Statewide Summary of Breath Alcohol Data For Year 2009

The following report summarizes the breath alcohol data obtained from BAC Datamaster breath test instruments in association with DUI arrests performed in Washington State during the year 2009. Only breath alcohol results of 0.01 g/210L or greater are included in this summary. This summary should be considered an approximation since the accuracy, in several respects, depends on the reliability of the data entered and the successful collection by the host computer.

The following table shows the average breath alcohol concentration for each age group

Mean Breath Alcohol Concentration by Age Group

alc1

Age Group	Mean	N	Std. Deviation
13 to 19	.1052	2217	.05328
20 to 29	.1377	12835	.05001
30 to 39	.1474	6615	.05305
40 to 49	.1515	5095	.05755
50 to 59	.1496	2912	.05965
60 to 69	.1428	786	.05843
70 and Over	.1352	199	.04894
Total	.1410	30659	.05461

The following table shows the percent of male and female found within each age category

Age by Gender Crosstabulation

		Gender		
		Female	Male	Total
Age	13 to 19	645	1829	2474
		26.1%	73.9%	100.0%
	20 to 29	3716	11537	15253
		24.4%	75.6%	100.0%
	30 to 39	1896	6613	8509
		22.3%	77.7%	100.0%
	40 to 49	1763	5123	6886
		25.6%	74.4%	100.0%
	50 to 59	890	2926	3816
		23.3%	76.7%	100.0%
	60 to 69	180	837	1017
		17.7%	82.3%	100.0%
	70 and Over	36	203	239
		15.1%	84.9%	100.0%
Total		9126	29068	38194
		23.9%	76.1%	100.0%

The following table shows the mean breath alcohol concentrations for males and females:

Mean Breath Alcohol by Gender

alc1

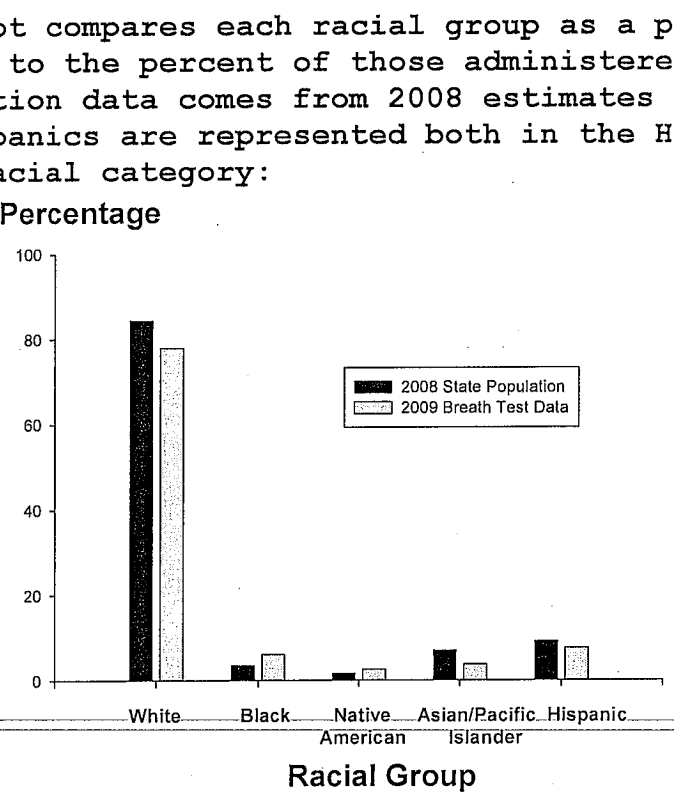
Gender	Mean	N	Std. Deviation
Female	.1414	7467	.05544
Male	.1409	23192	.05433
Total	.1410	30659	.05461

The following table shows the distribution of those arrested for DUI by race:

