate the firm. "The technology continued to improve, which helped with efficiency, but the drawback was that our operators had to spend time installing and taking down masts and cables every day. That takes a bite out of production time."

When Komatsu introduced its initial *intelligent* Machine Control dozer five years ago, Liesfeld

Contractor jumped at the chance to be the first to demonstrate the revolutionary D61i-23 with factory-integrated GPS that required no time-consuming set up of masts or cables.

Komatsu has since added five more sizes of the machine: D39i, D51i, D65i, D85i and D155i. Some of the dozers are in their second generation, including the D61i-24s. All feature fully automatic blade control from first pass to last. During rough-cut, if the system senses excess blade load, it automatically raises the blade to minimize track slip and maintain forward momentum. The blade also automatically lowers to push as much material as possible for maximum production in all situations.

"Right away we recognized that the original D61i was a game-changer," stated Project Manager Kelby Morgan. "Komatsu built a bulldozer around GPS, versus trying to adapt GPS to the bulldozer. By doing that, they created a superior product. After the trial period, we made it part of our fleet and have since put additional units to work. We use them in all facets of construction, from stripping topsoil to putting a site to final grade. The accuracy is outstanding."

Accuracy delivers productivity

With thousands of machines in North America and total fleet hours into the millions, Komatsu's *intelligent* Machine Control dozers have proven to reliably deliver accuracy on jobsites.

"The blade is a dirt pusher, and it's also our survey crew," stated Liesfeld. "The dozers always know where they are in relation to final elevation. They have virtually eliminated staking and the need for extra labor to check grade, which is a huge cost savings. After the

A Liesfeld Contractor operator grades with a Komatsu D51PXi-24 dozer. "The blade is a dirt pusher, and it's also our survey crew," said Vice President Joe Liesfeld III. "This technology allows us to do (finish grading) three to four times faster than before we acquired the first *intelligent* Machine Control dozer."

▶ VIDEO





Komatsu *intelligent* Machine Control excavators, including this PC360LCi-11, are go-to machines for Liesfeld Contractor, which puts them to work excavating, digging trenches and constructing ponds. “They have the versatility to move mass quantities of materials as well as do precision work such as slopes, so we were able to construct a relatively large pond rather quickly,” said Technology/GPS Manager Chris Ashby.

site model is loaded into a machine, we set up a base station and a benchmark, and that’s it. We have noticed the biggest savings with fine grading. This technology allows us to do (finish grading) three to four times faster than before we acquired the first *intelligent* Machine Control dozer.”

Liesfeld Contractor’s Technology /GPS Manager Chris Ashby builds 3-D site models based on CAD files provided by engineering firms. After checking for accuracy, he sends the models to the dozers via Topcon’s SiteLink3D system.

“It’s seamless, and once the model is loaded, the machine is ready to go to work,” said Ashby. “The operator always has an overall, site-grading map available on the high-res monitor, detailing elevations and where cut-and-fill locations are. If there is a change, I can send an update directly to the machine, so that adjustments are virtually instantaneous.”

Excavators effective in every application

Ashby can also transmit revised information to the firm’s *intelligent* Machine Control

excavators. Komatsu announced their arrival with its PC210LCi-10 – the world’s first such excavator – approximately one year after the D61i-23 dozers. Liesfeld Contractor runs a second-generation PC210LCi-11, as well as PC360LCi-11 units.

Among a host of standout features in the excavators is an exclusive control function that goes beyond simple guidance to semi-automatically limit overexcavation and trace a target surface. Once the target elevation is reached, no matter how hard an operator tries to move the joystick to lower the boom, the excavator won’t allow it. This reduces wasted time and the need for expensive fill materials.

“The main uses for our excavators are trench digs for dry utilities, so the models are done on a ditch-by-ditch basis, because each is unique,” Ashby pointed out. “Recently, on a large project, we had dozens to dig. If each required staking and we needed someone to constantly check grade, the cost would have been fairly high. Once I loaded the models, the operators could simply excavate the trenches and move the dirt.”



Chris Ashby,
Technology/GPS
Manager

Continued . . .

'The technology allowed us to work confidently'

... continued

What others are saying about *intelligent Machine Control*



"The accuracy is spot-on, and we aren't wasting materials due to overcutting. The technology is easy to use – download a file to the machine, and you're ready to roll in just a few minutes."

