

CONTINUING LEGAL EDUCATION

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Story Telling in the DWI Trial and Accident Reconstruction

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SPONSORED BY:
APPELLATE DIVISION, FIRST JUDICIAL DEPARTMENT
AND
THE ASSIGNED COUNSEL PLAN FOR THE FIRST DEPARTMENT

ACCIDENT INVESTIGATION & RECONSTRUCTION

FROM DWI TO VEHICULAR HOMICIDE



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WHAT IS ACCIDENT INVESTIGATION & RECONSTRUCTION

WIKIPEDIA
The Free Encyclopedia

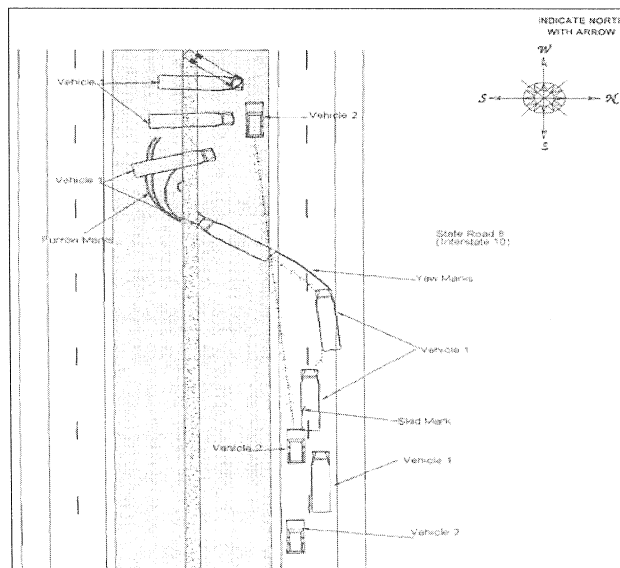


Vehicular Accident Reconstruction is the scientific process of investigating, analyzing, and drawing conclusions about the causes and events during a vehicle collision.

Reconstructionists are employed to conduct in-depth collision analysis and reconstruction to identify the **collision causation and contributing factors** in different types of collisions, including the role of the driver(s), vehicle(s), roadway and the environment.

The laws of physics and engineering principles such as the conservation of linear momentum, work-energy methods, and kinematics are the basis for these analyses and may make use of software to calculate useful quantities.

The accident reconstruction provides a rigorous analysis that an expert witnesses can present at trial¹



¹ Wikipedia contributors. "Vehicular accident reconstruction." *Wikipedia, The Free Encyclopedia*. Wikipedia, The Free Encyclopedia, 20 Dec. 2014. Web. 26 Feb. 2015.

ACCIDENT INVESTIGATION & RECONSTRUCTION APPLIED:

WHAT CRIMINAL CASES WILL BE IMPACTED?

DRIVING WHILE IMPAIRED OR INTOXICATED

VTL § 1192.1:	DWAI
VTL § 1192.2/3/4:	DWI
VTL § 1192.2/4A:	Aggravated DWI
VTL § 1192.2-AB:	Leandra's Law

RECKLESS DRIVING & RECKLESSNESS ENDANGERMENT

VTL § 1212:	Reckless Driving
PL § 120.20:	Reckless Endangerment 2 nd
*PL § 120.25:	Reckless Endangerment 1 st

LEAVING THE SCENE OF AN ACCIDENT

VTL § 600.1A	Leaving the Scene (Property Damage)
VTL § 600.2A	Leaving the Scene (Injury/Death)

PENAL LAW ASSAULT

PL § 120.00:	Assault 3 rd
PL § 120.05:	Assault 2 nd
*PL § 120.10:	Assault 1 st

VEHICULAR ASSAULT

PL § 120.03:	Vehicular Assault 2 nd
PL § 120.04:	Vehicular Assault 1 st
PL § 120.04-A :	Aggravated Vehicular Assault
PL § 120.12:	Vehicular Homicide 2 nd
PL § 120.13:	Vehicular Homicide 1 st
PL § 120.14:	Aggravated Vehicular Homicide

PENAL LAW HOMICIDE

PL § 125.10:	Criminally Negligent Homicide
PL § 125.20:	Manslaughter 2 nd
*PL § 125.25:	Murder 2 nd

*Depraved Indifference *Mens Rea*

THE IMPORTANCE OF KNOWING THE RELATIONSHIP OF AN ACCIDENT INVESTIGATION AND RECONSTRUCTION WITH THE LEGAL INSTRUCTIONS TO A FACT FINDER

- Determining the collision causation and contributing factors in these criminal investigations and/or prosecutions can be the difference in whether criminal charges are filed or not, what level criminal charges are brought, and ultimately the difference between guilt and innocence.
- In order to know what you are looking for and maximize the use of evidence obtained in a vehicular accident investigations, you must consider what the fact finder will be instructed as it pertains to the role of an accident, the driver's conduct, and in the most serious cases of assault and homicide – causation.

ACCIDENT INVESTIGATION & RECONSTRUCTION APPLIED:
APPLYING ACCIDENT INVESTIGATION AND RECONSTRUCTION TO
THE JURY CHARGE:

DRIVING WHILE IMPAIRED OR INTOXICATED

Excerpt of NYS CJI – VTL §§ 1192.1, 2, 2A, 2AB, 3, 4, and 4A

“To determine whether the defendant was intoxicated you may consider all the surrounding facts and circumstances, including, for example:

- * the defendant’s physical condition and appearance, balance and coordination, and manner of speech;
- * the presence or absence of an odor of alcohol;
- * **the manner in which the defendant operated the motor vehicle;**
- * [opinion testimony regarding the defendant’s sobriety];
- * **[the circumstances of any accident];**
- * [the results of any test of the content of alcohol in the defendant’s blood].”

RECKLESS DRIVING

Excerpt of NYS CJI – VTL § 1212²

“Under our law, a person is guilty of RECKLESS DRIVING when that person **drives or uses any motor vehicle, in a manner which unreasonably interferes with the free and proper use of a public highway,** road, street, or avenue, **or unreasonably endangers users of a public highway,** road, street, or avenue.”

² Note that VTL § 1212 is a necessary element in the Aggravated Vehicular Assault and Homicide charges [PL §§ 120.04-A and 120.14 respectively], and is subject to the Third Department holding in People v. Goldblatt, 98 A.D.3d 817 (2012).

ACCIDENT INVESTIGATION & RECONSTRUCTION APPLIED:
HOW DOES IT APPLY IN THESE CRIMINAL CASES?

RECKLESS ENDANGERMENT 2ND

Excerpt of NYS CJI – PL § 120.20

“A person RECKLESSLY engages in conduct which creates a substantial risk of serious physical injury to another person when:

- **he or she engages in conduct which creates a substantial and unjustifiable risk of serious physical injury** to another person, and
- when he or she is aware of and consciously disregards that risk, and
- when that risk is of such nature and degree that disregard of it constitutes a gross deviation from the standard of conduct that a reasonable person would observe in the situation.”

RECKLESS ENDANGERMENT 1ST

Excerpt of NYS CJI – PL § 120.25

“A person RECKLESSLY ENGAGES IN CONDUCT WHICH CREATES A GRAVE RISK OF DEATH TO ANOTHER PERSON when he or she:

- **engages in conduct which creates a grave and unjustifiable risk that another person’s death will occur,** and
- when he or she is aware of and consciously disregards that risk, and
- when that grave and unjustifiable risk is of such nature and degree that disregard of it constitutes a gross deviation from the standard of conduct that a reasonable person would observe in the situation.”

ACCIDENT INVESTIGATION & RECONSTRUCTION APPLIED:

HOW DOES IT APPLY IN THESE CRIMINAL CASES?

LEAVING THE SCENE OF AN ACCIDENT

Excerpt of NYS CJI – VTL § 600.2

(Analogous language being found in VTL § 600.1)

Under our law, **any person operating a motor vehicle who knowing or having cause to know that personal injury has been caused to another person, due to an incident involving the motor vehicle operated by such person** shall, before leaving the place where the said personal injury occurred, stop, exhibit his or her license and insurance identification card for such vehicle and give his or her name [and] residence to the injured party, if practical, and also to a police officer, or in the event that no police officer is in the vicinity of the place of said injury, then, he or she shall report said incident as soon as physically able to the nearest police station or judicial officer

ACCIDENT INVESTIGATION & RECONSTRUCTION APPLIED:

HOW DOES IT APPLY IN THESE CRIMINAL CASES?

PENAL LAW ASSAULT & HOMICIDE

MANSLAUGHTER 2ND

Excerpt of NYS CJI – PL § 125.15(1)

(Analogous language being found in all Assault and Homicide charges referenced above)

Under our law, a person is guilty of Manslaughter in the Second Degree when that person **recklessly causes the death** of another person.

*See the expanded **Causation /Cause of Death** (injury) charge below.

VEHICULAR ASSAULT & VEHICULAR HOMICIDE

VEHICULAR MANSLAUGHTER 2ND

Excerpt of NYS CJI – PL § 125.12(1)

(Analogous language being found in all Vehicular Assault and Vehicular Homicide Charges)

Under our law, a person is guilty of Vehicular Manslaughter in the Second Degree when he or she operates a motor vehicle

while he or she is in an intoxicated condition.

and **as a result of such intoxication, operates such motor vehicle in a manner that causes the death** of such other person.

*See the expanded **Causation/Cause of Death** (injury) charge below.

ACCIDENT INVESTIGATION & RECONSTRUCTION APPLIED:

HOW DOES IT APPLY IN THESE CRIMINAL CASES?

CAUSE OF DEATH

A person “**causes the death**” of another when **that person's conduct is a sufficiently direct cause of the death** of another.

A person's conduct is a sufficiently direct cause of death when:

One, **the conduct is an actual contributory cause of the death; and** two, when the **death was a reasonably foreseeable result of the conduct.**

Let me explain each of those two concepts.

First, when does a person's conduct constitute an actual contributory cause of the death of another?

A person's conduct is an actual contributory cause of the death of another when that conduct forged a link in the chain of causes which actually brought about the death – in other words, when the conduct set in motion or continued in motion the events which ultimately resulted in the death.

An obscure or merely probable connection between the conduct and the death will not suffice.

At the same time, if a person's conduct is an actual contributory cause of the death of another, then **it does not matter that such conduct was not the sole cause of the death**, or that a pre-existing medical condition also contributed to the death, or that the death did not immediately follow the injury.

Second, when is death a reasonably foreseeable result of the conduct?

Death is a reasonably foreseeable result of a person's conduct when the death should have been foreseen as being reasonably related to the actor's conduct.

It is not required that the death was the inevitable result or even the most likely result.

And, it is not required that the actor have intended to cause the death.

**HOW DO YOU DETERMINE COLLISION CAUSATION AND
CONTRIBUTING FACTORS?**

START WITH YOUR FUNDAMENTALS!

ACCIDENT INVESTIGATION & RECONSTRUCTION FUNDAMENTALS

INVESTIGATION

- I. Police Accident Report
- II. Witness Investigation
- III. Scene Investigation
- IV. Vehicle Investigation
- V. Use of Technology
- VI. Expert Witness Input

RECONSTRUCTION

- I. Point or Area of Impact
- II. Direction of Travel
- III. Speed
- IV. Pre-Collision Conduct
- V. Causation &
Contributing Factors
- VI. Expert Witness Report

I. POLICE ACCIDENT REPORT

**ARE YOU MAXIMIZING THE EVIDENCE THAT MAY BE
OBTAINED FROM THE MV-104?**

- 1. NAMES OF OPERATORS, PASSENGERS, WITNESSES, &
REGISTRANTS**
- 2. ADDRESSES OF OPERATORS AND REGISTRANTS**
- 3. CONTACT INFORMATION**
- 4. SKETCH OF CIRCUMSTANCES OF ACCIDENT**
- 5. NARRATIVE OF PERCEIVED CIRCUMSTANCES OF
ACCIDENT**
- 6. INITIAL REPORT OF INJURIES**
- 7. INSURANCE CODES →**
 - a. INSURANCE RECORDS**
 - i. STATEMENTS BY OPERATORS AND
PASSENGERS**
 - ii. PICTURES OF VEHICLES AND SCENE**
 - iii. MEDICAL RECORDS**
- 8. INITIAL ASSESSMENT OF INVESTIGATING OFFICER:
RE: CONDITIONS, CAUSES & CONTRIBUTING
FACTORS**

ARE YOU MAXIMIZING THE EVIDENCE THAT MAY BE OBTAINED FROM THE MV-104?

