



A MESSAGE FROM THE CHAIRMAN & PRESIDENT



Robert S. Benard



Paula F. Benard

Celebrating five years of *intelligent* Machine Control





Tel. (781) 935-1919 Fax (781) 937-9809

Dear Valued Customer:

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

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

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

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

Whatever machines you run, proper maintenance is critical and using OEM products in the process is highly recommended. Find out why Komatsu's CK-4 Genuine Engine Oil is a wise choice for keeping machines running at peak performance.

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

Sincerely,

C.N. WOOD COMPANY CO., INC.

Robert S. Benard

Chairman

Paula F. Benard

President



IN THIS ISSUE

ARGUS CONSTRUCTION CORP. pg. 4

See how this Bedford, Mass., contractor works hard to construct fun spaces as it specializes in creating athletic fields and parks.

R.J. PELCHAT EXCAVATING INC. pg. 8

Meet the namesake of this Boston-area firm, who is making a lasting impact on local communities with his public-safety projects.

INDUSTRY NEWS pg. 11

Delve into the details of an expanded Section 179 Expensing deduction and first-year bonus depreciation.

EMPLOYMENT OUTLOOK pg. 13

Recruiting qualified millennial employees is an ongoing challenge in the construction industry. Take a look at some ideas to attract and retain members of this generation.

GUEST OPINION pg. 17

Learn why one environmental professional says communities are at risk without more investment in the federal water infrastructure.

CASE STUDY pg. 19

Explore the reasons why one contractor finds added value when using his PC490LCi excavator on utility applications.

GPS TECHNOLOGY pg. 20

Find out why the first company to use an *intelligent* Machine Control dozer has expanded its use of the revolutionary technology in the past five years.

NEW PRODUCT pg. 25

Examine the unique features of the D65PX-18 Wide VPAT dozers that equip them for maximum production on a variety of jobsites.

Published by Construction Publications, Inc. for



WOBURN, MA

200 Merrimac Street • Woburn, MA 01801 (781) 935-1919 • FAX: (781) 937-9809

WHATELY, MA

102 State Road • Whately, MA 01093-0222 (413) 665-7009 • FAX: (413) 665-7277

JOHNSTON, RI

60 Shun Pike • Johnston, RI 02919 (401) 942-9191 • FAX: (401) 942-9266

AVON, MA

140 Wales Ave. • Avon, MA 02322 (508) 584-8484 • FAX: (508) 584-8514

NEW HAVEN, CT

25a Bernhard Road • New Haven, CT 06513 (203) 848-6735 • FAX: (203) 848-6734

WESTBROOK, ME

84B Warren Avenue • Westbrook, ME 04092 (207) 854-0615 • FAX: (207) 854-0614

THE PRODUCTS PLUS THE PEOPLE TO SERVE YOU!

CORPORATE

Robert S. Benard Founder/Chairman

Paula F. Benard President

Dana MacIver V.P. & Chief Operating Officer

SALES/MARKETING

Jim Maxwell General Manager

Gerry Carney Jr. Marketing Manager

PARTS

Mike VilesDirector, Corporate Parts

Jeff Sullivan Parts Manager

Bruce Rushford Johnston Store

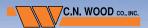
Darryl Cutter Whately Store

Kevin Blais Avon Store

PRODUCT SUPPORT

Mark Whelan Service Manager







ARGUS CONSTRUCTION CORP.

Finding the right niche and size leads to success for this Bedford contractor



Peter Salem, President

What do you get when you combine Steven Seagal, the Yellow Pages and Greek mythology? The answer is Bedford, Mass., contractor Argus Construction Corp.

"I asked my parents for name ideas when I was incorporating," recalled President Peter Salem. "My dad had just watched a Steven Seagal movie and suggested Argus, based on the name of a company in the movie. My mom said that was a great choice because it would be in the front of the Yellow Pages. I thought the name sounded cool, and the logic made sense. Of course, two years later, I watched the movie and realized my dad

Using a Komatsu PC290LC excavator on a jobsite in Allston, Mass., an Argus Construction Corp. operator works on a pump track, which is similar to a skate park, only for BMX-style bikes.



had the name wrong and now no one uses the phone book."

Fortunately for Salem, it all turned out well in the end.

"After that, I thought I should probably look up what Argus meant," he joked. "According to Greek mythology, he was a watchdog with 1,000 eyes, and the dictionary defines it as watchful and diligent. I felt those traits were appropriate for a construction company; so, thankfully I chose a pretty solid name after all."