Bret Barnhart, Owner, Bret Barnhart Excavating



"I think what stood out the most to me was using the PC490LCi to cut a slope, and when it was done, the slope was smooth as glass. We loaded the plans, and it cut right to grade with no stakes or grade checkers."

Pete Sewczak, Vice President, Zak Dirt



"(The integrated system) saves us time and money by eliminating the need to put up and take down masts, and we no longer worry about them getting damaged or stolen. What stands out is the increased production and efficiency. We simply plug the plans into the machines and go to work."

Randy Ellis, Owner/Vice President, R&T Ellis



"The savings of time and material costs have been significant. We don't need surveyors to drive new stakes or replace the ones that invariably get knocked down."

Mike Greenfield, Owner/President, Greenfield Trucking

Liesfeld Contractor uses its *intelligent Machine Control* dozers, including this D61PXi-24, from first pass to last. "Right away we recognized that the original D61i was a game-changer," said Project Manager Kelby Morgan. "Komatsu built a bulldozer around GPS, versus trying to adapt GPS to the bulldozer. By doing that, they created a superior product."



Morgan added, "There were a lot of ups and downs to those utility trenches compared to straightforward ditch digs, which added to the complexity. As a result, there was no way to use laser guidance. Every grade break required staking, but the integrated system eliminated the need for that. The technology allowed us to work confidently, knowing that once the excavators reached target depths at each point of the trenches, our operators could not go beyond that."

On the same project, Liesfeld Contractor used the excavators for additional applications. "They have the versatility to move mass quantities of materials, as well as do precision work such as slopes, so we were able to construct a relatively large pond rather quickly," said Ashby. "Because these excavators are accurate and could put the entire area to grade, we did it without a dozer. That eliminated additional machine costs."

Upped the ante

Joe Liesfeld Jr. founded Liesfeld Contractor in 1972, clearing house lots with a dozer, chainsaw and a dump truck. As the years progressed, so did the company. By the mid-1980s, commercial site work and other large projects that involve a comprehensive package of services became the norm, most of them for repeat customers. The Liesfelds also operate an environmental company that offers wetland construction, as well as a recycling operation.

Expansion continued through the 1990s, when Joe III and his brother, Kenny (who's no longer with the company), as well as Morgan joined the business. The trio were instrumental in bringing GPS technology to Liesfeld Contractor's jobsites.

"We have moved millions of yards of dirt through the years, and we've always sought ways to be as efficient and productive as possible," said Morgan. "The *intelligent Machine Control* products really upped the ante. They make operators at every career level more effective, and our people love them." ■

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**"I'VE USED THEM ALL AND
KOMATSU IS THE BEST."**

TAD GRIFFITHS / ROYAL T ENTERPRISES / UTAH

"Komatsu's i-machines definitely make my operators better at what they do. I mean, we haven't been using this technology for the past twenty years, so it's pretty new. But this tech makes it easier to do our job—makes it so that my operators can work more efficiently, and we get a better finished product."



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**"THERE'S NOTHING THIS
HI-TECH OUT THERE!"**

ANTHONY CARLTON / OWNER / CARLTON, INC / ALPINE, UT

"Using and understanding the new product technology, available from Komatsu for our business, made me apprehensive at first. But our dealer and their technical support have worked with us to help us make the tech work for our needs. I am seeing the benefits now. I'm on board and love it!"



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CASE STUDY



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WPIUpdate.com

INTELLIGENT INSTALLATION

Boomerang Corp. finds added value on utility applications with PC490LCi excavator

Since opening his own construction company in 1998, Bryce Ricklefs has always looked outside the box to find a hidden niche to help his company, Boomerang Corp., thrive.

Twenty years later, Ricklefs continues to search for those advantages, which is why he selected a Komatsu *intelligent* Machine Control PC490LCi excavator with integrated GPS technology last year.

"We were one of the earliest adopters of GPS because we knew it would help save time and money, and it's a strategy that continues to work," shared Ricklefs. "For us, it was a no-brainer to add the PC490LCi to our fleet."

