

**INSIDE SPEC
MY TRUCK**

Check out Brad Collins's rig. Page 12.

IN THIS ISSUE

- ONLINE AUCTIONEER TURNS ATTENTION TO TRUCKS 10
INDUSTRY RESPONDS TO EPA'S TIER 4
EMISSIONS STANDARDS 18
DIESEL ENGINES ENTER SPACE AGE 20



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THE MAGAZINE FOR MOBILE HEAVY DUTY REPAIR AND MAINTENANCE

Volume 1 Issue 2

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FEATURE



Riverbend Machinery ND's F750 lube truck services a Link-Belt 290LX in Killdeer, N.D.
Photo courtesy of Riverbend Machinery ND

Trucks service fracking sector

Shale gas development has driven up demand for work trucks in recent years, says industry insider

SAUL CHERNOS

The word fracking would seem entirely appropriate to describe what it can be like servicing machines and other heavy equipment the hydraulic fracturing sector uses in North America's most unforgiving climates.

Bone-chilling winters and sweltering summers come hand-in-hand with the job for Evan Vibbert and his crew at Riverbend Machinery ND. From its shop in Hazen, North Dakota, a town of 2,500 people on the eastern fringe of the Bakken oil reserve, Riverbend maintains the most slender of fleets — one service truck and

continued on page 14

EMPLOYMENT OUTLOOK



Recruiting Road Warriors

Finding qualified mechanics to do field repairs is a battle in itself

DAN ANDERSON

It's easy to outfit a service truck with toolboxes, crane, on-board air compressor, welder and other essential tools. What's increasingly difficult to find is an experienced mechanic to work out of that truck.

"I could use four people to work out of service trucks right now, but nobody is applying," says Scott Anderson, vice president at Midwest

continued on page 11

NEWS

Prepare for material costs to increase

Just because your company isn't currently experiencing price volatility doesn't mean you shouldn't be prepared for possible increases

LEAH GROUT GARRIS

Steel, copper, and aluminum prices are all fairly stable — for now.

But fluctuating costs are always a concern for manufacturers, especially since material price is one element of the manufacturing process that can't be controlled, emphasizes Jeff Shaw, sales manager for Curry Supply Company in Martinsburg, Pa.

"We haven't seen any measurable change in buying behavior due to rising material costs," Shaw explains. "This may be due to the fact that we have not passed any major increases in prices on to the consumer as of yet."

Brett Collins, president of Venco Venturo Industries LLC in Cincinnati, is also noticing very minimal effects. "We're actually looking forward to moderate inflation so we can get some much needed price increases," Collins says.

Even in times when material costs aren't volatile, manufacturers should still be prepared for the possibility of a price change. There are a few steps you can take when increases happen — or even before they do — that will help you prevent having to pass the price increase on to customers.

continued on page 8



Jeff Shaw of Curry Supply Company says his firm is always looking for more efficient ways to produce products and manage costs.

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ADVERTISERS INDEX

Boss Industries, Inc.....	11
Del Hydraulics, Inc.	14
Knapheide Manufacturing Company	23
Maintainer Corporation of Iowa, Inc	15
Pride Bodies Ltd.....	7
Service Trucks International	17
Summit Truck Bodies	24
Vanair Manufacturing, Inc.....	4
Venco Venturo Industries LLC.....	18
Wilcox Bodies Ltd.	2

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New training centre has its day

“Diesel Day” was celebrated Aug. 16 at Lincoln Technical Institute’s campus in South Plainfield, N.J., to mark the grand opening of a heavy equipment and truck technology training program.

Dignitaries including South Plainfield Mayor Matthew Anesh joined Scott Shaw, Lincoln’s president and chief operating officer, for the occasion, which included campus tours and live engine demos, according to an article on a local news website.



Young participants smile for the camera at “Diesel Day.”

The day also included displays by Lincoln partners like Hertz, Jesco, Hoffman Equipment, Binder Machinery, and Cambria Truck Center.

“We’re excited to have the opportunity to now offer heavy equipment training at our campus,” the alternative.com article quoted Robert Paganini, South Plainfield campus president. “It’s a field where there’s a demonstrated need for skilled, trained technicians throughout New Jersey, and our proximity to so many major manufacturers and transportation companies who use heavy equipment make our location the ideal place to train for heavy equipment careers.”

Graduates are expected to pursue such career paths as

mobile heavy equipment mechanic, which is projected to grow by 17 percent from 2010 to 2020, the report said.

Tim O’Connor, director of education at the campus, joined Shaw and Anesh in cutting the ribbon to open the new facility.

“I can’t think of a better way to launch a new program like heavy equipment training than with an event such as this,” Shaw said.

Executive summit debuts in Vegas

The NTEA, the association for the Work Truck Industry, is holding its inaugural Executive Leadership Summit this October in Las Vegas.

The two-day summit, Oct. 14-15 at the JW Marriott Resort & Spa, promises to be a “unique opportunity to learn economic and political issues that could impact your company,” according to the NTEA.

Among the presentations are the following:

- Rich Galen, a former press secretary for Dan Quayle and Newt Gingrich, will talk about the current political scene and offer predictions for the next election cycle.
- Peter Zeihan, geopolitical strategist and forecaster, will provide insights into how threats, crises, and opportunities will affect the North American market.
- Andrej Divis, head of global truck research for IHS Global Insight, will offer an in-depth look at North America’s commercial vehicle markets.
- Mark Vitner, managing director and senior Economist with Wells Fargo Securities LLC, will examine the factors that are expected to drive growth in the work truck industry in 2015 and 2016.
- NTEA managing director Michael Kastner and Bob Raybuck, NTEA director of technical services, will examine the effects of new fuel efficiency regulations on medium and heavy trucks.
- Rob Stevens, vice-president of strategy for ROUSH Clean Tech, will moderate a panel on the transformation of work trucks into integrated work systems.



NTEA managing director Michael Kastner and Bob Raybuck, NTEA director of technical services — shown here that the Work Truck in Indianapolis this March, will be among the presenters at the Executive Leadership Summit this October in Las Vegas.

• Steve Carey, the NTEA’s executive director, and Doyle Sumrall, an NTEA managing director, will look at evolving trends and changing dynamics in the industry, such as sales, plant utilization, backlogs, employment levels, and fleet purchasing.

For more information about the conference and registration, visit www.ntea.com/executivesummit.

Big orders for big trucks in July

Orders of North American class 8 trucks were 70 per cent higher in July 2014 than the previous July as overall demand for commercial vehicles “remained at healthy levels,” according to a recent report from ACT Research.

“In July, historically the weakest month for order volumes, NA Class 8 net orders again rose above expectations to a six-month high 29,900 units,” ACT president and senior analyst Kenny Vieth said in a news release highlighting the report.

“In addition to a continuation of the ongoing strong order trend, some of the non-seasonal strength in July might be related to the rapidly dwindling supply of available build slots in 2014,” Vieth added.

Class 8 volumes were 12 percent greater than in June, the news release noted.

Overall, 45,500 class 5-8 orders were booked in July. Since orders strengthened last October, booking have averaged 45,200 units per month.

NEWS

Pricey report looks at 29 companies

A recent report from Ireland-based Research and Markets identifies 29 North American manufacturers of crane truck bodies.

The 53-page report, titled *Crane Truck/Mechanic Service Body Manufacturing in North America*, "presents estimates of 2013 production/sales in units and at market values, as well as an overview of the broad competitive picture," said a news release this spring announcing the report.

Those report also includes "standings of key manufacturers and the demand outlook for the industry through 2018," the news release said.

Accessing the report doesn't come cheap. A single user electronic PDF sells for US\$1,500, according to the Research and Markets website. A site licence costs \$3,000 while an enterprise-wide licence is \$4,500.

Eleven of the companies mentioned in the report manufacture both cranes and truck bodies on which the cranes are mounted.

"Most crane truck bodies are manufactured by companies that also manufacture telescopic and articulated cranes," the news release said. "Truck-mounted cranes can be sold as standalone units or integrated units. In the case of integrated units, both the crane and the truck body are manufactured and assembled by the crane manufacturer. Standalone units are sold through equipment dealers, who mount these cranes onto bodies with crane reinforcements sourced from various service/utility body manufacturers."

Companies featured in the report are as follows:

- Adkins Truck Equipment Co.
- A J R Inc.
- Auto Crane Co.
- Caseco Mfg. Inc.
- Dakota Bodies Inc.
- Diamond Truck Body Manufacturers
- Douglass Truck Bodies Inc.
- H & H Sales Co. Inc.
- Harbor Truck Bodies
- Iowa Mold Tooling Co. Inc.
- Jomac Ltd.
- Knapheide Mfg. Co.
- Largo Tank & Equipment Inc.
- Maintainer Corp. of Iowa Inc.
- Monroe Custom Utility Bodies, Inc.
- Omaha Standard Palfinger
- Phenix Truck Bodies & Equipment
- Pride Bodies Ltd.
- RKI Inc.
- Royal Truck Body Inc.
- Service Trucks International
- Stahl/Scott Fetzer Co.
- Stellar Industries
- Teamco Inc.
- The Reading Group LLC.
- Valew Welding & Fabrication
- Venco Venturo Industries LLC
- Warner Bodies
- Wilcox Bodies Ltd.

Research and Markets is a business intelligence and research firm based in Dublin. More than 400 of the Fortune 500 companies buy its research, says its website.



Auto Crane Co. is among the 29 manufacturers featured in report.



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Sex, lies, and mechanics

Warning: this item is completely concerned with sex.

Now that we have your attention, and take it that you been warned again, let it be revealed that a prominent women’s magazine recently rated the sexual prowess of 15 professions, including mechanics and truck drivers, based on a survey of 400 married women.

Whether or not that also captures those who work with mechanics trucks isn’t clear, however.

“If he tinkers with intricate machines all day, maybe he’ll be gifted at navigating a woman’s body,” the article’s introduction quoted sex therapist and author Linda De Villers.

In any case, according to *Redbook* readers, 61 per cent of wives rate their husbands “the best of the best,” the article said.

In addition, 95 percent of mechanics and truck drivers engage in foreplay, with 39 percent enjoying “excellent” sex lives.

Almost half — 47 percent — have sex at least twice weekly, which is above average. And 26 percent have an appetite for edible underwear.

All that activity takes it toll, though: about a third of mechanics and truck drivers fall asleep right after the act — triple the average, *Redbook* reported.



A man who tinkers might know how to please his woman, says sex therapist.

Mechanic’s truck hit on highway

A car slammed into a mechanic’s truck stopped on a Texas highway Aug. 24 during the last in a chain of three crashes early that morning, according to a news report.

The mechanic was “working on an 18-wheeler that had stopped” on northeast Loop 410 in San Antonio when a car hit the mechanic’s truck after narrowly missing the mechanic, Fox 29 News reported on its website.

The car’s driver fled on foot, the report said.

Just before 2:15 a.m., a minivan flipped after losing control. Another car lost control while trying to avoid the minivan and wound up on a median. The third car missed the other two but then hit the truck, the report said.

The minivan’s driver and a passenger were taken to hospital with unknown injuries.

Work trucks prove popular with thieves

A category that includes work trucks was the most popular type of stolen construction equipment in 2013, according to a recent report from a maker of theft-protection devices.

The category of work trucks, light utility vehicles and trailers was the most popular type of equipment installed with a device from LoJack Corporation to be stolen and recovered, a news release said.

The Canton, Mass.-based company’s annual Construction Equipment Theft and Recovery in the United States study also found that in 2013 California was the state with the highest incidences of equipment theft. Texas, Florida, Georgia, and New Jersey rounded out the top five.

California retained its top ranking because of its many active construction projects as well as the state’s proximity to an international border and access to major ports, the report said.

“According to the National Insurance Crime Bureau, close to \$1 billion a year nationwide is lost due to the theft of construction equipment and tools,” associate vice-president of LoJack Commercial, Courtney DeMilio, said in the news release. “It has become harder to detect construction theft, and combined with the fact that job sites are often poorly secured, thieves are finding the theft of construction equipment is a lucrative opportunity. As a result, construction and rental businesses are vulnerable and at an increased risk for theft and significant monetary losses as a result of theft.”

The study tracked thefts in 27 states where LoJack-installed equipment was stolen and recovered, the news release said.

Backhoe loaders, skip loaders and wheel loaders made up the second most stolen and recovered equipment category. Third on that list was the category of generators, air compressors, welders, and light towers — equipment often found on service trucks. Skid steers were the fourth most popular equipment category to steal.