While Salem got lucky with the name, his success has been no accident. After graduating from the University of Massachusetts Amherst with an engineering degree in 1987, he took a job with a construction firm and began managing projects. During his time with that company, the business tripled in size and Salem began taking side jobs, laying the groundwork for Argus. In 1994, he made it official and went out on his own.

"That project-management job was a great experience," said Salem. "I learned a lot about the industry and showed the organization I was working for how to incorporate some new practices. When I started doing side projects, we teamed up as well. The owner really helped me establish my company."

Today, Argus Construction Corp. has 35 employees and focuses on specialized site-work projects within a two hour radius of its Bedford headquarters.

"We're fortunate to have a solid reputation and a lot of opportunity for work nearby," noted Salem. "We've had chances to travel for customers who we have good relationships



An Argus Construction Corp. crew uses a Komatsu PC160LC excavator to help complete a utility installation project. "My operators recommend Komatsu every time we demo machines," noted Salem. "They are strong, powerful and efficient. Plus, the relationship we have with C.N. Wood factors into the decision. They continue to deliver on their service promises and keep pricing fair and competitive."

with, but most of my employees have kids and prefer to stay close, which is fine with me."

Recreation specialists

In the beginning, Argus Construction worked as a subcontractor tackling pads and other site-development projects. It didn't take long for Salem to find his company's niche as a prime contractor building athletic fields and parks.

"The majority of our work today is athletic-field construction," said Salem. "It's fun and interesting, and we prefer to be the prime on a job because we have better control over the time line. Because we can do a lot of it on our own, this makes the most sense."

Salem estimates that Argus crews install four to six fields of varying types each year, typically for high schools and colleges in the area.

"Most of the fields that we complete are multi-purpose and can be used for several sports, but we also do sport-specific projects," explained Salem. "In the beginning, all of the fields were natural, but today, roughly 75 percent are synthetic with varying surface requirements based on the activity the field will be used for. It takes us three to four months to do a typical field, and we handle other components of the facility, such as bleachers, press boxes, concession stands and utility installation, which can add time to the job."

Argus Construction's project list goes beyond athletic fields. Recent assignments have included a high-end track installation, New England's first pump track and a large park.

"At Deerfield Academy we installed what has to be the nicest high-school track around," explained Salem. "It has the same specifications as Georgia Tech's track. The pump track in Allston is like a skate park, only for BMX-type bikes. The site has a huge amphitheater and an attached skate park; it's the first of its kind in the region.

"For projects like those, we have a short window to complete them before the next season begins," he continued. "We also do roughly four parks a year to help keep our workflow consistent. We are currently working

Continued . . .

'My operators recommend Komatsu'

. . . continued

on a park behind Wynn Casino in Everett and create other recreational spaces for cities. Those projects can range from \$2 to \$3 million and include everything from trees and benches to splash pads and playgrounds. They keep us busy and are enjoyable to do."

Working smarter

While Argus Construction's endeavors may fall under the "play" category, it is serious about efficiency. That is why it deploys Komatsu equipment from C.N. Wood and Sales Rep Brian Doherty. It's a bond that was formed at the very beginning of Argus' history.

"We love Komatsu and C.N. Wood," shared Salem. "Our first machine was a PC150 excavator. We were small and didn't have a ton of money, but C.N. Wood Chairman Bob Bernard came out to meet me and finalize the deal. He told me that if I ever needed anything, to let him know. On our very next job we had a machine go down. He sent me a loaner, took care of the issue and didn't charge me. I've never forgotten that."

That relationship has led to the purchase of five Komatsu excavators ranging from a PC35 to a PC290LC and several D51 dozers.

"My operators recommend Komatsu every time we demo machines," noted Salem. "They

Argus Construction Corp. President Peter Salem calls on C.N. Wood Sales Rep Brian Doherty for all of his Komatsu service and equipment needs.



are strong, powerful and efficient. Plus, the relationship we have with C.N. Wood factors into the decision. They continue to deliver on their service promises and keep pricing fair and competitive."

Salem enhances the equipment's productivity with GPS technology. Recently, Argus Construction added a Komatsu *intelligent* Machine Control D61PXi dozer with integrated GPS.

"It helps us save time and money," said Salem. "We don't use stakes, and we move a lot of dirt in a short time. We mostly use aftermarket kits with TOPCON base stations, but we've had GPS all the way back to the laser-system days.

"I am excited to see how much the D61PXi improves our efficiency," he added. "To avoid messing with masts and cables every morning and evening is a time savings on its own. The early reports are very encouraging, and the operators love it."