Frequency by Racial Group

	Frequency	Percent	Valid Percent	Cumulative Percent
Asian	1380	3.6	3.6	3.6
Black	2329	6.1	6.1	9.8
East Indian	19	.1	.1	9.8
Hispanic	2876	7.6	7.6	17.4
Native American	1001	2.6	2.6	20.0
Pacific Island	78	.2	.2	20.2
Uknown	689	1.8	1.8	22.0
White	29616	78.0	78.0	100.0
Total	37988	100.0	100.0	

The following plot compares each racial group as a percent of the state population to the percent of those administered breath tests. The state population data comes from 2008 estimates and sums to over 100% because Hispanics are represented both in the Hispanic category and in another racial category:



The following table shows the mean alcohol concentrations by racial category:

Mean Breath Alcohol by Racial Group

alc1

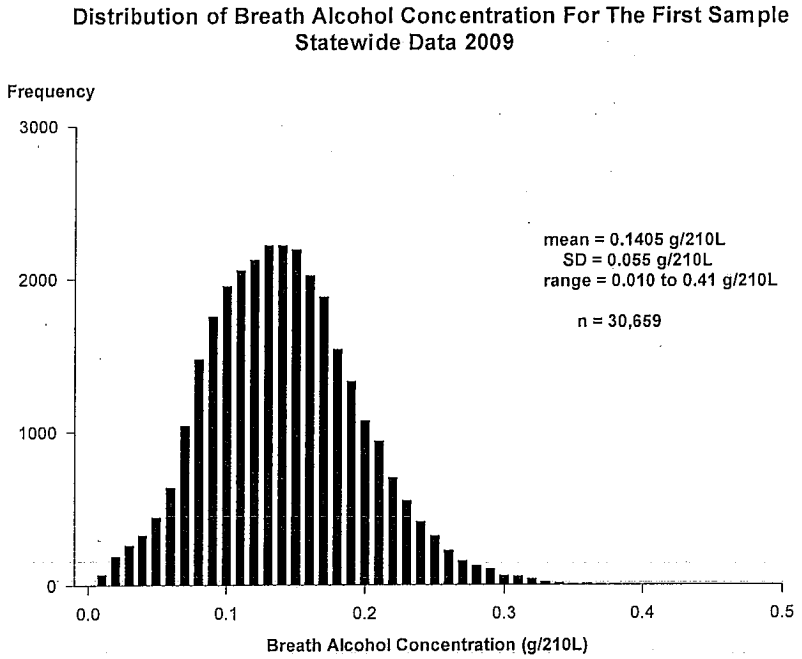
race	Mean	N	Std. Deviation
Asian	.1292	1113	.04936
Black	.1320	1734	.05300
East Indian	.1462	15	.04391
Hispanic	.1425	2337	.05242
Native American	.1603	721	.05728
Pacific Island	.1310	64	.04298
Uknown	.1435	545	.05084
White	.1414	23974	.05497
Total	.1410	30503	.05460

The following table shows the distribution of gender according to the different racial groups:

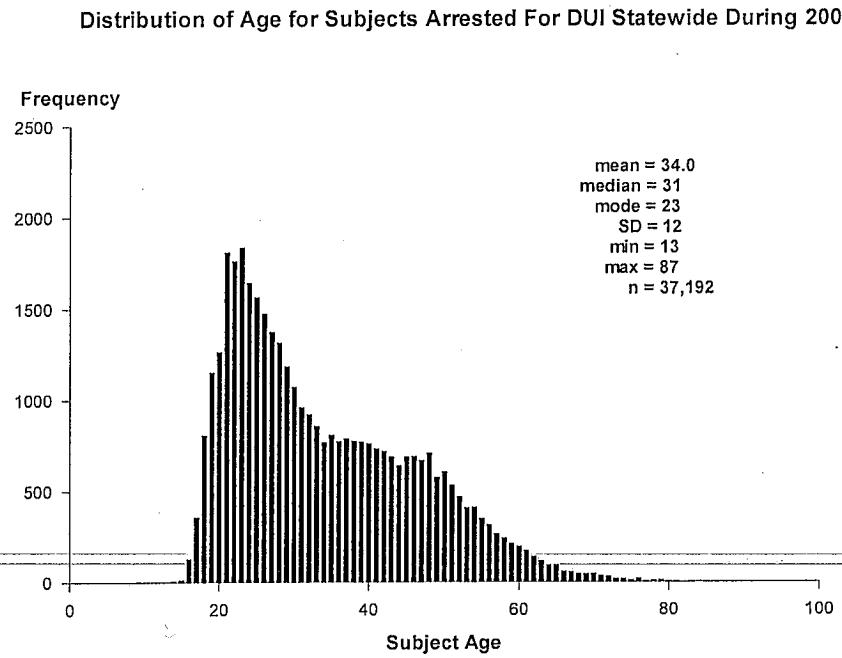
Race by Gender Crosstabulation

		Gender		
		Female	Male	Total
Race	Asian	325	1055	1380
		23.6%	76.4%	100.0%
	Black	432	1897	2329
		18.5%	81.5%	100.0%
	East Indian	2	17	19
		10.5%	89.5%	100.0%
	Hispanic	252	2624	2876
		8.8%	91.2%	100.0%
	Native American	380	621	1001
		38.0%	62.0%	100.0%
	Pacific Island	17	61	78
		21.8%	78.2%	100.0%
	Uknown	73	616	689
		10.6%	89.4%	100.0%
	White	7604	22012	29616
		25.7%	74.3%	100.0%
Total		9085	28903	37988
		23.9%	76.1%	100.0%

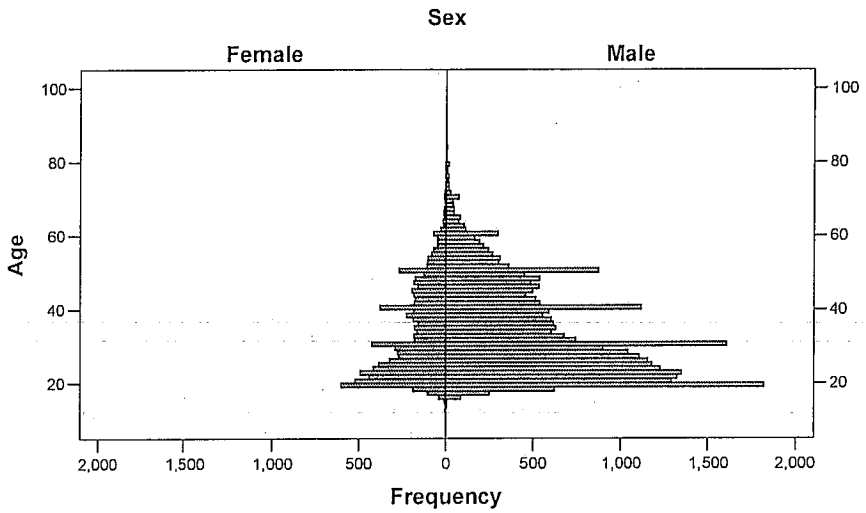
The following is the distribution of all breath alcohol results for all subjects arrested for DUI during 2009 who provided a breath sample. 90% of the subjects were 0.080 g/210L or greater.



The following plot shows the distribution of subject age for statewide DUI arrests during 2009:



The following shows a population pyramid which compares the age distribution for females and males side by side. From this the two distributions can be better compared. We see for the males there are more subjects at the higher ages than for females. Also, there appears to be a larger proportion of males in the 20 to 30 year age group compared to the females. The large majority of males compared to females are clearly seen in comparing the two figures.