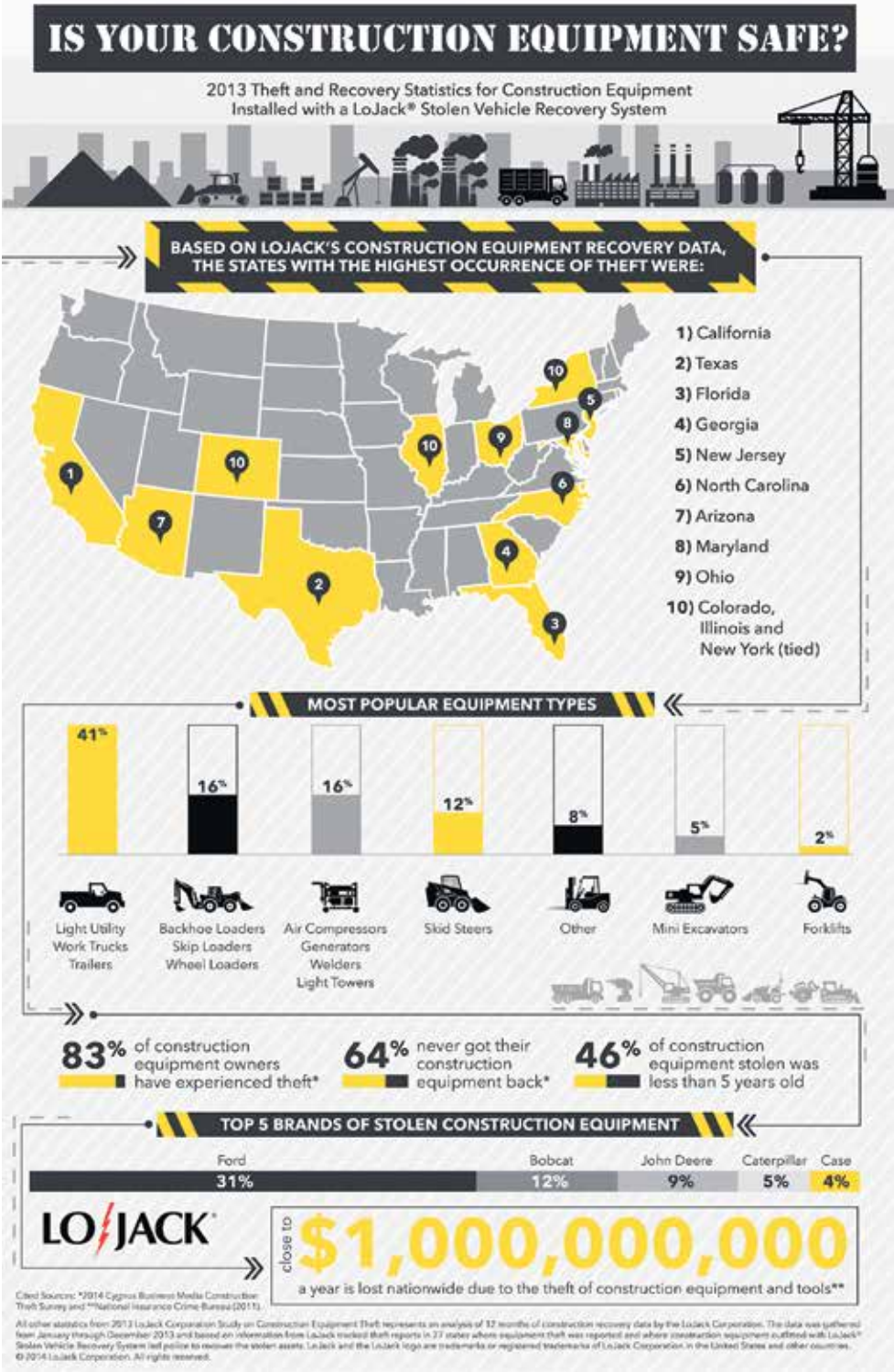
The study looked at theft trends of equipment and tools equipped with LoJack’s Stolen Vehicle Recovery System.

According to the study, 46 percent of the stolen equipment was less than five years old. In 95 percent of cases, the equipment was recovered in the same state from which it was stolen.

Equipment stolen was from 51 manufacturers, although five major equipment makers accounted for 61 percent of the thefts. Ford equipment accounted for 31 percent, with Bobcat equipment second at 12 percent, and John Deere equipment third at nine percent. Caterpillar, at five percent, and Case, at four percent, completed the top five.

The news release noted that the LoJack system combats equipment thefts in 29 U.S. states and the Canadian provinces of Ontario and Quebec.

“LoJack’s data reveals that 44 percent of equipment installed with our system was recovered in less than five hours after being reported stolen,” DeMilio said. “A swift recovery time of equipment is growing in importance, as modern economic conditions have led construction businesses to increasingly rent rather than purchase equipment. This rising demand for heavy duty rental equipment has made rental companies, and the businesses they supply, vulnerable for not only theft, but significant monetary losses as a result of theft.”



This infographic reviews 2013 theft trends in the U.S. of construction equipment and tools equipped with the LoJack Stolen Vehicle Recovery System.





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Service Truck Magazine welcomes submissions of letters, guest columns, short notices, product announcements, press releases, and ideas for articles. Send them to editor@servicetruckmagazine.com.

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Guest columns: These can be up to 700 words. Please send a brief note of inquiry first, however, just in case space what you wish to write about has already received a lot of coverage in our pages. Include your full name, the city or town you live in, and a contact phone number.

Short notices: Tell us about individual promotions, appointments, awards, staff movements, plant openings, plant closures, expansions, and other milestones. These short items should be no longer than 100 words.

Product announcements: Are you a supplier to the industry? Has your company developed a new product or process? If possible, attach a photograph.

Press releases: These should have something to do with service trucks and mechanics trucks in North America. We might publish only part of a press release or use it as starting point for an article by one of our writers.

Story ideas: Maybe you have an idea you'd like us to explore for an article. A good rule of thumb is to limit your story idea to no more than 30 words. If it takes longer than that to describe it, then chances are we won't be able to take it on.

All submissions are subject to editing and publication cannot be guaranteed. The deadline for our next issue of *Service Truck Magazine* is Nov. 1, 2014. Sooner is always better than later.

EDITORIAL

Time to fix those roads and bridges

Everyone — business owners and workers, children and retirees — benefits either directly or indirectly from well-maintained and safe roadways. So governments at all levels owe it to all those people they serve and represent to provide for the most efficient and safest roads the people can afford.

As that old commercial used to point out — you can pay now, or pay later.

In recent years, various groups, including those representing engineers and urban planners, have warned about the deterioration of America's transportation infrastructure — including its highways and bridges. In 2013, for example, the American Society of Civil Engineers issued a report card on the country's infrastructure, giving it a D+ grade-point average. The society estimated that \$3.6 trillion needed to be spent by 2020 to bring the infrastructure up to snuff.

Also last year, consultants Ernst & Young issued a report with the Urban Planning Institute that noted "many mature countries—particularly the United States and those in Europe—are grappling with how to repair or refashion once-advanced, but now increasingly outmoded, infrastructure in the face of limited funding capacity."

And this July, as reported in this edition of *Service Truck Magazine*, the Transportation Research Board of the National Academies released a report that concluded rural roads and bridges in the U.S. heartland are substandard and three times as deadly as other roads.

Now, not everyone believes that the infrastructure is crumbling. Skeptics, or cynics, argue that it's a myth perpetrated by spendthrift liberals out to waste money on "stimulus" projects or self-interested folks in the construction and engineering trades looking to create work for themselves. Some of those arguments are more reasoned, such as an analysis by David Hartgen, an adjunct scholar with the conservative Reason Foundation, who examined data on Interstate highway conditions and spending from 1989 to 2008. Hartgen's study discovered that those roads had improved in that period and fatalities on them had dropped.

Of course, that doesn't include what's happened since the fiscal crisis of 2008. And in a subsequent report this year, the Reason Foundation, while acknowledging Hartgen's arguments, went on to say, "Nevertheless, these figures don't call for complacency. There are still huge congestion costs being borne by highway users, especially in large urban areas. There is still a large backlog of deficient bridges."

The problem with the bridges became all too apparent last summer, when a bridge over I-5 in Washington State collapsed into the Skagit River after a steel box on a truck clipped a bridge support. After that disaster, which fortunately didn't result in any deaths, it was soon revealed that several hundreds of bridges in Washington State alone are in even worse shape than the Skagit bridge was.

As an article this May on Smithsonian.com stated, "while there may not be money laying around to fix bridges, there are certainly bridges laying around that need fixing."

More recently still, this June the conservative news magazine *The Economist* weighed in. It noted that since the U.S. Interstate highway system was built in the 1950s and 1960s "public infrastructure spending as a share of GDP has declined to about half the European level."

So, a highway system that was once the envy of the world isn't much envied any more.

Among those who agree that U.S. roads and bridges need fixing are many who have put forward ideas on how to raise money to do that. One recurring recommendation is to raise the federal gasoline tax that replenishes the Highway Trust Fund. That tax hasn't increased since 1993. And in those last two decades, cars have become more fuel efficient, which is not a bad thing at all, but it has diminished the ability of the gas tax to raise money.

That had led some proponents to suggest following the lead of Oregon, which has been experimenting in imposing mileage charges on motorists. Another idea, contained in a bill from Maryland Democratic congressman John Delaney, would give tax breaks to U.S. firms wanting to repatriate foreign-earned profits on the condition that they put part of windfall into infrastructure bonds, *The Economist* and other news outlets reported. Delaney's bill has substantial bipartisan support, which in itself is something of a miracle in Washington these days.

Some ideas are going to be more practical than others. With a little thoughtful analysis even better ones can be devised. The main thing is that people of influence are willing to take the risk to raise the money to improve the roads.

That's as opposed to acting like a miser who refuses to fix his roof, allowing the moss to accumulate and destroy the shingles until the whole structure collapses on top of him.

According to *The Economist*, when people are asked to vote on infrastructure initiatives they support them three quarters of the time. And even the Reason Foundation reasons that public infrastructure projects should be financed over time, similar to the way people finance house purchases.

It's past time to put the house in order with respect to roads. And if in doing so, it means creating skilled jobs for Americans to build those roads, and service that equipment, then that would just be a bonus. Wouldn't it?

About our cartoonist

Nelson Dewey has been a prolific cartoonist for over 50 years. If his work looks familiar, maybe you read a lot of car comic books when you were younger.

In the 1960s, '70s and '80s, Dewey was a frequent contributor to those comics, particularly *CARtoons*. He also drew for *Hot Rod Cartoons*, *CYCLEtoons*, *SURFtoons* and *SKItoons*. In all, he produced nearly 2,000 pages in those publications.

He has also published cartoons in *Cracked Magazine*, *Oui*, *Reader's Digest* and *Motor Trend*, as well as community newspapers and dozens of books. And he shared an Emmy Award in 1988 for his work on storyboards for the *Arthur* cartoon series on television.

To take a trip down memory lane and see samples of Dewey's car cartoons, go to his website, www.nelsondewey.com.



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Rural road network needs work

Highways, roads and bridges in the U.S. rural heartland lack adequate capacity, and aren't built to standards need to accommodate growing freight travel and meet safety requirements, according to a recent research report.

The 39-page report, from the Transportation Research Board of the National Academies, examined the condition of the nation's rural transportation system and points out needed improvements.

Among the findings of the report, dated July 2014, are the following:

- A lack of connectivity to the highway system is impeding growth in rural community. The report notes that the U.S. population has almost doubled, to 315 million, since the Interstate Highway System began in 1956. Sixty cities of at 50,000 people don't have direct access to an interstate highway.
- The rate of traffic fatalities on rural roads is almost three times that of all other roads. The rural fatality rate in 2012 was 2.21 deaths per 100 vehicle miles, compared with 0.78 deaths overall. Forty-eight per cent of traffic fatalities in 2012 were on non-Interstate rural routes.
- Numerous improvements can be made to reduce serious crashes and deaths. Low-cost improvements include installing rumble strips, improving signage and lane markings, and installing lighting. Moderate-cost improvements include adding turn lanes at intersections, resurfacing pavements and adding median barriers. More costly remedies include improving roadway alignment, reducing the angle of curves, widening lanes, adding or paving shoulders, adding intermittent passing lanes, or



Rural routes in the U.S., like this one in Montana, are in need of upgrading, says research report.

Photo by Marcia Eberl

- adding one or more lanes.
 - In 2013, 12 percent of the nation's rural bridges were rated as structurally deficient while 10 percent of the nation's rural bridges were rated as functionally obsolete.
 - To remedy that, the report recommends adequate funding for state and local transportation programs. The report notes that the federal government is a critical source for funding for rural routes, but that the current funding expires Sept. 30, 2014.
 - A booming energy sector is dramatically increasing travel loads on rural roads. For example, The U.S. production of liquid fuels, including crude oil and natural gas, has increased 34 percent from 2000 to 2014. In that same period, the average travel per lane mile by large trucks on major, non-arterial rural roads in the U.S. increased by 16 percent.
- To access the full report, visit www.trb.org/Highways1/Blurbs/171039.aspx.

CTEA conference comes to Edmonton

More than 200 people are expected to attend the Canadian Transportation Equipment Association's 51st annual manufacturers conference in Edmonton, Alta., in late October.

Don Moore, the association's executive director, said the conference typically draws 220 to 230 delegates, although those numbers were down after the economic downturn of 2009.

"But I'm hopeful to get that number out again," Moore said.

The conference takes place Oct. 27 to 29 at the Delta Edmonton South Hotel and Conference Centre.

The association has more than 500 members from across Canada and the U.S. They include service body manufacturers such as Maintainer Corporation of Iowa Inc., Stellar Industries Inc., and Wilcox Bodies Ltd. of Ontario. Other members include chassis makers, such as Canadian Kenworth, Daimler Trucks North America, Mack Trucks Canada Inc., and Hino Motors Canada Ltd., as well as equipment dealers Strongco Corporation, and Wajax Industries.

The program for the agenda was still being finalized as this edition went to press. However, Moore said the conference, which also includes the association's annual general meeting, will begin on Oct. 27 with a directors meeting, followed by a town hall meeting with officials from Transport Canada, and reception in the evening.

At the reception, there will be a "table-top" trade show featuring 30 to 40 exhibitors, mostly suppliers.

Over the next two days, the conference, which has "fuels of the future" as its theme, will have sessions on such topics as natural gas, clean diesel, and hydrogen injection, as well as updates from truck chassis manufacturers, and the impact of greenhouse gas rules on outfitters.

The conference's final day is expected to include a tour of the Leduc #1 Energy Discovery Centre, which showcases Canada's oil and gas industry.

For more information about the conference, visit <http://ctea.ca/events>.

