Overview of Drug and Alcohol Use Among Large Truck and Bus Drivers, 2011–13

U.S. Department of Transportation
Federal Motor Carrier Safety Administration

December 2016

FOREWORD

Possession or use of controlled substances or alcohol by commercial motor vehicle (CMV) drivers poses a serious highway safety risk; therefore, the Federal Motor Carrier Safety Administration (FMCSA) has implemented regulations prohibiting and monitoring such behavior. In this report, the U.S. Department of Transportation (USDOT) FMCSA Analysis Division provides a broad overview of drug and alcohol usage among large truck and bus drivers from 2011–13. The overview is based on several data sources, including testing results from motor carrier drug testing programs, roadside inspections of large trucks and buses, and fatal crash reports collected by the National Highway Traffic Safety Administration (NHTSA).

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16. Abstract

This report provides a broad overview of drug and alcohol usage among large truck and bus drivers for 2011–13. Data sources for the overview are: testing results from motor carrier drug testing programs, roadside inspections on large trucks and buses, and fatal crash reports collected by the National Highway Traffic Safety Administration (NHTSA). In addition to a 2011–13 overview of drug and alcohol usage estimates derived from a review of those sources, driver drug and alcohol usage highlights for 2013 are presented.

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SI* (MODERN METRIC) CONVERSION FACTORS

Approximate Conversions to SI Units				
Symbol	**When You Know**	**Multiply By**	**To Find**	**Symbol**
		Length		
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
		Area		
in^2	square inches	645.2	square millimeters	mm^2
ft^2	square feet	0.093	square meters	m^2
yd^2	square yards	0.836	square meters	m^2
ac	Acres	0.405	hectares	ha
mi^2	square miles	2.59	square kilometers	km^2
		Volume (volumes greater than 1,000L shall be shown in m^3)		
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
		Mass		
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2,000 lb)	0.907	megagrams (or “metric ton”)	Mg (or “t”)
		Temperature (exact degrees)		
°F	Fahrenheit	5(F-32)/9 or (F-32)/1.8	Celsius	°C
		Illumination		
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m^2	cd/m^2
		Force and Pressure or Stress		
lbf	poundforce	4.45	newtons	N
lbf/in^2	poundforce per square inch	6.89	kilopascals	kPa

Approximate Conversions from SI Units				
Symbol	**When You Know**	**Multiply By**	**To Find**	**Symbol**
		Length		
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
		Area		
mm^2	square millimeters	0.0016	square inches	in^2
m^2	square meters	10.764	square feet	ft^2
m^2	square meters	1.195	square yards	yd^2
Ha	hectares	2.47	acres	ac
km^2	square kilometers	0.386	square miles	mi^2
		Volume		
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m^3	cubic meters	35.314	cubic feet	ft^3
m^3	cubic meters	1.307	cubic yards	yd^3
		Mass		
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or “t”)	megagrams (or “metric ton”)	1.103	short tons (2,000 lb)	T
		Temperature (exact degrees)		
°C	Celsius	1.8c+32	Fahrenheit	°F
		Illumination		
lx	lux	0.0929	foot-candles	fc
cd/m^2	candela/m^2	0.2919	foot-Lamberts	fl
		Force and Pressure or Stress		
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in^2

* SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380. (Revised March 2003, Section 508-accessible version September 2009).

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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

Acronym	Definition
BAC	blood alcohol content
CDL	commercial driver's license
CFR	Code of Federal Regulations
CMV	commercial motor vehicle
DHHS	U.S. Department of Health and Human Services
FARS	Fatality Analysis Reporting System
FMCSA	Federal Motor Carrier Safety Administration
FMCSR	Federal Motor Carrier Safety Regulations
GVWR	Gross Vehicle Weight Rating
MCMIS	Motor Carrier Management Information System
NHTSA	National Highway Traffic Safety Administration
OOS	out-of-service
PCP	Phencyclidine
USC	U.S. Code
USDOT	U.S. Department of Transportation

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EXECUTIVE SUMMARY

Possession or use of controlled substances or alcohol by commercial motor vehicle (CMV) drivers poses a serious highway safety risk; therefore, the Federal Motor Carrier Safety Administration (FMCSA) has implemented regulations prohibiting and monitoring such behavior. Title 49, Code of Federal Regulations (CFR), Part 392 prohibits the use or possession by CMV drivers of certain substances.[1] To help analyze drug and alcohol usage among large truck and bus drivers, the U.S. Department of Transportation (USDOT) FMCSA Analysis Division is providing this broad overview of data collected from 2011–13.

