

# **Results from the 2008 Drug and Alcohol Testing Survey**



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

**January 2010**

## FOREWORD

This report summarizes the results of the 2008 Federal Motor Carrier Safety Administration Drug and Alcohol Testing Survey. This annual survey measures the percentage of drivers with commercial driver's licenses who test positive for controlled substances (referred to as drugs in this report) and/or alcohol, as a result of random and nonrandom (pre-employment, post-crash, and reasonable suspicion/follow-up) testing.

## NOTICE

This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or the use thereof.

The contents of this Report reflect the views of the contractor, who is responsible for the accuracy of the data presented herein. The contents do not necessarily reflect the official policy of the U.S. Department of Transportation.

This Report does not constitute a standard, specification, or regulation.

The United States Government does not endorse products or manufacturers named herein. Trade or manufacturers' names appear herein solely because they are considered essential to the object of this report.

**Technical Report Documentation Page—Form DOT F 1700.7 (8-72)**

1. Report No. <b>FMCSA-RRA-10-052</b>		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle <b>Results from the 2008 Drug and Alcohol Testing Survey</b>				5. Report Date <b>January 30, 2010</b>	
				6. Performing Organization Code	
7. Author(s) <b>Mokbul A. Khan, PhD</b>				8. Performing Organization Report No.	
9. Performing Organization Name and Address <b>U.S. Department of Transportation Office of Analysis, Research and Technology Analysis Division, 1200 New Jersey Ave. SE Washington, DC 20590</b>				10. Work Unit No. (TR AIS)	
				11. Contract or Grant No.	
12. Sponsoring Agency Name and Address <b>U.S. Department of Transportation Federal Motor Carrier Safety Administration Office of Research and Analysis 1200 New Jersey Ave. SE Washington, DC 20590</b>				13. Type of Report and Period Covered <b>Final Report</b>	
				14. Sponsoring Agency Code	
15. Supplementary Notes					
16. Abstract  <b>This report summarizes the results of the 2008 Federal Motor Carrier Safety Administration Drug and Alcohol Testing Survey. This annual survey measures the percentage of drivers with commercial driver's licenses who test positive for controlled substances (referred to as drugs in this report) and/or alcohol, as a result of random and nonrandom (pre-employment, post-crash, and reasonable suspicion/follow-up) testing.</b>					
17. Key Words <b>alcohol, CDL, CMV, commercial driver's license, commercial motor vehicle, controlled substances, drugs, Federal Motor Carrier Safety Regulations, FMCSR, nonrandom, testing, random</b>				18. Distribution Statement <b>No restrictions</b>	
19. Security Classif. (of this report) <b>Unclassified</b>		20. Security Classif. (of this page) <b>Unclassified</b>		21. No. of Pages <b>15</b>	22. Price

# SI\* (MODERN METRIC) CONVERSION FACTORS

Table of APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
<b>LENGTH</b>				
In	Inches	25.4	Millimeters	mm
Ft	Feet	0.305	Meters	m
Yd	Yards	0.914	Meters	m
Mi	Miles	1.61	Kilometers	km
<b>AREA</b>				
in <sup>2</sup>	square inches	645.2	square millimeters	mm <sup>2</sup>
ft <sup>2</sup>	square feet	0.093	square meters	m <sup>2</sup>
yd <sup>2</sup>	square yards	0.836	square meters	m <sup>2</sup>
Ac	Acres	0.405	Hectares	ha
mi <sup>2</sup>	square miles	2.59	square kilometers	km <sup>2</sup>
<b>VOLUME</b>				
fl oz	fluid ounces	29.57	Milliliters	mL
Gal	Gallons	3.785	Liters	L
ft <sup>3</sup>	cubic feet	0.028	cubic meters	m <sup>3</sup>
yd <sup>3</sup>	cubic yards	0.765	cubic meters	m <sup>3</sup>
<b>MASS</b>				
Oz	Ounces	28.35	Grams	g
Lb	Pounds	0.454	Kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
<b>TEMPERATURE</b>				
°F	Fahrenheit	$5 \times (F-32) \div 9$ or $(F-32) \div 1.8$	Temperature is in exact degrees Celsius	°C
<b>ILLUMINATION</b>				
Fc	foot-candles	10.76	Lux	lx
Fl	foot-Lamberts	3.426	candela/m <sup>2</sup>	cd/m <sup>2</sup>
<b>Force and Pressure or Stress</b>				
Lbf	Poundforce	4.45	Newtons	N
lbf/in <sup>2</sup>	poundforce per square inch	6.89	Kilopascals	kPa