While most PC490LCi owners use the excavator in mass grading applications, Ricklefs believed the machine also offered advantages on Boomerang's utility-installation projects.

"Using the PC490LCi for utility applications has improved our efficiency," reported Ricklefs. "It's quicker and more cost effective because we can hit grade without a person in the hole guiding the operator; the machine does that step for us. Plus, the plans are right there on the screen in the cab, so the operator doesn't have to get out or stop to ask as many questions. We can get on grade, switch to pipe and move to the next cut faster."

"We reduce the amount of material because the excavator prevents overdigging, which also saves on rock as the bottom of the cut is always uniform," he added. "In addition to material savings, it enables us to provide a quality finished product with consistent bedding throughout the project."

Komatsu delivers

Komatsu was on-hand to assist Boomerang in unlocking the advantages of the system.

"They came here for training and helped us set up," noted Ricklefs. "It was quick and easy. Right now, we are about 10 percent more efficient and regularly within one-tenth of a foot of grade. As we get more comfortable, I'm confident we will see both of those numbers improve."

Boomerang recently expanded its investment in *intelligent* Machine Control technology as it acquired a PC360LCi excavator last fall and two D51PXi dozers earlier this year.

"Our purchase of the PC360LCi is a direct result of our experience with the PC490LCi," stated Ricklefs. "They are the first of what I envision as many Komatsu i-machines for us." ■



Bryce Ricklefs,
President
Boomerang Corp.

A Boomerang Corp. operator uses a Komatsu *intelligent* Machine Control PC490LCi excavator to dig a trench to install storm pipe. "Using the PC490LCi for utility applications has improved our efficiency," said Boomerang Corp. President Bryce Ricklefs. "We can hit grade, switch to pipe and move to the next cut faster."



▶ VIDEO

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AN OPTION IN THE
JUNGLE."**

THE MOST RELIABLE.

"At D. Grimm, Inc., we handle construction projects across the USA and in Puerto Rico that keep our crews and equipment constantly on the edge. And it's my reputation that's on the line, so I choose Komatsu over all other brands because they've proved that they're the most reliable. If you need exceptional construction equipment, and a company that will work hard for you, I recommend Komatsu!"

Dawn Mallard / D.Grimm, Inc. / Conroe, TX

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NEW PRODUCT



Discover more at
WPIUpdate.com

EFFICIENT MATERIAL MOVEMENT

Komatsu's new wide-blade dozer excels when low ground pressure is needed

The ability to move mass quantities of material and finish grade with one machine on a variety of jobsites is a distinct advantage. Komatsu's new D65PX-18 Wide VPAT (Variable-pitch Power Angle Tilt) Blade Specification dozer provides it in a package that includes nearly a foot more blade width and six-inch larger track shoes than its standard counterparts. Traditional and *intelligent* Machine Control models are available.

The 53,925-pound dozers have 14.1-foot, six-way blades, which deliver greater grading productivity and versatility, according to Chuck Murawski, Komatsu Product Manager, Dozers, who emphasized that customers are increasingly using these size-class dozers for more than slot dozing. Komatsu beefed up the C-frame to ensure it could carry the wider blade.

"Our D65s handle the heavy lifting of stripping, cutting and pushing, and the Wide VPAT blades make them excellent finish dozers," he said. "Each has increased steering power for greater maneuverability, and we added an automatic shift mode with a full-time torque converter that maximizes production and efficiency on both short and long pushes. The hydraulics are smooth, so operators can control the blade with little effort."

Light footprint

The D65PX-18 Wide VPAT Blade Specification models really stand out in sensitive areas, said Murawski. Ground pressure with the 36-inch track shoes is approximately 5 PSI, which is 14 percent lower than machines with 30-inch shoes.

"This makes them ideal for projects such as landfill cells where the dozer is running across a liner or in pipeline construction where it's operating on top of buried pipe," reported Murawski. "Another advantage is that the

shoes are centered on the track compared to being offset like some competitive models, so the load is always evenly distributed. That helps lengthen undercarriage life."

Komatsu equipped the D65 dozers with its PLUS (Parallel Linkage Undercarriage System) Undercarriage, which features rotary bushings and larger components that undergo a unique heat-treating process for increased strength and durability.

