

# DUI and Breath Testing

The devil is in the details



# NO DIVERSION PROGRAMS

Domestic Violence	Fraud Check	Possession Pot	Possession Crack	Assault and Battery 2 <sup>nd</sup> or 3 <sup>rd</sup>	DUI
PTI	PTI	PTI	PTI	PTI	NO
	Diversion	Discharge	Discharge		NO
MD Court	MD Court	MD Court	MD Court	MD Court	YES BUT NO
YOA	YOA	YOA	YOA	YOA	NO
Expungable	Expungable	Expungable	Expungable	Expungable	NO

# Driving / Operating

SECTION 56-5-2930. **Operating motor vehicle** while under influence of alcohol or drugs; penalties; enrollment in Alcohol and Drug Safety Action Program; prosecution.

(A) It is unlawful for a person to **drive** a motor vehicle within this State while under the influence of alcohol to the extent that the person's faculties to drive a motor vehicle are materially and appreciably impaired,

# Driving / Operating

Code Commissioner

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The Law

# DUI and Implied Consent

## **DUI (damned if you do)**

- Criminal offense of DUI
- Offense
- Magistrate/Municipal Court
- Magistrate Judge
- Presumed Innocent
- Proof Beyond a Reasonable Doubt
- Jury

## **Implied Consent Violations (damned if you do or don't)**

- Civil violation to refuse to blow or blow .15% or greater
- Administrative Law Court Office of Motor Vehicle Hearings
- Hearing Officer
- No Presumption but Suspension starts Immediately
- Preponderance
- No Jury

### DUI 1<sup>st</sup> Offense Direct Consequence

BAC .00-.04	BAC .05-09	BAC.10-.15	BAC .16-^	Refused
NOT GUILTY*	2-30 Days	3-30 Days	30-90 Days	2-30 Days
	\$1,017.00	\$1,224.50	\$2,262.00	\$1,017.00
	6 Month Suspension	6 Month Suspension	6 Month Suspension	6 Month Suspension
	ADSAP	ADSAP	ADSAP	ADSAP
	IID	IID	IID	IID
	ADSAP	ADSAP	ADSAP	ADSAP

