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A MESSAGE FROM THE PRESIDENT



David Coultas

BRANDEIS

Dear Valued Customer:

While industry groups are actively recruiting new employees to fill skilled-labor positions, a shortage of such workers remains. One aspect of today's construction industry that many potential crew members may find attractive is the growing use of technology, especially when it comes to equipment.

Komatsu revolutionized integrated GPS technology and is now taking its *intelligent* Machine Control dozers to the next level with Proactive Dozing Control logic to mimic the actions of seasoned operators during rough-cut application. Now, these dozers truly deliver first-to-last-pass auto blade control and continuous data collection. We believe this is another giant leap in helping novice operators become skilled dozer hands faster. You can read more about how Komatsu has continued to improve its innovative technology in this issue of your Brandeis Focusing On Solutions magazine.

Komatsu also led the way in bringing integrated technology to excavators and has added another to the lineup with its new PC290LCi-11. It is well-suited for applications that require good stability and working range, and its size helps to avoid most transportation limits associated with larger-size-class excavators. Find out more inside.

This issue features two case studies, one shares the success story of a business that relies on Komatsu excavators in a waste-industry application and another focuses on our customer White Stallion Energy LLC's use of a PC4000-6 mining shovel. I think you will find both interesting as each provides insight into how Komatsu machinery offers greater efficiency and productivity.

Also, be sure to check out the fun and comradery at our annual customer appreciation fishing tournaments.

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

Sincerely,

President

BRANDEIS MACHINERY & SUPPLY COMPANY

David Coultas

Taking 'intelligence' to the next level



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A FAMILY REUNION

Brandeis Eastern Region Customer Appreciation Fishing Tournament another success



Robert Krutsinger, Brandeis Vice President/ Regional Sales Manager, talks with attendees at a gathering the afternoon before the eastern region fishing tournament.

Brandeis Machinery & Supply Company's Regional Manager, Eastern Kentucky Barry Justice reviews the tournament rules at the Eastern Region Customer Appreciation Fishing Tournament at Swann's Marina on Douglas Lake in Dandridge, Tenn.



Nearly 200 customers, family members and employees enjoyed an ideal weekend at Swann's Marina on Douglas Lake in Dandridge, Tenn., for the 28th annual Customer Appreciation Fishing Tournament hosted by Brandeis Machinery & Supply Company's Corbin and Stanville branches.

"With 94 boats, it was probably the best attendance we've had in a long time," said District Sales Rep Jason Douglas. "This is such a fun event. We have customers who have been coming for years; it's like a family reunion."

A barbecue dinner and raffle drawing were held on Saturday. Each attendee received a welcome bag with assorted Brandeis apparel and an opportunity to choose from a selection of door prizes that included rods, reels, tackle, boat batteries, engine oil, tools and

Continued . . .

Willie Fee of JRL Coal poses with his grand prize Nitro Z21 bass boat. "I said I wouldn't come unless I won a new boat," joked Fee. "I can't believe I won the grand prize my first time here."





Big Fish

Anglers wait for their boat numbers early in the morning on Douglas Lake near Dandridge, Tenn.



Ronnie Blaylock of 7 Earthmovers displays the second-place, 15.77-pound haul that he and teammate Trent Adkins of Adkins Cable Construction reeled in.



Dustin Evans of Tackett Creek Mining and his partner John Smith took third place with 15.76 pounds.



(L-R) Doug Napier, Nally & Hamilton's Jacob Napier and Michael Miniard along with Star Construction's Richard Munsey proudly show off more than 32 pounds of fish.

2019 Brandeis Fishing Tournament - Eastern Division

Top Five Teams	Fish Weight
Jacob Napier (Nally & Hamilton) and Doug Napier (Retired)	19.89 lb
Ronnie Blaylock (7 Earthmovers) and Trent Adkins (Adkins Cable Construction)	15.77 lb
Dustin Evans (Tackett Creek Mining) and John Smith (Tackett Creek Mining)	15.76 lb
Robert Sawyers (Zebulon Machine) and James Slone (CAM Mining	g) 14.61 lb
Wayland Partin and Dustin Hyatt (JR Partin Logging)	14.40 lb

Jacob Napier (Nally & Hamilton) and Doug Napier (Retired)

Fish Weight

6.11 lb

'The prizes are a highlight of the event'

... continued



Premier Elkhorn's Bryan Johnson waits for his largemouth bass to be weighed.



of bass he nabbed at the annual tournament.



Nally & Hamilton's James Stewart holds up two of his team's three bass.



Floyd Wayne Howard of McVey Land Development presents a 3.26-pound largemouth.

Eastern Region Customer Appreciation Fishing Tournament attendees take a look at the selection of a raffle prizes.



more. The following day, anglers blasted off at 6:45 a.m.

"The prizes are a highlight of the event, and everyone receives one," said Brandeis Product Support Representative Nick Baird. "We try to make sure we have things that they will use, and more often than not, the value of the item exceeds their entry fee."

"An event like this really shows just how much Brandeis appreciates its customers," noted Timmy Ray Robinson of CAM Mining.

Jacob and Doug Napier swept the top honors at this spring's event as the duo hauled in a tournament-best 19.89 pounds, including the 6.11-pound Big Fish. Ronnie Blaylock and Trent Adkins finished second with a total of 15.77 pounds while Dustin Evans and John Smith were third with 15.76 pounds.

With 28 years of the tournament on record, it remains as popular as ever.

"I look forward to this event every spring," said Premier Elkhorn's Dale Tackett. "I get to see a bunch of friends, and I enjoy the comradery. This is a great thing that Brandeis does for its customers."