Date: 023 File No: 1054		POLICE ACCIDENT REPORT (NYC) NY-100.42 (7/71)	
Date of Acc: 08/20/14 Day of Week: FRI Time of Acc: 1135		No. of Vehicles: 1 No. Injured: 0 No. Killed: 0	
Location of Acc: 520 W 44TH ST City: NEW YORK State: NY Zip: 10036		Vehicle 1: 1990 TAXI License: E169 220 417 Make: AC 19-190	
Driver: [Name] License: [No.] Insurance: [Company]		Passenger: [Name] License: [No.] Insurance: [Company]	
Description of Vehicle 1: [Details]		Description of Vehicle 2: [Details]	
Description of Vehicle 3: [Details]		Description of Vehicle 4: [Details]	
Description of Vehicle 5: [Details]		Description of Vehicle 6: [Details]	
Description of Vehicle 7: [Details]		Description of Vehicle 8: [Details]	
Description of Vehicle 9: [Details]		Description of Vehicle 10: [Details]	
Description of Vehicle 11: [Details]		Description of Vehicle 12: [Details]	
Description of Vehicle 13: [Details]		Description of Vehicle 14: [Details]	
Description of Vehicle 15: [Details]		Description of Vehicle 16: [Details]	
Description of Vehicle 17: [Details]		Description of Vehicle 18: [Details]	
Description of Vehicle 19: [Details]		Description of Vehicle 20: [Details]	
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Description of Vehicle 95: [Details]		Description of Vehicle 96: [Details]	
Description of Vehicle 97: [Details]		Description of Vehicle 98: [Details]	
Description of Vehicle 99: [Details]		Description of Vehicle 100: [Details]	

**DO YOU KNOW EACH CONDITION, CAUSE, AND
CONTRIBUTING FACTOR NOTED BY THE INVESTIGATING
OFFICER**

COVER SHEET
L

I. POLICE ACCIDENT REPORT

INSURANCE CODES: SOURCE OF INSURANCE RECORDS THAT MAY CONTAIN RECORDED STATEMENTS, PICTURES, & MEDICAL RECORDS

STEP 1: IDENTIFY INSURANCE CODE ON POLICE ACCIDENT REPORT

STEP 2: GO TO THE NYS DEPARTMENT OF FINANCIAL SERVICES WEBPAGE: <http://www.dfs.ny.gov/insurance/dmvindex.htm>



DMV Insurance Codes and Company Contacts

Insurance Information for Consumers

In Cooperation with The New York State Department of Motor Vehicles

- Auto Insurance Cards (e.g. Bar Code inquiries)
- Changes - Code or contact information
- Unassigned numbers
- Other DMV code Inquiries
- DMV CODES
 - By Number
 - By Company Name

STEP 3: CLICK ON “DMV CODES: BY NUMBER”

DMV CODES - By Number [In Range]

Note: No codes are assigned to numbers ranging from 499 - 599, 773 - 999

001 - 099	300 - 399	700 - 772
100 - 199	400 - 498	Full List by Code
200 - 299	600 - 699	

I. POLICE ACCIDENT REPORT

INSURANCE CODES: LEAD TO INSURANCE RECORDS THAT MAY CONTAIN STATEMENTS, PICTURES, & MEDICAL RECORDS

STEP 4: CLICK ON DMV CODE – BY NUMBER RANGE THAT CORRELATES WITH INSURANCE CODE FROM POLICE ACCIDENT REPORT



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DMV Insurance Codes and Company Contacts

DMV Codes: All Codes

The code table has seven columns. Reading from left to right the column headings are: DMV Number, NAIC Number, Company Name, Contact, Phone Number, Street, and City, State, Zip.

001-099 | 100-199 | 200-299 | 300-399 | 400-499 | 600-699 | 700 and up | Full List by Code | Lists by Company

DMV#	NAIC#	Company Name	Contact	Phone	Street	City/State/Zip
1	36161	Travelers Property Casualty Insurance Company		(800) 238-6225	One Tower Square	Hartford, CT 06183
4	20699	Ace Property And Casualty Insurance Company	Ace INA Customer Services	(215) 640-1000	P.O. Box 1000, 436 Walnut Street	Philadelphia, PA 19106
5	11252	Encompass Home And Auto Insurance Company	Call Center	(800) 588-7400	529 Main Street, Suite 600	Charlestown, MA 02129

STEP 5: SCROLL DOWN TO THE SPECIFIC INSURANCE CODE THAT CORRELATES WITH THE VEHICLE INVOLVED IN YOUR ACCIDENT

36	16616	American Transit Insurance Company	Edward T. McGettigan Sr.	(212) 857-8200 x401	One MetroTech Center	Brooklyn, New York 11201
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I. POLICE ACCIDENT REPORT

INSURANCE CODES LEAD TO INSURANCE RECORDS THAT MAY CONTAIN STATEMENTS, PICTURES, & MEDICAL RECORDS

**BE SURE TO SECURE THE INSURANCE INFORMATION FOR EACH
VEHICLE INVOLVED.**

YOU WILL THEN BE IN POSSESSION OF THE NAME OF THE INSURANCE
CARRIER, CONTACT PERSON, PHONE NUMBER, & ADDRESS OF THE
INSURANCE CARRIER OF EACH VEHICLE INVOLVED IN THE
ACCIDENT.

YOU WILL THEN BE PREPARED TO ISSUE SUBPOENAS FOR COMPLETE
INSURANCE RECORDS THAT OFTEN CONTAIN:

- 1. RECORDED OR OTHERWISE MEMORIALIZED STATEMENTS
BY OPERATORS AND/OR WITNESSES**
- 2. PHOTOGRAPHS OF THE VEHICLE(S)**
- 3. PHOTOGRAPHS OF THE SCENE**
- 4. STATEMENTS FROM INVESTIGATING OFFICER**
- 5. MEDICAL RECORD(S)**

II. WITNESS INVESTIGATION

1. EACH AND EVERY WITNESS SHOULD BE SPOKEN TO, AND WHERE APPROPRIATE, A WRITTEN OR RECORDED STATEMENT SHOULD BE OBTAINED.
 - a. ASK WITNESSES TO ORIENT THEMSELVES AND IDENTIFY INFORMATION USING MAPS, DIAGRAMS, AND PHOTOGRAMS WHERE AVAILABLE
2. WHERE ONLY A NAME AND/OR ADDRESS IS PROVIDED OR OBTAINED THROUGH THE POLICE ACCIDENT REPORT, OTHER POLICE REPORTS, INSURANCE RECORDS, OR OTHER SOURCE – YOU CAN TAKE STEPS PRIOR TO ENLISTING THE SERVICES OF AN INVESTIGATOR TO OBTAIN THE ADDRESS IF MISSING AND PHONE NUMBER:

- a. Go to <http://wp.superpages.com/>

The screenshot displays the Superpages.com homepage with a navigation bar at the top containing links for Local Businesses, Find People, Buy Cars, Maps, Local Weather, and Lottery Results. Below the navigation bar is a large search area with the Superpages.com logo and a search bar. The search bar has three input fields: First Name, Last Name, and Location (for Seattle, WA), followed by a Search button. Below the search bar are three main search sections: People Search, Reverse Phone Lookup, and Reverse Address Lookup. Each section has its own set of input fields and a Search button. The People Search section has fields for First Name, Last Name, City or Zip Code, and State. The Reverse Phone Lookup section has a field for Phone Number. The Reverse Address Lookup section has fields for Address, City or Zip Code, and State. Below these sections are three additional sections: Public Records Search, Additional Resources, and Most Popular Searches. The Public Records Search section has fields for First Name, Last Name, and State. The Additional Resources section lists various services like Comprehensive Background Check, Criminal Check, Address History, Assets, Lawsuits & more, People Search - Find Anyone, Current & Verified Phone Number, Address, Age & Relatives, Email and Unlisted Phone Lookup, Current Name, Address and Phone for any Email address, Find the Value of Any Home, Sales History, Property Details, Neighborhood Info & More, ZIP Code and Area Code Lookup, Find a City for a ZIP Code or Area Code, Add a New Listing, and Add a new listing to the white pages directory. The Most Popular Searches section lists a variety of names.

Local Businesses Find People Buy Cars Maps Local Weather Lottery Results

superpages.com™ First Name Last Name Location (for Seattle, WA) Search

People Search

First Name: Last Name: City or Zip Code: State: All States SEARCH

Reverse Phone Lookup

Phone Number: (e.g. '206-555-1212') SEARCH

Reverse Address Lookup

Address: City or Zip Code: State: All States SEARCH

Public Records Search

First Name: Last Name: State: All States SEARCH

Additional Resources

Comprehensive Background Check
Criminal Check, Address History, Assets, Lawsuits & more.
People Search - Find Anyone
Current & Verified Phone Number, Address, Age & Relatives.
Email and Unlisted Phone Lookup
Current Name, Address and Phone for any Email address.
Find the Value of Any Home
Sales History, Property Details, Neighborhood Info & More
ZIP Code and Area Code Lookup
Find a City for a ZIP Code or Area Code
Add a New Listing
Add a new listing to the white pages directory

Most Popular Searches

Alisa Douglas - Joseph Park - Steven Narzgor - Susan Stanley - Teena Salvin - Amy Rising - Ann Triplett - April Ayers - Becki Coleman - Carol Ask - Hugh Page - Jane Vanni - Joseph Poltschan - Louise Kennedy - Neely Ward - Ofelia Rivas - Robert Hirschfeld - Vanessa Laird - Elizabeth Baker - He Zbogor - Jaime Miner - Jamie Colby - Mohammad Zibdeh - Nancy Graf - Sue Breen - Cameron Hill - Devon Vargas - Kerry Moore - Kimyo Ikari - Linda Doub

- b. Conduct a “Reverse Search”, inputting address or pedigree information to obtain address and/or phone numbers

II. WITNESS INVESTIGATION

3. TIPS FOR INTERVIEWING WITNESSES REGARDING THEIR OBSERVATIONS OF A MOTOR VEHICLE ACCIDENT:

- a. **SHOW & TELL:** There is no substitute for visiting the scene of an accident and specific location of any observation made, with the witness to:
 - i. Increase the reliability of the witness's account
 - ii. Refresh the witness's recollection about events observed
 - iii. Provide Reference Points for observations
 - iv. Provide context for time, speed, and distance
 - a. Use a clock or stopwatch to assist a witness in more accurately estimating time
 - b. Use a speedometer or laser to assist a witness to more accurately estimate speed
 - c. Have witnesses identify reference points, and then measure the distance between those reference points, to more accurately estimate distance
 - v. Identify the existence of any object, fact, or circumstance that makes the witness's account more likely, more unlikely, or impossible



“I was looking out of my window... when I saw the driver of the blue car run the light.”

III. SCENE INVESTIGATION

WHAT IS THE POINT?