"Customers report increased flotation and better traction with the wide, 36-inch track shoes; greater stability on slopes with the 7 percent wider track gauge; faster times when spreading material using the 14.1-foot blade; and a smooth, comfortable ride from a well-balanced machine," said Murawski. ■



Chuck Murawski,
Komatsu Product
Manager, Dozers

Quick Specs on Komatsu's D65PX-18 Dozer Models

Model	Horsepower	Operating Weight	Blade Capacity
D65PX-18 Wide VPAT and D65PXi-18 Wide VPAT	217 hp	53,925 lb	5.8 cu yd

Komatsu's new D65PX-18 Wide VPAT Blade Specification dozer has wider blades and track shoes, allowing for more efficient material movement on areas where low ground pressure is essential.



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**"WE'RE NOT A BIG COMPANY,
BUT KOMATSU TREATS US
LIKE WE ARE."**

BETTER SUPPORT.

"My cousin Thomas and I started our construction company on a wing and a prayer. We couldn't have done it without the financing, training, tech assistance and support we received from Komatsu and our distributor. The products are top quality. They make us efficient at our job, and feel connected—like they want to be our partner in this. That's why Komatsu works for us!"

Brian (left) and Thomas Cronin / Prosperity Construction / Jackson, MS

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VOICE OF THE CUSTOMER

Feedback leads to increased power, lift capacity and more in new XT-5 Series track feller bunchers

Lift capacity and power are major contributors to production in the woods, and Komatsu's XT-5 Series of track feller bunchers deliver both with a more powerful Tier 4 Final engine and greater lifting ability for enhanced logging performance. Komatsu also improved reliability and durability with the introduction of a new rugged undercarriage that significantly extends service life.

Four models – XT430-5 (non-leveling), XT435L-5, XT445L-5 and XT465L-5 – with operating weights ranging from 66,359 to 74,516 pounds are available. Compared to their predecessor XT-3 models, the contemporary XT-5s have a 310-peak-hp, Cummins engine that provides increased horsepower and torque and lowers fuel consumption by as much as 10 percent, thanks to advanced engine and hydraulic system control designs.

Lift capacities at full-reach have jumped 75 percent on the XT430-5, XT435L-5 and XT445L-5, and 16 percent on the XT465L-5. The latter now readily operates the Quadco (a Komatsu-owned company) 24-inch cutting-capacity, high-speed disc saw heads.

Responding to customers

"We have been systematically gathering and analyzing voice-of-the-customer input to define our next generation of feller bunchers," said Steve Yolitiz, Manager, Marketing Forestry, Komatsu America. "The XT-5 Series represents the culmination of translating this input into feller bunchers that truly meet the needs of today's demanding loggers."

Larger-capacity, hydraulic piston pumps for the implement, attachment and disc saw operate at 500 rpm lower speed, while providing high flow. Each pump has

pressurized suction inlets to reduce cavitation risk. Boom, arm and rear hydraulic tubes and hoses have robust forestry-specific guarding that improves protection and sheds debris.

The undercarriage's rugged 8.5-inch track chain link has a thicker and stronger bushing strap to resist "twist," as well as a high-density track roller and idler bushing material that extends wear cycles. All final drives feature a triple-labyrinth, floating-seal housing to protect the seal against mud packing. Other undercarriage improvements further extend service life.

Komatsu relocated the state-of-the-art forestry cab to the left of the boom for industry commonality. Design changes give superior lines-of-sight to each track. Standard rearview and optional right-side-view monitoring systems further enhance the operator's view. Eleven LED lights provide superior visibility for night operations. ■



Steve Yolitiz,
Manager,
Marketing Forestry,
Komatsu America

Komatsu's new XT-5 Series of track feller bunchers delivers increased power, lift capacity, reliability and durability as well as KOMTRAX® telematics system technology. Four models are available.



PRODUCT IMPROVEMENT

NEW PC1250-11 EXCAVATORS

Increased horsepower significantly boosts productivity and profitability



Kurt Moncini,
Komatsu Senior
Product Marketing
Manager,
Tracked Products

Numbers tell the tale on Komatsu’s upgraded PC1250 excavators. They offer a 13 percent boost in horsepower and up to 8 percent greater productivity, all while maintaining the fuel consumption of their Dash-8 predecessors. Two configurations are available – the PC1250-11 with a short undercarriage and a PC1250LC-11 with a long undercarriage – allowing users to match the excavator to their particular applications.