Slow and steady

When a company develops a solid reputation and is located in the center of a multitude of available projects, growth is inevitable. Salem has been careful to manage the expansion of Argus Construction.

"I took the slow, conservative route," he shared. "In the beginning, I worked 80 hours a week, but that came with headaches and stress. We have grown a lot in the last two years, and now we are at a point where if we were to get any bigger, we would almost have to double for it to make sense financially. I'm not in a hurry to do that."

Salem added that there is more to achieving success than cashing checks.

"We've gotten this far because of the people who work here," he said. "Our employees take pride in their jobs and work hard. Construction is a cyclical industry, so our current size is great because there is security in knowing that we aren't stretched too thin. It's a great fit."







R.J. PELCHAT EXCAVATING INC.

Firm provides site work for public safety complexes throughout the Boston area

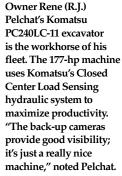
One of Rene "R.J." Pelchat's first summer jobs involved operating a 50-ton haul truck and a wheel loader at a sand pit. Following a 10-year stint away from the heavy equipment and construction industry, he accepted a position supervising lot construction for a residential developer. By 2004, Pelchat decided to open his own excavation business.

A one-man show, he aptly named the company R.J. Pelchat Excavating Inc. and began providing excavation services for Gardner, Mass., residents. To get his new venture off the ground, he said yes to every opportunity – nothing was out of the question.

"I did anything," recalled Pelchat. "It was a lot of little stuff, from removing tree stumps to burying sauna tubes. I just hustled and kept moving, always looking for the next job."

Pelchat was meticulous and conscientious in avoiding damage to customers' lawns, which quickly bolstered his reputation. Demand increased steadily and he began adding employees and purchasing new equipment. Shortly thereafter, R.J. Pelchat Excavating shifted away from residential work toward larger projects.

"Today, we're up to six employees," noted Pelchat. "All of our work is public or government, and we focus on bidding jobs between Interstates 495 and 95. Our first four contracts were all playgrounds for the City of Worcester. Within the last year, we've done







way for a bus terminal. "It's smooth, quick and efficient," noted Fiscus. "It's the perfect size machine for narrow spaces and street work."

site work for the Westwood police station and Walpole fire station as well as an addition to the Andover Department of Public Works."

Annually, R.J. Pelchat Excavating completes three to four public projects ranging between \$8 million and \$10 million. To supplement business during the winter, it provides snow-removal services throughout greater Boston. The bitter New England cold can take a toll on any employee, which is one of the reasons why Pelchat recognizes the tenured father and son duo of Troy and Tyler Fiscus as key operators who have made his company successful.

"I trust Troy, Tyler and the rest of my team when I'm not around," said Pelchat. "My first love is running equipment, but I have to spend a lot of time doing paperwork these days. I know they will do things right the first time by sticking to the blueprint, without cutting corners. We wouldn't be where we are today without them."

Taking on new projects

Last spring, R.J. Pelchat Excavating landed a contract to do the site work for a three-story parking garage in Newburyport, Mass. The endeavor is the first of its kind for the business and has presented several unique challenges.

"The garage sits on a two-acre corner lot and will come to within an inch of the property line when it's finished," explained Pelchat. "We've removed and replaced 5,000 yards of soil to reach compaction while shoring up the building next door to avoid causing any fundamental damage. The parking garage is structurally designed to support an additional two levels of parking, which requires larger footings to be buried 17 feet deep."

Commissioned by the Montachusett Valley Regional Transit Authority (MVRTA), the garage will also include a bus terminal. R.J. Pelchat Excavating is handling the site work to accommodate the public-transit system as well.

"Making room for the bus system requires widening the road and adjusting the sidewalk," stated Pelchat. "We will also install new storm drainage and several other small features. It's exciting to take on a new project to really test our skills."

Continued . . .

'Komatsu CARE simplifies maintenance'

... continued

The firm is wrapping up the Walpole fire station as well.

"That assignment was similar to the parking garage because it was a corner lot that required 5,000 yards of excavation and imported soil," noted Pelchat. "The ground in the area is very sandy and can't bear any weight, so a majority of new builds require a specific soil to reach compaction. It's great to know that we can have a positive, lasting impact in the community by providing a sturdy base for many of the public-safety structures."

C.N. Wood, Komatsu deliver

When establishing his company 14 years ago, Pelchat teamed with C.N. Wood on a rent-to-purchase agreement for a Komatsu PC120 excavator. After three years, he traded the machine for a larger Komatsu PC200. Since then, the two businesses have worked closely together and built a strong relationship.

