

Transportation Industry Outlook

The transportation industry must navigate a confluence of opportunities and challenges—a driver shortage, regulatory pressures, innovative disruptions, and changing marketplaces—to capitalize on high demand for freight.

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TRANSPORTATION INDUSTRY OUTLOOK

As the U.S. economy and population continue to grow slowly, so will the importance of the transportation industry. According to the American Trucking Associations (ATA), U.S. truckload freight volume grew 3.2 percent in 2018 and will increase 1.1 percent annually between 2019 and 2024. While freight volumes are expected to decelerate in growth beginning in 2019 due to a slowing economy, trucking will remain the dominant freight mode, already moving 10.77 billion tons of freight in 2017.

More drivers and trucks will be necessary to move all the goods needed by the American public in the coming years. In fact, the ATA expects the number of Class 8 trucks in operation to increase 19 percent by 2028. The industry is up to the challenge, though capacity is has tightened due to high demand for freight services in the face of a growing driver shortage, regulatory pressures, and disruptors upending the industry.

DRIVER SHORTAGE

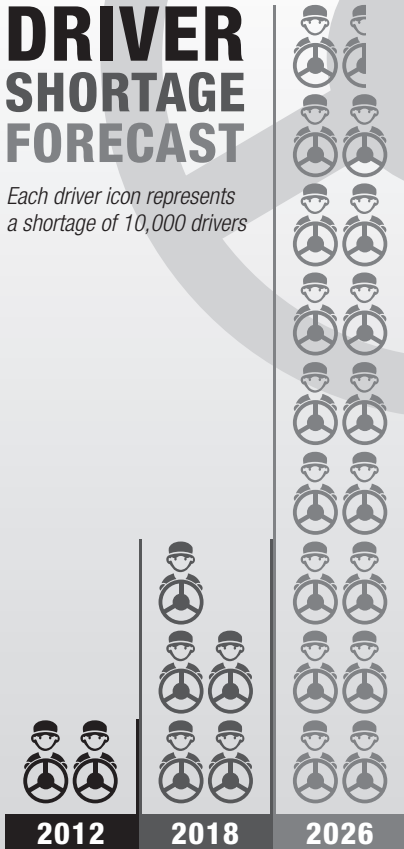
With the modest expected freight market growth and a portion of the current trucking workforce nearing retirement, the ATA estimates that the industry will need to hire nearly 1 million drivers and technicians in the next decade to meet demand. The shortage is currently estimated at around 50,000 drivers, and it could balloon to 174,000 drivers by 2026 if current economic growth trends continue. To fill these seats with qualified, safe drivers, the industry must make some changes.

Several underlying factors are contributing to the truck driver shortage, including competition within the industry and from other industries; driver qualifications and requirements; a low national unemployment rate (3.7 percent) means not many people are searching for jobs; trucking regulations that tighten capacity; costly time delays at shipper locations and along America's deteriorating infrastructure; and difficulty attracting young people to the industry since one cannot acquire a commercial driver's license (CDL) until age 21. Alarming, an American Transportation Research Institute (ATRI) study in 2014 found that 55.5 percent of truck drivers are age 45 and older, and less than 5 percent are in the 20- to 24-year-old age bracket. For younger generations, trucking is perceived to be labor intensive with low pay and poor hours that do not allow for work-life balance.

An ATA workforce development subcommittee was developed to work with federal and state officials to find solutions to these issues. The subcommittee is encouraging the development of robust apprenticeship programs to engage workers before they can officially qualify for a CDL at 21. Some efforts are even underway to lower the federal age requirement for interstate truck drivers. Outreach to veterans and historically underrepresented communities like women—who currently make up only 7 percent of the commercial driving workforce—will be critical as well. The ATA and other state trucking associations are actively engaged in a public relations campaign to position truck drivers as safe, family-oriented professionals who play a critical role in our nation's economy and the lives of every consumer.