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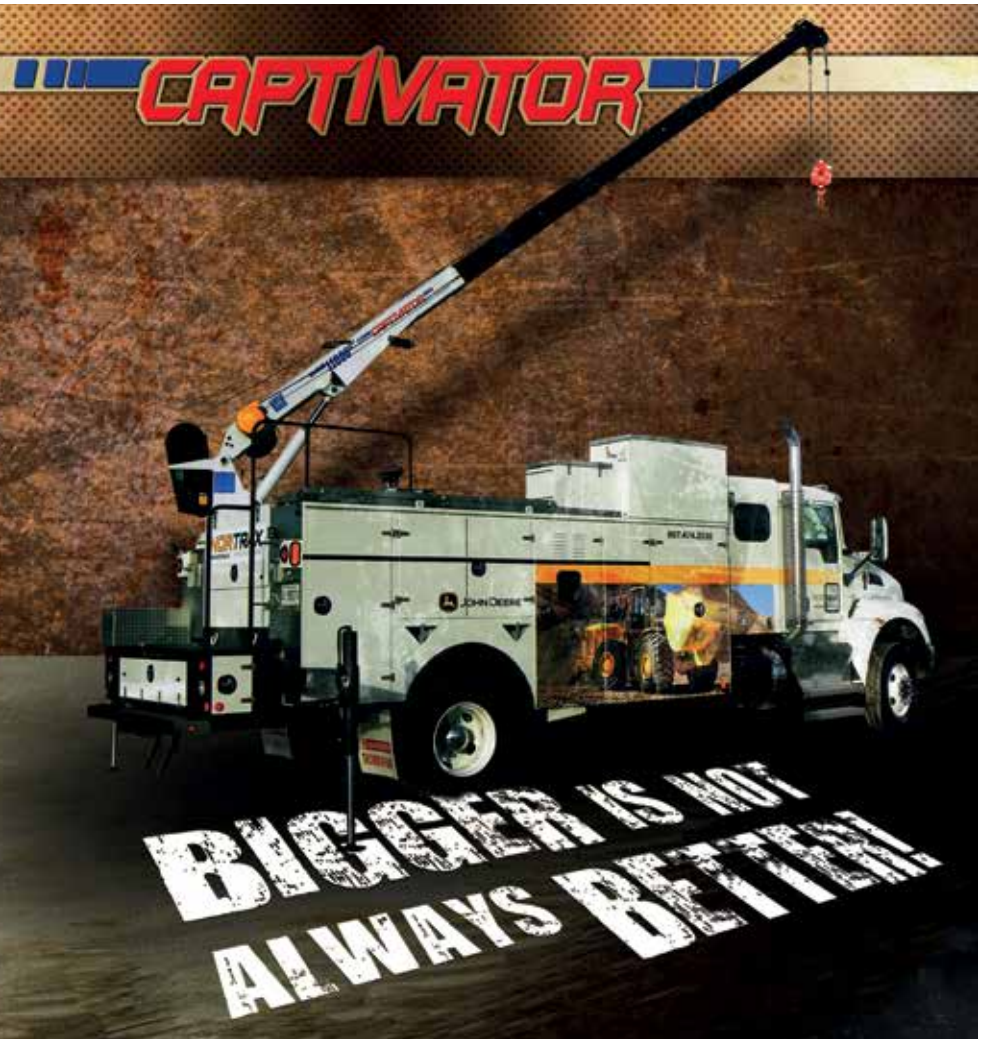
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COVER

Prepare for material costs to rise *continued from cover*

Build your inventory

"Depending on the volume or severity of the change, we might look at buying an entire truckload of material," explains Walter VanLaren, general sales manager for Sioux Automation Center Inc. in Sioux Center, Iowa. "Typically, once you get into a truckload of something, or a whole coil, you can locate your price point and see if you can go up to the next price point without affecting input cost or margin and still be within your comfort range." Many vendors will adjust cost for manufacturers who buy more material at one time.

Wilcox Bodies Ltd., based in Milton, Ont., always keeps a certain amount of stock on hand in case material prices increase. "We have an agreement with our metal supplier. If material prices go up, then they have to give us a long enough lead time to plan for it," says Wilcox vice-president David Dick.

Examine processes

Price changes (or the anticipation of price changes) offer opportunities for process improvement and waste reduction. VanLaren recommends examining the materials you're currently using to make sure they're being applied as resourcefully as possible. "Ask yourself: Am I utilizing the steel sheets as efficiently as I can? Can I take this piece over here and make something else out of that?" VanLaren says.

He says it's also worth investigating whether buying material in a different length and/or combining it with other material being used for another product would pay off. "It may save you from handling a piece of material three times," VanLaren explains.

energy-saving tactics were put into place, along with a plan to reduce energy use for its paint operation. As a result, the plant reduced MMbtu per truck (the DOE's metric for energy intensity) by 29.6 percent.

Budget for price changes

Price increases aren't necessarily just a one-time event, explains VanLaren. There are regular increases you should count on and plan for.

"Just about every year, we can expect a one or two percent price change in our paint, for example," he says. If you haven't incurred a recent price change for common materials, assume it will happen in the next 12 to 16 months.

Planning and forecasting are integral pieces of managing material price increases. Use your staff to gather helpful information that will make planning and forecasting as accurate as possible. For example, when they call on customers and dealers, Auto Crane's regional sales managers serve as liaisons to discover the types of orders coming in and what's happening in the field.

"The information starts from them," explains Auto Crane's Collins, "and then flows through sales, marketing, and engineering, and then out to the plant." The information is then used to plan and forecast orders.

Vendor and customer relations

Shaw says Curry Supply is always looking for more efficient ways to produce products and manage costs. "We regularly review material quality, delivery,



Venco ET18KX electric telescopic crane is mounted on a Stellar service truck body on a Ford F-750 chassis and cab at ConExpo-Con/Agg in Las Vegas this March.

Photo by Keith Norbury



"Depending on the volume or severity of the change, we might look at buying an entire truckload of material. Typically, once you get into a truckload of something, or a whole coil, you can locate your price point and see if you can go up to the next price point without affecting input cost or margin and still be within your comfort range."

~ Walter VanLaren, general sales manager, Sioux Automation Center, Sioux Center, Iowa



"Ideas aren't necessarily generated from the top; oftentimes they're generated on the shop floor in terms of how we can do things better, improve layouts or efficiencies and workflow, and how much time it takes to assemble."

~ Matt Collins, product manager, Auto Crane, Tulsa, Okla.

Operational excellence is a cost-saving focus for Tulsa, Okla.-based Auto Crane as well. Product manager Matt Collins says process improvement can (and should) happen at all levels. "Ideas aren't necessarily generated from the top; oftentimes they're generated on the shop floor in terms of how we can do things better, improve layouts or efficiencies and workflow, and how much time it takes to assemble," Collins says. Encourage staff to share their ideas for improving efficiency, or to communicate noticeable areas of inefficiency within their areas of responsibilities.

Any change you make that reduces the amount of material or energy used during production will help the bottom line. Volvo Trucks conducted U.S. Department of Energy assessments to identify where and how much energy was being used. Then,

and pricing with our vendors in order to manage manufacturing process and expenses," he says. Building good vendor relationships may allow you the luxury of negotiating back on price increases, as well as suggesting options like the unbundling of pricing, possible discounts for quick payments, or payment term extensions.

Establishing and maintaining relationships with customers can also help you deal with material price increases.

"More than ever, fleet managers are closely evaluating spec configurations to optimize operator efficiency and total cost of ownership," says Curry's Shaw. "We work together with fleet managers to measure cost effectiveness vs. cost of ownership."

While he says that some customers do shop on price alone, most customers are even more concerned about investing in products that will ultimately help

them make money, so they're looking for solutions with high cost/value relationships.

Consider a material change

While material change is an option, it's typically a last resort — for several reasons. First off, a change in material may also require a change in machinery to process it. (The same equipment can't be used to weld both steel and aluminum, for example.) Is your staff trained to work with the properties of the new material? If not, what would it take to get them up to speed?

A move from one material to another may require different tools as well. Using the steel-to-aluminum example, increased gauge thickness may be required for aluminum to gain the same comparable strength as steel.

"Changing materials would be extreme, and I think a company would embark on a change like that only if the market were driving it ... meaning that the consumer was the one saying they wanted a different material," says VanLaren. "I don't think

the material price change in itself is a big enough push to make that happen."

Dick says that Wilcox Bodies is close to using 85 to 90 percent aluminum, but it was the complete opposite 15 years ago, when the company used mostly steel. When managing a material change like this, it's important to let customers know about the benefits of the new material.

"For us, aluminum is about 30 percent lighter," Dick explains. "With that savings and weight, you're also saving on fuel and vehicle maintenance, there are fewer emissions, etc."

Even though most service truck manufacturers aren't experiencing material cost increases, implementing some of these ideas can help protect your company when price fluctuations do occur. By preparing now, you won't be caught off-guard down the road.

Leah Grout Garriss is a full-time freelance writer, editor, and marketing consultant based in Cedar Rapids, Iowa.



"We have an agreement with our metal supplier. If material prices go up, then they have to give us a long enough lead time to plan for it."

~ David Dick, vice-president, Wilcox Bodies Ltd., Milton, Ont.

Midwest college launches service truck training program

Two-year program expected to begin in January at Ellsworth Community College in Iowa Falls

An Iowa community college plans to use a specially equipped service truck to help train students in a new mobile service technician degree program.

The program, at Ellsworth Community College in Iowa Falls, is hoping to launch this January, said program coordinator Kevin Butt, an agriculture professor at the college.

"We're in the process right now of trying to get an instructor hired," Butt told *Service Truck Magazine* in late August.

The hope is the instructor will be able to do some recruiting this fall. "I've got a couple of students that have expressed interest in the program already," Butt said.

The two-year program "will train students to diagnose, repair and service agricultural equipment in rural locations," according to an article on the college's website.

Based upon his research, Butt said, the program will be the first of its kind in the United States.

"This is a relatively new but fast-growing sector in modern agriculture," Butt said in the article on the school website. "As the size of ag equipment continues to increase, it has become harder to load and transport the equipment to a dealer's location for repairs. Today, more than ever, dealers need to provide services at the customers' location. ECC's new mobile service technician degree program will assist agricultural implement dealers and service organizations in providing quality service to ag producers in the field."

The optimum class size would be 20 students, Butt said. "You get too many students and it's hard for one person to offer a class, especially when it's very hands on and very technical," he said.

That hands-on parts of the program will include working with a service truck, equipped with a 7,000-pound-capacity crane, on loan from equipment dealer Titan Machinery. Dale Stockdale — who manages the Titan location in Williams, Iowa — was actually the inspiration for

the program. Butt said he was talking with Stockdale one day about another program at the college — a precision agriculture degree — when Stockdale asked about the possibility of a program to train technicians to troubleshoot and repair farm equipment.

"If anyone gets credit for having this idea, it was him," Butt said of Stockdale.

Butt also did ride-arounds with other equipment dealers in the region and discovered that they were also keen on that kind of training. In fact, many agricultural equipment dealers in the Midwest would like to offer internships to students in the program, as well as consider them for job openings upon graduation, Butt said. Several local dealerships, such as Phelps Implement, Bros. Equipment, Central Iowa Farm Store, and Titan Machinery are represented on the program's advisory board, he added.

"With job prospects always a concern for college graduates, we believe this kind of industry involvement and support will go a long way in solidifying our recruitment efforts for the mobile service technician program," Butt said in that article on the college's website.

Stockdale said in that same article that Ellsworth's new program is "right on the leading edge" and he predicted it will be "a big deal in the industry."

More of his company's work is taking place in the field, he said, noting that graduates will gain the specialized skills to do those repairs and get equipments owners back to work quickly.

"We just don't have enough people with these skills," Stockdale said. "Some of these professionals love the variety and the challenge that comes with being a mobile service technician, while others can choose to develop a niche and become product specialists. With all of the proprietary product information and programming that's involved, the opportunities are almost endless."

The program aims to turn out specialists in the field by learning such as skills as fixing a sprayer or servicing a skid loader.



This Titan Machinery mobile service truck, with a 7,000-pound capacity crane, is similar to one that will help instruct students in Ellsworth Community College's new mobile service technician program.

"Basically, they are trained to repair or diagnose everything in the field except the internals of the diesel engine, transmissions, and hydrostats, which are usually done in the sanitary environment at the dealership or the specialized remanufacture center," Butt said.

Subjects in the curriculum include computers in agriculture, agricultural selling, hydraulics, harvesting operations and servicing, hay and forage operations and servicing, fundamentals of electricity and air conditioning, basic problem solving, and advanced precision farming hardware.

"The students who will excel in this career field will be effective communicators who can combine efficient customer service with problem-solving skills," Butt said. "They'll learn high-tech skills to be able to manage wireless computers and communications systems, download apps in the field, upgrade software in the field, and provide clear, real-time communications with the company. What those currently employed as Mobile Service Technicians

love about their jobs are the challenges and the fact that no two days are ever alike!"

The program was originally scheduled to launch this August. However, the college had to restart the approval process for the program when the Iowa Department of Education implemented a new online approval system this spring. That approval didn't come until late in the spring semester, which didn't leave enough time to get it ready for the fall.

If all goes well, the college will consider splitting off a sister program in heavy equipment repair. Butt has already had a call from a local CAT dealer who wanted to know if any training was available on the heavy equipment side.

"That's in the future," Butt said. "Our goal is to try and get the ag side of it up but we already know that's in the back of our minds going forward."

For more information about the program, visit www.EllsworthCollege.com and search for mobile service technician.



Highway service truck sideswiped

A sheriff's office service truck in Wisconsin made the local news this summer when it was sideswiped by a passing vehicle.

The truck, nicknamed "Beltline Bob," was directing motorists on the eastbound Beltline exit ramp at John Nolen Drive near highway 12 in Madison, Wisc., when the incident occurred June 30, the madison.com website reported.

The Dane County Sheriff's Office issued a news release that was also picked by www.channel3000.com.

"A sheriff's deputy was inside the vehicle at the time, and had the emergency lights on, with the large digital sign board directing traffic to move over," the release said. "Highway workers were on the shoulder removing construction barrels, when a red pick-up truck with a red topper side-swiped the service truck hitting the driver's side mirror. The driver of the pick-up truck did not stop, but undoubtedly sustained damage to the passenger side of the vehicle."

The release noted that the incident highlighted why Wisconsin enacted its Move Over Law to help protect emergency crews and highway workers.

Tools stolen from Ohio service truck

More than \$3,739 worth of items were stolen in the break-in of a service truck this spring in Union County, Ohio, according to the community news website, www.thisweeknews.com.

The Union County Sheriff's Office reported that the truck's rear window was broken and the items reported stolen April 28 from a business on Memorial Drive, about 20 miles northwest of Columbus. Flashlights, a volt meter, a recovery machine, leak detectors, torches, batteries, drills and other tools were among the items taken, the report said.

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NEWS

Online auctioneer turns attention to trucks

In its first year of operation, TruckPlanet boasts \$70 million in sales

KEITH NORBURY

The market for used trucks has been strong in recent months, says the CEO of online auctioneer TruckPlanet.

"The market as a whole has been very strong for the last several months," Randy Berry said in a recent interview. "We've been in the middle of that and experienced it like other market participants."

