

TRUCKTECH

CANADA'S FLEET MAINTENANCE MAGAZINE

FALL 2018

Stop and Think

Brakes dominate violations, but do they have to?

Passing Grades

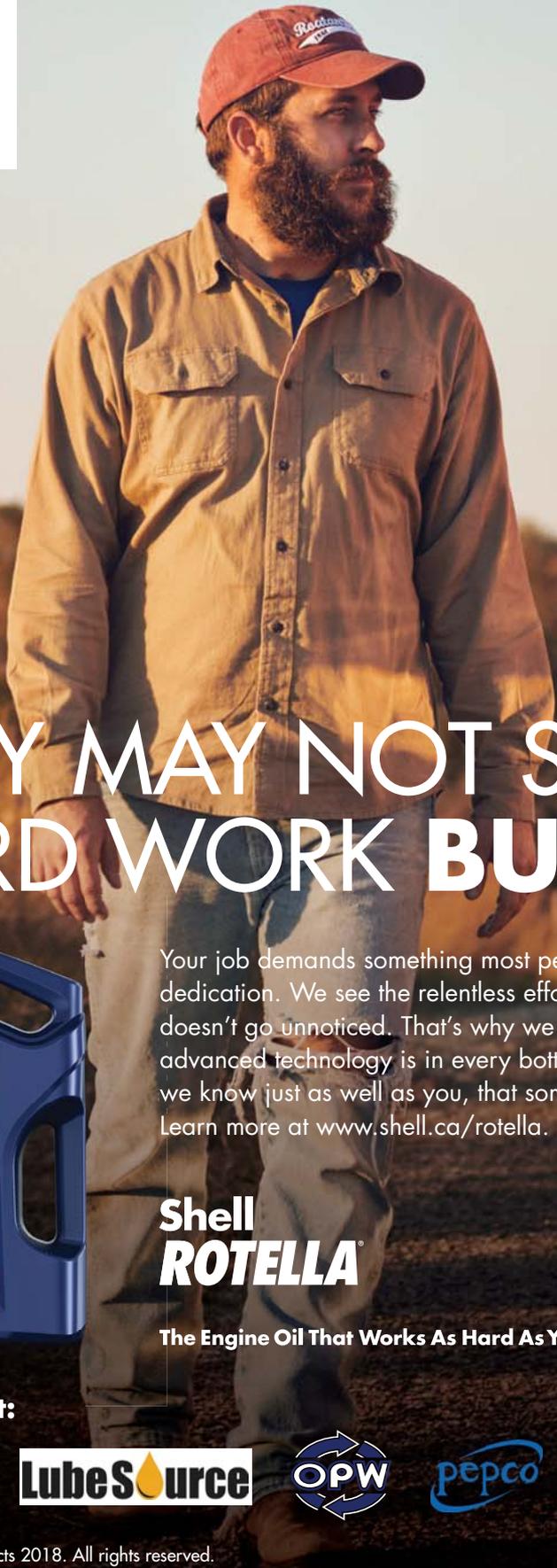
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CANADA'S FLEET MAINTENANCE MAGAZINE

is written and published for owners, managers and maintenance supervisors of those companies that operate, sell and service trucks, truck trailers, and transit buses.

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Competing in Top Tech offers countless opportunities, according to Ryder's Wade Robinson.



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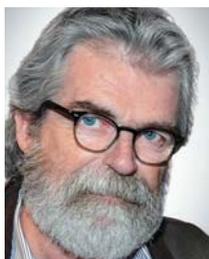
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Is it Rocket Science?

Achieving decent fuel economy is a challenge, for sure, but aim high

By Rolf Lockwood

Do you have a fuel-economy goal for the trucks you manage? Is it 10 mpg like we see in some trick-laden super trucks? Would you be happy with just 7 mpg?

Obviously, everything depends on the work you do, and a zillion other unpredictable. But this ain't rocket science.

About a century ago I reached for that 10 mpg mark when I ran a trip from Buffalo, N.Y., to Dallas with one of my heroes – Caterpillar's long-time test driver Jim Booth. Nicest man on the planet.

This was a revenue run in his own Kenworth tractor pulling his own van with some new and as-yet-unreleased 400-hp Cat engine installed under the hood for his evaluation and mine. That truck was instrumented up the ying-yang – but it was 1995, so that just meant we had a computer of some description and received printouts of our fuel economy at day's end.

We drove together several times over the years but this was the only occasion when we could “compete” with evidence at the ready.

I got north of 9 mpg by way of very careful driving. Of course I couldn't touch Mr. Booth's performance. A legend in these terms, he was pushing 11 mpg. Dang!

Naturally, I accused him of cheating. Jim was a hypermiler before that was a term, so of course he drove ever so slowly – like 50 mph – which I thought was unsafely slow. I chose instead to go wickedly fast, maybe 55 mph, believing I could win by never shifting, never braking, and being oh so easy on the throttle. Yeah, well, I was up against an expert, and as much as I tried to mimic



“Engines were dead simple then compared to what we have today.”

his driving style, I think he was just an awful lot better. But don't forget the speed thing.

Engines were dead simple then, compared to what we have today, unfettered by EPA this and EPA that, so it's probably unfair of me to even mention those results. But the fact is, I know people who routinely manage mileage figures like the ones above, even with the wildly complex engines of this era. And I know carriers who expect that kind of performance.

The North American Council for Freight Efficiency (NACFE) is a valuable

benchmarking resource here. Its 2017 Annual Fleet Fuel Study, the latest one, found that 2016 was the ninth year in a row that trucking fleets have recorded an increase in fuel economy.

NACFE's study covered 19 fleets operating more than 71,000 tractors and 234,000 trailers in regional and long-haul highway applications, including two Canadian carriers – Bison Transport and Challenger Motor Freight – which have been part of the study for several years.

Combined, these fleets reached an average fleet-wide fuel economy of 7.11 mpg. While this represents only a slight increase from the previous year's study, the U.S. fleet average is only 5.89 mpg. The fleets in the study are also mixed with new and old vehicles. According to NACFE, some 2017-model trucks achieved 7.8-9.2 mpg, with some approaching 10 mpg.

These are gross overall numbers with no adjustment for terrain, weight, etc. Bison, for example, often pulls B-trains, which will obviously show lower fuel economy figures than a straight 80,000-pounder. But that's not factored in. Only its overall fleet-wide performance.

In total, the study identified 85 currently available technologies like trailer tails to help fleets increase fuel economy – not prototypes, all sold commercially now.

The overall adoption rate for the technologies studied in the report has grown from 17% in 2003 to 42% in 2016.

If you haven't already, I'd recommend taking a close look at what NACFE is doing and how you might profit from its work. You owe it to your bottom line. **TT**



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Brake blitz grounds 12.4%

A surprise Brake Safety Day inspection blitz in Canada and the U.S. put 1,595 trucks out of service for brake violations on April 25, the Commercial Vehicle Safety Alliance (CVSA) reports.