"For us, running the tournament is something we want to do," explained Douglas. "We look forward to it just as much as the customers." ■



With five fish weighing in at 15.77 pounds, Mike (left) and Todd Tackett of CRS finish in 13th place.



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PICTURE-PERFECT WEEKEND

Evansville, Paducah branches welcome record turnout for ninth annual fishing tournament

When Brandeis Machinery & Supply Company's Paducah, Ky., and Evansville, Ind., branches set out to host a fun and unique customer appreciation event, they had no idea how it would be received. Nine years later, the Brandeis Western Region Customer Appreciation Fishing Tournament is a proven success.

"The first year we had 27 boats," recalled Machine Sales Rep Chad Porter. "This year we planned to cap the event at 80 boats and we still

Bassmaster Elite Series professional fisherman Mark Menendez addresses a packed house at the welcome dinner.

J&S Lawn's Joey Schmidt (left) shows off the tournament's Big Fish, a 5.81-pound largemouth bass, with partner Bobby Griffith of Gibson Plumbing.



ended up with 82, the most on record. The way this event has grown is amazing."

This year, more than 200 customers, families and Brandeis employees again made their way to Lake Barkley/Kentucky Lake in Kuttawa, Ky., for a weekend of fun and comradery. For Brandeis customers in western Kentucky and southern Indiana, early June has become synonymous with the event.

"We start planning about six months in advance; however, we have people calling and asking for registration forms before that," stated Regional Operations Manager, Western Region, Bob Morris. "It's such a fun event. We look forward to it as much as the customers do."

The weekend kicked off with a welcome dinner at Lee S. Jones Park inside the Lyon Convention Center in Eddyville, Ky. Attendees enjoyed door prizes and a barbecue buffet as Bassmaster Elite Series professional fisherman and Paducah native Mark Menendez spoke about the importance of promoting the health of Lake Barkley/Kentucky Lake.

Continued ...

Grand-prize winner Joe Barnes of Western Kentucky Coal took home a new Humminbird Helix 9 fish finder.



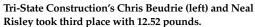




Contestants await their boat numbers to be called in the early morning at the ninth annual Brandeis Western Region Customer Appreciation Fishing Tournament in Kuttawa, Ky., on Lake Barkley/Kentucky Lake.



Second-place winners Danny Wooten of Foresight Energy (left) and Alliance Resource Partner's Jerry Wooten hold up their 13.43-pound catch.







Cameron Porter (center) helps his grandfather, Clark Distribution's Drew Lynch (right), and Jerry Bond of Wagner Moving & Storage show off their 13.72-pound haul. Bond and Lynch won the tournament for the third straight year.

2019 Brandeis Fishing Tournament - Western Division

Top Five Teams Jerry Bond (Wagner Moving & Storage) and Drew Lynch (Clark Distribution)	Fish Weight 13.72 lb
Danny Wooten (Foresight Energy) and Jerry Wooten (Alliance Resources Partners)	13.43 lb
Neal Risley and Chris Beudrie (Tri-State Construction)	12.52 lb
Charlie Nelson (Charlie Nelson Trucking & Excavating) and Jeff Defew (Defew's Body Shop)	11.62 lb
Kenny Brown (S.S.) and Chad Stokes (IAC)	11.35 lb

Big Fish	Fish Weight
Joey Schmidt (I&S I awn) and Robby Criffith (Cibson Plumbing)	5.81 lb

Winners are three-peat event champs

... continued



Harper McKinney (center) hugs one of the three fish caught by the State of Kentucky's Jason Sharp (left) and TVA's Jeremy Hoover.



Josh Nichols of Meuth Concrete poses with the largemouth bass he caught.



Barry Hornback of Liter's Inc. displays his big catch of the day.

(L-R) Charlie Nelson of Charlie Nelson Trucking & Excavating looks on while teammate Jeff Defew of Defew's Body Shop weighs their haul with McCracken County High School Head Fishing Coach Jeff Pierce.



Afterward, Brandeis representatives awarded door prizes and held drawings for several larger gifts. Joe Barnes won the grand prize, a Humminbird Helix 9 fish finder.

"The prizes are always a big draw," said Morris. "Everyone gets a welcome bag and a door prize – many of which cost more than the entry fee. Then we have a drawing for larger items like Yeti, Grizzly and ORCA coolers and a fish finder. We give away about \$10,000 worth of gear."

Competition day saw the team of Jerry Bond and Drew Lynch defend their 2017 and 2018 titles for the event's first three-peat with an overall catch of 13.72 pounds. Joey Schmidt and Bobby Griffith snagged the Big Fish at 5.81 pounds. ■