This overview is based on the analysis of several data sources, including testing results from motor carrier drug testing programs, roadside inspections of large trucks and buses, and fatal crash reports collected by the National Highway Traffic Safety Administration (NHTSA). In addition to specific statistical information on drug and alcohol usage from 2011–13, highlights for 2013 drug and alcohol usage estimates are derived from a review of those sources. These highlights are presented below:

- Drugs:
  - For random testing, the estimated overall positive usage rate for drugs by commercial driver's license (CDL) drivers was 0.7 percent.
  - The estimated positive drug usage rate for pre-employment screening was 1.8 percent.
  - The estimated post-crash drug usage rate (based on the annual survey) was 2.8 percent.
  - 1,401 CMV driver inspection violations were issued for "Possession/Use/Under Influence of Drugs."
  - 197 large truck and bus drivers who were involved in fatal crashes tested positive for at least one drug, which represents 19 percent of those drivers who were tested with results reported.
  - 91 large truck and bus drivers who died as a result of a fatal crash tested positive for at least one drug, which represents 26 percent of those drivers who were killed and were tested with results reported.
- Alcohol:
  - For random testing, the estimated overall positive rate for alcohol usage (the percentage of drivers with a blood alcohol content [BAC] of 0.04 or higher) was 0.1 percent.
  - The estimated post-crash alcohol usage rate based on the annual survey was 0.1 percent.

- 2,363 CMV driver inspection violations were issued for “Possession/Use/Under Influence of Alcohol.”
- 58 large truck and bus drivers who were involved in fatal crashes also tested positive for a BAC of 0.02, which represents 4 percent of those drivers who were tested with results reported.
- 36 large truck and bus drivers who died as a result of a fatal crash tested positive for a BAC of 0.02, which represents 9 percent of those drivers who were killed and were tested with results reported.

1. INTRODUCTION

This Federal Motor Carrier Safety Administration (FMCSA) report provides a broad overview of drug and alcohol usage among drivers of large trucks and buses. The overview is based on the analysis of several data sources, including testing results from motor carrier drug testing programs, roadside inspections of large trucks and buses, and fatal crash reports collected by the National Highway Traffic Safety Administration (NHTSA).

1.1 BACKGROUND

Title 49, Code of Federal Regulations (CFR), Part 392 prohibits commercial motor vehicle (CMV) drivers from using or possessing alcohol or certain drugs and substances.[2] The specific regulations are as follows:

- **Section 392.4: Drugs and other substances.**
  (a) No driver shall be on duty and possess, be under the influence of, or use, any of the following drugs or other substances:
  (1) Any 21 CFR 1308.11 *Schedule I* substance.[3]
  (2) An amphetamine or any formulation thereof (including, but not limited, to "pep pills" and "bennies").
  (3) A narcotic drug or any derivative thereof.
  (4) Any other substance, to a degree which renders the driver incapable of safely operating a motor vehicle.
- **Section 392.5: Alcohol prohibition.**
  (a) No driver shall:
  (1) Use alcohol, as defined in Section 382.107 of this subchapter, or be under the influence of alcohol, within 4 hours before going on duty or operating, or having physical control of, a CMV.[4]
  (2) Use alcohol, be under the influence of alcohol, or have any measured alcohol concentration or detected presence of alcohol, while on duty, or operating, or in physical control of a CMV.
  (3) Be on duty or operate a CMV while the driver possesses wine of not less than one-half of one per centum of alcohol by volume, beer as defined in 26 United States Code (U.S.C.) 5052(a) of the Internal Revenue Code of 1954, and distilled spirits as defined in Section 5002(a)(8), of such Code.[5,6]

1.2 DRIVER USAGE ESTIMATES DERIVED FROM FMCSA ANNUAL CONTROLLED SUBSTANCE AND ALCOHOL TESTING SURVEY, 2011–13

Title 49, CFR, Section 382.103 states that controlled substances and alcohol use and testing requirements apply to employers of drivers who operate a CMV and are subject to the commercial driver's license (CDL) requirements.[7] FMCSA conducts an annual statistical survey to acquire data needed for estimating the drug and alcohol usage rates among CDL

drivers working for motor carriers. Motor carriers are required by Section 382.403 of the Federal Motor Carrier Safety Regulations (FMCSRs) to submit a summary of the testing results from their alcohol and controlled substances testing programs for the previous calendar year when notified by FMCSA that they were chosen as participants in the annual survey.[8] Approximately 3,000 motor carriers are selected each year by a random process to submit data.