"The sales team at C.N. Wood has been great to me," said Pelchat. "I'm a loyal guy, and my first Sales Rep, Roger Vincent, really set the standard for C.N. Wood."

Today, Pelchat relies on C.N. Wood Sales Rep Bill Perla, who has helped him add several new pieces of equipment to his fleet.

R.J. Pelchat Excavating owns this D51EX dozer along with three excavators. "Compared to competitive brands, Komatsu equipment is very powerful and super fast," noted President Rene (R.J.) Pelchat.



"I own a Komatsu PC240LC-11, a PC170LC and PC45 excavators as well as a Komatsu D51EX dozer," stated Pelchat. "Compared to competitive brands, Komatsu equipment is very powerful and super fast. It increases cycle time and efficiency for any project."

The PC240LC-11 excavator is the workhorse of R.J. Pelchat Excavating's fleet. The 177-hp machine utilizes Komatsu's Closed Center Load Sensing hydraulic system to provide smooth operation and maximize productivity.

In tight areas, like the MVRTA parking garage, the company uses its PC170 excavator.

"The excellent visibility makes it a great street machine," noted Pelchat. "It's compact and has narrow tracks but packs a lot of power. The boom has excellent reach, which is perfect in a city environment."

R.J. Pelchat Excavating takes advantage of the Komatsu CARE for service on its machines. The program covers complimentary maintenance for the first three years or 2,000 hours for Tier 4 equipment.

"Komatsu CARE simplifies regular maintenance," explained Pelchat. "I also use Komatsu Financial to purchase equipment. Starting my own company, I didn't have a lot of money to invest initially, but Komatsu Financial made the process easy, and I knew I had the full support of C.N. Wood as well."

Backtracking to go forward

As Pelchat looks to the future, he envisions adding residential work back into his portfolio.

"Ideally, we'd have a mix of residential and public or government projects," explained Pelchat. "I've had experience in both fields and think as we continue to grow, having multiple types of jobs is important, so we have more than one form of business."

Before that happens, however, he wants to hire additional office employees.

"Hiring a full-time estimator is my first priority," he stated. "The more projects we can estimate, the busier we will be. Ultimately, if I can build a team around me, the work will come and the company will continue to grow."

INVESTMENT INCENTIVE

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

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

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

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

Taking a closer look

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

- 1. You purchased outright or financed up to \$1 million worth of previously owned equipment this year. You can fully deduct that amount for the 2018 tax year. This will be the case through the end of 2022.
- 2. Your acquisition was between \$1 million and \$2.5 million. You can still take a deduction of \$1 million.

- 3. The purchase exceeds \$2.5 million. The deduction is lowered dollar for dollar. For instance, if the total purchases were \$3 million you can only claim \$500,000, instead of \$1 million.
- 4. You bought more than \$3.5 million in used equipment. The Section 179 Expensing deduction is no longer available.

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

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

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



(R)WORKS FOR ME AEZASI KOMATSI

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

BETTER SUPPORT.

"My cousin Thomas and I started our construction company on a wing and a prayer.

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

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



THAT'S WHY I AM KOMATSU

komatsuamerica.com



RECRUITING A NEW GENERATION

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

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

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

Part of the reason is the ability to easily search for a seemingly infinite number of jobs at any time. There are thousands of positions listed across hundreds of online job sites, so why would employees limit themselves to one career for the rest of their lives? Society fosters the perception that the next employer will pay more or will offer other attractive features.

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

Cracking the code that is the millennial workforce will make or break businesses throughout the next decade, notes Iluma Learning, Inc. Founder Amy Parrish. "Millennials are looking to be a part of something; they crave a sense of community and belonging," she writes. "The idea of working for a faceless corporation is not always appealing to millennials – they want to

be welcomed and appreciated for their efforts, regardless of the industry. A company's culture goes a long way toward helping it transcend a workplace and become something more meaningful that employees can really buy into and commit to."

Match practices to your culture

Taking concrete steps can help your company understand how to hire, develop and retain this generation of young, ambitious

Continued . . .

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



Show millennials they can lead, grow and achieve

.. continued

workers. According to Parrish, every organization has a culture, whether it defines one or not.

"The way a company runs its daily operations, values employees and works with customers shapes its culture," she writes. "Making a concerted effort to delineate and develop a positive culture goes a long way toward attracting and retaining employees. While rules and regulations can create the outline for a company, the culture colors, shades and highlights the areas that reside outside the lines. Policies and procedures may tell the what, but culture provides the who, why and how."