“The higher horsepower delivers additional power to the pumps, which helps the excavator handle the high-demand segments of a cycle more effectively,” said Kurt Moncini, Komatsu Senior Product Marketing Manager, Tracked

Products. “We also made some changes to reduce hydraulic pressure loss for improved efficiency. During tough applications, the machines keep their digging force longer. Operators who have run the Dash-8 model, should notice a significant increase in performance.”

Companies involved in large, high-volume excavating jobs should choose the short undercarriage PC1250-11, which has a shorter boom that’s thicker at the arch. “This short-boom configuration allows customers to use a bigger bucket,” explained Moncini. “It’s primarily made for one application – high-production truck loading. Fifty-ton to 70-ton-class trucks are an ideal match, but the PC1250-11 is also more than capable of loading up to 100-ton trucks.”

Versatile LC configuration

In addition to mass excavation and truck loading, the PC1250LC-11 long-undercarriage configuration excels in deep sewer and water trenching, general construction and mining/quarry applications. It features a standard 29-foot, 10-inch boom and arm options of 11’2”, 14’9” and 18’8”.

“The long undercarriage model provides greater versatility because its arm options and longer boom enable larger digging envelopes with greater reach and digging depths,” said Moncini. “The ability to handle objects such as manholes and box culverts is outstanding, too. This is a great, larger-size, multi-purpose excavator.

“Komatsu’s Business Solutions Group can help identify the right configuration and machine specifications to best suit customers’ operations,” added Moncini. “Whichever they choose, either excavator will meet their needs and do so more productively and efficiently, which increases profitability.” ■

Quick Specs for Komatsu’s PC1250 Excavators			
Model	Net Horsepower	Operating Weight	Boom Length
PC1250-11	758 hp	259,960-265,900 lb	25 ft, 7 in
PC1250LC-11	758 hp	269,300-275,240 lb	29 ft, 10 in

Komatsu’s new PC1250-11 short-undercarriage, mass-excavation excavator (shown below), as well as the PC1250LC-11 long undercarriage model, deliver greater production while maintaining the same fuel efficiency as their Dash-8 predecessors.



ENGAGING MINE OPERATORS

Brian Yureskes, Director of Sales and Global Accounts, says direct conversations benefit mining customers

QUESTION: Customer engagement is a key element of Komatsu's commitment to helping them run more productively, and it gains valuable feedback for machinery improvement. What role does it play for Komatsu Mining?

ANSWER: We are engaging both current and potential customers by going into the field more often in order to better understand their operations, requirements and what they expect from us. We want them to know how Komatsu can meet their needs with a variety of innovative and technologically advanced trucks that move massive amounts of materials, as well as with the support to ensure that they do so in the most efficient manner possible. These direct conversations also provide valuable feedback as we look to the future.

This year is the 10th anniversary of our Autonomous Haulage System, or AHS. During the past decade, the system has moved around 2 billion tons of material. Mines that are not utilizing AHS vehicles are seeking information about the benefits, which are outstanding. In the past, there may have been some reluctance on our part to talk about these advantages beyond our AHS customer base. We are more actively spreading the word to customers through various means, such as inviting them to our proving grounds where we field test the trucks.

QUESTION: The Peoria Manufacturing Operation (PMO) focuses on mining trucks. What specific products are produced there?

ANSWER: We manufacture seven of the largest electric-drive mining trucks in the



Brian Yureskes, Director of Sales and Global Accounts, Komatsu Mining

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.

It was almost a foregone conclusion that Brian Yureskes would land in his current role as Director of Sales and Global Accounts, Komatsu Mining. He started with Komatsu six years ago in product marketing for construction equipment and became Director of Training and Publications at the company's Customer Center in Cartersville, Ga. Then, in 2015 the opportunity to move into mining presented itself, and Yureskes took it.

"My first job out of college was in operations management for a mining company," recalled Yureskes, who graduated from the Colorado School of Mines in 2005 with a mining engineering degree. He recently completed his MBA at Bradley University in Peoria, Ill. "When I came to Komatsu, I was indifferent as to whether I worked in construction or mining, but, with my background, it made sense that I would eventually migrate to the mining side."