DRIVER SHORTAGE FORECAST

Each driver icon represents a shortage of 10,000 drivers



ADDITIONAL INDUSTRY EFFORTS TO ATTRACT DRIVERS:

- + Carriers are moving to more regional routes that allow more or daily home time.
- + Carriers are being more selective about bringing on new business based on where they can historically attract drivers. Many are getting creative about routing and domicile locations to expand the potential driver base.
- + New trucks with driver-friendly comforts and safety and technology features are being purchased at record highs.
- + Carriers are working with shippers to reduce driver detention time and broadening delivery windows to encompass more appealing driver work hours.

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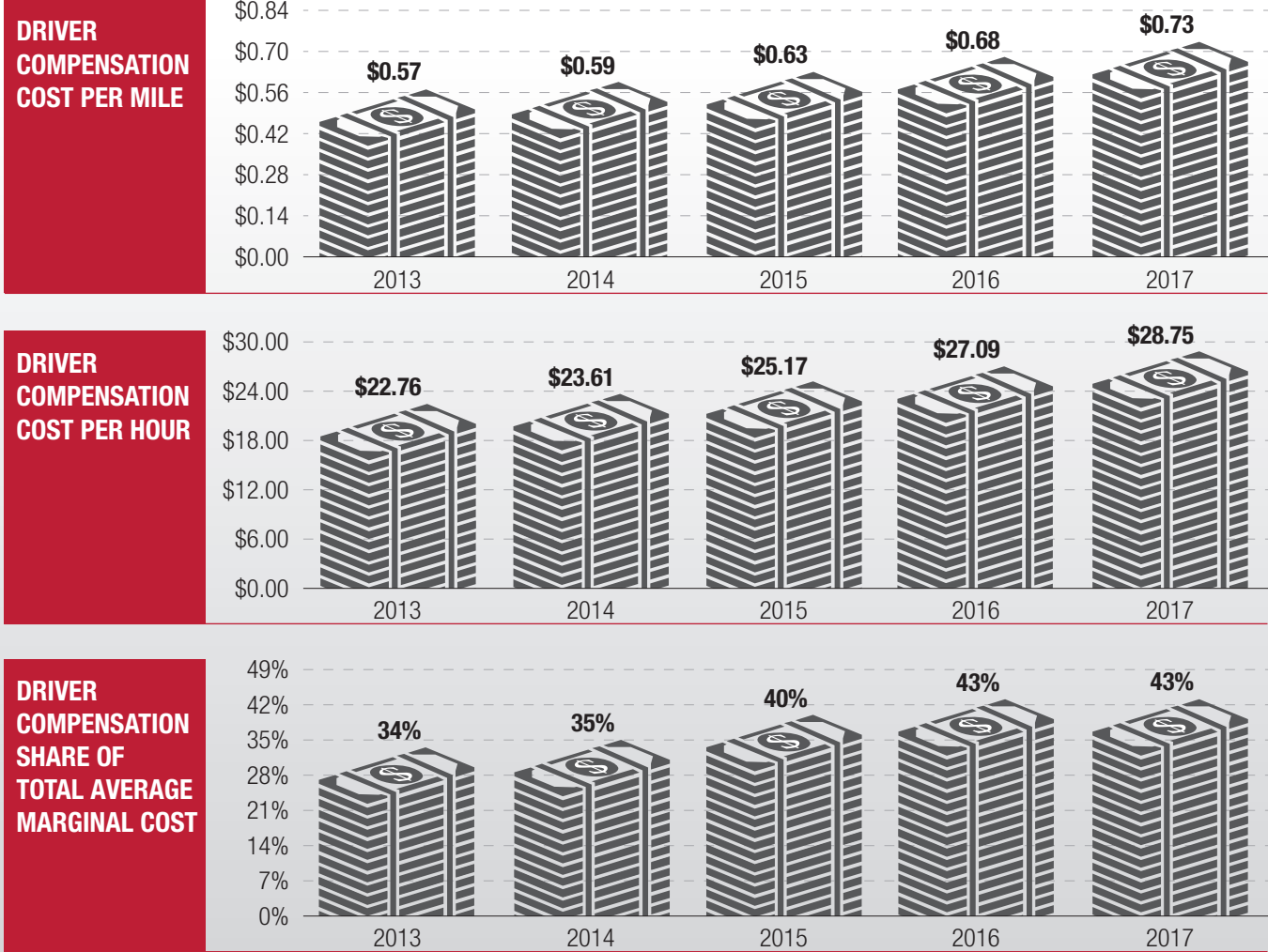
RATES AND DRIVER PAY

