Commercial Vehicle Safety - 2014

COMMERCIAL VEHICLE SAFETY IN LOUISIANA An Analysis of Truck Crashes for 2014

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Summary

In 2014, the total number of reported CMV crashes increased by 5.7% compared to 2013. The number of fatal CMV crashes increased from 83 in 2013 to 91 in 2014, an increase of 9.6%. The number of injury CMV crashes increased slightly from 1582 to 1621 during the same period, an increase of 2.5%.

The percentage of CMV drivers in fatal crashes cited for violations decreased in 2014 compared to 2013. The percentage of violations in fatal crashes that CMV drivers received citations decreased from 34.8% in 2013 to 29.2% in 2014. Careless operation and failure to yield were the most frequent citations. In injury and property damage crashes, the driver of the CMV was cited for violations 36.8% and 39.1% of the time, respectively. Within this same year, careless operation accounted for the majority of violations committed in association with commercial vehicle crashes. Careless operation made up 25.8% of all violations given to the driver of the CMV in fatal crashes and 38.0% in all crashes. Other violations with relatively high occurrence rates were failure to yield, with 25.8% in fatal and 12.4% in all crashes. Since careless operation is often a proxy for speed violations, we can look at the combined percentage of speed and careless operation) make up 29.0% of all violations the CMV driver receives. In all CMV crashes, this percentage is 39.1%. When failure to yield is included, these percentages increase to 54.8% for fatal crashes and 51.4% for all crashes.

The manner of collision most common in all CMV crashes are rear-end types at 32.3% and non-collision types (single vehicle crashes) at 17.8%. For fatal crashes, the types were head-on collisions at 24.2%, rear-end collisions at 22.0%, right angle collisions at 19.8%, and non-collision with motor vehicle crashes at 19.8%.

During 2014, 28.9% of all CMV crashes in Louisiana occurred on interstates, 34.2% occurred on state highways, and 19.2% occurred on U.S. highways. In 2013, the respective percentages were 25.9%, 35.5%, and 18.8%. From 2013 to 2014, the number of fatal interstate crashes decreased from 23 to 23. U.S. highways experienced an increase in fatal crashes of 71.4% and state highways saw an increase of 5.6%. Thus, the overall increase in CMV related fatalities of 9.8% was largely due to the increase of fatalities on US highways, the increase of fatalities on state highways, and the decrease of fatalities on interstates.

The number of fatal CMV crashes in work zones increased from 2 to 11 from 2013 to 2014. In addition, the number of fatal crashes within 5 miles of the construction zone (construction zone plus 5 miles on either end) increased by 33.3%, namely from 6 to 8. However, the number of fatal crashes in the 5 miles approaching the construction zone from either end (excluding the construction zones) decreased from 4 in 2013 to 3 in 2014. These counts are based on the construction schedule provided by the LA DOTD and may thus differ from the actual number of crashes occurring in construction zones because the schedule may not accurately reflect the actual times work was being done.

Overview

This section provides an overview of the most important issues relating to CMV crashes in 2014 and trend data for the past five years. Table 1 depicts CMV crashes from 2009 to 2014 and shows that the fatal CMV crashes have increased by 9.6% from 2013 to 2014 while the 5-year change in fatal CMV crashes was 23.0%. The CMV involved injury crashes increased by 2.5% while the CMV involved PDO crashes increased by 8.5% from 2013 to 2014. The total CMV crashes increased by 6.0% from 2013 to 2014, more than the increase observed for all vehicle crashes, which was 1.9%.

		CMV C	rashes		CMV	Crash	Percent	tages	All Crashes			%CMV				
Year	Fatal	Injury	PDO	Total CMV	Fatal	Injury	PDO	Total CMV	Fatal	Injury	PDO	Total	Fatal	Injury	PDO	Total
2009	74	1556	1890	3520	2%	44%	54%	2%	729	19958	109873	155980	10.2%	7.8%	1.7%	2.3%
2010	96	1579	2022	3697	3%	43%	55%	3%	643	18178	104596	147740	14.9%	8.7%	1.9%	2.5%
2011	86	1612	1968	3666	2%	44%	54%	2%	630	18216	105799	149798	13.7%	8.8%	1.9%	2.4%
2012	93	1600	1997	3690	3%	43%	54%	2%	654	18514	107960	153215	14.2%	8.6%	1.8%	2.4%
2013	83	1582	2105	3770	2%	42%	56%	2%	651	18246	109833	154026	12.7%	8.7%	1.9%	2.4%
2014	91	1621	2284	3996	2%	41%	57%	3%	646	18498	111443	156901	14.1%	8.8%	2.0%	2.5%
1 Yr % Change	9.6%	2.5%	8.5%	6.0%	3.4%	-3.3%	2.4%	4.1%	-0.8%	1.4%	1.5%	1.9%	1.3%	0.1%	0.1%	0.1%
5 Yr % Change	23.0%	4.2%	20.8%	13.5%	8.3%	-8.2%	6.5%	12.9%	-11.4%	-7.3%	1.4%	0.6%	3.9%	1.0%	0.3%	0.3%

Table 1: CMV Crashes 2009-2014

The number of CMV crashes is expected to follow the trend of all crashes. Thus, the CMV crashes as a percent of all crashes may provide some insight in how programs specifically designed for the reduction of CMV crashes have worked. Fatal CMV crashes as a percent of all fatal crashes increased in 2014 by 1.34 percentage points from 2013 while the CMV injury crashes as percent of all injury crashes increased by 0.09 percentage points from 2013.