The results derived from the annual survey data are used to assist in determining the required drug and alcohol testing rates described in Section 382.305.[9] In calendar years 2013, 2014, and 2015, motor carriers were required to test 50 percent of their CDL drivers each year for controlled substances and 10 percent of their CDL drivers for alcohol. The FMCSA Administrator has the discretion to lower the minimum annual percentage rate for random controlled substances testing to 25 percent of all driver positions if the survey results for 2 consecutive calendar years indicate that the positive rate is less than 1.0 percent, but greater than or equal to 0.5 percent. Based on the controlled substances random test data in FMCSA's Management Information System (MIS) for calendar years 2011, 2012, and 2013, the positive rate for controlled substances random testing fell below the 1.0 percent threshold for 3 consecutive calendar years. As a result, FMCSA lowered the controlled substances minimum annual percentage rate for random controlled substances testing to 25 percent of the average number of driver positions beginning in calendar year 2016. While the minimum annual percentage rate for random alcohol usage testing will never be less than 10 percent, if the survey results for a calendar year indicate that the alcohol violation rate (see definition below) is equal to or greater than 0.5 percent, but less than 1.0 percent, the FMCSA Administrator will increase the minimum annual percentage rate for random alcohol testing to 25 percent for all driver positions; and if the violation rate is greater than or equal to 1.0 percent, the random alcohol testing rate will be increased to 50 percent.

The FMCSRs also require motor carriers to perform drug and alcohol testing (non-random) on CDL drivers when:

- The driver is being considered for employment (only for drugs and only when the driver has not recently been in a drug and alcohol testing program).
- The driver has been involved in a crash (only when the crash involves a fatality or when the driver receives a citation for a moving traffic violation in a towaway- or injury-related crash).
- The driver is suspected by a supervisor of using drugs or alcohol while at work.

The FMCSA annual survey produces national estimates of the percentage of CDL drivers who test positive for controlled substances (referred to as drugs in this report) and/or alcohol, as a result of both random and non-random testing.

In the case of alcohol, an on-duty CDL driver is in violation of the FMCSRs when his or her blood alcohol content (BAC) is equal to or greater than 0.02 grams per 210 liters of breath as measured by an evidential breath testing device. If the driver tests at a concentration of 0.04 or higher, he or she also must undergo referral, evaluation, and treatment, pursuant to Part 382, Subpart F.[10] FMCSA also uses this 0.04 cutoff value to calculate the 'alcohol violation rate' for the industry, and uses this rate to evaluate what percentage of a company's CDL drivers need to

be randomly tested for alcohol each year. For drugs (i.e., marijuana, cocaine, opiates, amphetamines, and phencyclidine [PCP]), testing is based on laboratory analysis of urine specimens. The cutoff levels for identifying use are based on guidelines set by the U.S. Department of Health and Human Services (DHHS).[11]

The positive usage rates presented below represent weighted statistical estimates. These estimates are generalizable to the entire population of CDL drivers in the national fleet and have been derived by using standard statistical techniques applicable to stratified samples. It is important to keep in mind that the rates obtained from these procedures do not represent true values; rather, they are unbiased estimates of the true rates, with associated sampling errors.

For the 2013 survey, survey forms were sent to 3,251 randomly selected motor carriers. Of these forms, 2,236 surveys were completed and returned to FMCSA, resulting in usable data from:

- 1,654 carriers for random, controlled substance testing (comprising 497,270 CDL drivers).
- 1,524 carriers for random alcohol testing (comprising 205,669 CDL drivers).
- And additional data from many carriers for non-random testing.

Respondents providing non-usable data represent entities that are out of business, exempt, have no testing program in place, or belong to consortia that did not test any drivers for the carrier during 2013.

Based on the 2013 survey results, the estimated percentage of subject motor carriers with random controlled substance and alcohol testing programs in place is 61 percent, while the estimated percentage of all CDL drivers participating in such programs is 92 percent. The disparity between these two percentages stems from the fact that small carriers, which constitute a majority of companies in the national fleet, tend to be less compliant with Part 382. Large companies tend to be more compliant with Part 382, and they account for the majority of drivers (although they do not account for a majority of the carriers).

