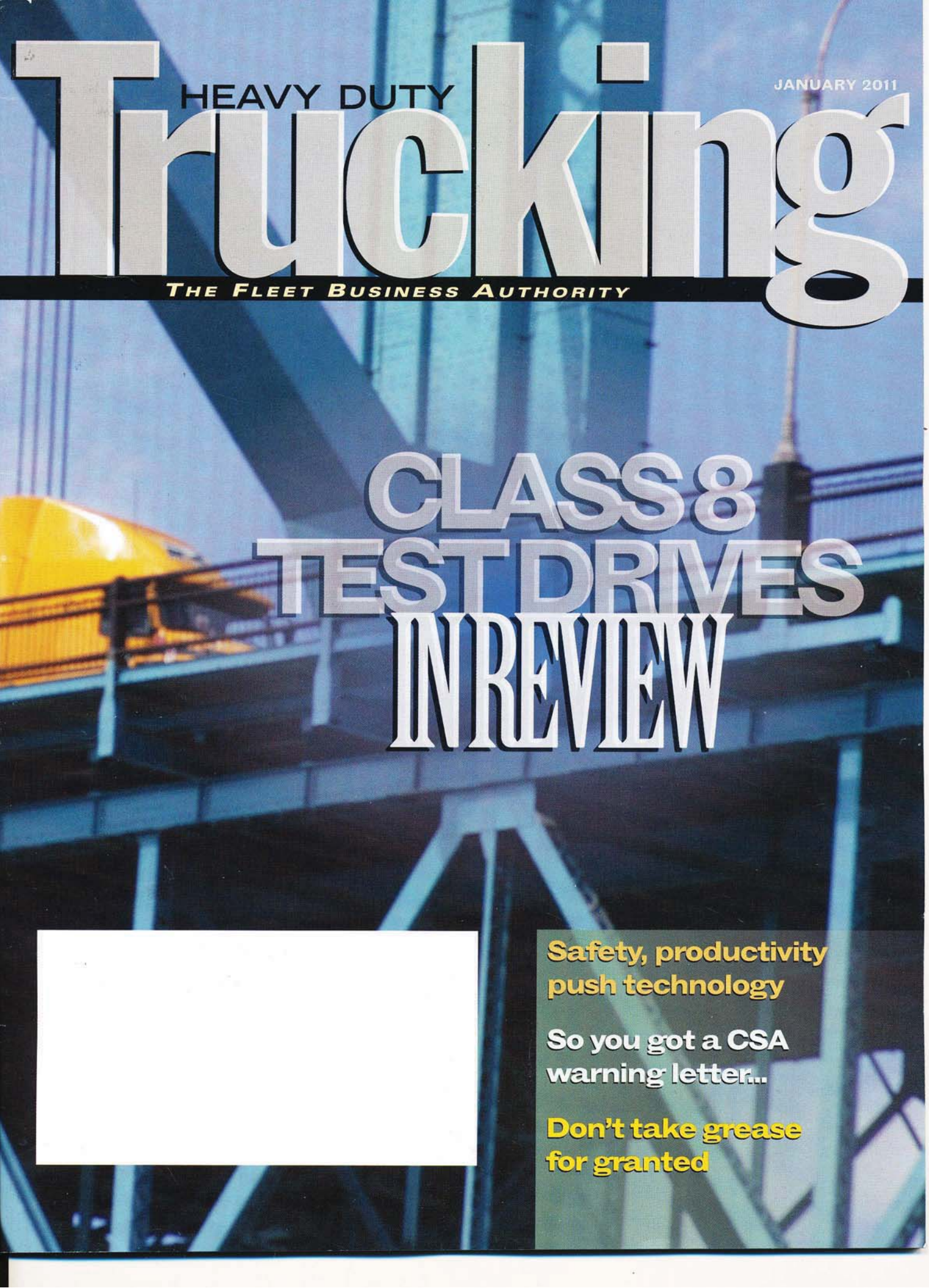
HEAVY DUTY
Trucking
THE FLEET BUSINESS AUTHORITY
JANUARY 2011



CLASS 8 TEST DRIVES IN REVIEW

Safety, productivity push technology

So you got a CSA warning letter...

Don't take grease for granted

Technology in the next decade

Safety and productivity will drive advancements

At its core, information technology is about managing data: the schedules, locations, miles, hours, fuel prices, rates, lanes, speeds, bills, invoices, settlements, etc., that trucking companies compile every day.

But while productivity has been (and will continue to be) the primary factor behind developing and implementing new technologies, safety and compliance are fast becoming important drivers of future developments.

There is little argument that trucking management software systems, coupled with mobile communications, navigation, routing and other software products, have helped carriers become more productive.

"To be honest, it was never a safety consideration when we look at what data to push out; it is more why push it out from a productivity standpoint," says Ken Weinberg, vice president and co-founder of Carrier Logistics Inc. The focus, he says, was how to "get data to the truck to allow drivers to improve their productivity and get data back to improve the flow of information through the enterprise system," he says.

