DRIVER DETENTION IMPACTS ON SAFETY AND PRODUCTIVITY

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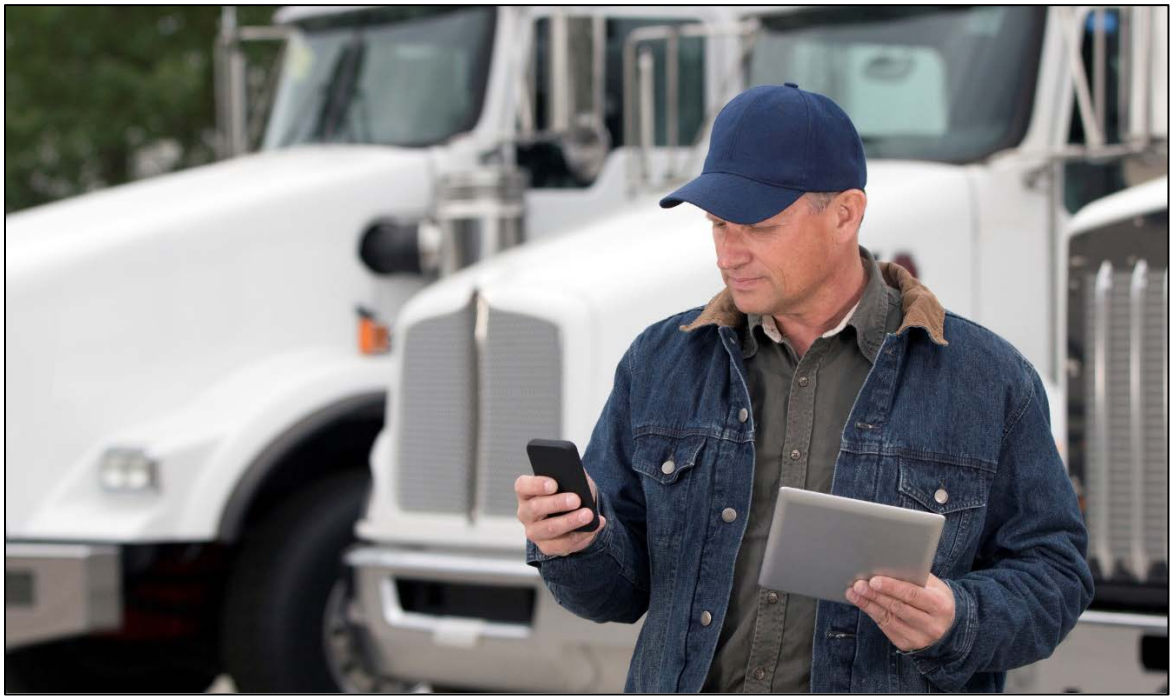

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LIST OF ACRONYMS

ATRI	American Transportation Research Institute
CMV	Commercial Motor Vehicle
FAST Act	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
GAO	Government Accountability Office
GATS	Great American Trucking Show
HOS	Hours-of-Service
LTL	Less-than-Truckload
MATS	Mid-America Trucking Show
NPRM	Notice of Proposed Rulemaking
OIG	Office of Inspector General
RAC	Research Advisory Committee
Reefer	Refrigerated Trailer
RODS	Record of Duty Status
TL	Truckload
U.S.DOT	United States Department of Transportation
VTTI	Virginia Tech Transportation Institute

INTRODUCTION

The Federal Motor Carrier Safety Administration (FMCSA) regulates the number of hours per day that commercial motor vehicle (CMV) drivers are allowed to be on-duty, which includes total driving hours.[1] Currently, property-carrying CMV drivers are allowed a maximum of 14 on-duty hours per day, with an 11-hour daily driving limit.

Since 2005, industry concerns over various provisions of the Hours-of-Service (HOS) regulations are consistently ranked in the top five (out of 10) issues in the trucking industry's annual survey of top concerns.[2] In the 2018 survey, the HOS rules were the number two issue after the driver shortage. Recent industry challenges with the HOS regulations relate to the lack of flexibility in the sleeper berth provision and the requirement for a 30-minute rest break within the first eight hours of being on-duty.[3] On August 23, 2019, FMCSA issued a Notice of Proposed Rulemaking (NPRM) to address these and other concerns with the HOS rules.[4]

One of the factors that impacts a truck driver's available hours-of-service is driver delay or detention at customer facilities. In the 2018 Top Industry Issues Survey, one of the strategies ranked by survey respondents for addressing the challenges associated with the HOS rules was to research and quantify the real-world safety, economic and operational impacts of detaining truck drivers at shipper and receiver facilities.[5]

Driver detention at customer facilities can result in a variety of adverse safety and economic impacts. As required in the December 2015 Fixing America's Surface Transportation Act (FAST Act), the U.S. Department of Transportation (U.S. DOT) Office of Inspector General (OIG) initiated an audit of detention time impacts on the industry's safety and productivity.[6] The OIG report estimates that driver detention costs CMV drivers and motor carriers over $1 billion annually and may be associated with increased crash risk.[7]

The unpredictability of loading and unloading times can alter driving times and thus interfere with an optimal sleep schedule. The indirect relationship between detention delays and fatigue management can be seen in a study conducted by Bunn et al. that explored the relationship between driver fatigue and the ability to find truck parking. Researchers found that the distance between rest stops was positively correlated with crashes in which commercial truck drivers were at fault.[8]

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[1] Hours of Service. Federal Motor Carrier Safety Administration. Available Online: http://www.fmcsa.dot.gov/regulations/hours-of-service

[2] "Critical Issues in the Trucking Industry – 2018." American Transportation Research Institute. October 2018. Arlington, VA.

[3] Ibid.

[4] "Federal Motor Carrier Safety Administration Publishes Hours of Service Proposal to Improve Safety and Increase Flexibility for Commercial Drivers." August 23, 2019. Available online: https://www.fmcsa.dot.gov/newsroom/federal-motor-carrier-safety-administration-publishes-hours-service-proposal-improve-safety

[5] "Critical Issues in the Trucking Industry – 2018." American Transportation Research Institute (ATRI). October 2018. Arlington, VA.

[6] Audit Announcement – Commercial Motor Vehicle Loading and Unloading Delays. Office of Inspector General, Office of the Secretary of Transportation, U.S. Department of Transportation. 15 June 2016. Available online: https://www.oig.dot.gov/sites/default/files/FMCSA%20Loading%20and%20Unloading%20Delays%20Announcement%5E-6-15-16.pdf

[7] "Estimates Show Commercial Driver Detention Increases Crash Risks and Costs, but Current Data Limit Further Analysis" U.S. Department of Transportation & Office of the Inspector General, January 31, 2018.

[8] Bunn, Terry L., et al. "Association between Commercial Vehicle Driver At-Fault Crashes Involving Sleepiness/Fatigue and Proximity to Rest Areas and Truck Stops." *Accident Analysis & Prevention*, vol. 126, May 2019, pp. 3-9. *EBSCOhost*, doi:10.1016/j.aap.2017.11.022.

While there is no industry-standard definition of "excessive detention," it is generally accepted within the trucking industry that any delay over two hours is reasonably defined as excessive.[9] Anecdotal estimates suggest that carriers who charge a detention fee often charge between $50 and $75 per hour.[10] Significant detention times at shipping and receiving facilities can create a number of challenges for trucking operations, including interruptions to otherwise tight schedules and inefficient use of equipment and labor.

While carrier-shipper relations vary greatly across the industry, it is commonplace for truck drivers to complain that shipper detention negatively impacts driver productivity and safety.[11] When drivers are impacted by a delay at a shipping or receiving facility they may in turn be more likely to drive faster, take greater risks or operate outside of their allotted hours in order to recover lost time and revenue associated with the detention.