Figure 1: CMV and Non-CMV Crashes 2013-2014

Figure 1 highlights the number of all crashes and shows the CMV crashes from 2009 to 2014. There were 226 more CMV crashes and 2875 more non-CMV crashes compared to 2013. In addition, CMV crashes accounted for 2.5% of all crashes in 2014, which is about the same as 2013.



Figure 2: CMV Crashes by Severity: 2009-2014

Figure 2 shows CMV crashes by severity. While injury crashes for all motor vehicles increased by 1.4% from 2013 to 2014, CMV injury crashes increased by 2.5% in the same period.

CMV property damage crashes increased by 8.5% from 2013 to 2014, while all CMV crashes combined increased by 6.0%.



Figure 3: CMV and Non-CMV Fatal Crashes 2009-2014

Figure 4: Fatal CMV Crashes by Year: 2009-2014



Figures 3 and 4 illustrate fatal non-CMV and CMV crashes from 2009 to 2014. While the decrease in the number of non-CMV fatal crashes was 1% from 2013 to 2014, the CMV fatal crashes experienced a large increase of 9.6%, which amounts to more fatal CMV crashes and 7% more fatalities. Figure 4 shows the trend of fatal CMV crashes which indicates that 2009 had the lowest number of CMV crashes in the past five years. In fact 2009 had the lowest number of CMV fatal crashes since at least 1999 when the yearly report was first compiled. The 2014 data shows that the downward trend in fatal CMV crashes experienced from year to year has not continued over the past three years.

Due to a steady increase in Louisiana traffic over the years, the number of crashes should be adjusted by the vehicle miles traveled (VMT) by commercial vehicles. In past reports vehicle miles traveled for CMVs were obtained from the FMCSA website (http://ai.fmcsa.dot.gov/CrashProfile/TruckBusFatalityRateAdj.asp) which was, however, discontinued after 2007. The new FMCSA website

(http://ai.fmcsa.dot.gov/CrashProfile/TruckBusFatalityRateNew2.asp) now proposes to use total VMT rather than commercial vehicle VMT. Table 2 depicts the fatalities, injury crashes, PDO crashes, and all crashes per 100 million miles traveled for CMVs and all vehicle crashes. The fatality rate for CMV crashes increased slightly from 0.17 in 2013 to 0.19 in 2014. It is important to note that with the new measure used by FMCSA the CMV rates cannot be compared with the rates for all vehicles because of the use of total VMT to normalize CMV crashes.

	CMV	' Fatality Rate	e and Crash F	Rates	Fa Crash F			
Year	Fatality Rate	Injury Crash Rate	PDO Crash Rate	Total CMV Crash Rate	Fatality Rate	Injury Crash Rate	PDO Crash Rate	Total Crash Rate
2009	0.16	3.47	4.21	7.84	1.62	44.48	244.87	347.63
2010	0.21	3.47	4.45	8.13	1.41	39.99	230.08	324.99
2011	0.18	3.47	4.23	7.88	1.35	39.17	227.48	322.08
2012	0.20	3.42	4.27	7.89	1.40	39.59	230.86	327.63
2013	0.17	3.31	4.41	7.89	1.36	38.21	229.98	322.51
2014	0.19	3.36	4.73	8.28	1.34	38.34	230.96	325.17

Table 2: CMV and All Crashes 2009-2014 per 100 Million Miles Traveled

Analysis of Crashes by Month

Since monthly crash data fluctuates considerably from year to year, it is difficult to attribute a monthly effect on crash counts. Specifically, the fatal crash count exhibits large variations since small crash numbers vary more than large crash numbers. Nevertheless, as the data in Table 3 indicates, September had the highest number of fatal crashes with 13 fatal crashes and 15 deaths.

The analysis of the CMV crash data for 2014 indicates yearly fatal crash counts in any given month may vary from 5 to 13 with the three highest months being September, December, and March with 15, 13, and 11 people killed.

MONTH	FATAL CRASHES	TOTAL KILLED	INJURY CRASHES	PDO	TOTAL CRASHES	TOTAL TRUCKS AND BUSSES	% CRASHES
January	5	5	115	197	317	348	8%
February	6	9	114	167	287	312	7%
March	10	11	157	200	367	390	9%
April	5	5	136	185	326	349	8%
May	7	8	152	179	338	365	8%
June	8	8	107	176	291	315	7%
July	8	11	134	192	334	350	8%
August	5	6	141	194	340	365	9%
September	13	15	148	215	376	398	9%
October	5	5	164	200	369	409	9%
November	7	8	132	175	314	331	8%
December	12	13	121	204	337	362	8%
TOTAL	91	104	1621	2284	3996	4294	100%

 Table 3: CMV Crashes by Month in 2014

Violations

There are two ways one can evaluate the citations in CMV crashes, depending on whether we use the number of drivers or the number of citations as the denominator. In a crash, either the CMV driver or the non-CMV driver or both may receive a citation. Thus, when the number of CMV drivers and the number of car drivers are used as the denominator, respectively, the two percentages do not add up to 100%. They may be lower or higher than 100% if there are many crashes where no driver received a citation, and this percentage will be higher than 100% if there are many crashes where both drivers received a citation. For instance, in 2014 the two percentages added up to more than 100% for fatal crashes. The average of both percentages approximates the percentage of all drivers involved in CMV crashes that received citations.