"Since we develop transportation management systems, our focus is automating dispatch and back-office operations, says Sean VanDyck, vice president of sales for PCS Software. These days, dispatchers do not have to verbally give drivers addresses and directions over the phone. Shippers do not have to wait for delivery information and billing does not have to wait to send out invoices.

But recently the focus has shifted more toward safety.

The Federal Motor Carrier Safety Administration's new CSA enforcement regime (which stands for Compliance, Safety, Accountability) is changing the way the government evaluates carrier safety, and there are many new software options to help carriers understand and manage their scores.

FMCSA also is expected to expand its rule mandating electronic on-board recorders and electronic logs for certain carriers, and the agency was expected to propose revised hours-of-service rules last month. Other federal agencies, along with some safety groups, are calling on the FMCSA to do more to mandate other technologies designed to improve truck safety.

For instance, the National Transportation Safety Board has recommended FMCSA require all heavy commercial vehicles to be equipped with video event recorders and require all motor carriers to adopt a fatigue management program. NTSB also repeated recommendations made previously for mandatory collision warning systems on new commercial vehicles and technologies to reduce fatigue-relat-

The new CSA program from FMCSA prompted many providers to offer ways to view where a carrier stands in the new safety rating system. Vigillo's Pre-Employment Screening Program Scorecard takes pre-employment screening information from a carrier's system and puts it directly into their CSA 2010 Scorecard, showing how a driver's PSP score may affect their CSA score.

Jim Beach • Contributing Editor

ed accidents.

Technology providers say all this focus on safety and compliance plays a role in product development.

"It is important as a provider that we provide the tools that the customer wants," to improve their business results, says Jim Angel, product manager of safety and compliance solutions for PeopleNet. "But we also point out new regulations, and we want to help them make an impact on their safety bottom line. We want the device to give them the tools to keep a driver on their regular hours-of-service or provide sudden start and stop warnings, for instance."

Charlie Mohn, Xata product marketing manager, says safety is "absolutely" a key factor alongside operational efficiency. "The core of our product focuses on compliance, safety and helping fleets drive down the cost of operating their business," he says.

Inspections

FMCSA is also investigating new technologies for safety enforcement. It recently held demonstrations in Tennessee featuring technologies for its Wireless Roadside Inspection Program and Smart Infrared Inspection System.

The WRI program inspects the condition of a vehicle or driver by examining data collected by an onboard system. The data, called the Safety Data Message Set, is transmitted wirelessly from the vehicle to fixed or mobile roadside readers. FMCSA says the data will help enforcement officers determine which vehicles to pull over for closer inspection. The agency says the technology can assess commercial vehicles and drivers 50 times more frequently than is now possible, increasing the number of inspections.

The inspection information can be automatically transmitted to the agency's CSA database, updating carriers' scores in real time. This should benefit safe carriers as they earn credits for good safety scores.

The Smart Infrared Inspection System demonstrated is a prototype system designed to detect vehicle brake, wheel and tire problems. It's based on the premise that faulty brakes or wheel bearings and underinflated tires will run hotter (or colder in some cases) than other components on the same vehicle. The system scans both sides of a vehicle as it passes through a scale or inspection lane and detects actual temperatures.

Fatigue detection

The FMCSA has also been exploring technologies to detect fatigue. In a report released in June 2009, the agency evaluated a number of systems. The report looked at four cate-

gories of alertness monitoring and fatigue detection and prediction technologies:

• Readiness-to-perform and fitness for duty technologies try to determine a driver's alertness before he drives by measuring reaction time or eye movements.

• Mathematical models/algorithm technologies use mathematical models to predict driver alertness based on individual patterns of sleep, work, and rest.

• Vehicle-based performance technologies measure things such as steering movements, vehicle speed and the vehicle's movement with lane markers to find evidence of driver fatigue.

• Vehicle-based operator alertness/drowsiness/vigilance monitoring technologies use cameras or other sensors inside the truck to monitor eye gaze, eye closure, head movement, brain wave activity and heart rate and other factors that might indicate the driver is fatigued or falling asleep.

Compliance issues

Xata's Mohn says there has been an increased focus on compliance in the past year – not necessarily the same thing as safety. "Safety is inherent in compliance," he explains. "What fleets are doing now deals with CSA 2010, EOBR regulations, hours-of-service. But safety is a key thing we are working at as we develop our products."

The CSA program is prompting technology providers to offer customers ways to keep track of their safety scores. Some examples:

• Vigillo offers CSA scorecards for carriers, brokers, shippers, and most recently, drivers. It introduced a free driver scorecard service in December called Roadside Resume. The company develops software products to "mine" a carrier's database in order to produce safety information in a scorecard format. The Roadside Resume will present CSA driver scores so truck drivers can see how they are rated under the new system.

• TMW Systems announced a free service to monitor and manage CSA safety scores and data. The Web-based CSA Management service gives carriers extended capabilities for analyzing and transforming all of their FMCSA safety rating data for further insight and action, including government data challenge.