Table of APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
<b>LENGTH</b>				
Mm	Millimeters	0.039	Inches	in
M	Meters	3.28	Feet	ft
M	Meters	1.09	Yards	yd
Km	Kilometers	0.621	Miles	mi
<b>AREA</b>				
mm <sup>2</sup>	square millimeters	0.0016	square inches	in <sup>2</sup>
m <sup>2</sup>	square meters	10.764	square feet	ft <sup>2</sup>
m <sup>2</sup>	square meters	1.195	square yards	yd <sup>2</sup>
Ha	Hectares	2.47	Acres	ac
km <sup>2</sup>	square kilometers	0.386	square miles	mi <sup>2</sup>
<b>VOLUME</b>				
mL	Milliliters	0.034	fluid ounces	fl oz
L	Liters	0.264	Gallons	gal
m <sup>3</sup>	cubic meters	35.314	cubic feet	ft <sup>3</sup>
m <sup>3</sup>	cubic meters	1.307	cubic yards	yd <sup>3</sup>
<b>MASS</b>				
G	Grams	0.035	Ounces	oz
Kg	Kilograms	2.202	Pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
<b>TEMPERATURE</b>				
°C	Celsius	$1.8C + 32$	Temperature is in exact degrees Fahrenheit	°F
<b>ILLUMINATION</b>				
Lx	Lux	0.0929	foot-candles	fc
cd/m <sup>2</sup>	candela/m <sup>2</sup>	0.2919	foot-Lamberts	fl
<b>Force &amp; Pressure or Stress</b>				
N	Newtons	0.225	Poundforce	lbf
kPa	Kilopascals	0.145	poundforce per square inch	lbf/in <sup>2</sup>

\* 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)

## TABLE OF CONTENTS

LIST OF ACRONYMS .....	V
1. BACKGROUND .....	1
2. RESULTS .....	3
2.1 RANDOM TESTING .....	3
2.2 NONRANDOM TESTING .....	4

## LIST OF TABLES

Table 1. Estimates of Random and Nonrandom Drug Usage Rates Among CDL Drivers for 2006, 2007, and 2008 .....	5
Table 2. Estimates of Random and Nonrandom Alcohol Usage Rates among CDL Drivers for 2006, 2007, and 2008 .....	5



## LIST OF ACRONYMS

BAC	blood alcohol content
CDL	commercial driver's license
FMCSA	Federal Motor Carrier Safety Administration
FMCSR	Federal Motor Carrier Safety Regulations
PCP	phenyclidine or phenylcyclohexylpiperidine
USDOT	U.S. Department of Transportation

# 1. BACKGROUND

This report summarizes the results of the 2008 Federal Motor Carrier Safety Administration (FMCSA) Drug and Alcohol Testing Survey. This annual survey measures the percentage of drivers with commercial driver's licenses (CDLs) who test positive for controlled substances (referred to as drugs in this report) and/or alcohol, as a result of random and nonrandom (pre-employment, post-crash, and reasonable suspicion/follow-up) testing.

Motor carriers that employ CDL drivers are required to implement drug and alcohol testing programs, pursuant to Part 382 of the Federal Motor Carrier Safety Regulations (FMCSRs). Currently, the FMCSA requires these carriers to randomly test 10 percent of their CDL drivers for alcohol and 50 percent of their CDL drivers for drugs each year. In addition, the FMCSA requires carriers to perform drug and alcohol testing (nonrandom) on CDL drivers whenever the following occur:

- 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 in a towaway- or injury-related crash).
- The driver is suspected by a supervisor of using drugs or alcohol while at work.

In the case of alcohol, an on-duty CDL driver is in violation of FMCSRs when his or her blood alcohol content (BAC) is equal to 0.02 grams per 210 liters of breath, or higher. If the driver tests at a concentration of 0.04 or higher, he or she also must undergo referral, evaluation, and treatment, pursuant to CFR 49, Part 382, subpart F—Alcohol Misuse and Controlled Substances Use Information, Training, and Referral. The alcohol violation rate for the industry (determined annually by the FMCSA, and used to evaluate required motor carrier testing rates) is based on this latter 0.04 cutoff level. For drugs (i.e., marijuana, cocaine, opiates, amphetamines, and phencyclidine [PCP]), the cutoff levels for identifying use are based on guidelines set by the U.S. Department of Health and Human Services.

The positive usage rates presented herein 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 but, rather, unbiased estimates of the true rates with associated sampling errors.





## 2. RESULTS

Estimates of positive usage rates from both random and nonrandom testing are discussed separately, below. All survey estimates are presented in Table 1 (drugs) and Table 2 (alcohol), which also include estimates from the 2006 and 2007 surveys. Unless specified otherwise, the term *positive usage rate* refers to use of any of the five drugs referenced in section 1.

Usage rates for specific drugs were also calculated by using the 2008 data and are included in Table 1 and Table 2. It should be noted, however, that the precision levels of these usage rates for individual drugs are considerably lower than the precision levels generally obtained for overall drug use. Also, in the case of random testing, these drug-specific rates may not necessarily add-up to the overall positive usage rate. This stems from such facts as:

- A driver may test positive for more than one drug, but will only be counted once when calculating the overall positive rate.
- The overall positive rate also includes refusals to test, which are treated as positives for this estimate but are not included in the rate for specific drugs.
- A carrier, when reporting its data to FMCSA, may include information on overall drug use but may fail to give details for specific drugs.