The percentage of CMV drivers in fatal crashes who received a citation has decreased by 6 percentage point from 2013 to 2014. In 2014, of all the CMV drivers in fatal crashes, 29% were cited for a violation compared to 35% in 2013. For injury and property damage crashes, 47% and 47% of the CMV drivers were cited for violations, respectively. Also 74% of non-CMV drivers received violations in fatal crashes in 2014. These figures show that in fatal crashes, non-CMV drivers continued to have a higher percentage of citations than CMV drivers, while 47% of CMV drivers and 55% of non-CMV drivers received citations in PDO crashes, the percentages of CMV drivers receiving citations in injury crashes was 47%, which is lower than the 50% received by non-CMV drivers.

Secondly, we can look at the percentage of citations going to CMV versus the non-CMV driver. These two percentages add up to 100% all of the time. Even if the percentage of all citations in crashes would decline to say 10%, still half, for example, could go to the CMV driver and half could go to the non-CMV driver. The percentage of citations in fatal crashes going to the CMV driver has increased from 2013 to 2014, i.e. from 34% in 2013 to 35% in 2014 (see Table 4b). For injury and property damage only crashes (PDO) the CMV driver received 48% and 52% of violations, respectively.

	As Percentage of Drivers											
VIOLATIONS	FATAL C	RASHES	INJURY C	RASHES	PD	00	TOTAL CRASHES					
YEAR	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver				
2009	27%	66%	52%	47%	49%	53%	50%	50%				
2010	35%	65%	52%	49%	50%	55%	51%	53%				
2011	30%	49%	52%	47%	50%	52%	50%	49%				
2012	36%	56%	51%	46%	48%	54%	49%	50%				
2013	35%	63%	49%	48%	49%	53%	48%	51%				
2014	29%	74%	47%	50%	47%	55%	47%	53%				
These are the percentage of drivers receiving citations.												

Table 4a: Violations as a Percentage of Drivers

			As Perce	ntage of Vio	lations				
VIOLATIONS	FATAL C	RASHES	INJURY C	RASHES	PD	00	TOTAL CRASHES		
YEAR	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	CMV Driver	Passenger Car Driver	
2009	29%	71%	52%	48%	52%	48%	51%	49%	
2010	36%	64%	52%	48%	53%	47%	52%	48%	
2011	36%	64%	53%	47%	55%	45%	54%	46%	
2012	43%	57%	53%	47%	52%	48%	52%	48%	
2013	34%	66%	49%	51%	52%	48%	50%	50%	
2014	35%	65%	48%	52%	52%	48%	50%	50%	
These are all the citations in a crash and the percentages going to either CMV driver or other car driver.									

 Table 4b: Violations as a Percentage of all Violations

The different views become apparent when the total number of citations given to the drivers decline over time. In 2014, citations in fatal crashes were given more frequently (35% & 65%) of the time for (CMV, Non-CMV), an increase for CMV drivers and a decrease for Non-CMV drivers from (34% & 66%) in 2013. This means, approximately 35% of the CMV drivers in fatal CMV crashes received a citation in 2014, while 34% received a citation in 2013, an increase of about 0.4% percentage points. Thus while the percentage of citations in fatal crashes has increased considerably, the relative distribution of these citations changed in the past year with 35% going to the CMV driver.

Figure 5 reiterates the findings expressed above, namely that the relative percentage citations going to CMV drivers versus non-CMV drivers in fatal CMV crashes have been relatively stable over the past years with roughly one third of citations going to the CMV driver and the remaining going to the non-CMV driver.



Figure 5: CMV and Non-CMV Driver Violations in Fatal Crashes: 2009-2014

VIOLATIONS	FA CRA	TAL SHES	IN. CRA	IURY SHES	Р	DO	TC CRA	OTAL SHES	
CARELESS OPERATION	8	25.8%	299	36.8%	451	39.1%	758	38.0%	
CUT CORNER ON LEFT TURN	0	0.0%	4	0.5%	11	1.0%	15	0.8%	
CUTTING IN, IMPROPER PASSING	0	0.0%	26	3.2%	54	4.7%	80	4.0%	
DISREGARDED TRAFFIC CONTROL	2	6.5%	24	3.0%	30	2.6%	56	2.8%	
DRIVER CONDITION	0	0.0%	16	2.0%	13	1.1%	29	1.5%	
DRIVING LEFT OF CENTER	0	0.0%	15	1.8%	18	1.6%	33	1.7%	
EXCEEDING SAFE SPEED LIMIT	0	0.0%	4	0.5%	15	1.3%	19	1.0%	
EXCEEDING STATED SPEED LIMIT	1	3.2%	1	0.1%	1	0.1%	3	0.2%	
FAILED TO DIM HEADLIGHTS	0	0.0%	1	0.1%	0	0.0%	1	0.1%	
FAILED TO SET OUT FLAGS,	0	0.0%	1	0.1%	2	0.2%	3	0.2%	
FAILURE TO SIGNAL	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
FAILURE TO YIELD	8	25.8%	114	14.0%	125	10.8%	247	12.4%	
FOLLOWING TOO CLOSELY	0	0.0%	106	13.0%	88	7.6%	194	9.7%	
IMPROPER BACKING	0	0.0%	18	2.2%	31	2.7%	49	2.5%	
IMPROPER PARKING	2	6.5%	8	1.0%	8	0.7%	18	0.9%	
IMPROPER STARTING	0	0.0%	3	0.4%	0	0.0%	3	0.2%	
MADE WIDE RIGHT TURN	0	0.0%	7	0.9%	8	0.7%	15	0.8%	
NO VIOLATIONS	75		910		1286		2271		
OTHER	4	12.9%	60	7.4%	101	8.8%	165	8.3%	
OTHER IMPROPER TURNING	0	0.0%	21	2.6%	34	2.9%	55	2.8%	
TURNED FROM WRONG LANE	0	0.0%	12	1.5%	18	1.6%	30	1.5%	
UNKNOWN	6	19.4%	63	7.7%	107	9.3%	176	8.8%	
VEHICLE CONDITION	0	0.0%	10	1.2%	38	3.3%	48	2.4%	
TOTAL	31	100.0%	813	100.0%	1153	100.0%	1997	100.0%	
Column %	2	9%	4	7%	4	7%	4	7%	
Row %	3	5%	48%		5	2%	50%		

