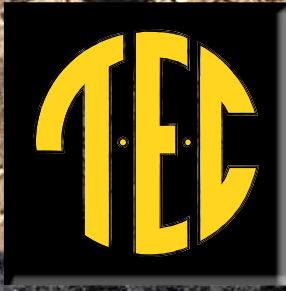


March 2023



Tractor Times



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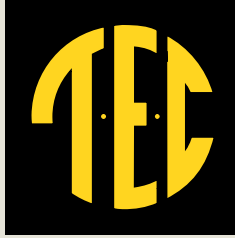
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A Message from the CEO



Chad Stracener

**Fuel savings,
reduced
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Dear Valued Customer:

I hope that your year is starting off well! We remain optimistic that 2023 will be a solid year in the Alabama, Florida and Georgia markets.

Choosing the right equipment for the job can help ensure maximum productivity and fuel efficiency. On traditional dirt jobs, a solid option is Komatsu's innovative Hybrid HB365LC-3 excavator that converts swing braking into electric energy that is stored and used to provide swing power. Compared to standard machines, the hybrid can also cut emissions significantly, which helps reduce your carbon footprint and improve sustainability measures. If you have interest in learning more about this machine, please contact your sales representative to arrange a demo.

Speaking of innovation, no one does it quite like Komatsu with its suite of Smart Construction solutions. Check out the articles on how Drone, Dashboard and Remote are helping customers save time and reduce costs with the increased efficiencies these solutions provide.

You can also read about Komatsu's D85EX-18 dozer, which won the Highest Retained Value Award for large dozers from EquipmentWatch.

Our mission is to provide you with helpful information, the best equipment and world-class service. We will continue to do so in 2023 and beyond.

As always, if there is anything we can do for you, please feel free to call or stop by one of our 20 locations.

Sincerely,

A handwritten signature in black ink that reads 'Chad Stracener'.

Chad Stracener
CEO



Tractor Times

TEC1943.com

In this issue

HCL Contracting LLC pg. 4

See how this firm completes milling, paving and sitework projects.

Dogwood Site Contractors LLC pg. 8

Meet the Donalds, whose company provides turnkey services.

Industry Outlook pg. 12

Discover what is in store for the construction industry in 2023.

Guest Opinion pg. 15

Listen to Sam DeBaltzo's advice about liens.

Smart Construction pg. 16

Move earth faster and save money with Smart Construction solutions.

Greener Excavator pg. 18

Check out Komatsu's Hybrid HB365LC-3 excavator.

Customer Success Story pg. 20

Find out how Emery Sapp & Sons Inc. reduces costs.

Savings for You pg. 23

Take a look at Komatsu's genuine Reman NOx sensors.

Battery Maintenance pg. 25

Follow these tips when handling batteries.

Top of the Heap pg. 27

Read about Komatsu's D85EX-18 dozer.

Forestry Focus pg. 29

Get a glimpse of Komatsu's new XT-5 tracked harvesters.

Industry Insight pg. 31

Examine the correlation of traumatic injuries and high temperatures in the construction industry.



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HCL Contracting LLC offers milling, paving and sitework services and uses technology to increase efficiency



Casey Smith,
President



Adam Lowery,
Vice President



Discover more at
TECTractorTimes.com

Since graduating high school in 2004, Casey Smith has lived and breathed the construction industry. His company, HCL Contracting LLC, has multiplied in size and expanded outward from the Mobile, Ala., market to provide milling, paving, sitework and material hauling services from Louisiana to Florida.

"My dad started the business to give me a job out of high school," recalled Smith. "We would fix potholes out of a flatbed truck, just the two of us. HCL's cup of tea was always paving work until we saw an opportunity to expand into the dirt industry around 2015."

HCL hired Vice President Adam Lowery in 2015 to oversee office operations while Smith managed the field. Today, General Superintendent John Stacey leads the dirt side of the business, and Asphalt Supervisor Branden Little oversees the paving division. The company's nearly 50 employees are split between three crews — milling, paving and dirt work — and complete a 60/40 split between paving and dirt projects.

"Completing patchwork turned into building driveways, which led to subdivision sitework and milling and paving big box retail stores' parking lots," explained Smith. "We focus

on industrial and commercial jobs but have recently added county work and state jobs to our project list."

Introducing iMC

Over the last year and a half, HCL's crews have completed state projects such as mass grading and paving a new bridge over Wilmer Georgetown Road and opening two lanes for the "new 98 alignment," which is a four-lane highway between Mississippi and Highway 158 in Saraland, Ala. The scope of work fit well within the company's capabilities.

"On the 98 alignment, we cleared it, stripped it, laid all the pipe, did all of the grading, and dumped and fine-graded the base, then let a partner company take it over from there," noted Smith. "The Wilmer Georgetown job had about 200,000 yards of muck, 200,000 yards of unclassified and 300,000 yards of import. It was a 320-working-day project, but we finished it up with 30% of the time left."

Smith credits HCL's Komatsu intelligent Machine Control (iMC) equipment as one of the main reasons why HCL was able to work efficiently and stay ahead of schedule.

An HCL paving crew lays an asphalt mat at a residential subdivision with a VÖGELE VISION 5100-2 paver. "The 5100 paver has sensors for your sonic eyes that capture your mat thickness, dirt and curb while you're operating," said Asphalt Supervisor Branden Little.

▶ VIDEO





► VIDEO

With a Komatsu D61PXi-24 intelligent Machine Control (iMC) dozer, an operator mass grades material at HCL's new 98 alignment job. "You can take an inexperienced operator, and within six months, they're a finish operator with comparable results to somebody who has been operating for 20 years," said President Casey Smith.

"We fully committed to GPS in 2017 and haven't used a wooden stake since making the change," commented Smith. "For instance, we have a D61PXi dozer on the new 98 job that is mass grading our sand clay basin. We use our PC210LCi excavator to dig ditches and lay our storm drain. We don't have to use a pipe laser to check grade. With the GPS-equipped machines, all we have to do is give each machine its CAD (computer-aided design) file for the job, then turn the crews loose."

According to Smith, the firm initially gravitated toward iMC equipment to compensate for the labor market challenges, but now he could not imagine completing a project as efficiently without the technology.

"You can take an inexperienced operator, and within six months, they're a finish operator with comparable results to somebody who has been operating for 20 years," said Smith. "The GPS and iMC technology take the guesswork out of operating."

Stacey added, "On a 30-foot fill, we can put in 8-inch lifts, get it 6-inch compacted and get a test on it because you're not sitting there having to eyeball it."

