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Chief of Police

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**COMMERCIAL MOTOR VEHICLE SAFETY AND ENFORCEMENT**



# Memorandum

**TO:** Joel Holford, Chief

**FROM:** Michael P. Callahan, TAI

**RE:** Research Proposal: Commercial Motor Vehicle Safety and Enforcement

**Date:** December 12, 2015

**Purpose**

The purpose for this research proposal is to identify an area of weakness within our police department, and to develop a method to provide the safest roadway that we can for the motoring public, traveling on Aberdeen Proving Ground. As we discussed in your office, there has been a recent increase of motor vehicle accidents involving commercial vehicles. This proposal will show statistical evidence of safety enforcement actions and the process needed to certify police officers as DOT inspectors.

**Research**

My research involving our spike in commercial vehicle involved accidents comes from the Traffic Sections internal traffic accident database. The research involving safety violations come predominantly from the Commercial Motor Carrier Safety Administration. Research pertaining to the outcome of safety violation enforcement actions is provided by third parties research and analysis organizations.

**Action Plan**

If the proposal is approved, the first step is to send individual officers to the Maryland State Police Commercial Safety Enforcement Division’s two week training course. The training is free to both the officer and the APG Police Department. Following the training course, officers will have to coordinate with outside jurisdictions in order to complete certification.

**Cost and Benefits**

Other than a few minor costs to supply inspectors with necessary equipment, there is nearly no cost to the department to get a safety enforcement team up and running. The benefits of an enforcement team are safer streets for the motoring public and our officers that patrol the streets on a daily basis.

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# **Executive Summery**

**Purpose and Method**

The purpose of this proposal is to address an area that we, as a department, have been lacking in during our enforcement efforts. Commercial vehicle traffic has become an issue as of late and was even brought up as an issue, by the public, during a town hall meeting held last month. The method of this proposal is to establish an actionable plan to combat the rise in traffic accidents within our jurisdiction involving commercial vehicles.

**Findings**

My findings during the course of this research determined that there is an increase of accidents involving commercial vehicles within our jurisdiction. It also determined that there is a course of action that we can take to make the highways that we patrol safer. Finally, I found third party research and analysis that states that the safety enforcement actions on commercial vehicles does reduce the occurrence of accidents involving these vehicles.

**Recommendations**

My recommendation is to send the four members of the Traffic Section to the next available Maryland State Police Commercial Safety Enforcement Division’s training course. Upon successful completing of all training requirements, those four officers will be fully certified Department of Transportation Inspectors. As inspectors, they will be able to enforce safety regulations that are currently not enforceable by anyone currently in our department.

**Conclusions**

The research confirms that there is an actual need for tougher safety violation enforcement on commercial vehicles. This proposed plan provides a method to combat the commercial vehicles that do not meet the safety standards and regulations at a very low cost to the department.

#### Introduction

|  |  |  |
| --- | --- | --- |
| Year | Total Number of Traffic Accidents | Accidents Involving Commercial Vehicles |
| 2010 | 315 | 35 |
| 2011 | 298 | 42 |
| 2012 | 307 | 39 |
| 2013 | 372 | 51 |
| 2014 | 366 | 69 |

An interesting trend was discovered while compiling the yearly traffic accident data. There is an increase of traffic accidents involving commercial vehicles within our jurisdiction. I checked back through past data and determined that there is an increase of over 30% over the past year’s data. An increase of over 56% has occurred since 2013. These accidents ranged from minor damages to property to accidents that resulted in life threatening injuries. Where is this information taken from? I think a citation here would be good.

As I explained to you in a prior meeting, the rise in commercial vehicle involved accidents can be attributed to the rise of business that are operating within our jurisdiction, and therefore, the rise in commercial vehicle traffic to support these new businesses. With our business community scheduled growth to continue, we can make an assumption that the number of accident that involve commercial vehicles will continue to grow as well.

This is a startling trend that must be addressed. There is a specialized enforcement action that we could pursue to combat the rise in commercial vehicle involved accidents. While working at another police department, I was certified as a Department of Transportation (DOT) Commercial Vehicle Inspector. As an Inspector, I checked commercial vehicles for safety violations and commercial vehicle operators for valid licensing. These inspections would force the vehicle owners and drivers to fix discrepancies and would reduce the amount of accidents caused by unsafe commercial vehicles.