All survey estimates for drugs and alcohol for the period 2011–13 are presented in Table 1 and Table 2, respectively. Unless otherwise specified, the term “positive usage rate” for drugs refers to use of any of the following five controlled substances: marijuana, cocaine, opiates, amphetamines, and PCP.

1.2.1 Drug Testing Survey Estimates

For random testing conducted in 2013, the estimated overall positive usage rate for drugs was 0.7 percent. The 95-percent confidence interval for this estimate ranges from 0.6–0.8 percent. If the survey were to be replicated, it would be expected that the confidence interval derived from each replication would contain the true usage rate in 95 out of 100 surveys. In 2011, the estimated positive usage rate for drugs was 0.9 percent; in 2012, it was 0.6 percent (see Table 1).

Table 1. Estimates of random and non-random drug usage rates among CDL drivers, 2011–13.

Category	2011 Estimate	2011 Standard Error	2012 Estimate	2012 Standard Error	2013 Estimate	2013 Standard Error
Random Testing						
Any Drug	0.9%	0.1%	0.6%	0.1%	0.7%	0.1%
– Marijuana	0.6%	0.1%	0.4%	0.1%	0.4%	0.1%
Non-random Testing						
Pre-employment	1.2%	0.1%	1.3%	0.1%	1.8%	0.5%
Post-crash	1.8%	0.6%	1.3%	0.5%	2.8%	0.8%
Reasonable Suspicion	15.7%	3.7%	37.2%	11.2%	26.6%*	15.4%*

* Estimates are of very low precision and should be used with caution.
Source: USDOT, FMCSA, Analysis Division.

Usage rates for specific drugs were also calculated. With the exception of marijuana, the precision levels of these usage rates for individual drugs are considerably lower than the precision levels generally obtained for overall drug use and do not meet publication standards for statistical information; therefore, they are not presented. From 2011 to 2013, the estimated positive usage rate for marijuana ranged between 0.6 percent and 0.4 percent. Unlike the estimate for the overall positive usage rate, the positive usage rate for specific drugs does not consider refusals to test (which are treated as positives in the case of the overall positive rate), and a carrier, when reporting its data to FMCSA, may include information on overall drug use but may fail to give details for specific drugs.

With the exception of pre-employment drug testing, the sample sizes achieved in the survey for the various non-random testing categories tend to be much lower than those achieved for random testing (because the events that trigger a non-random drug or alcohol test are rare events, carriers selected for the survey may not have necessarily conducted drug and alcohol testing in all non-random testing categories in a given year). As a result, the estimated precision levels for many of these estimates are low, and caution should be exercised when interpreting these estimates.

In the 2013 survey, data were provided on 486,853 drivers who underwent pre-employment drug screening. This number is nearly as large as those who were included in the random testing and is indicative of the large turnover of drivers in the industry. The positive usage rate for pre-employment screening was 1.8 percent in 2013—more than twice as high as the random drug usage rate of 0.7 percent. In 2011, the pre-employment drug screening positive usage rate was 1.2 percent; in 2012, it was 1.3 percent.

Data on 20,029 drivers with post-crash drug testing results were reported in the 2013 survey. The estimated post-crash drug usage rate was 2.8 percent, about four times greater than the random drug testing rate. Post-crash drug usage rates in 2011 and 2012 were 1.8 percent and 1.3 percent, respectively.

For reasonable suspicion of drug usage, testing results for 667 drivers were reported in the 2013 survey. The positive usage rate for reasonable suspicion was 26.6 percent in 2013; however, it should be noted that the precision level of this estimate is much lower than for the other rates presented. The low precision level is presumably due to the small number of drivers in the sample receiving such testing. The estimate is of very low precision, with the 95-percent confidence interval including zero, and does not meet standard publication criteria for statistical information; however, it is presented here for informational purposes only and should be used with caution. The reasonable suspicion drug usage rates were 15.7 percent in 2011 and 37.2 percent in 2012, both of which also have low levels of precision.

1.2.2 Alcohol Testing Survey Estimates

In 2013, the estimated alcohol violation rate (i.e., the percentage of drivers with a BAC of 0.04 or higher) based on random testing was 0.1 percent. The 95-percent confidence interval for this estimate ranges from 0.05 to 0.13 percent. If the survey were to be replicated, it would be expected that the confidence interval derived from each replication would contain the true usage rate in 95 out of 100 surveys. For 2011 and 2012, the alcohol usage violation rates were 0.1 percent and 0.03 percent, respectively (see Table 2).