The iMC dozers and excavators work well with HCL's Komatsu GD655 motor grader, which is equipped with Total Station.

"The motor grader allows us to clip the road before paving without waiting a week to set up hubs," said Stacey. "We can avoid stringlining the surface, which saves time."



HCL utilizes its Komatsu PC210LCi-11 iMC excavator to dig ditches and lay storm drain.

Milling and paving efficiently

HCL's fleet also includes WIRTGEN mills, VÖGELE pavers and HAMM rollers.

According to Smith, it's typical for a big box store to hire HCL to replace a 15-year-old parking lot, which includes milling 1.5 to 2 inches, sweeping the surface, and laying the asphalt.

"On a project of that size, we could mill 9,000 square yards of asphalt per day with our WIRTGEN mill," said Smith. "At a big box retail job we did in Foley, Alabama, we removed 6,000 tons of asphalt and put a new surface down in two weeks — in and out."

Continued...



John Stacey,
General
Superintendent



Branden Little,
Asphalt Supervisor

'TEC has always had our back'

... continued



(L-R) HCL's John Stacey, Casey Smith and Adam Lowery work closely with TEC's Chris Howard for any equipment or service needs. "The service that we get out of them is second to none," commented Lowery. "We love to do business with them every day."



With a HAMM HD12 tandem roller, an operator compacts an asphalt mat.

An operator clips a road with a Komatsu GD655 motor grader equipped with Total Station.



At a residential subdivision job, HCL recently laid 2 inches of three-quarter binder with a VÖGELE VISION 5100-2 paver.

"The technology on the WIRTGEN GROUP machines allows us to function within tight tolerances," noted Smith. "The VÖGELE paver's ski poles provide tighter accuracy than anything else we've used in the past. Whether we're measuring cross slope or the grade, it's spot on."

"Once you set your parameters with a WIRTGEN machine, you can essentially turn it on and go," added Little. "The 5100 paver has sensors for your sonic eyes that capture your mat thickness, dirt and curb while you're operating. Having lower control panels on either side of the paver that are separate from the operator's control panel means your crew can collectively monitor your auger speed and mix speed, and control your side gates."

TEC support

Since Smith and his father founded HCL, the company has worked closely with Tractor & Equipment Company (TEC), especially sales representative Chris Howard, to fill its equipment needs.

"My dad bought a used dozer from Chris in 2005, and we've built a relationship since then," said Smith. "TEC has always had our back. If something breaks down, they're Johnny-on-the-spot to fix it."

"When I joined HCL, it was evident TEC was one of the best providers in our market," noted Lowery. "If we need parts or have a question, their service department gets us running in an expedited amount of time. That directly impacts our uptime and bottom line. The service that we get out of them is second to none. We love to do business with them every day."

Future

Smith believes HCL is in a good position and plans to continue seeking similar-sized milling and paving jobs, while also taking on larger sitework jobs.

"Retirement is still a decade down the line, but it's something I'm aware of," noted Smith. "We have a lot of great employees who know how to run the business and want to continue growing where it makes sense. Eventually, we would like to put together a board of directors and help direct the company for the next generation." ■



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Dogwood Site Contractors LLC provides turnkey services on residential, industrial and commercial projects in Atlanta



Ashley Donald,
Owner/CEO



Matt Donald,
President



Jerry Tipton,
Operations
Manager

For Dogwood Site Contractors LLC founders Matt and Ashley Donald, the dogwood tree symbolizes rebirth and growth. Their turnkey site contracting company in Marietta, Ga., embodies both of those elements.

"Ashley and I started the business after years of working in construction and development," said Matt. "The market in Atlanta had really exploded after the COVID pandemic, and we saw a need for more site contractors. Jerry Tipton, who's our operations manager, and I were working together, and the three of us decided it was a risk we were willing to take. In July of 2021, we completed our first project — tearing down a pasture fence for a growing community south of Atlanta."

Now, Dogwood Site Contractors has over 100 employees. The Donalds attribute the company's expeditious growth to their experienced staff as well as their commitment to conducting business with integrity and character.

"We've grown from not owning a shovel to one of the bigger site development contractors in Georgia," noted Matt. "Our senior leadership, specifically Jerry and some of the folks who we've been fortunate to work with, have built a phenomenal reputation in this industry over the past 20-plus years. That stuff spreads like wildfire. When you continue to get good people

with good character more people follow. It starts a tidal wave of growth. That's been amazing to watch. I think you'll be blown away by the folks we have operating equipment, using the shovels, answering phone calls, putting bids together, completing takeoffs, doing payroll. It is a collective of fantastic people."

Dogwood Site Contractors initially invested heavily in residential site development for build-to-rent and single-family homes. Recently, the company added industrial and commercial projects to its scope of work. A majority of the firm's contractors are within the Atlanta metro area.

Adding iMC equipment

At its Hickory Level job site in Villa Rica, Ga., Dogwood Site Contractors transformed 19.5 acres of undeveloped land into a 117-multifamily townhome community. The project was a typical size for the firm, and the staff took it from clearing to paved roads. Throughout the life of the project, Dogwood Site Contractors moved over 100,000 yards of on-site and import material. Crews installed 9,000 linear feet of sewer and 4,000 feet of storm, drain and water.

To complete projects like Hickory Level, Dogwood Site Contractors relies on its fleet of Komatsu machines, including multiple intelligent Machine Control (iMC) dozers — D61PXi-24, D71PXi-24, D65PXi-18 and D155AXi-8 models — as well as PC360LCi-11, PC390LCi-11 and PC490LCi-11 iMC excavators. The firm also has several Komatsu wheel loaders, ranging from the WA320-8 to the WA380-8, and uses Komatsu HM300-5 articulated trucks to haul material.

Matt emphasized that the iMC equipment helps Dogwood Site Contractors meet tight deadlines.

"It's critical for us to be able to do the work one time effectively and correctly," said Matt. "The iMC provides a kind of standard for us where we build our models, we put them into those machines, and the guys are able to install it and get it right the first time, so we're not having to do it again."

Dogwood Site Contractors typically uses the D61PXi and D71PXi dozers to fine grade lots and roads, while the D155AXi is mainly used to move material.

Operator Karson McCarthy moves material with a Komatsu D61PXi-24 intelligent Machine Control (iMC) dozer at Dogwood Site Contractors' Hickory Level job site. "The one thing that I like most about this dozer is that it's very good on slopes," said Karson.