• McLeod is working on enhancements to the safety module of its LoadMaster Enterprise product that will incorporate the new Behavior Analysis and Safety Improvement Categories (BASICs) used in the CSA system. It will allow carriers to keep track of each driver's BASIC scores well ahead of federal database updates by allowing carriers to enter roadside inspection reports directly as they are received from drivers.

• EBE Technologies offers a Web-based CSA 2010 carrier and driver dashboard. It's designed "for carriers who are seeking a management tool, not simply a scorecard posting scores and percentiles," said Cindy Nelson, EBE's vice president of marketing and business development. "A carrier's score is reflective of the collective results of its individual drivers. If you can identify and correct at-risk behavior before it becomes a pattern or causes a serious safety incident, then the carrier's score should be reflective of that."

• Qualcomm's newest system, the Mobile Computing Platform 110, features a new scorecard-type CSA product that will take the hours of service, performance monitoring and other data already monitored by the Qualcomm system and measure it the same way FMCSA does, explains Norm Ellis, vice president. This should allow fleets to target problem drivers before their behavior shows up in future CSA scores.

On the horizon

While safety and compliance are driving much of the safety technology discussion in recent months,

TECH BYTES

XATA FOR VERIZON

The Xata Turnpike fleet management and compliance solution is now available to Verizon Wireless enterprise customers.

Verizon Wireless enterprise customers can access Xata Turnpike's compliance tools, which include electronic logs, electronic inspections, speed management, CSA risk scorecards, and driving behavior alerts.

www.xata.com

COVERT TRACKING

The FreightWatch Geo F2 Tracker is an embeddable device for tracking and monitoring cargo, identifying its whereabouts, preventing cargo theft or recovering shipments if a load is stolen.

The F2 Tracker can be inserted inside packaging as small as a pill bottle, which can then be placed directly in a box as a part of the shipment.

www.freightwatchintl.com

LOW-COST COVERT GPS

Transport Security's new Enforcer Geo F1 is a low-cost trailer and tractor covert GPS tracking solution. The Tracking Bundle has no monthly invoice charges unless it's used. The unit is always on and ready to track but does not report location unless manually pinged.

This solution is designed for emergency situations where a vehicle or trailer is lost or stolen and needs to be found. Optional weekly or daily reporting plans let users verify vehicle location automatically.

The unit has no external antennas and can be hidden inside trailer walls and tractor dashboards.

www.transportsecurity.com

improving operational efficiency will be a continuing focus.

The next advances may be in automating decisions.

"Most of the decision-making in dispatch is still being done by humans," says PCS's VanDyck. "Every day, people in dispatch operations make decisions, but these decisions are really based on rules or objectives they are trying to achieve. They may have rules for a particular customer that says they need to dedicate company equipment to certain loads, or they may be allowed to broker certain loads as long as a certain type of carrier is used. They may have rules for company drivers that guarantee a certain amount of time home every week. Then they have their own objectives like eliminating deadhead miles and maximizing profit. In the future, our clients will be able to set more rules, prioritize them, and have the computer system make more decisions, without any human involvement."

"MOST OF THE DECISION-MAKING IN DISPATCH IS STILL BEING DONE BY HUMANS. ... IN THE FUTURE, CLIENTS WILL BE ABLE TO HAVE THE COMPUTER SYSTEM MAKE MORE DECISIONS."

Carriers may have more product choices and options in the future as software as a service, or so-called cloud computing, is expected to become more common. (See *HDT*, April 2010).

"Cloud-based computing technology is the next generation of advanced information management solutions," says Dick Hyatt, president of Decisiv, a company that provides software that connects fleet maintenance managers with service locations. It enables interaction between applications and database systems both internally and over the Internet. "The key with cloud-based solutions is that the solution provider has already made the investment in hardware, software and operations so their customers don't have to," Hyatt says. Customers also don't have to maintain or upgrade infrastructure and can scale their services up or down based on their business needs.

Steve Bryan, CEO of Vigillo, agrees there will be more interest in cloud computing services. "You have the computing power you need available to you wherever you are and you don't care what or where that computing power is, just like you don't care where your electricity comes from." Bryan says it can be more economical because users only pay for what they use.

Bryan also thinks future systems will tie into social media and mobile computing. "The whole social media environment is huge to us."

He says mobile computing is "where the computer comes to the person, not the person to the computer, as we have with the desktop." He cites products such as the iPhone and iPad and the relatively low price of the applications these devices run. "We used to pay hundreds and thousands of dollars for applications, but nowadays if a mobile app is over $2, we are outraged." It is a changing world, Bryan says. "Security and privacy will be tricky issues that need to be addressed, but they won't hold any of this back."

Complying with new safety rules or maintaining a good CSA safety score may prompt more carriers to invest in technologies such as EOBRs, electronic logs and mobile communications. More likely, they make the investment because they are convinced it will pay off in operational efficiencies. Either way, they are likely to find their fleet becoming both safer and more efficient. ■