As the driver shortage intensifies, carriers are more frequently increasing pay or providing sign-on bonuses to attract new drivers, as well as offering performance-based bonuses to retain existing drivers. In fact, wages have been increasing for several years. In 2017, driver wages and benefits topped carriers' cost-per-mile spending for the third consecutive year, according to data released in October 2018 by ATRI. Carrier costs on the whole climbed 1.69 cents a mile, per the report, with increases in spending on driver wages and benefits accounting for 43 percent of carriers' average marginal cost.

The National Transportation Institute expects driver wages to be up 6 to 10 percent year-over-year in 2019—and the industry has already seen wage increases, around

10 percent since early 2017. Still, wage hikes are well behind the pace of the growth in the minimum wage and will not make up for the 16 to 19 percent shortfall of driver wages when adjusted for inflation.

Generally, before carriers can offer their drivers higher pay and bonuses, they must secure rate increases from customers, both in contractual relationships and in the spot market. And they are doing so successfully. The Cass truckload index, which tracks contract rates minus fuel surcharges, achieved a record high in October 2018, the 19th monthly accelerating increase, before slowing pace in November—which still saw a 7.9 percent year-over-year increase. Cass experts forecasted contract pricing to increase 6 to 12 percent in 2018 because of tightening capacity. The tables below show the results of ATRI's 2018 "Analysis of the Operational Costs of Trucking" report.



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REGULATIONS

President Trump’s administration has been marked by a reduction in the number of proposed regulations actively being pursued by the Department of Transportation. This trend follows an executive order issued by President Trump in his second week in office stating that for every new regulation submitted to the Federal Register, government agencies must identify two regulations that should be repealed. A split Congress has also contributed to regulatory stagnation. However, trucking is highly regulated, and several regulations—or changes to existing regulations—will come into play in the next few years.



Hours-of-Service Flexibility

In August 2018, the Federal Motor Carrier Safety Administration (FMCSA) issued an Advanced Notice of Proposed Rulemaking (ANPRM) seeking industry comments on the current hours-of-service regulations after frequent industry requests for flexibility. ANPRM sought input on whether the 30-minute rest break is necessary, if the 14-hour work day window should be expanded during adverse weather conditions, if short-haul drivers should be allowed to operate 14 hours in a day instead of the current 12-hour allotment, and what alternatives would make the sleeper berth options more effective. Since the new rules were put in place in 2013, the industry has sought revision to the 10-hour rest break rule, which requires drivers to be off-duty or in a sleeper berth for 10 consecutive hours before driving again after completing a 14-hour workday. Allowing drivers to split this sleeper berth, proponents of change argue, would eliminate the need for the 30-minute break rule—requiring that a driver take a 30-minute break after eight

hours of working before being able to drive again. The FMCSA received thousands of comments, and the agency is expected to publish a rule change proposal in the first few months of 2019.

Meal and Rest Break Provisions

Even though the trucking industry is regulated by these federal HOS rules, some states have issued their own regulations that are often in conflict with the federal rules. In these states, plaintiffs’ attorneys are using state regulation of trucking companies as the basis of expensive lawsuits related to meal and rest breaks and pay types. And many courts are siding with the states, especially California.

As a result, the top regulatory priority for the ATA has long been to restore the strength of the Federal Aviation Administration Authorization Act of 1994 (F4A)—the regulation that broadly preempted states from regulating interstate motor carriers. After Congress failed to act on the F4A issue for four years, the trucking groups petitioned the FMCSA to determine whether California’s rules are pre-empted under federal regulations, arguing that California’s duplicative break rules hinder safety, create an unreasonable burden to interstate commerce, and are incompatible with federal regulations. In a major industry triumph, the FMCSA granted the petition blocking California’s rules in December 2018. “FMCSA is granting this petition to ensure uniform and consistent rules in order to promote safety and economic growth. Drivers, consumers, and job creators are best served by reliable and consistent rules,” according to the FMCSA. “This action prioritizes safety, jobs, and uniformity for truck drivers.”