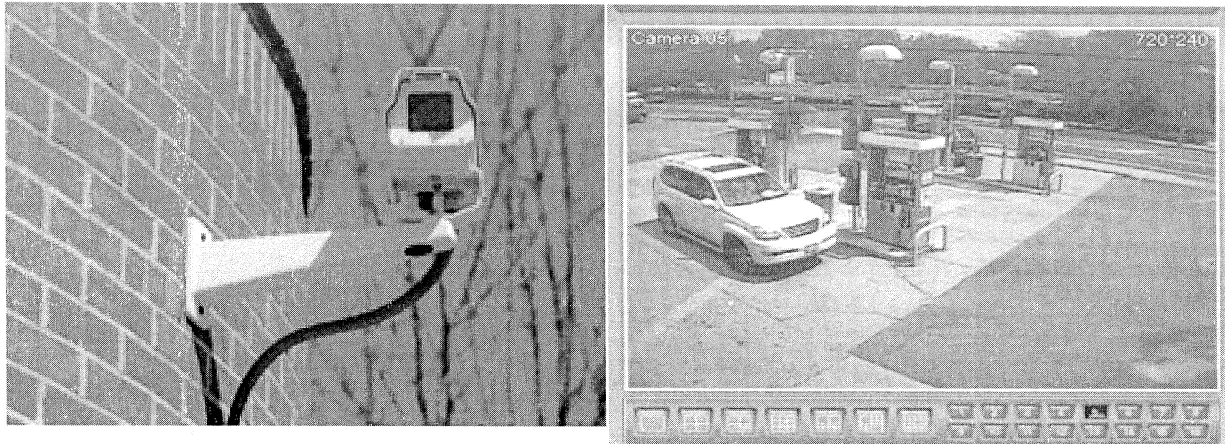
1. In order to understand the collision causation and contributing factors involved in an accident, you must be able to visualize the scene of an accident
2. There is no substitute for actually seeing the roadway, both in optimal conditions and in similar conditions to those that existed at the time of the accident
3. Additionally, if there is any allegation that there was a roadway defect that contributed to the accident, you must conduct a Background Check on the scene as a component of your investigation
 - a. Submit a FOIL request to the appropriate Department of Transportation regarding prior complaints about roadway conditions and repairs, traffic patterns, traffic light sequencing, and prior accidents
4. Valuable evidence may be obtained from a scene investigation, including:
 - a. Video
 - b. Witnesses
 - c. Traffic control light sequencing
 - i. Tire marks
 - ii. Gouge marks
 - iii. Damaged property
 - iv. Roadway defects
 - v. Street signs

III. SCENE INVESTIGATION

WHERE TO LOOK AND WHAT TO LOOK FOR?

VIDEO

I. SURVEILLANCE CAMERAS



- a. Inspect the exterior of commercial and residential properties for anything that could be a surveillance camera
- b. Speak with property owners about the existence of surveillance cameras, as well as preserving and obtaining the relevant footage
- c. Where necessary, serve a Preservation Letter directing a property owner to preserve all video relevant to the timeframe of your accident
- d. Where video is property of a public entity (i.e. Triborough Bridge and Tunnel Authority), or where otherwise necessary, use a subpoena
- e. Where necessary seek judicial intervention
- f. See, People v. Ramrup, 2014 NY Slip Op 51740(U) (Supreme Court, Bronx County), *decided by the Hon. Richard L. Price*, “Regarding the videotape surveillance recordings in the possession of the TBTA, the ‘prosecutor has a duty to learn of any favorable evidence known to the others acting on the government's behalf in the case, including the police’”; *cf.* Kyles v. Whitley, 514 U.S. 419 (1995).

III. SCENE INVESTIGATION

WHERE TO LOOK AND WHAT TO LOOK FOR?

VIDEO

II. ATM MACHINES

- a. There exist small, pinhole cameras above the ATM screens, as well as dome housing cased cameras above many ATMs



III. RED LIGHT CAMERAS

- a. Depending on jurisdiction, subpoena records and video footage from government agency or third-party monitoring agency.



III. SCENE INVESTIGATION

TIRE MARKS

DIFFERENT TERMS OF ART THAT HAVE DIFFERENT APPLICATIONS IN ACCIDENT INVESTIGATION AND RECONSTRUCTION:

1. PRE-IMPACT SKID MARKS



In a motor vehicle not equipped with an Antilock Brake System (ABS), heavy braking will cause the tires to lock up with the vehicle still in motion, causing skidding. The result will be very dark skid marks that when measured correctly may be used to estimate the speed the vehicle was traveling when it began braking.

Not all four tires will necessarily leave skid marks, and almost never will all skid marks be the same length. In speed computations, the longest skid mark will be used, not an average.

*Important: The tires will lock prior to the location where the heavy skid marks are observable. You may observe a light line on the pavement aligned with the heavy skid mark. Additionally, the use of Polaroid lensed glasses or camera filter will reduce sun glare, increasing the visibility of otherwise invisible skid marking.

III. SCENE INVESTIGATION

TIRE MARKS

2. ABS BRAKE SCUFF MARKS



In a vehicle equipped with ABS, a computer program does not permit the vehicle's tires to lock up. The brakes effectively pulse the brakes, slowing the tires to nearly the point of locking, and then releasing. The result is a dashed line up heavy and light marks, often referred to as ABS scuff marks. When measured correctly may be used to estimate the speed the vehicle was traveling when it began braking.

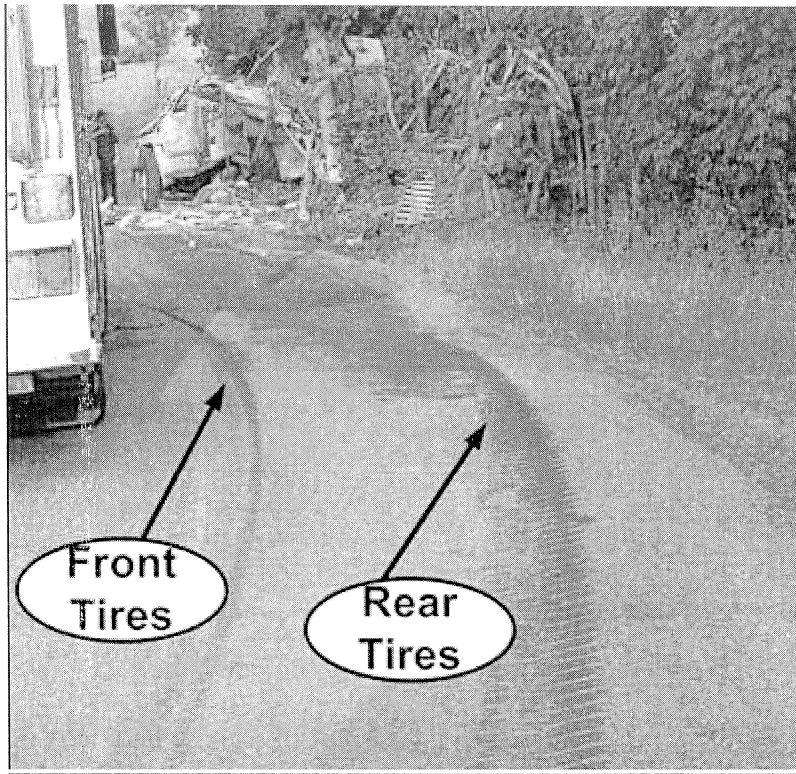
Similar to non-ABS skid marks, not all four tires will necessarily leave ABS scuffmarks, and almost never will all ABS scuffmarks be the same length. In speed computations, the longest ABS scuffmark will be used, not an average.

*Important: The tires will lock prior to the location where the heavy skid marks are observable. You may observe a light line on the pavement aligned with the heavy skid mark. Additionally, the use of Polaroid lensed glasses or camera filter will reduce sun glare, increasing the visibility of otherwise invisible skid marking.

III. SCENE INVESTIGATION

TIRE MARKS

3. YAW MARK



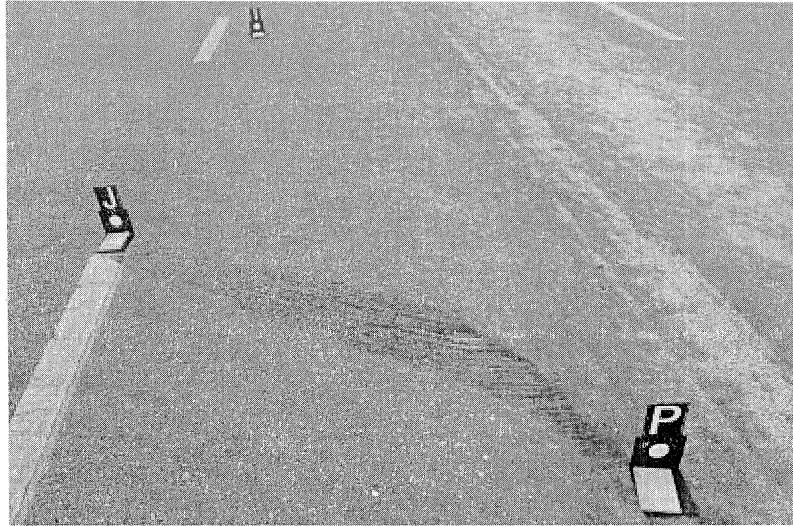
Yaw marks, or side slipping, present differently from skid or ABS scuff marks, as they arc, are marked by striations, and start narrow and get wider. This is due to the manner in which a yaw mark is created. A yaw mark is created when the car travels at a speed in excess of what is called the “critical curve speed” of the roadway, and the centrifugal force created exceeds the friction created by the tires and the road surface. In this circumstance, the vehicle will begin rotating clockwise or counterclockwise around the center of mass of the car.

A proper measurement of the radius of the yaw mark will permit an estimate of the speed the vehicle was traveling at the beginning of the yaw.

III. SCENE INVESTIGATION

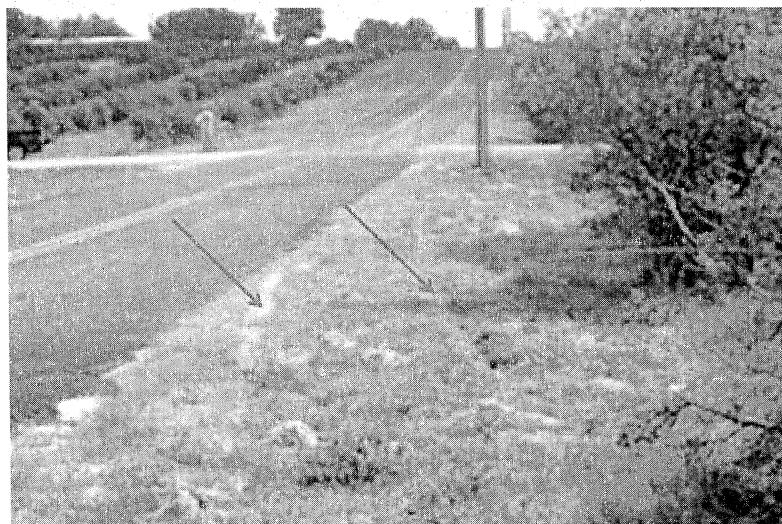
TIRE MARKS

4. SCRUB MARKS



A scrub mark is created post-impact by the sudden redirection of the tires from the force of the impact. A scrub mark typically looks like a smear and will be close in proximity to gouge marks and the point or area of impact.

5. FURROW MARKS



Furrow marks simply track the path of the vehicle through unpaved surfaces.

III. SCENE INVESTIGATION

TIRE MARKS

POST-IMPACT SKID MARKS



These marks will follow a disruption of pre-impact skid or scrub markings, and/or include sharp, jarring movements, that are oftentimes begin in the vicinity of gouge marks, denoting a point or an area of impact.

GOUGE MARKS



Gouge marks are used to identify the point or area of impact. Often times there will be the beginning of fluid spills and/or components of the vehicles in this area too. This is due to the fact that as the vehicles come together, components of the vehicles are forced down and scrap the surface of the roadway. The direction of the gouge marks may also indicate the angle that the two objects traveled immediately following impact at an intersection strikes, for the purpose of speed calculations.