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

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



Avoid the turnover trap

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

Winning over millennial talent has less to do with offering hip perks or remodeling the office than it does with showing millennials that they have a future at your organization where they can learn, grow, achieve and lead, according to a recent Gallup poll. Providing opportunities for career growth as well as personal development plays a major role for millennials when deciding where to work and how long they are willing to stay with one company.

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

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

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



DISCOVER THE DIFFERENCE.

Conquer even the most inaccessible jobsites imaginable with the Terramac family of crawler carriers. Thanks to their rubber tracks, these machines boast a low ground pressure that protects sensitive ground conditions. The highly maneuverable RT6, versatile RT9 and massive RT14 are easily customizable with a range of attachments from hydroseeding units to welders, while the RT14R offers a dump bed and 360-degree rotation for precision even in tight spaces. And they're all backed by our highly trained service and support professionals, so you'll stay up and running no matter how difficult the job.

Visit **Terramac.com** to learn more or demo one today at your nearest C.N. Wood location.













Т9

RT14R





www.bomag.com/us

Go Ahead, Compare Us...

Available through C.N. Wood Co., Inc.

COMMUNITIES AT RISK

Additional federal infrastructure investment is critical to ensuring safe drinking water

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

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

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

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

Essential for health, economy

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

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

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

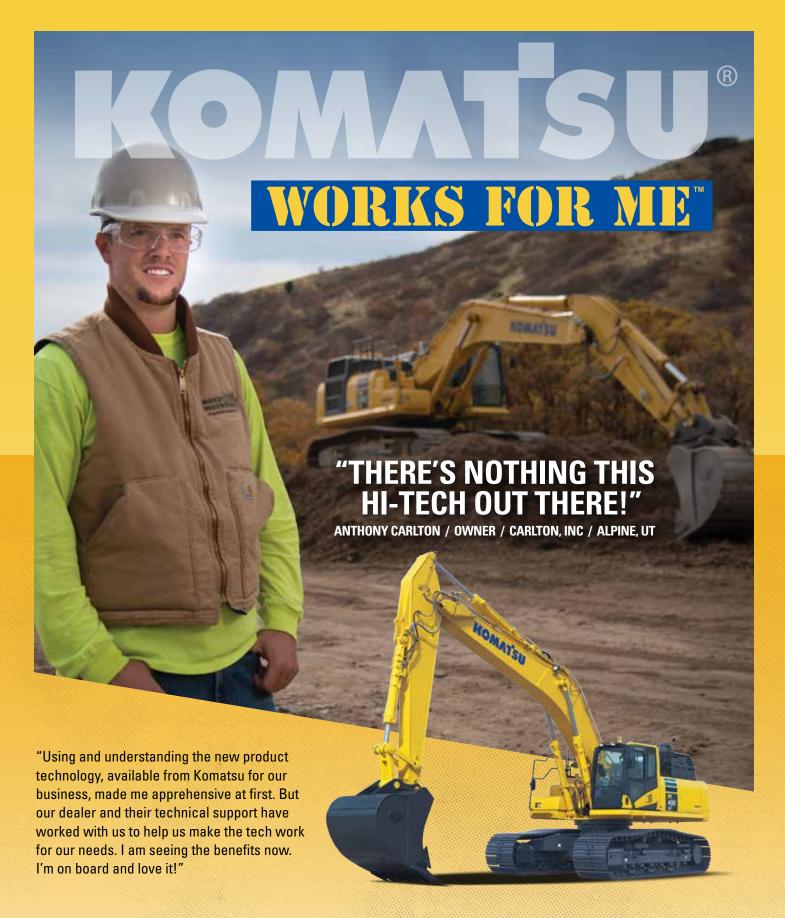
Sara Schwartz holds a master's degree in environmental management from the Yale School of Forestry and Environmental Studies. This article is excerpted from a blog post. For the full version, visit blog.ucsusa.org. Connect with Schwartz at www.linkedin.com/in/saraschwartz1/.



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

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





KOMATSU®

THAT'S WHY I AM KOMATSU







INTELLIGENT INSTALLATION

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

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

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

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

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

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

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

Komatsu delivers

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

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

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

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



Bryce Ricklefs, President Boomerang Corp.

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





A 'GAME CHANGER'

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



Joe Liesfeld III, Vice President



Kelby Morgan, Project Manager

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

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

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

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

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

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

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



Accuracy delivers productivity

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

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



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

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

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

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

Excavators effective in every application

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

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

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

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



Chris Ashby, Technology/GPS Manager

Continued . . .