Electronic Logging Device Mandate

A mandate requiring electronic logging devices for heavy-duty trucks went into effect December 18, 2017. Since then, law enforcement has issued out-of-service citations for any violation of the ELD mandate, which largely monitors hours-of-service compliance. Fortunately, the number of HOS violations in the industry has decreased quite significantly since enforcement began.

The mandate, which impacts approximately 3 million commercial drivers, was expected to cause a 3 to 5 percent reduction in productivity due to tighter

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enforcement of hours-of-service limits, according to Stifel Financial Group. Before the mandate, experts anticipated that ELDs would tighten capacity by forcing drivers unwilling to adopt them out of the industry. Instead, the loss of capacity has come from the loss of driving hours—not drivers themselves. Many carriers and drivers that were operating on the edges or outside of HOS limits have fallen into compliance with HOS rules, which means that some transit times have increased significantly. As a result, shippers and carriers alike have begun to rethink everything from distribution center locations to routing options.

While most motor carriers have complied with the mandate, 2019 will see another significant transition for fleets still using older electronic log systems that pre-date the ELD rule. The rule allowed



early adopters of electronic logs to continue using their existing systems, classified as automatic onboard recording devices (AOBRDs) for two additional years. By December 16, 2019, those carriers running AOBRDs will have to update their systems to an ELD platform. Overall, the ELD mandate is largely accepted by the trucking industry because it levels the compliance playing field and has a positive impact on safety, as HOS rules are designed to limit fatigue and accidents.

Compliance, Safety, Accountability Overhaul

Compliance, Safety, Accountability (CSA) is the FMCSA's carrier scoring program designed to improve safety by identifying at-risk drivers. FMCSA conducts inspections and reviews crash reports and then measures the results using the Safety Measurement System (SMS). Each month, SMS measures a carrier's previous two years of violations and crash data to calculate a score in seven safety behavior areas called BASICs: unsafe driving, hours-of-service compliance, driver fitness, controlled substances and alcohol, vehicle maintenance, hazardous materials compliance, and crash indicator.

But the regulation has been under fire for a number of reasons since its inception in 2011—namely data quality, use of relative rankings between carriers, and

enforcement and reporting inconsistencies between states. Congress ordered CSA scores to be removed from public view until a study could be conducted to identify issues, followed by the implementation of needed changes that better assess a carrier's safety performance. The National Academies of Science (NAS) completed the Congressionally mandated study on CSA last year and recommended that the FMCSA rework CSA's Safety Measurement System and its underlying statistical model—so essentially rework the regulation from the ground up, according to *Commercial Carrier Journal*.

Following the NAS's recommendations, the FMCSA submitted in August 2018 a corrective action plan detailing CSA reforms to Congress. FMCSA will replace the existing CSA SMS with a new scoring system; work to improve the quality of data used to score carriers; make it easier for carriers to understand and calculate their safety scores; and evaluate adding an absolute scoring system instead of relying only on relative scores that hinge on a comparison to a carrier's peers, according to *Commercial Carrier Journal*. FMCSA plans to conduct a full-scale model test of the new system by April 2019.

National Drug and Alcohol Clearinghouse

The national drug and alcohol clearinghouse final rule was slated to go into effect in January 2020, but it will likely be stalled several months. The central database will house verified positive drug and alcohol tests, as well as names of drivers who refuse to be tested. Beginning in January 2020, carriers will be required to report positive test results and refusals to test into the database. Employers will also be required to access this database when looking to hire potential drivers—and to query the database annually for current drivers. This rule is intended to increase highway safety by ensuring that CDL holders who have tested positive or have refused to submit to testing have completed the DOT's return-to-duty process before driving, as well as ensure that employers are meeting their drug and alcohol testing responsibilities. As more and more states legalize recreational marijuana use—which federal rules strictly prohibit for CDL holders—a standardized clearinghouse will ensure visibility across the industry.