There were 11,531 inspections conducted overall, 1,457 of which were in Canada. While 12.4% of inspected trucks were grounded on this side of the border, 14% were placed out of service in the U.S.

The blitz included 41 states along with 11 Canadian provinces and territories.

Several jurisdictions also focused on antilock braking systems (ABS). Of the 8,128 air-braked trucks and tractors that needed ABS, 10.2% recorded violations.

Trailers didn't fare quite as well. Of the 5,331 that were inspected, 14.3% had ABS-related violations.

Of the 1,299 inspected hydraulic-braked trucks that required ABS, 3.5% recorded ABS violations.

Trailer Wizards acquires Canadian Service Plus

Trailer Wizards has acquired Canadian Service Plus (CSP), an independent trailer maintenance repair shop.

The purchase adds seven employees and five mobile service vehicles to company's Montreal location. And Trailer Wizards said buying CSP was an easy choice because of its customer service relationships and ability to complete mobile service repairs.

"When the opportunity presented itself to acquire Canadian Service Plus (CSP) it did not take long to see that this would be a great benefit for Trailer Wizards and our Montreal location," said Stephane Morin, branch manager.

Trailer Wizards specializes in commercial trailer rentals, leasing, sales, service, parts, and storage.

Eaton forms eMobility business

Eaton is banking on an electric future for trucking, establishing a new eMobility business to provide a wide range of electric power solutions.

Known most for its transmissions, Eaton is also well established in the electrical field and formed the new business by combining products, expertise and global manufacturing capabilities from its electrical and vehicle groups.

"We really do know electricity and electric power," Scott Adams, senior vice-president of product strategy and sales for the eMobility business segment, said in an interview. "We have a really strong depth of understanding of electricity and with our heritage in the vehicle space, we're able to blend our electricity knowledge with our vehicle knowledge."

Eaton is investing about US\$500 million into the new business over the next several years. It anticipates the vehicle electrification market will grow to include 15 million pure battery-electric vehicles and another 30 million hybrids by 2030. Its prime focus will be on intelligent power electronics, power systems, and advanced power distribution and circuit protection for both automotive and commercial vehicle customers.

Despite this sharp growth in electrification, Adams said it will be awhile before fully electric heavy trucks become the norm. But the journey to an electric future will begin with smaller steps, such as the electrification of certain components, and eMobility has a role to play there as well.

"We believe adoption will happen from a regulatory perspective," Adams said. "Over time, as they get into the second and third phases of the greenhouse gas (GHG) Phase 2 rules, some electrification will be used to achieve those limits. There

are a lot of drivers. There's a regulatory push and a customer pull."

Recommended Practices updated

The American Trucking Associations' (ATA) Technology and Maintenance Council (TMC) says there are more than 40 new or revised practices in its new Recommended Practices manual.

"Each Recommended Practice has been developed through experimentation in the field, then subjected to stringent evaluation by TMC members, so you know the information is top quality," said TMC executive director Robert Braswell.

The manual is available in two volumes as a digital set or three as an in-print version. It contains more than 3,500 pages of technical information that TMC says represents the consensus and collective wisdom of council members on spec'ing, testing, and maintenance.

Topics include everything from battery selection criteria, to aerodynamic wheel cover considerations, and lifting and jacking vehicles guidelines.

Quick Truck Lube opens in Napanee

Quick Truck Lube is set to open a new location in Napanee, Ont. this fall.

The site at Exit 579 on Hwy. 401 will offer the same services as locations in Ayr and Fort Erie.

Quick Truck Lube is a fast drive-through oil change facility, equipped to service all makes and models.

TruckPro network expands again

TruckPro is expanding again in Ontario, expanding its network of parts and service shops.

Diesel Brothers is bringing its eight service bays and seven mechanics to the TruckPro family.

The Milton, Ont. facility is a full-ser-



vice shop and certified inspection station located just off Hwy. 401. The shop is open six days a week from 7 a.m. to midnight, with mobile repair service available 24/7 – including Sundays when the shop is closed.

Diesel Brothers is a family-run business that was opened in 2014. Two lead mechanics have 30 years experience working with heavy-duty trucks and trailers between them.

Canadian businesses honored for quality

Two Canadian suppliers were among 40 recipients of Daimler Trucks North America's (DTNA) 2017 Masters of Quality Supplier awards.

The awards recognize the top quality component and service suppliers to Freightliner and Western Star.

Multimatic Manufacturing of Concord, Ont., and Hendrickson Canada ULC of Stratford, Ont., were among the four-year winners.

“Now in our 31st year, the Masters of Quality Supplier award recognizes the partners who provide our company with critical components and services that contribute to our overall success,” said Carsten Kirchholtes, general manager, supply chain management and international trade compliance for DTNA. “We are proud of our industry-leading products and innovations, and our suppliers’ commitment to excellence is essential.”

Electric vehicles continue to surge

More than 100,000 electric commercial vehicles will be sold by 2035, according to a report from ACT Research.

The study, Commercial Vehicle Electrification: To Charge or Not To Charge, concludes that commercial electric vehicles will grow from a small beachhead today to a significant share of the Class 4-8 market by 2035.

“We believe that electrification will

offer a competitive solution for an increasing number of commercial vehicle segments as we look to the decade ahead and beyond,” said Jim Meil, principal, industry analysis for ACT. “Initial adoption will likely be in shorter-range hauls with frequent stops and starts, regular and predictable routes, and daily return-to-base for overnight charging types of operations. Early adopters will tend to be in medium duty and highly specialized Class 8 applications that make the current limitations of battery storage technology more manageable.”

The study reports that as battery technology advances, performance will improve and costs will drop, making a wider range of applications and duty cycles suitable for electrification.

“We see shares reaching about 20% for medium-duty and double digits for Class 8 as a ‘most likely’ case by 2035,” Meil said. “In favorable case circumstances – such as oil and diesel prices



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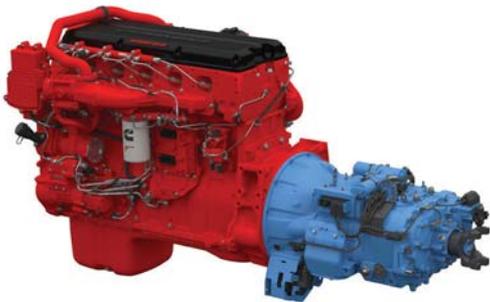
*Tested by independent lab according to TMC recommended practice 432A and 1102.

escalating as they did in 2005, 2009 and 2011 – market take rates for CEVs could get to one-third or higher, depending on the segment.”

Eaton-Cummins venture to profit by 2020

A Cummins and Eaton joint venture that was developed in 2017 is expected to be profitable by 2020, Cummins president and chief operating officer Richard Freeland said when releasing financial results for the second quarter of 2018.

Current losses for Eaton Cummins Automated Transmission Technologies are expected to be halved in 2019, with a break-even point to be reached the following year.