# Implied Consent Violation

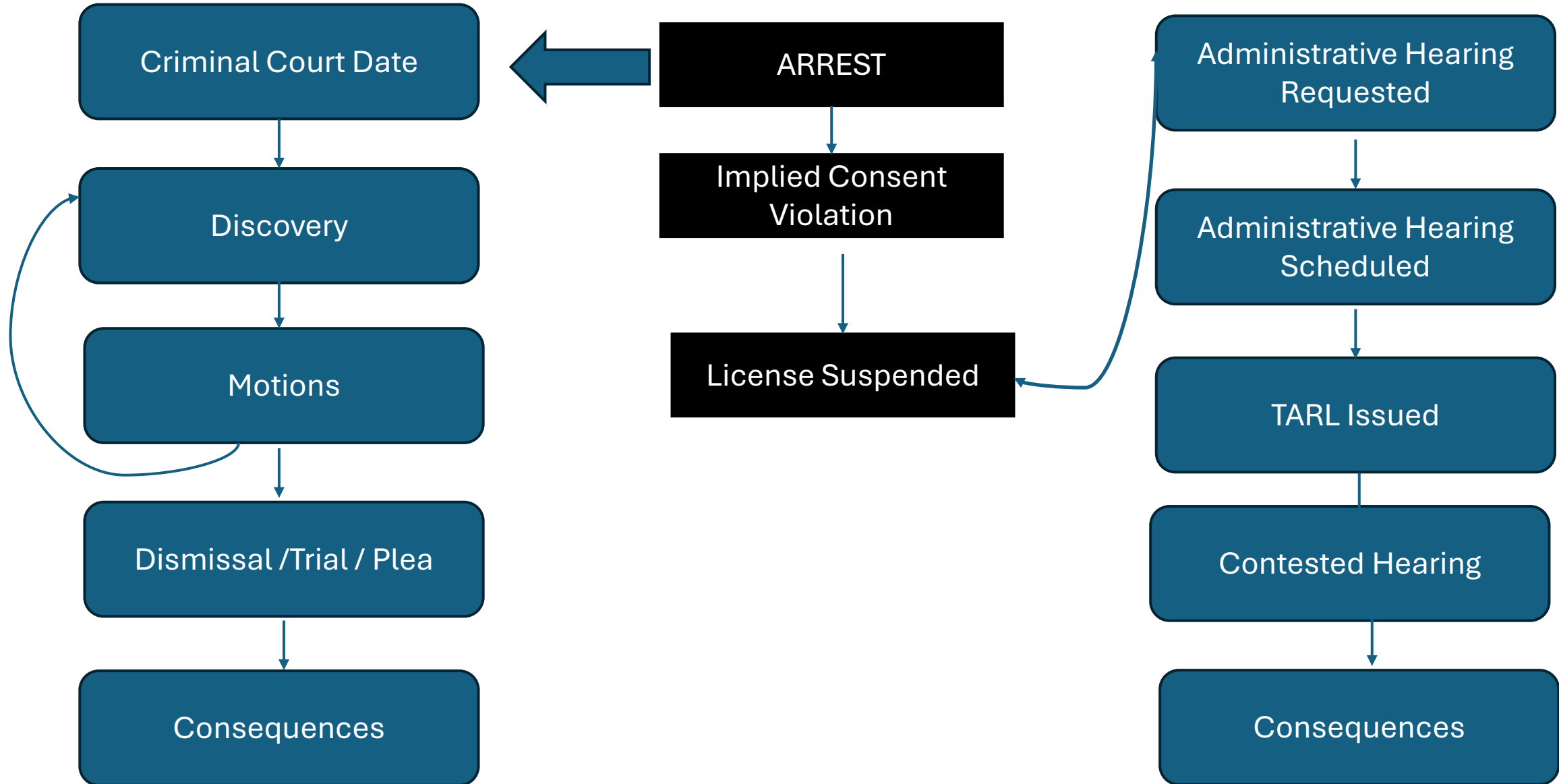
## **Refused Breath Test**

- 180 day suspension
- ADSAP

## **BAC .15% or greater**

- 30 day suspension
- ADSAP

- Suspensions Begin Immediately (no presumption of innocence)
- Optionally can end suspension by getting IID.
- Can challenge the suspension, but consequences for not winning the challenge.
  - Mandatory IID.





Too Many Drunks on the Road





**STOP**

**DON'T DRUNK**

**AND**

**DRIVE**

## Drinking and Driving Don't Mix

- Last year more than 10,000 D.U.I. related fatalities
- 31% of all traffic fatalities
- One DUI fatality every 51 minutes.

# Cautionary Tales

- Felony DUI
- Death
- Great Bodily Injury

# Standardized Field Sobriety Testing

NHTSA research began in 1975 in California with three final reports being published:

- California: 1977 (lab study only)
- California: 1981 (lab/field study)
- Maryland, Washington, DC, Virginia, North Carolina: 1983 (field study only)

# Standardized Field Sobriety Testing

- HGN by itself was 77% accurate
- Walk and Turn was 68% accurate
- One Leg Stand was 65% accurate

Three SFST validation studies were undertaken between 1995 and 1998:

- Colorado - 1995
- Florida - 1997
- San Diego - 1998

# Standardized Field Sobriety Testing

- 95% correct arrest decision based on three test battery (HGN, WAT, OLS)
- 95% of those arrested had a BAC of 0.05 or higher
- 93% of those arrested had a BAC of .08 and above.

# Standardized Field Sobriety Testing

But who was excluded from the test:

- Individuals 60 years old and above
- Individuals 50 pounds or more overweight
- NHTSA took weight and age into consideration and determined that a person over the age of **60** **65**, and people more than 50 pounds overweight could not perform the Walk and Turn or the One Leg Stand tests the same way other people could.



# Standardized Field Sobriety Testing

Standardized mean to a known standard.

Are their consequences for deviation.

Hohman Order.



# Breath Testing

Question: Officer, was the machine working perfectly.

Answer: Yes.

Question: Officer, how do you know the machine was working perfectly.

Answer: The machine said so.

Question: Officer, what if the machine didn't recognize its own error?

Answer: That's not possible. The machine tells me if it has an error.

# THE THREE GREATEST LIES IN LAW ENFORCEMENT

1. I'm gonna do you a favor...
2. Just step out for a minute and let's make sure you're OK to drive
3. It's the perfect machine, incapable of error

# 1938 | THE DRUNKOMETER



1954 Breathalyzer 900  
a/k/a The Dial a Drunk



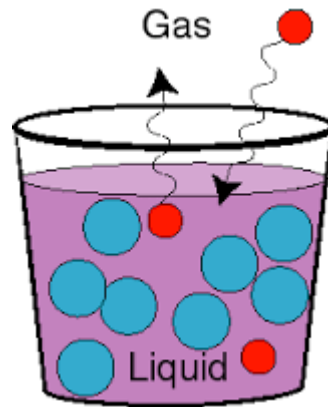
Henry's Law is a relationship between the concentration of dissolved gasses in a liquid to the concentration of the air above the liquid, or the saturation ratio of alcohol in the air in which the gas is contained.

