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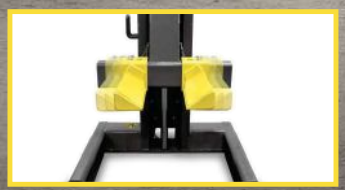

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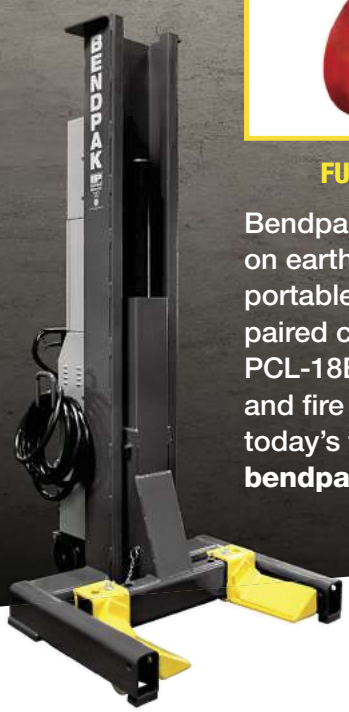

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Trucking Tech: Going Beyond the Gee-Whiz

Looking to make a Genius Bar appointment recently, I learned about the new Apple Vision Pro, a goggles-like headset that lets you view and interface with digital content that seems to float in front of you in the room. Seriously futuristic stuff.

Senior Editor Jack Roberts came away from the CES electronics show with a glimpse of more seriously futuristic tech, including a company that can show information on the windows to vehicle occupants or to those outside the vehicle (see page 20).

I grew up on science fiction, and this kind of tech sometimes makes me feel like I've traveled forward in time.

We write a lot about the ever-accelerating pace of technology in trucking. But implementing it in the real world can be more challenging.

This is an industry that varies enormously in its level of tech adoption. Some small fleets, especially, may still be using paper and whiteboards. Maybe an Excel spreadsheet. Even some large fleets are still relying on mainframes and monochrome green-screen computers that were the latest thing in the 1980s.

It's no secret that trucking is a low-margin business. Freight rates are subject to the ups and downs of the economy, and in general, costs mostly go up rather than down. It's hard to have much control over either of those factors.

But what you can work on is making your business more efficient. And using technology and data, to automate processes, to identify areas where you can cut waste, is probably the best way to do that.

On top of that, customers are increasingly demanding real-time transparency into their loads and the ability to interact with their carriers electronically and automatically.

If you think the way your dad or granddad did things when they owned the company is still just fine, you may be setting yourself up for failure.

If you think the way your dad or granddad did things when they owned the company is still just fine, you may be setting yourself up for failure.

At the same time, technology does not exist in a vacuum. When Nathaniel Klein started digging into his father-in-law's operations at Sun Logistics, he reported that the company had good people, but the processes were "archaic" and the computer systems were worse.

Klein and Sun's leadership team developed a plan to transform the company's systems to new, cloud-based, integrated IT. The goal was to give those "good people" the tools to do their jobs better and more efficiently. For instance, the company improved its accuracy of dock check (its inventory of freight) to virtually 100%.

"Part of that is technology," Klein told me. "But it's the people behind it, that the technology enables you to get there."

Vin McLoughlin of Cardinal Logistics, a 2011 HDT Truck Fleet Innovator, had a similar message. Ryder just bought Cardinal, sending me to our archives to find the story. Reading it nearly 13 years later, it struck me how ahead of the curve Cardinal was. Dynamic route monitoring, tracking refrigerated trailer temperatures, giving customers real-time status of their loads, a dynamic workflow system for drivers to use on a handheld device, were all cutting-edge at the time.

Yet McLoughlin told HDT in an interview that while technology may have been the key to Cardinal's edge in the market, "This is a people business. This business has absolutely nothing to do with trucks. Who you hire is the most important decision you're ever going to make."

These takeaways point to a longtime change-management strategy in business, the people-process-technology framework. (Klein called it people-process-systems, but the same idea.) Like a three-legged stool, this framework says all three elements need to work together for a business to succeed. And it's never been more relevant than it is today.

Covering the trucking industry since 1990, Deborah Lockridge is known for her award-winning, in-depth features on diverse issues. She can be reached at (205) 989-6467 or dlockridge@truckinginfo.com.

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What Truck Fleet Managers Need to Know about OSHA

By Ray Chishti, J.J. Keller

If you're a fleet safety manager, you're likely familiar with federal Department of Transportation regulations affecting your company's operations. But what about OSHA, the Occupational Safety and Health Administration? Do its workplace regulations affect your company?

Generally, the federal DOT preempts OSHA's jurisdiction while vehicles operate on public roadways. OSHA's jurisdiction is limited to vehicles operated in the workplace and not on public roads.

In addition, the DOT's jurisdiction covers interstate (between two states) commerce. OSHA's jurisdiction extends to intrastate (within a state) commerce. For instance, OSHA's jurisdiction includes gravel and sand haulers, logging, agriculture, and cement and concrete mixers, which are typically intrastate commerce activities.

Making the question more complex is the fact that many states have adopted federal DOT standards for intrastate commerce activity within their borders.

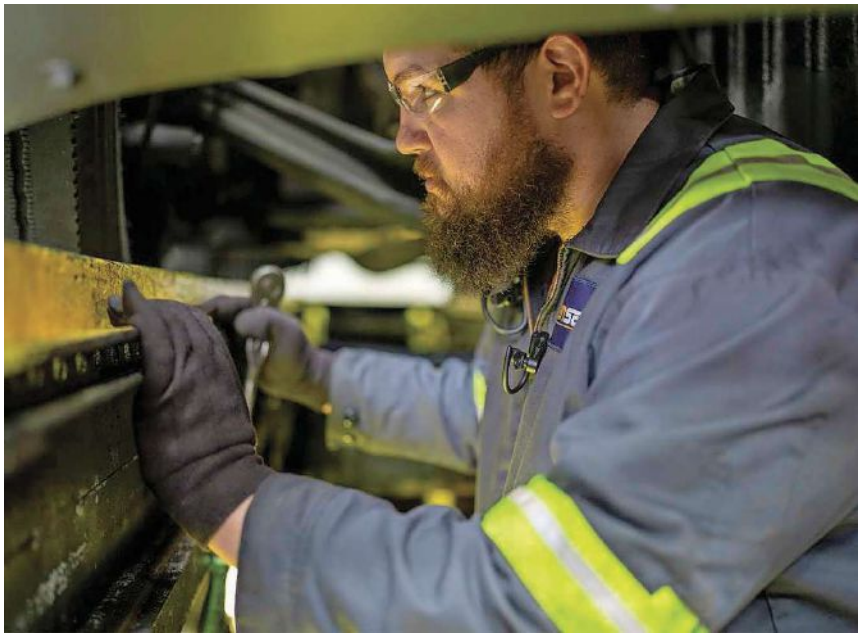

PHOTO: TRANSERVICE

While the DOT regulates the roadworthiness of the vehicle, OSHA is concerned with the safety and health of employees performing maintenance tasks.

DOT, OSHA, or Both?

It can be confusing to know when and where the dividing line is between these two federal agencies.

For example, say a trucking company hauls building materials from its shop in Wisconsin to California. Another trucking company then delivers the building material to its final destination in California.

Although the second company travels entirely intrastate (in California), the original intent of the shipment is interstate and therefore covered by DOT regulations.

However, suppose the first company delivers to a warehouse in California. In that case, delivery trucks taking the building material from the warehouse to a construction jobsite are not considered involved in interstate commerce. The original manifest must not indicate the shipments were intended for the particular construction jobsite. Otherwise, it would be interstate commerce activity. If not, then OSHA would have jurisdiction over the intrastate commerce activity and not DOT.

What about yard trucks? Fleets of all sizes rely on yard drivers to move trailers safely and efficiently around the yard. Drivers who operate yard trucks in any area open to public travel, even if on private property, are subject to the Federal Motor Carrier Safety Regulations, with off-highway operations covered by OSHA safety regulations. This means these drivers must also understand which regulations apply to them and how to stay in compliance.

Loading and Unloading

OSHA regulations cover off-highway loading and unloading at warehouses, plants, grain handling facilities, retail locations, marine terminals, wharves, piers, and shipyards, among others.

Its jurisdiction in the construction industry includes loading/offloading scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment.

Common safety issues to consider while performing loading and unloading activities include:

- Stacking.
- Storing.
- Lifting.
- Rigging practices.
- Rigging equipment.
- Powered industrial truck operations.
- Forklift operations.

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What Can Trigger an OSHA Inspection?

OSHA has jurisdiction over approximately 7 million worksites. The agency seeks to focus its inspection resources on the most hazardous workplaces in the following order of priority:

1. **Imminent danger situations** — hazards that could cause death or serious physical harm receive top priority. Compliance officers will ask employers to correct these hazards immediately or remove endangered employees.
2. **Severe injuries and illnesses** — employers must report all work-related fatalities within 8 hours and all work-related inpatient hospitalizations, amputations, or losses of an eye within 24 hours.
3. **Worker complaints** — allegations of hazards or violations also receive a high priority. Employees may request anonymity when they file complaints.
4. **Referrals of hazards** — from other federal, state or local agencies, individuals, organizations or the media receive consideration for inspection.
5. **Targeted inspections** — inspections aimed at specific high-hazard industries or individual workplaces that have experienced high rates of injuries and illnesses also receive priority.
6. **Follow-up inspections** — checks for abatement of violations cited during previous inspections are also conducted by the agency in certain circumstances.

- Safe working loads.
- Rigging inspections.

For instance, OSHA has a whole e-tool section on beverage delivery on its website, covering possible solutions to potential ergonomic hazards drivers face with doing things like unloading beverages, using hand trucks, and so forth.

OSHA and the Shop

In terminal operations, such as at a shipping warehouse, OSHA regulates the performance of all vehicle maintenance activities. It also regulates mobile maintenance activities on public roadways such as highways.

DOT regulates the roadworthiness of the vehicle. OSHA is concerned with the safety and health of the employees performing such maintenance tasks.

Drivers or technicians performing vehicle maintenance can be exposed to chemicals. Safety data sheets must be provided to maintenance workers, and employers must ensure the manufacturer's recommendations are followed to minimize exposure to hazards.

In addition, if workers perform hot work, such as making repairs by welding, a hot work permit must be issued. Appropriate fire prevention and protection measures must be in place to prevent fires and address any fire event, such as training workers to use a portable fire extinguisher or requiring workers to evacuate to a designated area.

Another common issue concerns the failure to chock trailer wheels. OSHA doesn't cite drivers for failure to chock commercial motor vehicle trailer wheels because DOT regulation preempts enforcement. However, OSHA can enforce chocking requirements on trucks used in intrastate commerce. In addition, OSHA can enforce chocking requirements on CMVs used for interstate commerce if employees other than the driver enter the trailer.

Workers may need to perform lockout/tagout if exposed to hazardous energy, such as electrical components, while performing service and maintenance activities. This is a safety procedure used to ensure that dangerous equipment is properly shut off and not able to be started up again until the maintenance or repair work is completed.

Employers should ensure controls are in place to prevent cuts, abrasions, stains, and shock. Workers could become pinned against equipment and machinery, or worse, entangled or killed if safety guards are removed or not properly used. Other exposures include irritation, sensitization, carcinogenicity, and physical hazards (such as flammability, corrosion, and reactivity.

PHOTO: J.J. KELLER

Employers must perform a hazard assessment and identify hazards workers will be exposed to.

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Hazmat: When the Driver is a 'First Responder'

OSHA has limited authority over over-the-road vehicle operations. If hazardous materials spills occur while the material is on the vehicle or otherwise "in transportation," OSHA's Hazardous Waste Operations & Emergency Response standard does not cover drivers.

It does, however, cover first responders who respond to the scene of the spill. That means if drivers become actively involved in an emergency response, OSHA would consider them an emergency responder, subject to following OSHA's applicable health and safety requirements.

Fall Protection

When employees are on top of a semi-trailer, for whatever reason, fall protection is required if using it would be feasible. Even if there's no overhead anchor, providing training on safe practices and precautions would is a good idea.