'The technology allowed us to work confidently'

. . . continued

What others are saying about intelligent Machine Control



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

Bret Barnhart, Owner, Bret Barnhart Excavating



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

Pete Sewczak, Vice President, Zak Dirt



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

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



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

Mike Greenfield, Owner/President, Greenfield Trucking

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



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

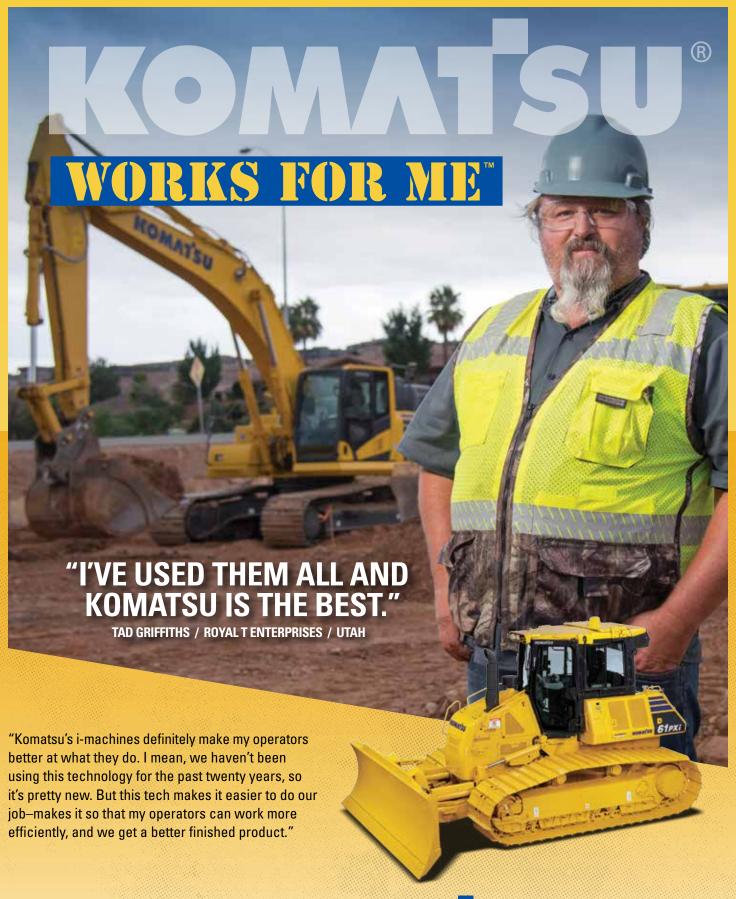
On the same project, Liesfeld Contractor used the excavators for additional applications. "They have the versatility to move mass quantities of materials, as well as do precision work such as slopes, so we were able to construct a relatively large pond rather quickly," said Ashby. "Because these excavators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