Based on anecdotal data, shippers and receivers do not seem to be fully aware of, or overly concerned by, the costs incurred by carriers and drivers while waiting. It appears that many shippers are unaware of the frequency and duration of driver detention. It has also been reported that some shippers and receivers may purposefully create truck queues at their facilities to ensure that truck capacity is readily available to support shipper operations.[12]

Previous Research

The scale and impact of driver detention at customer facilities, and the requisite relationship to regulatory non-compliance appears to be extensive. A 2011 Government Accountability Office (GAO) study found that 65 percent of the drivers surveyed had been excessively detained during the previous month.[13] For those drivers who reported experiencing long detention times, 65 percent reported loss of revenue and 80 percent stated that detention time impacted their ability to meet HOS requirements.[14] Research conducted by the Federal Highway Administration (FHWA) found that, while not an exclusive cause, shipper scheduling demands do contribute to drivers' HOS violations.[15] However, this research was conducted in 1996 and numerous changes have occurred in industry operations and HOS regulations since that time. Additionally, the research results are based solely on qualitative findings derived from industry focus groups consisting of 57 participants.

A December 2014 Virginia Tech Transportation Institute (VTTI) study examined third-party vendor detention data across 31 carriers over a six-month period.[16] VTTI defined a driver as being

[9] United States Government Accountability Office. (2011). Commercial Motor Carriers: More Could Be Done to Determine Impact of Excessive Loading and Unloading Wait Times on Hours of Service Violations. Report No.: GAO-11-198. Washington, D.C. Available online: http://www.gao.gov/new.items/d11198.pdf
[10] Straight, Brian. "As detention mounts, drivers still searching for a solution." February 20, 2018. FreightWaves. Available online: https://www.freightwaves.com/news/cash-flow-corner/driver-detention
[11] Karst, Tom. "Industry Gets an Earful on Truck Detention Times." The Packer. August 13, 2019. Available online: https://www.thepacker.com/article/industry-gets-earful-truck-detention-times
[12] United States Government Accountability Office. (2011). Commercial Motor Carriers: More Could Be Done to Determine Impact of Excessive Loading and Unloading Wait Times on Hours of Service Violations. Report No.: GAO-11-198. Washington, D.C. Available online: http://www.gao.gov/new.items/d11198.pdf
[13] Ibid.
[14] Ibid.
[15] Global Exchange, Inc. (1998). A Qualitative Assessment of the Role of Shippers and Others in Driver Compliance with Federal Safety Regulations. Washington, DC: Federal Highway Safety Administration.
[16] Dunn, N., Hickman, J.S., Soccolich, S., & Hanowski, R.J. (2014). Driver Detention Times in Commercial Motor Vehicle Operations. Washington, D.C.: United States Department of Transportation, Federal Motor Carrier Safety Administration, Report No.: FMCSA-RRR-13-060. Available Online: http://ntl.bts.gov/lib/54000/54300/54378/13-060-Detention-508C-Dec14.pdf

"detained" if the detention at a customer extended beyond two hours. According to the analysis, on average, drivers were "detained" for 1.4 hours beyond the two-hour window, therefore spending 3.4 hours total at a customer's facility.

Furthermore, the findings suggested that medium-sized carriers experienced the greatest detention time (mean = 1.54 hours), followed by large carriers (mean = 1.33 hours) and then small carriers (mean = 0.62 hours). In addition, for-hire truckload (TL) carriers had the greatest percentage of stops that involved excessive delays, followed by for-hire less-than-truckload (LTL) carriers and then private carriers. Finally, the results suggested that refrigerated trailer operations experienced detention times more frequently, and for greater durations, than other carrier types (e.g., dry bulk, liquid bulk, van/refrigerated, van/flatbed).[17]

Research Objective

In 2014, the American Transportation Research Institute (ATRI) Research Advisory Committee (RAC)[18] identified the ongoing "evaluation of the impact of customer detention times on driver productivity and compliance" as a top research priority. Since that time, ATRI has undertaken a series of research tasks to better understand the issue. The objective of this research was to quantify the degree and impact that excessive detention has on truck drivers and trucking operations – both productivity and compliance – as well as how implementation of the Electronic Logging Device (ELD) mandate has impacted driver detention issues. Finally, the research intends to provide direction to carriers and shippers/receivers in order to improve relationships and develop strategies to reduce driver detention times.

Methodology

ATRI developed and administered a series of truck driver and motor carrier surveys to identify the impacts of shipper/receiver-imposed detention times on truck driver productivity, HOS compliance and ELD mandate-related impacts. ATRI's baseline survey was based on responses collected via an online survey website as well as paper surveys distributed at the 2014 Mid-America Trucking Show (MATS) in Louisville, Kentucky. A total of 674 driver responses, and 220 carrier responses were collected between March 2014 and January of 2015.

In 2018, ATRI updated the driver survey to understand how the implementation of the ELD mandate has impacted driver operations related to detention times. The surveys were administered both online and at the 2018 Great American Trucking Show (GATS) in Dallas, Texas. A total of 1,011 driver responses were collected from August 2018 to November 2018.

[17] Ibid.

[18] ATRI's Research Advisory Committee (RAC) is comprised of industry stakeholders representing motor carriers, trucking industry suppliers, labor and driver groups, law enforcement, federal government and academia. The RAC is charged with annually recommending a research agenda for the Institute.

RESPONDENT DEMOGRAPHICS

The 2014 and 2018 truck driver datasets are described in Table 1 below. Notable differences between the two datasets include:

- Females represented a larger percentage of the 2018 dataset than in the 2014 dataset. However, both datasets had a greater percentage of women than the industry overall which currently is comprised of 6.6 percent females.[19]
- The new entrant driver population (less than one year of driving experience) increased while the number of veteran drivers decreased across both surveys.
- In 2018, there was a slight increase in respondents who drive for fleets of 50 or fewer trucks.

Table 1. Driver Detention Survey Respondent Demographics

	2014	2018
Gender		
Male	91.7%	86.7%
Female	8.3%	13.3%
Age		
Younger than 25	1.1%	1.5%
25 – 44	26.3%	29.4%
45 – 64	66.9%	61.4
65+	5.7%	7.6%
Years of Commercial Driving Experience		
Less than 1 year	2.2%	3.4%
1 – 5 years	13.7%	19.5%
6 – 10 years	15.5%	13.9%
11+ years	68.6%	63.2%
Trucking Sector		
For-hire	85.4%	78.1%
Private	11.1%	14.6%
Don't know	3.5%	7.4%
Employment Status		
Employee Driver	60.4%	58.0%
Owner-Operator with own authority	12.2%	14.6%
Owner-Operator/Independent Contractor leased to motor carrier	27.4%	27.4%
Fleet Size		
Less than 5	24.8%	30.0%
6 – 15	8.3%	9.9%
16 – 50	15.5%	12.2%
51 – 250	16.1%	17.0%
251 – 500	10.2%	8.1%
501 – 1,000	8.5%	6.1%
1,000+	16.5%	16.8%
Length of Haul		
Local (less than 100 miles per trip)	2.2%	6.8%
Regional (100-499 miles per trip)	25.4%	30.0%
Inter-regional (500-999 miles per trip)	45.2%	34.6%
Long-haul (1,000+ miles per trip)	27.2%	28.6%

[19] *Trucking Trends 2019*. American Trucking Associations. Arlington, VA

With the implementation of the Electronic Logging Device (ELD) mandate in 2017, drivers that are required to maintain Record of Duty Status (RODS) for HOS compliance had to do so using an Automatic Onboard Recording Device (AOBRD) or an ELD. One key research question for the 2018 driver survey was to identify if the ELD mandate had an impact on driver detention. Nine out of ten respondents from the 2018 survey reported using an ABORD/ELD.[20] Table 2 below shows how long the 2018 driver respondents had been using AOBRDs/ELDs to log their HOS, with nearly half of the drivers reporting using an AOBRD/ELD for less than two years.