A subsidiary of IronPlanet, TruckPlanet marked its first anniversary this May. In that first year, TruckPlanet sold over \$70 million worth of trucks and trailers. How much of that volume was in service trucks wasn't available. However, a search of the TruckPlanet website in July revealed that 323 service trucks had been sold to that date.

"We've always sold trucks but we hadn't had a real focus on the commercial truck space," said Berry, who is also senior vice-president of operations and services with IronPlanet.

Commercial trucks were a growth area for IronPlanet, which was established in 1999. That growth led to the decision in early 2013 to launch truckplanet.com. So IronPlanet CEO Greg Owens tapped Berry to add the new site to his duties.

"I've got a vice-president of sales who reports in to me for TruckPlanet and so his team is out there working to develop a broader base of sellers for TruckPlanet, but TruckPlanet still is supported by the broader operations team within IronPlanet," said Berry, who joined IronPlanet in 2007 after 14 years with Accenture, the Ireland-based



IronPlanet Inc. CEO Greg Owens speaks at press conference at the company's booth at the ConExpo-Con/Agg trade show in Las Vegas in March.

our traditional IronPlanet sweet spot," he said. As a consequence, "they may be coming in through our traditional IronPlanet sellers rather than through these new TruckPlanet sellers."

A search of the IronPlanet site in July showed 36

Services, an inspection firm focusing on the commercial truck industry that IronPlanet bought in February 2013. On top of that, IronPlanet hires 100 to 200 contractors in any given 12-month period to conduct inspections.

"The contractors generally are lower-volume guys who might have a specific expertise," Berry said. "They may have a geographic coverage that's rather remote that we don't have that much volume in."

Many of those contractors have their own service businesses and their own service trucks, he added. "And they supplement their service business by doing inspections for us."

The minimum trip charge for an inspection is \$270. Depending on the complexity of the item, the inspection fee can run to \$1,600. "But generally the average is somewhere in the \$400 to \$500 range for a full inspection," Berry said.

Those inspections, for which IronPlanet provides a trademarked IronClad Assurance, are crucial for online sales of big ticket items, said Sue McGregor, IronPlanet Inc.'s managing director for Canada.

"I don't even know if we break even on it (the inspection fee)," McGregor said. "But we need to do it to get people comfortable over the Internet."

According to Berry, an IronPlanet auction will attract an audience of 15,000 from all over the globe whereas a physical auction can only draw a much smaller audience because of space limitations. A physical auction is also likely to bring in only those customers who live within the region where the auction is taking place.

"So if you're comparing IronPlanet to a physical auction that may have an auction every quarter in a physical location, those regional customers have to wait for those auctions four times a year, whereas for us they can sell every week," Berry said.

He expects that online selling of equipment, including of service trucks, will only keep growing.

"There's been a migration of just about every business that you can think of from the brick-and-mortar and physical side to the online version, Berry said. "So we feel like those things are definitely working in our favor."



"Our plan is to keep growing this market and continuing to reach out to customers and potential customers in this marketplace."

— Randy Berry, CEO, TruckPlanet

consulting firm. Accenture was also one of the firms that Owens worked for before he joined IronPlanet.

"Our plan is to keep growing this market and continuing to reach out to customers and potential customers in this marketplace," Berry said.

A privately held company, IronPlanet is backed by two Silicon Valley venture capitalist firms — Kleiner Perkins Caufield & Byers and Accel Partners. Iron Planet's strategic investors include major equipment manufacturers Caterpillar, Komatsu, and Volvo.

TruckPlanet doesn't have a specific strategy for selling service or mechanics trucks, Berry said. But IronPlanet has been selling those vehicles since the site was launched.

"So most of the service trucks that we sell are primarily coming from our traditional IronPlanet customers," Berry said.

Those include contractors and other companies that have service trucks as part of their fleets, he said.

"But a heavy focus of TruckPlanet in terms of new sellers is a lot of the class 8 over-the-road trucks, which we never sold a ton of through IronPlanet," Berry said. Those new customers include major food companies that previously wouldn't have used IronPlanet because they operated in "a whole different market."

Service trucks, however, were already "more in

service trucks for sale with another 454 sold.

A similar search for mechanics trucks, however, returned no items for sale and only two sold items.

TruckPlanet meanwhile had 22 service trucks for sale and 269 sold, and no search results at all for mechanics trucks.

In contrast, the Ritchie Bros. website, rbauction.com, returned 2,999 results for a search of mechanics truck, most of those being described as service trucks.

"It's probably nomenclature," Berry said. "Certainly Ritchie Bros is still the biggest kind of player in this space. They've been around for 65 years."

One key difference between an IronPlanet or TruckPlanet auction and a live auction at Ritchie Bros. is that there is no auctioneer to interact with the crowd. At a physical auction, the auctioneer might suggest a bid of so many dollars but will drop down as low as a buck just to get the bidding started, Berry said.

TruckPlanet, however, sets a starting price based upon the market value of the truck. "And if for some reason nobody bids at the starting bid level, we will generally have a pre-approved agreement with the seller to adjust the starting price and re-list it," Berry said.

TruckPlanet and IronPlanet have about 50 inspectors on staff, including those of the subsidiary Asset Appraisal



Sue McGregor

Recruiting Road Warriors *continued from cover*

Roofing Company, Mason City, Iowa. "It's hard to find somebody with a CDL (commercial driver's license), who understands large equipment, someone with good mechanical skills, who's capable of working out of a service truck."

Anderson's dilemma echoes across North America. From the resurgent construction industry in the eastern United States to the booming oil fields in western Canada and the Dakotas, demand is high for mechanics with the unique skills, personality and desire necessary to be successful road warriors.

"It takes an independent person, who can work by himself, who likes a challenge," says Eric Paul-Hus, one of the owners of Fort Lauderdale-based Hypower Inc. "It's all about whether they understand equipment. Not only do they need to know hydraulics, electrical and basic maintenance and repairs, they need to be able to do diagnostics. Diagnosing things and fixing things are separate skills, and a good field mechanic is good at both."

It's important for companies to recognize the difference between a "mechanic" and a "field mechanic."



It's important for companies to recognize the difference between a "mechanic" and a "field mechanic."

"A full-time shop mechanic and a full-time field mechanic are separate individuals," says Jason Van Pelt, manager for Maizis and Miller Recruitment Specialists, based in Toronto. Maizis and Miller specializes in recruiting diesel engine mechanics for the truck and heavy equipment industry. "That doesn't mean one type of mechanic is better than another — it just recognizes that it takes different types of people to excel at different types of the same basic job."

"A mechanic in a shop doesn't generally have to deal directly with customers," explains Van Pelt. "He can keep his head down, do his job on a concrete floor under good lighting and go home at 5 o'clock. A field mechanic, on the other hand, has to be able to deal directly with customers, is often on-call, and usually works pretty long hours in all



"Construction companies and fleet companies don't necessarily need all the brand-specific training and knowledge a dealership mechanic needs. They want somebody who has the ingenuity and skills to go out and work on anything, from basic maintenance to diagnostics and complete overhauls."

*~ Jason Van Pelt, manager,
Maizis and Miller Recruitment Specialists, Toronto, Ont.*

sorts of weather. It requires a special person who cannot only deal easily with people, but who is good at diagnostics, good at repairs, and enjoys a challenge. They've got to be self-motivated, physically fit and interested in constantly learning and improving themselves. They're the sort of person who is never satisfied doing the same thing all the time."

Finding mechanics with the experience and unique personality to work from a service truck isn't easy. A candidate with a tech school degree, 10 years of in-shop experience and glowing references may still not be the best man for a job, depending on the type of training and experience. Mechanics who received training under a specific format and worked in a dealership shop — trained, for example, at a tech college affiliated with a John Deere-specific curriculum and then employed at a John Deere dealership — might be an ace at diagnosing and repairing green equipment, but less confident when confronted with yellow machinery.

"A dealership mechanic (dedicated to a specific brand of machinery) and a general construction or fleet mechanic are different situations," says Van Pelt. "Construction companies and fleet companies don't necessarily need all the brand-specific training and knowledge a dealership mechanic needs. They want somebody who has the ingenuity and skills to go out and work on anything, from basic maintenance to diagnostics and complete overhauls. It's important that a company realizes what they need when they're reviewing resumes for a field mechanic job."

Personality is another important consideration when recruiting field mechanics. Some mechanics are by nature more comfortable pulling wrenches alone, working on machinery in the back corner of a shop. Others have the gift of gab and are able to interact easily and professionally with customers.

"A good field mechanic is a people person," says Van Pelt. "They understand the importance of eye contact when talking to people. They're good at interacting easily with a machine operator who may not be the best communicator in the world, and then they can turn around and talk easily with the boss who needs a detailed explanation of what's wrong and how it's going to be fixed."

Companies in need of qualified field mechanics benefit from searching outside their local job market.

"Seventy percent of our placements are relocations," says Van Pelt. "Maybe the guy's family wants to relocate to a warmer climate, or they want a higher income and are willing to move to get a better paying job. When you find someone able and willing to relocate, these mechanics — and companies — need to consider other factors required to make it happen. Are they in rental housing or do they own their home and will need to sell? Will the spouse have to switch jobs? If they're willing to relocate in a different state it takes more consideration than if they want to stay in the same city."

Once a company identifies a candidate for a field mechanic position, the current market requires quick, decisive action.

"A company that spends a couple weeks shuffling job applications and resumes between the HR department and other departments is going to miss out on good applicants," says Van Pelt. "There's a huge demand for qualified field mechanics, and good ones get snatched up quickly."

The demand for field mechanics means pay rates, incentives and "perks" must be in-line with the marketplace to attract quality personnel. Van Pelt says pay rates currently range from \$25 per hour in South Carolina to more than \$35 per hour in the Dakota oil fields. Perks and incentives sweeten the pot for experienced mechanics.

"Most of these guys are work horses," says Van Pelt. "They don't like 40-hour weeks. They're looking for the opportunity to put in lots of hours and to get paid well for that extra time. It helps to provide them a quality truck to work out of. Cranes, nice toolboxes, air compressors, welders and even the way the cabs are outfitted are selling points to these guys."

So, in the end, service trucks become part of an incentive package to attract experienced, quality field mechanics. Base salary, extra-hours bonuses and other perks are important, but when it comes to recruiting field mechanics, the happiest road warriors ride into battle in well-equipped service trucks.



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BY DAN ANDERSON

Spec My Truck

No brag, just action

Experience, the right tools and a good service truck give this mechanic confidence he can fix just about anything.

Text by Dan Anderson, Photos by Amanda Howell, courtesy of EJ Equipment Inc.

Brad Collins is proud to be different. “I’m one of the oddballs that don’t mind being on the road,” says the 31-year-old mechanic with EJ Equipment Inc. in Edwardsville, Illinois.

EJ Equipment sells and services sewer maintenance trucks, hydro-excavators, truck-mounted industrial vacuums and other specialized heavy equipment. Collins savors the variety and mobility his job offers.

“I enjoy the challenge of being out there on my own, having to figure things out by myself. I like starting each day not knowing exactly where I’ll end up. I’ve traveled anywhere from 100 to 600 miles in a day. Sometimes I’ll spend two or three overnights on a job.”

Collins works from a 2014 Ford Super Duty F550 powered by a 6.7-liter, dual-turbo diesel engine ahead of a six-speed automatic transmission, sporting a Maintainer-brand service body. EJ Equipment is a dealer for Maintainer service truck bodies, and his bosses outfitted the Ford’s chassis with a one-ton Maintainer body equipped with a 6,500-pound Maintainer-brand crane with wireless controls, a 40-cfm Vanair air compressor, a built-in air hose reel, LED strip lights inside the tool cabinets, and special fans that pressurize the toolboxes and cabinets.

“Having the side cabinets pressurized is nice,” says Collins.

Changes in temperature and humidity often cause condensation to form inside the cabinets on service bodies. The special fans force fresh air into the cabinets any time the truck is running, and the ventilation reduces condensation on tools.

“My tools are my livelihood. It costs me money to replace tools that get rusty. The pressurized sideboxes are a nice feature.”

The crane on Collins’s service truck is a “tall mount” crane fastened to the floor of the body rather than to the top of one of the sideboxes, increasing the crane’s strength and stability. The outriggers for the crane raise and lower hydraulically. The right outrigger, near the base of the crane, also extends and retracts horizontally from the chassis via hydraulics.

Collins added a few items to customize the truck to his needs. He bolted his own Miller “Bobcat” 10,000-watt generator/AC-DC welder to the top of one side of the service body. The welder has 25 feet of welding cables, and Collins has another 50 feet of extension cables available for hard-to-reach welding jobs. He also carries an extra 50 feet of half-inch i.d. compressed air hose to augment 50 feet of air hose on the built-in hose reel.

“With the 40 cfm air compressor and the half-inch hose, I have no problem running my one-inch (drive) air guns,” he says.

Collins is especially pleased with the amenities in the truck’s cab.

“The cab is pretty tricked-out for a service truck,” he says. “It’s got a split-bench seat, power windows, a CD player and nice stereo, and a synched phone system. I’m impressed with how nice it rides and the mileage I’m getting. It’s averaging 12 miles per gallon, even though the gross weight is around 16,000 pounds.”

Collins and his truck have become a mobile profit center for EJ Equipment. Customers ask for him by name. Many bypass his dealership when they need repairs, and call him direct.

“They know I can get the job done,” he says. “I’ve got a nice, well-equipped truck, I’ve got the tools and parts to fix just about anything, and I took enough classes in the School of Hard Knocks that I’m confident I can figure out whatever they throw at me. I enjoy what I do and take pride that I can handle just about any repair or maintenance job they throw at me.”

Dan Anderson is a freelance writer based in Bouton, Iowa. In addition to working full-time as a mechanic, with 20-plus years experience working out of service trucks, Anderson has authored more than 1,800 articles in national and international publications over the last 25 years. They include his regular In the Shop column in Farm Journal Magazine and frequent contributions to Speedway Illustrated Magazine, a leading short-track stock car racing publication.



The 6,500-pound Maintainer-brand “tall mount” is fastened to the floor of the body rather than to the top of one of the sideboxes, increasing the crane’s strength and stability.

A self-retracting hose reel holds 50 feet of half-inch i.d. air hose.