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Entry-Level Driver Training Rule

The entry-level driver training rule, which goes into effect in February 2020, mandates certain minimum training requirements for those seeking to obtain a Class A or Class B commercial driver’s license, or a hazardous materials, passenger, or school bus endorsement. Drivers must complete a prescribed program of knowledge-based instruction and behind-the-wheel instruction provided by an entity that is listed on FMCSA’s Training Provider Registry. According to the FMCSA, “The comprehensive CDL training requirements, which emphasize safety and promote driving efficiency, will result in lives saved, reductions in fuel consumption and emissions, vehicle maintenance cost reductions, and industry-wide performance improvements.”

DISRUPTORS

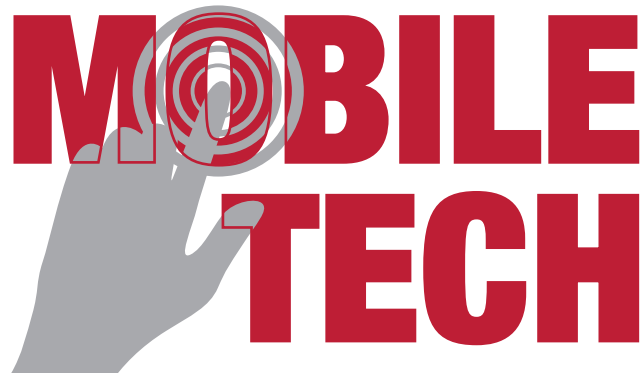
In addition to the driver shortage and regulations contributing to a capacity crunch, carriers are contending with a changing marketplace. The rapid growth of e-commerce has completely changed how and when and for what price consumers want to receive their goods. Trucking companies must ensure that they help their customers meet the expectations of the final consumer of the products. That includes providing transparency and visibility to where a product is and when. In addition, carriers must attract new drivers to haul the freight in the first place—and younger generations have high technology expectations.

Many start-ups and tenured companies alike are creating everything from freight quote marketplaces and self-driving trucks to fleet management solutions and mobile technology systems that can wholly transform—or disrupt—the way business has been done in the past. They’re revolutionizing ways that trucks operate and interact with the central office, as well as how shipments are booked, paid for, and tracked.

Mobile Technology

Workers and customers now expect their business interactions to function like their personal interactions. Like all workers in other industries, truck drivers—particularly young truckers the industry is desperately trying to attract—are fluent in mobile tech use and

expect high-functioning technology in the workplace. And shipper customers demand it. To remain competitive, trucking companies must adopt the latest mobile technologies, which can describe a system with mobile capabilities or that can push information to and from a mobile device.



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While many trucking companies were early adopters of mobile technology, these legacy systems have become almost archaic after the rapid advancements in recent years. Unfortunately, many are strapped with “technical debt” from adopting early systems and have limited financial ability to move to the more advanced systems available. But to remain competitive, they must.

The ELD mandate helped carriers to adopt new technology. Many platforms that met the ELD mandate requirements are available on smart phones or tablets instead of the dash-mounted computers that some carriers adopted for logging and compliance prior to the mandate. For a population that’s accustomed to the ease of use offered by mobile technology for personal needs, dash-mounted computers with chunky keyboards or touch screens that require large buttons or styluses are a hassle.

What’s more, drivers and office workers are often tasked with completing jobs or entering data in multiple and

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separate apps and programs. This context shifting is time consuming, inefficient, and frustrating. Modern mobile technology allows work to be completed within one unified, workflow-centric app that runs on common tablets and smart phones. The dynamic workflow capabilities within mobile technologies ensure that data is captured in a uniform way, enforcing consistent and common practices across the company. Plus, workflow and accurate data can eliminate major driver headaches—like delays from handling paperwork, inefficient scheduling, confusing procedures, and recording detention time, to name a few.