Three years ago, he took the role of a Business Development Lead, working closely with a single mining customer. Last year, Komatsu Mining expanded his duties, putting him in charge of global efforts.

"I have always found mining enjoyable," he shared. "Playing in the dirt with trucks seems like such a natural fit."

Yureskes and his wife, Katherine, have two children and like to stay active. He enjoys weightlifting, mountain biking, basketball and playing some golf now and then. "I don't like to sit still," he said.

Continued . . .

Mining trends foretell future growth

... continued

world, ranging from the 200-ton-capacity 730E to the 400-ton 980E, as well as autonomous versions of some models. Every Komatsu mining truck ordered worldwide is built and shipped from the PMO. In addition, all global engineering support, research

and development, parts and testing for the products manufactured are handled it here. That's unique compared to other Komatsu manufacturing operations in North America.

QUESTION: What is the state of the mining industry?

ANSWER: There has been some overall volatility lately. After a down period, all the markets experienced a surge, then stabilized a bit. Trends look positive going forward, and analysts are predicting growth for mining during the next five years. Komatsu is taking a proactive approach to further expand its footprint in the mining sector.

QUESTION: Do you encourage customers to visit the PMO?

ANSWER: Absolutely. It's a fantastic experience for people to see how these massive haulers are manufactured. If the timing is right, visitors may even watch their own trucks being built. We also view it as a great opportunity to showcase the quality that Komatsu builds into its products and the world-class support behind them. ■



Komatsu's Peoria Manufacturing Operation produces seven of the largest electric-drive mining trucks in the world, ranging from the 200-ton-capacity 730E to the 400-ton 980E, as well as autonomous versions of some models.

Brian Yureskes, Director of Sales and Global Accounts, Komatsu Mining, says customer engagement provides valuable feedback that can have a direct impact on new products.



NEW ENGINE OIL

Komatsu designed its CK-4 Genuine Engine Oil for better wear protection in all conditions

Lubricants are the lifeblood of any machine, helping them run at peak performance, according to Bruce Gosen, Senior Product Manager, Komatsu Parts Marketing. "They protect against wear, so it's essential to have the best oil possible for extended engine life," said Gosen.

Komatsu makes its new EO15W40-LA (CK-4) from semi-synthetic base oil rather than from conventional base oils. "That provides better protection, especially in severe conditions, compared to most other 15W-40 engine oils in the marketplace," said Gosen. "It also has several benefits that contribute to better fuel economy compared to the CJ-4, which this new product replaces.

Specific benefits of the new oil:

- It has outstanding resistance to oxidation and deposit formation, helping engines maintain their original horsepower and fuel-efficiency ratings.
- The new oil quickly sheds air bubbles, enabling equipment to operate on extreme grades where air can be drawn into the oil-pump suction line and compromise engine health and performance.
- It was designed to protect even the hottest components in off-road engines such as turbocharger bearings, piston rings, top lands and more.
- The oil was formulated to maintain its viscosity, even under extreme oil-drain conditions. EO15W40-LA has a low-ash formula that has been enhanced to meet CK-4 specifications. In addition to Tier 4 equipment, it is backward-compatible for use in Tier 3 and older machinery.

The new engine oil can be used in any brand of equipment that requires 15W-40, CK-4, CJ-4, CI-4 or ECF-3 oil.

"While not required by the American Petroleum Institute, we field tested EO15W40-LA in order to confirm its performance and benefits in large, off-road equipment," said Gosen.

"We encourage anyone who wants excellent performance throughout the life cycle of their machinery to choose Komatsu Genuine Oils like our CK-4, which is one in a line of competitively priced products that are available through our distributors." ■



Bruce Gosen,
Senior Product
Manager, Komatsu
Parts Marketing



Komatsu's EO15W40-LA (CK-4) Genuine Engine Oil reduces wear and helps maintain original fuel economy. It is approved for use in all engines that require CK-4 and is backward-compatible for use in Tier 3 and older machines.