### 2.1 RANDOM TESTING

For the 2008 survey, survey forms were sent to 2,973 randomly selected motor carriers. Of this total, 2,266 were completed and returned to FMCSA, resulting in usable data from 1,678 carriers (comprising 443,340 CDL drivers) for random drug testing, as well as usable data from 1,531 carriers (comprising 117,132 CDL drivers) for random alcohol 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 2008.

The results are as follows:

- **Drugs:** The estimated positive usage rate for drugs, based on random testing in 2008, is 1.04 percent. The 95 percent confidence interval for this estimate ranges from 0.76 percent to 1.32 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 2007, this rate was estimated to be slightly higher (1.3 percent).
- **Alcohol:** The estimated violation rate for alcohol use (i.e., the percentage of drivers with a BAC of 0.04 or higher), based on random testing in 2008, is 0.19 percent (i.e., close to one-fifth of one percent) with a 95 percent confidence interval ranging from 0.03 percent to 0.35 percent. For 2007, the violation rate was estimated to be higher (0.25 percent).
- **Part 382 Compliance:** Based on the 2008 survey results, the estimated percentage of subject motor carriers with random drug and alcohol testing programs in place is 48 percent, and the estimated percentage of all CDL drivers participating in such programs is 89 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, on the other hand, tend to be more compliant with Part 382, and account for the majority of drivers (although they do not account for a majority of the carriers).

## 2.2 NONRANDOM TESTING

Estimates of positive drug usage rates for the nonrandom testing categories are shown in Table 1, beneath the random testing rates. Estimated rates from nonrandom alcohol testing are shown in Table 2.

With the possible exception of pre-employment drug testing, the sample sizes achieved in the survey for the various nonrandom testing categories are much lower than those achieved for random testing. As a result, the estimated precision levels for many of these estimates are low, and caution should be exercised when interpreting these estimates. Generally speaking, given the achieved levels of precision in the 2008 and 2007 estimates, year-to-year differences in nonrandom testing rates between these two years cannot be shown to be statistically significant.

Where the estimated rate and standard error for the 2008 data are 0.00 percent and 0.00, respectively, in the table, no or negligible drug use was recorded in the sample for the 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.

**Table 1. Estimates of Random and Nonrandom Drug Positive Usage Rates among CDL Drivers for 2006, 2007, and 2008**

Category	2006 Estimate	2006 Standard Error	2007 Estimate	2007 Standard Error	2008 Estimate	2008 Standard Error
<b>Random Testing</b>						
Any Drug	1.3%	0.2%	1.3%	0.2%	1.04%	0.14%
Marijuana	1.0%	0.4%	0.6%	0.2%	0.65%	0.12%
Cocaine	0.4%	0.1%	0.4%	0.1%	0.20%	0.05%
Amphetamines	0.3%*	0.2%	0.2%*	0.1%	0.07%	0.03%
Opiates	0.03%*	0.02%	–	–	0.04%*	0.03%
PCP	–	–	–	–	0.00%†	0.00%†
<b>Nonrandom Testing:</b>						
Pre-employment	1.9%	0.2%	1.6%	0.1%	1.28%	0.10%
Post Crash	1.9%	0.5%	2.7%	0.7%	2.04%	0.65%
Reasonable Suspicion	30.0%	11.6%	48.0%	18.0%	39.37%	18.89%
Return to Duty	5.4%*	4.6%	6.5%*	3.9%	1.03%	0.50%
Follow-up	1.9%	0.5%	1.6%	0.4%	3.70%	1.51%

Source: Analysis Division, FMCSA, U.S. Department of Transportation (USDOT)

\* Indicates estimate with extremely low precision.

– Indicates no or negligible usage among sample cases.

† Indicates no or negligible usage among sample cases.

**Table 2. Estimates of Random and Nonrandom Alcohol Positive Usage Rates among CDL Drivers for 2006, 2007, and 2008**

Category	2006 Estimate	2006 Standard Error	2007 Estimate	2007 Standard Error	2008 Estimate	2008 Standard Error
<b>Random Testing</b> (0.04+ BAC)	0.3%	0.1%	0.25%	0.08%	0.19%*	0.11%
<b>Nonrandom Testing</b>						
Pre-employment	1.2%*	1.0%*	0.2%*	0.2%	0.01%*	0.01%
Post Crash	0.3%	0.1%	0.1%	0.03%	0.13%	0.02%
Reasonable Suspicion (.04+)	32.2%	19.7%	29.4%	19.0%	11.3%	2.99%
Return to Duty (.04+)	0.1%*	0.1%*	0.6%*	0.00%†	0.00%*†	0.00%†
Follow-up (.04+)	0.1%*	0.04%	0.2%	0.08%	2.45%*	2.34%

Source: Analysis Division, FMCSA, USDOT.

\* Indicates estimate with extremely low precision.

† Indicates no or negligible usage among sample cases.