In a memorandum dated Oct. 18, 1996, OSHA explained, "It would not be appropriate to use the personal protection equipment standard... to cite exposure to fall hazards from the tops of rolling stock, unless employees are working atop stock that is positioned inside of or contiguous to a building or other structure where the installation of fall protection is feasible. In such cases, fall protection systems often can be and, in fact, are used in many facilities in the industry."

Personal Protective Equipment

Using personal protective equipment, or PPE, can seem simple. Put on safety glasses, wear gloves, use steel-toe shoes, or put in earplugs. The reality is much more complicated than that.

Injuries related to PPE in the transportation industry often stem from wearing the wrong type of equipment for the task, not wearing the PPE correctly, or not wearing the equipment because it wasn't clear what workers needed to do.

What's in it for your workers? Why do they even wear PPE? Understanding PPE requirements, using the right equipment, and learning how and when to use PPE is essential to protecting workers from injury and illness. Wearing it helps get workers home safely each day and keeps them injury-free.

Employers must perform a hazard assessment and identify hazards workers will be exposed to. This is called a PPE certification. Workers should be issued PPE, paid for by the employer, that is comfortable to use and fits properly.

OSHA's General Duty Clause

OSHA doesn't have any specific standards on some topics, such as distracted driving or avoiding back injuries, but employers are expected to address such topics under OSHA's General Duty Clause.

Under the GDC, when OSHA doesn't have a standard about a certain hazard or safety issue to workers, employers must still address the issue by implementing controls and mitigating workers' exposure to hazards.

For instance, employers must train workers how to avoid distracted driving. Perform a check ride with drivers and make observations about their driving habits. Correct any distracted driving behaviors and follow up with the driver to ensure corrective actions are effective.

Ergonomics and Injuries

Loading and unloading trucks involves the movement of products, not just with materials handling equipment like forklifts, conveyors, and overhead cranes, but also by hand. Manually handling loads, in turn, puts a lot of strain on an employee's back.

In the trucking industry, injuries and illnesses involving the back account for numerous injury and illness cases, some involving days away from work each year, making back disorders a top concern. Some disorders are serious enough to require surgery, and some lead to permanent disability.

While many people think that back disorders are acute and come from a single lift of a heavy or awkward load, back disorders often result from relatively minor strains that occur chronically over time.

OSHA has no specific standard related to ergonomic lifting, which means there are no safe lifting techniques OSHA recommends officially.

However, ergonomic lifting and safe lifting techniques fall under OSHA's General Duty Clause, which requires employers to protect workers from serious and recognized workplace hazards. As a result, you must employ any "feasible and useful" method necessary to mitigate the danger.

Teaching safe lifting techniques, for example, is a proven way to reduce employee lost time and workers' compensation costs related to back disorders.

A complete back safety effort will also include the identification of back hazards at your facility, implementing engineering and administrative controls to reduce or eliminate those hazards, and managing any reports of back disorders.

Workers in the transport industry experience the most fatalities of all other occupations. DOT and OSHA will continue working together on driver safety issues.

Together, they provide employers, warehouse workers, and truck drivers with information and assistance to help comply with federal standards and ensure transportation workers have a safe working environment.

Ray Chishti is a workplace safety editor with J.J. Keller & Associates. He has more than 18 years of environmental, health and safety experience and is an OSHA-authorized trainer for general industry and construction. This article was authored and edited according to Heavy Duty Trucking's editorial standards and style to provide useful information to our readers. Opinions expressed may not reflect those of HDT.

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School buses and medium-duty trucks such as the eMV were Navistar's first forays into the electric truck market. But new, larger models are coming.

Q&A NAVISTAR'S TOBIAS GLITTERSTAM ON ELECTRIC TRUCKS

By Jack Roberts, Executive Editor

PHOTO: NAVISTAR

You don't get to be one of the oldest truck OEMs on the planet without a tradition of technological innovation. Over a century ago, International Trucks helped define the concept of what a commercial vehicle would be, as well as the powertrain technologies that would power and propel them.

Today, Navistar is once again at the forefront of technological change, helping trucking transition away from fossil fuels to a zero-emission transportation future.

Tobias Glitterstam, Navistar's chief of strategy and transformation since early 2023, is leading the truck-builder's efforts on this new frontier. In an interview with HDT, he spoke about the complexities facing fleets and truck OEMs — and why more help is needed to ease and expediate this transformation.

This interview has been edited for length and clarity.

HDT: We're here talking primarily about electric trucks today. But you've made it clear Navistar looks at the technology transformation fleets are facing in more basic terms. Can you explain?

Glitterstam: Our transformation toward zero-emission vehicles started years ago. And our strategy has always made our mission clear for us: We want to accelerate the adoption and impact of sustainable mobility in trucking.

But that very much goes back to our core values at Navistar — and that is putting our customers first. One big reason we are so committed to green transportation and decarbonization is we strongly believe that electrified transportation is the best solution for our customers in the long term.

HDT: You're talking about fleet benefits instead of something massive like combating climate change?

Glitterstam: Yes. That's why we are so committed. Our strategy is very much based on our own, in-house scientific research. We have our own global team of scientists dedicated to studying all of these zero-emissions technologies in detail. And as they look into the future, data shows us that electric vehicles will offer our society the best possible solutions from an environmental point — but even more so from our customers' view.

Our research tells us that in terms of efficiency, productivity, performance, and total cost of ownership, electric trucks will be the best solution for a majority of customer applications.

HDT: And your electric vehicle rollouts have reflected these views, haven't they?

Glitterstam: Yes. We brought out our electric school bus in 2020. That was followed by our first electric medium-duty truck shortly thereafter. The reason is we saw that as a very good starting point on the path to full electrification.

Those launches will be followed by regional haul and long-haul trucks. Given the high, intensive usage of long-haul trucks, they prove to make the best longer term business sense in transitioning to electric. So, this approach to introducing this new technology allows us to learn about it hand-in-hand with our dealer network and customers as we go.



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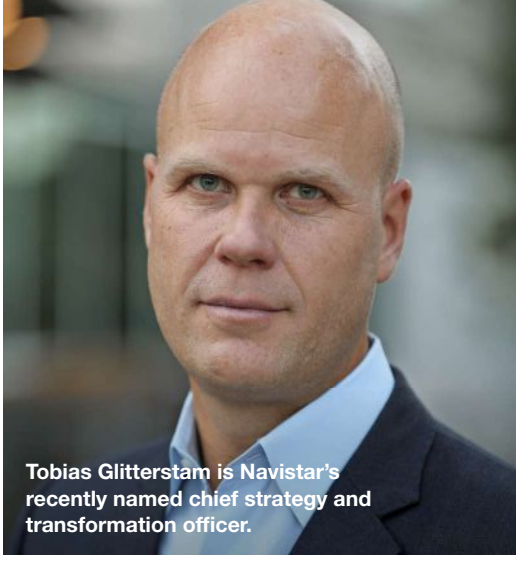

Tobias Glitterstam is Navistar's recently named chief strategy and transformation officer.

PHOTO: NAVISTAR

HDT: How important is Navistar's place in the global Traton corporation for this process?

Glitterstam: Very important. Although it's not merely a question of Navistar using European technology here. The fact is that now, Navistar is fortunate to be vital member of a leading global truck OEM. It is true that Traton and Navistar quickly synergized and merged our zero-emission research and development activities into one, joint, global organization with a global product roadmap. And that benefits us.

HDT: And those R&D efforts go far beyond electric trucks?

Glitterstam: Yes. Electric truck development was already underway at Navistar. But now, our global research is focused in many other areas. We are working on the digitalization of fleets and connectivity, for example. And we are looking toward autonomous trucks in order to leverage that technology from a leading position in the North American market.

HDT: But none of this means Navistar is abandoning diesel engine technology any time soon, does it?

Glitterstam: No. Of course, we have a two-step approach to this transformation. We have investments in green, clean technology. And that includes bringing the completely new International S13 Integrated Powertrain to the market. When compared to the last generation of the A26, the S13 Integrated Powertrain offers up to 15% better fuel economy and 75% fewer NOx emissions.

Accelerating the introduction of the S13 makes very good economic sense for our customers, and environmental sense aligned with more stringent regulations for greenhouse gas emissions. So, we see this as a logical step toward decarbonization as we move on to electrification.

HDT: Which brings up another point: We are moving into a time when many fleets will have to manage different powertrains at once. What are your thoughts on that new reality?

Glitterstam: While we explore all major technologies, we see BEV as our clear core priority. At Navistar we believe battery-electric vehicles have a clear advantage over fuel-cell-electric vehicles.

At the same time, we recognize that fuel-cell electric vehicles can have compelling use cases in certain applications to make the best use of clean energy resources.

To manage mixed fleets, it starts with a strong foundation of connected vehicles and enables new digital technologies to help optimize the freight operations. Continued digitalization will be vital for fleets, especially in managing the new complexities of mixed fleets.

HDT: What about alternative-fuel internal combustion engines?

Glitterstam: For some time to come, our customers will have to run mixed fleets. So, we will continue to have an efficient ICE product available over the next five, 10 and 15 years.

In parallel, we will see a rapid transition to electric trucks. We are strong believers that is the path forward.

Our ambition at Navistar is to sell 50% new electric trucks by 2030, subject to the buildout of charging infrastructure. And that is the largest concern at this point in time — the lead time required to get sufficient electric charging infrastructure in place.

HDT: Which is why we see truck makers stepping up to offer more than just trucks. You are really moving into a business partner and consulting role, aren't you?

Glitterstam: Yes. We have to support our dealer network and the customer, becoming a trusted partner. There is no other choice. We are not just selling the best trucks possible anymore. We are helping to set up an entirely new system and an entirely new way of managing their fleets.

HDT: What would you like to see happen to help accelerate the adoption of electric trucks in North America?

Glitterstam: I think two things are important.

One, we need to find a pathway to cost parity for electric trucks in as many applications as possible. Navistar has over 300,000 connected vehicles on the road, and we know from that data that 10% to 15% of the freight currently being moved by our customers could be moved by electric trucks efficiently today.

One way we could get more fleets to try electric trucks on these routes would be with grants and incentive to support one-off costs of upgrading electric charging infrastructure for fleets. Such incentives would help align everyone's timeline to zero emissions – OEMs, regulatory agencies and fleets.

HDT: And your second ask?

Glitterstam: There is always resistance to new technology at first, and fleets are finding that installation of charging infrastructure is a new complexity. Navistar is here to help, of course.

But targeted incentives for fleet operators would be another big help in easing fears about adopting this new technology. I would like to see subsidies for initial vehicle deployments to help get the ball rolling. This would give both fleet managers and drivers valuable experience with these trucks.

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NEW RULES ON INDEPENDENT CONTRACTORS

COULD AFFECT TRUCKING'S OWNER-OPERATOR MODEL

By Deborah Lockridge, Editor and Associate Publisher

The Intermodal Association of North America said the new requirements "threaten to force the reclassification of over 80% of intermodal drayage drivers that currently enjoy independent contractor status."

PHOTO: JIM PARK

A new rule from the U.S. Labor Department will likely mean some independent contractor truckers will be reclassified as employees. The new rules are scheduled to go into effect March 11, but it would not be surprising if they are challenged in court.

In a final rule published in the Federal Register on Jan. 10, the DOL changed its Wage and Hour Division regulations on determining whether a worker is an employee or independent contractor under the Fair Labor Standards Act.

The new rule outlines six "economic reality" factors that should be considered in making an IC vs employee determination:

1. Opportunity for profit or loss depending on managerial skill.
2. Investments by the worker and the potential employer.
3. The degree of permanence of the work relationship.
4. The nature and degree of control.
5. The extent to which the work performed is an integral part of the potential employer's business.
6. Skill and initiative.

None of the factors is supposed to be given more weight than the others, under what the department called a "totality of the circumstances" analysis. And additional factors may be considered outside of these six.

"Employers will now be forced to guess which of the ... factors may bear greater weight, thus creating much uncertainty for companies," said the trucking and logistics attorneys at Becker LLC in an email alert.

"As the trucking industry relies heavily on the use of independent contractors, we are anticipating trucking companies may be on the high priority list for DOL scrutiny on worker classifications under the new final rule," Becker added.