The pressurized storage system forces fresh air into the cabinets any time the truck is running.

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The crane has wireless controls.



A Miller "Bobcat" 10,000-watt generator/AC-DC welder is bolted to the top of one side of the service body.



A CD player and stereo are among the accessories inside the cab.



Brad Collins's 2014 Ford Super Duty F550 truck sports a Maintainer-brand service body.



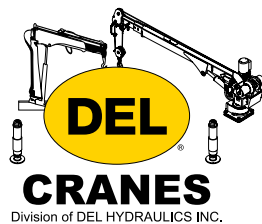
The 40-cfm Vanair RC 40 air compressor bears a Maintainer logo.



The truck is powered by a 6.7-liter, dual-turbo diesel engine ahead of a six-speed automatic transmission.

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NEWS



Trucks service fracking sector *continued from cover*

one lube truck cover a footprint stretching several hundred miles.

Hydraulic fracturing has been around since the late 1940s, but it's neither the easiest nor the most cost-effective or accepted means of drawing oil from the ground. The process, colloquially known as fracking, is generally done by pumping water, sand and chemicals into the ground through a wellhead under high pressure to crack open the rock underneath and release trapped oil and gas.

Amidst reports of groundwater contamination and earth tremors, fracking has faced stiff opposition from environmentalists and divided some communities where it's done or even proposed. Still, with growing demand to produce oil domestically rather than rely on imports, fracking has become a billion-dollar industry over the last half decade.

Vibbert, who manages Riverbend's Hazen business, hasn't seen protests locally. "I don't hear much about it," he explains, adding that "if they don't do it (fracking) here they're going to do it somewhere else."

For service truck operators and others working in the Bakken, the main challenge is the harsh climate. Vibbert says -25 degree daytime temperatures and 25 mile an hour winds are common in winter.

Vibbert has vivid memories of a February all-nighter two years ago, soon after he arrived in North Dakota to open the Riverbend operation. "I was out at a well site where they'd lost a fuel pump," he recalls. "It was 30 below zero and the wind was howling."

Propane heaters aren't allowed at fracking sites — crews even wear H2F gas detectors — so the only way to keep warm was to hop in the truck every few minutes.

"We spent six hours trouble-shooting when under normal circumstances it might have only taken about two hours," Vibbert says.

That's wintertime in North Dakota. Vibbert describes July as hot, humid and dusty, fall as rainy, and spring as wet from flooding with the ground still frozen.

"You're working in standing water because these well sites don't have drainage," Vibbert explains. "All the water drains to the well, not away from the well, because if they have a spill it needs to be contained."

Despite four seasons of weather extremes the subsidiary of Grand Junction, Colorado-based Riverbend Machinery keeps busy selling, renting and servicing heavy equipment made by the likes of Kawasaki and Link-Belt that's used to build and run the oil rigs and pipelines. Vibbert says his team does everything from oil changes and hose and hydraulic repairs to solving electrical problems on equipment such as skid steers, portable light plants, excavators, cranes and wheel loaders.

Core to Riverbend's business is a 2013 four-wheel-drive Dodge 5500, which has a 6.7-litre Cummins turbo-diesel engine and a Knapheide service box.

"We took the box off a 2002 Ford F550," Vibbert says. "The truck was worn out but the box was still in good shape, so instead of buying a whole new service truck with a new box we took the old box and put it on a new chassis."

Riverbend's lube truck is a 2005 Ford F750 with a 5.9-litre Cummins turbo-diesel engine, assembled by Elliott Machine Works of Galion, Ohio.

The vehicles, including equipment, cost roughly \$60,000 apiece, Vibbert says.

The investments have paid off, though. The oil boom "is bigger than anything I've ever seen," Vibbert says. Business is so brisk that if a new customer calls up, service

wait times can exceed a week.

Vibbert says he would expand but it's not easy finding qualified, reliable mechanics willing to work in the often-extreme conditions.

However, the weather isn't the only challenge. "It's easy to get parts for Caterpillar and John Deere," Vibbert says. "But when you start getting into some of the weird equipment it can be difficult."

Vibbert says increased fracking is partly responsible — activity is ramping up in states as widespread as North Dakota, Colorado, Texas and Ohio. But he also blames a trend towards low inventories.

"Companies don't stock the parts like they used to," Vibbert explains. "We just worked on a crane out of Texas and it was one of the biggest pains in the ass to get parts for."

"It's easy to get parts for Caterpillar and John Deere. But when you start getting into some of the weird equipment it can be difficult."

~ Evan Vibbert, Riverbend Machinery ND

Bruce Bunting, an industrial products specialist with Knapheide Manufacturing Company in Quincy, Ill., says demand for service and lube trucks was strong in the fracking states during an initial boom from 2009 through 2011. Demand then dropped but has risen again in the last year or so.

Shale gas development has almost single-handedly driven up demand for work trucks over the last five to six years, Bunting says.

"It takes a lot of support vehicles to drill one of these shale gas wells and then put it in production. It's a very labor-intensive process."

Some companies doing fracking maintain their own service trucks, and Bunting says one challenge for them is to correlate levels and areas of activity to equipment purchases.

"Our end users in the energy field don't know if a well is going to be productive or dry, so they can't say how many trucks they're going to need to support a new sector they're planning to develop," Bunting explains. "If it hits, they might need 15 more trucks — and need them within hours or days, not weeks or months. So our challenge is to support our customers in a way that keeps their operations going."

In the shale gas sector, Bunting says, companies need to service fracking and coil tubing trailers, many of which have specialized cranes and compressors. Companies also need to maintain trucks that haul sand used to do the fracking.

Bunting says Knapheide chassis come from "every truck manufacturer in the U.S. market" and the company offers after-sales support directly and through its network of distributors across the U.S. and Canada.

Bunting says he admires companies working in some of fracking's harshest environments. "I tip my hat to them," he adds, noting that the industry continues to expand into remote areas.

Saul Chernos is a freelance writer based on Toronto.



Five years in jail for truck and tool theft

A man who pled guilty to stealing a Ford F-450 service truck and about \$43,000 worth of tools was sentenced in a Montana court this spring to a five-year jail term and a order to pay restitution of over \$9,511.

Christopher Hogard, 30, of Kalispell, also received a five-year suspended sentence from District Judge Robert Allison, who ordered him to pay almost \$20,000 to the Corrections Department in Helena and a \$400 public defender fee, the *Daily Interlake* reported.

The accused also pled guilty to burglary for breaking into and living temporarily in a boarded-up house.

The report said that the tools were stolen from Glacier Stone Supply. The tools included air compressors, welders, chain saws, cordless power tools, and hand tools. The stolen truck was later found abandoned and empty in the Evergreen Boys and Girls Club parking lot, the article said.

Welding training facility opens in Texas

A new training center for welding and technology opened recently in Houston, Texas.

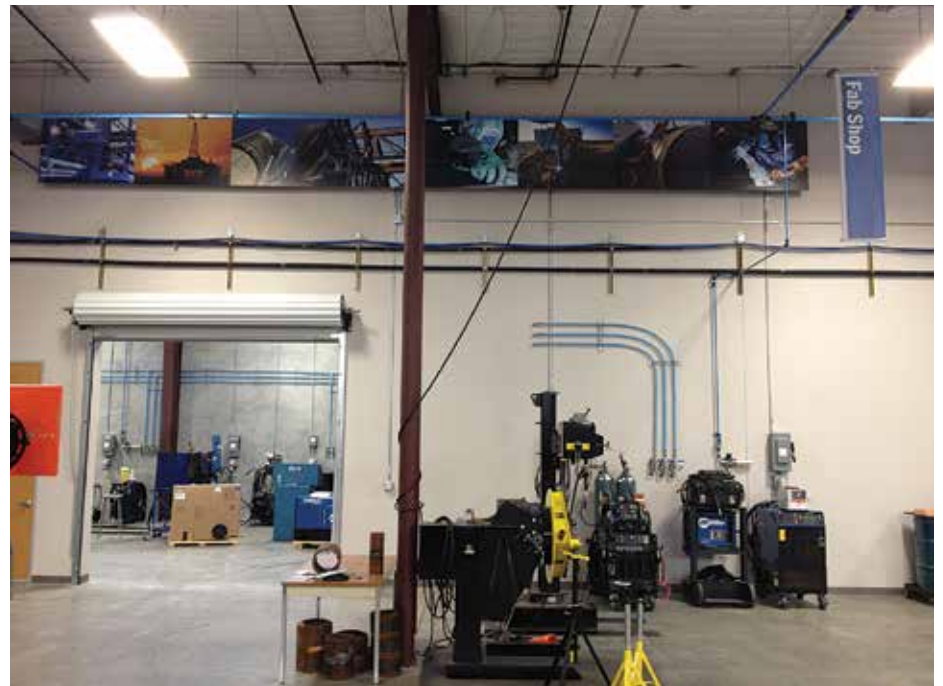
The 23,000-square-foot Miller and Hobart Technology and Training Center includes classroom space, training and demonstration space and warehouse space for storing Hobart filler metals and equipment, said a news release from Miller Electric Mfg. Co., a manufacturer of welding and cutting equipment.

The facility will feature a variety of Miller machines for demonstrations and training, covering the processes of MIG, TIG, flux-cored and submerged arc welding, plasma cutting and induction heating. Training at the center will focus on processes and techniques used in the oil and gas industry.

"Miller and Hobart want to be your partners, to help you get the maximum performance out of your investment in our equipment and products," facility manager Blake Parks, who is also a welding engineer, said in the news release. "This new center is a resource where people can get their questions answered and learn more about welding, heating and cutting techniques that can help improve productivity, quality and efficiency."

Both Hobart, which makes filler metals, and Miller, headquartered in Appleton, Wisc., are subsidiaries of Illinois Tool Works Inc.

The Gulf Coast Welding and Cutting Technology Conference and Expo was scheduled to take place at the new centre Sept. 10 and 11. The free event featured demonstrations



Equipment at the new Miller and Hobart Technology and Training Center in Houston, Texas, is ready for the Gulf Coast Welding and Cutting Technology Conference, which took place Sept. 10-11.

and tours of the centre. Miller and Hobart Brothers sponsored the conference in conjunction with Magnaflux and E.H. Wachs.

Located at 15331 Vantage Parkway East in Houston, the new training center is a resource for product users, regional employers and welding distributors, the news release said. Miller and Hobart representatives with expertise in the latest welding, heating and cutting techniques lead the training.

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NEWS



Volvo Trucks Academy has received Continuing Automotive Service Education accreditation from the National Society of Automotive Service Excellence.

Truck academy CASE accredited

The Volvo Truck Academy has received Continuing Automotive Service Education (CASE) accreditation, says a recent news release from Volvo.

The accreditation from the National Institute for Automotive Service Excellence, or ASE, "helps ensure high-quality training programs," the news release said.

The training arm of Volvo Trucks in North America, the academy offers "online courses or customized instructor-led classes led by Volvo product experts," according to the Volvo Trucks website.

Those instructor-led classes take place at six locations in the U.S. and Canada.

"CASE accreditation drives continuous improvement of our instructional program and differentiates us within the heavy-duty truck industry," Volvo Trucks North American sales and marketing president Göran Nyberg said in the news release. "Exceptional training is vitally important for the success of our dealer network and drives a greater value of ownership for our customers. Accreditation also validates the quality of training we provide to customers who operate their own service networks."

Bill Jacobelli, senior vice-president of maintenance at Penske Truck Leasing, noted in the news release that his company commends Volvo for the accreditation. "Penske has high standards for truck fleet maintenance training programs and we have strongly supported CASE accreditation in our internal certification training program for several years," Jacobelli said.

Volvo Trucks Academy delivered more than 5,800 instructor-led training courses and nearly 110,000 e-learning courses to Volvo dealerships and Volvo customers in 2013, the release said.

ASE is a non-profit organization that has been working since 1972 to improve vehicle repair and servicing quality by certifying technicians, according to the ASE website. More than 300,000 technicians and service professionals hold ASE certifications.

"CASE-endorsed professional development and continuing education is a valuable component in our ongoing efforts to address the well-publicized shortage of heavy-duty service technicians," Nyberg said.

Texas dealer added to IMT network

Custom Vehicle Solutions of Texas is now a part of Iowa Mold Tooling Co. Inc.'s distribution network.

Headquartered in Denton, with additional operations in Houston, Custom Vehicle Solutions serves IMT customers in north Texas to southern Arkansas, north and southwestern Louisiana, and southeastern Texas, says a recent news release from IMT.

Custom now offers an extensive line of IMT equipment including mechanics trucks, telescopic cranes, lube trucks and lube skids, air compressors and articulating cranes, the news release said. The company also provides IMT parts and service.

With 45 years of trucking industry experience, Custom specializes in highly customized truck modifications and installations for nearly any industry.

"The new partnership with Custom Vehicle Solutions strengthens our distributor network," IMT general manager Jim Hasty said in the news release, adding that the new partnership with Custom strengthens IMT's network of distributors.

"The experts at Custom Vehicle Solutions have extensive industry experience and a reputation for



Lube skids are among the IMT products that Custom Vehicle Solutions now offer at its Texas locations.

providing high-quality solutions and customer support," Hasty said. "Working with Custom Vehicle Solutions, our customers in the region will find the right equipment for the job and receive excellent service after the sale."

Custom's Denton shop is near a Peterbilt Motors Company manufacturing facility. The Houston location offers a variety of services for numerous industries, including a specialization in oilfield applications.

"We're dedicated to providing our customers with only the highest-quality products, and IMT equipment aligns perfectly with that commitment," Custom general manager Mike Zimmerman said in the news release. "IMT also shares our focus on superior customer

service and product support. We're excited about this partnership."

For more information on Custom Vehicle Solutions, visit www.cvsolutions.com.

For more information on IMT, which is an Oshkosh Corporation company based in Garner, Iowa, visit www.imt.com.

Governor honors Pennsylvania firm

Curry Supply Company, a national and international distributor of service and mechanics trucks, is among 50 companies to receive ImpAct Awards this spring from the governor of Pennsylvania.

Curry Supply, which is headquartered in Martinsburg about 100 miles east of Pittsburgh, won the Jobs First Award for the state's Southern Alleghenies region.