► VIDEO





At Dogwood Site Contractors' Hickory Level job site, an operator uses a Komatsu PC490LC excavator to load material into the bed of a Komatsu HM300 articulated truck.

"With Komatsu dozers, you can see everything around you, which increases safety," said Jerry. "They're well balanced and strong. Some of our machines are already pushing 2,000 hours, and we've had very little issues. They've been really good machines."

For operator Karson McCarthy, the D61PXi dozer provides several advantages compared to competitive brands.

"The one thing that I like most about this dozer is that it's very good on slopes — you can do work at a 2-to-1 slope like it's no problem at all," commented Karson. "Whenever I'm fine grading building pads or roadways, the GPS system in this dozer works very well with different contour lines and different sections of pads to grade out. Basically, it shows me what areas need to be cut, what areas need fill dirt, what areas need to be fine-tuned, and what areas have been missed."

To mass excavate material and load its HM300 trucks, Dogwood Site Contractors primarily uses its Komatsu PC490LC and PC490LCi excavators.

Superintendent Luis Saturnino said, "Out of all the equipment I've run — and I've been operating machines for over 10 years — the 490 is the best machine to have on your job site. We use it to dig trenches for pipes as well as lay the storm and sewer piping. It's strong, fast and very comfortable. It has heated seats, AC and a radio. It is a great piece of equipment."



► VIDEO

An operator digs a trench with a Komatsu PC490LC excavator. "Out of all the equipment I've run — and I've been operating machines for over 10 years — the 490 is the best machine to have on your job site," commented Superintendent Luis Saturnino. "It's strong, fast and very comfortable."

According to Jerry, training new operators on the iMC machines reduces the learning curve and makes them more productive faster.

"The generation that's entering the workforce is accustomed to having technology at their fingertips in everything they do," Jerry noted. "With the iMC equipment, it's basically like playing a video game. At the end of the day, they can look back and see how productive they were and take pride in their work."



Discover more at
TECTractorTimes.com

Continued...

'We would not be where we are today without TEC'

... continued

TEC key to growth

When Dogwood Site Contractors began searching for an equipment distributor, they met with TEC sales representative Mack Brice.

"We would not be where we are today without TEC," stated Ashley. "Mack and TEC took a leap of faith on us and have matched our vision for where Dogwood Site Contractors can go. They've shown a commitment to building a relationship and acted with integrity to take care of our equipment and make sure we have the right machines for the right jobs."

Dogwood Site Contractors utilizes TEC's complimentary Komatsu Care, which offers routine maintenance at regular intervals for the first three years or 2,000 hours of a

machine's life. The program allows Dogwood Site Contractors to focus on growing the business instead of maintaining equipment.

"A TEC technician will contact us when a service is due and work around our schedule to limit downtime," noted Jerry.

"They handle 90% of the services on our Komatsu equipment," added Matt.

Plus, if a situation comes up where Dogwood Site Contractors needs assistance or has a question about the GPS equipment, TEC's service center and GPS specialists answer the phone and walk through the solution.

"They've been great," said Jerry. "We've not had any issues at all."

Dogwood Site Contractors also appreciates that TEC has multiple locations across its footprint.

"You make a call and somebody's within an hour or hour and a half from you no matter where you are in Georgia or in the South," stated Jerry.

Continued growth

As the demand for new infrastructure throughout the southeastern United States continues to grow, the Donalds and Dogwood Site Contractors plan to continue seeking new opportunities in that area.

"We want to go where our clients and relationships take us," stated Matt. "Our clients trust us to complete jobs the right way the first time, and we plan to continue delivering that reliability as new projects become available. Dogwood Site Contractors didn't mean anything the day we registered with the Georgia Secretary of State; our hope is that over the next five, 10 or 20 years, people see what we stand for by how we act and what we do." ■



▶ VIDEO

(L-R) Dogwood Site Contractors' Jerry Tipton, Ashley Donald and Matt Donald work closely with TEC's Mack Brice. "Mack and TEC took a leap of faith on us and have matched our vision for where Dogwood Site Contractors can go," stated Ashley.

The Dogwood Site Contractors team gathers in front of their Komatsu and HAMM equipment at the Hickory Level job site.



A JOHN DEERE COMPANY

A large-scale construction site under a bright, sunny sky. In the foreground, a green Wirtgen roller is compacting a layer of gravel. Behind it, a large Wirtgen paver is spreading material. Further back, a yellow Wirtgen machine is visible. Several workers in high-visibility vests are on the site. The ground is uneven, with piles of dirt and gravel.

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Bipartisan Infrastructure Law positively impacts transportation, overall forecast is mainly flat due to inflation concerns

In late 2021, President Joe Biden signed the \$1.2 trillion Infrastructure and Investment Jobs Act (IIJA) into law, which was a historic investment in the nation's infrastructure and transportation funding. The Bipartisan Infrastructure Law has had a positive effect and will continue to do so in 2023, according to several construction industry professionals as they forecast this year's outlook.

During testimony before the Environment & Public Works (EPW) Committee in late 2022, American Road & Transportation Builders Association (ARTBA) President and CEO Dave Bauer told senators that 29,000 transportation improvement projects are moving forward thanks to the Bipartisan Infrastructure Law. Bauer highlighted ARTBA's economic analysis, showing that highway formula funds supported 2,500 more safety, mobility and maintenance improvements in 2022 than in 2021, while the number of \$100 million projects increased from 18 in 11 states to 24 in 14 states.

"Though each project has a unique story of need and solution, they are all tangible illustrations of the impacts underway from the leadership of this committee in delivering generational investments through

a multiyear surface transportation program reauthorization," said Bauer.

The Bipartisan Infrastructure Law reauthorized surface transportation programs for five years, investing \$110 billion in America's aging roads and bridges.

ARTBA estimated that highway and bridge construction spending will increase 13.4% this year to a total of \$119 billion, according to the article "2023 Forecast: Markets are Mixed for Year Ahead" published by Engineering News-Record (ENR). Dodge Data & Analytics Inc. is even more optimistic, predicting new starts will be as high as 20%, thanks to infrastructure funding. That would be an increase beyond the 23% rise Dodge forecast for the end of 2022. Dodge Chief Economist Richard Branch pointed out that only 19% of funding from the Bipartisan Infrastructure Law had been allocated by late last year.

"There's a lot of money still on the table waiting to be spent," said Branch in the Equipment World article "Dodge Economist: Prepare for a Rocky First Half of 2023." "We continue to think 2023 and 2024 are the best years for infrastructure construction. But, I could foresee, again, if we have appropriation delays, that maybe 2024 and 2025 are the best years."