Trump-Era Definition is Out

The new rule repeals and replaces a 2021 Trump administration rule that simplified the definition and set up two "core factors" to use in making the determination:

- Nature and degree of control over work.
- Opportunity for profit or loss based on initiative and/or investment.

Under the Biden administration, the Labor Department put out a proposed rule in October 2022, which many in the industry said would make it harder for trucking companies to demonstrate the independent contractor status of their owner-operator drivers.

The final rule is only "incrementally" better than the original proposal, according to the transportation attorneys at Scopelitis, Garvin, Light, Hanson & Feary.

Scopelitis anticipates business groups will go to court to challenge DOL's authority to issue this regulation.

'A Tangled Mess'

"It's unfortunate that the administration has chosen to replace a clear and straightforward standard with a tangled mess that weakens our supply chain and undermines the livelihoods of hundreds of thousands of truckers across the country," said American Trucking Associations President and CEO Chris Spear in a statement.

Owner-Operator Independent Drivers Association President Todd Spencer criticized the uncertainty that changing regulations create.

"Truckers are tired of the endless parade of classification rules that do not listen to their concerns," Spencer said.

"This constantly changing landscape has created uncertainty that makes it more difficult for them to operate their businesses."

1 Opportunity for Profit or Loss

This factor considers "whether the worker exercises managerial skill that affects the worker's economic success or failure in performing the work." This might include, for instance, if the worker can negotiate rates

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and if he or she works to expand the business and add customers.

If a worker has no opportunity for a profit or loss, says DOL, it suggests that the worker is an employee.

2 Investments by the Worker

This factor looks at "whether any investments by a worker are capital or entrepreneurial in nature."

The DOL defines these investments as ones "that generally support an independent business and serve a business-like function, such as increasing the worker's ability to do different types of or more work, reducing costs, or extending market reach."

The final rule discussed whether an owner-operator leasing a truck from the trucking company he or she is providing services to would qualify as this type of investment. If a driver chooses to lease a truck from the employer, the DOL said, it could still be considered an entrepreneurial investment, but the worker would have to be able to consider independent financing options, be able to negotiate terms of the lease, not be required to work for that company for a minimum amount of time, and not be prohibited from using the leased truck to work for others.

3 Permanence of the Work Relationship

When the work relationship is indefinite in duration or continuous, the rule says, it would "weigh in favor of the worker being an employee."

However, the DOL explained that this is not black and white. Addressing concerns about long-term business relationships, the final rule said like other factors, this one is best understood in the overall context of the relationship between the parties.

4 Nature and Degree of Control

The amount of control of an employer over a worker is often a point of discussion in determining independent contractor status in trucking.

One of the key sticking points was a sentence in the original proposal that said "control" could be indicated if workers are required by the company to take actions to comply with legal obligations, safety or health standards.

In the final rule, the department changed the regulation, saying actions taken by the potential employer for the sole purpose of complying with a specific law or regulation are not indicative of control. However, actions "that go beyond compliance" with those laws could indicate control and thus employee status.

The new rule also said control could be indicated by an employer supervising the performance of the work — "including

through technological means of supervision, such as monitoring systems that can track a worker's location and productivity."

However, it also said that collecting data through monitoring systems isn't automatically about control; it might instead serve other operational needs of the employer.

Another aspect of control that comes up frequently in relation to truck owner-operators is whether the employer "explicitly limits the worker's ability to work for others" or "places demands on workers' time that do not allow them to work for others." In this case, the worker is most likely an employee rather than IC, said the DOL.

5 Integral Part of the Potential Employer's Business

This is another factor of particular interest to the trucking owner-operator model.

The department explained that most courts adopt a common-sense approach to determining whether the work or service performed by a worker is an integral part of a potential employer's business. For example, if the potential employer could not function without the service performed by the workers, then the service they provide is integral.

A number of commenters on the proposed rule expressed concerns that this was an attempt to adopt one of the prongs of an ABC test such as the one used in California's AB5 law.

However, the department emphasized that it is not adopting an ABC test. An ABC test requires all three of the A, B, and C factors to be met for IC status. The "B" prong, requiring that the worker performs work that is outside the usual course of the hiring entity's business, is virtually unattainable in trucking's owner-operator model.

6 Skill and Initiative

This factor looks at "whether the worker uses specialized skills to perform the work and whether those skills contribute to business-like initiative."

Because both employees and independent contractors can be highly skilled and/or bring specialized skills to the work relationship, the rule recommended focusing on whether the worker uses "the specialized skills in connection with business-like initiative."

Several trucking comments on the proposal pointed out that although truck driving typically is not classified as 'skilled' labor in other contexts, the skills needed to obtain a commercial driver's license make this type of work specialized, whereas a regular auto driver would not be considered to have specialized skills.

The Department of Labor agreed and in the final rule explained that a worker who uses truck-driving skills "in connection with business-like initiative" would qualify under this factor.

3 Transportation Technology Trends from CES 2024

CES can always be counted on for a glimpse of the future. This year's show didn't disappoint on the commercial vehicle front.

By Jack Roberts, Executive Editor

CES — formerly known as the world-famous Consumer Electronics Show — is a lot to take in. It's impossible to see everything at the show, which sprawls over almost the entire, massive, Las Vegas Convention Center complex. Nonetheless, CES is the place to see the latest and greatest tech trends for any market segment or industry you can think of; including transportation.

Although CES isn't an automotive-focused show, it is still a great place to get a sense of the overall trends shaping both trucking and passenger car markets. This year's show was no exception.

Here are a few emerging trends from CES 2024 that I think OEMs, suppliers and fleets ought to pay attention to. In my opinion, these are major technology developments that will be shaping commercial vehicle design, use and operation in the coming years.

1 Software-Defined Vehicles

Last year from CES I reported that the rise of the software-defined vehicle was imminent. And that's still true.

Really, the concept of the "software-defined vehicle" makes perfect evolutionary sense from a technology point of view. Software and computing systems dominate every other facet of our lives, and motor vehicles aren't going to be an exception. Cars and trucks are well on their way to becoming rolling computers. OEMs and outside suppliers are hard at work developing new apps and special computing programs designed to heighten safety and increase comfort for drivers and passengers alike.

But there are already problems with this new software push.

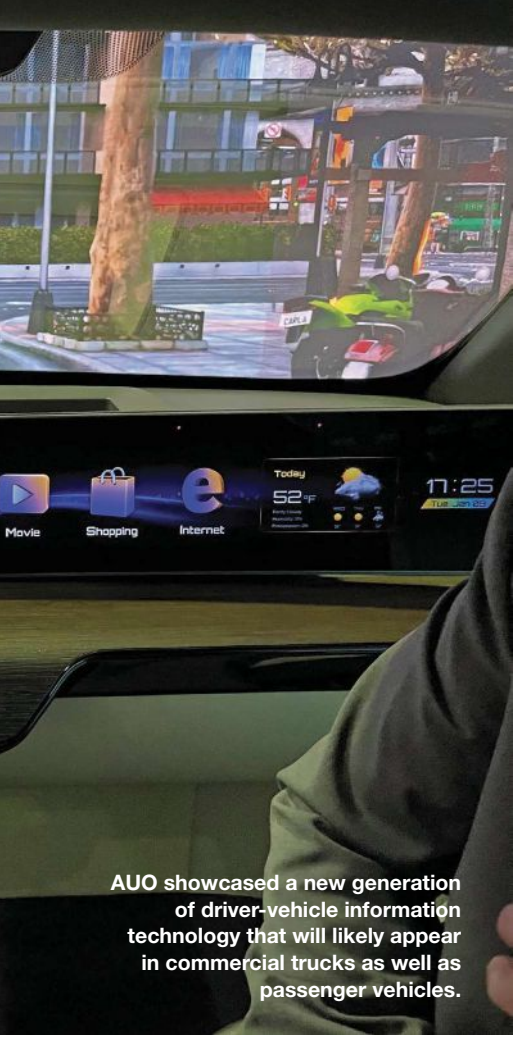
The average passenger car today depends on more than 10 million lines of computer code to operate its various systems. More often than not, these codes are written by multiple suppliers. The brake supplier writes the code for the brakes. The engine supplier writes the code for the engine. The transmission supplier writes the code for the AMT, and so on.

Figuring out how to get all of these codes to work smoothly together without some sort of common, open-source, baseline operating code is already starting to be a problem. The Chevrolet Blazer EV has already become a poster child for this challenge with a litany of highly publicized software issues plaguing the vehicle.

There's another issue as well: The OEMs have been eying the airlines' business model and really like the idea of monthly subscription fees for "add-on" features, ranging from heated seats to any number of apps performing any number of services. But it remains to be seen if the people who purchase those vehicles will be as enthusiastic about paying subscriptions for all of those features as OEMs hope they will be.

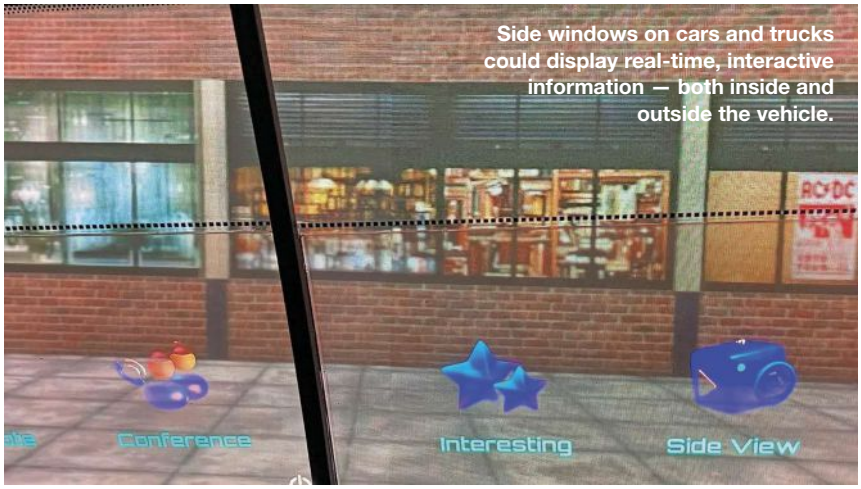
2 Mandatory Driver and Passenger Monitoring

Beginning this year, every vehicle sold in Europe is required to have interior



AUO showcased a new generation of driver-vehicle information technology that will likely appear in commercial trucks as well as passenger vehicles.

PHOTO: JACK ROBERTS



Side windows on cars and trucks could display real-time, interactive information — both inside and outside the vehicle.

PHOTO: JACK ROBERTS

camera systems that monitor driver behavior. The U.S. is considering enacting similar regulations.

Obviously, the trucking industry has already dealt with this issue on a voluntary basis, driven by the need to reduce crashes, lower insurance costs, and minimize the threat of nuclear verdicts. We understand well how unpopular those systems can be with commercial drivers. But it seems like this could become a regulatory reality.

Not surprisingly, several automotive suppliers at CES 2024 this year, notably Bosch and Continental, introduced new in-vehicle camera and radar systems to monitor both drivers and passengers. These systems use AI to make sure the driver is not sleepy, intoxicated, ill, impaired or distracted and that passengers are behaving reasonably.

These sophisticated systems can even identify objects inside the vehicle such as smartphones or laptops. Bosch has augmented its camera monitoring system with an in-cabin radar system that can detect objects out of the line of sight of the cameras. These radars are sensitive enough to pick up respiratory patterns in the air emitted by unattended children covered by blankets or pets asleep in the floorboard.

This technology seems poised for rapid growth and is certainly worth watching.

3 Get Ready for a Whole New Driver-Vehicle Interface

Just like it was only a matter of time before software became the dominant design/operational system for cars and trucks, we're frankly overdue for a complete reworking of how drivers and passengers get information while they're driving or riding in a vehicle.

True, there are a lot more bells and whistles and display screens in modern vehicles. But for the most part, the dashboard and interiors look a lot like they did 50 or 60 years ago. That's about to change.

Soon, modern graphics and touchpad interfaces, combined with new window coatings, lighting and interiors, are going to completely transform every aspect of a vehicle's interior and how drivers get information from the vehicle itself, its immediate surroundings and the outside world.

Several technology suppliers at CES 2024 demonstrated brand-new dashboards that bring modern computing icons, graphics and information into the vehicle in a truly stunning way.