“The combined powertrain product is doing terrific as we introduced the new product, and more importantly, as we’ve done the integration work between the engine and the transmission,” he said.

The first product to emerge through the joint venture was the 12-speed automated Endurant transmission.

It isn’t the only partnership playing a role in future business plans, either.

Cummins, which recently acquired Efficient Drivetrains Inc. as part of its electrification strategy for commercial vehicles, is also forming a joint venture with Chinese JAC Motors following Navistar’s exit from that business.

Tom Linebarger, Cummins chairman and chief executive officer, says the company will benefit from JAC’s strong exporter status in overseas markets that follow China 6 emissions standards. Cummins’ market share in the region is expected to grow significantly – perhaps double – in five years, he said. 

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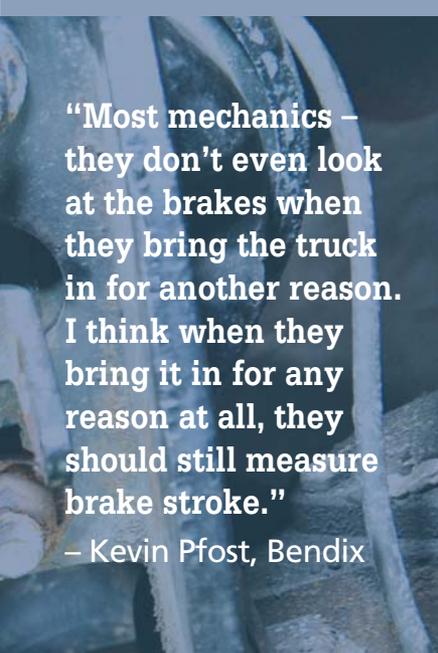
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STOP AND THINK

Fleet maintenance teams play vital role
in tackling brake-related violation rates

By James Menzies



“Most mechanics – they don’t even look at the brakes when they bring the truck in for another reason. I think when they bring it in for any reason at all, they should still measure brake stroke.”

– Kevin Pfof, Bendix

Left: A technician inspects automatic slack adjusters.

Right: Kevin Pfof of Bendix says technicians need all the training they can get.



An unannounced Brake Safety Day enforcement initiative by the Commercial Vehicle Safety Alliance (CVSA) on April 25 saw 13.8% of inspected commercial vehicles placed out of service for brake violations.

More than 11,500 vehicles were inspected on the day, including 1,457 in Canada. Canada’s out-of-service rate was slightly better than in the U.S., with 12.4% of trucks taken off the road here for brake violations compared to 14% in the U.S.

Despite steady enforcement initiatives such as Brake Safety Day, a part of the CVSA’s Operation Airbrake Program, brake-related defects continue to be a leading cause of out-of-service violations. But fleet maintenance departments have a direct impact on a fleet’s violation rate, since routine maintenance can prevent many of the defects found at roadside.

We caught up to brake guru Kevin Pfof – formally technical services coordinator, Bendix Spicer Foundation Brake – for his insights into brake maintenance best practices.

Truck Tech: Why is it that brake violations continue to be a leading cause of roadside violations, and what can fleet maintenance departments do to avoid adding to the statistics?

Pfof: It seems strange after all these years that we still have a high difficulty with brake maintenance and brakes out

of spec’. Here’s the thing I tell everybody: If you bring a truck into a garage, it takes about 10 minutes to go through and actually measure brake stroke.

Most maintenance departments will tell you they don’t have enough time. But when you bring a truck in for any reason, take that extra five to 10 minutes to measure brake stroke while you have the truck in there. If you have a truck that’s out of spec’, stroke-wise, at least you catch it before it leaves.

Most mechanics, they don’t even look at the brakes when they bring the truck in for another reason. I think when they bring it in for any reason at all, they should still measure brake stroke.

Truck Tech: With air disc brakes becoming more prevalent in the market, should we not see a correlating decrease in brake-related out-of-service violations?

Pfof: Yes, air disc brakes are having less violations. I haven’t heard of many violations as of yet. Most of the time, when they go through the scales, (when inspectors see) they’re disc brakes they’re waving the guys through. So that cuts down on brake violations.

The other thing is, people like disc brakes because the pushrod is internal to the caliper. Now they can’t measure brake stroke, right? The biggest violation you’ll find is brakes out of spec’.

Truck Tech: So it sounds like a fleet that’s having trouble with brake violations



LEADERS SPEAK

could solve them pretty much completely by spec'ing air disc brakes.

Pfost: You know what, some of them are doing that for that reason.

Truck Tech: But that doesn't mean disc brakes are maintenance-free, does it?

Pfost: Here's the maintenance requirements for a drum brake: you have to grease it, you're measuring brake stroke, you have a lot more components in a drum brake, so you have more chances of failure or mis-adjustment.

In a disc brake, your inspection is vis-

ual. You're looking for cracks – cracks in the rotors, or you look up between the wheels and the caliper. You're looking where the pads sit. You're looking for mismatched pad thicknesses. Then you'll move the caliper, check the caliper movement on the guide pins. You want to make sure there's running clearance. If there isn't, that can tell you (that) you have a guide pin seized up.

So, they're not maintenance-free. People get it in their heads that they're maintenance-free. You still visually have to inspect this, you still have to listen for air leaks, and you'll also have to check for caliper movement. Grab the caliper and slide it in and out of the wheel to make sure it moves freely.

Truck Tech: I have noticed, especially since the introduction of reduced stopping distance (RSD) drum brakes, there has been a lot of emphasis from Bendix on the importance of swapping out like for like friction material when doing brake jobs. Why is this so important, and is the message getting through to technicians, or does it need to be re-inforced?

Pfost: I think it needs to be re-inforced. The reason we tell you to replace friction material with the same material is because we have to meet the stopping distance rule by the government. Aftermarket do not have to meet that rule. If you can make friction in your garage and put it on a shoe, in the aftermarket you can actually sell that. OEMs, we have to keep the same quality and same stopping distance in our friction. Aftermarket friction has no oversight at all.

The other thing, too, that I've heard from people is that when they buy aftermarket friction they don't get as much mileage as they did with OEM friction.

Truck Tech: How important is ongoing brake training for technicians? Do fleet maintenance departments offer enough of this?

Pfost: I do a lot of technician training myself. What I find is, especially on the disc brake side right now, everybody's kind of leery about (the technology). But it's not a new product. The disc

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brakes on a truck are no different than the disc brakes on a car, other than they weigh about 100 times more.

So, the inspections are the same. But, our products are changing all the time. So I believe that technicians need all the training they can get. There are a lot of things they don't run into every day, so they forget about it.

Truck Tech: Are there certain knowledge gaps you've encountered while training technicians, or issues that are widely misunderstood when it comes to brake maintenance?

Pfost: When I do a disc brake training class, I start talking about different things like brake adjustments on disc brakes. On our disc brakes you adjust them til they make contact with the rotor and then back them off until you hear three audible clicks. On a lot of other ones, you back them off half a turn like you do on a drum brake. Technicians didn't understand it's three audible clicks – they thought they had to back it off half a turn.