Autonomous Trucks

Innovations to trucks themselves have major potential to disrupt the trucking industry as we know it. Start-ups and the largest truck builders alike are investing billions of dollars to develop trucks capable of driving themselves down America's freeways. A number of companies are already testing self-driving trucks with a safety driver in the cab.



Self-driving trucks could help companies reduce labor costs by extending the number of hours trucks are in operation and potentially cutting the number of drivers needed for interstate driving. Plus, some believe autonomous trucks have the potential to be safer—and could therefore reduce insurance premiums—because accidents are largely caused by human error. The industry agrees, however, that drivers will still be critical to navigate city streets for the first and last miles of trips. In fact, self-driving tech developers are positioning the technology as a partner to drivers rather than a job killer—productivity increases, but the job becomes more attractive to drivers. From exit to exit, drivers can perform other tasks, like ensuring data is captured accurately,

while the truck runs on autopilot.

While the technology could soon be in place, the challenge is to get autonomous trucks on the road and making money. Several technical and regulatory hurdles to that future currently exist, but a growing number of trucks are already equipped with advanced driver assistance systems that step in with alerts or autonomous braking and other controls when drivers are slow to react.

Electric Trucks

One of a trucking company's largest—and often most volatile—operating expenses is fuel, so Tesla's 2017 announcement about the launch of its wholly electrically powered tractor-trailer could be a game changer. A number of major carriers have already reserved Tesla semis, which cost \$150,000 for a model with a 300-mile range per charge and \$180,000 with a 500-mile range. Most diesel-powered tractors cost around \$100,000, but Tesla predicts that the electric vehicle will pay for itself within two years thanks to savings in aerodynamics, reliability, and fuel. The vehicle boasts additional safety features, including wrap around windshields, cameras instead of rearview mirrors, and autonomous systems like automatic emergency braking, automatic lane keeping, and forward collision warning, according to Tesla.

A number of other companies are entering the electric truck space as well. The widespread adoption of electric trucks will depend on how they perform in real-world situations, the availability of battery recharging facilities, and the training of workers to service electric vehicles.

Driver Monitoring

One way the industry is moving to combat accidents is through the use of driver monitoring tools. The newly required electronic logging devices are a type of monitoring system, as they track and report speed, location, and driving status, not to mention where drivers stand within federal hours-of-service requirements. Trucks now widely come equipped with advanced driver assistance systems that use a combination of radar- and camera-based components, like following distance alerts and active braking, to intercede on the driver's behalf to eliminate or greatly decrease a collision's severity. Any event triggered by the technology is reported to employers.

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But more intrusive technologies are also entering the marketplace and being adopted by trucking companies. Ball caps can measure brainwaves and give a fatigue rating, a critical factor for drivers as many accidents are caused in one way or another by the effects of fatigue. One company is developing a vest that can detect a driver's heart attack and stop the truck as a result. More common, road- and driver-facing dashboard cameras are used to record actions that can negatively affect safety—but also monitor slacking behavior or unauthorized stops, according to *Forbes*. Onboard video event recorder systems link into a truck's engine to record video clips before and after exception-based events such as speeding, forward collision warnings, harsh braking, lane departure alerts, and collisions. Those videos may then be accessed for driver coaching or for litigation in the case of an accident. Some driver-facing cameras even monitor

technologies because their trucks serve as their offices—and homes for over-the-road drivers. Others like the idea of working for companies that value providing drivers the resources to stay safe and improve their skills. If the technology can help prevent accidents, provide coaching opportunities after near-misses, and save carriers money, more carriers will likely conclude that the intrusion is warranted.

THE YEAR AHEAD

2019

Certainly trucking companies face a host of challenges in the marketplace, but 2019 will see success for those able to capitalize on high demand for freight while navigating the driver shortage, regulatory pressures, innovative disruptions, and changing expectations of consumers.



drivers' eyelids for signs of fatigue. Drivers, who already feel closely monitored by regulators, employers, and their customers (who are demanding real-time data on loads to appease their own customers) are often bothered by the use of these additional monitoring