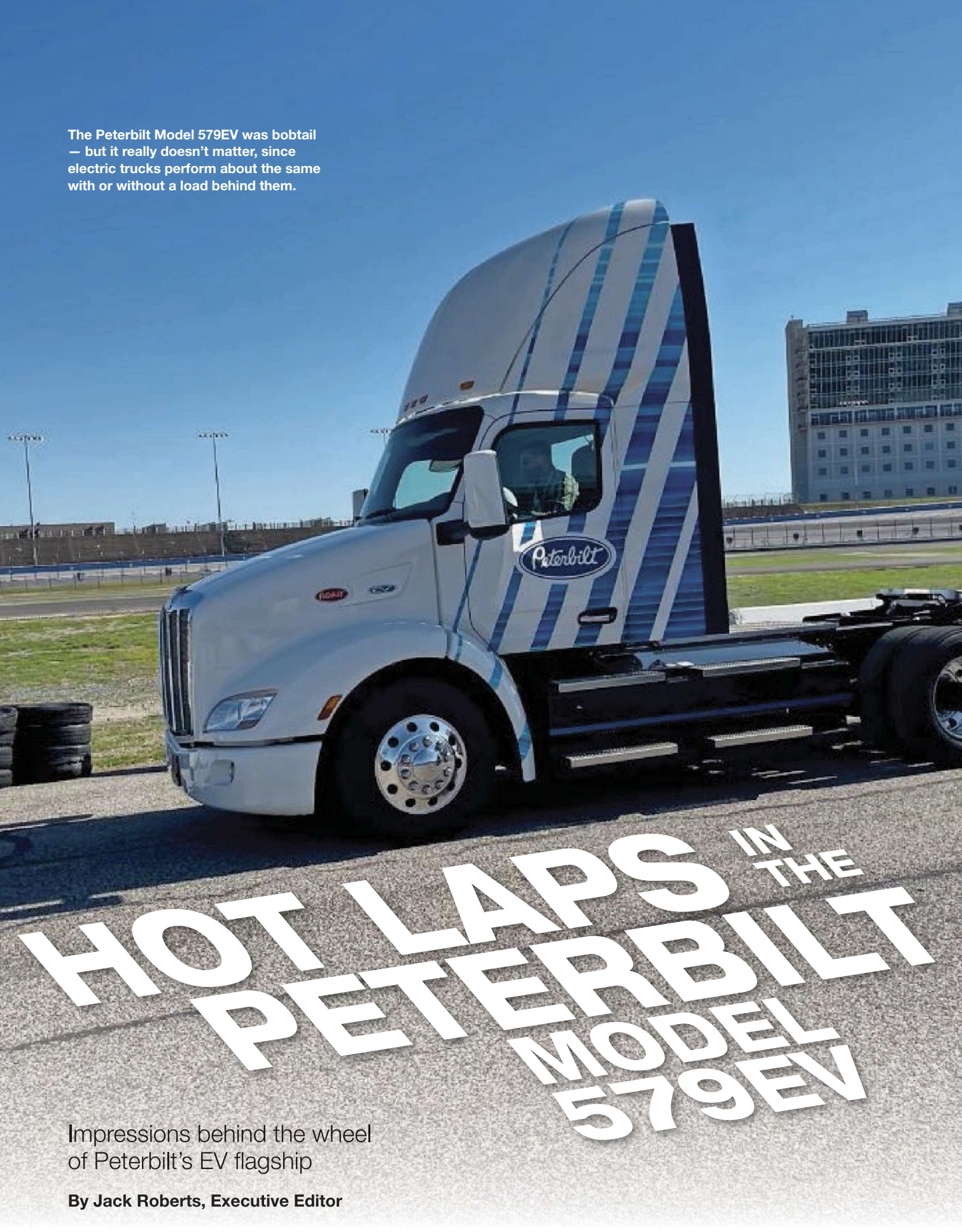
AUO, a Taiwanese computer graphics and display company, showed me a compelling suite of all-new display systems that allow real-time information, including navigation prompts and danger alerts, to be flashed onto the windshield in front of the driver. That's in addition to new, completely customizable dashboards and control systems for vehicle functions.

With the AUO system, passengers can receive descriptions of landmarks, or even advertisements or special offers from buildings and businesses they drive past, translucently displayed on the vehicle's side windows.

And, significantly for commercial vehicles, those window display screens work both ways. So, a truck driver using AUO vehicle display systems can get a see-through message flashed on the front windshield above the steering wheel directing them to their assigned loading dock to make a delivery. At the same time, a QR code with information on the shipment and the cargo could be flashed on the outside windshield to be scanned by a dock worker and expedite the shipment onward to its final destination.

The same interactive system, tied in with the truck's telematics system, could display a maintenance checklist on the side window for technicians, who could then tick off the work performed right on that window/computer screen.

How and when these new technologies will begin to show up on new vehicles remains to be seen. But it is obvious that all three have tremendous potential to transform fleet operations if implemented successfully.



The Peterbilt Model 579EV was bobtail — but it really doesn't matter, since electric trucks perform about the same with or without a load behind them.

HOT LAPS IN THE PETERBILT MODEL 579EV

Impressions behind the wheel of Peterbilt's EV flagship

By Jack Roberts, Executive Editor

PHOTO: JACK ROBERTS

Peterbilt electric vehicles are ready to roll, and I got the chance to drive one at a Peterbilt customer event in Denton, Texas, late last year.

It was a gleaming white, serial-production Peterbilt Model 579EV battery-electric truck, and I was able to take the truck around a road course at the Texas Motor Speedway for a few hot laps.

I first drove a pre-production model of this truck at the Paccar Innovation Center in Sunnyvale, California, in 2018. This was an early take on Peterbilt's EV philosophy. That early version used a conventional Eaton automated transmission mated to a Dana electric powertrain. At the time, the Paccar engineers at Sunnyvale told me this was an arrangement that optimized the torque from the two sequenced electric motors powering the truck while saving space and weight.

It was an interesting concept, but one that Peterbilt eventually shelved, as I saw for myself at the Texas Motor Speedway.

Another early Peterbilt EV drive was at the Technology & Maintenance Council's 2019 annual meeting. I was behind the wheel of a Peterbilt Model 220EV in heavy, hilly, Atlanta rush hour traffic when I realized that, outside of range and weight limitations, an electric truck was just a truck. It's a commercial vehicle fully capable of doing anything a gas- or diesel-powered vehicle can do.

These experiences with Peterbilt EVs were crucial in helping me understand this technology when it was brand new.

They also illustrate how meticulous Peterbilt has been in developing its electric truck models. The company's engineers have tried different powertrain and transmission combinations. But their eyes have always been firmly locked on customer expectations.

Fast Acceleration

During the presentations at the customer event, I picked up a bit of an odd detail that intrigued me: Peterbilt engineers and product managers kept referring to the Model 579EV as an "electric vehicle," instead of an "electric truck." Given that Peterbilt is about as focused and committed a commercial truck OEM as you'll find anywhere on the planet, I wanted to know why that was the case.

"The term 'EV,' short for 'electric vehicle,' is universally understood to mean a plug-in, battery-powered vehicle," explained Patrick Wallace, marketing manager, electric vehicles. "Of course, all of our electric vehicles are commercial trucks. But we want customers to know immediately when reading or hearing the model name, such as 579EV, that this is the fully electric version of our Model 579."

Fair enough. With that minor point cleared up, it was time to take the latest version of the Model 579EV out for a few quick laps.

Unfortunately, the truck was bobtail. But the truck I'd driven in California back in '18 was pulling a loaded trailer. So, I was already familiar with how the truck performs with a load of cargo behind it.

The funny thing about electric trucks is that there's not a whole lot of difference in how they perform in terms of acceleration and braking, whether they are loaded or not. That's because their electric drivetrains and regenerative braking systems are so efficient at providing instantaneous torque to the drive wheels.

In fact, a key enabler for electric trucks was developing sophisticated energy management systems to manage all that torque. Without those onboard electronic control modules metering out all that power, you could put an electric truck accelerator pedal to the floorboard at a full stop and burn up your drive tires in a burnout that would make professional drag racers green with envy.

The Model 579 EV features a new, battery-focused dashboard and instrument cluster.

PHOTO: JACK ROBERTS

Behind the Wheel

Climbing up in the cab, you're confronted with a pretty standard Model 579 interior. The main difference is the EV-specific cluster in front of the driver. Featuring brightly lit and color-coded digital graphics, this display gives the driver all the information they need to safely operate the truck at a glance.

I did have to deal with an electronic gremlin before I could get out on the track.

Electric trucks don't really "start" the way a diesel truck does. You just switch them "on." But when I turned the key to the right, the instrument cluster lit up as expected, but that was about all. The truck didn't want to go.

One of Peterbilt's engineers eventually managed to reset the system, and we were soon good to go.

I don't think this reflects any production or design deficiencies with the truck. It's not unusual in a pre-production specimen to find something amiss. It's happened a number of times over my years of test-driving diesel trucks, too. But it begs the question, what's a driver to do under a hot load when the truck fails to launch?

Well, basically, the same as drivers do now with cantankerous diesels: Call it in and go for coffee. Nothing new here, except a different problem with a different solution.

The engineers will learn from it, and that learning will carry forward with subsequent software updates.

One-Pedal Control

The other difference between this truck and a diesel-powered Model 579 is that the right-hand control stalk coming off of the steering column controls the truck's regenerative braking system instead of an exhaust engine brake. Just like a diesel truck, there are three settings that let the driver determine how aggressively they want the regenerative brakes to engage. Which, of course, also determines how much captured kinetic energy gets fed back into the truck's batteries.

A Peterbilt Model 579EV waits to head out on a road course at the Texas Motor Speedway during a customer event.

PHOTO: JACK ROBERTS

That brings up another interesting difference between electric trucks and diesel-powered ones. With the regenerative braking system fully engaged, you tend to find yourself driving the truck with the accelerator pedal only. Rarely do you engage the truck's service brakes. Usually, that's only necessary when coming to a complete stop at a traffic light or stop sign. The rest of the time, you tend to simply feather the accelerator pedal in conjunction with the regenerative brakes to slow the truck down.

It takes a little time to master this technique. The regenerative braking system can be surprisingly aggressive when you take your foot completely off of the accelerator. But, with just a little practice, smoothly accelerating and decelerating the truck using only one pedal quickly becomes second nature.

On the road course inside the oval at the Texas Motor Speedway, the Model 579EV greased through the hairpin turns with ease. As noted, electric trucks don't dilly-dally when you hit the throttle. If you haven't driven an electric truck yet, prepare to be surprised at the amount of power instantly coming from the drivetrain. Then there's the fact that there is virtually no noise accompanying all that power, aside from a quiet, golfcart-like whine coming from somewhere under the floorboard.

The truck's handling is superb. Views from the cab are outstanding.

In short, the Model 579EV offers everything you appreciate about the Model 579 — without a noisy diesel engine roaring away in front of you.

That's a pretty apt summation of Peterbilt's approach to electric trucks: All the performance, capability, and comfort you expect from Peterbilt in a quiet, smooth, and surprisingly quick package.

It's been said many times that electric trucks aren't for every fleet out there. But trucks like the Model 579EV have me convinced that fleets that do put them to work will not be disappointed in how they perform out on the road and in the real world.

The best new and significantly improved products and components announced in 2023

At the end of each year, Heavy Duty Trucking's editors look back at all the product announcements we reported on and choose the ones we felt were most significant and innovative.

Then we ask a panel of fleet decision-makers from our HDT Truck Fleet Innovators, Emerging Leaders, and our Editorial Advisory Board to weigh in and evaluate them in the following three areas to help us make the final decisions:

- Innovation
- Ability to address an industry issue
- Potential to affect a fleet's bottom line

The product must be commercially available in the U.S., or scheduled to become available in 2024, to be eligible. Entire powered vehicles or concept products were not eligible.

Awards will be presented at the American Trucking Associations' Technology & Maintenance Council annual meeting in New Orleans in March.

The 2024 HDT Top 20 Products appear on the following pages in alphabetical order by company.