III. SCENE INVESTIGATION

ROADWAY DEFECTS

Depending on the nature of the vehicle collision, the surface of the roadway should be carefully examined, in the area preceding the crash, to determine if any defect existed that may have contributed to the circumstances of the accident. These defects can be naturally occurring or manmade. Items to look for include potholes, cracks, excessive dirt, sand, or debris, poor sightline or visibility created by sloping or bending, as well as traffic or parking patterns that negatively impact the safety of travel in the area.

As indicated, a FOIL request should be submitted to the appropriate Department of Transportation regarding prior complaints about roadway conditions and repairs, traffic patterns, traffic light sequencing, and prior accidents.

IV. VEHICLE INVESTIGATION

WHAT TO LOOK FOR:

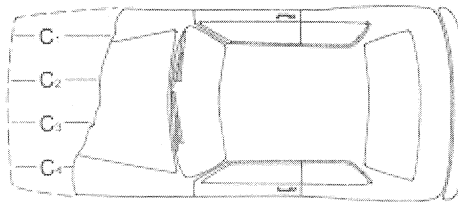
1. **DAMAGE PATTERNS:** Look for jigsaw like impression that impacts of two vehicles often leave, as well as impression pedestrians often leave on hoods, windshields, and roofs. Additionally, the damage patterns will often time indicate the principal direction of force of the vehicles involved.



V. VEHICLE INVESTIGATION

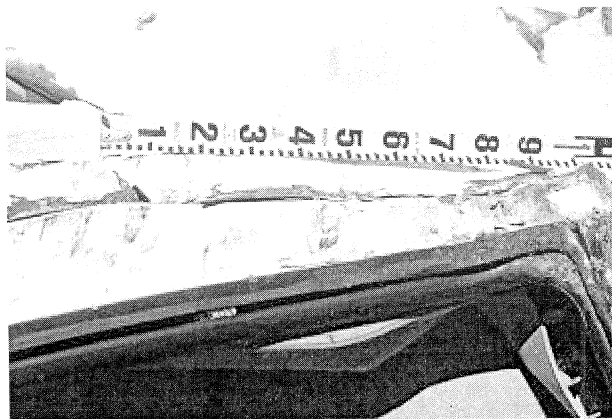
WHAT TO LOOK FOR:

2. **“CRUSH” DAMAGE:** Car manufacturers perform countless, controlled crashes involving their vehicles. The data from these tests has established the stiffness coefficient or stiffness constant that is the amount of speed that it takes to cause a specific measurement of intrusion or damage into the vehicle. Crush damage measurements can be performed using standard measuring tools, or optimally Total Station laser mapping. Your reconstruction expert will be capable of entering in these measurements into an EDCRASH computer software or other computer software program to determine the force or minimum speed necessary to cause the measured damage.



C₁ = 31" C₂ = 27" C₃ = 18" C₄ = 12"

3. **PAINT TRANSFER:** When two vehicles come into contact with one another, the paint from each car will transfer at the point of impact between the two. The presence or absence of paint transfer may be critical in an alleged sideswipe or near collision event to support the likelihood of contact or no contact between the vehicles.



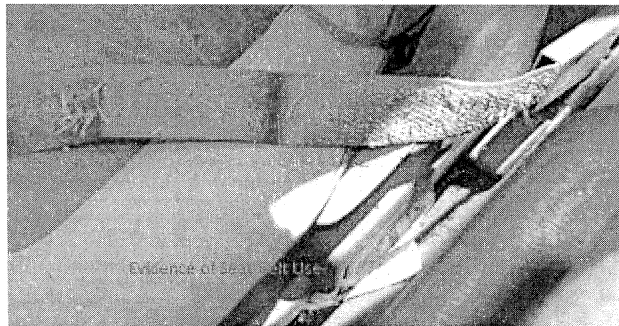
VI. VEHICLE INVESTIGATION

WHAT TO LOOK FOR:

4. **AIR BAG DEPLOYMENT:** If the identity of the driver is not clear, the presence of blood on the airbag should correlate with an injury to the operator. Additionally, the blood provides biological material suitable for DNA analysis.



5. **SEATBELT USAGE:** An examination of the seatbelts can determine if the seatbelt was in use at the time of the collision. A seat belt worn in a high-speed collision will have evidence of stretching. Likewise, if the seatbelt pretensioner operated properly, the seat belt will often be locked in a stretch condition following a high-speed crash.

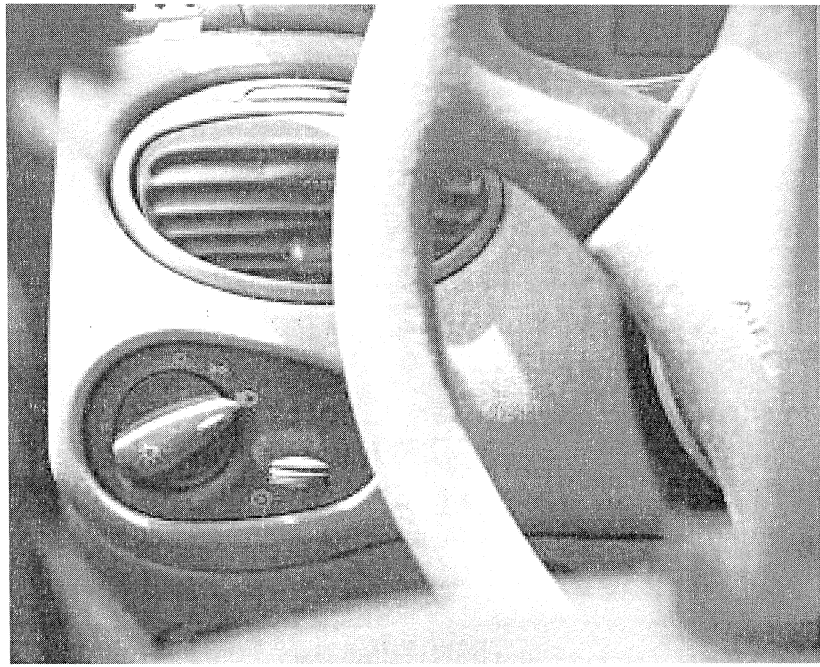


In such a high-speed event, you can also expect to find correlating burns or bruising on the left shoulder diagonal to the right and down across the chest of the operator.

VII. VEHICLE INVESTIGATION

WHAT TO LOOK FOR:

6. **STATUS OF LIGHTS:** If there is an issue of fact or allegation that an operator did not have his or her headlights on at the time of the crash, there are several good pieces of evidence to examine. First, was the headlight switch “on” in the car.

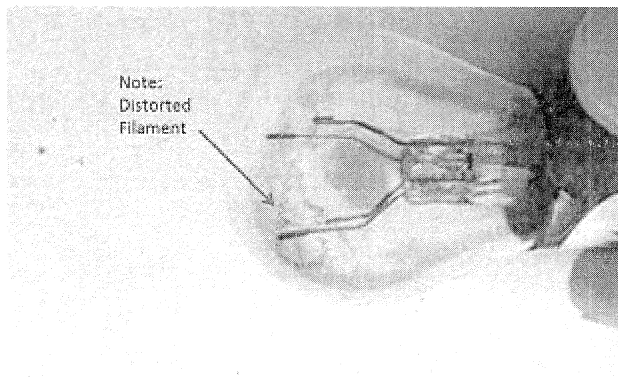


Your reconstruction expert should also examine the light casings of the headlights and the brake lamps for HOT SHOCK & COLD SHOCK.

I. VEHICLE INVESTIGATION

WHAT TO LOOK FOR:

HOT SHOCK: Upon an examination of the filament within an enclosed glass bulb, you may see the inside of the casing singed and/or the filament to be significantly stretched. This indicates that the filament was hot at the time of the collision, which made the filament particularly malleable. This indicates that this light bulb, whether headlight or brake lamp, was on at the time of the impact.



COLD SHOCK: Upon an examination of the filament within an enclosed glass bulb, you may see the filament broken. This indicates that the filament was cold and brittle at the time of the collision. This indicates that this light bulb, whether headlight or brake lamp, was not on at the time of the impact.



7. **FROZEN DASHBOARD OR CLOCK:** In the event of a heavy impact, where the battery is damaged or severed, the speedometer, tachometer, odometer, and clock may freeze, providing valuable insight into the conditions of the speed at the moment of impact.
8. **TIRE CONDITON:** The overall condition, tread depth, abnormal wear, and indication of damage should be noted for each tire
9. **BACKGROUND CHECK ON VEHICLES:** Check for Safety Recalls on NHTSA's webpage:

<http://www-odi.nhtsa.dot.gov/owners/SearchSafetyIssues>

Search Safety Issues: Recalls, Investigations & Complaints

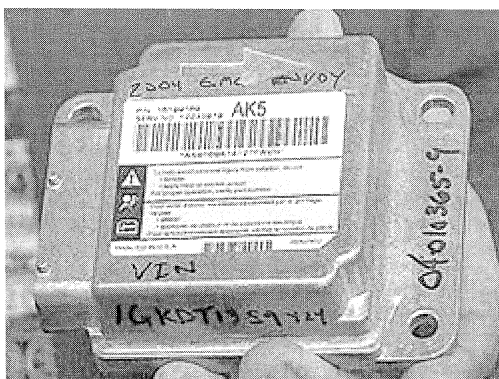
[Learn about NHTSA's Recall Process](#)

Vehicles	Recalls, Investigations, & Complaints - Vehicle Selection
Child Restraints	Select Model Year, then Make.
Tires	Model Year: <input type="text" value="--select--"/>
Equipment	Make: <input type="text" value="--select--"/>
Keyword (Complaints Only)	Model: <input type="text" value="--select (optional)--"/>
ID Number	<input type="button" value="GO"/>

IV. USE OF TECHNOLOGY

BLACK BOX: Also known as the Crash Data Recorder (CDR) and Event Data Recorder (EDR), if commercially available, can provide precise data regarding speed, braking, RPMs, percentage of throttle, steering angle, and whether the seatbelts were buckled. See attached Sample CDR Download from NHTSA³.

Black boxes are actually silver.



An expert with the appropriate software will need to be involved to perform a download.



Other technology that may assist you is the Powertrain Control Module (PCM), which potentially has similar data to an ECR, GPS units, OnStar, and cellular phones

³ NHTSA VSR | Vehicle Database: Event Data Recorder Reports. *NHTSA VSR | Vehicle Database: Event Data Recorder Reports*. N.p., n.d. Web. 02 Mar. 2015.