#### Federal Motor Carrier Safety Administration

The Federal Motor Carrier Safety Administration (FMCSA) is a branch of the DOT and is responsible for the for the DOT Inspector program. Their mission is to prevent commercial vehicle involved fatalities and injuries. The FMCSA accomplishes this mission by enforcing safety regulations and targeting high-risk carriers and drivers (Federal Motor Carrier Safety Administration, 2014).

The regulations that we would enforce, within our jurisdiction, would be the same that are enforced across North America (Federal Motor Carrier Safety Administration, 2014). These are the same regulations that every commercial vehicle that travels through our jurisdiction is already responsible to abide by. However, there is simply no enforcement of these regulations in this department. Sending a number of officers to the training class would allow those officers to begin enforcing these safety regulations.

#### International Road Check

|  |  |  |  |
| --- | --- | --- | --- |
| **2013 - 2015 International Road Check:**  **Percentages of Cause for Drivers and Vehicles Placed into an Out of Service Status** | | | |
| Driver Infractions | 2013 | 2014 | 2015 |
| Hours of Service | 50.3 | 46.5 | 46 |
| False Logs | 14.8 | 13.7 | 12.6 |
| Med. DQ’ed | 10.2 | 12.7 | 7.6 |
| Drug/ Alcohol Usage | 4.9 | 1.1 | 2.1 |
| Other | 19.8 | 26 | 31 |
| Vehicle Infractions |  |  |  |
| Brake Adjustments | 19.5 | 18.7 | 18.5 |
| Brake System | 30.1 | 32 | 27.5 |
| Tire/Wheels | 10.1 | 13.8 | 13.9 |
| Lights | 17.6 | 13.5 | 14.7 |
| Safe Loading | 11.7 | 11.5 | 17.3 |
| Steering | 2.3 | 2.4 | 3.8 |
| Frame | 1.5 | 1.3 | .1 |
| Suspension | 5.8 | 5.2 | 2.1 |
| Coupling Devices | .8 | .9 | .7 |
| Driveline/Driveshaft | 0 | 0 | .6 |
| Fuel System | .6 | .4 | .5 |
| Exhaust System | .4 | .3 | .3 |

For the past 28 years, the Commercial Vehicle Safety Alliance conducts a nationwide enforcement effort named “International Road Check” (Commercial Vehicle Safety Alliance, 2015). International Road Check is a 72 hour enforcement effort conducted across North America that targets commercial vehicle safety violations. It provides statistical evidence of the current trends of commercial vehicle safety.

During the 2015 International Road Check, 4.8 percent of drivers were placed in an out of service status (Commercial Vehicle Safety Alliance, 2015). That means over the course of the three day enforcement 2,160 commercial vehicles were placed out of service because of the driver. The reasons for the drivers being placed in an out of service status include:

* Violating hours of service
* Keeping false logs
* Being medically disqualified
* Being under the influence of drug and/or alcohol

During the same enforcement period, International Road Check placed 17.5 percent of the vehicles inspected in an out of service status. 17.5 percent represents 15,746 commercial vehicles were placed out of service due to a safety violation of the commercial vehicle (Commercial Vehicle Safety Alliance, 2015). There are many reasons why a commercial vehicle would be placed in an out of service status during a safety inspection:

* Brakes out of adjustment I changed this to maintain parallelism
* Brake system violation
* Violation of the tires or wheels
* Inoperable lights
* Unsafe loading
* Improper steering limits
* Defects of the frame
* Defective suspension
* Damaged coupling device
* Damaged driveline
* Damaged fuels system
* Exhaust system.

Over the course of the three day enforcement, International Road Check 2015 placed 107,884, or 22.3 percent, of the vehicles and drivers inspected out of service. In simpler terms, more than one out of every five commercial vehicleswere pulled off to the side of the road due to driver or vehicle safety violations. On average, our jurisdiction sees about 120 commercial vehicles per day. If we had the capability to perform a safety inspection on each one of these vehicle, we would take 24 unsafe vehicles off of the road every day.