Modest downturn, quick recovery

Infrastructure projects are bright spots in the overall construction industry, which has been slowed by several factors during the past year. Dodge sees it as relatively flat in 2023, with a slight decline. Fails Management Institute (FMI) forecasts a 1.3% decline.

"I don't think this is another great recession," said Jay Bowman, Principal of Industry Management Consultant for FMI in the ENR article. "I'll take flat over down any day of the week."

Branch noted that inflation will be a big factor going forward, along with other causes for concern such as the war in Ukraine and oil production cuts by the Organization of the Petroleum Exporting Countries (OPEC). Branch's forecast assumes that core inflation will improve, and there will not be any major shocks. If his predictions are correct and everything remains stable, Branch believes a "technical

Multifamily housing appears to be a bright spot in the residential sector. Dodge predicts a 1.4% rise in starts, while FMI sees a nearly 6% jump.





The Bipartisan Infrastructure Law will give a boost to projects such as roads, bridges, canals, broadband, utility upgrades and more in 2023, according to industry forecasters. ARTBA estimated that highway and bridge construction spending will increase 13.4% this year to a total of \$119 billion. Dodge is even more optimistic, predicting new starts to be as high as 20%, thanks to infrastructure funding.



recession" could be avoided with economic stabilization and recovery starting in the latter half of 2023. He added that a strong banking system and undersupplied housing market are favorable for the construction industry.

"We're sitting at 14- to 15-year highs in the Dodge Momentum Index, so it should provide some semblance of confidence and reassurance that developers and owners are continuing to put projects into the queue despite the fact that we're concerned about what might happen when interest rates keep rising and the economy slows down in 2023," said Branch.

In its most recent outlook, the Portland Cement Association (PCA) projected a near-term demand decline of about 3.5% for 2023, the first decline in 13 years. It expects the slowdown to be short, with growth returning in 2024.

"Due to inflation and rising interest rates, economic growth is expected to remain sluggish through mid-2023 with unemployment

reaching 4.7%," said Edward J. Sullivan, PCA Chief Economist and Senior Vice President. "Inflation is expected to remain high, leading to further monetary policy tightening through this year and into early next."

Sector gains

While both Dodge and FMI predict overall construction starts to be down in 2023, both foresee increases within several sectors. Dodge predicts a slight increase in total residential construction, including 1.4% in the multifamily category. FMI anticipates a nearly 6% jump in multifamily, despite overall residential starts being lower.

Dodge and FMI have opposing outlooks on total non-residential as well. FMI is optimistic of a 4.4% rise, led by the manufacturing sector with a jump of 15.4%. It sees lodging, amusements and recreation, education, health care, commercial and public safety all getting boosts. Dodge predicts increases for hotels and motels, stores and shopping centers, and education. ■

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Subcontractors, don't waive your right to a lien

In the course of reviewing construction subcontracts, I've recently seen provisions similar to the following (simplified for convenience and confidentiality):

- "The subcontractor shall reimburse the [contractor and/or owner] for any costs and expenses for any claim, obligation, or lien that arises from the performance of the work."
- "The subcontractor shall remove and discharge any lien, claim, security interest, or other encumbrance related to the subcontractor's performance of the work."

The provisions are often followed with boilerplate requirements for paying the third-party claimant, bonding, reimbursement of attorneys' fees, indemnification responsibilities, or other ways of providing security to the owner or general contractor.

The purpose of these types of provisions is clear: Owners want their projects completed free of liens, and they want the person responsible for the work to make sure that happens. This is an understandable position, and it is reasonable for any construction contract to require lien waivers. The problem is that these provisions do not require payment prior to the waiver.

Yes, if a subcontractor is paid, it should agree to keep the project clear of liens and remove any

liens filed by its respective subcontractors or suppliers. But, until payment has occurred, retaining the powerful lien right is essential for any prudent subcontractor. Whether intentional by the drafting party or not, these provisions suggest the subcontractor is agreeing to waive its lien rights even when the owner or contractor fails to pay.

Simple solution

With these specific provisions, I find the solution is simple and relatively unobjectionable; I like to add "provided subcontractor has been paid for the work" at the beginning of the phrase.

Subcontractors should be on the lookout for these and other potential pitfalls, and make sure they do not unwittingly leave themselves unprotected by accepting provisions that are inherently unfair. ■

About the Author: Sam DeBaltzo has a wide variety of experience representing clients in real estate transactions and the purchase, sale and leasing of real property. He additionally provides counsel in several related industries, working routinely with construction, architect and engineering contracts. His business law experience includes general corporate matters and representation of both for-profit and non-profit businesses in mergers, acquisitions and dispositions. For more information, visit tonkon.com.



Sam DeBaltzo,
Associate Attorney,
Tonkon Torp LLP



Until payment has occurred, retaining the powerful lien right is essential for any prudent subcontractor.

Smart Construction solutions, iMC help Castle's Renewable Energy Division move earth faster with decreased costs



Chris Scheve,
Vice President,
Renewable Energy



Joel Brewton,
Vice President of
Asset Management &
Centralized Services

The company known today simply as Castle was originally founded as Progressive Pipeline in 1999 by Mike Castle Sr. His business focused on providing service to the oil and gas industry with jobs done with integrity, on time and on budget. That strategy proved highly successful, and within three years, the company landed its first multimillion-dollar contract, which led to the creation of more divisions within the firm.

In addition to Pipeline, Castle's divisions now include an Integrity Group, a Facility Group, Directional Drilling, Environmental Reclamation, and its latest undertaking: Renewable Energy, which focuses on sitework and other services for wind and solar projects.

"Castle saw the transition to renewables and wanted to be a part of that," said Vice President Chris Scheve, who joined the company about a year ago and has helped spearhead the formation and expansion of the Renewable Energy Division. "With our skilled workforce and our equipment, it's a nice fit to move over and do the renewables effort."