MAKING SMART USE OF YOUR EXPERT

1. In a serious incident, involving injury or death, an expert reconstruction expert should be retained immediately. A significant amount of accident investigation is time sensitive. Favorable data that is not retrieved early on in the investigation, may be lost or destroyed.
2. SPEAK WITH HIM/HER ABOUT THE AREA OF IMPACT (AOI) OR POINT OF IMPACT (POI): Typically, the AOI or POI is determined by identifying the location of tangible physical evidence such as :
 - a. Gauge Marks
 - b. Fluid Stains
 - c. Post-impact Scrub Marks
 - d. Debris (glass, car parts)
 - e. Scuff marking on roadway from footwear of pedestrian
3. SPEAK WITH HIM/HER ABOUT THE SPEED: Speed calculations and minimum speed estimates may be obtained through Blackbox data, as well as speed formulas that calculate speed from tangible evidence
 - a. CRUSH Analysis
 - b. Skid to Stop Formula

$$S = \sqrt{30Df}$$

S = Speed

30 = Constant

D = Distance of Skid Mark

f = Coefficient of Friction of the road

- c. Critical Curve Speed or Speed from Yaw Marks Formula:
$$S = \sqrt{15 (f)(R)}$$

S = Speed

15 = Constant

f = Coefficient of Friction of the road

R = Radius of Yaw Mark
 - d. Time, Speed, Distance Measurements from surveillance video
 - e. Linear Momentum Equations or Momentum Analysis
 - f. Pedestrian Throw Formulas
- 4. Have your expert review your adversary's expert witness report and educate you about the strengths and weaknesses, and most importantly the assumptions made by your adversary's expert
 - 5. Visit the scene with your expert
 - 6. Have a second expert that you use to critically examine the report and/or finding of your expert witness

BRENDAN M. AHERN

Barket Marion Epstein & Kearon, LLC

666 Old Country Road, Suite 700

Garden City, New York 11530

(631) 553-8945

bahern@barketmarion.com

CDR File Information

Vehicle Identification Number	1GNDT13S822149556
Investigator	
Case Number	
Investigation Date	
Crash Date	
Filename	IIHS-CEF0119-1GNDT13S822149556 .CDR
Saved on	8/15/01 2:27:45 PM
Data check information	849E1E96
Collected with CDR version	Crash Data Retrieval Tool 1.260
Collecting program verification number	A1CF3E45
Reported with CDR version	Crash Data Retrieval Tool 2.70
Reporting program verification number	70812808
Interface used to collected data	Block number: 00 Interface version: 18 Date: 03-22-01 Checksum: 8700
Event(s) recovered	Deployment Non-Deployment

SDM Data Limitations

SDM Recorded Crash Events:

There are two types of SDM recorded crash events. The first is the Non-Deployment Event. A Non-Deployment Event is an event severe enough to "wake up" the sensing algorithm but not severe enough to deploy the air bag(s). It contains Pre-Crash and Crash data. The SDM can store up to one Non-Deployment Event. This event can be overwritten by an event that has a greater SDM recorded vehicle forward velocity change. This event will be cleared by the SDM after the ignition has been cycled 250 times.

The second type of SDM recorded crash event is the Deployment Event. It also contains Pre-Crash and Crash data. The SDM can store up to two different Deployment Events, if they occur within five seconds of one another. Deployment events cannot be overwritten or cleared from the SDM. Once the SDM has deployed the air bag, the SDM must be replaced.

The data in the non-deployment file will be locked after a deployment, if the non-deployment occurred within 5 seconds before the deployment or a deployment level event occurs within 5 seconds after the deployment.

SDM Data Limitations:

-SDM Recorded Vehicle Forward Velocity Change reflects the change in forward velocity that the sensing system experienced during the recorded portion of the event. SDM Recorded Vehicle Forward Velocity Change is the change in velocity during the recording time and is not the speed the vehicle was traveling before the event, and is also not the Barrier Equivalent Velocity. This data should be examined in conjunction with other available physical evidence from the vehicle and scene when assessing occupant or vehicle forward velocity change. For deployments and deployment level events, the SDM will record 100 milliseconds of data after deployment criteria is met and up to 50 milliseconds before deployment criteria is met. For non-deployments, the SDM will record the first 150 milliseconds of data after algorithm enable.

-Event Recording Complete will indicate if data from the recorded event has been fully written to the SDM memory or if it has been interrupted and not fully written.

-SDM Recorded Vehicle Speed accuracy can be affected if the vehicle has had the tire size or the final drive axle ratio changed from the factory build specifications.

-Brake Switch Circuit Status indicates the status of the brake switch circuit.

-Pre-Crash Electronic Data Validity Check Status indicates "Data Invalid" if the SDM does not receive a valid message.

-Driver's Belt Switch Circuit Status indicates the status of the driver's seat belt switch circuit

-The Time Between Non-Deployment and Deployment Events is displayed in seconds. If the time between the two events is greater than 25.4 seconds, "N/A" is displayed in place of the time.

-If power to the SDM is lost during a crash event, all or part of the crash record may not be recorded.

SDM Data Source:

All SDM recorded data is measured, calculated, and stored internally, except for the following:

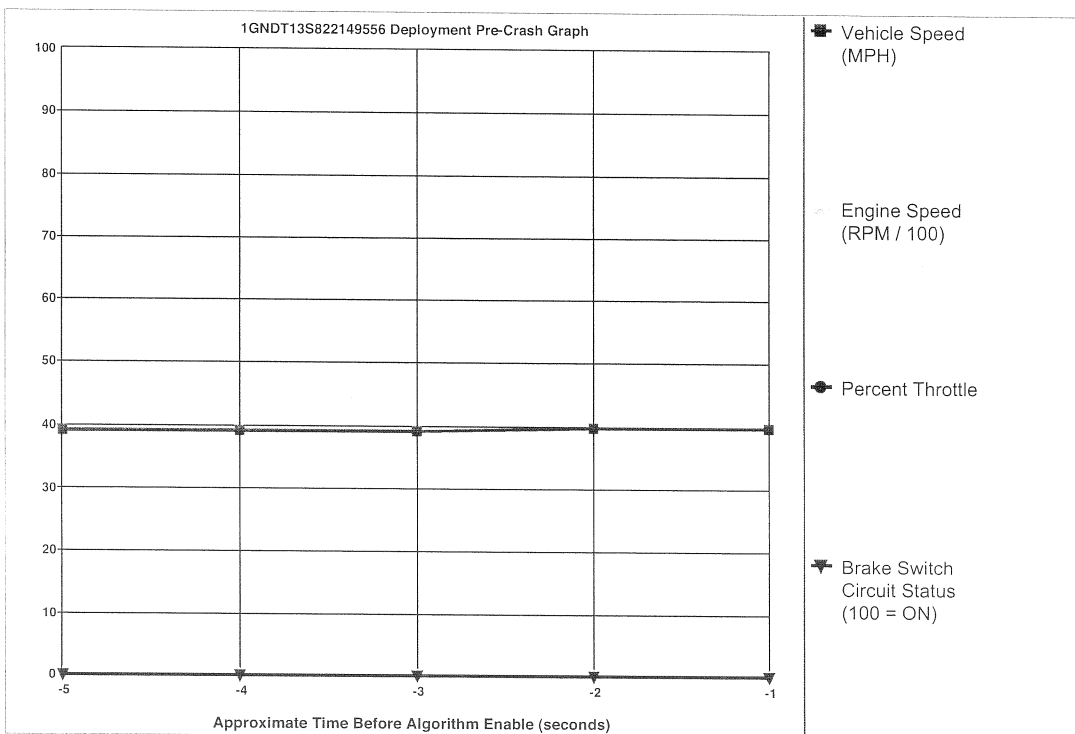
-Vehicle Speed, Engine Speed, and Percent Throttle data are transmitted once a second by the Powertrain Control Module (PCM), via the Class 2 data link, to the SDM.

-Brake Switch Circuit Status data is transmitted once a second by either the ABS module or the PCM, via the Class 2 data link, to the SDM.

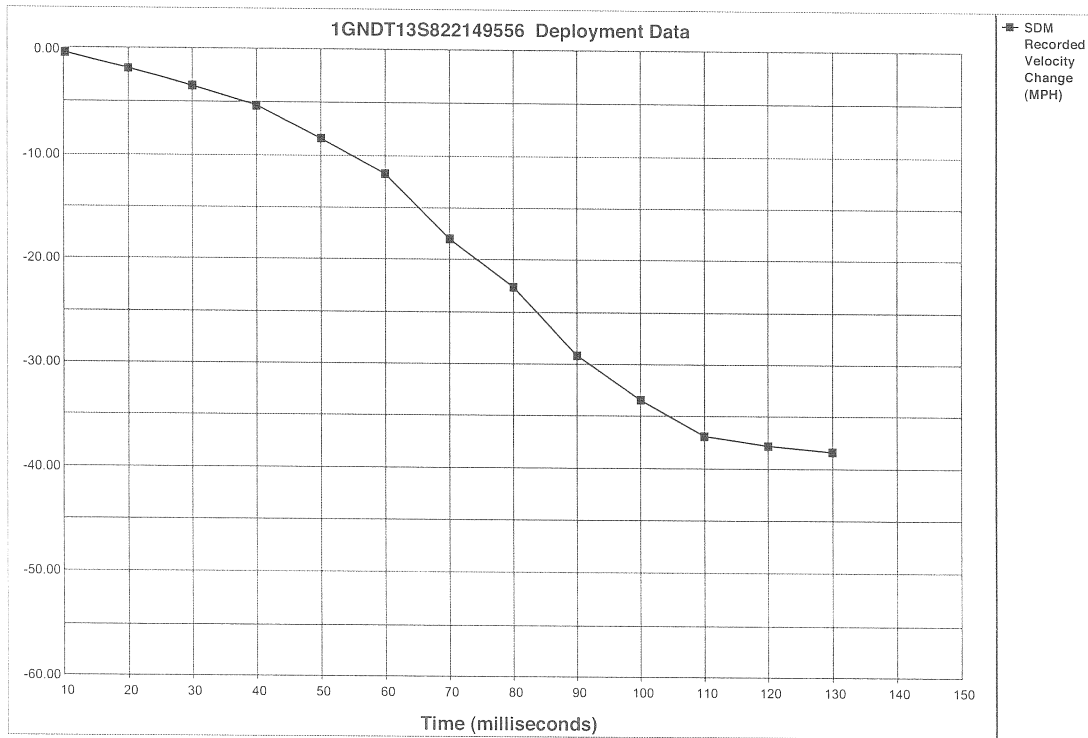
-In most vehicles, the Driver's Belt Switch Circuit is wired directly to the SDM. In some vehicles, the Driver's Belt Switch Circuit Status data is transmitted from the Body Control Module (BCM), via the Class 2 data link, to the SDM.

System Status At Deployment

SIR Warning Lamp Status	OFF
Driver's Belt Switch Circuit Status	BUCKLED
Ignition Cycles At Deployment	148
Ignition Cycles At Investigation	150
Maximum SDM Recorded Velocity Change (MPH)	-39.03
Algorithm Enable to Maximum SDM Recorded Velocity Change (msec)	152.5
Driver First Stage Time Algorithm Enabled to Deployment Command Criteria Met (msec)	30
Driver Second Stage Time Algorithm Enabled to Deployment Command Criteria Met (msec)	32.5
Passenger First Stage Time Algorithm Enabled to Deployment Command Criteria Met (msec)	30
Passenger Second Stage Time Algorithm Enabled to Deployment Command Criteria Met (msec)	32.5
Time Between Non-Deployment And Deployment Events (sec)	N/A
Frontal Deployment Level Event Counter	1
Event Recording Complete	Yes
Multiple Events Associated With This Record	No
One Or More Associated Events Not Recorded	No