Aperia Technologies
Halo Tire Management

1 Building on its suite of Halo-branded tire management solutions, Aperia Technologies' new Halo Tire Management platform can be a single source for fleets looking to more effectively manage their tractors, trailers, and tires with a single tool, according to the company, especially with the addition of asset tracking. Halo Connect's proprietary tire analytics engine receives data from several sources and translates that data into meaningful maintenance recommendations. The Halo Tire Management platform comes standard with APIs allowing fleets to pull the latest location and tire information into their other software platforms.

Cargobull North America
Hybrid TRUs

2 Utility Trailer and European trailer maker Schmitz Cargobull are bringing a new transport refrigeration unit technology and brand to North America. The Cargobull North America joint venture is offering TRU technology that offers as much as 20% less fuel consumption, with plug-in hybrid and all-electric units to reduce and eliminate emissions. The 625 Hybrid and the 655MT Hybrid multi-temp unit are available now, with two more models coming soon, the e625 Electric and the e655MT Electric. A compact, low-profile design allows for a shorter tractor-trailer gap. The evaporator has three high-velocity vans and an ultra-low profile for more clearance inside the trailer.

Carrier Logistics Inc.
A/R Risk Analyzer

3 Carrier Logistics Inc., which provides freight management software for less-than-truckload fleets, has a new feature in its FACTS solution providing automated accounts receivables risk scores. The enhancement uses artificial intelligence to identify at-risk accounts, which saves valuable company resources and reduces bad debt. Fleet users can quickly know which customer accounts are at higher risk and use that information to prioritize collection efforts and improve cash flow. The data can be presented in various options, including in Excel format, and in line and bar charts to illustrate scores over time.

ConMet EMobility
Nmotion Zero-Emission Refrigeration

4 ConMet eMobility's Nmotion TR 160-45 makes possible a zero-emissions refrigerated trailer, cooled by an electric standby transport refrigeration unit powered by energy generated from in-wheel electric motors. It's the initial application of ConMet's PreSet Plus eHub technology, which uses an in-wheel electric motor packaged with ConMet's hub assembly to create a regenerative energy source. The complete system pairs two eHub wheel ends on a customized suspension with an attached energy management unit (EMU). The EMU contains the proprietary system controls, thermal management system, and automotive-grade battery storage.

Dana
Spicer Electrified Zero-6 e-Transmission

5 Dana is expanding its Spicer Electrified e-Powertrain offerings to include a family of e-transmissions for medium-duty electric-vehicle applications. Accommodating a gross vehicle weight rating up to 59,500 pounds, the Zero-6 e-Transmission series will be available in two models, the eS4700t and the eS7900t, offering 4,700 and 7,900 Nm of output torque, respectively. The new SpicerZero-6 e-Transmission accommodates a diverse range of medium-duty applications, such as straight trucks, walk-in vans, refuse trucks, utility trucks, and platform trucks. The technology will launch on a global electric vehicle platform in 2024.

Doleco USA
ConnectedDeck System

6 Double-decking systems have helped fleets increase the cargo density of their trailers for years. Doleco USA says its ConnectedDeck System takes those to a new level and addresses pain points fleets have with decking systems. The patented ConnectedDeck is a pre-platformed double-decking unit. It merges two or three adjustable, self-leveling decking beams with a formed composite panel that creates an integrated cargo platform that is easily adjustable, stores at ceiling height, and never has to be disassembled and reassembled.

Dragonfly Energy
Battle Born Electric APU

7 Dragonfly Energy has entered the trucking industry with its new Battle Born all-electric auxiliary power unit. The company said its lithium-ion battery system provides ample wattage to run auxiliary power on trucks, even when the engine is off. Lithium-ion batteries allow for longer run time, addressing a big driver complaint about traditional electric APUs. The Battle Born also is significantly lighter than other electric APUs, according to the company. It mounts between the frame rails, which should help reduce vibration and thus reduce maintenance costs.

Flipturn
Flipturn Connect

8 Flipturn Connect provides real-time data on battery-electric truck and charging performance to help companies better manage their EV fleets. Fleets that adopt electric vehicles face operational challenges involving vehicle range, charging infrastructure, and energy costs. Flipturn Connect is a unified EV fleet operations platform providing cross-system visibility across fleets' vehicles, chargers, and related systems. Managers can monitor location and state-of-charge for all vehicles, track the availability and status of all chargers, set charging schedules automatically, minimize electricity costs through charger power management, analyze kWh per mile and cost per mile across vehicles and trips, and more.

Fontaine Fifth Wheel
SmartConnect

9 The SmartConnect Fifth Wheel uses sensors to monitor the fifth wheel lock position when a tractor is coupled or de-coupled from a trailer. It gives drivers an indication of whether the fifth wheel is properly coupled or not with an indicator light. The SmartConnect uses the data from sensors to help fleet managers anticipate maintenance needs before problems surface. The system analyzes the gathered data and predicts fifth wheel maintenance needs and issues alerts for servicing or inspection. When integrated with the truck OEM's CAN and telematics systems, SmartConnect will transmit lock status, hours of use, number of couples and maintenance alerts to fleet managers.

Grote Industries
4See by Grote With Rear-View Camera

10 In partnership with Stoneridge, Grote added a back camera to its 4See smart trailer system. The camera is hardwired through the standard J560 7-way connector for a reliable feed directly from the rear of the trailer to a video display in the cab with virtually no latency. It seamlessly integrates with the full 4See by Grote smart trailer system, including sensors for trailer lights, cargo, ABS, proximity-sensing radar technology, GPS tracking, tire pressure monitoring, and automatic tire inflation, made possible through Grote's digital harness and 4See smart nose box.

Mack Trucks
ElectriFi Subscription

11 Mack Financial Services is offering a new usage-based leasing option for Mack MD Electric medium-duty trucks. ElectriFi Subscription allows customers to pay as they go for miles driven. Chassis and body, charging, any incentives, physical damage insurance, and maintenance costs for the term of the agreement are bundled into a single monthly payment. ElectriFi Subscription reduces upfront investment while lowering long-term risk with the option to walk away at the end of the term. Terms are flexible starting at three years, with an option to extend up to a total term of six years.

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Motive
AI Omnicam

12 Motive said its AI Omnicam is the industry's first artificial-intelligence-enabled camera designed for side-, rear-, passenger-, and cargo-monitoring. When the AI Omnicam is paired with Motive's AI Dashcam, it gives fleets and drivers a full 360-degree view of a vehicle, its interior, and its surroundings. Since its launch in 2023, the AI Omnicam now also detects collisions, unsafe lane changes, sideswipes, and rear accidents to enable accident reduction. The AI Omnicam helps fleets improve road and job site monitoring and safety, investigate and combat potentially fraudulent claims, and resolve disputes over transportation and handling of valuable cargo and goods.

Orbcomm
CT 1000 Solar-Powered Asset Tracker

13 Orbcomm said its CT 1000 asset tracker enables fleets of any size to cost-effectively monitor trailers, intermodal containers, and other transportation assets and gain operational visibility. It offers a solution for fleet and intermodal managers looking to monitor asset location, start/stop motion status, and configurable alerts a few times a day. It installs in as little as one minute per asset and has minimal upkeep requirements thanks to its solar-powered battery and over-the-air updates. The company called it an easy, effective way to keep track of trailers without having to worry about dead batteries.

Phillips Industries
EC47 Tractor-Trailer Connectivity Solution

14 We still rely on 60-year-old technology to manage communications between the tractor and trailer: the seven-pin J560 connector. There are limits to how far wireless connections and telematics will take us; conventional wireless communication is too slow for the demands of future connectedness. Phillips has an answer with its new EC47. The name comes from what it offers: two ethernet connectors, two CAN network connections, 4 AUX connections, and a 7-way J560 power connection. No adapters are required, as the EC47 interfaces with present-day J560 components. This new connector is backwards-compatible while accommodating future connectivity requirements.

Range Energy
Range RA Electric Trailer

15 Range Energy's RA-01 is a 53-foot electric trailer that can help fleets reduce fuel costs and their carbon footprint. The trailer's electrification platform and equipment set — an e-axle, battery pack, and smart kingpin — provides power to auxiliary devices, enables zero-emission precooling for transportation refrigeration units, provides the ability to move trailers with reduced emissions, and increases the overall uptime of tractors. Preliminary third-party testing results showed the technology enables up to 36.9% fuel efficiency gains (+3.25 mpg) for semi-trucks.

SMC³
Dynamic PriceBuilder

16 The Dynamic PriceBuilder system from SMC³ pairs a less-than-truckload carrier's specific cost model with a flexible business rules engine to enable strategic, dynamic price generation. Powered by SMC³'s fully hosted platform, Dynamic PriceBuilder delivers high-speed, secure API connectivity and 100% service reliability for quote generation, retrieval and reporting. Using it, carriers can immediately adjust prices based on internal and external factors such as available capacity, shifting national freight patterns, and other external market conditions such as extreme weather events.

A VISION FOR SAFETY

Rear View Camera

EFFICIENCY

Smart Nose Box

COST SAVINGS

Digital Harness

SECURITY

HONORED TO BE RECOGNIZED AS AN HDT TOP 20 PRODUCT

HDT 20 TOP PRODUCTS 2024

Smart trailer technology designed for safety, security, efficiency and cost savings.

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Stemco
Auto-Torq Axle Fastener

17 Stemco says its new Auto-Torq axle fastener simplifies wheel-end installation — no torque wrench required. Auto-Torq is designed with an internal mechanism for optimal wheel bearing adjustment. With no need for washers, clips, snap rings, screws, or keepers, Auto-Torq makes installation simple and efficient, according to Stemco, reducing potential causes of installation failure. An integrated locking mechanism prevents backoff while still allowing easy removal for annual inspections and maintenance. Plus, by applying the optimum clamp load on the bearings every time, bearing wear is minimized, resulting in longer bearing service life.

Texa
IDC5 Axone Voice & TXT Multihub

18 Texa launched Axone Voice, a hands-free diagnostic device for heavy-duty technicians that features voice control and facial recognition. Axone Voice is Texa's first unit with voice control, a function developed in collaboration with Microsoft. It uses face recognition to identify who is using it, unlocking a series of exclusive functions to access the protected diagnostic procedures provided by the manufacturer. Axone Voice can tell technicians what to do in many situations. Techs do not have to touch the tool; they can simply say "Hey Texa" followed by the command. Axone Voice works with the TXT Multihub to provide a universal vehicle connection for all vehicle environment / industry types.

Thermo King
TracKing Pro Telematics

19 Thermo King's new TracKing Pro telematics uses predictive technology and machine learning to deliver actionable insights for refrigerated fleet operations. TracKing Pro telematics offers an energy usage dashboard on select units that provides comprehensive insights into fuel consumption, electricity usage, and opportunities to improve uptime. TracKing Pro telematics enables customers to quantify their fleet's CO_2 emissions in metric tons for both diesel and electric standby operations. Predictive analytics make it possible to anticipate where failures may occur and provide the necessary alerts in advance.

U.S. Cargo Control
Ultra Lightweight Parachute Tarps

20 U.S. Cargo Control's new parachute material tarps are a lightweight solution for truck drivers to protect their cargo. Parachute tarps, also known as airbag material tarps, are made with 6-ounce. nylon packcloth material, which makes them 20-30 pounds lighter than those made with standard vinyl polyester. The ergonomic design is also more flexible to fit around heavy cargo such as pallets, crates, steel, and machinery, making drivers' jobs easier and lowering risk of driver injury. Available in two versions, along with the option to create a custom parachute tarp with specific dimensions.

OPPORTUNITIES IN DELIVERY

There are opportunities in big-and-bulky and white-glove delivery — but also challenges.

By Deborah Lockridge
Editor and
Associate Publisher

PHOTO: GETTYIMAGES/VITPHO

When you say last-mile delivery, most people will picture an Amazon delivery van or a FedEx delivery truck. But there's also a market out there for big and bulky final mile services, including "white glove" deliveries.

Like the rest of the trucking industry, the delivery business was heavily impacted by the e-commerce boom that hit in 2020 with the Covid-19 pandemic — and by the hangover afterward.

AlixPartners in its May 2023 home delivery survey found that e-commerce softened in 2022 following the increase it saw in 2020 and 2021.