Upped the ante

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

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

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

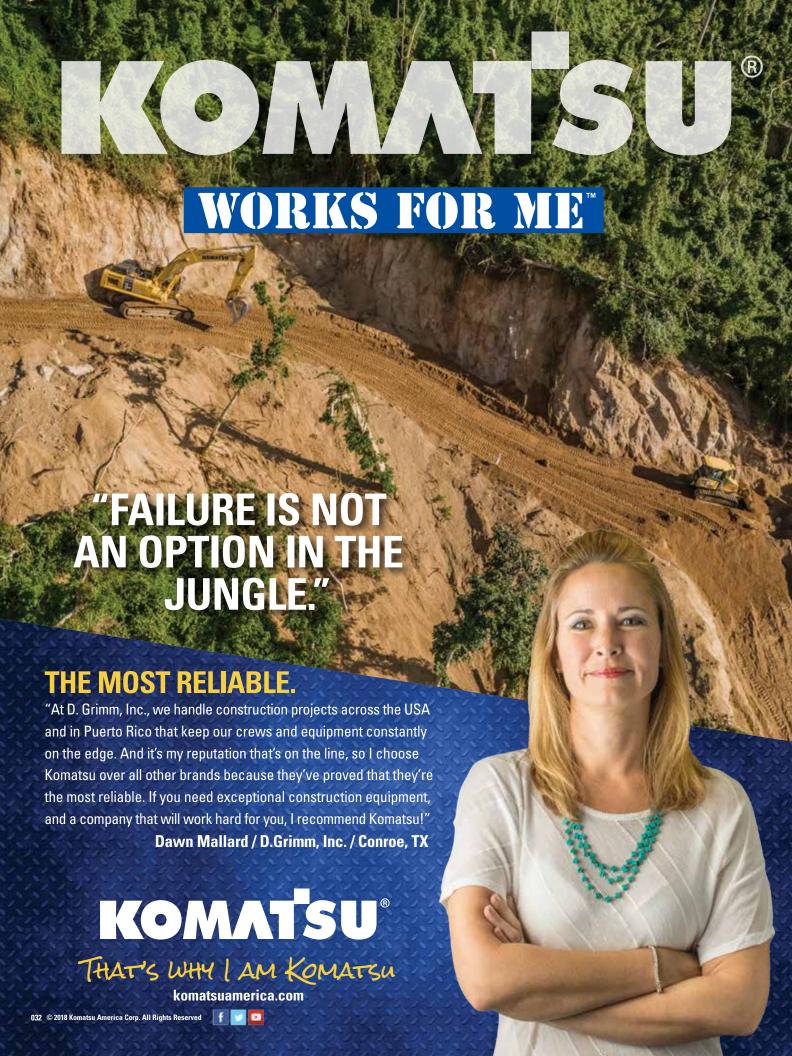


KOMATSU®

THAT'S WHY I AM KOMATSU









EFFICIENT MATERIAL MOVEMENT

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

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

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

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

Light footprint

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

"This makes them ideal for projects such as landfill cells where the dozer is running across a liner or in pipeline construction where it's operating on top of buried pipe," reported Murawski. "Another advantage is that the shoes are centered on the track compared to being offset like some competitive models, so the load is always evenly distributed. That helps lengthen undercarriage life."

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

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



Chuck Murawski, Komatsu Product Manager, Dozers

Quick Specs on Komatsu's D65PX-18 Dozer Models								
Model	Horsepower	Operating Weight	Blade Capacity					
D65PX-18 Wide VPAT and D65PXi-18 Wide VPAT	217 hp	53,925 lb	5.8 cu yd					

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



















EARTHMOVING, DEMOLITION, AND MATERIAL HANDLING ATTACHMENTS • EXCAVATOR CUSTOMIZING



































NEW PC1250-11 EXCAVATORS

Increased horsepower significantly boosts productivity and profitability

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

"The higher horsepower delivers additional power to the pumps, which helps the excavator handle the high-demand segments of a cycle more effectively," said Kurt Moncini, Komatsu Senior Product Marketing Manager, Tracked Products. "We also made some changes to reduce hydraulic pressure loss for improved efficiency. During tough applications, the machines keep their digging force longer. Operators who have run the Dash-8 model, should notice a significant increase in performance."

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

Versatile LC configuration

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

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

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



Kurt Moncini, Komatsu Senior Product Marketing Manager, Tracked Products

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

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



NEW ENGINE OIL

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



Bruce Gosen, Senior Product Manager, Komatsu Parts Marketing

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

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

Specific benefits of the new oil:

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

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

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

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



MORE INDUSTRY NEWS

New video highlights optimal use of backup alarms

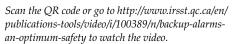
Canadian scientific research organization, IRSST, recently released a video intended to ensure the optimal use of backup alarms under realistic working conditions. Among the recommendations in the video are placing the backup alarm at the vehicle's rear, at a height of 3 to 6.5 feet above the ground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

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

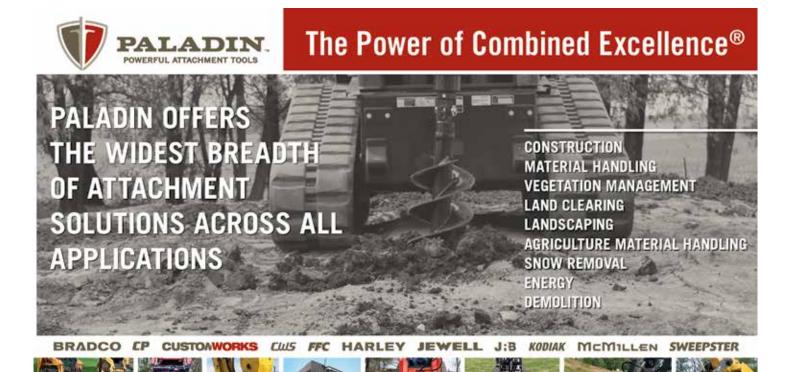
165

risks associated with poor ability to locate sound sources.