Table 2. Estimates of random and non-random alcohol usage rates among CDL drivers, 2011–13.

Category	2011 Estimate	2011 Standard Error	2012 Estimate	2012 Standard Error	2013 Estimate	2013 Standard Error
Random Testing						
(≥ 0.04 BAC)	0.1%	0.0%†	0.03%	0.0%†	0.1%	0.0%†
Non-random Testing						
Pre-employment	0.0%†	0.0%†	0.0%	0.0%†	0.0%†	0.0%†
Post-crash	1.5%*	1.1%*	0.1%	0.0%†	0.1%	0.0%†
Reasonable Suspicion	27.4%*	18.4%*	6.6%	2.8%	14.5%	5.6%

* Estimates are of very low precision and should be used with caution.
† No or negligible usage among sample cases; standard error was negligible.
Source: USDOT, FMCSA, Analysis Division.

In the 2013 survey, data were provided on 9,287 drivers who underwent pre-employment alcohol screening. This number is much smaller than those undergoing pre-employment drug screening because pre-employment alcohol screening is not mandatory. The estimated positive usage rate for pre-employment alcohol screening was zero percent in 2011, 2012, and 2013. This zero percent usage rate indicates that negligible or no alcohol use was recorded in the sample for this particular category. In such cases, the actual positive rate for the population is, in all likelihood, greater than zero, but the sample size was inadequate to produce a more precise estimate.

Data on 11,567 drivers with post-crash alcohol testing results were reported in the 2013 survey. Based on the survey, the estimated post-crash alcohol usage rate was 0.1 percent. The rates were 1.5 percent in 2011 and 0.1 percent in 2012; however, the levels of precision for all three years

are low due to the small samples in the survey. The 2011 estimate is of very low precision with the 95-percent confidence interval including zero, and does not meet standard publication criteria for statistical information; however, it is presented here for informational purposes only and should be used with caution.

Testing results for reasonable suspicion of alcohol usage were reported for 518 drivers in the 2013 survey. The positive usage rate for reasonable suspicion was 14.5 percent in 2013; however, it should be noted that the precision level of this estimate is also much lower than for other rates presented, based on the small number of drivers in the sample. The reasonable suspicion alcohol usage rates for 2011 and 2012 were 27.4 percent and 6.6 percent, respectively; however, levels of precision for all reasonable suspicion alcohol testing results from 2011 to 2013 are low due to the small samples in the survey. The 2011 estimate is of very low precision with the 95-percent confidence interval including zero, and does not meet standard publication criteria for statistical information; however, it is presented here for informational purposes only and should be used with caution.

1.3 DRIVER DRUG AND ALCOHOL VIOLATIONS FROM ROADSIDE INSPECTION AND TRAFFIC ENFORCEMENT RECORDS, 2011–13

Where the drug and alcohol usage testing requirements apply only to CMV drivers who are required to have a CDL, the regulations regarding drugs and alcohol and driving a CMV apply to all drivers, whether they hold a CDL or not. The FMCSR driver violation codes that are related to illegal possession and use of drugs or alcohol are:

- 392.4A (driving under the influence of drugs)[(12)]
- 392.5A (possession/use/under the influence of alcohol–4 hours prior to duty).[(13)]
- 392.5A3 (driving while in possession of intoxicating beverage—non-cargo).[(14)]
- 392.5C2 (violating out-of-service [OOS] order pursuant to 392.5(A)/(B)).[(15)]

From 2011 through 2013, an average of 4,300 drug- and alcohol-related violations were issued each year as a result of roadside inspections performed on CMVs and their drivers (see Table 3). These violations account for about 0.4 percent of all violations issued per year during roadside inspections; however, they make up slightly more than 2 percent of all OOS violations annually. There are more than twice as many alcohol-related violations issued each year as there are drug-related violations.

Table 3. Drug- and alcohol-related driver violations from roadside inspections, by violation code, 2011–13.