"But it looks like a lot of e-commerce activity is rebounding in 2023," says Andrew Kerr, senior vice president for AlixPartners' operations practice, who has specialized in distribution and logistics for 10 years.

A Bloomberg Intelligence report projects that e-commerce will account for 33% of U.S. retail sales by 2027. E-commerce will grow at a 10% compound annual growth rate to $2.55 trillion over the next five years, it predicts.

One aspect of the pandemic boom that will affect e-commerce and last-mile delivery in the future is the way it changed the way people shopped for big and bulky goods such as furniture and appliances.

Big and Bulky Delivery Growth

Jeff Abeson, vice president sales at Ryder Supply Chain Solutions, joined the company in 2018 with Ryder's acquisition of big-and-bulky home delivery provider MXD. Ryder uses a partner model, relying on independent contractors running 24- or 26-foot box trucks.

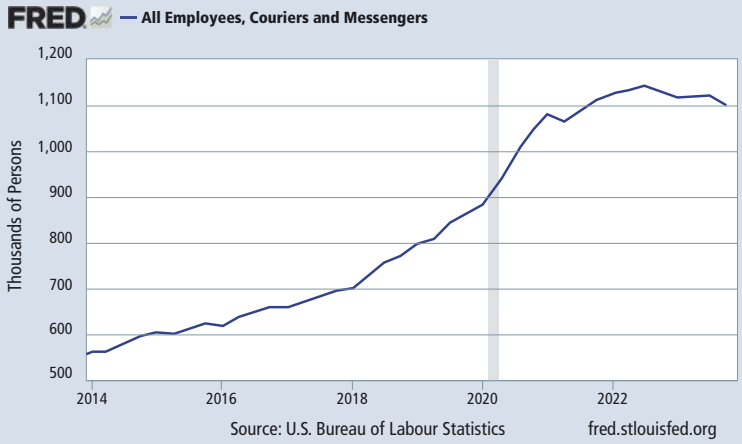
During the pandemic, big-and-bulky delivery saw a big upswing.

"As people recognized that Covid wasn't going to disappear immediately, people had disposable income that they were not spending on entertainment, or travel or going out to eat," Abeson explains. "And they started to spend their money in the places where they were spending the most amount of time — which was at home."

While the huge growth seen in that big-and-bulky delivery business has slowed, Abeson says, e-commerce sales of big and bulky items such as furniture and appliances have become more normalized.

"I think people's comfort level with buying this type of product without seeing it, or sitting on it, or testing it… people are just becoming more accustomed to that. And that's a pretty significant paradigm shift."

"This is not a great time for heavy goods final mile — it's not a great time for freight in general," said Bruce Chan at Stifel in an email news alert to investors. "Consumer durables are likely in a supercycle trough, with most consumers



FEDERAL RESERVE ECONOMIC DATA

Despite an increase in overall employment in December, couriers and messengers (which includes the parcel delivery segment) lost 32,000 jobs to the lowest level since July 2021. However, analysts believe this is a sign of the market normalizing after the surge in deliveries during the Covid-19 pandemic and that this sector will return to the type of growth we saw before the pandemic.

Demand is growing for "white glove" delivery, which involves more than just transporting the product and leaving it by the door.

PHOTO: RYDER

blowing the wad on appliances and big and bulky during and immediately following the pandemic."

Eventually, however, that demand will head back up, meaning potential big-and-bulky last-mile opportunities for motor carriers operating medium- and heavy-duty trucks.

White Glove Service

A subset of big-and-bulky delivery is white-glove service. These are final-mile freight delivery services that go beyond a traditional dock-to-dock delivery or a traditional home delivery where items are left at the door. They often involve two-person crews, and can be done with tractor-trailers or straight trucks. White-glove deliveries can include:

- Taking product inside its destination
- Uncrating/unboxing a shipment
- Placing items in the room where they will be used
- Assembly and installation
- Removing all packing material before leaving

'We see white glove has become more and more popular," Kerr says. AlixPartners' latest home delivery survey found that 35% of shippers are offering some type of white glove delivery.

In late 2022, Armstrong & Associates, which provides insights into the third-party-logistics market, estimated the U.S. 3PL big and bulky last-mile delivery market experienced a compound annual growth rate of 18% from 2017 through 2021 and projected CAGR of nearly 12% from 2022 through 2025. (At press time it was in the progress of updating that report, "Making it Count: Big and Bulky Last-Mile Delivery in the United States.")

Typically, last-mile e-commerce orders are shipped as small packages and transported by parcel carriers. However, with expanding e-commerce product categories such as furniture and appliances, other last-mile options are growing in significance, Armstrong noted. Third-party logistics providers with fleets of independent contractors and freight brokerage operations deliver many last-mile orders.

In addition, less-than truckload, truckload, last-mile and household goods carriers are expanding last-mile services for big and bulky items to accommodate the rapid growth in e-commerce retail sales, according to the report.

Some of the well-known names that operate final mile operations for big and bulky goods are ArcBest, Southeastern Freight Lines, TForce Logistics, and J.B. Hunt. Late last year, Hub Group bought Forward Air Final Mile from Forward Air Corp. to expand its Hub Group Final Mile offerings of white-glove delivery of big and bulky goods such as appliances.

Armstrong said that home delivery models will continue to evolve, and the need to create new, innovative solutions will be important for the future. Enhanced services in the white glove space are becoming more of a norm.

> "I think people's comfort level with buying this type of product without seeing it, or sitting on it, or testing it… people are just becoming more accustomed to that."
>
> **— Jeff Abeson, Ryder Supply Chain Solutions**

Not for Everyone

"For a couple years we tried to get into last-mile delivery with refrigerators, appliances, treadmills, the larger stuff," says Dwayne Andreasen, president of DDA Transport, Londonderry, New Hampshire. DDA operates a fleet of about 160 trucks under a contract to the U.S. Postal Service, and also a smaller operation as a FedEx Ground contractor. They provide line-haul service between distribution centers via tractor-trailers and delivery to small post offices in smaller trucks.

"We didn't stay in that very long. It was a tough business to be competitive in, especially with labor issues. Most of that you needed a couple of people on the truck that had some muscles to move stuff around and had to be professional in somebody's home, and we found that was a bit of a challenge. We opted out of that after about a year."

Ryder's Abeson points out, "It's not like delivering an iPhone case. With big and bulky, someone's spent a lot of money. So there's a lot of emotion around that, and you've got people that are coming into your home, going into the most intimate spaces in your house. And so the business is hard, because you're dealing with emotion. And it's got to be right."

AlixPartners' Kerr says there's a demand for white-glove delivery, but "the real problem is all the challenges that it presents," such as:

- **Equipment:** What equipment do you need to deliver? Can you do it with a tractor-trailer? Do you need a box truck? Is a lift gate required, or will you be backing up to a dock?

- **Scheduling:** Can you coordinate if the homeowner is home to receive the shipment? What type of technology platform is there for you to connect to, to make sure that you're scheduling that the right way?
- **Routing:** Routing is a significant challenge when it comes to white glove delivery. "White glove delivery is usually a single piece delivery," Kerr says. "And so you may have more shipments packed into a truck than you did previously, and more stops."
- **Reverse logistics:** Even less-than-truckload providers are probably not used to the high frequency of loads being rejected. "If you're dropping off a refrigerator at a customer's home, and there's a dent on the front, they're unwilling to accept it," Kerr says. "So you also introduce this entire reverse logistics and returns process into the equation that you're not as used to dealing with."

DDA Transport is a contractor for the U.S. Postal Service, delivering from distribution centers to small local post offices. It tried big-and-bulky delivery but decided it wasn't a good fit.

PHOTO: DDA

- **Customer service:** "In the white glove type environment, you're asking someone who drives a truck for a living to suddenly be the face of an organization and interface directly with the customer," Kerr says. "And so that type of training that's required for truck drivers and employees is something that providers definitely need to consider."

In fact, Armstrong's report noted that as retailers look to add to their service offerings, it increases the premium for skilled white-glove delivery drivers/workers, driving up labor costs.

Kerr says fleets that are interested in opportunities in delivery but are turned off by some of the customer-facing requirements may have an opportunity in

business-to-business, or B2B, delivery, such as delivering medical equipment, or restaurant equipment.

"You still have the challenges of connecting to the demand source and the technology of routing and things like that," he says. "But you can ease some of those customer service requirements.

"Dealing with a business customer who's receiving something is typically simpler than dealing with your average shopper who's ordered something online and has a higher expectation when it comes to customer service."

Finding Customers

Kerr points out that one of the key factors in traditional truckload or LTL carriers being successful adding last-mile or big-and-bulky delivery is access to the freight, to the customers.

"If you think about what it would take for a full truckload provider to connect into the white glove delivery demand market, or the B2B type demand market, where it's these smaller one-off type shipments, there's obviously some of the equipment and labor and customer facing requirements that are challenges," he says.

"But the big one is, how would you even tap into that type of demand, and get connected with that demand and customers who are involved in that space?"

One opportunity for local and regional carriers, Kerr says, is to connect with larger nationwide shippers as a last-mile provider for them.

> "I think there may be an opportunity for local operators to find a way to connect with larger shippers who are getting involved in e-commerce, and they can provide a localized service for, to fulfill their e-comm demand."
>
> **— Andrew Kerr, AlixPartners**

AlixPartners' most recent home delivery survey found growth in the number of shippers that are pursuing a diversified carriers strategy by adding regional carriers, up to 49% this survey from 45% the year before.

"As shippers become more aware of mitigating risk and having a larger or more diverse pool of carriers to lean on, I think there may be an opportunity for your more local operators to find a way to connect with larger shippers who are getting involved in e-commerce, and they can provide a localized service for, to fulfill their e-comm demand."

Technology Paramount

For anyone involved in the delivery business, whether it's as a contractor for USPS or FedEx Freight or doing big-and-bulky last-mile white glove delivery, using technology to optimize those operations is becoming key to success — and even survival.

For big and bulky direct to the consumer delivery, "the technology really is the enabler," explains Ryder Supply Chain's Abeson. "When you're talking about in-home delivery appointments, technology is essential for making that efficient for the carrier and at the same time easy for the end customer."

For instance, Abeson says, Ryder has a proprietary system called RyderView geared towards the end consumer.

Instead of the age-old frustrations of consumers having to wait around all day for the cable guy to appear, he says, "what we've really tried to do is allow self-service capability through your phone or through the web, to be able to schedule your own delivery at your convenience," Abeson says.

"And then there's continued communication along the way to make sure that [the consumer is] updated on exactly what's happening, all the way up to the days and hours and minutes until the delivery is made."

Tim Goff came from a tech background and got into trucking as a FedEx Ground contractor.

"I found there were no tools in this FedEx Ground ecosystem," he says. So he developed software to automate much of what it takes to run a contractor's business and opened up GForce Software.

"We essentially train robots to do all the administrative work in a logistics company," Goff explains. "All the financial data that you could ever imagine is crunched by these robots running at light speed. The robots talk to the ELDs and the trucks and pull information down and do automatic maintenance planning and automatic notifications and automatic work order creation and report generation and compliance management — all these things that used to take people."

That kind of efficiency, he says, is going to be vital for FedEx contractors and others in the delivery business going forward.

"You have to find a way to automate your business," he says. Companies such as FedEx already are using powerful tools to help them optimize last-mile delivery routes.

"There are some even more powerful training systems under development," Goff says. "Technology is going to be the game-changer."

Goff says he and his fellow FedEx contractors will find that any increases in contract payments are not going to keep pace with increases in expenses.

"The only way you're going to reach your profit targets in future years is, you

When you're talking about in-home delivery appointments, technology is essential for making that efficient for the carrier and at the same time easy for the end customer.

PHOTO: RYDER

have to reduce the cost of your operation," he says. "The only way to do that is to truly understand what the cost of your operation is, and what levers to pull to improve it. And then when you pull those levers be able to monitor the results and see if you achieved what you're trying to do."

And data is the key to making that happen.

Efficiency and Visibility

Sun Logistics is a recent convert to the opportunities for improvement using technology.

Sun uses a variety of straight trucks and tractor-trailers to deliver in the New York City area and in Miami and Southern Florida. It has the capabilities to deliver inside, ground level, dock-to-dock, with one or two delivery people, as well as white-glove service.