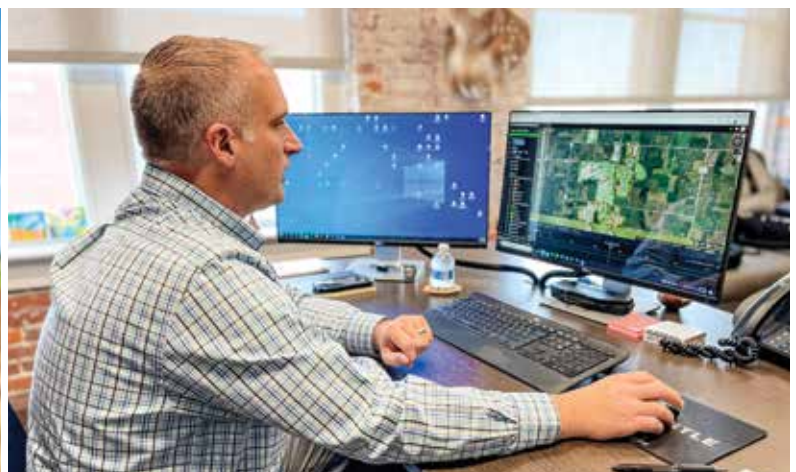
Joel Brewton, Vice President of Asset Management & Centralized Services, added, "Outstanding service is our hallmark, and that's really built around doing things safely and efficiently. We believe that goes hand in hand with delivering solid production. We are

always seeking ways to improve our practices. Technology — such as the Komatsu Smart Construction machinery and solutions we now use — is playing an increasingly bigger role for us because we see the benefits it is delivering in terms of cost and time savings."

Brewton and Scheve emphasized that the two large solar projects that Castle's Renewable Energy Division recently took on in Wisconsin are prime examples. About a year ago, Castle began site preparation, including putting the sites to grade, building basins, and handling erosion control. Between the two, Castle team members moved about 700,000 yards of dirt.

"Our Onion River project, which is the bigger of the two, involved about 18 different sites, so it was pretty spread out," explained Superintendent Rocky Hartwick. "We started in July and had the mass grading done by the end of the year. Our Crawfish River project began earlier, and the grading was basically done within a relatively short timeframe."

Hartwick continued, "These projects were our first ones using Komatsu's intelligent machines, and we were very impressed with the ability to use the integrated GPS from grass to grade. Using traditional methods, we cut approximately two acres to grade each day. Komatsu's intelligent machines allowed us to



Komatsu's Jason Anetsberger (left) uploads data from the Smart Construction Drone flights to Smart Construction Dashboard. Castle's Joel Brewton (right) uses Komatsu's Smart Construction Dashboard in his office in Meridian, Miss., to check the progress of Castle's job sites in Wisconsin.



► VIDEO



An operator cuts grade with a Komatsu D71PXi-24 intelligent Machine Control (iMC) dozer on Castle's Onion River project near Adell, Wis. "We were very impressed with the ability to use the integrated GPS from grass to grade," said Superintendent Rocky Hartwick. "The accuracy and efficiency are spot on."

do 10 to 12 acres without the need for a grade checker because the machines always know where they are in relation to final grade. The accuracy and efficiency are spot on."

Using Smart Construction solutions

Throughout the projects, Castle has used Komatsu intelligent Machine Control (iMC) dozers and excavators, as well as Smart Construction Drone, Smart Construction Dashboard and Smart Construction Remote. Castle also purchased its own drone, and staff members received training from Komatsu, so they could conduct flights independently.

"Komatsu corporate has been a big part of helping us learn the intelligent system as well as incorporating drone flights to verify that what the machines are seeing is exactly what we're seeing," Scheve explained. "We've made drone flights a standard, so before we ever move a speck of dirt, we do an initial flight of the sites to make sure we have accurate models to work from. CAD (computer-aided design) files are developed from those, and those models are uploaded to the intelligent machines. We do subsequent flights about a month apart to check progress and verify how much dirt was moved, and that gets uploaded to Dashboard. That information helps us put together as-built models we can show to the customer and keep accurate records."

Brewton said that level of accuracy has been impressive to Castle and its customers.

"We are a very schedule-driven contractor," Brewton stated. "When we make a schedule, we want to stay on it. Drone flights let you verify a site within a matter of hours rather than days with the old methods of walking the site and staking it. Instead of taking maybe 20 shots with a rover and a stick within a 10-foot section, the drone is shooting thousands of points in that same area, so it's delivering a more accurate picture. Billing is another advantage we see. We don't want to overcharge our customer or be underpaid. With the drone, you can verify exact quantities, and you get paid for exactly the work you've done, and that's what we want."

Additional adoption

Increased productivity and efficiency with Komatsu iMC machines and Smart Construction solutions on the Renewable Energy Division's Wisconsin projects have encouraged the Castle team to expand their usage of technology.

"Recent legislation is only going to put additional significant dollars into renewables, and we have customers asking us for commitments for several years out; making the investment makes sense," said Scheve. "We see the applications for the machines and solutions in our other divisions too, such as Pipeline, so we are looking into how to adopt it for those going forward." ■

***The opinions expressed here are from the end users who are quoted.*



Watch the video

Hybrid HB365LC-3 excavator offers significant fuel savings and helps reduce your carbon footprint with lower emissions



Kurt Moncini,
Senior Product
Manager,
Komatsu

Looking for ways to increase production while reducing costs? In today's economy with diesel prices higher than ever, using a hybrid excavator such as Komatsu's Hybrid HB365LC-3 is a solid solution, according to Kurt Moncini, Senior Product Manager, Komatsu.

"Hybrid technology continues to grow and be adopted in the automotive world, and the construction industry is coming around to the benefits such as lower fuel costs and emissions," said Moncini. "The HB365LC-3 offers increased fuel efficiency without sacrificing power, so the overall performance is outstanding. A topper on the cake is the added benefit of reduced emissions that lowers your carbon footprint and promotes sustainability."

Moncini continued, "Based on EPA's (Environmental Protection Agency) CO2 formula, the Hybrid potentially offers an up to 20% reduction in CO2 emissions compared to the standard PC360LC-11. It's a big win all around."

Komatsu introduced the 36-ton Hybrid HB365LC-3 — the industry's first true hybrid in that class size — in 2017. Since then, thousands have been used around the world for all types of excavation, loading trucks and to perform other tasks. The HB365LC-3 followed the introduction of Komatsu's first hybrid excavator, which was launched in 2008.

"The Hybrid HB365LC-3 has equal or better performance than our standard PC360LC excavator, but with fuel savings that could be as high as 20%, depending on application," said Moncini. "It's a great fit for construction companies that use excavators in high-swing applications, as well as for feeding crushers in quarry, recycling and demolition applications where swing is a constant."

An electric swing motor captures and regenerates energy as the upper structure slows down and converts it to electric energy.

Moncini explained, "It's using energy that would normally be wasted and makes it available to do work, contributing to increased efficiency and decreased diesel usage."

Highly responsive

The energy captured during each swing braking cycle is stored in the Hybrid HB365LC-3's ultracapacitor. Each time the excavator swings, the capacitor discharges electric power to the electric swing motor.