Also, during the inspection process, there are a lot of guys that have no clue that they need to check the caliper for slide-ability while they're doing their preventive maintenance.

On the drum brake side, look behind the clevis pin. Many guys will not spray any lube on a clevis pin. If the clevis pin seizes, that could be a brake-out-of-adjustment failure. A lot of guys look at me like a deer in the headlights and say, "Wait a minute, you need to lube these?" Yes, you need to make sure that the clevis pins are free.

Truck Tech: There seem to be a lot of training tools available today, including Bendix's Online Brake School. But are maintenance managers doing enough to keep their technicians trained?

Pfost: There are a lot of guys that, when I get out there and I start talking to them about our online school, they're amazed we have one. And I'm amazed that they don't know about it. I think we really need to stress to technicians that there are free online schools – and they're good schools.

This is what I tell fleet managers who

tell me they don't have the time to train their technicians: I always tell them, everybody breaks for lunch, right? One day a month, as a fleet manager, log into our brake school, and when these guys break for lunch, buy them pizza and pop. Put a monitor in the breakroom.

Plug your laptop into it and do one short class.

It's 10 minutes, 15 minutes max. Play that during their lunch while they're eating pizza and drinking soda. I'm telling you right now – if you put food out, they're coming! This is a win-win. **TT**



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BREAKING DOWN THE BREAKDOWN

Control your experience and expenses during on-road repairs

BY JOHN G. SMITH

David Marvin, Tandet Management's director of equipment services, and Kirk Tilley, president of Tandet Management and T-Fleet, stress that early planning is key.



Mike Gomes, the vice-president of maintenance for Bison Transport, summarizes his fleet's on-road repair process in six simple words: "Truck broke. Fix truck. Send money." It's a joke, of course, but there's still a ring of truth to it. Each step in the process – especially as it relates to controlling costs – makes a roadside breakdown much more difficult to manage than work in your own shop.

Despite every commitment to preventive maintenance, there will always be equipment that breaks down during a journey. Maybe it's a shredded tire or the results of a collision. Fan belts are dropped, and ignored regen warnings lead to de-rated engines. For some reason, such issues seldom seem to happen in the middle of the day or in front of a dealership, too.

The repairs completed at roadside also carry some unique dynamics of their own.

Standard Repair Times (SRTs) don't apply in environments like this, explains David Marvin, Tandet Management's director of equipment services. Each case needs to be judged on its own merits.

"If I see the invoice or I'm getting the phone call, they're going to tell me how long it's going to take. The vendor says, 'It's an alternator. It's going to take 45 minutes to change out.' OK. That sounds fair," he says. But there is an acceptance that tools are limited to what was loaded onto a service vehicle. Required replacement parts can be much further away than a counter adjacent to a service bay.

This hardly means such repairs need to be out of a maintenance manager's control, however. The secret is to plan for such eventualities, and choose partners who can provide help when it's needed.

"A good roadside event happens well before you ever need a roadside event. It's all the pre-planning," says Kirk Tiley, president of Tandet Management and T-Fleet, which provides emergency breakdown service across North America. "Do you know your route of travel? Have you pre-approved vendors? Have you negotiated rates with those vendors? Do you know their night call-out rates? Do you know all their upcharg-

**“Truck
broke.
Fix truck.
Send
money.”**

– Mike Gomes, Bison Transport

es? If it's a towing operation, do you know their mileage charge? Do they have a hook charge? You [answer] all that kind of stuff well before you're broken down, because when you're broken down and you have no idea who you need to talk to, you're at the mercy of whoever gets a hold of you."

Choosing suppliers

Titanium Trucking Services, for example, relies on a single U.S. supplier to address trailer repairs, and leans on a truck supplier to handle 95% of power-related repairs. Tire failures are handled by a single supplier as well. But there still needs to be a network of other service providers to ensure there is support along every lane, says Greg Black, manager of fleet maintenance. "There are always some dead areas."

T-Fleet combines a list of its own

preferred vendors with those that fleets themselves have identified. Bison takes a similar approach, anchored in a software platform known as Bison Emergency Assistance Roadcall Service (BEARS). It's populated by about 5,000 service providers – each rated with one to five stars based on the quality of service, responsiveness, and price.

It's about more than repair capabilities, too. Bison has established working relationships with truck stops including Love's and Flying J because of other support. "Our drivers are familiar with them," Gomes says, referring to the added benefits of amenities like showers and restaurants.

Even drivers can be enlisted to be part of the support network, as long as they are equipped with replacement parts such as gladhand seals and bulbs, and informed how to use them.

Titanium offers financial incentives to those who complete the repairs on the road. "The faster the driver can get fixed and get going, the better it is for the E-log," Black says, noting how the fleet offers drivers the supplies including springs and clamps to hang air lines, as well as bulbs and wire ties.

Admittedly, roadside repairs are usually taken up by drivers who have spent more years on the road. Equipment spec's have a role to play as well.

"The equipment is becoming harder for people to access repairs," says Black, referring to features like fuel tank skirts that can make it harder to crawl underneath. "Some of the equipment, you can't get under to repair it."

Processes and procedures

No matter who is selected for any work, formal triage processes ensure that nothing is overlooked.

Bison, for example, ensures that anyone answering the phones will follow a specific series of questions. Stranded drivers are first asked if they're OK and whether emergency services are need-

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ed, and if the vehicle is secured. Then there are standard operating sheets walking step by step through basic systems to gather repair information.

BEARS is also tied into the Bison dispatch system, ensuring that everyone understands the related loads and delivery timelines. Some customers might be able to wait longer for repairs than others.

The actual steps a fleet might follow can even vary by region, from one company division to the next, Tilley says, referencing the differences in labor rates between Canada's Oil Patch and the East Coast.

Black says the Titanium team always looks to balance the severity of a failure with potential tow costs as well. It might make more sense to have a clutch repaired on the road if a tow back to a known shop is worth half as much as the labor on the repair itself.

"It all depends on the customer's policy. That's a huge factor," Tilley says, referring to differences from one fleet to the next. "They'll limit what they want repaired on the side of the road to what they want towed in. It also depends on whether they're loaded or not. Depends on what the load is. Depends on whether it's dangerous goods or not. Liquid or dry. It's so customer-dependent and on how they manage the operations of their business. Some clients don't want anybody to touch the engine on the roadside. Others, they don't care."

Communications

Once a decision is made to have the work performed, a constant flow of information will be the best weapon to ensure that costs don't spiral out of control.

This begins by providing accurate information to a service provider, Black says. That means conveying exactly how a driver described the issue, and providing the driver's phone number and location to ensure that those behind the wheel are kept in the loop.