Table 2. ELD Usage – 2018 Driver Dataset

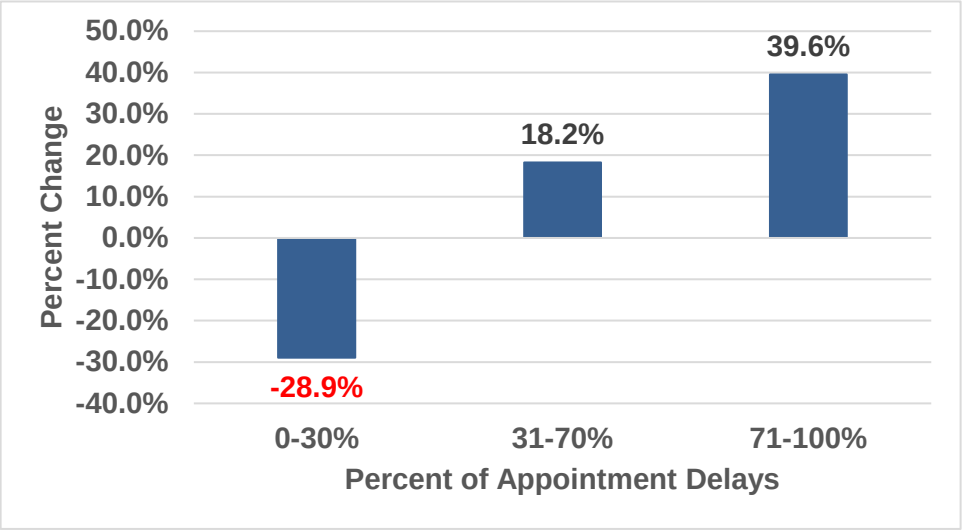
Length of AOBRD/ELD Use	Percent of 2018 Respondents
Less than one year	34.6%
1-2 years	14.7%
2-4 years	17.4%
4-6 years	16.1%
6+ years	17.1%

DETENTION FREQUENCY AND DURATION

In order to understand the scale of the detention problem, the surveys queried driver respondents on the frequency and duration of detention, as well as the impact on subsequent customer appointments.

In terms of frequency of detention, drivers were asked, "What percent of your pick-ups and deliveries over the past year were delayed due to the action of a customer/shipper?" As shown in Figure 1 below, drivers reported increasing percentages of appointments delayed in 2018 over 2014, with the most significant increase coming from drivers who reported that more than 70 percent of their pick-ups and deliveries were delayed over the past 12 months due to customer actions.

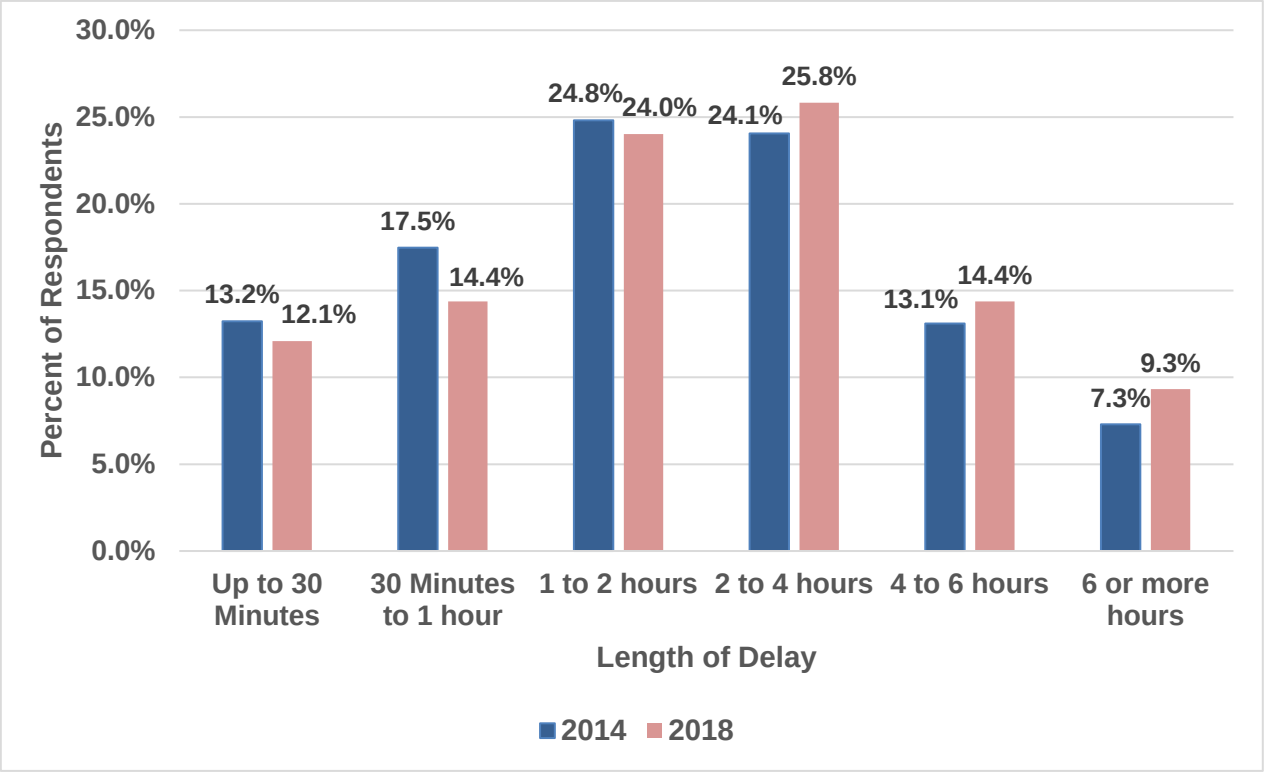
Figure 1: Change in Detention Frequency Due to Customer Actions 2014 – 2018



[20] Drivers exempt from using an ELD include those who use RODS for 8 days or less during a 30-day period, drivers in pre-2000 model year vehicles, or drivers who conduct tow-away operations. General information about the ELD rule available from FMCSA online at: https://www.fmcsa.dot.gov/hours-service/elds/general-information-about-eld-rule

To understand how long drivers are being detained, driver respondents in both surveys were asked to identify what percent of their detention over the past 12 months fell into the following time bins: 30 minutes or less, 30 minutes to one hour, one to two hours, two to four hours, four to six hours, and six hours or more. Between 2014 and 2018, driver respondents experienced an increase in the percent of delays greater than two hours, with a 27.4 percent increase in delays of six or more hours (Figure 2).

Figure 2: Detention Duration



An important consideration in interpreting driver delay time findings is the fact that the surveys rely on driver recollection of delay across a 12-month period. This may result in respondents over- or under-estimating their detention lengths. Many factors may influence a driver's perception of how long they have been waiting including:

- how much time pressure the driver is experiencing in getting to their next appointment;
- physical comfort (i.e. are they in air conditioning, do they have access to restroom facilities, etc.);
- are they keeping themselves busy;
- is there available space to socialize or take a break; or
- did the driver have an appointment versus first come first serve?

Future research could address the impacts of different driver activities while waiting at customer facilities.

Being delayed at a customer facility often creates cascading impacts on subsequent pick-ups and deliveries. Across both driver surveys in 2014 and 2018, a majority of respondents indicated that it had been necessary to modify subsequent appointment times due to detention at a customer's facility (Table 3).