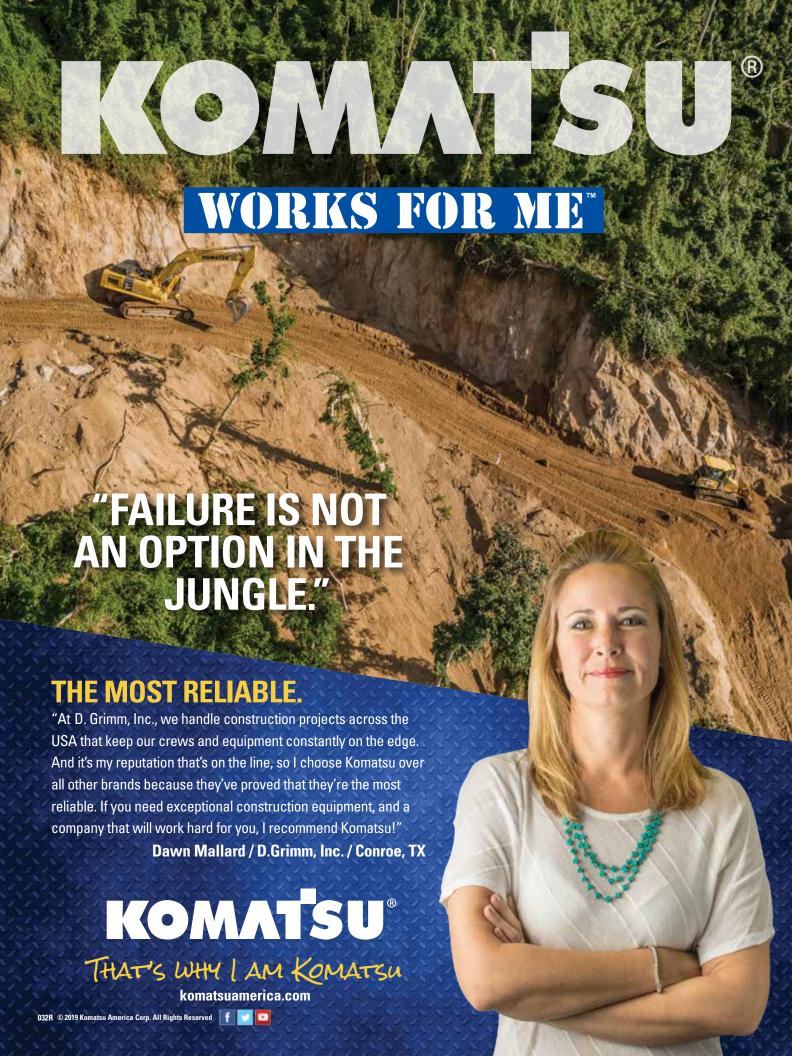
(L-R) Yager Materials' Cary Gaddis holds up a bass as teammate David Alsip (retired) waits for Jeff Pierce to determine the official weight.



T.J. Tucker of Trans Ash peruses the door prizes in the Lyon Convention Center at Lee S. Jones Park.

James Lee (retired, left) and Grove Construction's Chuck Wright show the trio of largemouth bass they nabbed.







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BREAKING GROUND

Brandeis delivers first Komatsu PC4000-6 mining shovel to work in Illinois Basin

When White Stallion Energy LLC was in the market for a new mining shovel earlier this year for its Eagle River Mine in Harrisburg, Ill., it did its due diligence in selecting a machine. The result was both literally and metaphorically groundbreaking and resulted in Brandeis Machinery & Supply Company delivering the first Komatsu PC4000-6 mining shovel in the Illinois Basin.

"We typically used another brand, but after doing the research, it was clear that we should go with Komatsu, Brandeis and the PC4000," explained Senior Vice President of Operations Shane Chancellor. "Komatsu's mining reputation, combined with the excellent relationship we have with Brandeis and a parts distribution center five hours from our location, gave us the confidence to move forward with the purchase."

Special delivery

This spring Brandeis delivered the nearly 900,000-pound shovel with a 29-yard bucket to the Eagle River Mine and began a five-week assembly process.

"The machine was shipped to the mine from Alabama in 19 loads," said Brandeis Mining Specialist Jonathan Beaven. "Once it was on site, we got to work putting it back together. Brandeis Mechanic Dustin Young is dedicated to the site and worked to get the shovel operational. All told, it was nearly a two-and-a-half month process from purchase to operation."

White Stallion Energy has been impressed with its initial returns.

"It's outperformed our projections," noted Eagle River Mine Production Manager Joe Reising. "We're already getting 1,600 yards with the PC4000 in just a few weeks of use. The output along with the service we receive from Brandeis are unmatched."

Gaining quick approval

It also didn't take long for the PC4000 to win over one skeptic, Operator Jerry Rigsby.

"Jerry said if we made him run the PC4000, he'd start looking for another job," laughed Reising. "After the first day, he changed his mind. Now, he won't use anything else."

"It's extremely powerful and more comfortable than the shovel I used to run," admitted Rigsby. "It's the quietest machine I've ever been in, and it's quick. All around, this is a real good machine."



Shane Chancellor, Senior Vice President of Operations



Joe Reising, Production Manager

White Stallion Energy LLC Operator Jerry Rigsby uses the company's new Komatsu PC4000-6 mining shovel – the first working in the Illinois Basin – to remove overburden at the Eagle River Mine in Harrisburg, Ill. "It's the quietest machine I've ever been in, and it's quick," said Rigsby. "All around, this is a real good machine."



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Marv Selge (with Noah & Justin) / Selge Construction, Inc. / Niles, MI



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HANDS-ON EXPERIENCE

Komatsu revamps Demo Days to provide ultimate customer event

This spring, more than 300 customers, distributor representatives and industry professionals attended Komatsu's Demo Days at the Cartersville Customer Center in Georgia where they experienced a newly tailored schedule for the event.

"We've been using this site for more individualized customer demonstrations, and we learned a lot from them," said Komatsu Instructor and Developer Isaac Rollor. "We applied a good deal of the feedback we received from those interactions to enhance this group event. As a company, Komatsu is always looking to improve in all aspects, and that includes Demo Days."

The new format significantly increased attendees' time at the demo site. The morning session featured walk-arounds for 30 machines, including the full family of *intelligent* Machine Control dozers and excavators, with Komatsu experts on-hand to answer questions.

"After registration and a short safety meeting, we got customers up on the hill," said Rollor, referring to the demo site location. "In the past, we held the morning session in our auditorium, but we want Demo Days to be as interactive as possible. We felt it was important to increase the amount of individualized time customers spent with our people and on the machines to achieve that goal."

Food trucks, raffles and competitions

The morning ended with an *intelligent* Machine Control dozing demo and then Atlanta-area food trucks provided lunch. The afternoon was reserved for machine operation.