"We handle first and last mile freight in two of the hardest markets in the U.S. — New York City and Miami," says COO Nathaniel Klein. Customers include major less-than-truckload carriers.

But when Klein came to work for the company that was his father-in-law's, he discovered what he called "archaic" computer systems and worked with company leadership to change that.

> "The technology really is the enabler."
>
> **— Jeff Abeson, Ryder Supply Chain Solutions**

"Our legacy system was not able to help us modernize our processes and grow as a leader in first and last mile logistics."

The new system, for instance, allowed the company to improve how early drivers make their first stop, which in turn reduced the number of returns.

"We used data to identify, where's our waste. And that data we made actionable to make changes," Klein says.

DDA Transport's latest technology investment is a traffic management system that helps with scheduling, using the GPS information from the trucks and providing alerts if a truck is off-route or running late.

Not only does that improve efficiency and on-time deliveries, Andreasen says, "It provides transparency so the Post Office knows where their stuff is. The Post Office is getting into the package service and needs to provide that transparency to their customers."

DDA is also processing payments using EDI, electronic data interchange.

"We get an electronic order that says here's what we need you to do tomorrow, we send the information back electronically here's what our truck did, and now we get payments," he says. "The days of generating a lot of paper are kind of the past."

That move to technology may be a challenge for some contractors.

"A lot of postal contractors have been in this business for three, four generations, and not a lot has changed," Andreasen says. "Change is sometimes hard to adapt to, and I think there are a lot of postal contractors that are smaller, that have been in it for a long time, that aren't

going to be able to adapt to that change as fast as USPS requires it."

He also believes we will see more third-party logistics companies that already are tech-savvy becoming postal contractors, then contracting with asset-based transportation providers.

"We have already seen turnover in the postal contract world," he says, and that's likely to continue.

Do or Die Spells Opportunity for Others

Ryder's Abeson believes we will see more consolidation of last-mile providers.

"This post-Covid timeframe has made it challenging for many, especially those who have physical assets," he says. "The key to the game is customer service — but you've got to have efficient operations," which means asset utilization.

"If you don't have the amount of volume that you need to be able to cover up those fixed costs, it's challenging from a financial standpoint," Abeson explains. "I think some of those smaller guys either could be consumed or could go out of business."

Goff, too, predicts that many delivery contractors won't be able to compete because they are trying to do things the same way they've done for decades — which could open up opportunities for more tech-savvy operators.

Two years ago, Goff bought a six-truck FedEx Ground contractor operation in Memphis.

"The guy was wanting to sell, he'd been doing it 20 years. And he had no information. And when I say none, I'm talking zero," Goff says. "He couldn't produce financials, he couldn't produce anything. When I asked him for his employee information, he wrote it on notebook paper, took a picture and sent it to me. And I don't think he's the exception to the rule."

> "There's a demand for white-glove delivery, but the real problem is all the challenges that it presents."
> **— Andrew Kerr, AlixPartners**

Goff has been a contractor himself for five years now.

"It was way easier to make money in 2018, 2019 than it is now," he says. "There's nothing that I do as a contractor that is less expensive than it was four years ago. Costs have gone up three times more than my revenue."

"So if you're one of these guys that's been doing things on notebook paper, and you've been getting by, you didn't even realize how inefficient you were, but it didn't matter, you could still put food on the table. That's going to change."

Cox Automotive Mobility's Project Pink is an initiative to celebrate diversity among its Fleet Services and Manheim technicians and support breast cancer awareness.

PHOTO: COX AUTOMOTIVE MOBILITY

FINDING AND KEEPING TOMORROW'S TRUCK TECHNICIANS

Recruiting and retention, pay and benefits, and training for EV powertrains.

By Wayne Parham, Senior Editor

Drivers may be the ones who deliver the freight, but without technicians, the trucks would eventually stop rolling. Many of the most experienced technicians have reached retirement age and left the workforce, leaving a void that must be filled by younger workers. But they must be trained, and trucking companies are challenged by the ongoing task of recruitment, and more importantly, retention.

Like other industries, trucking is faced with the retirement of many veteran workers from the Baby Boomer generation.

The average age of a technician is getting younger, according to Terry Rivers, senior manager of vehicle services training, Cox Automotive Mobility. A decade ago, the average age of a diesel technician was mid-50s. Today, he says, it's mid-40s.

Just look at the American Trucking Associations' Technology & Maintenance Council, he says, where the age of the industry leaders in maintenance is much younger than it was a decade ago.

With the retirement of most experienced techs, the industry also lost a lot of knowledge and ability. Rivers says for every seven of these veteran technicians who have left the industry, because of the loss of expertise garnered from decades of experience, it will take 10 technicians to fill the void.

New Technicians

Where are new technicians coming from and how are they trained? The U.S. Bureau of Labor Statistics forecasts a 4% growth in diesel technicians by 2030.

"There's not a whole lot changing in respect to new technicians coming into the business. So that's an ongoing challenge," explains Victor Cummings, Rush Enterprises vice president of service operations.

"Recently, we've had some success with increasing our student loan reimbursement amounts, and we've had some good influence with techs coming out of the schools."

Rivers says there is a need for accelerated diesel technician training, similar to what Cox Automotive Mobility offers through its FleeTec Academy locations. With the need for new technicians, Rivers expects there will be an increase in training academies or programs offered at tech schools.

But he cautions that some technical colleges ask technicians to study for four years, which leaves them with high student loan debt.

"They want you to go spend 60 grand and four years of your life there before you ever turn a wrench," Rivers says.

He says whether new technicians come from a four-year tech school or an expedited training course, they will all begin their career doing the same thing — preventive maintenance and other low-level technician tasks.

"Everyone starts out doing PMs no matter what their background is," he says.

Recruitment and Retention

A key factor in efforts to recruit future technicians is encouraging younger people to consider the career path.

Joe Aschoff, Rush Enterprises director of service, Peterbilt, points out that both Peterbilt and Navistar are reaching out to high schools and getting involved, and Rush has been teaming up with high schools and providing mentoring.

> "If you're looking for the cream of the crop, I don't think you're going to have much of a chance if you don't offer student loan reimbursement."
>
> **— Victor Cummings, Rush Enterprises**

Rush has an internship program to work with students in school, whether trade school or high school, and provides a curriculum that they follow.

"They have a required curriculum that they complete, we look at their proficiency performance, and they get to experience work in the dealership environment on kind of an introductory or gradual basis versus just full throttle right out of trade school," adds Cummings. He expects to see more high schools gravitating back toward vocational programs, as well.

Level 1, 2, and 3 technicians, in particular young techs, more commonly leave one shop and jump to another employer, says Ashcoff. But often they return to Rush later.

"I think a lot of that is youth, experience, expectations," Cummings says. "The lower-level techs, the tenure is much shorter, but we do have a few that stick with it from start to finish. But we do have a very high percentage of technicians that leave and come back several months to a year later. In fact, it's run as high as 22%." And when they come back, they tend to stay.

Rusty Rush, president and CEO of Rush Enterprises, says once techs get past Level 2, they are more likely to stay, and the turnover rate drops significantly.

A competition such as the Rush Enterprises Tech Skills Rodeo is good for both technician satisfaction and rewarding skills.

PHOTO: WAYNE PARHAM

Workplace Atmosphere

The shop culture is an important factor in whether a technician stays or leaves for greener pastures.

Any techs who are toxic or drag down the positive culture must be weeded out, says Michael McDonald, who's senior director of maintenance at Benore Logistic Systems. Some of those individuals later request to rejoin the team, but the answer is no.

"The culture of the shop is huge. I always say people leave over management or toxic work environments; that's when they get to looking," McDonald explains. "A lot of times they'll leave for more money. But if they were really happy, they probably wouldn't be looking, and they wouldn't have noticed that there's more money somewhere else."

Mead has noticed the same trend of culture being king.

"If you talk to technicians, they don't leave for pay, and in most cases, they leave for atmosphere, leadership reasons," he says. "A lot of the companies that have great retention picked up their shop retention basically by showing appreciation and other ways."

Things like offering more training so technicians can shape a career path can be huge. Or, it may be as simple as occasionally feeding the shop techs, even taking time to eat with them. Creating that spirit of "family" helps techs feel at home and belong. Tool allowances, scheduling flexibility, and other considerations also can help build a healthy workplace they're less likely to leave.

"Any perk you come up with to help retention really doesn't replace a strong salary," Mead says. "So that's still important, but it still allows them to feel like they're there and at home."

> "A lot of times they'll leave for more money. But if they were really happy, they probably wouldn't be looking, and they wouldn't have noticed that there's more money somewhere else."
>
> **— Michael McDonald, Benore Logistic Systems**

"If there's any hesitation on a technician saying that they trust the leadership or even their teammates, I want to do things to eradicate that, because the lack of trust is toxic to any organization," McDonald says.

Pay, Benefits, and Incentives

McDonald has seen technician pay and benefits increase in recent years. At Benore, for example, they have added a tool reimbursement program. The technician pay structure has been built around factors such as differential pay for night work and having a CDL. Benore has also added sign-on bonuses and has a 401(k) plan with a company match.

"A lot of your benefits that I think weren't as commonplace in truck technician pay structures in the past, we've added those now," McDonald says. "We are seeing senior-level techs that are making over $100,000 a year.

"You're dealing with that level of individual that's looking for those wages and benefits and 401(k) and career advancement and progression throughout the company, and they want a clear career plan."

For a new technician, building up his or her inventory of tools can be daunting, and a huge financial obstacle. At Cox Automotive Mobility, all technician students who complete training at either FleeTec Academy location will receive $20,000 in tools, basically everything they need to start a career.

If they stay with the company for two years, the tools are theirs to keep.

Many employers are incentivizing new hires by helping pay for the training they received in a technical school. Rush Enterprises, for instance, will provide a stipend to cover up to $30,000 worth of student loan payments spread over five years. Depending on the residual amount of the loan, that repayment may be quicker, but it never extends longer than five years, according to Cummings.

"I think with the larger employers, reimbursement amounts range considerably," he says. "But if you're looking for the cream of the crop, somebody that's invested $30,000 to $40,000 going to trade school, I don't think you're going to have much of a chance if you don't offer student loan reimbursement when you consider a young professional coming out of trade school with that kind of debt."

Entry-level pay for a new technician, Cummings explains, ranges from about

$18 to $24 per hour depending on the location. But if a technician sticks with the career, Ashcoff says, he or she can eventually make $55 to $60 per hour.

Training On New Technologies

Most commercial truck technicians are diesel mechanics, but as the trucking industry increasingly focuses on a shift to lower- or zero-emissions, some of those techs will need to learn how to work on alternative powertrains.

> "Not long from now, we're going to electrify transportation and trucking. It's already happening, rapidly growing."
>
> **— Terry Rivers, Cox Automotive Mobility**

Cummings says currently, training on electric vehicles is sporadic or fragmented, because everyone is still trying to shape out what techs will need to train on moving forward.

"We're building out training modules to educate our employees internally and provide those training modules just to kind of get a baseline," he says. "That's definitely something that technicians today, veteran and new, need to migrate into to know what's available and really embrace it. There's still so much to learn."

Aschoff expects each shop will have a couple of techs who learn about EVs, in a similar fashion to when techs started learning about natural-gas vehicles 15 years ago. Not every tech will have to learn every alternative powertrain, but techs wanting to learn more will be drawn to whatever interests them.

"I think the field will become more specialized as the vehicles develop, the EV and hybrids, because the product is so technical," Cummings says.

Cox Automotive's Rivers knows electric-truck and component manufacturers can train technicians on specific EV systems. However, he says, technicians should learn the basics of EVs in advance of OE-specific training.

"We built our own internal agnostic EV training program because the OEMs were not doing it. And all the OEMs we deal with love that we did that," Rivers says. "It helps them streamline their training because they don't have to teach the fundamentals of electric vehicles. They only have to teach what's unique about their specific vehicle."

Rivers says 10% of mechanics working for Cox Automotive Mobility are EV-certified to Level 2 EV standards.

He says most OEMs that provide electric vehicle training ask for technicians to be sent for a week of training but thinks the indus

try needs to shift to more remote learning so technicians are not pulled out of the shop.