Table 3. Modifying Appointments Due to Detention

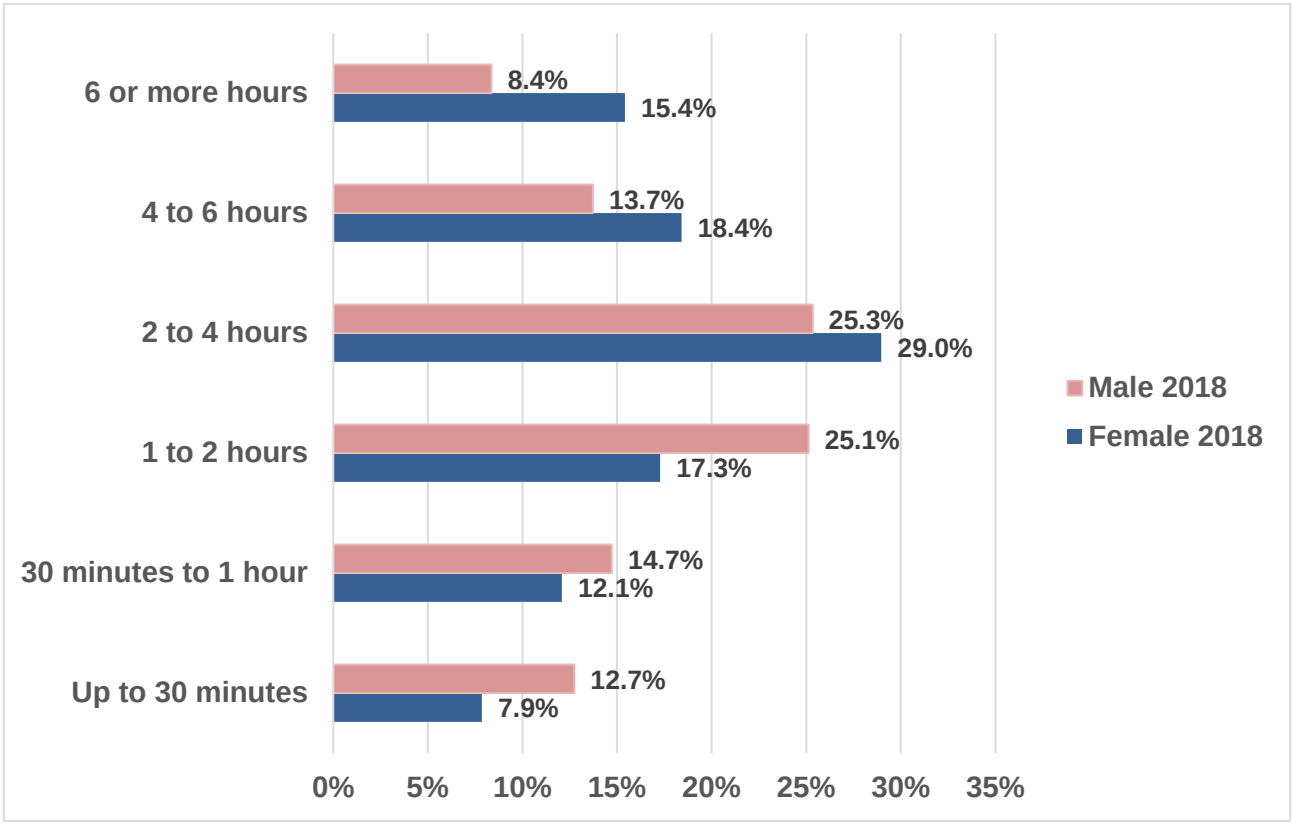
In the last 12 months, have you been late to or had to cancel your next scheduled pick-up or delivery as a result of being detained at a customer's facility due to a customer action?	2014	2018
Yes	84.8%	79.7%
No	11.8%	16.5%
Don't Know	3.4%	3.7%

DETENTION IMPACTS AND GENDER

With a majority of respondents in both surveys experiencing detention over the previous 12 months, cross tab analyses were run on the data to identify any potential differences in detention by respondent gender.

In analyzing the 2018 data only, women were 83.3 percent more likely than men to be delayed six or more hours (Figure 3). Men were detained more frequently than women in each of the delay bins up to the two-hour detention period. After two hours, women were detained longer in every category assessed in this research.

Figure 3. Delay Duration by Gender



On average, women reported approximately 55 percent of their appointments being delayed due to the actions of personnel at a customer facility, compared to 47 percent for men (Table 4). The 7.7 percentage point difference between men and women shows that women are not only detained longer, but are also detained more frequently.

Table 4: Frequency of Appointments Delayed due to the Actions of a Customer

	Average Percent of Appointment Delays
Female	54.5%
Male	46.8%
All	47.8%

Given these findings, ATRI developed an interview guide to discuss the analyses with female professional drivers. Through outreach to the Women in Trucking Association and other organizations, ATRI conducted interviews with a dozen women drivers. Those interviews yielded potential factors that may contribute to the gender findings, and are described below.

When presented with the differences in delay times by gender, the majority of interviewees were at first very "surprised" by the information and then mentioned how they do not believe the difference is the result of dock workers showing preference toward male drivers.

> *"When we back into a dock, the guys working don't know what gender is driving the truck, nor do they care. We are drivers first, not male or female drivers, just drivers to them."*
>
> *-I.B., Truck Driver*

The interviewees implied that women are perhaps less likely than men to show persistence and assertive behavior while being detained. For example, when customer facilities are behind schedule, drivers are typically asked to check in with dock personnel every few hours to get an update on the status of their load. Male drivers who check in more frequently or express more consternation than women appear likely to be loaded/unloaded sooner.

> *"I think male drivers have a shorter fuse than women do when it comes to waiting. I am less likely to go in and start drama and throw a fit because I'm not empty yet, as opposed to the guy next to me. A lot of my male driving friends become aggravated more quickly."*
>
> *-J.L., Truck Driver*

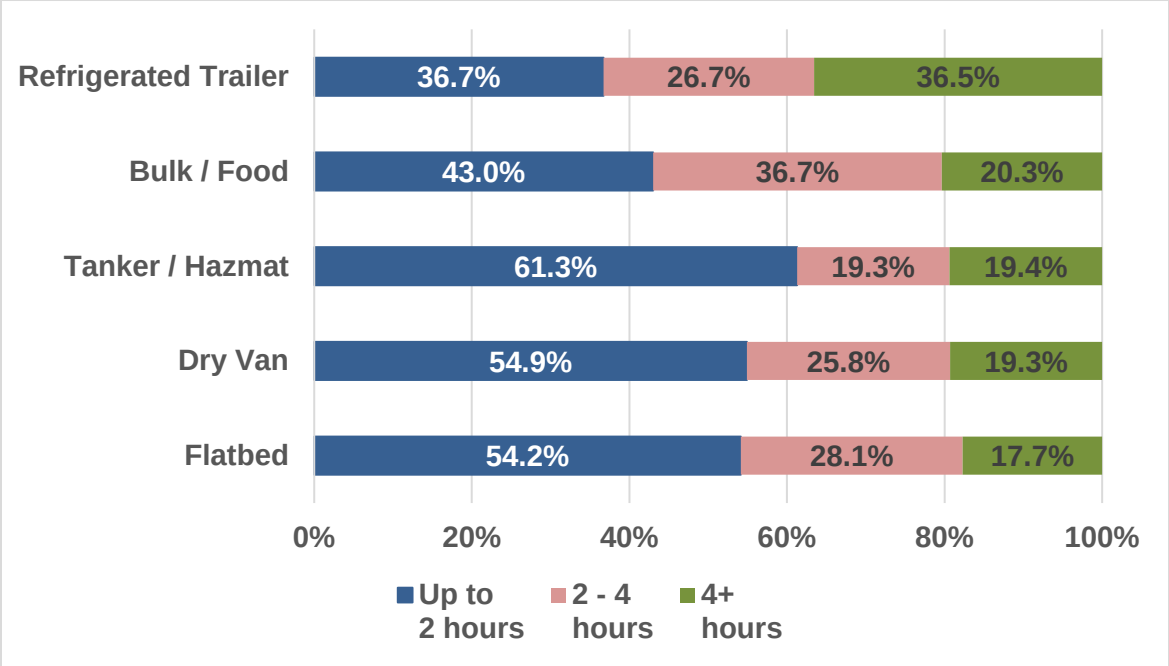
A wife / husband driving team provided a relevant anecdote to support the possibility that women are more patient than men.

> *"I would say to my husband 'let's be patient and not go in yet because they are short staffed.' And he would insist that we need to go in now because we had an appointment…I think it's possible the people at shippers and receivers are yelled at more by men than by women."*
>
> *-D.L., Truck Driver*

DETENTION AND INDUSTRY SECTOR

Previous research has documented the extended detention times experienced by refrigerated trailer drivers.[21] [22] ATRI's driver surveys corroborate those findings as shown in Figure 4 below. In the 2018 dataset, over a third of the respondents (36.5%) who operate refrigerated trailers (reefer) indicated experiencing delays of four or more hours.

Figure 4. Delay Duration by Industry Sector (2018)



The increased delay experienced by respondents in the reefer trailer sector of the industry may also explain the increased delay experienced by women in the ATRI sample. In the 2018 dataset,

[21] Dunn, N. J., Hickman, J. S., Soccolich, S., & Hanowski, R. J. *Driver detention times in commercial motor vehicle operations.* (No. FMCSA-RRR-13-060). United States. Federal Motor Carrier Safety Administration. Office of Analysis, Research, and Technology. 2014.