"By the time customers go home, we want them to feel as confident with the Komatsu product as we are," noted Rollor. "This new setup provides more time for them to talk with Komatsu personnel, operate equipment and have all of their questions answered."

In addition to machine demos, the gathering also featured raffle prizes; timed wheel loader and mini excavator challenges; and a factory tour of Komatsu's Chattanooga Manufacturing Operation. Demo Days also included a "Help Build the Machine of the Future" area, which invited customers to share what they want to see from Komatsu in five, 10 and 15 years. ■



Isaac Rollor, Komatsu Instructor and Developer



(L-R) Todd Daugherty and Mike Gidaspow, Komatsu America; Dylan Neudecker, Turner Mining; and Corey Wall, Brandeis Machinery & Supply Company, gather at Demo Days in Cartersville, Ga.

Komatsu Demo Days attendees had the opportunity to operate 30 machines, including the new GD655-7 grader and the full line of *intelligent* Machine Control equipment. The event also featured walk-arounds, competitions, a factory tour and other interactive sessions.



EMBRACING TECHNOLOGY

Construction companies adopting innovations; expert advises using a measured approach

Editor's note: Some information for this article was supplied by Damon Haber, Co-founder and Chief Revenue Officer at Record360. During the past two decades, the development and acceptance of construction technology has made huge strides. GPS-based grade control is a perfect example. It has evolved from masts and cables on the outside of machines to integrated systems that can automatically raise and lower dozer blades. Today, companies are increasingly accessing information about their machinery via mobile platforms such as smartphones and tablets, using Wi-Fi or cellular networks.

Construction companies that fail to embrace these new strategies may fall behind those that do and could eventually be forced to close. It's essential to adopt innovations in today's world, although firms should take a measured and realistic approach to implementation, says Damon Haber, Co-founder and Chief Revenue Officer at Record360, which helps businesses add the latest products to their operations.

"I was an operator before I became a tech guy, so I understand how it is affecting companies and individuals," Haber said. "Like equipment, devices and apps don't create outcomes; however, they can be valuable tools that help achieve them. Failures often happen when companies try to do too much or have no clear objectives as to why they want to implement certain solutions."

Other obstacles to successful adoption include leaving key personnel out of the process and underestimating the impact of change. "Definitely take those factors into consideration prior to any final decisions," advised Haber.

Mobile on the rise

Mobile solutions continue to grow in the construction industry, and this is one sector where caution is especially necessary, according to Haber. Technology can be used to track equipment for maintenance, order parts, locate machines and much more.

"Every major manufacturer has an app, and all are proven," said Haber. "So, it's not an issue of whether a construction company can use them; however, they must look at the technical considerations."

Haber points to the devices themselves as a critical item for examination. "It's important to consider the costs, as well as the features and benefits of each device. For instance,



Best practices for adopting technology include starting small, setting measurable goals and outcomes as well as securing commitments from end-users. "You can always get bigger," said Damon Haber, Co-founder and Chief Revenue Officer at Record360. "You should also look at today's modern solutions and see how they can flex to match desired business goals."



Mobile technology continues to grow in the construction industry, and this is one area where caution is especially necessary, according to Damon Haber, Co-founder and Chief Revenue Officer at Record360. "Every major manufacturer has an app, and all are proven," said Haber. "So, it's not an issue of whether a construction company can use them; however, they must look at the technical considerations."

Apple and Android each have advantages and disadvantages."

Additional factors to weigh include using Wi-Fi or cellular networks, data costs, native versus web platforms, security encryption, level of support from your provider and provider integration capabilities.

"All are important to analyze, although they should not deter companies from using mobile options," said Haber. "Embracing them could be a key aspect in attracting new talent. Today's younger workforce is already very familiar with how to use mobile devices. Studies show that millennials use their smartphones up to 223 minutes per day."

Best practices include starting small

There are some best practices for introducing technology, mobile or otherwise. Among them are starting small, setting measurable goals and outcomes in addition to securing commitments from end-users.

"You can always get bigger," Haber emphasized. "Before full implementation, it's wise to do a pilot study and do it well. You should also look at today's modern solutions and see how they can flex to match desired business goals."

Best practices also include managing expectations, according to Haber. "Not everything needs to integrate or be perfect. There must be a clear vision for what success looks like."

A more competitive future

Staying flexible and open to the latest advancements will remain vital to construction companies' competitiveness and, ultimately, their survival. The future will continue to bring innovations that make jobsites more productive and efficient, if implemented with sound practices.

"We are on the cusp of major changes right now," Haber stated. "5G for mobile is right around the corner, and it will be 100 times faster than 4G. Everything cellular will be affected, and we will be able to do things that were not possible before.

"I also believe artificial intelligence, including machine learning, will gain more prominence, as will augmented reality," he added. "Companies should not be afraid of or intimidated by technology. They should view it as a means to enhance and improve their practices and increase competitiveness."

TAKE A DIFFERENT ROUTE

Construction careers often pay as much or more than those requiring traditional four-year degree



Deanna Quintana

Deanna Quintana emphasizes that careers in construction and the skilled trades can be as, or more, lucrative and rewarding than those requiring the traditional route of higher

education that leads to

As our children grow up, we continually ingrain in them that there is one route to success – a four-year degree. However, higher education is not solely defined by a bachelor's degree. There are other paths that will guide them in the right direction before entering the workforce.

While there are misconceptions about the construction and skilled-labor industry, numbers prove that there are millions of jobs available in this field and compared to college graduates, they're well-paid. The average starting salary for college graduates stands at \$50,004; however, student debt is on the rise and the class of 2018 graduated with an average of \$29,800 in loans. One of the most important reasons students choose to pursue a four-year degree is to land a high-paying job. The truth is, multiple careers in construction make an average of \$65,000 per year and do not require a degree from a large institution.