"On average, it takes eight points of

contact to deal with a roadside event," Tilley adds. Each step of the way, from the first call to the repair itself, involves asking for timelines and following up – whether it's asking how long until a vehicle is dispatched, or when a repair is expected to be done. "Through all that, 'How much? How much? How much? You didn't give me an estimate. Can you tell me roughly what you think this is going to cost?'" Then it's a matter of issuing purchase orders for the agreed amount, and ensuring these documents match the invoices that follow.

But the way such information is shared can vary widely. One T-Fleet client communicates each piece of information electronically, with dispatchers filling out pre-formatted documents that generate emails. But 60% of the customers still prefer to receive such information over the phone.

This is especially the case when it comes to communicating with stranded drivers.

"The driver wants to know somebody is actually concerned. They can actually tell them how frustrated they are, or they can get a sympathetic voice on the other end of the line. Our philosophy we use with everyone is that a driver wants to do their job safely and go home. Our job is to get them home," Tilley says.

Marvin agrees: "His truck's broke down. It's cold. It's dark out. He wants to know, 'When's that tow truck going to be here?' I've seen it before where something's happened and the driver just wants to be aware that somebody's coming."

Protecting warranties

Meanwhile, the careful tracking of the repair process itself will help to ensure that potential warranty claims are not sacrificed.

"We're firm believers in purchasing extended warranties," Gomes offers. But costs are only recovered if specific information is captured at the time of a repair. Pictures have to be taken before

anything is disassembled, repairs need to be documented, and replaced parts need to be returned.

Such related capabilities can be established when first choosing vendors for the on-road repair network.

"One of the things you should do with a vendor when you're setting yourself up, 'Can you take pictures from the roadside if we request it? Can you hold parts if we request it? It looks like it's a brand new truck and it looks like a warrantable item. Do you charge for that?' Some vendors do that, some don't," Tilley says. There's also the question of whether a service provider can retain a part until their told to dispose it or ship it.

The warranties to be tracked are not limited to trucks alone, either. Even the replacement parts will come with warranties, Tilley stresses. "We capture right down to the nuts and bolts. Any time something goes on, we start to track the manufacturer's warranty on the specific part."

Ongoing communications through the process can also help to protect against a variety of scams. Simply telling a driver what service provider is coming can protect them from another shop who rolls in, hooks up, and asks for a cash payment, for example.

Black refers to the way it can protect those in a home office from credit card scams.

"I get the calls all the time," he says. Scammers spot a trailer number and licence plate, and call to say they have the truck in a "shop" awaiting payment on a repair. "This is happening, more rampant and more often," Black says. It's why Titanium tells teams to validate vehicle locations using the satellite system, and call the driver or owner-operator to ensure that repairs are actually being performed.

Dealing with an unplanned repair is tough enough without addressing a repair that was never performed in the first place. ■

Passing Grades

By Eric Berard

The most important oil grades may not be the ones you think





Grades are relative things when talking about engine oil. On one hand, you have what goes in, the 15W40s, 10W30s; and the like. But there are also grades that apply to oil coming out of the engine – like a “pass” or “fail” when an oil sample returns from the lab after an analysis.

Tony Costa, maintenance manager at Carmen Transportation in Toronto, prefers to go beyond the binary “pass” or “fail” approach and requires oil analyses to include detailed numbers that relate specifically to metal particles, contamination levels, and viscosities. Think of his preference as something akin to an overall report card.

Many Canadian fleets still don’t have an oil analysis program in place. Some are not even familiar with the concept, says Gloria Gonzalez, general manager of WearChek laboratory, in Burlington, Ont. “We come across them at trade shows. They stop in and say: ‘What do you guys do?’ We tell them and that’s how we meet people who have never heard about oil analyses,” she explains.

The cost of an oil test is fairly low at roughly \$35 apiece – often less, depending on volumes – but it still represents a barrier to implementing an oil analysis program for some carriers. Corporate cultures or a maintenance manager’s own background can tip the

decision either way, Gonzalez adds.

Budget restrictions imposed by upper management can influence decisions as well. “Usually, that’s [the oil analysis program] one of the first things that goes,” Gonzalez says.

It’s kind of sad because, when you balance the relatively low test cost and the kind of problems a test can help avoid, the return on investment is fairly convincing.

An oil analysis program won’t prevent component wear or breakdown. But it can help schedule when and where downtime is going to occur – in your shop at the moment of your choosing instead of on the highway in the middle of nowhere. “Your workflow doesn’t stop. That’s the advantage,” the WearCheck expert says of what should be the preferred approach.

Besides, the diagnostics can indicate the early stages of a “health problem” with an engine, when it requires a relatively minor action as opposed to a complete rebuild.

Speaking of money, many experts agree on the fact that fleets which can’t afford to test every power unit at every oil change can still focus on trucks that are more likely to show signs of weakness.

“You would want to focus on the older ones, or maybe the ones that do the more strenuous work,” Gonzalez says.

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Building an oil analysis program

Any focus on the right power unit requires a clear understanding of the truck being tested. It's why Grant Dawson, a laboratory data analyst with Bureau Veritas in Texas, says the first step is to develop a detailed inventory of each piece of equipment – including the brand, model year, VIN, and date of the last oil change.

“Providing as much relevant, accurate machine information to the laboratory is imperative for receiving quality, in-depth analysis of the test data. Laying the proper groundwork dramatically increases the value of an oil analysis program,” he says.

The process also involves carefully choosing the laboratory that's going to test the samples you'll collect. Carmen Transportation's Costa suggests maintenance teams should review two or three different labs before making a decision. It could be one from an oil supplier, and two more from independent labs. Then send test samples from the same engine to see how detailed and intelligible the different results are.

“They usually have explanations about what's going on with your oil,” Costa says. The preferred approach to those explanations could be a legitimate factor in the choice of lab.

Meanwhile, the all-important baselines can be established by testing brand new oil of the same grade and brand to be poured into the sump.

Determining sampling points and sampling intervals is also important, says Dawson. Remember that a simple oil analysis offers a snapshot of a specific moment in time. Nothing more. Trends emerge by comparing consistently collected samples.

This is why Costa recommends looking at the previous reports to understand how the engine is trending. “Is it getting better or worse? Was a major engine repair just completed at last oil change? This would increase some numbers,” he says.

Upstream from the lab, maintenance managers running an oil analysis program need to follow a consistent protocol if they want accurate results, too.

That includes collecting samples in the bottles provided by a specific lab.

Huge amounts of oil won't be needed. The most common sample bottle holds about 100 ml, or three fluid ounces.

The way samples are drawn from an oil pan also matters. The first drops that emerge when a plug is pulled, and the final residue, should be avoided. “We want right in the middle, and preferably within 20 minutes after the engine has been shut down so that oil had time to circulate and things haven't settled to the bottom yet,” Gonzalez says.

What analyses tell you

Used oil tells a story. How's the viscosity? Can you extend drain intervals? Have you overextended them? Most important, the results will help to identify unusual increases in wear metals and other contaminants such as coolant, fuel and soot.