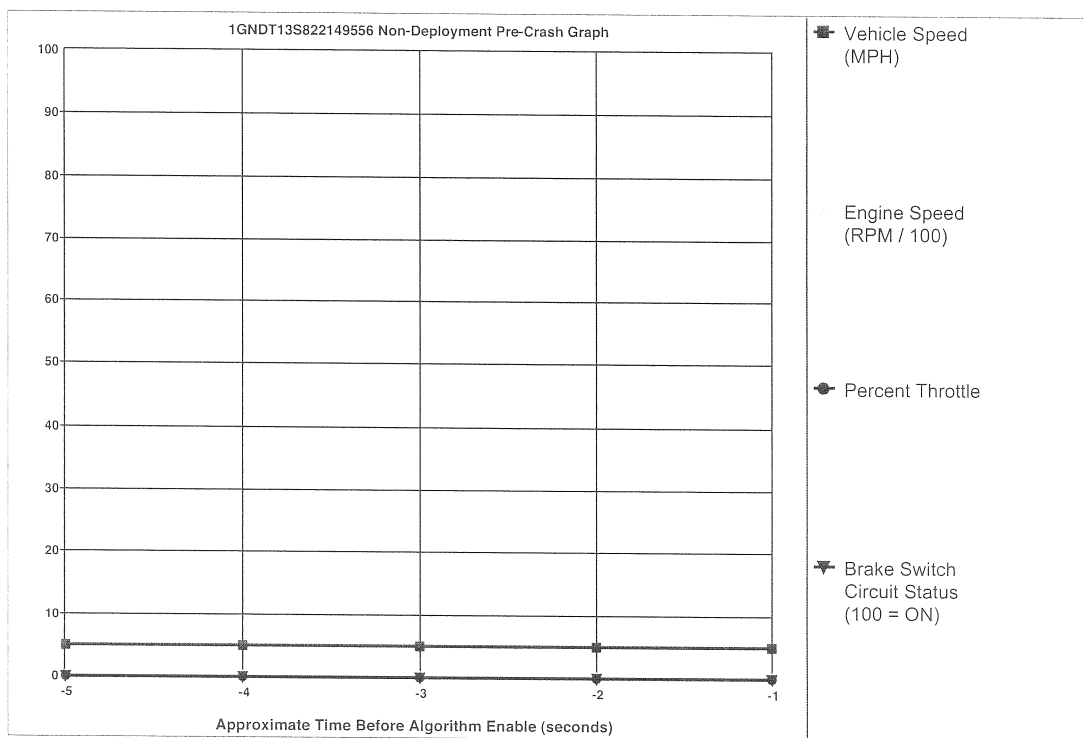
Seconds Before AE	Vehicle Speed (MPH)	Engine Speed (RPM)	Percent Throttle	Brake Switch Circuit Status
-5	39	0	Invalid	OFF
-4	39	0	Invalid	OFF
-3	39	0	Invalid	OFF
-2	40	0	Invalid	OFF
-1	40	0	Invalid	OFF



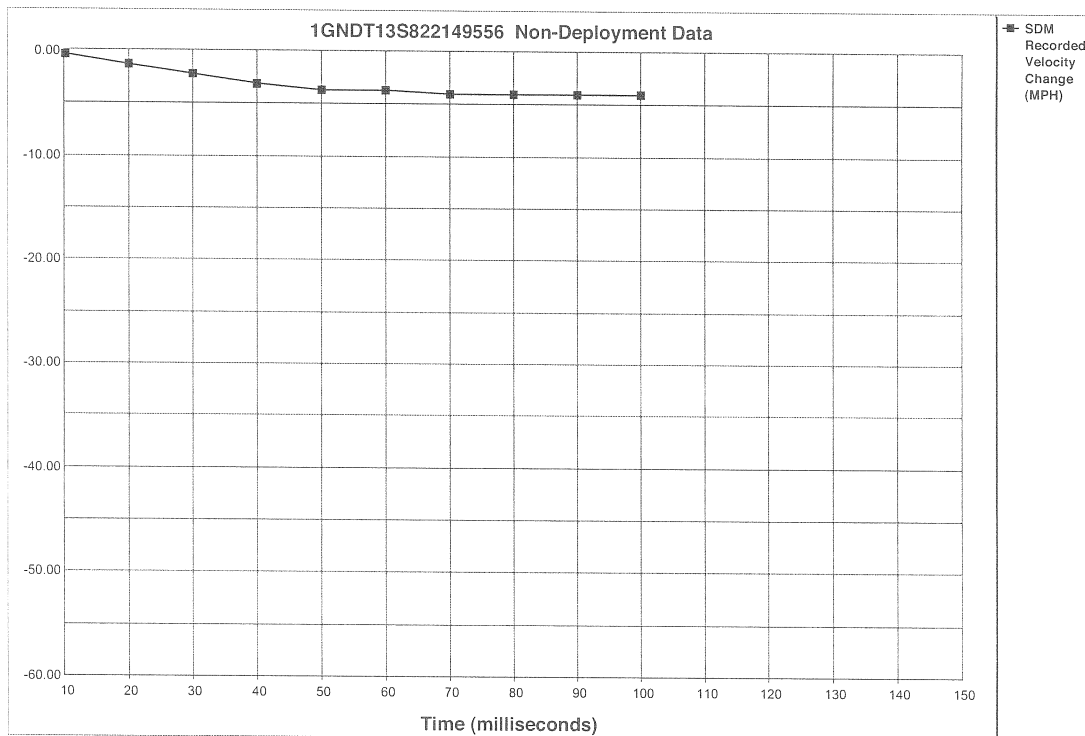
Time (milliseconds)	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Recorded Velocity Change (MPH)	-0.31	-1.86	-3.41	-5.27	-8.37	-11.78	-17.98	-22.63	-29.14	-33.48	-36.89	-37.82	-38.44	N/A	N/A

System Status At Non-Deployment

SIR Warning Lamp Status	OFF
Driver's Belt Switch Circuit Status	UNBUCKLED
Ignition Cycles At Non-Deployment	120
Ignition Cycles At Investigation	150
Maximum SDM Recorded Velocity Change (MPH)	-4.05
Algorithm Enable to Maximum SDM Recorded Velocity Change (msec)	62.5
Event Recording Complete	Yes
Multiple Events Associated With This Record	No
One Or More Associated Events Not Recorded	No



Seconds Before AE	Vehicle Speed (MPH)	Engine Speed (RPM)	Percent Throttle	Brake Switch Circuit Status
-5	5	0	0	OFF
-4	5	0	0	OFF
-3	5	0	0	OFF
-2	5	0	0	OFF
-1	5	0	0	OFF



Time (milliseconds)	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Recorded Velocity Change (MPH)	-0.31	-1.24	-2.17	-3.10	-3.72	-3.72	-4.03	-4.03	-4.03	-4.03	N/A	N/A	N/A	N/A	N/A

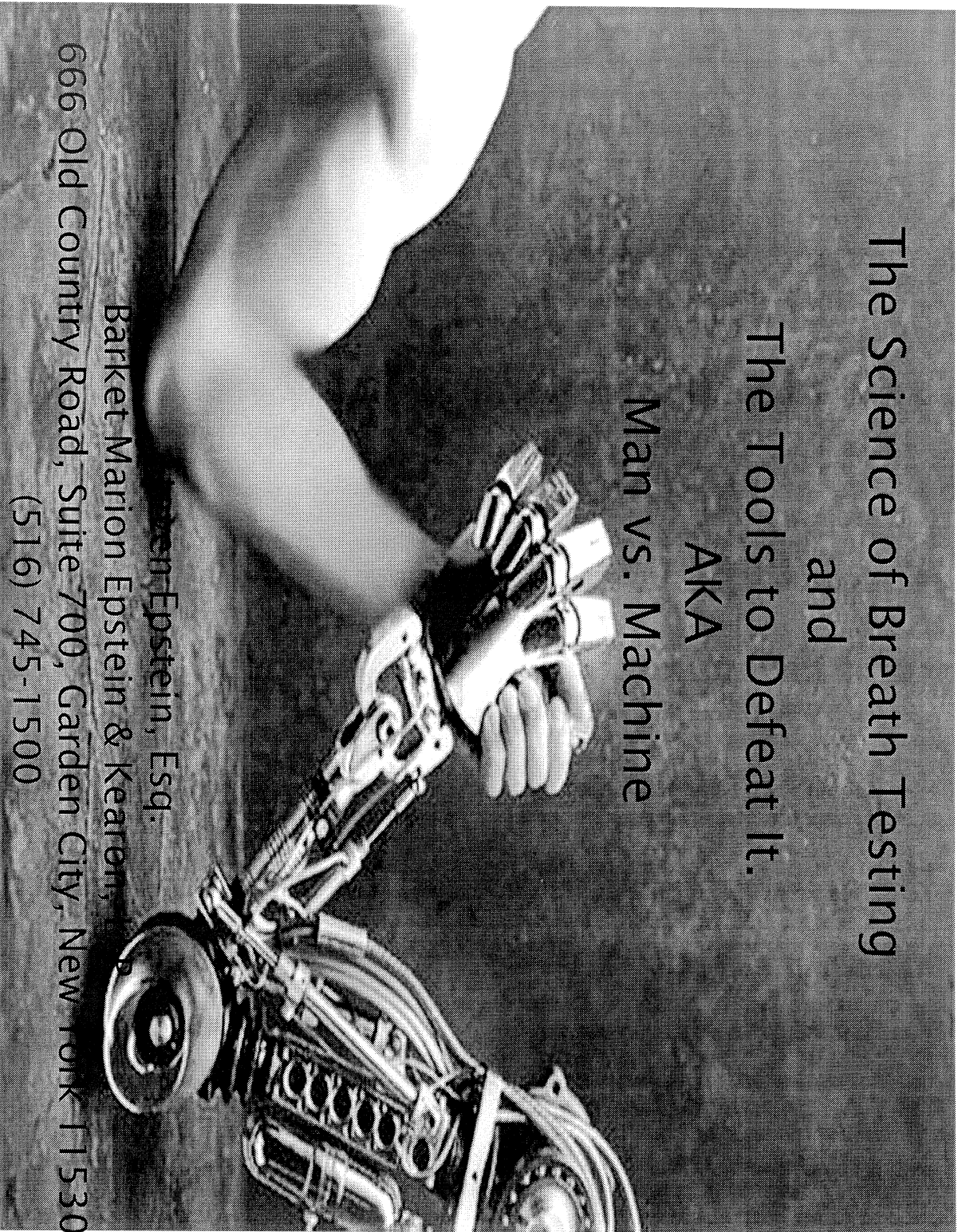
Hexadecimal Data

This page displays all the data retrieved from the air bag module.
It contains data that is not converted by this program.