This poses the question: How does one get higher education without going to a traditional college or university? The answer is simple: apprenticeships; technical

or community colleges; and career and technical education (CTE).

Earning while learning

Apprenticeships provide valuable on-the-job training and are structured programs relating to the technical and academic competencies that apply to the job. In fact, the construction industry in the United States represents approximately 30 percent of all active, registered apprentices. Construction is one of the few industries where individuals are given the opportunity to develop skills and knowledge about a career, while earning a paycheck.

Technical or community colleges offer shorter time spent in school and can be just as beneficial and rewarding as a four-year degree. In these programs, minimal debt is incurred, and the skills and education obtained apply directly to careers upon graduation.

CTE prepares secondary, postsecondary and adult students with the hard and soft skills needed to build a successful career and life. Classes prepare students for a variety of high-skill, high-wage and high-demand careers.

While a four-year degree may be the path for some, it is not the only form of post-secondary education. Higher education is about acquiring skills and knowledge that will help you succeed in your desired career path. ■



Deanna Quintana is a marketing intern at the National Center for Construction Education and Research (NCCER). She is learning about the industry and how to recruit and educate new craft professionals. This article is excerpted from a blog post, and reprinted with permission from "Breaking Ground: The NCCER Blog" at blog.nccer.org.

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NEW INTELLIGENT EXCAVATOR

PC290LCi-11 uses 3D design data to deliver first-to-last pass accuracy

Komatsu augmented its *intelligent*Machine Control lineup with the addition
of the new PC290LCi-11 that provides
first-to-last-pass accuracy. Like its predecessors,
the excavator features Komatsu's unique
sensor package – stroke-sensing hydraulic
cylinders, an inertial measurement unit sensor
and global navigation satellite system antennas –
that utilizes 3D design data to accurately check
its position against the target elevation and
semi-automatically limit overexcavation.

"The PC290LCi-11 is perfect for applications where customers are looking for good stability

and working range. It has a 30-ton-class undercarriage and an upper structure similar to our standard PC240LC model. This excavator also includes a 3.2-meter (10.49-foot) arm," said Andrew Earing, Senior Product Manager, Tracked Equipment, noting that a 3.5-meter arm option will be available soon. "Its size helps to avoid most transportation limits associated with larger size-class excavators, making it a good fit for residential and utility work, as well as smaller non-residential jobs."

Users can load design data into the intelligent

Machine Control box. It is displayed





Model PC290LCi-11

Net Horsepower 196 hp

Operating Weight 70,702-72,091 lb

Bucket Capacity .76-2.13 cu yd



Display shows realistic design surface

continued

The machine and design surface are shown in a realistic 3D format. The angle and magnification of the views can be changed, allowing the operator to select the best option, depending on working conditions.

Easily switch modes, offset functions

Operators can choose between manual and semi-automatic modes, as well as design offset functions using switches on the joysticks. The semi-automatic mode features Auto Grade Assist. As the operator moves the arm, the boom adjusts the bucket height to trace the target surface and minimize the chance of digging too deep.

Additionally, the PC290LCi has Auto Stop Control that halts the working equipment when the bucket edge reaches the design surface, which reduces design surface damage. Minimum Distance Control regulates the bucket by automatically selecting the point on the bucket closest to the target surface. Finally, the Facing Angle Compass shows

edge to be accurately positioned square to the target surface.

"Komatsu introduced *intelligent* Machine Control excavators four years ago with the PC210LCi, which is now in its second generation with the Dash-11 model," said Earing. "As we continued to expand our intelligent product line, we heard customers asking for a PC290LCi. With the introduction of this model, we are pleased to demonstrate our commitment to our customers."

Covered by Komaisu CARE

The PC290LCi-11 has Komatsu's KOMTRAX Level 5 technology that provides machine data such as fuel and diesel exhaust fluid (DEF) levels, Komatsu Diesel Particulate Filter (KDPF) regeneration status, machine location, cautions and maintenance alert information.

Whether rented, leased or purchased, the PC290LCi-11 is covered by Komatsu CARE, complimentary for the first three years or 2,000 hours. It includes scheduled factory maintenance, a 50-point inspection at each service interval and up to two complimentary KDPF exchanges and two DEF tank flushes in the first five years.



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



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EQUIPPED FOR SUCCESS

Excavator fleet outfitted with waste packages helps recycling firm meet production goals

Lakeshore Recycling Systems (LRS) is one of the largest waste and recycling companies in the Chicago area. In order to process the massive amount of waste material that comes through its seven locations, LRS requires equipment that is dependable, versatile and durable. It found a solution with a fleet of 15 Komatsu PC210LC excavators outfitted with Komatsu waste packages.

"Our PC210s run up to 20 hours a day – sometimes as many as 11 hours straight – which is vital to keeping us on schedule," explained LRS Managing Partner Rich Golf. "We know that they are going to run every day."

The company uses its PC210LC fleet to sort through piles of waste material, removing pieces that can hinder the performance of its production line.

"It is an instrumental tool," shared Golf.
"Operators can identify items that might be harmful to machines downstream like hoses, electrical cords, plastics or bulky items."

Golf touts the versatility of the PC210LC for its ability to feed the operation, a task typically reserved for a large wheel loader.

"It takes up less space, uses less fuel and eliminates tire costs," said Golf. "It does the job of a WA500 wheel loader, just more efficiently."

Enhanced performance

To help the PC210s perform 20-hour work days in unforgiving conditions, LRS equips its excavators with Komatsu waste packages.