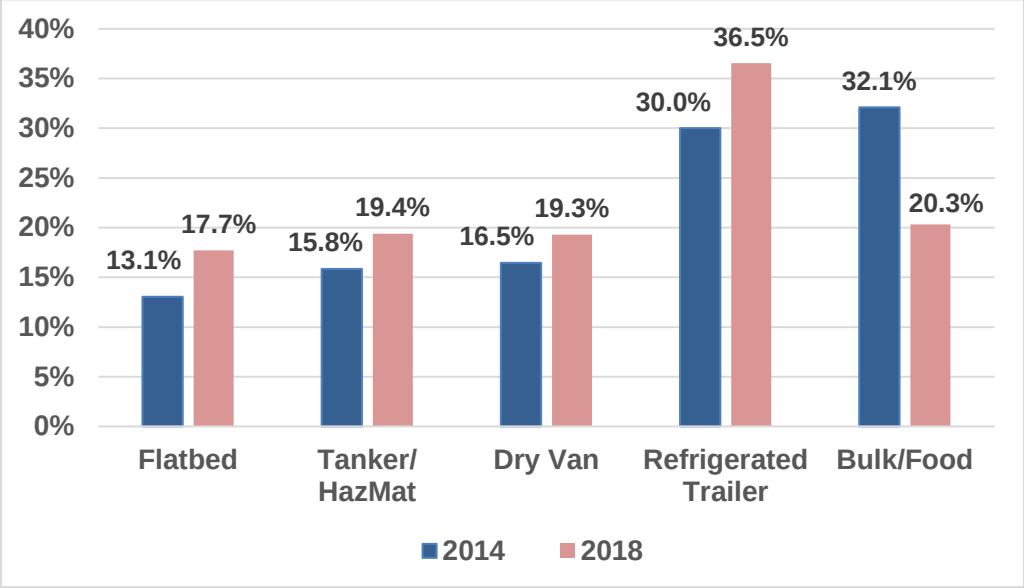
[22] "Estimates Show Commercial Driver Detention Increases Crash Risks and Costs, but Current Data Limit Further Analysis." U.S. Department of Transportation Office of Inspector General. January 2018. Available online: https://www.oig.dot.gov/sites/default/files/FMCSA Driver Detention Final Report.pdf

36.5 percent of the women drove reefers compared to 23.6 percent of the men. One of ATRI's interviewees provided additional context for the challenges in hauling reefer freight.

> *"I drive freight for a respectable commodity sector that always adheres to their appointment times. Occasionally, I will look for filler loads, but when I do I never consider hauling anything grocery-related because the wait time could be 8 hours or more…and when detention time is paid, it isn't up to par with other types of loads."*
>
> *-D.L., Truck Driver*

Refrigerated freight also realized more than a 20 percent increase in the percent of loads experiencing detention of four or more hours in 2018 over 2014, as shown in Figure 5 below.

Figure 5. Delays of 4+ Hours by Industry Sector



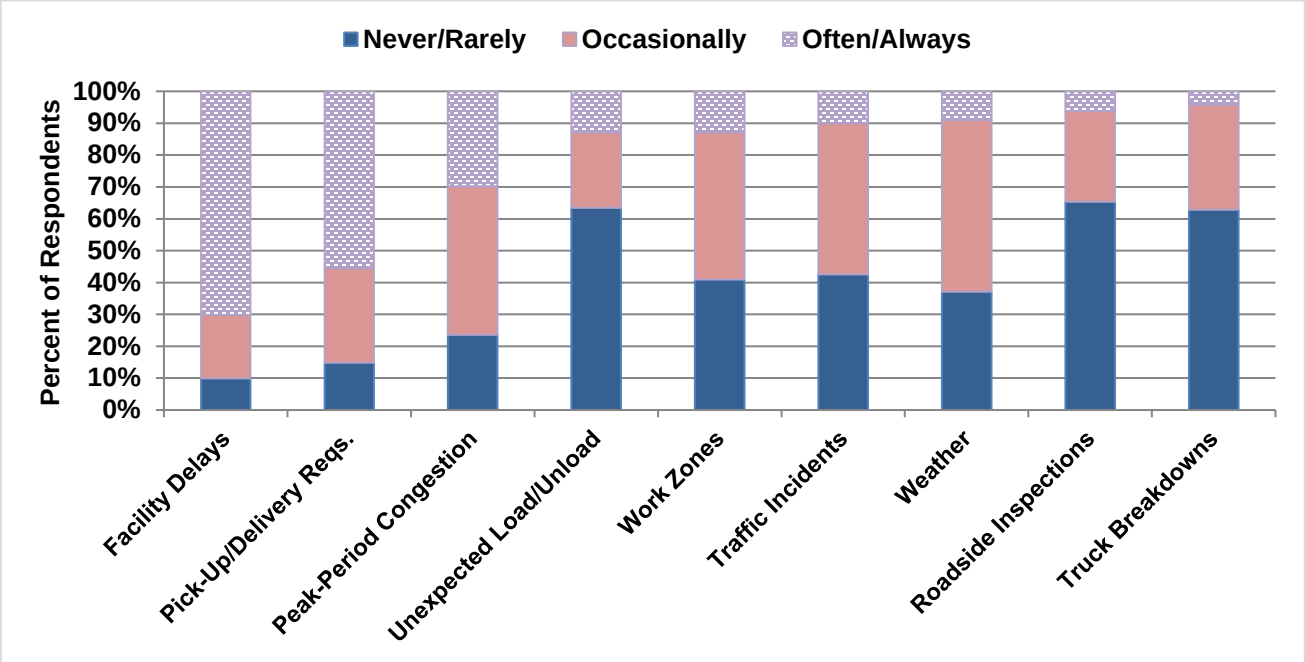
Another interviewee shared that refrigerated freight is often a starting point in the industry for new entrants. ATRI's 2018 dataset had a larger percentage of women with just 1-5 years' experience (33.3%) compared to new entrant male drivers (17.3%) and this may explain why the women in the ATRI sample experienced longer detention durations than did the men.

> *"Most people start with reefer because it is a natural progression in the industry. The big companies are great to work for but they often require over-the-road experience. Once you put your time into doing the hard stuff you can graduate into doing the kind of freight you want to do, the kind where the detention isn't as bad."*
>
> *-N.W., Truck Driver*

DETENTION AND HOURS-OF-SERVICE

Given the strict federal HOS regulations that drivers must comply with, the impact of detention on drivers' available on-duty hours was a key examination point of this study. When drivers are detained at a customer facility they are losing on-duty, revenue-generating time. As shown in Figure 6 below, facility delays are the number one factor identified by motor carriers in ATRI's survey as impacting drivers' ability to comply with HOS regulations, followed closely by customer pick-up and delivery requirements.