If Temperature is constant

If Pressure is constant

There is a knowable ratio between the amount of a volatile chemical in liquid and in the head space above it.

PARITION RATIO





**DataMaster DMT Device**



# Portable Breath Testing



# Is 2100:1 the correct partition ratio?

- Likely correct for German Shepards
- More correct for men than women
- More correct for younger people
- Recognized difficulty in getting a large enough population sample
- True measured partition ratios have ranged from 832:1 up to 7289:1
- Most measured partition ratios fall between 1600:1 and 3200:1
  - This allows for reported BAC's 31% higher than accurate
  - And 34% lower than accurate
- Dubowksi and others have recommended that test results be reduced by 25%.

## Measure Twice, Cut Once



# If the machine is accurate: The results should be repeatable!

Duplicate breath tests are a well known safeguard for increasing confidence in breath alcohol tests. Kurt Dubowski authored a paper in 1960 entitled "Necessary Scientific Safeguards in Breath Alcohol Analysis" and was published in the Journal of Forensic Sciences

"justifiable confidence in breath alcohol analysis results can be drastically increased by the relatively simple and practical means of performing duplicate or replicate analyses on a given subject in rapid succession."

# If the machine is accurate: The results should be repeatable!

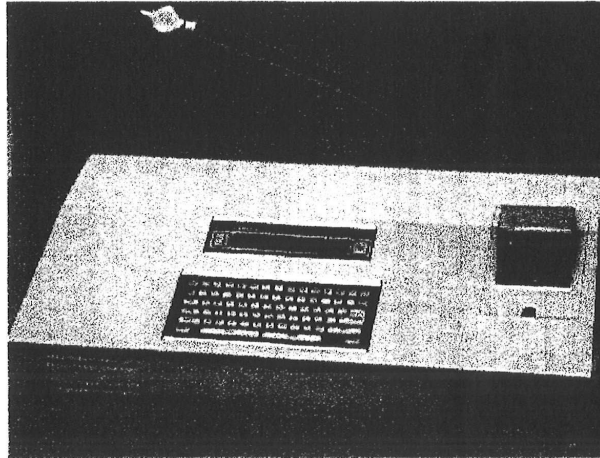
Twenty-six years later, in 1986, Dubowski repeated the necessity of duplicate breath alcohol testing when he reported the position statement of the National Safety Council Committee on Alcohol and Other Drugs (WOA30116):

“At least two separate breath samples should be collected and analyzed individually in performing any quantitative evidential breath-alcohol analysis. The breath samples should be collected at intervals of not less than 2 nor more than 10 minutes after an initial deprivation period of at least 15 minutes.”

**REPORT ON THE  
STATE OF SOUTH CAROLINA  
BAC DATAMASTER EVALUATION**

**BY**

**KURT M. DUBOWSKI, Ph.D., DABCC, DABFT**



**Submitted to the South Carolina Law Enforcement Division  
Columbia, South Carolina**

**26 December 1998**

# Body Temperature Error

- Henry's Law:
- If Temperature is constant
- If Pressure is constant
- There is a knowable ratio between the amount of a volatile chemical in liquid and in the head space above it.
- Datamaster ASSUMES an average body temp body temperature. The machines self test does measure the simulator solution temp
- If 37C is average: Half of all people have a higher body temp.
- Each person's temp may vary by 1C during the course of a day



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> [J Anal Toxicol](#). 2010 Jun;34(5):238-42. doi: 10.1093/jat/34.5.238.

# The relationship of normal body temperature, end-expired breath temperature, and BAC/BrAC ratio in 98 physically fit human test subjects

[J Mack Cowan](#) <sup>1</sup>, [James M Burris](#), [James R Hughes](#), [Margaret P Cunningham](#)

Affiliations + expand

PMID: 20529457 DOI: [10.1093/jat/34.5.238](#)

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# Body Temperature Error

- Each 1C degree causes a variance of +/- 6.5 percent in the partition ration.
- 1963:1 instead of 2100:1

# Breath Alcohol v. Mouth Alcohol

- The Slope Detector Fallacy