#### Washington Crash Study

During a crash study conducted in the state of Washington, it was determined that commercial vehicles are involved in a higher rate of fatal accidents than other vehicle types. During the time of the study, commercial vehicles were only responsible for six percent of the vehicle accident reported to the police (Stein & Jones, 1988). However, they were involved in 12 percent of all crashes that resulted in the death of a vehicle occupant. In nearly 75 percent of fatal accidents involving a commercial vehicle, the fatality occurred in the non-commercial vehicle.

The main cause for this disproportionate rate of fatality crashes was mostly caused by the increased weight of the commercial vehicle. In other words, the commercial vehicle is so much larger and heavier that other vehicles on the road that the occupants of the other vehicle are more at risk. The study also determined that safety violations, with either the vehicle or the operator, were the largest contributing cause of the accidents (Stein & Jones, 1988).

#### Federal Highway Administration Study

The Federal Highway Administration, Office of Motor Carrier, conducted a study of 223 crashes involving a commercial vehicles. In all 223 crashes, the commercial vehicle or the operator was determined to have a safety violation. These violations were divided into five risk categories: potential immediate factor leading to crash, potential single eventual factor leading to crash, potential contributing factor to the crash, unlikely potential contributing factor to the crash, or little or no connection to the crash. The five risk categories were then divided into two sub categories (Office of Motor Carrier Research and Standards, 1999). The safety violation would either placed the vehicle or operator into an out of service status or the violation would be considered a non-out of service violation.

The study concluded that 46 percent of the commercial vehicles involved in the accidents would have been placed into an out of service status if they were inspected prior to the accident (Office of Motor Carrier Research and Standards, 1999). That means that 103 fatal accident would have been avoided had a level one inspection been performed on those particular commercial vehicles.

#### Creating the Unit

The implementation of a commercial vehicle enforcement unit within our department is the best way to lower the number of commercial vehicle involved accidents. However, it is not something that we can start tomorrow without any forethought. This process must be thought out and communicated properly to all of those involved.

The first problem that must be overcome is the lack of a certified inspector in our department. Because a certified inspector is required to supervise the first 30 inspections, we must find a way to work with an inspector from another department. I would recommend working with the Maryland Transportation Authority’s Commercial Vehicle Enforcement Division, whichoperates the weight station off of Route One.

The second problem is the tools that are required to complete the Level One Safety Inspection. A short list of the tools necessary to complete an inspection is as follows: a laptop, a printer, forms from the Commercial Vehicle Enforcement Division, wheel chalks, a mechanics creeper, a commercial vehicle rated tire pressure gauge, a tire depth gage, measuring tape, and a brake cam measuring tool. Only one or two of these items can be found in our department’s supply room. These items will need to be ordered before an inspector can perform an inspection. From past experiences, these tools should cost approximately $350 to $400 per inspector. An additional $600 should be allocated to purchase twolaptops and two printers that can be shared between the inspectors. In following years, more laptops and printers could be purchased until each inspector has his or her own.

#### Who should be in the unit?

The Traffic Accident Investigation Section’s mission is to ensure the safety of the motoring public traveling within our jurisdiction. Therefore, the enforcement of commercial vehicle safety regulations would fall perfectly within this mission. The Traffic Section has the available time to perform inspections without taking away from other requirements and duties. All four members of the Traffic Section have expressed interest in becoming DOT Inspectors. As Inspectors, members of the Traffic Section would be available to assist other sections when they come across enforcement issues with commercial vehicles.

#### Training

There is a considerable amount of training that must take place before an officer can become a certified DOT Inspector. A two week training program is provided, at no cost to our department, by the Maryland State Police Commercial Vehicle Enforcement Division (Maryland State Police, n.d.). After the two week training course ,32 inspections must be conducted with a certified Inspector.

When I attended, the initial two week training program was broken into two sections; the driver and the vehicle. The first week covers all of the regulations that covers the operator of the commercial vehicle. Ensuring the operator has the proper license to drive that type of motor vehicle, medical certificate regulations, and operating times are the focus for this week (Department of Transportation National Training Center, 2013). Enforcing these regulations can prevent accidents that occur due to the driver operating a vehicle without the proper license or medical card. It could also prevent accidents that occur because of fatigue from operating the vehicle over the legal time limits.