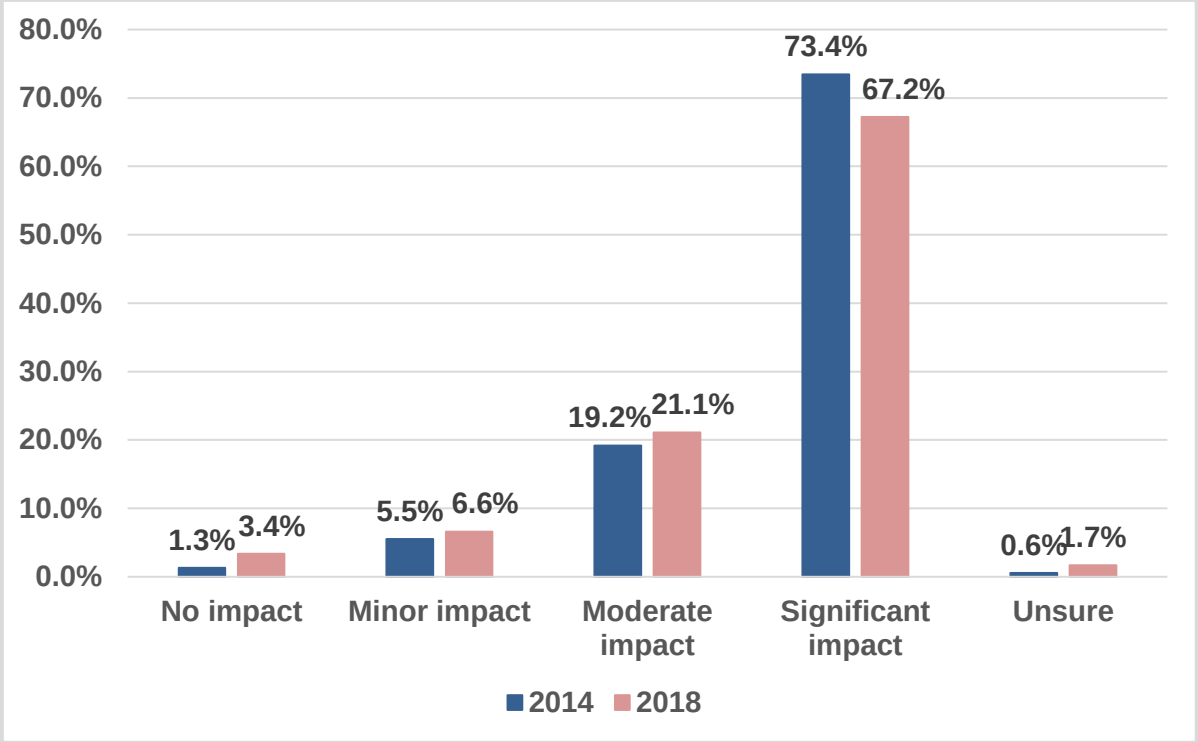
Figure 6: Motor Carrier Views on Factors Affecting Drivers' HOS Compliance



The surveys queried drivers on whether or not they had "run out of available on-duty hours while at a shipping or receiving facility as a result of being detained at a customer?" Across both years, the majority of drivers reported that they had run out of available hours at a customer facility due to detention (82.8% in 2014 and 79% in 2018).

When asked to gauge the severity of the impact of detention on HOS availability, a majority of drivers across both years reported that detention had a significant impact on their ability to comply with HOS rules (Figure 7).

Figure 7. Impact of Detention on HOS Compliance



Despite a majority of drivers reporting significant impacts on HOS compliance from detention, only 17 percent of the drivers in the 2018 dataset reported sharing their AOBRD/ELD data with the customer to document/validate detention times.

DETENTION AND DRIVER COMPENSATION

In order to reconcile the productivity impact of detention, carriers often respond by charging detention fees when drivers are delayed for an "excessive amount" of time; a plurality of both drivers and carriers reported defining "excessive delay" as being detained for more than two hours. Nearly 80 percent of respondents in the two driver surveys reported that their company collects detention fees from shippers and receivers for excessive delays. Across both years, 62.8 and 71.4 percent (2014 and 2018, respectively) of driver respondents reported receiving all or part of the detention fees collected.

Detention fees for most drivers are set up so that they are paid by the hour after two hours of being detained. The hourly rates reported by the driver respondents in the surveys ranged from $10.00 per hour to $100.00 per hour. While it is most common for a driver's detention time to start after two hours, multiple cases were reported where the driver's detention time does not start until after three, four or even six hours. There were respondents, however, who reported that detention formally started after one hour.

Driver respondents indicated that detention payment policies can be both complex and convoluted. Some survey respondents reported limitations to being compensated for detention. Examples include monetary caps (i.e. detention fees will not exceed $100), caps on time (i.e. not to be paid

for more than 6 hours of detention), or no detention fees to be paid if the driver is late to their appointment by more than 10 minutes.

As noted, drivers who receive detention fees are typically compensated via an hourly rate, but a small percentage of drivers received flat fees, or a percent of the load. It was expressed often by drivers that the detention compensation was not adequate for covering fuel expenses, or lost wages. Furthermore, a plurality of respondents reported that it is often difficult to generate the detention payments from customers. These respondents were often required to make additional phone calls to brokers or have to "fight for it" with customers. Anecdotally, one driver mentioned having to send in pictures to prove he was in his truck while being detained because the customer tried to argue that they were not able to find him when they came around with the paperwork. Other shipping and receiving facilities have a first-come-first-serve policy to avoid having to pay detention fees.

In the motor carrier survey, 79.8 percent of fleets reported charging detention fees, which aligns with the driver responses across both years. Carriers not charging detention fees listed the following as reasons for not doing so:

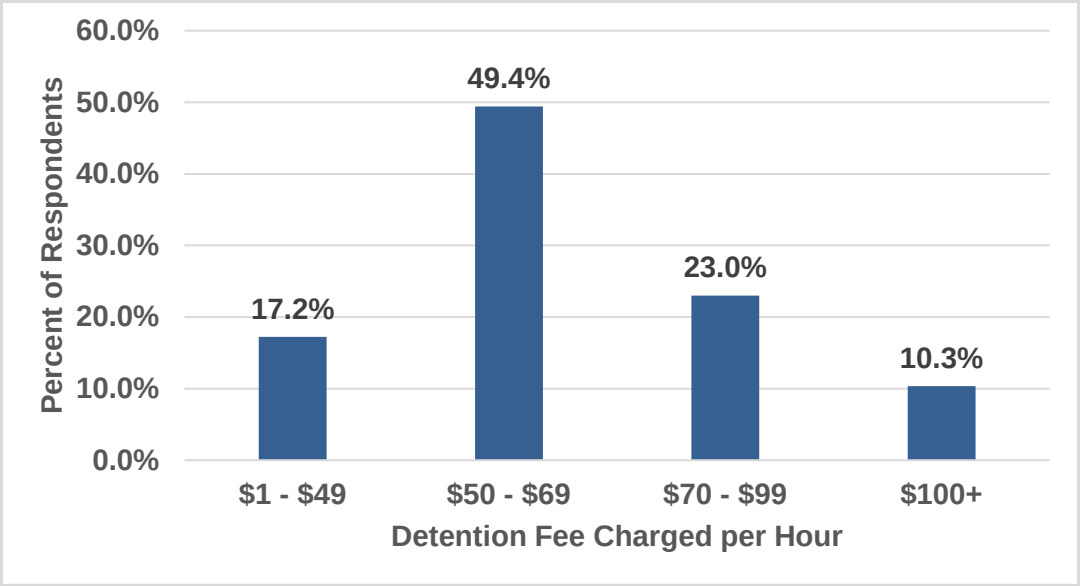
- Contract or account terms;
- Customer refusal to pay for past detention fees;
- Use of brokerage services that do not attempt to collect detention fees;
- To remain competitive and maintain good relationships with current customers.

The last bulleted explanation was most prevalent among smaller carriers. Of the motor carrier survey respondents defined as small carriers (fewer than 50 power units), 20 percent do not charge detention fees for excessive delay whereas only 10 percent of large carriers (500+ power units) do not charge fees. This ostensibly reflects a pricing strategy among small carriers to remain competitive with larger carriers.

Of the carriers responding that they charge customer detention fees, the amount charged varied across the respondents. Detailed in Figure 8 below, the majority of carriers (72.4%) charged a detention fee between $50.00 and $99.00 per hour of excessive detention with an additional 10.3 percent charging more than $100.00 per hour. With a national average per-hour operating cost of $66.65 reported in 2017,[23] detention can dramatically undermine the profitability of trips, possibly causing some trips to operate in the red. Alternatively, shipper recalcitrance toward detention fees is clear: only 29.3 percent of carriers reported they were able to collect all of the detention fees they had billed to customers.