"Overheating can be a serious problem," stated Golf. "However, the Komatsu package includes an enhanced cooling feature with

wider fins and radiators that swing out. It improves access to the area and allows us to blow them out quicker to keep everything cool."

The waste package also includes an enhanced boom arm and stick as well as extra safety guarding around the cab. Golf credits the Komatsu waste package as one reason why LRS excavators work past the 15,000-hour mark – with some already at 25,000 hours. They also play a role in ensuring that those hours are completed safely.

"Komatsu has done a great job of creating waste packages that meet our needs," noted Golf. "This helps make the machines more durable as well as safer for the operator. Safety has been our top priority from day one, and that has been important in our relationship with Komatsu."



Rich Golf, Managing Partner, Lakeshore Recycling Systems

A Lakeshore Recycling Systems operator uses a Komatsu PC210LC excavator equipped with a Komatsu waste package to manage a pile of material. "Komatsu has done a great job of creating waste packages that meet our needs," noted Managing Partner Rich Golf. "This helps make the machines more durable as well as safer for the operator."



GOING BEYOND THE SALE

VP – Marketing Communications says Komatsu helps customers gain knowledge to maximize production



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.

Evelyn Maki, Vice President – Marketing Communications

Originally from Brazil, Evelyn Maki went to college with a focus on building a career in tourism. While in school, she interned at a heavy equipment manufacturer, took a position there upon graduation and has been supporting the industry ever since.

"I have been involved with sales, data analysis, forecasting and dealer development," said Maki. "I enjoyed those, but marketing is what I love. I really enjoy today's modern practices and am always thinking about ways we can shape our industry from a marketing perspective."

Maki moved to the United States when she was transferred to Wisconsin by her previous employer in the early 2000s. About eight years ago, she began working for P&H, then part of the Joy Global organization, now owned by Komatsu. Today, she is the Vice President – Marketing Communications for Komatsu. Maki oversees global marketing for Komatsu Mining, as well as for construction, forestry, forklift and industrial presses for North America.

"Komatsu is about more than manufacturing quality, dependable equipment; it's focused on building relationships by taking care of customers from every standpoint: sales, service and support," said Maki. "From a marketing perspective, that's what we want to highlight because, at the end of the day, this is what creates customers for life."

QUESTION: Komatsu is known as a "total solutions provider." What does that entail?

ANSWER: It means we can take care of customers throughout their machinery's life cycle. For instance, if a customer is looking for a machine with GPS-grading capabilities, Komatsu has several options including our integrated *intelligent* Machine Control dozers.

In addition, we, and our distributors, have expert personnel who can provide mapping services, jobsite setup, training, consultation and more. Most of our latest models come with Komatsu CARE, so scheduled maintenance is covered for the first three years or 2,000 hours. Programs are available to extend that, and we have other solutions to take care of maintenance and repairs.

QUESTION: What are the roots of Komatsu's customer-focused approach?

ANSWER: Our approach stems from our origins and from listening to customers. Komatsu was started nearly 100 years ago by Meitaro Takeuchi. He saw that the copper mine in Komatsu City, Japan, was about to exhaust its resources and close. The city's economy centered around that mine, so he started an equipment manufacturing company to provide new jobs and help people in his community develop new skills. That's how Komatsu was created.

For nearly a century, we have expanded globally because we visit jobsites and mines around the world to talk with customers in order to better understand their needs and challenges. Knowledge gained from those conversations helps develop equipment and solutions to meet those needs and alleviates challenges so customers can concentrate on



Komatsu has a long history of dedication to developing solutions for people and their businesses, according to Evelyn Maki, Vice President – Marketing Communications. "Komatsu was started nearly 100 years ago by Meitaro Takeuchi," said Maki. "He saw that the copper mine in Komatsu City, Japan, was about to exhaust its resources and close. The city's economy centered around that mine, so he started an equipment manufacturing company to provide new jobs and help people in his community develop new skills."

getting their jobs done more effectively and efficiently, backed by Komatsu.

QUESTION: How is Komatsu reaching customers to provide information about its equipment and support?

ANSWER: There are several avenues. From a global perspective, information is available on our websites, and that's a good starting point for research. Customers can also gain information from our social media pages and video library on YouTube.

QUESTION: In addition to online resources, how can customers learn more about Komatsu equipment?

ANSWER: We encourage them to contact their distributor personnel. From a manufacturer marketing standpoint, we develop content that helps distributors and their representatives provide the most accurate, detailed information possible so that customers can make highly informed decisions. We serve as a support tool.

One way we do that is with events, such as Demo Days, where distributors can bring customers to our Cartersville Customer Center to operate machinery, and our experts provide insight into maximizing machine usage as well as other valuable content.



During Demo Days at the Cartersville Customer Center, Komatsu experts provide valuable insights about maximizing machine production and more.

Our distributors are excellent resources and can directly help customers with details about equipment and the programs to maintain it, such as Komatsu CARE for Tier 4 construction equipment. We encourage anyone seeking information to contact their distributor and/or sales representatives who have the knowledge to put them in the right machine for maximum production and efficiency.



INTUITIVE TECHNOLOGY

Proactive Dozing Control logic interprets data, makes decisions to mirror seasoned operators



Derek Morris, Komatsu Product Marketing Manager

When Komatsu unveiled its revolutionary intelligent Machine Control system in 2013, the integrated, mast- and cable-free, semi-automated GPS program promised increased production and precision grading. It delivered, and now Komatsu is taking the technology to another level with Proactive Dozing Control logic.

"The first iteration of *intelligent* Machine Control was a starting point," explained Komatsu Product Marketing Manager Derek Morris. "Once that was accepted in the market and became a viable part of a construction site, we focused on how to make it better."