Table 5: Type of Violation of CMV Driver

Table 5 shows the types of violations drivers receive. In 2014, failure to yield and careless operation violations accounted for the majority of violations of the CMV driver in fatal crashes, 16 occurrences or 51.61%, associated with fatal commercial vehicle crashes. The percentage of careless operation of CMV drivers was 36.78% for injury CMV crashes and 39.12% for PDO crashes.

Manner of Collision

Table 6 shows the manner of collision. "HEAD-ON", "REAR END", and "RIGHT ANGLE" collisions make up more than 82.2% [(22 + 20 + 18) / (91 - 18)] of all fatal multi-vehicle CMV crashes. This is a 17.9 percentage point increase from 64.3% in 2013 for these three types of collisions. Also, the non-collision fatal CMV crashes increased from 13 in 2013 to 18 in 2014.

	1		I		I		I	
MANNER OF COLLISION	FA CRA	ATAL ASHES	IN. CRA		PDO		TC CRA	SHES
HEAD-ON	22	24.2%	60	3.7%	28	1.2%	110	2.8%
LEFT TURN - ANGLE	0	0.0%	47	2.9%	56	2.5%	103	2.6%
LEFT TURN - OPPOSITE DIRECTION	2	2.2%	66	4.1%	53	2.3%	121	3.0%
LEFT TURN - SAME DIRECTION	0	0.0%	34	2.1%	44	1.9%	78	2.0%
NON-COLLISION WITH MOTOR VEHICLE	18	19.8%	198	12.2%	495	21.7%	711	17.8%
OTHER	0	0.0%	93	5.7%	190	8.3%	283	7.1%
REAR END	20	22.0%	585	36.1%	687	30.1%	1292	32.3%
RIGHT ANGLE	18	19.8%	238	14.7%	241	10.6%	497	12.4%
RIGHT TURN - OPPOSITE DIRECTION	0	0.0%	11	0.7%	12	0.5%	23	0.6%
RIGHT TURN - SAME DIRECTION	3	3.3%	16	1.0%	32	1.4%	51	1.3%
SIDESWIPE - OPPOSITE DIRECTION	3	3.3%	58	3.6%	56	2.5%	117	2.9%
SIDESWIPE - SAME DIRECTION	5	5.5%	215	13.3%	388	17.0%	608	15.2%
Total	91	100.0%	1621	100.0%	2282	100.0%	3994	100.0%

Table 6: Manner of Collision

High Crash Locations in Interstate Corridors

There are two main corridors in Louisiana, (1) Interstate 10/12 corridor in south Louisiana from the Texas state line to the Mississippi state line, and (2) Interstate 20 corridor in north Louisiana from the Texas state line to the Mississippi state line. Both corridors have significant interstate traffic.

Interstate 10/12 Corridor

The Interstate 10/12 Corridor includes 16 parishes, and these parishes accounted for 55% of fatal CMV crashes and 59% of all crashes in 2014.

Figure 6: Interstates 10/12 Corridor



The corridor includes Louisiana Interstates 10, 110, 310, 610, 12, 55, and parts of 59 as shown in Figure 6. The major US Highways along the corridor are US 90, 190 and 61.

The cumulative percentage graphs provide an easy to understand method to identify high crash locations. For any interval of mileposts, the steeper the graph, the more crashes occur within the mileposts. For instance, Figure 7 shows the cumulative frequency of commercial vehicle crashes for 2014 and 2013 by milepost on interstate 10 along with all crashes. The comparison between 2013 and 2014 shows the percentage of crashes within the first 50 miles of Interstate 10 has increased slightly from 20% to 21%. The most obvious area for CMV crashes in 2014 was between milepost 210 and 240.





Figure 8a: Interstate 10 in New Orleans Mileposts 200 to 230

The interstate section of I10 between West Baton Rouge and the I10/12 split has about 3% of all crashes on I10, but about 5% of all CMV crashes. These crashes are shown in Figure 8b.

Figure 8b: Interstate 10 Between WBR and I110-12



Figure 8c: Interstate 10 Bridge in Baton Rouge

Figure 8c shows the CMV crashes that occurred on the I10 bridge in Baton Rouge.