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







www.paladinattachments.com



MUNICIPAL

VERSATILITY 4 ANY SEASON



The Trackless MT meets and exceeds EU, CARB and EPA standards without sacrificing torque, horsepower, and performance that customers expect 365 days a year! Trackless leads the market in technological design, efficiency, safety features, operator comfort and overall performance.



Offering more than 20 attachments that easily mount to the tractor, making it the most complete and versatile piece of equipment in your fleet. Nearing 50 years of manufacturing the leader of municipal tractors. Our website welcomes you at tracklessvehicles.com.



Flail Mower, Boom Flail Mower 6',10' & 14' Rotary Finishing Mowers Aerator, Spraying Systems



Leaf Loader with Truck Chute
Power Angle Sweeper & Pickup Sweeper
Front End Loader, Stump Grinder, Debris Blower



Asphalt & Concrete Cold Planers
Line & Stencil Painting
Infrared Asphalt Heater & 45KW Generator



Snow Blowers (Standard or High-Output Ribbon)
Angle Plows, V-Plows, 5 Position Folding V-Plow
Front, Rear & Tow Behind Spreaders













USED EQUIPMENT SPECIALS OF THE MONTH

Manufacturer/Model	Stock No.	Year	Hours	Manufacturer/Model	Stock No.	Year	Hours	
EXCAVATORS				WHEEL LOADERS				
Komatsu PC210LC-11	KM6520	2016	1,693	Komatsu WA380-7	KM6675	2013	9,228	
Komatsu PC360LC-10	KM6578	2014	5,695	Komatsu WA270-8	KM6841	2017	107	
Komatsu PC390LC-10	KM6373	2013	4,812	Komatsu WA320-7	KM6800	2016	1,675	
Komatsu PC490LC-10	KM6725	2015	4,921	Komatsu WA470-7	KM6798	2014	3,905	
Komatsu PC50MR-2	CE3301	2006	6,959	Komatsu WA500-8	KM6839	2016	2,725	
Komatsu PC78US-6	KM6568	2002	8,661	Volvo L90H	CE3314	2016	996	
			•	Vovo L70F	CE3359	2009	7,986	
Komatsu PC138USLC-11	KM6840	2017	1,125	Kawasaki 65TMV2	CE3264	2001	4,000	
Komatsu PC308USLC-2	KM6791	2006	13,428	OWEEDEDO				
Komatsu PC650LC-8	KM6812	2016	6,536	SWEEPERS				
Volvo ECR145DL	CE3282	2015	1,415	Elgin Pelican SE	EG2132	2006	8,320	
Volum FO400	050040	0010	•	Elgin Pelican SE	EG2192	2005	5,757	
Volvo EC480	CE3340	2013	5,561	Elgin Pelican NP	EG2202	2008	6,894	
Sany SY215C	SY0007	2013	278	COMPACTION EQUIPMENT				
DOZERS				Volvo SD115	CE3014	2014	1,149	
Komatsu D61PX-24	KM6522	2016	1,549	Volvo DD110B	CE3288	2014	1,266	
Komatsu D85PX-18	KM6525	2016	2,963	Volvo DD140B	CE3290	2014	800	
Komatsu D37EX-24	KM6610	2017	154	BOMAG BW161AD-0	B00156	2015	7,930	

Call Paul Oliveira today at 781-935-1919 x206!

WOBURN, MA 200 Merrimac Street Woburn, MA 01801 (781) 935-1919 FAX: (781) 937-9809 WHATELY, MA 102 State Road Whately, MA 01093-0222 (413) 665-7009 FAX: (413) 665-7277



JOHNSTON, RI 60 Shun Pike Johnston, RI 02919 (401) 942-9191 FAX: (401) 942-9266 **AVON, MA**140 Wales Ave.
Avon, MA 02322
(508) 584-8484
FAX: (508) 584-8514





WE HAVE YOU COVERED



Sales/Marketing

Jim Maxwell General Manager

Gerry Carney Jr. Marketing Manager

PRODUCT SUPPORT

Mark Whelan Service Manager

Mike Viles

Director, Corporate Parts

Jeff Sullivan Parts Manager

Darryl Cutter Whately Store Bruce Rushford Johnston Store

> **Kevin Blais** Avon Store

Call us for all of your equipment, rental and service needs!



KOMATSU®

WOBURN

200 Merrimac Street • Woburn, MA (781) 935-1919

JOHNSTON

60 Shun Pike • Johnston, RI (401) 942-9191

WHATELY

102 State Road • Whately, MA (413) 665-7009

AVON

140 Wales Ave. • Avon, MA (508) 584-8484