Governor Tom Corbett presented the second annual awards at a ceremony in Hershey May 30.

Mark Ritchey, Curry Supply principal partner, accepted the award, which recognized his company "for consistently creating and retaining jobs over the past two years," said a news release announcing the award.

"Today, we honor the men and women who spend countless hours providing the leadership and care that it takes to run a successful and growing business," Corbett said in the news release. "This recognition goes beyond the contributions made to Pennsylvania's diverse and vibrant economy. Today, we celebrate Pennsylvanians who embody the American dream by taking risks, working hard and achieving success."

A total of 247 nominations were received in five categories: Jobs First, Community Impact, Small Business Impact, Entrepreneurial Impact and Export Impact.

The Corbett administration created the awards initiative in 2013 to honor businesses in Pennsylvania that are creating job opportunities and contributing to the state's economy.



Curry Supply principal partner Mark Ritchey (center) receives 2014 Governor's ImpAct Award.

"We are extremely proud to receive this award," Curry Supply president Jason Ritchey said. "Our dedicated and hard-working employees are a key ingredient to our growth over the past 80 years. We have hired, and retained, 193 employees in the past two years alone. To be recognized in this way is a huge honor."

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NEW PRODUCTS

New telescopic truck cranes feature stability control system

Two new 25-foot hydraulic cranes have been added to Maintainer Corporation of Iowa Inc.'s line of work truck cranes.

In addition to their 25-foot reach, the H12025 and H14025 telescopic cranes both have a 90,000 foot-pound crane rating, said a recent news release from the manufacturer, which is based in Sheldon, Iowa.

The cranes can lift 12,000 and 14,000 pounds respectively. Both models "are engineered to provide more lifting capacity at further distances from the truck," the release said.

Each crane also features a planetary winch mounted on the boom, an upgrade over the existing 12000 and 14000 models.

"As our customers perform maintenance on larger equipment, Maintainer continues to improve the capabilities, performance, and safety engineered into our products," company sales manager Tom Wibben said in the news release. "We believe the customers will be very satisfied with these latest crane upgrades for their service trucks."

Maintainer offered a sneak preview of the equipment at the ConExpo-Con/Agg trade show in Las Vegas this March.

The new cranes are equipped with the company's latest Advanced Crane Control for monitoring stability during operation. New sensors monitor the truck's tilt angle as well as the crane's boom angle.

"If the system senses an out-of-level condition, it will



Maintainer's H14025 is one of two new models of 25-foot reach hydraulic work truck cranes.

warn the operator and even stop the crane rotation if necessary," the news release noted.

The system also monitors the cranes rotational position "to determine overall truck stability when making large lifts," which the company described as "a great feature for operators who normally manually calculate their loads and compare against their zone chart."

Wibben said the technology can save money by eliminating the need for front outriggers on several types of service bodies. The technology should also reduce operator error and enhance job site safety.

Features of the H12025 and H14025 crane models include the following:

- five-year limited structural crane warranty;
- low profile boom with no need for flip sheave;
- boom-bounded planetary winch;
- increased line speed from 30 to 60 feet per minute;
- easy and convenient block storage;
- total operational range of 91 degrees;
- OSHA 1910.180/ANSI B30.5 compliant;
- low-profile anti-two block standard;
- closed-center/load sensing hydraulic system (open center optional);
- 615 degrees of boom rotation; and
- wireless remote with independently proportional controls.

For more information, visit www.maintainer.com.

This truck crawls

Imagine a service truck on tracks instead of wheels.

Ohio-based Rayco Manufacturing Inc. not only imagined such a vehicle, it built one with the help of Jomac Ltd., an Ohio manufacturer of truck bodies and cranes.

The result is Rayco's RCT60 field service truck, which combines a custom-built Jomac service body with Rayco's RCT60 rubber-track crawler truck. The vehicle, which was displayed at Rayco's booth at the recent ConExpo-Con/Agg trade show in Las Vegas, provides "in-field service capability, eliminating the need to bring machines to a landing or roadway, says a news release from Rayco.

A 67-horsepower Kubota diesel engine powers the RCT60, which rides on 17.7-inch rubber tracks. The service body can be outfitted with cranes, air compressors, welders, fuel tanks, and other accessories to meet individual needs.

A maker of forestry machines, such as mulchers and stump cutters, Rayco was founded in the 1970s by John M. Bowling, according to the company website. He designed his own stump grinder after discovering he would have to wait a year to have one made for his tree service business. In 1978, he founded Rayco, which he named after his father, Ray.

In 1981, the company, which is based in Wooster, introduced its C85 mini crawler, a line which has become Rayco's fastest growing market segment.

Jomac, based on Carrollton, Ohio, has been building service truck bodies since 1976. It has also been making truck cranes for over 30 years.

For more information, visit www.raycomfg.com and www.jomacLtd.com.



Rayco's RCT60 field service truck combines a custom-built Jomac service body with rubber-track crawler truck

Bodies developed for Ford Transit chassis

A full line of bodies for 2015 Ford Transit cutaway and cab chassis has been developed by Knapheide Manufacturing Company.

Quincy, Ill.-based Knapheide said in a recent news release that the selection includes the company's trademarked KUV enclosed utility body and service as well as the trademarked Value-Master X platform body.

"The KUV features externally accessible secure storage compartments with an oversized enclosed cargo area and conduit chutes," the news release said. "The abundant storage offers increased productivity and efficiency through better organization for plumbing, electrical, and construction applications."

Nine standard models are available. They include several combinations of body length and height that are compatible with Transit cutaway chassis, Knapheide says.

For the Transit cab chassis, available products include the Knapheide service and Value-Master X platform bodies.

"Much like the KUV, the Knapheide service body provides secure and versatile storage enabling mobile technicians to find the parts, tools, and equipment they need when they need it," the news release said. "Knapheide's Value-Master X platform body features a reinforced understructure and a variety of floor materials to choose from including pine or apitong wood, smooth steel, and tread plate."

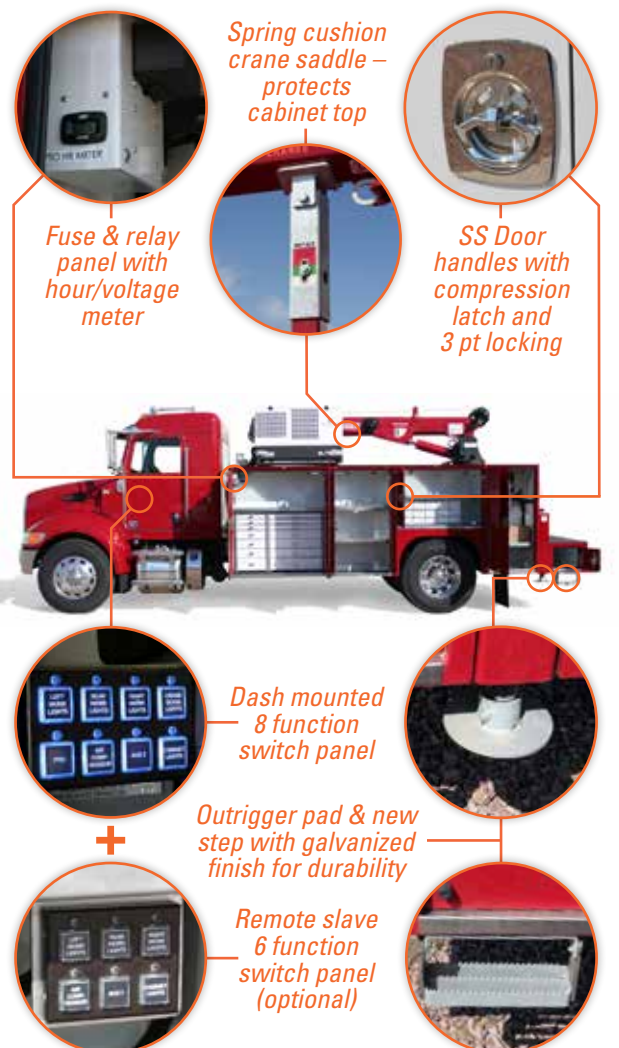
For more information, visit www.knapheide.com.



Knapheide's KUV body features externally accessible secure storage compartments.

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FEATURE

A service truck from Butler Machinery Company of Fargo, N.D., works on a Caterpillar 980K.
Photo courtesy of Butler Machinery Company



Industry responds to EPA's Tier 4 emissions standards

Handling of diesel exhaust fluid, a.k.a DEF, is among the challenges

MATT JONES

Over 15 years ago, in 1998, the U.S. Environmental Protection Agency announced new regulations to reduce emissions from non-road diesel engines.

The standards, which are still being phased in, require manufacturers to integrate engine and fuel controls as a system to gain the greatest emission reductions. The most recent phase, Tier 4 final, has a deadline of Jan. 1, 2015.

The law requires that new diesel engines for off-road use reduce emissions of nitrogen oxides and particulate matter by 50 to 96 per cent over existing

generations of engines, according to a fact sheet from the Association of Equipment Manufacturers.

The regulations, which apply only to new products and not older machines, pose a challenge not only to manufacturers, but to also to service truck operators.

"Acquisition costs for a diesel-powered fleet have gone up; they rise every time there's a tier change," said Kelly Klemisch, fleet manager for Butler Machinery Company out of Fargo, N.D. "From an operational standpoint, we've had a lot more downtime associated with emissions issues on light and medium duty diesel trucks."

Klemisch notes that the downtime presents a financial cost to both Butler Machinery Company and their customers and requires them to redeploy assets to respond and ensure the fleet is running smoothly.

And then there's diesel exhaust fluid, a.k.a. DEF, a key element in allowing high horsepower diesel engines (175-750 hp) to meet the Tier 4 emission standards. DEF is a mixture of synthetic urea and de-ionized water, used during the selective catalytic reduction process. As the name implies, it reduces emissions of nitrogen oxides and particulate matter found in diesel engine exhaust.

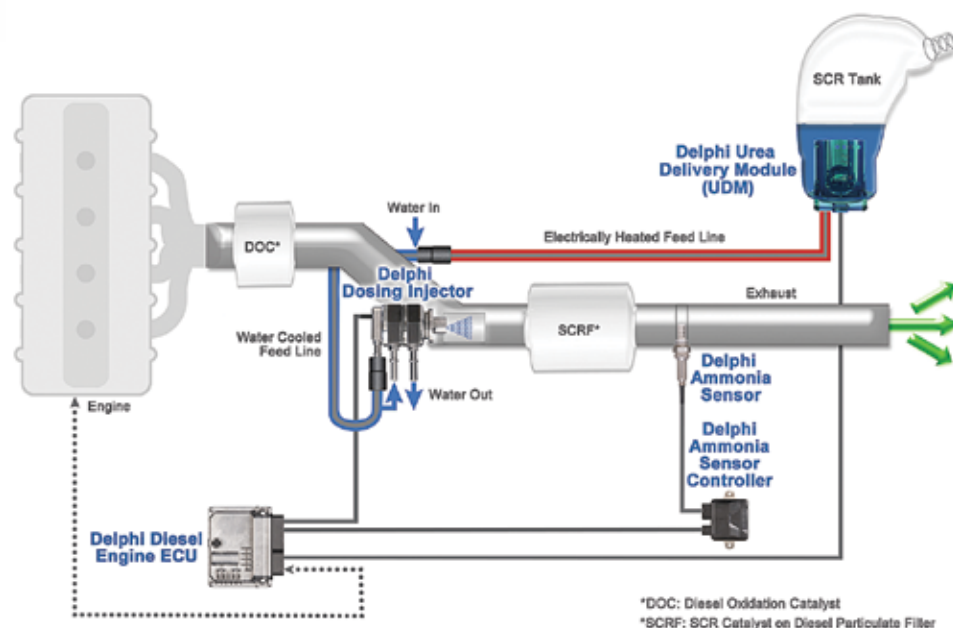
DEF, however, is very easily contaminated — a fraction of a teaspoon of elements such as copper or zinc could bring a 5,000 gallon tanker of DEF off-spec.

"The biggest impact is that they will now have to handle DEF to service equipment in the field," said Jean Van Wyk, a marketing specialist for Thunder Creek Equipment, an Iowa manufacturer of fuel and service trailers. "It's imperative that this is done in a clean, closed system to maintain the purity of the fluid."

Cold weather is also a major concern with DEF. Freezing does not damage the DEF, but could cause a closed container to burst.

"That's probably how it affects us the most," Klemisch said. "We can't leave a jug

Delphi Selective Catalytic Reduction Dosing System



This diagram illustrates the layout of a Delphi SCR (selective catalytic reduction) dosing system in which heated diesel exhaust fluid (DEF) is injected (dosed) into the exhaust stream, based on engine operation.
Photo courtesy of Delphi Automotive LLP



A Thunder Creek Equipment double-wall fuel trailer, equipped with a 115-gallon DEF system, refills a tractor in the field.
Photo courtesy of Thunder Creek Equipment



Ford F-Series trucks feature the DEF fill point alongside the diesel fuel fill point (green cap for diesel and blue cap for DEF).
Photo courtesy of Ford Motor Company and Auto Service Professional Magazine

to sit out and expect to fill with it in the morning, or for any length of time in the winter. It's definitely a concern, to be able to handle that product, not only safely, but to use it period when it's cold."

While the regulations do pose a challenge to both operators and manufacturers, there is opportunity for innovation for equipment manufacturers. Thunder Creek Equipment offers a variety of DEF delivery solutions for commercial applications. Van Wyk says that developing DEF solutions made sense given the company's existing products.

"The development of our system came from the logical conclusion that if we're already creating a platform to bring equipment and service to the field, we should integrate a DEF delivery system,"

Van Wyk said.

Miller Electric Mfg. Co., based out of Appleton, Wisc., is another equipment manufacturer that has developed products that meet the challenges of these regulations. Miller's EnPak provides service truck operators with AC power, air compression and hydraulics with the truck itself turned off.

"With Tier 4 final and interim engines, these trucks don't like to be idled," said Travis Purgett, a product manager for Miller. "What EnPak allows the user to do is to shut the truck off while on the job site and still have full functionality where in the past the truck would need to be running pretty much non-stop."