Violation Code	Violation Description	2011	Percent of All Driver Violations	2012	Percent of All Driver Violations	2013	Percent of All Driver Violations	Total 2011–2013	Percent of All Driver Violations
392.5C2	Violating OOS Order Pursuant to 392.5(A)/(B)	175	0.01%	144	0.01%	144	0.01%	463	0.01%
392.5A3	Driving While in Possession of Intoxicating Beverage—Non-cargo	N/A	0.00%	3	0.00%	602	0.06%	605	0.02%
392.5A	Possession/Use/Under Influence of Alcohol	2,743	0.23%	2,802	0.27%	2,363	0.22%	7,908	0.24%
392.4A	Possession/Use/Under Influence of Drugs	1,254	0.11%	1,270	0.12%	1,401	0.13%	3,925	0.12%
Total	**Drug and Alcohol Violations**	**4,172**	**0.35%**	**4,219**	**0.41%**	**4,510**	**0.41%**	**12,901**	**0.39%**
Total	**All Driver Violations**	**1,178,324**	**100.00%**	**1,041,361**	**100.00%**	**1,091,557**	**100.00%**	**3,311,242**	**100.00%**

Source: FMCSA, Motor Carrier Management Information System (MCMIS), August 28, 2015.

FMCSA also collects data on drug and alcohol violations that are cited during inspections associated with traffic enforcement activities. For a drug or alcohol violation to be counted as a traffic enforcement violation, there has to be another accompanying traffic enforcement violation, such as a moving violation, railroad-grade crossing violation, or non-specified State law/miscellaneous violation. If an accompanying traffic enforcement violation does not occur, the drug and alcohol violation, although not counted as a traffic enforcement violation, would still be counted as a roadside inspection violation and would be included in Table 3 (above). On average, 1,300 drug and alcohol traffic enforcement violations were reported annually from 2011 to 2013 (see Table 4). Drug and alcohol traffic enforcement violations account for 30 percent of the total drug and alcohol violations issued each year, and 0.2 percent of all traffic enforcement violations issued each year. Nearly 60 percent of the drug and alcohol traffic enforcement violations are alcohol-related violations.

Table 4. Drug- and alcohol-related traffic enforcement driver violations, 2011–13.

Drug & Alcohol Violations	2011	2012	2013
Driver Use or Possession of Drugs	556	548	514
Driver Use of Possession of Alcohol	865	820	596

Source: FMCSA, MCMIS, August 28, 2015.

1.4 DRIVER DRUG AND ALCOHOL USAGE ESTIMATES FROM CRASH DATA, 2011–13

NHTSA's Fatality Analysis Reporting System (FARS) is a nationwide census providing yearly data regarding motor vehicle crashes that involve fatalities. The FARS data include crashes involving large trucks and buses, which are defined below. No distinction is made between commercial and non-commercial use.

- Large trucks are defined as trucks with a gross vehicle weight rating (GVWR) greater than 10,000 pounds.
- Buses are defined as any motor vehicle designed primarily to transport nine or more persons, including the driver.

FARS contains information on the presence of drugs and alcohol in the systems of drivers involved in fatal crashes;[i,16] however, it should be noted that the drugs reported in FARS include substances not tested for in FMCSA's drug and alcohol testing program (e.g., inhalants). Also, where FMCSA testing results are based on breath analysis for alcohol and urinalysis for drugs, the FARS data include results from multiple methods of testing (e.g., blood tests). At the time this report was written, the most recent FARS data available were from calendar year 2013.

[i] The FARS drug and alcohol testing results come from police reports. FARS does not collect drug and alcohol post-crash testing results from motor carriers conducted under the requirements of 49 CFR 382.303.

1.4.1 Drug Usage Results from Crash Data, 2011–13

In 2013, a total of 4,138 large truck and bus drivers were involved in fatal crashes. Of these drivers, 63 percent were not tested for drugs; 4 percent were tested, but results were not reported; and for another 8 percent, it is unknown whether they were tested (see Table 5). The remaining 1,050 drivers were tested for drugs after the crash, and then the results were reported. Of the 1,050 drivers tested for drugs after the crash, 197 tested positive for at least one drug. Considering only those drivers who were tested and results reported, 19 percent tested positive. For 2012, that percentage was 17 percent; in 2011, it was 16 percent.

Table 5. Drug test results for large truck and bus drivers in fatal crashes, 2011–13.