"A traditional battery requires time for the chemical process that releases electricity to occur," stated Moncini. "The heavy work nature of construction equipment places a much faster demand on power transfer. The ultracapacitor's ability to store and discharge energy quickly makes it ideal."

He added, "When it comes to the boom arm and bucket, the capacitor drives the swing, and all available engine horsepower can go into the

Komatsu recently improved the warranty on the HB365LC-3's hybrid components to seven years or 15,000 hours. The warranty covers the electric swing motor, motor-generator, capacitor and inverter.





"The Hybrid HB365LC-3 has equal or better performance than our standard PC360LC excavator, but with fuel savings that could be as high as 20%, depending on application," said Kurt Moncini, Senior Product Manager, Komatsu. "It's a great fit for construction companies that use excavators in high-swing applications, as well as for feeding crushers in quarry, recycling and demolition applications where swing is a constant."

hydraulic system. This creates faster cycle time and a very quick, responsive swing. It's snappy."

In addition to powering the swing motor, the ultracapacitor sends electric energy to the engine via the motor-generator. This energy is used to accelerate the engine from an ultra-low idle speed of 700 revolutions per minute (rpm) and improve hydraulic response.

Tier 4 and more

Komatsu recently improved the warranty on the HB365LC-3's hybrid components. The special hybrid component warranty term is now up to seven years or 15,000 hours and covers the electric swing motor, motor-generator, capacitor and inverter. If you sell the excavator, the warranty is transferrable.

The Hybrid HB365LC-3's 269-horsepower engine is a six-cylinder with a Komatsu aftertreatment system that meets U.S. EPA Tier 4 Final emissions regulations. A Komatsu Diesel Particulate Filter (KDPF) and Selective Catalytic Reduction (SCR) work together to inject Diesel Exhaust Fluid (DEF) and decompose nitrous oxide into non-toxic water and nitrogen.

Komatsu Care comes standard, including two complimentary KDPF exchanges and two SCR

services during the first five years with unlimited hours. It also covers scheduled maintenance for the first three years or 2,000 hours. All work is done by factory-trained distributor technicians.

Hours and key performance data can be tracked remotely with Komtrax. Operators can see the information first-hand on the 7-inch, color LCD monitor, including a capacitor charge gauge, DEF levels and a rear-view camera. Komtrax has an Operator Identification System that records machine-operation and application data for up to 100 individual ID codes.

Operators will also appreciate lower noise levels in the spacious ROPS (roll-over protective structure)-certified cab. Features include vibration-dampening mountings and a fully adjustable, air-suspension seat and arm rests. A Bluetooth AM/FM radio is now standard on new machines.

"Users are raving about their productivity and cost savings," said Moncini. "It's not the right machine for every application or job site, but on those swing intensive jobs where it fits, it really stands out. We encourage anyone who uses excavators in the 36-ton class to contact their distributor for more information and to set up a demonstration." ■

Quick Specs

Model
Hybrid HB365LC-3

Horsepower
269 hp

Operating Weight
81,791-85,495 lbs.

Bucket Capacity
0.89-2.56 cu. yd.



Learn more

Emery Sapp & Sons Inc. reduces costs by utilizing Smart Construction Remote to transfer files from the office to the field



Tyler Grotewiel,
Surveying and
Construction
Technology
Manager



Watch the video

Valuing hard work, investing in its employees, adapting to the markets, and taking chances on new opportunities has made Emery Sapp & Sons Inc. (ESS) successful. For the past 50 years, that formula has propelled the Columbia-based firm into one of Missouri's largest full-service civil contractors with about 1,800 employees.

"Our capabilities include everything from full site development to bridge installation to every aspect of paving," said Tyler Grotewiel, Surveying and Construction Technology Manager. "We have over 200 projects in the works at any one time. In addition to core values, ESS has always been very forward-looking when it comes to adopting technology that increases efficiency on every site."

One of the company's earliest technology adoptions was adding aftermarket GPS grade control systems into its earthmoving operations, which improved its productivity.

More recently, ESS began utilizing Komatsu's intelligent Machine Control (iMC) dozers.

"When I started here 17 years ago, we had a few machines with GPS, and now we have more than 100," said Grotewiel, noting that ESS has also adopted GPS in its paving operations. "Knowing where you are in relation to final elevation and only having to move dirt once really increased our efficiency. It also cut costs because there is no rework, less wasted material, and no need for a grade checker. Every site we do now has a GPS model, whether it's a small parking lot or a large highway job."

"Solution we needed"

Grotewiel manages a group of about 30 people at ESS who focus on construction layout and prepare data files for machine control. About one-third of them are building 3D GPS models from the data as well as from CAD (computer-aided design) drawings from engineers and transportation departments.

"Our staff is outstanding at building accurate models that can be uploaded directly into the machines, but as anyone in the construction industry knows, plan changes are inevitable," said Grotewiel. "In the past, that meant we had to physically drive to a project with a thumb drive to update files. Our projects are spread out across a large territory that covers multiple states, so it's time-consuming and a major expense in fuel to do that. We were looking for a way to reduce or eliminate the hassle, and our research determined that Komatsu's Smart Construction Remote was the solution we needed. The fact that it's compatible with both Topcon and Trimble systems is a huge benefit. We have used it with both our Komatsu and competitive machines."

Grotewiel added, "We compared it to other solutions in the market and found Smart Construction Remote to be more user-friendly, too. The process is simple. All you have to do is log into the website, find the machine or machines that you want to send the file to, and drag and drop the file to them. It's nearly instantaneous, and the operator doesn't have to do anything. We have four offices, and I estimate that we use Smart Construction Remote about 15 times per week at each one. I don't have to



VIDEO

Tyler Grotewiel, Surveying and Construction Technology Manager at ESS, updates plans on machines in the field from his office with Komatsu's Smart Construction Remote. "The process is simple," said Grotewiel. "All you have to do is log into the website, find the machine or machines that you want to send the file to, and drag and drop the file to them. It's nearly instantaneous, and the operator doesn't have to do anything."



With Komatsu's Smart Construction Remote, ESS can send plans and updates to its machines without driving to the job site. "Our projects are spread out across a large territory that covers multiple states, so it's time-consuming and a major expense in fuel to do that," said Tyler Grotewiel, Surveying and Construction Technology Manager. "Komatsu's Smart Construction Remote was the solution we needed."

pay someone to drive the file to the job site, and the operators get the information faster."