The following table shows the mean alcohol concentration for subjects arrested by the Washington State Patrol (WSP) compared to other agencies:

Mean Breath Alcohol by Agency

alc1

Agency	Mean	N	Std. Deviation
WSP	.1329	14555	.05132
Seattle PD	.1503	943	.05625
King County SO	.1536	640	.06047
Spokane PD	.1636	363	.05619
Tacoma PD	.1597	495	.05249
Other Agencies	.1471	13663	.05627
Total	.1410	30659	.05461

The following table shows the refusal rates by gender:

Gender by Test Refusal Rates

		Test Refusal Status		
		Refused Test	Provided Sample	Total
Gender	Female	1393	7733	9126
		15.3%	84.7%	100.0%
	Male	5343	23725	29068
		18.4%	81.6%	100.0%
Total		6736	31458	38194
		17.6%	82.4%	100.0%

The following table shows the refusal rate for WSP compared to Other Agencies:

Agency by Refusal Rate

		Test Refusal Status		
		Refused Test	Provided Sample	Total
Agency	WSP	2577	14787	17364
		14.8%	85.2%	100.0%
	Seattle PD	240	986	1226
		19.6%	80.4%	100.0%
	King County SO	169	671	840
		20.1%	79.9%	100.0%
	Spokane PD	146	371	517
		28.2%	71.8%	100.0%
	Tacoma PD	143	511	654
		21.9%	78.1%	100.0%
	Other Agencies	3461	14132	17593
		19.7%	80.3%	100.0%
Total		6736	31458	38194
		17.6%	82.4%	100.0%

The following table shows refusal rates by racial group:

Refusal Rates by Racial Groups

		Test Refusal Status		
		Refused Test	Provided Sample	Total
Race	Asian	219	1161	1380
		15.9%	84.1%	100.0%
	Black	526	1803	2329
		22.6%	77.4%	100.0%
	East Indian	4	15	19
		21.1%	78.9%	100.0%
	Hispanic	476	2400	2876
		16.6%	83.4%	100.0%
	Native American	257	744	1001
		25.7%	74.3%	100.0%
	Pacific Island	13	65	78
		16.7%	83.3%	100.0%
	Uknown	122	567	689
		17.7%	82.3%	100.0%
	White	5075	24541	29616
		17.1%	82.9%	100.0%
Total		6692	31296	37988
		17.6%	82.4%	100.0%

The following table illustrates the breath test refusal rates by age group.

Refusal Rate by Age Group

		Test Refusal Status		
		Refused Test	Provided Sample	Total
Age	13 to 19	227	2247	2474
		9.2%	90.8%	100.0%
	20 to 29	2145	13108	15253
		14.1%	85.9%	100.0%
	30 to 39	1709	6800	8509
		20.1%	79.9%	100.0%
	40 to 49	1624	5262	6886
		23.6%	76.4%	100.0%
	50 to 59	807	3009	3816
		21.1%	78.9%	100.0%
	60 to 69	195	822	1017
		19.2%	80.8%	100.0%
	70 and Over	29	210	239
		12.1%	87.9%	100.0%
Total		6736	31458	38194
		17.6%	82.4%	100.0%

The following table illustrates the breath test refusal rates by each of the Washington State Patrol Districts:

Breath Test Refusal Rates by WSP District

		Test Refusal Status		
		Refused Test	Provided Sample	Total
District	1.0000	356	2006	2362
		15.1%	84.9%	100.0%
	2.0000	611	3094	3705
		16.5%	83.5%	100.0%
	3.0000	225	1267	1492
		15.1%	84.9%	100.0%
	4.0000	149	1181	1330
		11.2%	88.8%	100.0%
	5.0000	228	1478	1706
		13.4%	86.6%	100.0%
	6.0000	113	862	975
		11.6%	88.4%	100.0%
	7.0000	629	3544	4173
		15.1%	84.9%	100.0%
	8.0000	249	1273	1522
		16.4%	83.6%	100.0%
Total		2560	14705	17265
		14.8%	85.2%	100.0%

The following table illustrates the mean breath alcohol concentration obtained in Washington State Patrol DUI arrests by District:

Mean Breath Alcohol Concentration by WSP District

alc1

District	Mean	N	Std. Deviation
1.0000	.1369	1980	.05223
2.0000	.1290	3048	.04849
3.0000	.1322	1253	.05279
4.0000	.1398	1169	.05142
5.0000	.1352	1454	.05154
6.0000	.1370	841	.05603
7.0000	.1292	3486	.05009
8.0000	.1348	1247	.05305
Total	.1329	14478	.05130