While manufacturers like Miller have

continued on page 19



All DEF fill points are easily identified by a blue cap, labeled for diesel exhaust fluid. It's a good idea to remind customers not to confuse the blue DEF caps for windshield washer solvent locations. Photo courtesy of Auto Service Professional Magazine



Typical consumer size DEF 1-gallon containers are the most common size found in auto parts stores. Photo courtesy of Old World Industries LLC and Auto Service Professional Magazine



For fleet convenience, 50-gallon drums of DEF are also available. Photo courtesy of Old World Industries LLC Photo and Auto Service Professional Magazine



Misco Refractometer, based in Cleveland, specializes in digital refractometers such as its model 201 that offers a single-scale readout, ideal for most shops. Photo courtesy of Misco Refractometer and Auto Service Professional Magazine



Miller's EnPak provides service truck operators with AC power, air compression and hydraulics with the truck itself turned off. Photo courtesy of Miller Electric Mfg. Co.



The DEF fill point for GMC and Chevy light trucks is located underhood adjacent to the passenger-side firewall.

"It complicates our product line because these engines require low-sulfur diesel fuel and that's not available everywhere in the world. We cannot build one product and supply it to all the world."

~ Travis Purgett, product manager, Miller Electric Mfg. Co.

continued from page 18

been able to develop products in response to the EPA regulations, there are financial challenges as well. Joe Gitter, a product manager with Miller's industrial engine drive division, says that the regulations have caused some growing pains.

"I think one of the biggest heartaches right now is that the U.S. is really leading the world with the regulations," Gitter said. "It complicates our product line because these engines require low-sulfur diesel fuel and that's not available everywhere in the world. We cannot build one product and supply it to all the world."

In spite of the challenges the regulations pose to both manufacturers and truck operators, most agree that the end gains far outweigh the current challenges.

"I think if we left it the way it was it would be pretty hard to breathe in another 10 years," said Tim Potts, fleet manager for Graham Construction. "It was an added cost for repairs, but so be it. Look at the big cities and smog issues. We were on the brink of destruction if we kept it the way it was."

Klemisch says the operators in his fleet take the challenges in stride and that the technology developed in response to the regulations has been very impressive.

"There's some return on investment where we're purchasing technology that's meant to reduce idling, but it's also meant to reduce fuel consumption, it's reducing engine hours and, obviously, it's reducing emissions," Klemisch said. "There are challenges, but it has its positives."

Matt Jones is a freelance writer based in Fredericton, N.B.

Final Emissions Standards in grams per horsepower-hour (g/hp-hr)

Rated Power	First Year that Standards Apply	PM	NOx
hp < 25	2008	0.30	-
25 ≤ hp < 75	2013	0.02	3.5*
75 ≤ hp < 175	2012-2013	0.01	0.30
175 ≤ hp < 750	2011-2013	0.01	0.30
hp ≥ 750	2011-2014 2015	0.075 0.02/0.03**	2.6/0.50† 0.50††

* The 3.5 g/hp-hr standard includes both NOx and nonmethane hydrocarbons.
† The 0.50 g/hp-hr standard applies to gensets over 1200 hp.
** The 0.02 g/hp-hr standard applies to gensets; the 0.03 g/hp-hr standard applies to other engines
†† Applies to gensets only.

This table shows the specific allowable levels for particulate matter (PM) and nitrogen oxides (NOx) related to engine horsepower.

Tier 4 emission standards explained

The first Environmental Protection Agency standards for non-road diesel engines were adopted in 1994. Tier 1 standards for equipment under 37 kilowatts (50 horsepower) were introduced in 1998.

Increasingly strict Tier 2 and Tier 3 standards were scheduled from 2000 to 2008.

On May 11, 2004, the EPA announced a comprehensive rule to integrate engine and fuel controls as a system to gain the greatest emission reductions. Engine manufacturers must produce engines with advanced emission-control technologies. Exhaust emissions from these engines are expected to decrease by more than 90 per cent.

The EPA also announced new fuel requirements that will decrease the allowable levels of sulfur in fuel used in non-road diesel engines by more than 99 per cent.

Reducing diesel emissions will result in large benefits to public health, including roughly 12,000 fewer premature deaths and hundreds of thousands fewer incidences of respiratory problems. In dollars, these health benefits are estimated to represent \$80 billion annually once older engines are replaced.

*Source: Environmental Protection Agency
<http://www.epa.gov/otaq/documents/nonroad-diesel/420f04032.pdf>*

FEATURE

Diesel engines enter space age

Engine manufacturer rep explains how modern emission-control systems work

KEITH NORBURY

In his decade with engine manufacturer Cummins Inc., Fred Baaske has seen the diesel engine go from “the Stone Age to the Space Age.”

Going back even further to the 1970s and 1980s, diesel engines have made “huge leaps” in reducing emissions of particulate matter and oxides of nitrogen, Baaske said in a presentation at the Crane Rental Association of Canada’s annual conference earlier this year in Whistler, B.C.

The improvement has been a hundredfold, he estimated. “So 100 diesel propelled trucks going up and down the road contribute to the same emissions as one truck did back in the 1980s time frame,” said Baaske, who is Cummins Western Canada’s territory manager for B.C. and Yukon.

The driving force behind cleaner emissions is the U.S. Environmental Protection Agency, which in 1990s introduced a tier structure of increasingly stringent regulations. Environment Canada mirrors those regulations, Baaske pointed out. And the European Union has similar, staged standards.

Since 2011, the EPA’s tier 4 interim regulations have been in effect. In 2015, tier 4 final regulations become mandatory for all diesel engine sizes, although manufacturers have some flexibility in implementing those, as Baaske explained in some detail.

Low-emission engines costly to fleets

As an audience member pointed out to a previous speaker at the conference, “there’s a definite cost increase to any fleet” in switching to low-emission engines. The commenter also told Chris McNally, who chairs the industry advocacy and regulator affairs committee of the Canadian Construction Association, that the emission regulations are causing a drop in efficiency and productivity “in the northern climates.”

McNally said he had heard similar complaints from contractors. One B.C. highway maintenance contractor was having to pull over its Caterpillar scrapers to the side of the road “and let them run at high idle for a period of time before they can start working with them again.”

But McNally also sounded confident that manufacturers would solve those problems. And he noted that each year new models are becoming bigger and more powerful with shorter cycle times.

“So yes, the tier 4 rollout does not look like it’s going well. But I have expect that there’s enough brains out there, enough money in the business, that they’ll figure out how to do it,” McNally said.

Europe leads, EPA sets the rules

In setting emissions standards, Baaske said, “the EPA wants the biggest bang for their buck.” So the regulations were aimed initially at the on-highway trucking market, which has “the highest volume of diesel engines in North America.”

A benefit for manufacturers has been that they can learn from their mistakes in developing the on-road diesel technology and apply that knowledge to off-road diesel engines.

“As far as cranes and off-highway equipment go, we’ve learned a lot in the past six to eight years,” Baaske said.

Those improvements have been led by European manufacturers, he said, noting that diesel-powered cars have long been popular in Europe because of high fuel prices.

The EPA regulates two things coming out of the tailpipe: oxides of nitrogen, or NOX; and particulate matter, a.k.a. PM.

Tier 1 allowed NOX emissions of 6.8 grams per horsepower-hour, and 0.4 grams of PM per horsepower-hour,



Fred Baaske, Cummins Western Canada's territory manager for B.C. and Yukon, speaks at the Crane Rental Association of Canada's annual conference in Whistler, B.C.
Photo by Keith Norbury

according a slide in Baaske’s presentation. In tier 4 interim, the present stage, the NOX drops to 1.5, which is 45 per cent lower than in tier 3. When tier 4 final comes into effect in 2015, the NOX level will be down to 0.3, a 90 per cent reduction from the 3.0 level of tier 3. Meanwhile, the tier 4 final PM level will also drop by 90 per cent over the tier 3 level to 0.015.

When tier 5 kicks in in 2020, those emissions will be zero.

Tier deadlines depend on horsepower

The deadline for meeting the respective tiers depends on the horsepower of the engines, Baaske pointed out. For example, engines of less than 24 horsepower had to meet tier 4 final by 2008 whereas engines of 174 to 751 horsepower had until 2014, and engines of 75 to 173 horsepower and over 751 horsepower have until 2015.

To further add to the confusion, the allowable levels of NOX, PM, and carbon monoxide also vary depending on horsepower levels within each of the tiers. (For example, the tier 4 PM level for the smallest engines is 10 to 20 times greater than what is allowed for the larger engines: 0.4 grams per horsepower hour for engines under 24 horsepower; but only 0.03 grams for the 25 to 74 horsepower range; and 0.02 grams for engines of 75 to 751 horsepower.)

In tandem with the new regulations is the introduction of ultra-low-sulfur diesel fuel.

“Basically it’s a cleaner burning fuel,” Baaske said. “The negative effect is you lose lubricity in the fuel. So refineries have had to add those elements back to the fuel because the fuel systems are so sensitive on the new engines.”

Tier reduces emissions 90 per cent

A challenge in meeting the tier 4 regulations is that it represents a 90 per cent reduction in NOX and PM levels from tier 3. “So, not an easy achievement,” he said.

But there is also loophole: the Transition Program for Equipment Manufacturers. Called TPME for short it is also known as the Flex program, he pointed out.

“So if you’re building a crane that’s coming down the line with a tier 3 engine, there’s no cliff event where (on) Jan. 1 the next year you have to start putting in tier 4 final engines,” Baaske said. “They either allow you a period of time or a volume of engines.”

A low-volume manufacturer can probably receive an extension of two to three years, he said.

“Even Cummins has signed up for this program. If you’re an equipment manufacturer, we fill out the paperwork for you,” Baaske said, noting that most original equipment manufacturers are already utilizing the Flex program.

ECMs and the “drive-through” test

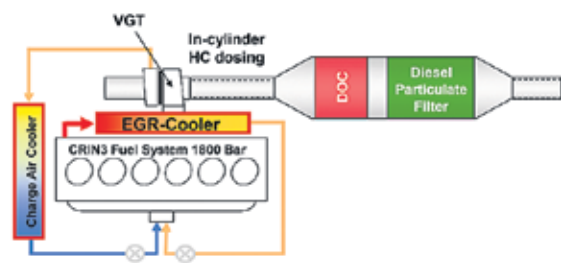
The transition to cleaner diesel engines has been made possible by electronic control systems, a.k.a. ECMs, which have also contributed to making diesel engines more efficient and quieter.

For example, electronics have enabled advanced combustion, which eliminates the familiar engine knocking of older diesel engines.

“Electronics basically allows you put in multiple injections,” he said. That enables a smoother burn, “as opposed to just dumping in a pile of fuel as the piston comes up.”

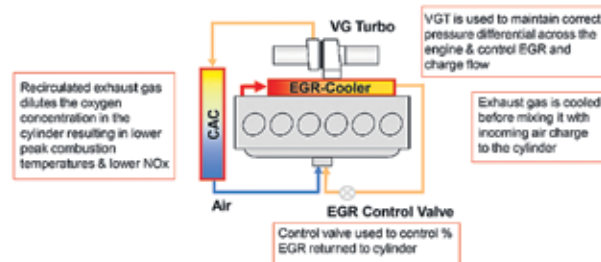
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Typical Tier 4 interim System



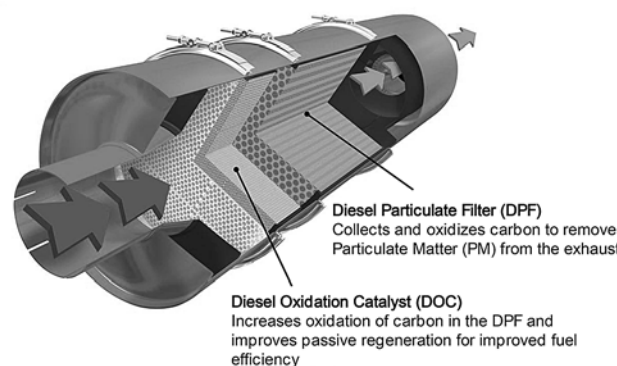
This diagram shows the layout of a typical tier 4 interim diesel exhaust system.

How CEGR Works



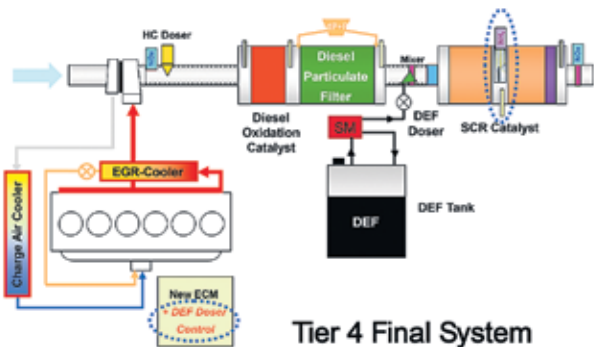
The Cummins exhaust gas recirculation system (CEGR) utilizes vertical geometry (VG) turbo chargers to regulate the pressure.

Particulate Filter



A particulate filter contains two pucks: a diesel oxidation catalyst and a diesel particulate filter.

Tier 4 Final System



The tier 4 final diesel exhaust system adds a selective catalytic reduction system, or SCR, that utilizes diesel exhaust fluid.

continued from page 20

In that way, newer engines pass what he calls “the drive-through test,” which means not having to turn the engine off in order to place an order at a drive-through window.

“Basically the more efficient we can make a diesel engine in cylinder, the less we have to clean up with the after-treatment systems,” Baaske said. “So we’ve done a lot of advancements with spray patterns in the cylinder, making sure that we burn all the fuel, and so on and so forth.”

HPCR distributes fuel more smoothly

Another element that has come into play is called “high pressure common rail” or HPCR. This is commonplace on mid-range engines, including those used on cranes, he said.

Where an older engine required higher RPMs to gain pressure in the fuel system, an HPCR utilizes electronics and a high-pressure pump with a common rail to distribute fuel evenly.

“Basically the more efficient we can make a diesel engine in cylinder, the less we have to clean up with the after-treatment systems.”

~ Fred Baaske,
territory manager, Cummins Inc.

“It makes the diesel engine much more responsive to throttle,” Baaske said.

The pressures in these HPCR systems “are getting ridiculous,” with systems of 35,000 PSI under development, he said. “So a diesel mechanic cracking the fuel system to bleed out things is no longer commonplace because it will take your finger off.”