To do that, Komatsu designed its Proactive Dozing Control system to more closely resemble

Available on new Komatsu D51i-24 and D61i-24 dozers, the latest version of *intelligent* Machine Control improves automation during rough-cut applications by more closely operating like an end-user. "Proactive Dozing Control logic tracks, collects and interprets terrain data, then makes decisions based on that information," said Komatsu Product Marketing Manager Derek Morris.



an experienced operator during initial rough-cut applications – a point when operators were not utilizing *intelligent* Machine Control.

"Traditionally, end-users were only using automation to perform final grade," noted Morris. "That happened because the system would work to get the blade to grade as soon as possible, creating aggressive cuts that could stall a machine. During that phase, experienced operators would typically cut and carry large but manageable loads, so they could move the material to other parts of a jobsite. We added this logic and practice."

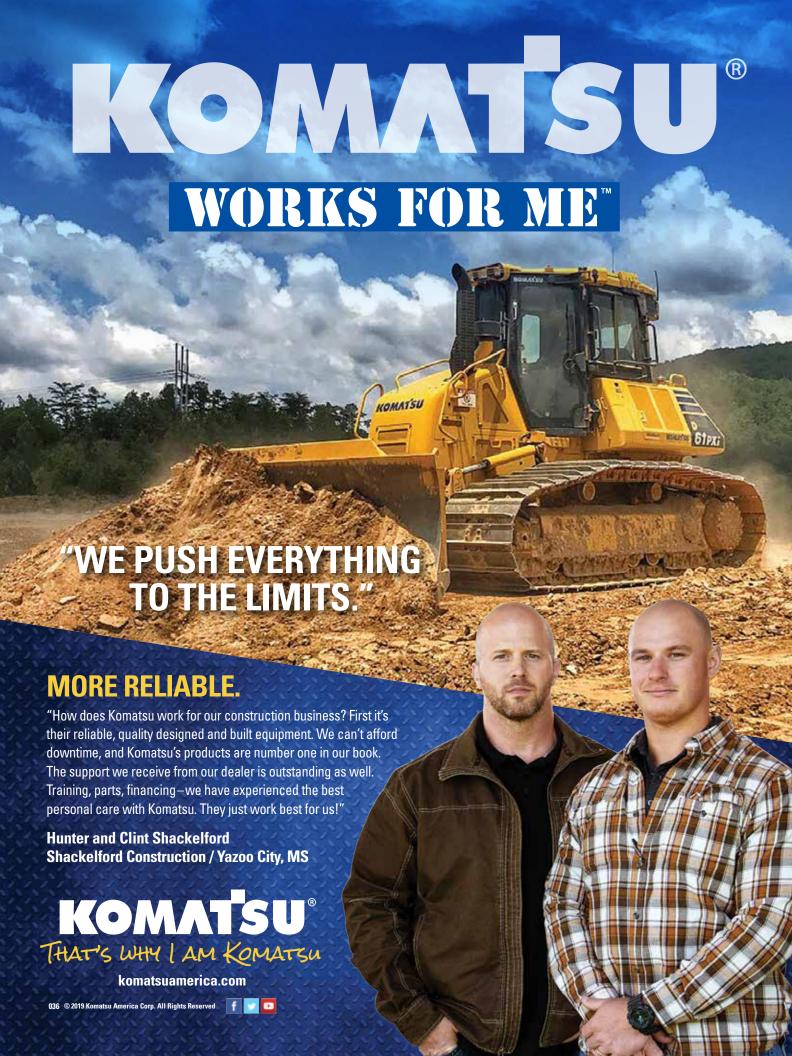
The result is an intuitive technology that delivers productivity gains of within 6 percent of an experienced operator.

"Proactive Dozing Control logic tracks, collects and interprets terrain data, then makes decisions based on that information," said Morris. "It can now calculate when to cut and when to carry material, while also allowing the operator to provide input on where the blade should be based on existing ground. The new system enables the operator to use automatics in applications such as stripping topsoil or spreading fill."

'Grass to grade'

With Proactive Dozing Control logic, operators are able to use the technology at all times, boosting efficiency and productivity.

"Using machine control exclusively for fine grading meant it was utilized only 10 to 20 percent of the time," said Morris. "Proactive Dozing Control logic gives Komatsu *intelligent* Machine Control dozers grass-to-grade automatics, which delivers greater return on investment."



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WASTE EXPO DRAWS CROWDS

Solutions and support for rugged landfill operations showcased in Las Vegas

Companies from across the country gathered in Las Vegas for the 2019 Waste Expo to see the latest innovations for the waste management industry. Educational sessions and networking opportunities supported the exhibit area where customers met with manufacturers and inspected machines.

At the Komatsu America booth, attendees could visit with company representatives to learn about new solutions for the industry.

"We're building strong relationships with our waste-market customers and developing the machines that meet their applications," said Komatsu America Chairman and CEO Rod Schrader. "Then, in partnership with our dealers, we support them very effectively with local service and parts departments."

Customer success

Waste industry professionals who utilize Komatsu products note the positive impact the equipment has made on their operations.

"We recently switched to Komatsu and, in the past year, have added more than a dozen machines, including excavators and wheel loaders," said DTG Recycling Group COO Tom Vaughn. "The maintenance support has been fantastic."

Andrew Springer with Sun Recycling in Beltsville, Md., relies on Komatsu equipment for the company's roll-off dumpster hauling and C&D recycling operations.

"We run Komatsu wheel loaders and excavators exclusively," noted Springer. "Our environment is very rough on machines, and they stand up to the test. The most critical piece has been the dealer support in getting the parts we need, when we need them."