See what the operator does

If an operator has a question or an issue, Grotewiel and his team can assist them from the office because Smart Construction Remote allows direct remote access to a machine.

"Instead of having to drive to the site, we can see what the operator sees on the screen in the machine," said Grotewiel. "If necessary, I can actually take control remotely to directly address the issue."

Operator Gage Snider says Smart Construction Remote has also notably increased the company's production.

"If there is an update, it's just done," stated Snider. "You don't have to wait on somebody to show up. It comes to the machine and is done automatically, so I keep moving dirt without having to worry about the plan being outdated. Because it's done remotely, most of the time I don't even know it's been done."

Initial setup, ongoing support

ESS worked with its local Komatsu distributor to access Smart Construction Remote. Distributor representatives helped ESS with the setup, including the installation of cellular modems that are used for communication to load and update plans.

"They remain an invaluable resource because they guided us through the initial setup, helped us through the learning curve, and provide ongoing support," said Grotewiel. "As we were adding Smart Construction Remote, our modems had to be upgraded to 4G, which was a big undertaking, and they were there every step of the way. They have ensured our successful use of Smart Construction Remote. Because of that — and the savings we are seeing — our plans include working with them to add it to more machines. We highly recommend Smart Construction Remote." ■

***The opinions expressed here are from the end users who are quoted.*



Gage Snider,
Operator



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Reman NOx sensors deliver optimal performance while lowering costs, controlling emissions and promoting sustainability

Equipment users often think of remanufacturing when it comes to engines and large components because the cost savings are significant, and they are getting “like-new” with a warranty. However, you could also save resources with smaller remanufactured items you may not have considered.

“NOx (nitrogen oxides) sensors are a great example of a high-quality, low-cost replacement option that help avoid breakdowns and reduce owning and operating expenses,” said Komatsu’s Goran Zeravica, Senior Product Manager, Reman. “A Reman NOx sensor protects your diesel engine’s aftertreatment system and promotes optimal performance with the added benefit of lowering emissions and promoting sustainability.”

Komatsu genuine Reman NOx sensors meet original equipment specifications, assembly processes and test procedures to match the performance of a new part. They help equipment users stay in compliance with regulations while maintaining productivity.

Komatsu genuine Reman NOx sensors can also help you:

- Avoid maintenance issues with new/upgraded probe tips fitted with an anti-seize lubricant that is pre-applied to the sensor threads

- Reduce wear with watertight inline connectors that verify electronic continuity between the probe and the control module
- Operate predictably with limited data from the control panel, including temperature, mileage and hours
- Reduce waste and save natural resources by reusing and salvaging components

Get the credit you deserve

Zeravica noted that sensor probes are a common failure, so remanufactured NOx sensors are fitted with new probe tips. Once the sensor probe is replaced, Komatsu Reman NOx sensors are calibrated and bench tested. Reman components are backed by a one-year, unlimited-hour warranty.

“We highly encourage that you return your used NOx sensor, so you get full core credit, even if the probe has been cut,” said Zeravica. “Contact your Komatsu distributor for additional details and work with them to acquire the right sensor and for proper installation.” ■

To learn more about Komatsu Reman, visit <https://www.komatsu.com/services-and-support/equipment-reman-assembly/>.



Goran Zeravica,
Senior Product
Manager,
Reman,
Komatsu



Discover more

A Komatsu genuine Reman NOx sensor protects your diesel engine’s aftertreatment system and promotes optimal performance. The low-cost, like-new replacement can help you avoid breakdowns and reduce expenses.



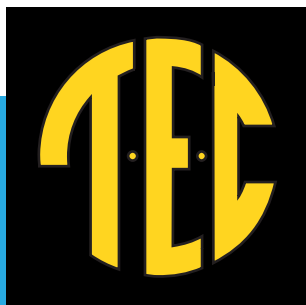
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Proper storage and handling of your equipment's batteries ensure safety, help maintain peak performance

Batteries are crucial to your equipment's productivity, and properly caring for them can ensure their performance and longevity. Here are some tips to prepare batteries for storage, so they are ready to work when you are.

"Safety is of utmost importance because batteries generate explosive hydrogen gas," emphasized Komatsu's Veronica Vargas, Product Manager, Parts. "Always wear safety glasses, a face shield and proper gloves when working on or near them. Batteries also contain corrosive sulfuric acid that can destroy clothing and burn the skin. Neutralize acid spills with a paste made of baking soda and water or large quantities of water."

To stay safe when handling batteries, remember these tips:

- Keep sparks, flames and cigarettes away from batteries
- Do not connect or disconnect "live" circuits
- Always turn charging and testing equipment off before attaching or removing clamps to avoid creating sparks
- Perform work in a ventilated area
- Never lean directly over a battery while boosting, testing or charging it

Always store batteries in a cool, dry place, and do not store batteries outside or high on racks. Add demineralized water to non-maintenance-free batteries as required.

Test, inspect

When it's time to use the batteries again, testing should be done prior to installation. Use load testers to simulate starting, and test for conductance and voltage. Charge batteries, if necessary.

"Just as you do with batteries, it's important to maintain testing and charging equipment," said Vargas. "Clean the terminals and cable ends. Check for correct output, check leads for corrosion, and change leads annually. As you prepare to test the batteries, check them for any signs of damage, and if there is any, or if there is any doubt about their safe usage, replace them immediately as usage may lead to severe consequences."

Vargas concluded, "If you take care of batteries, they will take care of you. We recommend that when it's time to replace them, you use genuine Komatsu products from your Komatsu distributor." ■



**Veronica Vargas,
Product Manager,
Parts,
Komatsu**



Proper battery care ensures your equipment's productivity and long battery life. If you are storing batteries, it's essential to follow safety guidelines.



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PANAMA CITY
PENSACOLA

Komatsu's D85EX-18 earns first place in EquipmentWatch's Highest Retained Value Awards for large dozers

Large construction and/or small mining companies want dozers that are built for high production, as well as solid value when it comes time to trade in or sell them. Komatsu's D85EX-18 fits the bill and received a Highest Retained Value Award for large track dozers for 2022 from EquipmentWatch.

The 264-horsepower D85EX-18 has a five-year residual value of 72.71%, according to EquipmentWatch, which was about 10 percentage points higher than the overall average for the category. EquipmentWatch added that retained values are calculated using market data, depreciation standards and a proprietary algorithm.

"For EquipmentWatch's Highest Retained Value Awards, the retained value is a prediction for the value of a piece of equipment five years from now," said Don McCloud in the article "Komatsu D85EX-18: The Large Dozer with the Highest Retained Value for 2022" published by Equipment World. "Analysis was limited to models sold in 2022 to ensure these results can be applied to buying decisions today."