Figure 9 shows a decrease in the cumulative percent of CMV crashes within the first 20 miles of Interstate 12 from 20.2% in 2013 to 19.8% in 2014.





Figure 10 shows the Interstate 12 corridor between Baton Rouge and Slidell with considerably fewer crashes than in 2013.

Figure 10: Interstate 12 Crashes



Interstate 20 Corridor

Figure 11: Interstate 20 Corridor

The Interstate 20 corridor includes 10 parishes. The three parishes (Caddo, Ouachita, and Bossier) account for 9% of all commercial vehicle crashes in 2014. As illustrated in Figure 11, the corridor includes Interstate 20, 220 and parts of Interstate 49. The major US highways along the corridor are 61, 65, 71, 80, 165, and 167.

Figure 12 shows the cumulative frequency of commercial motor vehicle crashes by milepost on Interstate 20 along with all crashes. The percentage of CMV crashes within the first 50 miles of Interstate 20 decreased in 2014 from 49% to 47%.

Figure 12: Cumulative Frequency of CMV Crashes on Interstate 20



Work-Zone Crashes

Work zones are of specific interest for enforcement activities because they are potential hotspots for crashes. The work zones were derived from a DOTD file containing all scheduled work on interstates. Because this schedule may not accurately reflect the actual construction, the numbers in Table 7a are likely to be inflated. There are also workzone indicators on the crash report form (Work Zone Indicator (Yes/No)) and a Road Condition field with 14 options, two of which are Construction Repair and Construction No Warning). However, these crash report fields have drawbacks as well. It may not be filled out consistently in cases where there is a work zone but no work is performed. Also, since many of the crashes occur before the work zone when traffic slows down or comes to a standstill, these crashes may be missed in the crash report. This analysis will include the 5 miles of the approach to the construction zone. Since we do not have the detailed information about the lane the construction is in or if both lanes are under construction, we include 5 miles on either side of the construction zone indicated in the work schedule by DOTD. Table 7a shows that the number of fatal CMV crashes on all interstates remained constant at 23 in 2013 and 2014 while the number of fatal crashes in construction zones increased by 450.0% from 2 to 11 when only the schedule is used. However, the number of crashes must be adjusted by the construction time and miles under construction. For instance, the year 2014 had 218% more construction zone day miles, i.e. miles times days under construction. We will therefore adjust the crash count by the miles multiplied by the days under construction to normalize the count. This adjustment does not take into consideration the VMT of CMV within the construction zones because it is not readily available. When miles and days under construction are taken into account, fatal crashes increased from 5.0 fatal crashes per day-mile in 2013 to 8.6 fatal crashes per day-mile in 2014.

The number of fatal crashes in the \pm -5 miles of the approach to the construction zones decreased from 4 in 2013 to 3 in 2014 and the number of fatal crashes per day mile decreased from 8.7 in 2013 to 2.6 in 2014. Also seen in Table 7a is an increase in all CMV crashes within the \pm -5 miles that include the construction zones, i.e., from 202 in 2013 to 573 in 2014, an increase of 183.7%, while the number of crashes within construction zones also increased from 105 in 2013 to 414 in 2014, an increase of 294.3%.

Table 7a: Work-Zone CMV Crashes on Interstates (2013-2014) using DOTD Schedule Only

Within 5 miles of construction zone refers to 2 times 5 miles plus the length of construction ## In 5 miles approach to construction zone refers to only the 5 miles on either side of the construction zone excluding the construction zone

			2014				201	3		Percent Change			
	WHERE	FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL
ALL CMV CRASHES ON INTER-STATES	Count	24	374	688	1086	23	315	569	907	4.3%	18.7%	20.9%	19.7%
	Per 100K Miles	7.3	114.5	210.6	332.4	7.0	96.4	174.2	277.6	4.3%	18.7%	20.9%	19.7%
CONSTRUCTION	Count	7	131	109	247	1	22	29	52	600.0%	495.0%	275.9%	375.0%
ZONES	Per 100K Day-Miles	9.9	185.5	154.4	349.8	4.8	105.3	138.8	248.9	106.3%	76.2%	11.2%	40.6%
WITHIN 5 MILES OF	Count	7	168	130	305	6	72	64	142	16.7%	133.3%	103.1%	114.8%
CONSTRUCTION ZONES	Per 100K Day-Miles	5.7	136.4	105.5	247.6	15.7	161.2	143.3	317.9	-63.7%	-15.4%	-26.4%	-22.1%
IN 5 MILE APPROACH TO	Count	0	37	21	58	5	50	35	90	n/a	-26.0%	-40%	-35.6%
CONSTRUCTION ZONE	Per 100K Day-Miles	0	70.3	40	110.3	21.0	210.3	147.2	378.5	n/a	-66.6%	-72.8%	-70.9%

Using crashes that are marked both on the crash report as work-zone related (see Table 7b), the number of fatal crashes in construction zones was ZERO in 2013 and 2014. The number of crashes within the +/-5 mile approach to the construction zones is zero, since officers are unlikely to mark the crash as in a work zone in their report when the crash occurred before or after the work zone. Table 7b therefore does not report crashes before or after construction zones.