If each of the 1.75 million technicians in the country had to be removed from the workplace for 50 hours one week to be sent to training on EVs, Rivers says, using an average labor rate of $130 an hour, more than a billion dollars of work and more than 100 years of labor hours would not get done that week on internal combustion engine vehicles.

"We have to make it accessible online so they can learn remotely. We have to make it easy. We have to revolutionize the way we train our mechanics," Rivers explains.

Replace Rather Than Repair

Cummings thinks the industry will increasingly see truck components, such as transmissions, being removed and returned to OEMs for repair rather than being rebuilt by a technician locally. He points to the new fully integrated S13 drivetrain by Navistar as an example.

"I think you'll see more of that just out of necessity, I think the business will drive that," Cummings adds. "The industry is definitely going to a more fully integrated product, and as the complexity increases, I just see that evolution coming."

When he and Aschoff started as technicians, starters, alternators, water pumps, and many more components would be rebuilt locally in the shop, he says. That is no longer happening.

Rivers notes that rebuilding an engine, for instance, takes time, and the best option is the one that gets the truck back on the road as soon as possible.

"If a guy's making three grand with his truck every single day and you pull his truck down for an entire month to rebuild an engine that you could just swap out with a good one in less than a day, you're doing everybody a disservice," Rivers says. "So, there's that reason why nobody does on-site engine remans anymore. Just swap it out."

Rivers also thinks that soon fleets may be faced with a choice to either replace a diesel engine or convert it to battery-electric, so techs will be tasked with such conversions. At the FleeTec Academy in Indianapolis, the students did just that — converted a Mercedes Sprinter service truck from diesel to electric.

"Not long from now, we're going to electrify transportation and trucking. It's already happening, rapidly growing," Rivers says. "If an engine blows and the engine's 25 grand, you can convert it for 45 grand."

The technicians of today face different challenges than those a generation ago. Not only must they know the traditional methods of preventative maintenance, service, and repair, but they also have to be positioned and eager to learn even more. Whether that means how to maintain battery-electric trucks, fuel-cell powertrains, or other emerging technologies is yet to be determined.

Yet, it seems they will be able to shape their course, and career path, based on what additional training most appeals to their interests.

Tapping Sources of New Technicians

Michael McDonald has found success in hiring young people from a background that he says sets them up to succeed as technicians — the military.

"We feel that some of the core values that the military teaches on respect and dedication are core values that we want as well," says McDonald, who's senior director of maintenance at Benore Logistic Systems "Those are key traits in maintenance and operations and in trucking in general."

Many of McDonald's younger technicians come from a military background, and he says they bring a solid work ethic.

"The probability of getting a good work ethic in a younger person that's a veteran is dramatically higher than the probability of them having a good work ethic and not being military," McDonald says.

Gerry Mead, who has headed up fleet maintenance at trucking giants such as U.S. Xpress and Hub Group, began his career as a diesel technician in the military. He says while there's a trend of more shops seeing the value of hiring veterans, it's still an untapped reservoir of talent.

"Those guys are becoming more and more advanced because their equipment is really becoming more dynamic," he says of veterans coming out of the military. Obviously, they're not into the EVs, but when you talk about diagnostics and prognostics and leveraging data, keeping the vehicle up so it doesn't break down in combat is pretty important. Their uptime is really enhanced when you look at it."

Women Technicians

Another untapped resource for technicians is women.

The 2023 WIT Index, prepared by the Women in Trucking Association, reported that more than 7% of technicians are women, an increase of nearly 4 percentage points from the 2022 WIT Index. The information in the 2023 WIT Index was collected through the input of 350 companies in the trucking industry.

"The industry as a whole is certainly more open-minded and in favor of women entering the workforce in respect to being technicians," says Victor Cummings, Rush Enterprises vice president of service operations.

"When I started in this business, I don't recall any women technicians. So, it's really exciting to see it, the diversity and the fact that women are taking an interest. We've got some very talented female technicians."

To recognize and celebrate its women techs, Cox Automotive Fleet Services launched Project Pink, where eight female technicians were selected to show their support by wearing custom-made pink uniforms in support of breast cancer awareness. This initiative is being expanded to reach more technicians.

As Cox continues to recognize and celebrate the vital role of its female fleet services professionals and promote the contributions of women across the trucking sector, Project Pink participants will be sharing their stories.

McDonald points out that there's still a lot of room for improvement.

"It's not shifting as much as we'd like to see," he says. "It is still primarily a male-dominated field."

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– Roger Isaac, Transportation Manager, Nelson Brothers

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– Ryan Pierce, Director of Human Resources, Contract Transport Inc.

My expectation going into the event was there would probably be a couple of vendors that we may have interest in. In reality, less than a week after the event, we have made purchases from two vendors and are pursuing possibilities with three others.

– David Jones, Director of IT and Fleet Maintenance, Sharp Transit

POWERED BY bobit Business Intelligently

FCEV Vocational Trucks

General Motors and Autocar are teaming up to create a range of zero-tailpipe-emissions vocational vehicles powered by GM's Hydrotec power cubes. Each power cube contains more than 300 hydrogen fuel cells, along with thermal and power management systems and proprietary controls to maximize fuel cell and battery life and performance while optimizing cold start capability. The Hydrotec power cube provides 77 kilowatts of power and is much quieter than a conventional diesel propulsion system. Multiple power cubes can be arrayed in a vehicle for even higher power ratings. The first of these vehicles is expected to go into production in 2026.

PHOTO: GM

PHOTO: AUTOCAR

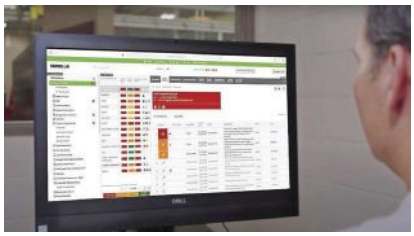

PHOTO: NOREGON

TripVision Enhanced PM Tracking

Noregon has added a preventive maintenance feature to TripVision that allows fleets to add non-connected assets to their digital fleet. TripVision is Noregon's remote diagnostic application for all makes and models of commercial vehicles, available from leading telematics providers. TripVision's PM feature lets fleets track user-defined preventive maintenance schedules and events while adding notes and comments for maintenance professionals and others within the organization. This enhancement lets fleets add vehicles and assets in TripVision even if those vehicles are not connected to a telematics system.

Heated LED Lamps

Optronics' new heated LED lamps automatically monitor ambient temperature and turn heating functions on and off as weather conditions change: the STL13 Series 4-inch round LED stop, turn, tail lights, and the TLL75 Series LED flood beam work lights. The company said most heated lamps on the market use filaments embedded in their lenses, much like a rear-window defroster. Optronics' heated lamps begin the heating process at the core of the lamp, at the level of the circuit board. The heat then emanates throughout the lamp, quickly warming the entire body of the lamp, including its housing.

PHOTO: OPTRONICS

Winter Weather Tire

Yokohama Tire's new 907W is a premium, extreme-traction drive tire designed for fleets looking to keep trucks rolling in snow and icy conditions. The 907W, which replaces the SY767, carries the three-peak mountain snowflake symbol, which means it meets or exceeds the industry's required performance criteria for severe snow service. It is available in the U.S. in three sizes: 295/75R22.5, 11R22.5, and 11R24.5.

PHOTO: YOKOHAMA

Valve Cap Sensor

Continental has added a valve cap sensor to its Digital Tire Monitoring products and services. This sensor works with all of Continental's digital tire monitoring products, including ContiConnect Live Truck and Trailer, ContiConnect Yard, and ContiPressureCheck. Continental said installation of the sensor requires minimal downtime on the vehicle, as there is no requirement to dismount and remount tires.

PHOTO: CONTINENTAL

PHOTO: CHEVRON

Synthetic Oil

Chevron plans to simplify its Delo Heavy Duty Engine Oil product line by focusing its portfolio on synthetic blend and full synthetic products. In a rolling transition beginning in January 2024, Chevron will sunset three products — Delo 400 SDE SAE 10W-30, Delo 400 SDE SAE 15W-40, and Delo 400 XLE SAE15W-40. The three will be replaced by Delo 400 XLE SB SAE 15W-40, a new high-performing synthetic blend. Chevron said this new, high-quality synthetic blend will complement its existing Delo 400 XLE 10W-30.

CARB-Compliant Telematics

The California Air Resources Board has exempted Geotab's aftermarket solutions from CARB's emissions anti-tampering regulations in the California market. Geotab said this is the only CARB-compliant continuously connected fleet management solution available at this time. The exemption was needed because CARB prohibits the marketing, installation, or sale of any part that makes changes to the original design or performance of the emissions controls system, which includes the on-board diagnostic (OBD) system that Geotab's GO device and many other telematics companies' devices use to collect data from vehicles.

PHOTO: GEOTAB

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How K&B Transportation Made Lumper Fees Easier

By Kevin Survance, Eleos

PHOTO: K&B TRANSPORTATION

The traditional process of paying lumpers is highly manual and can create friction between drivers, the back office, payees, and customers. K&B wanted to change that.

Where and when drivers began paying "lumper" fees to get unloaded at receiving locations is a trucking industry mystery. Perhaps it started when the Motor Carrier Act of 1980 deregulated freight transportation pricing. No one knows for sure.

Under federal law, shippers must reimburse carriers for unloading fees. However, this law does not make lumper transactions easy to manage. Paying lumper fees creates administrative headaches and driver frustrations. It also strains cash flow.

That's why digitizing the process was a top priority for Nebraska-based refrigerated carrier K&B Transportation when it deployed a custom mobile app for drivers.

The custom app from Eleos created an automated process that instantly validates and approves driver lumper payment requests.

The integrated system eliminates administrative work in the office by tracking and processing payments for more than 70% of the company's loads with lumper fees.

Manual Process

Before the company deployed the app, drivers had to call dispatch to request payments. K&B drivers haul loads of fresh meat and often unload between 1 and 6 a.m., explains Kyle Burton, chief financial officer. The timing of calls strained office resources during night shifts.

Previously, driver managers had to issue payments via an in-cab mobile system or over the phone. And then the accounting team sometimes waited weeks to receive the receipt from the driver to seek shipper reimbursement.

The entire process was highly manual and had the potential to create friction between drivers, the back office, payees, and customers — especially since many lumper payments happen late at night or early in the morning. The potential for fraud was also a concern; unscrupulous drivers could submit fake lumper receipts.

Lumper Payments with a Tap

Deploying a custom mobile app that uses smartphone technology and prebuilt system integrations offered a way to streamline and secure the process.

A custom mobile app that runs on a smartphone or in-cab platform can use real-time location data, communications, document capture, and other tools to create an instant process for drivers to request and be reimbursed for lumper payments.

With the new tech, K&B drivers tap a button in the app to request payment. The request is approved using predetermined criteria, including comparing the lumper payment request amount to the receipt amount.

The preauthorized payments ended late-night calls for authorization. Drivers get an immediate response and reimbursement if all criteria are met. The app immediately files the electronic receipt for easy accounting access to bill shippers more efficiently, resulting in faster reimbursements.

The custom app's lumper payment process has eliminated driver frustration from waiting for payments. Warehouse pickups and deliveries are much faster, enabling drivers to get on the road more quickly for their next load. The system also prevents fraud.

Burton says the feature is "universally loved" by drivers and driver managers for the time and money savings, and it's just one of the tools K&B gives drivers through the app.

FLEET SNAPSHOT

- **WHO:** K&B Transportation
- **WHERE:** South Sioux City, Nebraska
- **FLEET:** 700 power units
- **OPERATIONS:** Transports perishable food products throughout the Greater Midwest while serving other areas of interest throughout the United States.
- **FUN FACT:** K&B Transportation was founded by Ken Ackerman in Sioux City, Iowa, in 1987. The 25 tractor and 85 meat rail trailer operation hauled carcass meat from the IBP kill plants to the IBP processing plants.
- **CHALLENGE:** Automating lumper payments

Kevin Survance is the CEO of Eleos Technologies, which helps trucking fleets create custom apps. This article was authored and edited according to Heavy Duty Trucking's editorial standards and style to provide useful information to our readers. Opinions expressed may not reflect those of HDT.

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