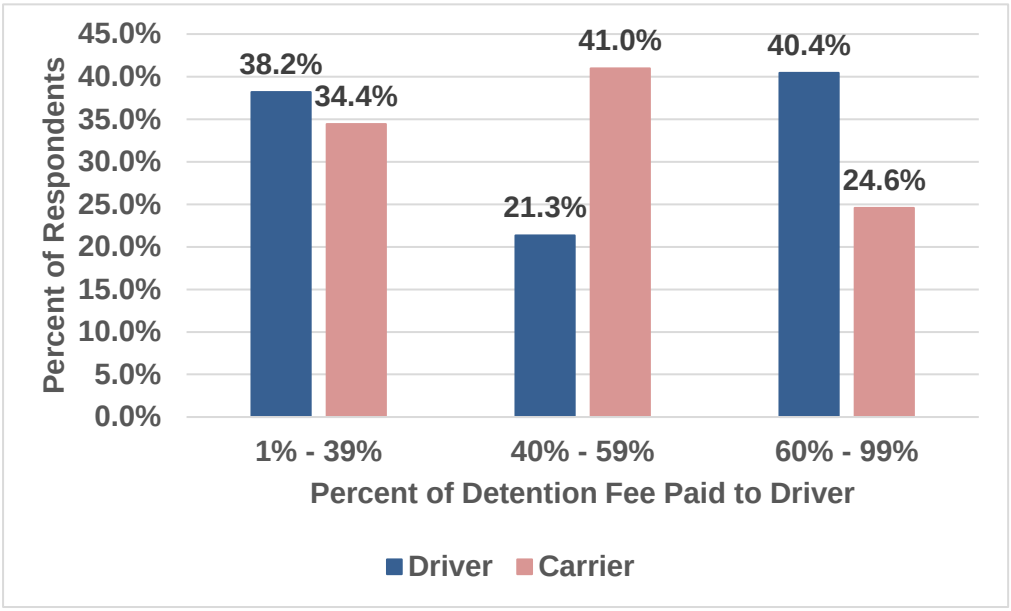
[23] Alan Hooper and Dan Murray. "An Analysis of the Operational Costs of Trucking: 2018 Update" American Transportation Research Institute. October 2018. Arlington, VA.

Figure 8: Carrier-Reported Detention Fees



Again, while detention times often affect a carrier's operating margin, driver compensation is typically impacted as well. In response to this, motor carriers often transfer detention fees to their drivers, either in total or as a percentage of the total. According to respondents, 55.5 percent of carriers and 46.3 percent of drivers reported that detention fees are partially passed to the driver, while 19.4 percent of carriers and 16.5 percent of drivers reported that all detention fees are passed to the driver. Figure 9 below details how much of the fees are passed on to the driver according to driver and carrier responses that indicated the partial transfer of fees, with 65.6 percent of carriers indicating that they transfer at 40 percent or more of the detention fee to their drivers.

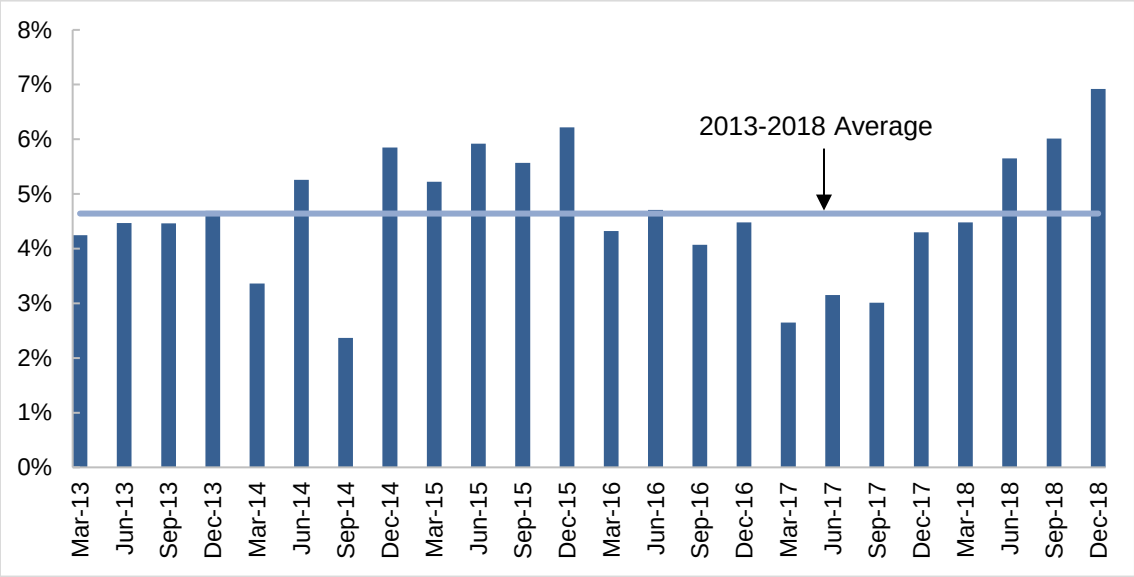
Figure 9: Percent of Detention Fees Partially Paid to Driver (2014)



DETENTION AND MOTOR CARRIER REVENUE

Clearly, delays affect both driver compensation and motor carrier profit margins. The majority of drivers are paid by the mile, and therefore the amount of time they are detained at a facility directly affects their compensation. Additionally, if a carrier cannot maintain scheduled pick-ups and deliveries, additional asset and driver resources are required – thus impacting their relatively small profit margins (Figure 10).[24]

Figure 10: Profit Margins of Publicly Traded Truckload Carriers



This revenue impact is corroborated through survey responses, with 68.8 percent of carriers, and 77.9 percent of drivers indicating customer delays had a moderate or significant impact on their weekly revenue. Additionally, smaller carriers have more detention-related financial challenges than do large carriers. Slightly more than 43 percent of small carriers reported that detention created significant negative financial impacts versus 26.3 percent for large carriers answering the same question.

In order to assess the validity, reliability and representativeness of the survey responses relating to carrier detention charges and the percentage of revenue that is transferred to the truck driver, ATRI applied its "Operational Costs" database to the response metrics.

As background, ATRI annually collects, anonymizes and releases robust financial data on marginal line-item costs associated with operating a truck for one hour (as well as one mile). In the 2018 report, the aggregated cost to operate a tractor-trailer combination truck was $66.65 per hour.[25]

To assess whether motor carriers were recovering the full cost of detention, ATRI compared average hourly detention fees charged by a plurality of respondents to the average marginal hourly cost of $66.65. The results show that 49.4 percent of carrier respondents charged between $50.00 and $69.00 per hour. While this range maps well to hourly operating costs, the average detention fee per hour across all fleet sizes at $63.71 is slightly lower than the $66.65 average per hour

[24] ACT Research TL Carrier Database
[25] Alan Hooper and Dan Murray. "An Analysis of the Operational Costs of Trucking: 2018 Update" American Transportation Research Institute. October 2018. Arlington, VA.

operating cost. This is likely due to the earlier referenced finding that smaller carriers undercharge or avoid charging for excessive detention.

To understand whether an equitable share of the detention fee is transferred to the driver, ATRI used the Operational Cost data that relates to truck driver wages and bonuses. The combined truck driver wage/benefits calculation in the 2018 report was $28.75 per hour, which represents 43 percent of total hourly operating costs.[26]

The detention survey data from the motor carrier respondents indicates that 65.6 percent of carriers transfer 40 percent or more of the detention fee to their drivers. Similarly, 61.7 percent of driver respondents indicated that they receive 40 percent or more of the detention revenue collected by their carrier (Figure 9).