The second week of training is dedicated to the applicable laws that pertain to the commercial vehicle. Laws that pertain to the proper registration of the vehicle, the safety rating for the vehicle, and the proper procedures to complete a safety check of the motor unit and the trailer unit are covered during this week. The safety check is a process where all of the safety equipment is checked on the commercial vehicle (Department of Transportation National Training Center, 2013). Everything from the turn signals to the brake lines are checked to ensure they comply with the safety regulations set by the Federal Motor Carrier Safety Administration.

After the two week training course, the officer is still not considered to be a DOT Inspector. He or she is allowed to write violations that apply to the driver. However, the officer is still not able to write violations that apply to the vehicle’s safety. The officer must complete 30 safety inspections with a certified inspector. Because the safety inspection process is so in depth, this time with a certified inspector is imperative to ensure the inspection is done properly. After the first 30 inspections are completed satisfactorily, the officer must complete two inspections with a DOT Instructor at a Maryland State Police Commercial Vehicle Enforcement Division weigh station. Only after the successful completion of the 32nd inspection will the officer become a certified inspector.

I contacted the Maryland Transportation Authority’s Commercial Vehicle Enforcement Division’s last week. They expressed that they would be very happy to assist us with the initial 30 inspections that are required for certification. They also stated that the only thing they would need from our department was an authorization form from yourself stating that we were authorized to work at their weigh station.

I also contacted the Maryland State Police Commercial Vehicle Enforcement Division about assistance with the certification process. Captain Gelormino, Division Commander, stated that if we had difficulty reaching the initial 30 inspections, he would send one of his inspectors to assist us with the process.

#### Time table of implementation

When we last discussed this issue, I told you that the Maryland State Police Commercial Vehicle Enforcement Division was providing a training class in January 2016. Unfortunately, that class has been postponed until March 2016. This ,of course, pushes back the estimated time of implementation for the unit. If the March class goes off without a hitch, and with the help of the Maryland State Police and Maryland Transportation Inspectors, I believe that we can have four fully certified instructors by the end of June 2016.

#### Conclusion

The research found during this proposal has indicated that there is a significant spike, over the past two years, in commercial vehicle involved accidents. It also found that there is potential for far more unsafe commercial vehicles traveling on our highways than just those involved in the reported accidents. It continued to show that enforcement efforts can make a real impact upon the number of unsafe vehicles on the road and potentially lower accidents. Finally, the research showed that for a relatively small financial burden, to the department’s budget, we could have a fully operational enforcement unit up and running by June 2016.

#### References

Commercial Vehicle Safety Alliance. (2015). *International Roadcheck*. Retrieved from http://www.cvsa.org/programs/int\_roadcheck.php

Department of Transportation National Training Center. (2013). *North American Standard Part A (Driver).*

Department of Transportation National Training Center. (2013). *North American Standard Part B (Vehicle).*

Federal Motor Carrier Safety Administration. (2014, March 31). *Mission*. Retrieved from https://www.fmcsa.dot.gov/mission/about-us

Maryland State Police. (n.d.). *Commercial Vehicle Enforcemnt Division*. Retrieved from http://mdsp.maryland.gov/Organization/Pages/CommercialVehicleEnforcementDivision.aspx

Office of Motor Carrier Research and Standards. (1999). *Risk-based Evaluation of Commercial Motor Vehicle Roadside Violations: Process and Results.* Washington, DC: Federal Highway Administration, Office of Motor Carrier. Retrieved from <http://purl.fdlp.gov.ezproxy.umuc.edu/GPO/gpo6567>

Stein, H. S., & Jones, I. S. (1988). Crash Involvement of Large Trucks by Configuration: A Case-Control Study. *American Journal Of Public Health, 78(5)*, p491-498. Retrieved from MasterFILE Premier.

I really like the way you have written this paper. You have a lot of documented factual data, and you clearly presented it appropriately to your audience. Very good job!

Contents: 10

Format: 5

Audience: 5

Mechanics: 4.5

Grade: 24.5=245 good job!