Table 7b: Work-Zone CMV Crashes on Interstates (2013-2014) based on Crash Report

Within 5 miles of construction zone refers to 2 times 5 miles plus the length of construction## In 5 miles approach to construction zone refers to only the 5 miles on either side of the construction zone excluding the construction zone

			2014				2013				Percent Change			
	WHERE	FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL	FATAL	INJ.	PDO	ALL	
ALL CMV CRASHES	Count	24	374	688	1086	23	315	569	907	4.3%	18.7%	20.9%	19.7%	
ON INTER-STATES	Per 100K Day-Miles	7.3	114.5	210.6	332.4	7.0	96.4	174.2	277.6	4.3%	18.7%	20.9%	19.7%	
CONSTRUCTION	Count	2	27	12	41	0	11	13	24	N/A	145.5%	-7.7%	70.8%	
ZONES	Per 100K Day-Miles	1.6	21.2	9.4	32.2	0.0	27.5	32.5	59.9	N/A	-22.8%	-71.0%	-46.3%	
WITHIN 5 MILES OF	Count	2	27	12	41	0	11	13	24	N/A	145.5%	-7.7%	70.8%	
CONSTRUCTION ZONES	Per 100K Day-Miles	0.8	11.1	4.9	16.9	0.0	12.8	15.1	27.9	N/A	-13.0%	-67.3%	-39.5%	
IN 5 MILES TO APPROACH	Count	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	
TO CONSTRUCTION ZONE	Per 100k Day-Miles	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	

Seat Belt Usage

Seat belt usage is one of the most important factors preventing death in a crash. Table 8 shows that in 2014, 50% of CMV drivers killed in a crash did not wear a seat belt while 63% of all drivers killed in all crashes were not wearing a seat belt.

Table	8:	Seat	Belt	Usage
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This includes only drivers with known seat belt use.

	CMV Driver							All Drivers					
Year	Drivers Killed w/o Seatbelt	Total Number of Drivers Killed	% of Drivers Killed w/o seatbelt	Drivers Seriously Injured w/o Seatbelt	Total Number of Drivers Seriously Injured	% of Drivers Seriously Injured w/o seatbelt	Drivers Killed w/o Seatbelt	Total No. of Drivers Killed	% of Drivers Killed w/o seatbelt	Drivers Seriously Injured w/o Seatbelt	Total No. of Drivers Seriously Injured	% of Drivers Seriously Injured w/o seatbelt	
2009	3	5	60%	4	10	40%	289	443	65%	263	806	33%	
2010	7	12	58%	3	12	25%	223	367	61%	226	705	32%	
2011	2	7	29%	4	14	29%	247	370	67%	224	705	32%	
2012	5	14	36%	3	8	38%	209	358	58%	213	632	34%	
2013	5	12	42%	3	9	33%	235	389	60%	198	627	32%	
2014	6	12	50%	3	13	23%	230	363	63%	201	624	32%	
5-Year Total	28	62	45%	20	10	30%	1433	2290	63%	1325	4099	32%	

On average, CMV drivers killed had a higher rate of seat belt usage than drivers killed while driving other vehicles. However, since the number of CMV drivers killed is relatively small, these percentages vary more than the percentages for all drivers. The 5-year average of CMV drivers killed not wearing a seat belt was 45%.

Hazardous Material

CMV crashes involving CMVs carrying hazardous material are of particular interest due to their potential danger to the environment and community when hazardous materials are released. Over the past 6 years, from 2009 to 2014, on average, about 15.7% of crashes involving hazardous material resulted in a release of the hazardous material. This percentage was 17.8% in 2014. The actual percentage of release may be higher since many of the CMVs identified as transporting hazardous material may actually be returning with an empty load, thus the percentage of releases based on crashes with full loads of hazardous material may be much higher than the percentages shown in Table 9.

Year	Transport	Released	% Released
2009	132	24	18%
2010	114	19	17%
2011	108	16	15%
2012	105	12	11%
2013	107	15	14%
2014	129	23	18%

Table 9: Hazardous Material Crashes

(Includes only known Chemicals Transported)

The interstates accounted for 35% of all crashes involving hazardous materials in 2014. Specifically, Interstate 10 accounts for 48% of all hazardous material crashes on interstates in 2014. US highways account for 19% of all hazardous material crashes in 2014, with US 90 and US 190 accounting for 37% of hazardous material crashes on US highways. State highways accounted for 30% of all hazardous crashes in 2014.

The types of hazardous material reported in CMV crashes are displayed in Table 10. On average, 7% involve corrosive material, 6% involve flammable gasses, and 22% involve flammable liquids. The remaining percentages are various chemicals. Note that Table 10 does not include unknown chemicals.