SERVING YOU BETTER

OPTIMIZING JOBSITES

Partnership for aerial mapping provides resources to reduce costs, increase efficiency



Jason Anetsberger,
Komatsu Senior
Product Manager

With drones becoming an increasingly common worksite tool, Komatsu has identified aerial mapping and analytics as key components of its SMARTCONSTRUCTION initiative – a range of integrated hardware and software solutions designed to offer an end-to-end workflow for each phase of construction. In addition to its long-standing relationship with Skycatch, Komatsu recently boosted those capabilities by partnering with Propeller Aero, a global leader in cloud visualization and analytics solutions.

“A Komatsu SMARTCONSTRUCTION jobsite, by definition, is technology enhanced and production optimized,” said Jason Anetsberger,

Komatsu Senior Product Manager. “Adding Propeller Aero as a key partner gives our North American distributors and customers exceptional capabilities to achieve this standard for aerial mapping. Propeller combines simple, yet powerful analysis tools with fast and accurate site visualization.”

Komatsu spent several years testing various commercial drone mapping and analytics options. In Propeller, it found an exceptionally robust product, well-suited to meet the needs of modern construction operations. Propeller balances ease of use with survey accuracy and reliability.

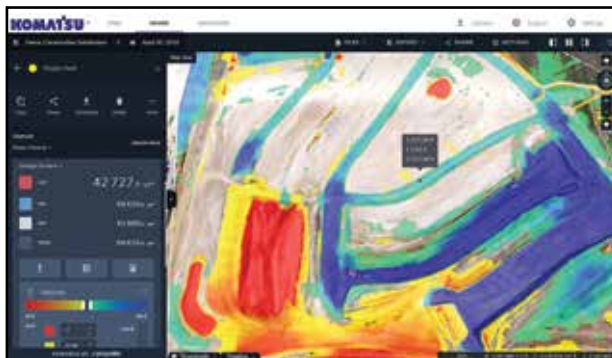
Powerful data at your fingertips

Propeller’s processing machinery quickly crunches drone images and delivers the results as a cloud-based, 3-D model to a desktop or tablet. From there, powerful collaboration and analysis tools let users perform height, volume and slope calculations as well as monitor if a project is on-track.

The technology platform created by Propeller supports multiple coordinate systems, including local site calibrations. This allows personnel to capture up-to-date data expressed in the specific geospatial coordinate already in use on that jobsite. Local grid support is crucial for ensuring that drone-captured maps and models match up with plans and previous surveys.

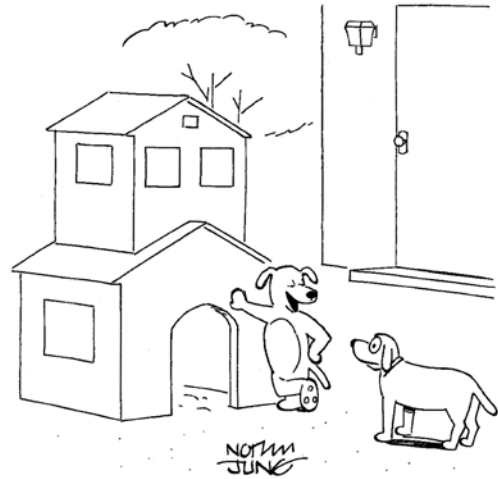
“Worksite managers are starting to see the real business value of accurate, up-to-date drone data,” said John Frost, Vice President of Business Development at Propeller Aero. “That’s why we’re building tools and workflows designed for experts and non-experts alike. It’s all about empowering users with information to reduce costs, improve safety and make the most efficient use of resources.” ■

Komatsu is now partnering with Propeller Aero – a leader in cloud visualization and analytics solutions – to provide customers with simple, yet powerful tools that offer accurate site visualization. Propeller balances ease of use with survey accuracy and reliability.



SIDE TRACKS

On the light side



"My owner is a contractor specializing in new home construction!"



"No, Jason,
you can't call
tech support."

Did you know?

- Beaver teeth are so sharp that Native Americans once used them as knife blades.
- Grover Cleveland is the only American president to get married in the White House.
- The world's first speed limit regulation was set in England in 1903. It was equal to 20 mph.
- The National Turkey Federation reports that 88 percent of Americans eat turkey on Thanksgiving.
- Franklin Mars invented the Snickers bar in 1930.
- Alaska and California, with eight each, are the U.S. states with the most national parks.
- The painting, "American Gothic" depicts the sister and the dentist of artist Grant Wood as farmers.
- A jiffy is an actual unit of time for 1/100th of a second.
- The hyoid bone in the throat is the only bone in the human body not connected to another bone.
- Pumpkins are 90 percent water.