Drug Test Results	2011 Number	2011 Percent	2012 Number	2012 Percent	2013 Number	2013 Percent
Not Tested for Drugs	2,199	57.3%	2,530	62.8%	2,617	63.2%
No Drugs Reported/Negative	992	25.8%	916	22.7%	853	20.6%
Tested for Drugs, Results Unknown	158	4.1%	198	4.9%	153	3.7%
Unknown if Tested	294	7.7%	199	4.9%	318	7.7%
At Least One Positive Drug Test Result:	195	5.1%	184	4.6%	197	4.8%
– Narcotic	41	1.1%	40	1.0%	50	1.2%
– Depressant	35	0.9%	32	0.8%	40	1.0%
– Stimulant	65	1.7%	61	1.5%	68	1.6%
– Cannabinoid	40	1.0%	34	0.8%	50	1.2%
– PCP	0	0.0%	1	0.0%	1	0.0%
– Inhalant	0	0.0%	0	0.0%	2	0.0%
– Other Drugs	90	2.3%	84	2.1%	77	1.9%
– Tested for Drugs, Drugs Found, Type Unknown/Positive	9	0.2%	13	0.3%	11	0.3%
Total	**3,838**	**100.0%**	**4,027**	**100.0%**	**4,138**	**100.0%**

Source: NHTSA, Fatality Analysis Reporting System (FARS).
Note: Drivers can test positive for more than one drug.

Of the 4,138 large truck and bus drivers involved in fatal crashes in 2013, 613 of them died as a result of the crash. (Note that in FARS, a fatal injury is considered to be any injury that results in death within 30 days after the crash in which the injury occurred.) Of these 613 drivers, 32 percent were not tested for drugs; 3 percent were tested, but results were not reported; and for another 7 percent, it is unknown whether they were tested. Ninety-one of these 613 drivers tested positive for at least one drug. When considering only those deceased drivers who were tested and results reported, 26 percent tested positive. For 2012, that percentage was 23 percent, and in 2011, it was 28 percent. Compared to all large truck and bus drivers who were involved in fatal crashes and were tested for drugs, the drivers who died as a result of the crash had higher recorded incidences of drug use.

In FARS, the majority of drug testing results for large truck and bus drivers are from blood tests. From 2011 through 2013, an average of 85 percent of the test results for large truck and bus drivers involved in fatal crashes came from blood tests, while 10 percent came from urine tests, and 4 percent came from both blood and urine tests. Sixty-one percent of the large truck and bus drivers who died in fatal crashes in 2013 were tested for drugs; of those tested, 87 percent were tested with blood tests, 7 percent were tested with both blood and urine tests, and 5 percent were tested with urine tests.

1.4.2 Alcohol Usage Results Derived from Crash Data, 2011–13

In 2013, of the 4,138 large truck and bus drivers involved in fatal crashes, 54 percent were not tested for alcohol. Information was not reported for 5 percent. Three percent were tested, but results were not reported; and for another 3 percent, it is unknown whether they were tested (see Table 6). In addition, two drivers were reported as having a positive reading, but with no actual values recorded. The remaining 1,452 drivers were tested for alcohol after the crash and then the results were reported. Of these 1,452 drivers, 58 tested positive for a BAC of at least 0.02 grams per 210 liters of breath; as such, these 58 drivers were in violation of the FMCSRs. When considering only those drivers who were tested, the percentage who tested positive for a BAC of at least 0.02 was 4.0 percent. In 2012, that percentage was 3.4 percent; in 2011, it was 3.0 percent.

Table 6. Alcohol test results for large truck and bus drivers in fatal crashes, 2011–13.

Alcohol Test Results	2011 Number	2011 Percent	2012 Number	2012 Percent	2013 Number	2013 Percent
Not Tested for Alcohol	1,859	48.4%	2,132	52.9%	2,249	54.3%
No Alcohol Reported/Negative	1,606	41.8%	1,508	37.4%	1,385	33.5%
Tested for Alcohol, Results Unknown	70	1.8%	117	2.9%	104	2.5%
Unknown if Tested	137	3.6%	112	2.8%	130	3.1%
Not Reported	106	2.8%	95	2.4%	201	4.9%
Positive Reading With No Actual Value	1	0.0%	0	0.0%	2	0.0%
Any Positive BAC	59	1.5%	63	1.6%	67	1.6%
– 0.02% BAC or higher	50	1.3%	54	1.3%	58	1.4%
– 0.04% BAC or higher	43	1.1%	48	1.2%	51	1.2%
– 0.08% BAC or higher	31	0.8%	43	1.1%	43	1.0%
Total	**3,838**	**100.0%**	**4,027**	**100.0%**	**4,138**	**100.0%**

Source: NHTSA, FARS.