Komatsu featured two industry-specific machines, the D85-18 dozer outfitted with a waste package and the WA380-8 wheel loader with waste-handling capabilities. Both offer solutions for landfill operations.

"The D85PX-18 dozer is fully-equipped and ready to push trash," noted Komatsu America Marketing Engineer Scott Ruderman. "It features an 18.4 cubic-yard blade with a trash rack to handle the lighter material and 30-inch track pads with clean-out holes for easier maintenance. The engine compartment is sealed, and the exterior hoses have been removed to prevent debris from contacting or damaging critical components."

Komatsu designed the WA380-8 wheel loader to be ready for harsh applications as well.

"We fully protect the bottom of the machine using a front frame underground, powertrain guard, fuel tank guard and axle seal guards," noted Ruderman. "Due to market demand, we've developed a guard that protects the fan cooling unit and rear grill from contact as well. The machine also has a corrugated screen outside of the intake system to prevent debris from entering the engine system."



Rod Schrader, Chairman and CEO, Komatsu America

The 2019 Waste Expo featured the latest innovations in the waste management industry, including a fully guarded Komatsu WA380-8 wheel loader and D85-18 dozer outfitted with a waste package.



HIGH-HEAT PROTECTION

Specially formulated HO56-HE hydraulic oil helps solve oil degradation in hot environments



Bruce Gosen, Senior Product Manager, Komatsu Parts Marketing

Using the proper fluids delivers bottom-line benefits, potentially increasing productivity and lowering operating costs. "Fluids designed to match the conditions you face offer the best protection, resulting in less downtime and extended equipment life," said Bruce Gosen, Senior Product Manager, Komatsu Parts Marketing.

Gosen pointed out that Komatsu's HO56-HE hydraulic oil is a good example. It is a zinc-based, anti-wear oil made from synthetic fluid, as opposed to traditional hydraulic fluids created from mineral oil. "This product is specially formulated to help solve oil degradation issues in hot environments," explained Gosen. "It's an ideal choice for equipment operating in desert regions or in high-temperature industrial facilities."

Specific benefits of HO56-HE:

• It has outstanding cold-start performance and excellent resistance to oxidation at high temperatures.

- It is specially formulated to maintain viscosity range throughout the full life of the fluid.
- The fluid performs with greater efficiency to reduce fuel consumption and extend oil drain intervals.
- It prevents valves from sticking, resulting in less "reactive maintenance" downtime.

"HO56-HE is more energy-efficient, so it can reduce overall fuel costs compared to conventional anti-wear hydraulic fluids," said Gosen. "HO56-HE has the potential to last longer too, reducing downtime for routine oil drains.

"It's compatible with most machines, so many companies can consolidate multiple hydraulic oils across their fleets, simplifying ongoing maintenance, which can lead to greater savings," Gosen added. "We encourage anyone needing a high-performance hydraulic oil to contact their distributor for HO56-HE."



MORE INDUSTRY NEWS

Largest autonomous truck now operating in Canadian oil sands

Komatsu's biggest autonomous ultra-class haul truck is now in operation, moving materials at an oil sands operation in Canada. With a 400-ton capacity, the new 980E-4AT builds on Komatsu's 930E Series and is one of the world's largest autonomous haulers.

The 980E-4AT has a 3,500-horsepower, 18-cylinder engine with a reliable hydraulic design. It also features a two-stage turbocharging system to maximize fuel efficiency.

Komatsu introduced its Autonomous Haulage System (AHS) more than a decade ago; then, in late 2018, it reached two billion tons hauled with its autonomous trucks. There are more than 130 AHS Komatsu trucks in operation worldwide.

"The introduction of these 980Es into the AHS environment was possible thanks to our customers and distribution partners," said Dan Funcannon, Vice President/General Manager, Large Mining Truck Division. "They're a big reason why Komatsu has the most autonomous systems, in the most mines, hauling the widest variety of material in the world."



OVERWHELMINGLY POSITIVE

Drone use report: Most companies say benefits of the technology far outweigh the cost

Ninety-two percent of companies that use drones say the benefits of this innovation exceed the costs, according to the "State of Commercial Drone Use" report recently released by Blue Research, which contacted more than 1,700 medium and large businesses for its study. The findings noted that 10 percent of surveyed companies with revenues of more than \$50 million currently use drones.

For 88 percent of respondents that utilize the technology, return on investment was

achieved in a year or less. About half said that taking drones away would negatively affect their bottom lines.

Construction is one of the prominent industries using drones, with a 35-percent adoption rate. Nine out of ten firms with drones reported that the devices allow them to capture more information, save time and increase efficiency. Seventy-five percent said drones increase worker safety, and 71 percent cited a competitive advantage as a benefit.

"One of the things we really struggled with was figuring out how companies are using drones. Much of the research focused on hobbyists, the military, etc.," explained Mariah Scott, President of Skyward, which commissioned the study and prepared a subsequent webinar titled, "Drones in Big Business: The State of Drones at \$50M+."

Majority handle it in-house

The report also found that less than 40 percent of companies hire outside help for their drone programs, including flights, data processing and data analysis. "Sixty-three percent are not outsourcing any of these activities," shared Scott. "This number was much higher than expected. It's very encouraging news about the ability of large companies to incorporate new technology."

Challenges to adopting a drone program included staying up to date on laws and regulations. Access to controlled airspace was another obstacle.

Two percent of respondents plan to start a drone program within a few months. Another 7 percent said they will begin using drones at some time in the future.



Large companies that use drones are overwhelmingly positive about the technology, citing the ability to capture more information, save time and increase efficiency among the primary benefits, according to a recent study. Almost 90 percent of companies that use drones said they saw a return on investment within a year.

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