The following table illustrates the number and percent of Washington State Patrol DUI arrests coming from accident investigations within each District:

Percent of DUI Arrests Coming From Accidents by WSP District

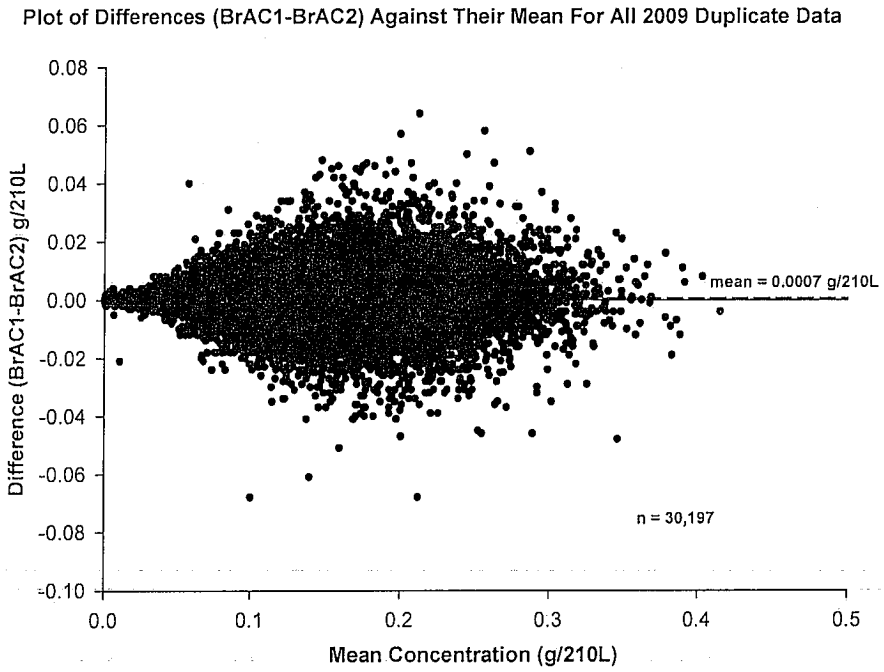
		Accident		
		No Accident	Accident	Total
District	1.0000	1994	368	2362
		84.4%	15.6%	100.0%
	2.0000	3306	399	3705
		89.2%	10.8%	100.0%
	3.0000	1357	135	1492
		91.0%	9.0%	100.0%
	4.0000	1167	163	1330
		87.7%	12.3%	100.0%
	5.0000	1494	212	1706
		87.6%	12.4%	100.0%
	6.0000	867	108	975
		88.9%	11.1%	100.0%
	7.0000	3867	306	4173
		92.7%	7.3%	100.0%
	8.0000	1317	205	1522
		86.5%	13.5%	100.0%
Total		15369	1896	17265
		89.0%	11.0%	100.0%

The following table illustrates the number and percent of DUI arrests coming from accident investigations for different agencies within the state:

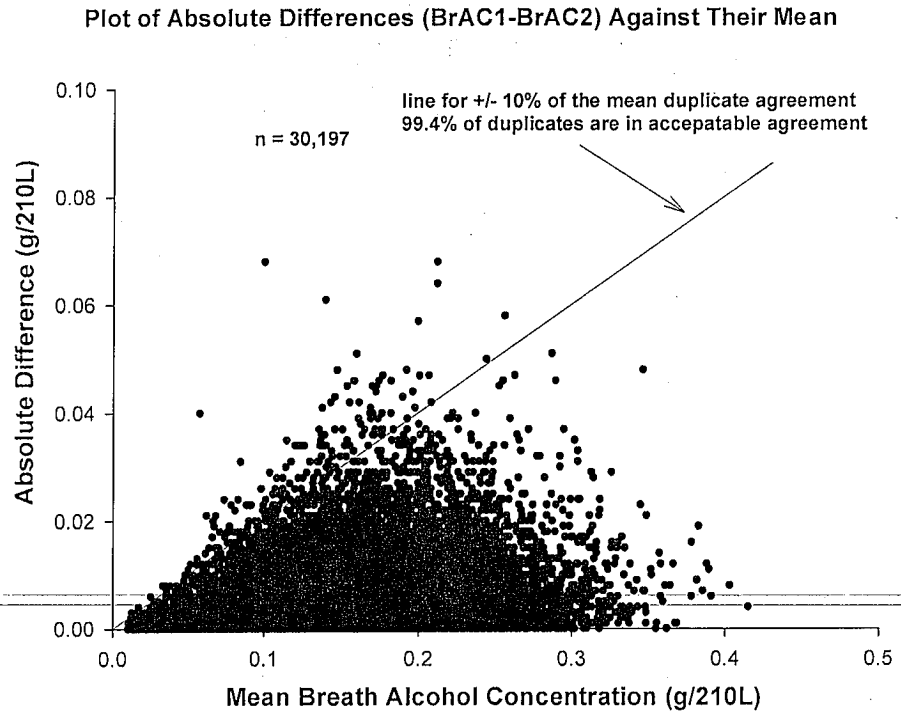
Percent of DUI Arrests Coming From Accidents for Different Agencies

		Accident		
		No Accident	Accident	Total
Agency	WSP	15457	1907	17364
		89.0%	11.0%	100.0%
	Seattle PD	829	397	1226
		67.6%	32.4%	100.0%
	King County SO	609	231	840
		72.5%	27.5%	100.0%
	Spokane PD	294	223	517
		56.9%	43.1%	100.0%
	Tacoma PD	485	169	654
		74.2%	25.8%	100.0%
	Other Agencies	14653	2940	17593
		83.3%	16.7%	100.0%
Total		32327	5867	38194
		84.6%	15.4%	100.0%

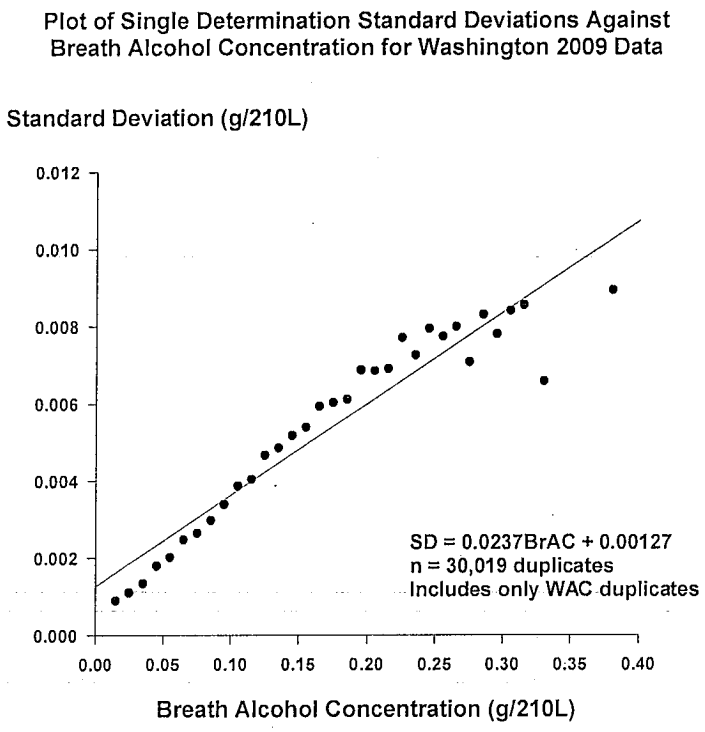
The following figure is a Bland-Altman plot of the duplicate breath test differences against their mean. The mean difference is very close to zero indicating that neither test is systematically higher. The increasing variability with concentration is common.