The presence of coolant, for example, might be the sign of a worn head gas-

ket or cracked engine head, while fuel could point toward the injection system or piston rings. “Either a crack in the rings or a crack in the piston somewhere,” Gonzalez says.

The presence of copper, lead or tin may indicate bearing wear, while elevated iron levels should lead maintenance teams to look around an engine's crankshaft, she adds.

Soot is particularly interesting because it's an indicator of incomplete combustion. Even if you lease trucks and are not ultimately responsible for the engine's condition, you're still paying for the fuel.

The results could also help to reduce costs associated with aftertreatment system maintenance.

“If you have a driver who just sits and idles the truck a lot, that idling will cause more soot,” Gonzalez says. And soot is certainly an enemy of modern engines and DPFs that oil testing can track. ■■

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INSTRUMENTS



TOOLS OF THE TRADE

By Derek Clouthier

Today's shop and diagnostic tools make some tasks easier, but a technician's job has changed

Steve Parkinson, the service manager for Cervus Equipment – Peterbilt in Lloydminster, Sask., knows the diagnostic tools that technicians have at their disposal today are far superior to those available in the past.

“These days, the tools we use and the troubleshooting trees are far more advanced and in-depth,” he says. “All tools, whether it’s hand tools or diagnostic programs, are getting better all the time and continue to make the technician’s job easier.” Even cordless impact guns,

drills, and screwdrivers are easier and quicker to use, especially when on the road.

But the diagnostic tools have become essential to the day-to-day success of a heavy-duty truck technician.

“If you are working on anything cab forward,” said Parkinson, “you are more than likely going to be hooking up with some sort of diagnostic tool.”

Cory Roche, president of Total Truck and Trailer Repair in Calgary, agrees that diagnostic equipment is fundamental.

“In today’s world, you can’t diagnose anything without the aid of a computer,” says Roche. “Software has become much easier to obtain, although, comes at a significant yearly cost. For independent repair facilities like ours, we must have multiple programs to address all the different makes of equipment that roll through our doors.”

Modern diagnostic tools are more user-friendly than the OEM-focused programs of the past, helping technicians find what they are looking for quickly, he says.



“It’s almost as if 20 years ago I needed 15 mechanics, and today I need 15 computer engineers with a background in mechanics.”

– Cory Roche, Total Truck and Trailer Repair

At Larry’s Custom Trailer Manufacturing, president David Hilliard explained how the business uses diagnostic tools to support very specific areas on the trailer.

“The only diagnostic tools we use are for diagnosing the ABS systems in trailers and the software for the new lift axle load equalizing systems on trucks for the Ontario SPIF requirements,” he said.

ABS systems, according to Hilliard, are rather simplistic, as they will tell a technician if it is reading a fault with the wheel sensors or the main control unit.

“They have functions for reading the mileage of the trailer as well, which can be helpful if there are issues that require a known amount of mileage to help diagnose,” Hilliard said.

Not everything on a trailer is as simple as ABS systems, however.

“The load equalizing software and control units are more complex, as they use load sensors and have calibrations that will control the air pressure and change the weight carried by the lift axle,” said Hilliard. “The software allows you to check the function of the system

and adjust as required.”

Though Hilliard agreed that today’s tools can make a technician’s job easier, as with any new technology, a whole new crop of issues can arise.

“Providing that the tools function properly, they are helpful,” said Hilliard, “but with increased automation and computer controlled systems, they now have more issues due to electrical connections and failures that were not problems prior to having them on the vehicles.”

Because technicians at Larry’s Custom Trailer Manufacturing

tom Trailer work on trailers and not engines, the impact these more-advanced shop and diagnostic tools have had on his staff and business has been minimal.

But for Roche, today's modern tools have made a significant difference in his shop, especially when it comes to specialty jobs.

"It's enabled manufactures to produce specialized tooling to get to hard-to-reach areas, or to increase the technician's efficiency by speeding up a process," he said. "In the end, time is money."

At Cervus Equipment – Peterbilt in Lloydminster, Parkinson said the size of his workforce has actually grown over the years as a direct result of the new higher-tech tools and trucks on the market.

"There are so many more systems and parts hanging off of today's engines and transmissions, it is so much more complex, there is now more to break down

than ever before," he said.

The type of technician in today's shop, however, has changed.

"Today's technician is far more computer savvy and needs to be far more advanced with electronics," said Parkinson. "If you can't run a computer and read a schematic, then you're going to get left behind. Some have been able to embrace the change, but most are happy to finish off their careers without getting caught up in technology."

Roche echoed Parkinson's thought that technician skillsets have changed, even if the number of technicians required to do a job has remained the same.

"The fundamentals of a diesel engine have not changed, but the control systems have," said Roche. "Today's standards will have ECMs that have over 2,500 internal parameters, a million lines of code, and can control a fuel injector to fire up to 11 times in one

crankshaft revolution. It's almost as if 20 years ago I needed 15 mechanics, and today, I need 15 computer engineers with a background in mechanics."

New technology also comes at a price when service shops are equipping their technicians with the modern tools they need to get the job done.

"Every year we spend tens of thousands of dollars upgrading diagnostic software, laptops, and specialty tools," said Parkinson. "It's a huge financial burden, but it's a necessary evil because if you don't keep up with new tooling then you're not going to get the work."

Parkinson added that he believes today's tools and diagnostic equipment have gotten better, last longer, and are more reliable than in the past.

One way to improve your bottom line is to make repairs the old-fashioned way when possible, however. Roche said a wise man once told him, "If a hammer won't fix it, it's an electrical problem." ■

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Smartphones have also found their way onto the shop floor, with a series of maintenance-focused apps.

Cummins

Cummins has many apps for its users, **Quick Service Mobile** gives customers a list of replacement parts, as well as build and dataplate information to help with repairs. By the same token, **Cummins Guidanz** helps technicians get information faster to ensure faster repairs. **Connected Diagnostics** requires a subscription to the program of the same name and a telematics device. It allows users to get updates on activity status of all equipment, fault alerts, and the meanings behind fault codes. If you don't have Connected Diagnostics but still want to know what the fault codes mean, you can get **Fault Code Advisor** to demystify the codes.

Detroit Connect

This app from Daimler Trucks North America (DTNA) allows all Freightliner and Western Star owners with the **Detroit Connect** service to have fault codes and events delivered right to their phones. The virtual technician feature allows users to see what's wrong with their truck and how best to fix it.

Mack and Volvo Asist

Two separate apps with the same name, **Mack Asist** and **Volvo Asist** are designed to access and track assets. With a map that will pinpoint trucks, search for assets, and view route information, users can also see the last time a truck was serviced and create new service requests.

Volvo My Truck

Volvo also has a dedicated app called **My Truck**, connecting through dealers to stay on top of things like fluid levels and maintenance needs, and even control in-cab temperatures.

SmartLINQ

For Peterbilt owners, this app connects to the SmartLINQ remote diagnostics portal to track vehicle locations, fault codes and service appointments.