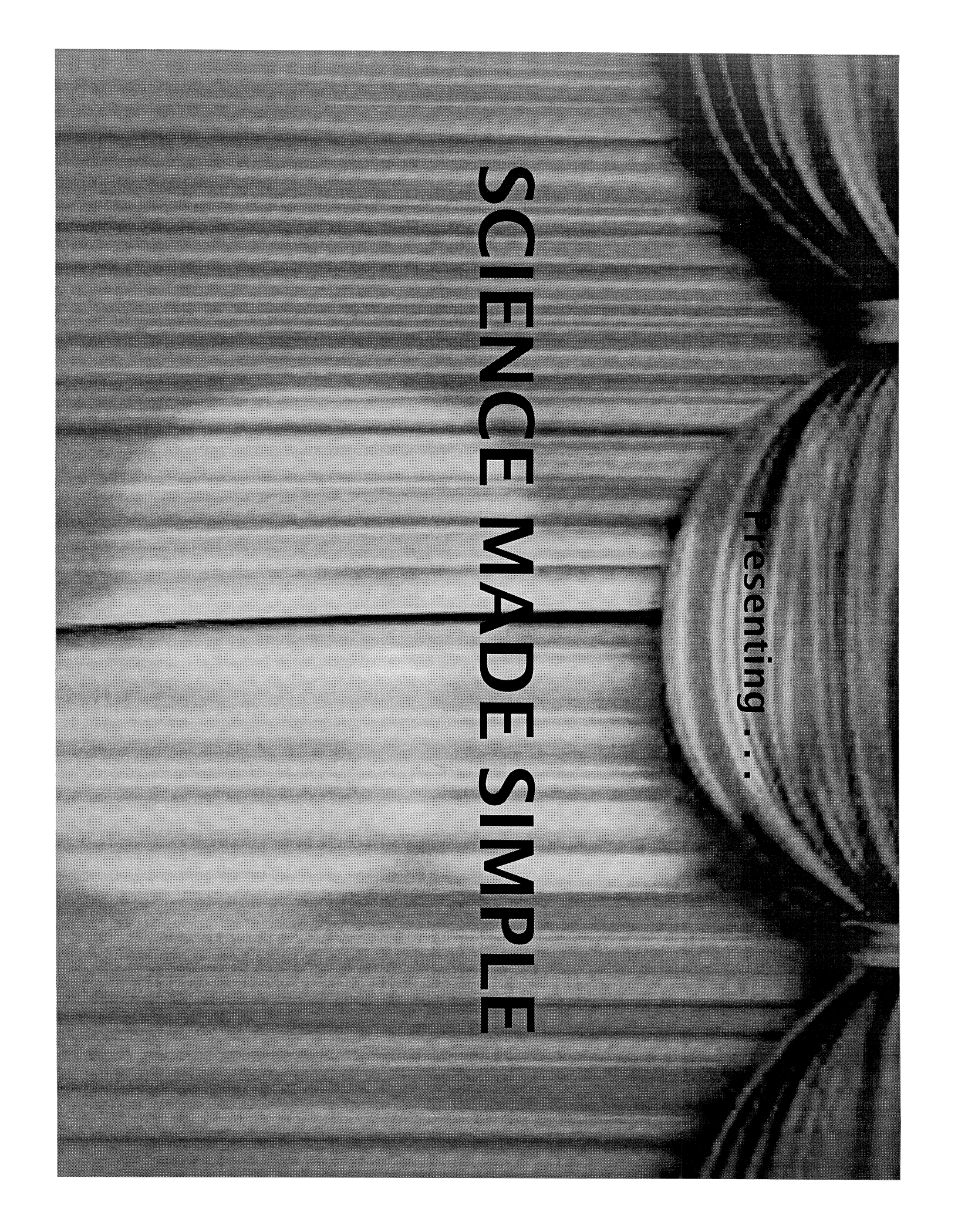
```
$01 08 31 46 B7 AE FB
$02 D1 D1 38 38 00 00
$03 41 53 31 31 32 33
$04 4B 31 4A 4C 46 33
$06 15 08 08 60 00 00
$10 FF ED C0 00 00 00
$11 80 7F 80 82 82 83
$12 8D 7B 00 00 00 01
$13 FF 02 00 00 00 00
$14 03 03 00 00 00 00
$15 FA FA FA FA FA FA
$16 FA FA FA FA FA FA
$17 FA FA 00 00 00 00
$18 3F 00 55 AC 01 00
$1F FE 00 00 00 00 00
$20 12 FD 00 00 FF FF
$21 FF FF FF FF FF FF
$22 FF FF FF FF FF FF
$23 FF FF FF FF FF FF
$24 D5 00 D1 11 19 22
$25 11 00 00 00 FF FF
$26 01 04 07 0A 0C 0C
$27 0D 0D 0D 0D 00 00
$28 00 00 00 0A FF F0
$29 FF A5 FF FF FF FF
$2A FF FF FF FF FF FF
$2B FF FF FF FF FF FF
$2C FF FF FF FF FF FF
$2D FF FF 00 00 00 00
$30 B2 FE 00 00 FF FF
$31 FF F7 FF FF FF FF
$32 FF FF FF FF FF FF
$33 FF FF FF FF 7F FF
$34 B9 00 50 17 0C 03
$35 00 50 17 0C 03 00
$36 50 18 0D 03 00 50
$37 18 0D 03 07 DC 50
$38 3D 0F 64 33 00 00
$39 0F 00 00 01 FF FF
$3A 01 06 0B 11 1B 26
$3B 3A 49 5E 6C 77 7A
$3C 7C 00 00 0D FF ED
$3D F0 A5 00 00 00 00
$40 40 40 3F 3F 3F 00
$41 00 00 00 00 00 00
$42 00 FF 00 00 00 00
$43 00 00 08 F8 00 00
$44 08 08 08 08 08 00
$45 00 00 00 00 00 00
$46 00 00 00 00 00 00
$47 00 00 04 80 00 00
$48 FF FF FF FF FF FF
$49 FF FF FF FF FF FF
$4A FF FF FF FF FF FF
$4B FF FF FF FF 00 00
$4C FF FF FF FF FF FF
$4D FF FF FF FF FF FF
$4E FF FF FF FF FF FF
$4F FF FF FF FF 00 00
$50 FF FF FF FF FF FF
$51 FF FF FF FF FF FF
$52 FF FF FF FF FF FF
```

\$53 FF FF FF FF FF FF
\$54 FF FF FF FF FF FF

The Science of Breath Testing
and
The Tools to Defeat It.
AKA
Man vs. Machine



Ben Epstein, Esq.
Barket Marion Epstein & Kearon, P.C.
666 Old Country Road, Suite 700, Garden City, New York 11530
(516) 745-1500



Presenting . . .

SCIENCE MADE SIMPLE

BREATH TESTING SCIENCE 101

HIGH SCHOOL SCIENCE LESSONS



The Machine - Science Made Simple

You need to have enough knowledge of the science to take on the prosecutor's strongest evidence.

You need a hook, it is not enough to say machines do not work.

The Beer-Lambert Law (or Beer's law)

BEER'S LAW PROVIDES THAT THERE IS A LINEAR RELATIONSHIP BETWEEN ABSORBANCE AND THE CONCENTRATION OF AN ABSORBING SPECIES.

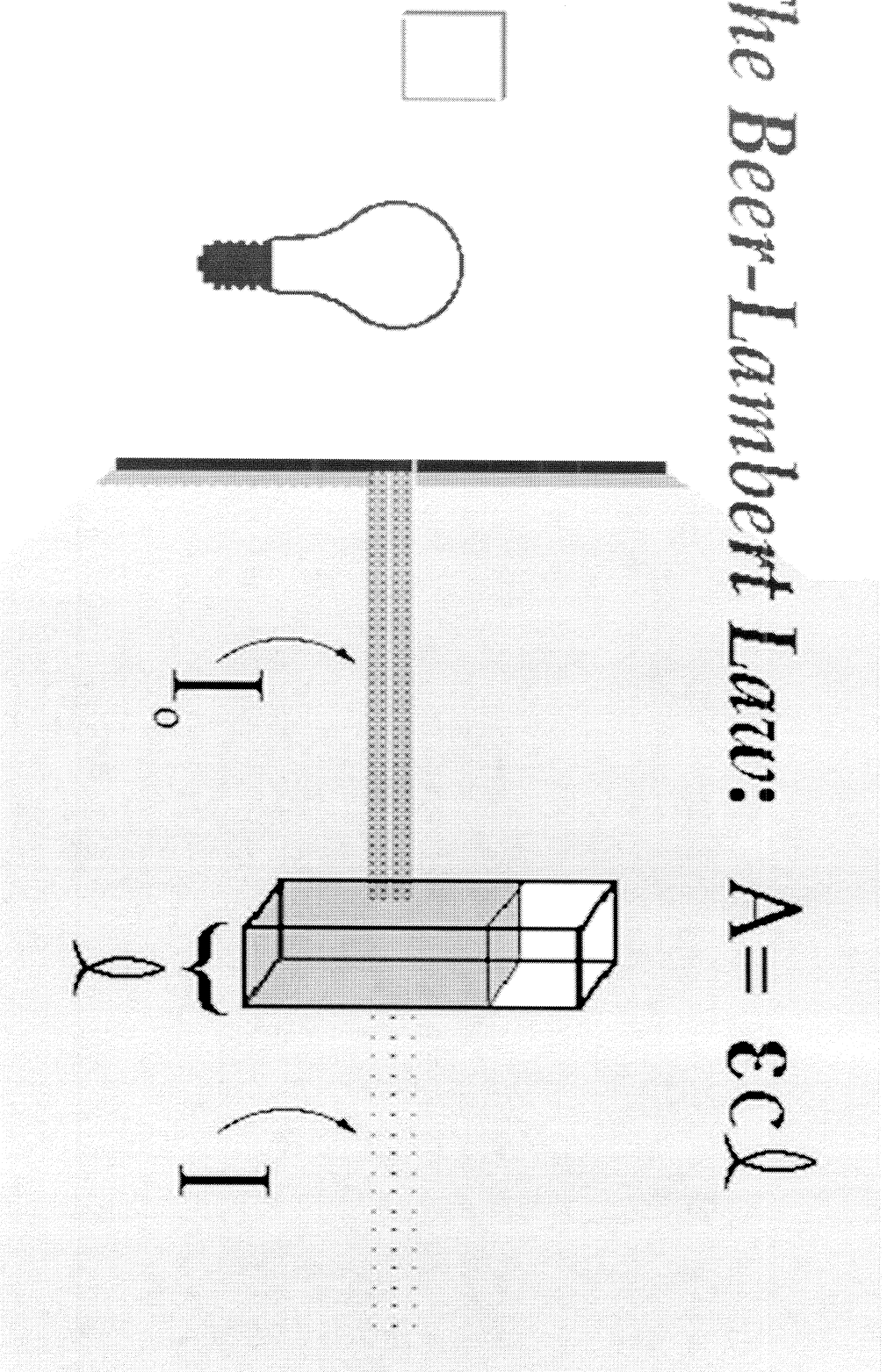
MOLECULES ABSORB ENERGY, BUT ONLY ENERGY OF A CERTAIN WAVE LENGTH WILL BE ABSORBED BY A MOLECULE OF ANY GIVEN COMPOUND. THEREFORE COMPOUNDS CAN BE IDENTIFIED BY THE DIFFERENT WAVE LENGTHS AT WHICH THEY ABSORB ENERGY.

INFRARED SPECTROSCOPY IS USED TO ESTABLISH "ABSORPTION FINGERPRINTS" FOR ANY GIVEN CHEMICAL COMPOUND, TYPICALLY ETHYL ALCOHOL.

HUH?

EX. YOUR MICROWAVE OVEN

The Beer-Lambert Law: $A = \epsilon c l$



Henry's Law

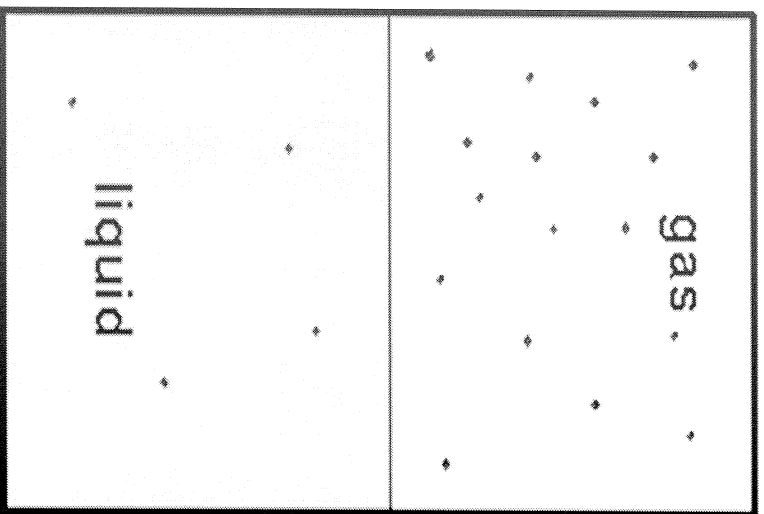
Henry's law, formulated by William Henry in 1803, states that at a constant temperature, the amount of a given gas dissolved in a given type and volume of liquid is directly proportional to the partial pressure of that gas in equilibrium with that liquid.

HUH?