Brain Teasers

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

1. EROND _ _ R _ _ _ _
2. GIPAPNM _ _ _ _ P _ _ _ _
3. TADA _ _ _ _ _
4. CEHT _ _ _ _ _
5. PSG _ _ _ _

NEWS & NOTES

Study suggests saving billions with dam removals

Removing, instead of repairing, aging dams could save billions of dollars, according to a Portland State University research study focused on current statistics regarding dam removal. Researchers said that if trends continue, between 4,000 and 36,000 dams will be eliminated by 2050.

The study found that hydroelectric and water-supply dams were most commonly

removed, and the choice of taking them out often comes down to cost-benefit versus ecological and other impacts. The Association of State Dam Safety Officials calculates it would cost \$64 billion to rehabilitate all of dams in the United States and bring them up to safe conditions. An estimate from the American Society of Civil Engineers put the cost above \$45 billion to repair and upgrade more than 2,100 high-hazard structures. ■

New video highlights optimal use of backup alarms

Canadian scientific research organization, IRSST, recently released a video intended to ensure the optimal use of backup alarms under realistic working conditions. Among the recommendations in the video are placing the backup alarm at the vehicle's rear, at a height of 3 to 6.5 feet above the ground and where it can easily be seen and heard by workers.

Other suggestions include setting the volume just above the level of ambient noise; limiting reversing speed to a maximum of 7.5 mph, allowing workers in the vicinity of the vehicle at least two seconds of reaction time; and using broadband alarms if several vehicles will be reversing at the same time, minimizing the

risks associated with poor ability to locate sound sources.

"The best way to prevent accidents involving reversing vehicles is still to limit reversing as much as possible and to control the number of pedestrians in the vehicle-reversing areas by implementing effective traffic plans," said Hugues Nélisse, Lead Study Author and IRSST Researcher. "Given that backup alarms are still a widely used means of warning people near vehicles that there's a hazard, we have to use them as effectively as possible to ensure safety." ■

Scan the QR code or go to <http://www.irsst.qc.ca/en/publications-tools/video/i/100389/n/backup-alarms-an-optimum-safety-to-watch-the-video>.



Discover more

Sticker campaign raising trench safety awareness

The Occupational Safety and Health Administration (OSHA) aims to raise trench safety awareness with new, free stickers designed to remind workers to "slope it, shore it, shield it." The stickers are available in English and Spanish through OSHA's website, www.osha.gov.

"When done safely, trenching operations can limit worker exposure to cave-ins, falling loads, hazardous atmospheres and hazards from mobile equipment," OSHA says. "The best way to prevent a trench collapse is to slope or bench trench walls, shore trench walls with supports or shield trench walls with trench boxes." ■

Grant funds available for rural water infrastructure

The U.S. Department of Agriculture (USDA) announced \$4 billion in grant funding to help upgrade and rebuild rural water infrastructure across 24 states. Eligible communities and water districts can apply online to maintain, modernize or build water and wastewater systems at <https://www.rd.usda.gov/programs-services/rd-apply> or through one of the USDA Rural Development's state or field offices.

Rural communities with 10,000 or fewer residents are eligible for the funding, which is provided through the Water and Waste Disposal Loan and Grant program. It can be used to finance drinking water, storm-water drainage and waste-disposal systems.

"USDA is committed to being a strong partner to rural communities in building their futures," said Anne Hazlett, Assistant to the Secretary for Rural Development at the USDA. "All people – regardless of their zip code – need modern, reliable infrastructure to thrive. We have found that when we address this need, many other challenges in rural places become much more manageable."

In fiscal year 2018, Congress provided a historic level of funding for water and wastewater infrastructure. The 2018 Omnibus spending bill includes \$5.2 billion for USDA loans and grants, up from \$1.2 billion the previous year. The bill also directs the Agriculture Secretary to make investments in rural communities with the greatest infrastructure needs. ■



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