Because the BAC cutoff level for determining whether a driver must undergo referral, evaluation, and treatment (pursuant to Part 382, Subpart F) is 0.04, and because a driver's BAC must be at least 0.04 to count as a positive result in the FMCSA annual drug and alcohol survey,

results for the 0.04 level are presented in Table 6 (above).[17,18] From 2011 through 2013, about 75 percent of the large truck and bus drivers who tested positive for some level of alcohol had a BAC of 0.04 or higher.

Many States consider a BAC of 0.08 or higher an indication of being intoxicated. From 2011 through 2013, between one-half and two-thirds of the large truck and bus drivers who tested positive for some level of alcohol had a BAC of 0.08 or higher.

Of the 613 large truck and bus drivers who died as a result of a crash in 2013, 22 percent were not tested for alcohol; for 4 percent, no information was reported. Additionally, 4 percent were tested, but results were not reported. For another 2 percent, it is unknown whether they were tested. The remaining 418 drivers were tested for alcohol after the crash and then the results were reported. Thirty-six of these 418 drivers tested positive for a BAC of at least 0.02; as such, these drivers were in violation of the FMCSRs. When considering only those drivers who were tested, 9 percent tested positive for a BAC of at least 0.02. For 2012, that percentage was 8 percent; in 2011, it was 7 percent. Compared to all large truck and bus drivers in fatal crashes who were tested for alcohol, drivers who died as a result of the crash had higher recorded incidences of alcohol use.

As with drug testing, in FARS, the majority of the alcohol testing results for large truck and bus drivers are from blood tests. From 2011 through 2013, an average of 80 percent of the test results for large truck and bus drivers involved in fatal crashes came from blood tests, while 10 percent came from preliminary breath tests. Five percent of the alcohol test results came from "breathalyzers." Of the 613 drivers who died as a result of fatal crashes in 2013, none of them had a preliminary breath test or "breathalyzer" test for BAC. Ninety-six percent of the 613 drivers who died in fatal crashes in 2013 had a blood test for alcohol; the remainder had some other type of test (e.g., urine, vitreous, etc.)

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2. SUMMARY

Possession or use of controlled substances or alcohol by CMV drivers poses a serious highway safety risk; therefore, FMCSA has implemented regulations prohibiting and monitoring such behavior. Information on drug and alcohol use is collected from motor carriers that are required to have drug and alcohol testing programs, through reported driver inspection violations, and from fatal crash statistics collected by NHTSA. Highlights for 2013 (from a review of these three sources) are presented below:

- Drugs:
  - For random testing, the estimated overall positive usage rate for drugs by CDL drivers was 0.7 percent.
  - The estimated positive drug usage rate for pre-employment screening was 1.8 percent.
  - The estimated post-crash drug usage rate (based on the annual survey) was 2.8 percent.
  - 1,401 CMV driver inspection violations were issued for "Possession/Use/Under Influence of Drugs."
  - 197 large truck and bus drivers who were involved in fatal crashes tested positive for at least one drug, which represents 19 percent of those drivers who were tested with results reported.
  - 91 large truck and bus drivers who died as a result of a fatal crash tested positive for at least one drug, which represents 26 percent of those drivers who were killed and were tested with results reported.
- Alcohol:
  - For random testing, the estimated overall positive rate for alcohol usage (the percentage of drivers with a BAC of 0.04 or higher) was 0.1 percent.
  - The estimated post-crash alcohol usage rate based on the annual survey was 0.1 percent.
  - 2,363 CMV driver inspection violations were issued for "Possession/Use/Under Influence of Alcohol."
  - 58 large truck and bus drivers who were involved in fatal crashes also tested positive for a BAC of 0.02, which represents 4 percent of those drivers who were tested with results reported.
  - 36 large truck and bus drivers who died as a result of a fatal crash tested positive for a BAC of 0.02, which represents 9 percent of those drivers who were killed and were tested with results reported.

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REFERENCES

[1] 49 CFR 392.

[2] Ibid.

[3] 21 CFR 1308.

[4] 49 CFR 382.

[5] 26 U.S.C. 5052(a).

[6] 26 U.S.C. 5002(a)(8).

[7] 49 CFR 382.103.

[8] 49 CFR 382.403.

[9] 49 CFR 382.305.

[10] 49 CFR 382 Subpart F.

[11] 73 FR 71858.

[12] 49 CFR 392.4(a).

[13] 49 CFR 392.5(a).

[14] Ibid.

[15] Ibid.

[16] 49 CFR 382.303

[17] 49 CFR 382 Subpart F.

[18] 73 FR 71858.