OnCommand Link

For Navistar customers with the OnCommand dongle, this app provides vehicle health reports, allows users to store preferred wi-fi connections, provides software updates for International, Cummins, and IC Bus engine control modules, and creates a seamless user interface for everything OnCommand Link-related.

Hino Trucks

The app for Hino owners and drivers gives

users access to Hino roadside assistance, a dealer locator, and more information on trucks and the HinoCare program. There's also a social feature, giving users access to #Hinionation, allowing them to meet and speak to other Hino drivers.

Truck Fault Codes

Developer Diesel Laptops gives users not connected to another OEM or maintenance

app the ability to quickly look up more than 40,000 fault codes.

Bendix Brake Pad Identifier

Don't know what model of brake pad you have? **Bendix's Brake Pad Identifier** will tell you. Just place the brake pad on a clean, white surface and take a picture with your phone. The app will search the full Bendix catalogue and generate the part number. 

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A STRONGER ALLIANCE

Daimler to enhance aftermarket support

Daimler Trucks North America (DTNA) is looking to set a new standard in customer service for its aftermarket business, strengthening the promise of turnarounds in 24 hours or less, adding new digital tools, expanding the supply chain, and expanding Alliance Truck Parts.

“Our customers have diverse products and businesses, and we want to help them be successful by providing solutions that create efficiencies and value,” said Stefan Kurschner, DTNA’s senior vice-president of aftermarket activities.

Kurschner noted that DTNA and its network have collaborated on new systems and processes to create the “ideal customer experience.” Recently, the Elite Support network – which includes more than 280 certified dealers – spearheaded an effort to narrow repair windows to 24 hours. He said 56% of its dealers achieve that goal today. The Elite Support initiative has been in place for nearly 10 years.

Maximizing uptime and creating a superior customer experience starts with clear and timely communications, he said.

“Keeping customers informed every step of the way during a service event is one

of the most important things we can do,” Kurschner added.

The new DTNA Service Tracker is a web-based, mobile-compatible application that enables customers to track their service in real time, on demand. Customers can opt to receive notifications about the repair status of their vehicle, review and approve estimates, and communicate in real time with the service location.

Service Tracker is a component of Daimler’s suite of uptime management tools that streamline communications between customers and the dealer network. Express Write-Up, UptimePro, and Uptime Performance are among the data-driven applications that work together.

On the supply chain front, in early 2019 Daimler will open its 10th parts distribution center in the greater Phoenix, Arizona area. A second Canadian PDC location is coming soon, too, likely next year in the Toronto area. But NAFTA negotiations may complicate that effort, Kurschner said. There is already a parts distribution center in Calgary.

More than 15 new product lines are scheduled to launch over the next several months, as well as new retail locations. ■■



Giti goes wide



Giti Tire (USA) has unveiled the GDL633 FS ultra-wide-base tire for drive axles and the GTL933 FS ultra-wide base tire for trailers in long-haul applications.

Both models of the SmartWay-verified offerings are available in the 445/50R22.5 size.

Promoted features on the drive tire include a special tread compound to reduce rolling resistance, sipes designed for the even contact pressure needed to minimize irregular wear, and the lug pattern design for traction and stability. There are seven circumferential grooves to evacuate water.

Features of the trailer tire include an optimized tread design on the rib edges to minimize irregular wear, and a wide tread design that promises a consistent contact patch pressure. Tread grooves have also been enhanced to minimize stone retention.

Amsoil updates gear oil packaging

Amsoil already offers gear lube, but by changing the packaging it is making installations easier.

The Amsoil Severe Gear Easy-Pack is flexible, helping to access fill holes in confined spaces. The end result leaves less waste than traditional quart-sized containers, the company said.

The packaging is now available with



'Extreme' starter for medium-duty engines



Medium-duty truck owners now have access to a new 21.5 lb., 12-volt, 4.5kW replacement starter from Leece Neville Heavy Duty Systems – the PowerPro Extreme 5.

The motors support six- to 10-liter engines used in construction, fire and rescue, pickup and delivery, refuse, and school bus applications.

Coming with a planetary gear reduction design, it's available in 10- and 12-tooth versions and offers a premium replacement for engines, including the Cummins ISB, ISC and ISL; International DT466E and DT570E; and MaxxForce DT, 9 and 10.

A sealed, noseless design blocks dust, oil and other contaminants, while an integrated magnetic switch eliminates voltage drop. A soft start relay also protects the ring gear, the company said.

Amsoil Severe Gear 75W-90 and 75W-140 100% Synthetic Gear Lube. But traditional quart packaging remains available, as well.

Many options with SingleViu gauges

Continental has unveiled a new line of round instruments for on- and off-high-way applications.

The VDO SingleViu instrument series features a dual input for digital CAN bus signals as well as analog signals. It comes in 74 variations for original equipment, retrofit or service replacement. There are 2-1/16-inch gauges for temperature, fuel, pressure, tachometer, DEF, voltage, amperage, and hour meters. Speedometers and tachometers are also offered in 3-3/8 and four-inch diameters.

The devices feature an adaptable



sensor curve or pulse count and can be configured with the SingleViu ConfigTool, or by using the LCD screen on speedometers and tachometers.

Design features include double-glazed and shock-resistant mineral glass to

prevent fogging and damage, while the housings are flame-resistant and environmentally sealed to Class IP67. The voltage range is from eight to 32 volts, while operating temperatures run from -40 to 176 Fahrenheit.

Visibility is enhanced through a 240-degree display angle and RGB LED background illumination for the dial and display. The lens also has anti-reflective coating.

The 80/85 and 100mm models include internal pushbuttons that can control information displayed in the operating menu. Up to five telltales can be added to the dial face.

TRP releases new king pin kits

Deeper grease grooves for longer wear are a key feature of a new line of No-Ream King Pin Kits being released by TRP.

The company said the new king pin kits are designed to allow 25% more grease in high wear areas for better durability.

TRP said the kits available in multiple diameter lengths to fit many makes of



trucks and buses are manufactured using high quality steel, as well as state-of-the-art heat treatment and machine



EQUIPMENT WATCH

tool technology.

The kit makes the use of reamers, presses, and pressing-in bushings during installation a thing of the past, saving on installation and repair time.

All TRP No-Ream King Pin Kits are backed by a one-year or 160,000-km warranty.

Navistar and Kenworth standardize Dana Spicer single drive axles

Navistar has made Dana Spicer single drive axles standard on its MV Series medium-duty trucks.

It will include the Dana Spicer S110,



S130, S140, S170, and S190 models, as well as the 060 series.

Kenworth T270 and T370 medium-duty trucks also now come standard with Dana Spicer S140 single-reduction, single-drive axles.

The Kenworth T270 features the Dana Spicer S17-140 rated at 16,000 lb., while the Kenworth T370 is standard with the Dana Spicer S21-140 rated at 21,000 lb.