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Table 10: Type of Hazardous Material in CMV Crashes (Includes only known Chemicals Transported)

	Year		2009		2010		2011		2012		2013		2014	
PLC	Material		Rel.	Transp.	Rel.									
	CORROSIVE GASES (CANADA)	0	0	0	0	0	0	0	0	0	0	0	0	
	CORROSIVE MATERIALS	18	3	20	4	22	0	16	2	15	1	20	2	
	DANGEROUS WASTES (CANADA)	0	0	0	0	0	0	0	0	0	0	0	0	
	DANGEROUS WHEN WET MATERIALS	0	0	0	0	0	0	0	0	0	0	0	0	
	ENVIRONMETALLY HAZARDOUS SUBSTANCES (CANADA)	0	0	0	0	0	0	0	0	0	0	0	0	
	Explosives	0	0	0	0	0	0	0	0	0	0	0	0	
	EXPLOSIVES WITH A MASS EXPLOSION HAZARD	0	0	0	0	0	0	1	0	0	0	0	0	
	EXPLOSIVES WITH A NO SIGNIFICANT BLAST HAZARD	0	0	0	0	0	0	0	0	0	0	0	0	
	EXPLOSIVES WITH A PREDOMINANTLY A FIRE HAZARD	0	0	0	0	0	0	0	0	0	0	0	0	
	EXPLOSIVES WITH A PROJECTION HAZARD	0	0	0	0	0	0	0	0	0	0	0	0	
	EXTREMELY INSENSITIVE DETONATING ARTICLES	0	0	0	0	0	0	0	0	0	0	0	0	
	FLAMMABLE GASES	19	3	21	3	13	0	16	1	14	0	19	0	
	FLAMMABLE LIQUIDS		2	55	0	51	2	50	1	68	4	66	9	
	FLAMMABLE SOLIDS		1	1	0	1	0	5	0	1	0	4	0	
	FLAMMABLE SOLIDS or SPONTANEOUSLY COMBUSTIBLE MATERIALS or DANGEROUS WHEN WET MATERIALS	0	0	0	0	0	0	2	0	0	0	0	0	
	GASES	1	0	1	0	3	0	0	0	3	0	1	0	
	GASES TOXIC BY INHALATION	0	0	0	0	0	0	2	0	0	0	1	0	
	INFECTIOUS SUBSTANCES	0	0	0	0	0	0	0	0	0	0	0	0	
	MISC DANGEROUS GOODS	11	1	8	1	5	0	7	0	3	0	7	1	
	MISC DANGEROUS GOODS (CANADA)	0	0	0	0	0	0	0	0	0	0	0	0	
	NON-FLAMMABLE, NON-TOXIC COMPRESSED GASES	7	1	7	0	9	1	5	0	1	0	6	0	
	ORGANIC PEROXIDES	0	0	0	0	0	0	0	0	0	0	1	0	
	OXIDIZERS	2	1	0	0	0	0	0	0	0	0	0	0	
	OXIDIZERS and ORGANIC PEROXIDES	0	0	0	0	0	0	0	0	0	0	0	0	
	RADIOACTIVE MATERIALS	0	0	0	0	1	0	0	0	1	0	1	0	
	SPONTANEOUSLY COMBUSTIBLE MATERIALS	0	0	0	0	0	0	0	0	0	0	0	0	
	TOXIC MATERIALS	1	0	1	0	2	0	0	0	0	0	2	0	
	TOXIC MATERIALS and INFECTIOUS SUBSTANCES	0	0	0	0	1	0	1	0	1	0	1	1	
	VERY INSENSITIVE EXPLOSIVES; BLASTING AGENTS	0	0	0	0	0	0	0	0	0	0	0	0	
	TOTAL	132	12	114	8	108	3	105	4	107	5	129	13	

Distractions

Although distractions play an important role in all crashes, including CMV crashes, no fatal CMV crashes were reported in 2014 in which cell phone usage was the cause of distraction. Table 11 shows the breakdown of crashes by type of distraction for CMV crashes.

Driver Distraction Description	Fatal	Injury	PDO	Total
CELL PHONE	0	7	3	10
NOT DISTRACTED	80	1854	1443	3377
OTHER ELECTRONIC DEVICE	0	3	3	6
OTHER INSIDE THE VEHICLE	2	44	24	70
OTHER OUTSIDE THE VEHICLE	2	44	31	77
UNKNOWN	19	385	284	688

Table 11: Distractions

Figure 13: Cell Phone Use as a Distraction in CMV Crashes



The number of CMV crashes with cell phone usage has declined from 18 in 2006 to 10 in 2014.

Changes in Number of Crashes by Parish

The 15 parishes with the highest number of fatal and non-fatal CMV crashes are listed in Table 12. From 2013 to 2014, Louisiana experienced a significant increase in all CMV crashes along the I10/I12 corridor and I20: Calcasieu (26%), Rapides (25%), and Bossier (18%).

St. Tammany (13%) and Lafourche (13%) also had considerable increases in CMV crashes. Thus the I10/I12 corridor and I20 are candidates for increased enforcement to counteract the increasing trend in crashes.

	FATAL CRASHES		TOTAL C	RASHES	TOTAL CRASHES		
PARISH	2014	2013	2014	2013	Diff	% Change	
East Baton Rouge	5	6	341	342	-1	0%	
Orleans	5	4	298	303	-5	-2%	
Lafayette	2	3	251	254	-3	-1%	
Jefferson	7	5	211	197	14	7%	
Calcasieu	4	3	221	176	45	26%	
Caddo	3	1	158	160	-2	-1%	
St. Tammany	3	2	176	156	20	13%	
Tangipahoa	1	3	138	130	8	6%	
Terrebonne	0	0	103	117	-14	-12%	
Ouachita	1	2	124	113	11	10%	
Ascension	3	4	87	111	-24	-22%	
Livingston	1	5	101	111	-10	-9%	
Rapides	0	1	139	111	28	25%	
Lafourche	5	1	116	103	13	13%	
Bossier	2	2	94	80	14	18%	
TOTAL	42	42	2558	2464	94	4%	

Table 12: CMV Crashes by Parishes

Rural CMV Crashes

Table 13a displays the count of crashes on rural roads by highway type. Although the data shows that rural roads account for most of the fatal and injury crashes, rural roads make up the majority of the roadway sections. While the fatal CMV crashes on US highways increased by 10 or 71% from 2013 to 2014, the fatal CMV crashes on state highways decreased by 2 (-6%), and the fatal CMV crashes on interstates remained constant at 23, a change of 0%. The injury crashes during the same period exhibit an increase of 19% on interstates, a decrease of 4% on state highways and an increase of 8% on US highways.