EGR recirculates exhaust gases

Yet another innovation that originated in Europe is exhaust gas recirculation, or EGR.

“Cummins has been putting EGR systems

on their diesels since about 2002. So we’ve shipped maybe 300,000 (EGR) engines into North America.”

In that time, Cummins has worked out the kinks in what he described as “an extremely simple” system.

EGR now utilizes vertical geometry (VG) turbo chargers to regulate the pressure. “So instead of all the exhaust getting pumped back out into the atmosphere, a small percentage of it goes back (into the cylinder).” The exhaust gas is extremely hot; so it needs to pass through a jacket water cooler first. “And then there’s a valve on the cold side of the engine. The ECM will regulate how much exhaust gas is actually required to go back into the cylinder. So you’re just re-combusting exhaust gas. Less goes out to the world.”

Tier 4 uses after-treatment systems

In order to meet the tier 4 requirements, an after-treatment system is added to the tier 3 platform. Called a particulate filter, this system consists of a single canister where the muffler used to be. The canister contains two pucks: a diesel oxidation catalyst, or DOC; and a diesel particulate filter, or DPF.

As its name implies, the DOC is a catalyst that creates a chemical reaction with the hot exhaust gas. This first section of the system contributes about 25 per cent of the particulate matter reduction, Baaske said. The DOC is coated with platinum and palladium, which makes it expensive to manufacture and also a temptation for thieves.

“We’ve had a lot of people up north actually stealing these off vehicles,” Baaske said.

The DOC isn’t serviceable but the DPF is something that needs servicing about every two years, depending on the duty cycle. He noted that cranes have very intermittent duty cycles with a lot of stopping, starting and lifting of heavy loads.

“Many people just refer to it as a trap,” Baaske said of the DPF. “And this is where the lion’s share of your PM reduction is. Up to 90 per cent is in the particulate filter.”

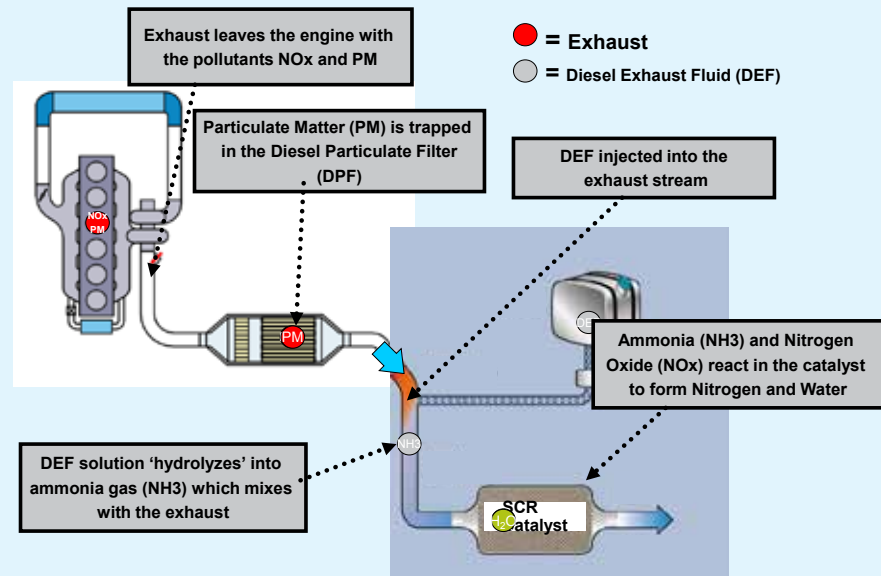
Re-gen systems both active and passive

Modern diesel engines also employ regeneration or re-gen, which can be passive or active. Passive re-gen doesn’t require any work; the exhaust just runs through the system. Active regeneration employs pressure differential sensors that will alert the ECM of pressure buildup in the particulate trap, Baaske said.

“In order for soot to oxidize, it requires a huge amount of heat, up to 500 degrees Celsius,” Baaske said. “So what actually occurs is there is a small dosing valve where we mist fuel into the exhaust, the hot exhaust stream, and it creates the burn that’s required.”

However, if a crane operator leaves the active regeneration system on for too long, ignores the warning lights, or the pressure builds for some other reason, the equipment will shut down.

“The ECM will go into a full active re-gen where the RPMs in the engine will actually ramp up to get the necessary heat,” Baaske said. “And there’s really no way around this; it’s regulated by the EPA.”



Diesel exhaust fluid, which consists of one part urea and two parts water, is part of a selective catalytic reduction system on tier 4 final engines.

Urine no substitute for DEF

The urea used in diesel exhaust fluid isn’t to be confused with urine, a representative of engine manufacturer Cummins said to chuckles during a presentation at the recent Crane Rental Association of Canada annual conference.

Fred Baaske, Cummins Western Canada’s territory manager for B.C. and Yukon, went on to tell of a redneck customer who peed in his DEF tank, thinking it would keep the system running and get him home. It didn’t work.

Diesel exhaust fluid, which consists of one part urea and two parts water, is part of a selective catalytic reduction system, or SCR, that is used to meet tier 4 emissions requirements for diesel engines.

SCR, which has been in use in Europe for two decades, mists the DEF it into the hot exhaust stream coming out of the particulate filter, Baaske explained during his presentation at the CRAC conference held this June in Whistler, B.C.

The DEF creates a chemical reaction in which the byproduct is primarily ammonia. The ammonia reacts with a catalyst and nitrogen oxide (NOX) to produce nitrogen and water vapour. Another catalyst, called slip, breaks down all but a trace of the remaining ammonia.

“Then by the time you’ve got your exhaust going out to the atmosphere it’s pretty much clean air,” Baaske said.

DEF has a freezing point of -11 C. So for use in the cool climates of Canada, it requires heated tanks and lines.

“The nice thing about a diesel engine is it’s not producing a lot of knocks at really low temperatures,” Baaske said.

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CALENDAR OF EVENTS

SEPTEMBER 2014

Sept. 21-23, 2014

Intermodal Expo

Long Beach Convention Center,
Long Beach, Calif.

"Find 3PLs, ocean carriers, motor carriers and drayage companies, railroads, equipment manufacturers and leasing companies, technology vendors, shippers/BCOs and many more intermodal industry professionals."

<http://www.intermodalexpo.com/>

Sept. 24-26, 2014

**Kansas Motor Carriers Association
Annual Convention**

Hilton Garden Inn in Manhattan,
New York, N.Y.

"This industry-wide event provides educational opportunities for members and their employees, as well as allows KMCA's allied members to network with carrier members and discuss the latest technology in equipment and services."

<http://www.kmca.org/content/kmca-annual-convention>

Sept. 24-26, 2014

SC&RA Crane & Rigging Workshop
Sheraton Dallas Hotel, Dallas, Texas

"Some of the industry's top professionals will present educational sessions during the annual workshop."

<http://www.scranet.org/events>

Sept. 24-26, 2012

**Crane Industry Council of Australia
Exhibition & Crane Display**
Allphones Arena & The Dome,
Sydney, New South Wales

"World-class industry speakers plus increased technical presentations and content — it's all about the cranes!"

<http://conference.cica.com.au/>

Sept. 29-Oct. 4, 2014

Breakbulk Americas 2014

George R. Brown Convention Center,
Houston, Texas

"Exhibitors and sponsors include specialized ocean carriers, freight forwarders, ports/terminals, logistics providers, ground transportation, heavy air, export packers, equipment companies and more."

<http://www.breakbulk.com/breakbulk-global-events/americas/breakbulk-americas-2014/>

OCTOBER 2014

Oct. 1-3, 2014

**National Trailer Dealers Association
24th Annual Convention**
LaQuinta Resort & Club and PGA West,
La Quinta, Calif.

<http://www.ntda.org/ntda/Convention.aspx>

Oct. 4-7, 2014

**American Trucking Associations
Management Conference & Exhibition**
San Diego Convention Center
And San Diego Marriott Marquis & Marina,
San Diego, Calif.

http://www.truckline.com/Auto_Carriers_Conferences.aspx



NTEA Executive Leadership Summit takes place at the JW Marriott Las Vegas Resort & Spa Oct. 14-15, 2014.

Oct. 14-15, 2014

NTEA Executive Leadership Summit
JW Marriott Las Vegas Resort & Spa
Las Vegas, Nevada

"Hear valuable insights which can support your strategic planning efforts by minimizing risk and improving profitability."

<http://www.ntea.com/executivesummit/>

Oct. 16-19, 2014

**Service Specialists Association
Convention**

Sheraton Nashville Downtown,
Nashville, Tenn.

"A great opportunity to meet with key suppliers and fellow service shops — to stay current with the latest trends in the heavy duty service industry, and to share best business practices and recent product and service developments."

<http://www.truckservice.org/>

Oct. 19-21, 2014

**Ohio Trucking Association/OAM
Annual Convention**

Oglebay Resort & Conference Center
Wheeling, W.Va.

<http://www.ohiotruckingassn.org>

Oct. 20-21, 2014

Crane & Rigging Conference Canada
Marriott at River Cree Resort,
Edmonton, Alta.

"Overhead cranes, critical lifting, rigging, standards, competency and training will be among key topics."

<http://www.craneandriggingconference.com/crc-canada/>

Oct. 23-25, 2014

**Arizona Trucking Association
Annual Leadership Conference**

JW Marriott Starr Pass,
Tucson, Ariz.

<http://www.arizonatrucking.com/events/calendar.php>

Oct. 27-29, 2014

**Canadian Transportation Equipment
Association's
51st Manufacturers Conference**
Delta Edmonton South Hotel & Conference
Centre, Edmonton, Alta.

"An investment in your business that will have a great ROI."

<https://ctea.ca/events/51st-manufacturers-conference/>

Oct. 27-29, 2014

**CanWEA's 30th Annual Conference and
Exhibition**

Palais des Congrès de Montréal
Montréal, Québec

"This premier event brings together over 2,000 delegates and almost 200 exhibiting companies from around the globe to discuss

opportunities and latest developments in Canada's wind energy industry."

<http://canwea2014.ca>

Oct. 28-30, 2014

Automotive Testing Expo

North America

Suburban Collection Showplace,
Novi, Mich.

"The resurging North American automotive industry is reflected in the fact that Automotive Testing Expo North America 2014 is set to be even bigger and better, than in recent years, with *all* exhibition floor space totally sold out."

<http://www.testing-expo.com/usa/index.php>



The Service Specialists Association's annual convention happens Oct. 16-19 at the Sheraton Nashville Downtown.

Oct. 28-29, 2014

Offshore Energy Exhibition & Conference
Amsterdam RAI, The Netherlands

"Offshore Energy 2014 will host between 500 and 600 exhibitors and is expected to attract over 10,000 professionals from all over the world."

<http://www.offshore-energy.biz/>

Oct. 29-30, 2014

Green Fleet Conference & Expo
Renaissance Schaumburg Convention Center
Hotel, Schaumburg, Ill.

"To provide an expert resource for vehicle and truck fleet professionals to learn new strategies for lowering cost of ownership, improving fleet efficiency, and staying up to date with the industry's latest technological advances."

<http://www.greenfleetconference.com/>

NOVEMBER 2014

Nov. 5-6, 2014

Buildex Calgary

BMO Centre, Calgary, Alta.

"Alberta's largest trade show and conference for more than 4,000 industry professionals."

<http://www.buildexcalgary.com/>

Nov. 5-7, 2014

**National Association of Fleet
Administrators**

International Fleet Academy
Rose Shingle Creek Resort, Orlando, Fla.

"Join in discussion and unique networking experiences to examine the news on global trends, fleet initiatives, how other fleet organizations are reducing TCO, driver productivity strategies, and much more."

<http://www.nafafleetacademy.org/>

Nov. 6-8, 2014

**Colorado Motor Carriers Association
75th Annual Conference**

The Broadmoor, Colorado Springs, Colo.

"National speakers, seminars, networking, great dining, vendor exhibits, receptions and banquets."

<http://www.cmca.com/news/convention.htm>

Nov. 11, 2014

**Original Equipment Suppliers Association
16th Annual Outlook Conference**

COBO Center, Detroit, Mich.

<http://www.oesa.org/Outlook-Conference>

Nov. 12-14, 2014

Oil Sands Lifting Workshop

Sawridge Inn and Conference Centre,
Fort McMurray, Alta.

"This workshop's curriculum will tightly focus on lifting activities conducted in oil sands projects including infrastructure fabrication, installation, maintenance, plant turnarounds and shutdowns, surface mining, cold flow, steam injection, and SAGD operations."

<http://iti.com/oilsands>

Nov. 15-19, 2014

**National Industrial Transportation League
Conference and TransComp Exhibition**

For Lauderdale, Fla.

<http://www.nitl.org/>

Nov 25-28, 2014

Bauma China

Shanghai New International Expo Centre,
Shanghai, China

"In 2014 up to 300,000 square metres of exhibition space will be available."

<http://www.bauma-china.com>

DECEMBER 2014

Dec. 3-4, 2014

National Green Building Conference
Metro Toronto Convention Centre,

Toronto, Ont.

"The National Green Building Conference, with an attendance of over 24,000, is a cost effective way to meet decision-makers and key industry contacts."

<http://nationalgreenbuildingexpo.com>

Dec. 3-4, 2014

**Crane and Rigging Conference/
Industrial Crane and Hoist Conference**
Hilton Houston Nasa Clear Lake

Houston, Texas

"Typical attendees include contractors, engineering firms, various construction user groups, unions, and crane and rigging professionals."

<http://www.craneandriggingconference.com/crc-ichc/>

Dec. 3-5, 2014

Power Generation Lifting Workshop
Charlotte, N.C.

"The workshop curriculum will tightly focus on construction and maintenance lifting activities conducted in power generation environments including nuclear, oil, gas, hydro power stations, and wind energy."

<http://iti.com/power-generation-lifting-workshop/>

Dec. 15-18, 2014

bC India

India Expo Centre,
Greater Noida/Delhi, India

"Following two successful events held in Mumbai the, Bauma ConExpo show — bC India is moving to Greater Noida, near to India's capital of Delhi."

<http://www.bcindia.com/>

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