The S140 axle design features GenTech gearing to reduce noise levels by up to 12dB when compared to standard gear designs, and provide a smoother vehicle ride. The Dana Spicer S140 axles also shed 85 lb. when compared to the Dana P20060S axle.

Carrier Transicold upgrades APUs

Carrier Transicold has updated its ComfortPro diesel-powered auxiliary power units (APUs), reducing maintenance demands and doubling service intervals.

A tensioner automatically adjusts a new automotive-style multi-v drive belt to help maintain the generator's full voltage output when the APU is running, the company said, with manual belt tensioning no longer required.

Maintenance intervals have been



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Enables the use of either your iOS or Android devices (e.g., smartphones or tablets) for quick access to basic diagnostic information. It plugs into the vehicle's diagnostic connector and provides wireless communication with on-board ECUs.



When used in conjunction with First-Link™, the NEXIQ Blue-Link Mini™ becomes a triage tool for drivers and service technicians.

To learn more about the NEXIQ Blue-Link Mini, visit the NEXIQ website at: www.nexiq.com/Product/Detail/126015.



For more information, contact NEXIQ Technologies at 800-634-6774 or www.nexiq.com.

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doubled to 2,000 hours, as well, thanks to the use of CK4 engine oils.

Fully-featured ComfortPro diesel-powered APUs offer air conditioning, heating, cab power, engine warming, truck battery monitoring and charging, and optional shore power connectivity.

They provide 12,000 BTUs of cooling and up to 10,000 BTUs of heating, along with power from the 6-kW generator for hotel loads and maintaining the battery's charge. The shore power option can be plugged into a 110/120-volt source.

The system is available as an integrated or stand-alone system or with a ClearSky diesel particulate filter for those running in California. A power-only model is also available.

Integrated models warm engines via an APU coolant exchange, while the stand-alone unit uses the generator to power the tractor's block heater.

Cell signals getting a boost

Can you hear me now? You should with Wilson Electronics' weBoost Drive 4G-X

Fleet, a device that will boost a fleet's cell signals by up to 32 times over what would otherwise be available.

The Drive 4G-X Fleet's outside antenna accesses all cellular voice and data signals, including 4G and 3G, and sends them to the booster. That booster receives the signal, amplifies it and serves as a touchpoint between the user's phone and the nearest cell tower. As a result, devices get a stronger signal, and calls and data are fed back to the network.

The end result supports cellular-based fleet tracking devices, even in areas with weak signals, according to the company. It increases cellular range, offers the fastest-available data speeds, and improves the quality of calls.

It's currently compatible with U.S. wireless carriers, including Verizon, AT&T, Sprint, T-Mobile, US Cellular, Straight Talk and more. Canadian wireless carriers will also be supported.



'Cool runnings' for Webb's brake drum

Webb's latest brake drum has incorporated the company's Cool Running technology that maximizes airflow into the wheel end, better managing heat in the process.

Officially known as the 56864B brake drum, it runs 10% cooler and lasts 10% longer in standard-duty 23K drive and trailer applications, the company said.

The change becomes particularly important in an era of aerodynamic devices, such as side skirts, that can reduce crosswinds and the straight-line airflow below the trailer, leading to higher brake temperatures, which can reduce brake performance while also accelerating drum and lining wear.



Optronics expands light bar line

Optronics International has introduced five new LED light bars, adding to three versions already in the product lineup.

The new lamps include a pair of three-inch cubes, a nine-inch bar, a 30-inch bar with supplemental turn functions, and a 52-inch bar with a 20,000-lumen beam.

With the exception of the 30-inch

multifunction lamp, all other light bars in the family combine spot beams and flood beams. The light bars feature a lifetime warranty – replacing a full lamp if just a single diode fails.

Seven of the lamps feature die-cast aluminum housing and mounting brackets and come with stainless steel hardware, and the 30-inch lamp with its auxiliary turn function includes an adjustable stainless steel sliding bracket. **TT**

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HOW THINGS WORK

Top Tech a trade of opportunities, says Ryder's Wade Robinson

By Eric Berard

"I always had an overall need to understand how things function and how things work," said Wade Robinson when asked if he tended to dismantle machines before attempting to reassemble them as he was growing up.

Now at age 34 and 6'6", Robinson is definitely a grown up. And as a technician at the Ryder branch in London, Ont., he still enjoys being around things with moving parts, specifically full-size trucks.

"I feel I'm best at diagnostics, electronic diagnostics in particular. Just taking a very methodical approach to how to repair any issue," he said after ranking second in Canada at the Ryder Top Tech competition.

Granted, the \$10,000 cash reward plus the full week of family leisure in San Antonio, TX, with wife Ashleigh and son William were a treat, but Wade said there was more to this competition. "I think it's a good outlet to get a grasp at where you stand and what areas you need to improve on. It helps you develop as a technician, not just in the competition but on the floor on a daily basis," Robinson explains.

Continuous improvement and evolution are recurring themes when speaking with the Top Tech. For instance, he didn't always aspire to become a truck technician, even though he enjoyed tuning dirt bikes or other recreational



equipment as a teenager.

After a couple of twists and turns in his educational path, he opted to attend a diesel technician course at Fanshawe College in London, which incidentally is his hometown. "I knew that the industry itself would become more challenging and that there was a lot of opportunities to gain a great career. So I made the decision to go back to school and follow this career path," Robinson said about his trucking industry beginnings.

Not that he had never heard of it before. "My grandfather was a truck driver. He would always tell me stories about the industry and how you progress through it. I think it kind of piqued my interest in the industry in one way or the other," Robinson recalls.

Passing the torch

Still a young man himself, Wade is nevertheless the one spreading the trucking virus among the new generation these days. "To the young guys that I know when I'm around, I express that it's a great industry and one with a lot of opportunity. I try to get rid of the stigma that it's just a grunt job where you're not using your mind and that you're not being challenged. Nowadays the industry requires a lot more to be a good technician," he said.

Like many of his peers in fleet or

dealer shops, Wade has lived the trucking software and hardware evolution, including the "love-hate" relationship with the evermore sophisticated, yet eco-friendly emissions systems. "As the technology is progressing, the after-treatment, the exhaust systems are probably the most challenging to stay on top," he said.

When asked what area (DPF, fuel dosing for regens, etc.) of these systems are the more difficult to work on, the diagnostician in him kicks in: "You can't really pick up one thing. Overall, the biggest challenge is being able to identify which portion is not functioning properly."

Aside from the new, hi-tech systems, some classics are still in fashion in maintenance shops. Like the good old intermittent electrical problems. "There's a lot of complex wiring issues that I come across often. I recall once where there was a wire that was damaged internally, in the insulation of the wire. So you couldn't visually see any fault with it and under certain testing it would pass fine; but when it was fully loaded it would cause an issue. I remember that one being tricky. At the location where it was on the harness, it was in the deepest part of the truck, where it's next to impossible to access."

Grandpa truck driver probably experienced something similar in his days. **TT**

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