HIGHWAY TYPE	FAT/	AL CRAS	SHES	INJUF	RY CRA	SHES		PDO			TOTAL	
	2014 CRASH	2013 CRASH	DIFFERENCE									
INTERSTATE	23	23	0%	402	337	19%	724	610	19%	1149	970	18%
US HIGHWAY	24	14	71%	342	316	8%	399	376	6%	765	706	8%
STATE ROAD	34	36	-6%	577	599	-4%	748	697	7%	1359	1332	2%
PARISH ROAD	8	5	60%	81	83	-2%	167	165	1%	256	253	1%
CITY/LOCAL ROADS AND STREETS	1	4	-75%	211	239	-12%	237	246	-4%	449	489	-8%
Total	90	82	9.76%	1613	1574	9.72%	2275	2094	29.68%	3978	3750	21.84%
% Interstates	25.6%	28.0%	-8.9%	24.9%	21.4%	16.4%	31.8%	29.1%	9.2%	28.9%	25.9%	11.7%
% US	26.7%	17.1%	56.2%	21.2%	20.1%	5.6%	17.5%	18.0%	-2.3%	19.2%	18.8%	2.1%
% State	37.8%	43.9%	-14.0%	35.8%	38.1%	-6.0%	32.9%	33.3%	-1.2%	34.2%	35.5%	-3.8%
% State, US, & Interstate	90.0%	89.0%	-11.1%	81.9%	79.5%	-4.0%	82.2%	80.4%	-5.4%	82.3%	80.2%	-4.9%

Table 13a: CMV Crashes by Highway Type 2014

	Fatal	Injury	PDO	Total
INTERSTATE	68%	54%	60%	59%
US HIGHWAY	61%	50%	50%	50%
STATE ROAD	88%	65%	70%	68%
PARISH ROAD	75%	83%	87%	85%
CITY/LOCAL ROADS AND STREETS	0%	1%	1%	1%
Total	74%	52%	58%	56%

Table 13b: Percentage of Rural CMV Crashes 2014

The crash report does not permit us to determine if a crash was urban or rural. The only indicator that may be used is the city code. Table 13b gives a different perspective of rural vs. urban crashes. Table 13b shows the percentage of crashes by severity and highway type that were coded with city code 00. This code is most often used by the state police to identify crashes that occurred outside of city limits. However, some crashes worked by state police could have been inside city limits. About 68% of the fatal interstate CMV crashes occurred in rural areas and about 54% of the injury interstate CMV crashes occurred in rural areas. Overall, 74% of fatal CMV crashes and 56% of all CMV crashes occur in rural areas. Thus rural interstates, US highways, and state highways should continue to be the focus of enforcement.

Bus Crashes

Small and large busses are of particular interest to law enforcement because of the potential risk of high number of fatalities in a single crash. The number of CMV bus crashes, injuries, and fatalities is depicted in Table 14. In 2014, there were 95 large bus crashes where 213 passengers were injured inside the bus. There were 38 small bus crashes with no people killed but 78 passengers were injured. There were 202 school bus crashes with 461 passengers injured. Overall, in 2014, there were 7 people killed in 335 bus crashes and 1042 injured. Compared to 2013, the number of bus crashes has increased from 333 to 335 in 2014. However, the number of injuries has increased from 975 in 2013 to 1042 in 2014. The number of school bus crashes has decreased by 1.9%, while small bus crashes have remained the same at 38 crashes, and large bus crashes have increased by 6.7%.

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Year		Count	School Bus	Small Bus	Large Bus	TOTAL
2013	Inside Bus	Number of Crashes	206	38	89	333
		Number of Killed	0	0	0	0
		Number Injured	417	55	245	717
	In Bus Crash	Number Killed	3	1	2	6
		Number Injured	551	82	342	975
	Inside Bus	Number of Crashes	202	38	95	335
		Number of Killed	0	0	0	0
2014		Number Injured	461	78	213	752
	In Bus Crash	Number Killed	6	0	1	7
		Number Injured	623	113	306	1042

Table 14: CMV Bus Crashes in 2014

Figure 14 shows the trend in bus crashes. While bus crashes have increased from 2013 to 2014, the total number of bus crashes have trended upward from 2009.







Figure 15 : Bus Crash Injuries by Year

Small Bus

Large Bus

While the number of bus crashes has increased by 0.6% from 2013 to 2014, namely from 333 to 335, the number of injuries have also increased by 6.9%, namely from 975 to 1042.

Note: Definition of Reportable CMV Crashes: To qualify for reporting to the SafetyNET, the crash has to involve a private or public motor carrier, a CMV weight of at least 10,001 pounds or above, a tow of one of the vehicles, or the transportation of a person to medical treatment away from the crash scene, or a fatality.