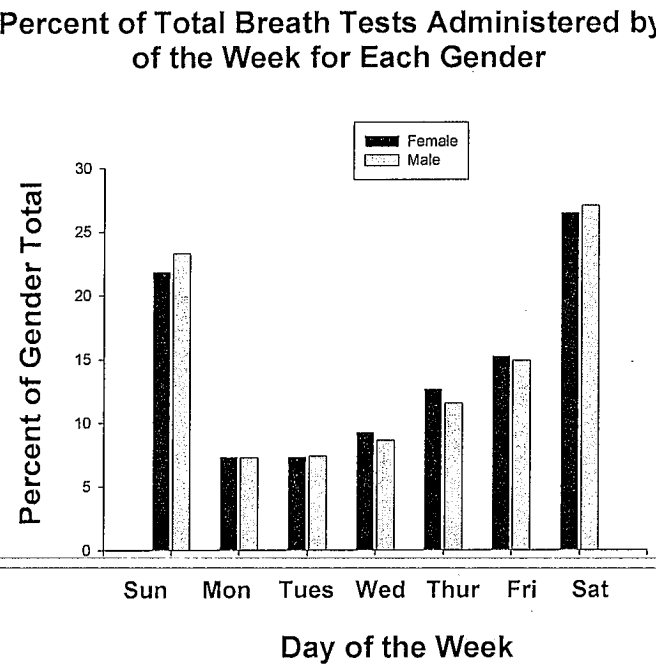
The following figure plots the absolute difference for the duplicate breath tests against their mean. The variability is seen to increase with concentration and illustrates the importance of a relative agreement standard. 99.4% of the duplicates are within the acceptable +/-10% of the mean WAC requirement.



The following is an uncertainty function for breath alcohol analysis. It plots the standard deviation against concentration and is relevant for estimating confidence intervals in breath alcohol measurement.



The following plots the percent of the gender total breath tests by day of the week. Both genders track fairly closely for each day of the week. Most testing is done on the weekends.



Summarizing Figures:

1.9% of the first breath sample attempts results in "Invalid Sample"

80 (0.2%) of the first breath sample attempts resulted in "Interference Detected"

21.9% of the DUI arrests statewide were done in King County for 2009.

67% of the tests performed in 2009 had a generic code entered for the Liquor Board License Number. 21% had an actual Liquor Board License Number entered as the place where the subject was last drinking. 12% refused to answer.

54% of the subjects were administered PBT tests.

99.4% of the duplicate breath tests agreed within the required ±10% of the mean.

The following shows the top twenty-five liquor licensed establishments identified most frequently in the breath test database during 2008:

Rank	Name	Location	License	Number
1	Jokers Casino	Richland	357267	101
2	Tulalip Casino	Marysville	085216	88
3	Lady Luck Cowgirl Up Steakhouse	Tacoma	357687	81
4	J.R.s	Marysville	359777	76
5	Mukelshoot Casino	Auburn	079098	58
6	McClouds	Bremerton	086908	52
7	Hoops Sports B & G	Yakima	356926	49
8	Snoqualmie Casino	Snoqualmie	402435	48
9	Dodge City Bar & Grill	Vancouver	365465	43
10	Freddie's Club Casino	Fife	072262	41
11	Gonzo's	Kent	089193	39
12	Wayne's Inn	Puyallup	357372	39
13	Charlie's Bar & Grill	Vancouver	076348	36
14	The Royal Inn	Bellingham	353649	35
15	O Finnigan's Pub	Everett	351609	34
16	Pint and Quarters Ale House	Olympia	071452	33
17	Yella Beak Saloon	Enumclaw	353633	33
18	Schotze's	Everett	077604	32
19	The Jet Bar & Grill	Mill Creek	368641	32
20	Jack-Sons Sports Bar	Yakima	074679	30
21	Suquamish Clearwater Casino	Suquamish	079392	30
22	Minn's Club	Wenatchee	353968	30
23	Royal Bear Pub & Eatery	Algona	356735	30
24	Emerald Queen Casino	Fife	366407	30
25	Susie's Bourbon Street Bistro & Bar	Yakima	076027	29