These results reflect that the plurality of drivers are receiving detention revenue that closely maps to or exceeds the 43 percent share of driver wages/benefits to overall hourly operating costs. The higher revenue distribution tier (60% or more in Figure 9) appears more common among larger carriers that is likely explained as an attempt to better satisfy and retain truck drivers among the fleet sizes that have the highest driver turnover rates.[27]

DETENTION CAUSES AND POTENTIAL SOLUTIONS

Causes of Delays

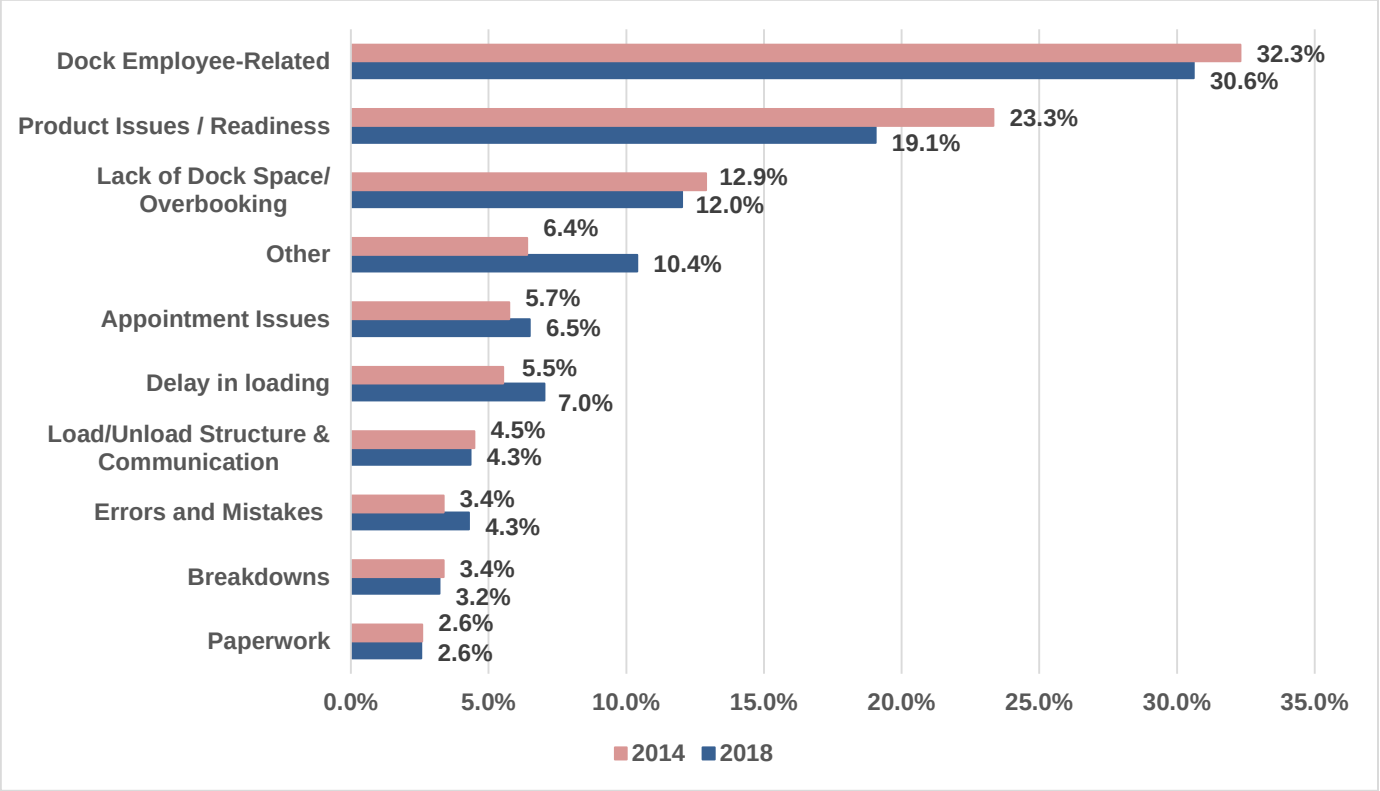
It is well understood that some detention delay is caused by externalities having nothing to do with customer actions. These might include traffic congestion, weather, and traffic incidents. That said, the analyses described herein relate to detention causes specific to customer actions. Closely associated with customer inefficiencies is the anecdotal finding that shippers are not increasing labor and dock capacity to reflect increased freight movement and truck activity.

When asked what actions caused delays, respondents in both the 2014 and 2018 surveys had similar answers. In both surveys, drivers provided a plethora of negative comments – lazy, slow, apathetic, taking too many breaks – to describe dock workers at customer facilities, in addition to facilities constantly being understaffed. Secondly, almost one in five drivers complained that their preloaded trucks were not ready by the time of their appointment, products were not ready, or were still being manufactured. The third most common complaint in both driver surveys pertained to shippers and receivers overbooking appointments, booking more trucks than there is space/docks, and not having enough equipment to load and unload trucks.

The similarities in the “cause of delay” responses between the two driver surveys likely reinforces that customer facilities have not made real improvements to their staffing, processes, accuracy or efficiency across the four year time period (Figure 11).

[26] Ibid.
[27] *Driver Turnover Falls at Large TL Carriers*. Transport Topics. January 3, 2019. Retrieved from https://www.ttnews.com/articles/driver-turnover-falls-large-tl-carriers

Figure 11. Driver Responses on Customer Actions Causing Delay



Potential Solutions

Both driver and carrier respondents identified some key customer practices that they believe improve efficiency and minimize detention delays. Respondents noted that customers who were well organized, utilized technology, maintained tightly managed schedules and appointments, and/or utilized as-needed extended business hours ("after-hours delivery") greatly reduced delays (Tables 5 and 6).

Table 5: Carrier-Reported Customer Practices that Increase Efficiency and Minimize Delay

Customer Practices	Percent
Organized, better planning, better communication	60.7%
Better scheduling, extending hours, and keeping appointments	58.4%
Available space, equipment, and employees	31.5%
Drop and hook operation	29.2%
Better skilled employees	25.8%

Table 6: Driver-Reported Customer Practices that Increase Efficiency and Minimize Delay

Customer Practices	Percent
Better scheduling or keeping appointments	43.2%
Available space, equipment, and employees	36.7%
Product is ready	34.2%
Organized and better planning	25.1%
Empathy for driver and better communication with driver	23.1%

CONCLUSION

Survey data collected in 2014 and 2018 shows that detention continues to be a significant issue for the trucking industry. Over the four-year period, detention times and the frequency of detention have both increased. Overall, delay lengths of two or more hours increased 11.2 percent between 2014 and 2018, with a 27.4 percent increase in delays of six or more hours. In addition, drivers reported increasing percentages of their appointments delayed in 2018 over 2014, with the most significant increase (39.6%) coming from drivers who reported that more than 70 percent of their pick-ups and deliveries were delayed over the past 12 months due to customer actions.

Delay lengths are even more extreme when factoring in gender as women were 83.3 percent more likely than men to be delayed six or more hours. This could possibly be attributed to the fact that a higher percent of women reported driving refrigerated trailers than men, which experienced longer delays than other vehicle types. Interviews with female drivers also identified differences in how men and women address detention, with male drivers more likely to become impatient and demand action at the customer facility.

The results from both the motor carrier and driver surveys indicate that customer detention times do significantly influence driver and carrier productivity, and compliance with federal regulations. Across both driver and carrier responses, refrigerated trailers and bulk/food haulers were detained for the greatest duration. In addition, the majority of drivers and carriers agreed that detention time of more than two hours was considered excessive, which mirrors previous research findings.

The majority of drivers reported that they had run out of available Hours-of-Service at a customer facility due to detention, and that detention had a significant impact on their ability to comply with the HOS rules. Yet, despite the ELD mandate that now provides an electronic means for recording wait times, only 17 percent of drivers reported sharing their ELD data with the customer to document and validate how long they had been detained.

In order to mitigate the impact of detention on driver compensation and carrier productivity, fleets will often charge hourly fees for excessive detention. The majority of respondents to ATRI's surveys indicated charging detention fees, with some portion of that fee being passed on to the driver. The average per hour fee charged by carrier respondents was $63.71, putting it slightly below the average per hour operating cost of $66.65 documented in ATRI's Operational Costs of Trucking research. The majority of carrier and driver respondents report that drivers are receiving 40 percent or more of that detention fee to compensate the driver for the wait time. However, the negative impact of detention on carrier revenue and driver compensation may be greater among smaller carriers (<50 power units) as 20 percent of smaller carriers indicated that they do not charge for excessive detention as a strategy to compete with larger carriers.

Carriers and drivers noted that shippers/receivers may not care about HOS constraints on the driver, likely do not understand the HOS regulations and are not held accountable for excessive delays – all of which further aggravates the issue of detention impacts on safety and productivity. The factors reported as causing the delays were almost identical between the two surveys, meaning the same causes were listed in both surveys at almost the same rate of response. This implies that shipping and receiving facilities have made little to no improvements to run more efficiently across the four-year time period.

Among the driver and carrier responses, better facility organization, better management of scheduling and appointments, and more flexible work hours were top customer practices that have contributed to increased efficiency and minimized delay.