When Komatsu introduced the D85EX-18 in 2015, it came with a new automatic transmission as well as the advantages of greater power-train efficiency and lower fuel consumption — even though its operating weight increased by nearly 10%. Two gearshift modes — automatic and manual — can be easily selected to fit the application: automatic for general

dozing, and manual for dozing and ripping rough ground. For added efficiency, operators can choose E mode for all general dozing, leveling and spreading. E mode provides adequate speed and power, while saving up to 10% on fuel usage.

Options available

The D85EX-18 features Komatsu's high-capacity, 9.4-cubic-yard SIGMADOZER blade with power pitch. This improves performance and increases productivity by up to 15%, compared to a conventional Semi-U blade. The SIGMADOZER blade's unique front design rolls material to the center of the blade and increases soil-handling capacity. Digging resistance is reduced for a smoother flow of material, so larger amounts of soil can be dozed with less power. You can customize the D85EX-18 to your preference with additional blade options.

In addition to the standard D85EX-18, Komatsu manufactures a D85PX-18, which is designed for low ground pressure. There are also intelligent Machine Control (iMC) versions — D85EXi-18 and D85PXi-18 — as well as purpose-built D85EX-18 WH and D85PX-18 WH waste handling models. For more information on these and other dozers, visit www.komatsu.com/products/dozers. ■



Discover more

With a five-year residual value of 72.71%, the 264-horsepower Komatsu D85EX-18 dozer won a 2022 Highest Retained Value Award for large track dozers from EquipmentWatch.





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New XT-5 tracked harvesters provide maneuverability and power in demanding conditions

To harvest trees in tight, dense and rugged-terrain forests, operators need machines with maneuverability, power, versatility and reliability. With Komatsu's XT430-5 and XT445L-5 tracked harvesters, operators can harvest closer to the carrier and maneuver confidently thanks to a lower center of gravity and off-set boom.

Made to perform in demanding conditions, Komatsu's XT-5 closed-loop tracked harvesters enable operators to simultaneously travel, cut, delimb, harvest and swing timber. Engineered with hydraulic lines for each function, operators can use the tracks, boom, arm and tools concurrently.

"Komatsu developed the XT-5 tracked harvesters to meet demanding needs, including a larger swing motor that provides additional swing torque compared to previous models," said Kyle Kovach, Product Planning Manager for Komatsu Forest. "They are also very versatile with multiple work equipment lengths and the ability to utilize many harvesting head sizes."

Benefits of the XT-5 tracked harvesters include:

- Significantly greater lift capacity
- 10% more horsepower
- 16% more torque
- 5% lower fuel consumption
- Excellent uptime and serviceability

More powerful, more productive

The short-tail swing of Komatsu's harvesters lets operators work through dense forests and clear-cutting environments. The set-back boom allows cutting close to the undercarriage and tracks, while the powerful swing torque excels in demanding applications.

Designed to significantly increase lift capacity, handling trees with the arm fully extended is made easier. With an excellent balance between boom lift and arm holding capacity, the XT-5 harvesters can be equipped with a wide selection of harvesting saw heads.

The harvesters can be adapted to the job with two different working ranges. Use the short reach and larger-scaled head to harvest larger trees, or switch to a longer reach and more compact designed head to grab trees further from the carrier.

With the XT-5 harvesters, you can save on maintenance costs because the innovative hydraulic tank system design requires 55% less hydraulic oil. Pumps are equipped with hydro-nucleation to help prevent pump cavitation and are 17% larger to help extend component life by operating 500 revolutions per minute (rpm) slower. The engine gull-wing and wide swing-out doors on the XT-5 harvesters offer quick and easy access to all engine service points and all key components.

"Terrain will be a determining factor in which model to choose for your particular operation," said Kovach. "The XT430-5 is non-leveling, while the XT445L-5 provides a leveling capability, so it's more effective on uneven and steep ground. It also has more tractive effort and better stability. We encourage anyone in the forestry industry to contact their Komatsu distributor for additional details." ■

All comparisons and claims of improved performance made herein are made with respect to the prior Komatsu model (XT-3) unless otherwise specifically stated.



Kyle Kovach,
Product Planning
Manager,
Komatsu Forest



XT430-5



XT445L-5

Quick Specs

Model	Horsepower	Tractive Effort	Swing Torque
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XT445L-5	331 hp	75,799 lbf.	64,445 lbs.-ft.

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Heat increases rates of traumatic injuries for construction workers, according to Oregon State University study

PRates of traumatic injury among workers in construction and agriculture are significantly higher during periods of high heat versus more moderate weather, according to an Oregon State University (OSU) study. Researchers said the results highlight the importance of providing robust safety protections for outdoor workers, especially in extreme heat events.

"The big take-home message I want people to get from this is that, if the temperature is high and you have workers out there, they're more likely to be injured, whether it's due to dehydration, reduction in mental capacity or exhaustion," said Richie Evoy, lead author on the paper and a recent doctoral graduate from OSU's College of Public Health and Human Sciences.

The study looked at Oregon workers' compensation data from 2009-2018, with researchers studying nearly 92,000 claims involving temporary or permanent disability or death. They focused on injuries that occurred in the months of April through October because the average heat index was above 55 degrees during that period.

Researchers found that construction and agriculture workers were significantly more

likely to suffer a traumatic injury on days when the heat index was above 75 degrees, compared to a 65-degree or less baseline. The effect worsened when the heat index was above 90 degrees, with an increased risk of 19% to 29% over baseline as the index ranged from 90 to 119 degrees.

"These results support the need for occupational safety practitioners to include protections for workers during extreme heat," said Laurel Kincl, co-author of the study and an associate professor in OSU's College of Public Health and Human Sciences. "While our study is based in Oregon, this is true of other states and regions since these conditions will likely become more frequent with climate change."

The other co-authors of the OSU study were Perry Hystad and Harold Bae, who are both in the College of Public Health and Human Sciences. The researchers also studied the impact of wildfire smoke on injury rates. ■

To learn more about the study, read the article by Molly Rosbach on OSU's website at <https://today.oregonstate.edu/news/osu-study-finds-higher-rates-traumatic-injuries-outdoor-workers-during-hotter-weather>.



An Oregon State University study found traumatic injury rates climbed as temperatures soared. Researchers said the results highlight the importance of providing robust safety protections for outdoor workers, especially in extreme heat events.



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