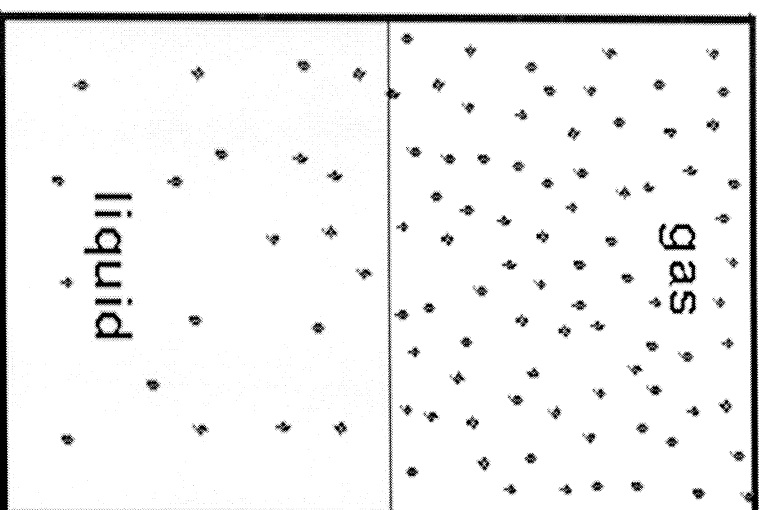
In simple terms the concentration of a volatile substance in the air above a fluid is proportional to the concentration of the volatile substance in the fluid.

An everyday example of Henry's law is given by carbonated soft drinks.

Henry's Law



Low Gas Pressure



High Gas Pressure

The Simulator -

Henry's Law Applied

Simulator

Guth 34C Simulator

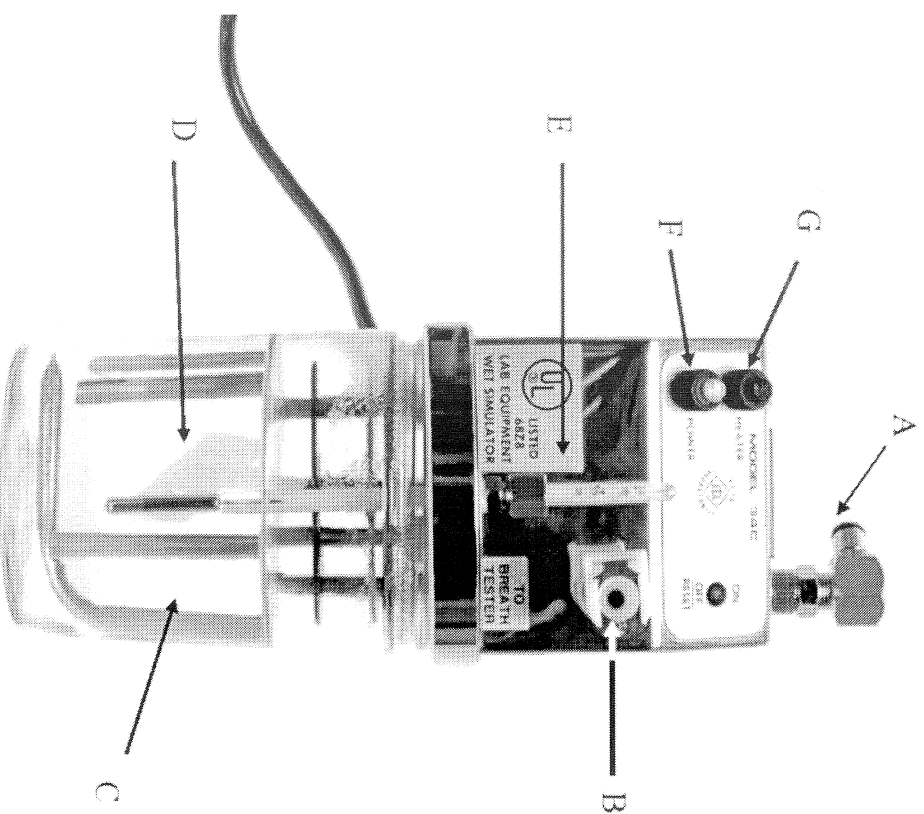


Figure 4

- A: Return Port
- B: Outlet Port
- C: Simulator Solution
- D: Agitator (Stirring Paddle)
- E: Thermometer
- F: Power Indicator
- G: Heater Indicator

There are some things about this process which are worth pointing out:

Henry's Law requires constant temperature.

When the testing is important they use GC..

And also note that the simulator occurs in a closed system....do you think the lungs are an example of Henry's Law at work?

0.10% SIMULATOR SOLUTION RECORD

Report Date: August 20, 2012

Manufacturer: Guth Laboratories, Inc.

Lot Number: 12110

Expiration Date: 2/1/2013

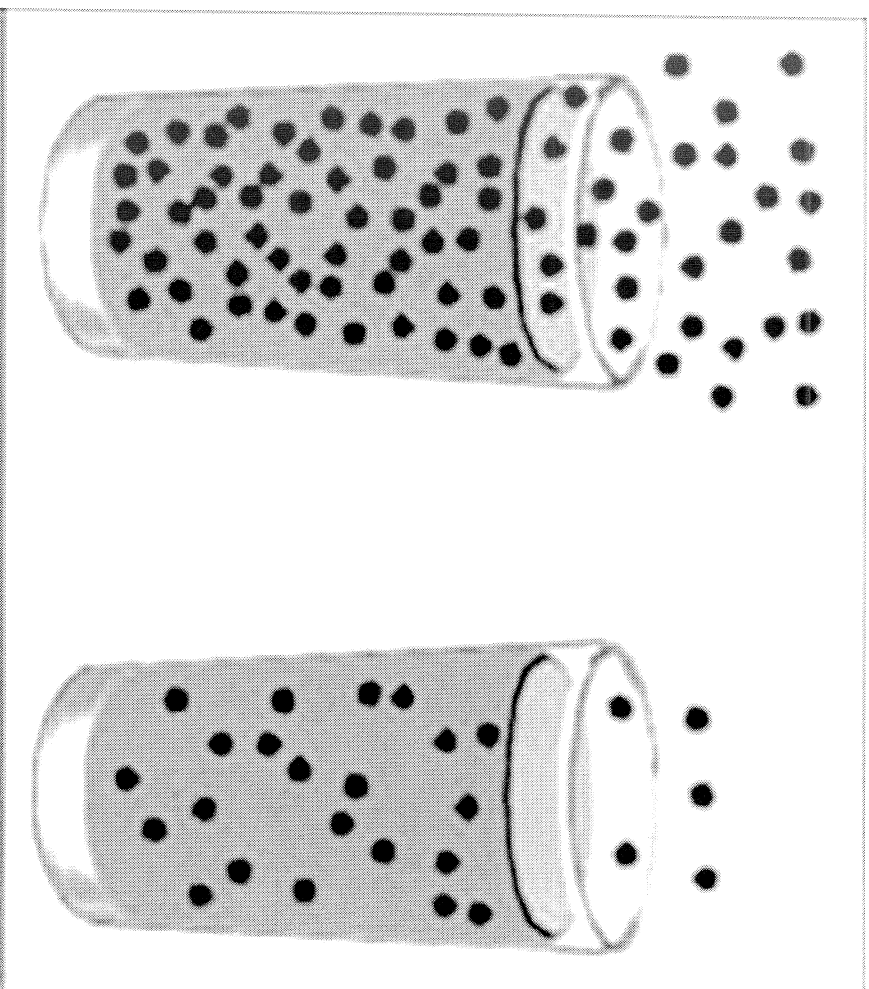
Analysis Results: 120 mg Ethyl Alcohol / 100 mL of solution

I, Carrie A Kirkton, tested simulator solution lot number 12110 by headspace gas chromatography and have determined that it contains the appropriate concentration of ethyl alcohol. This solution is hereby approved for use.

When this simulator solution is used with a properly operating breath testing instrument, it will provide a value of 0.10% within acceptable limits.

I, Carrie A Kirkton, made the entries contained in this record at the time of each event recorded, or within a reasonable time thereafter.

Henry's Law



This model represents the lungs

HENRY'S LAW

2100:1 means that 2100 ml of breath
has the same amount of ethanol as 1
ml of blood

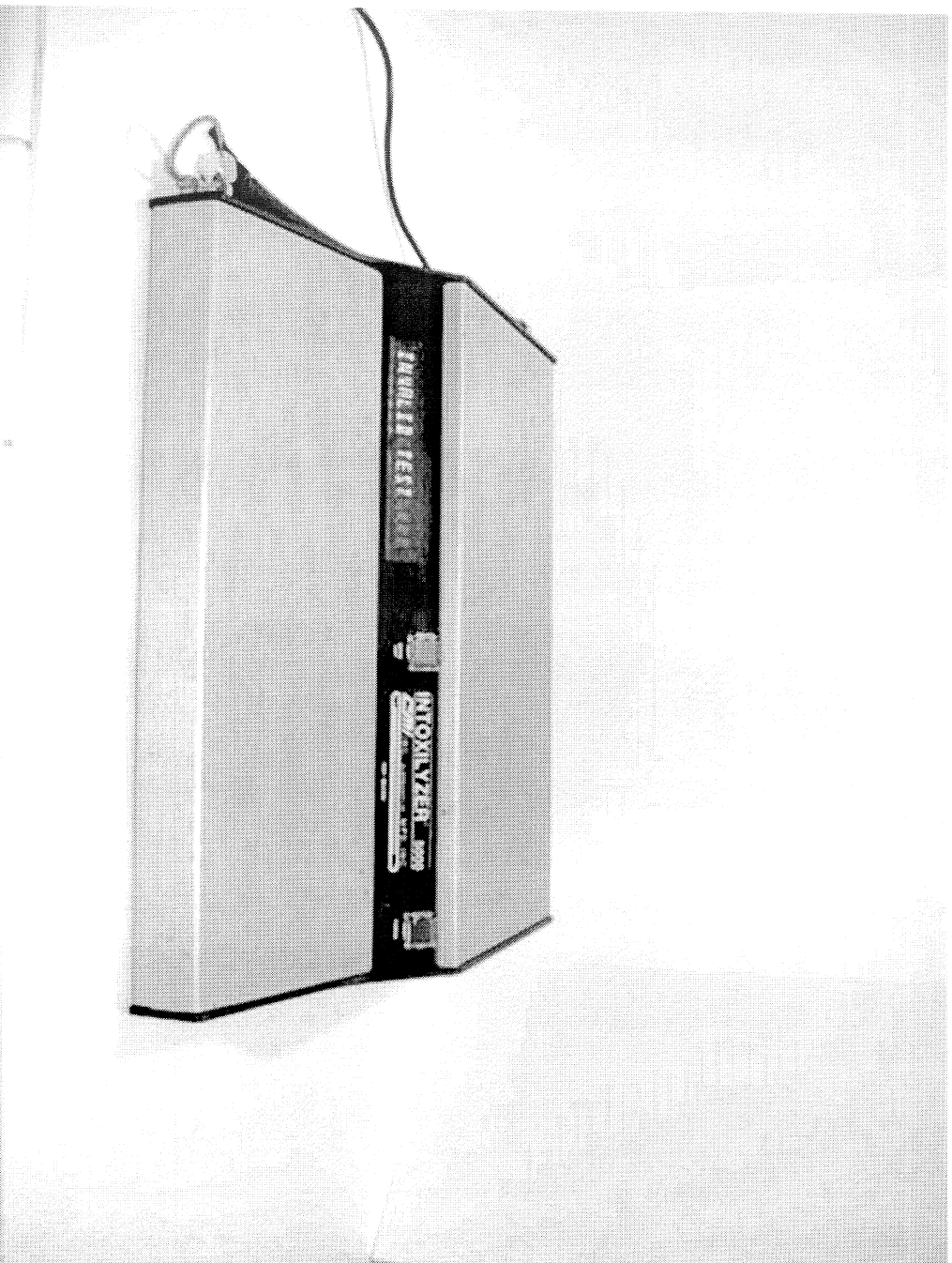


Henry's Law

Requirements:

- Closed system
- Known and constant pressure
- Known and constant temperature
- Reaches equilibrium

Fundamentals of Infrared Spectrophotometry



HOW DOES BREATH TESTING UTILIZING INFRARED SPECTROSCOPY WORK?

The device passes infrared light (using a light bulb similar to your microwave oven)

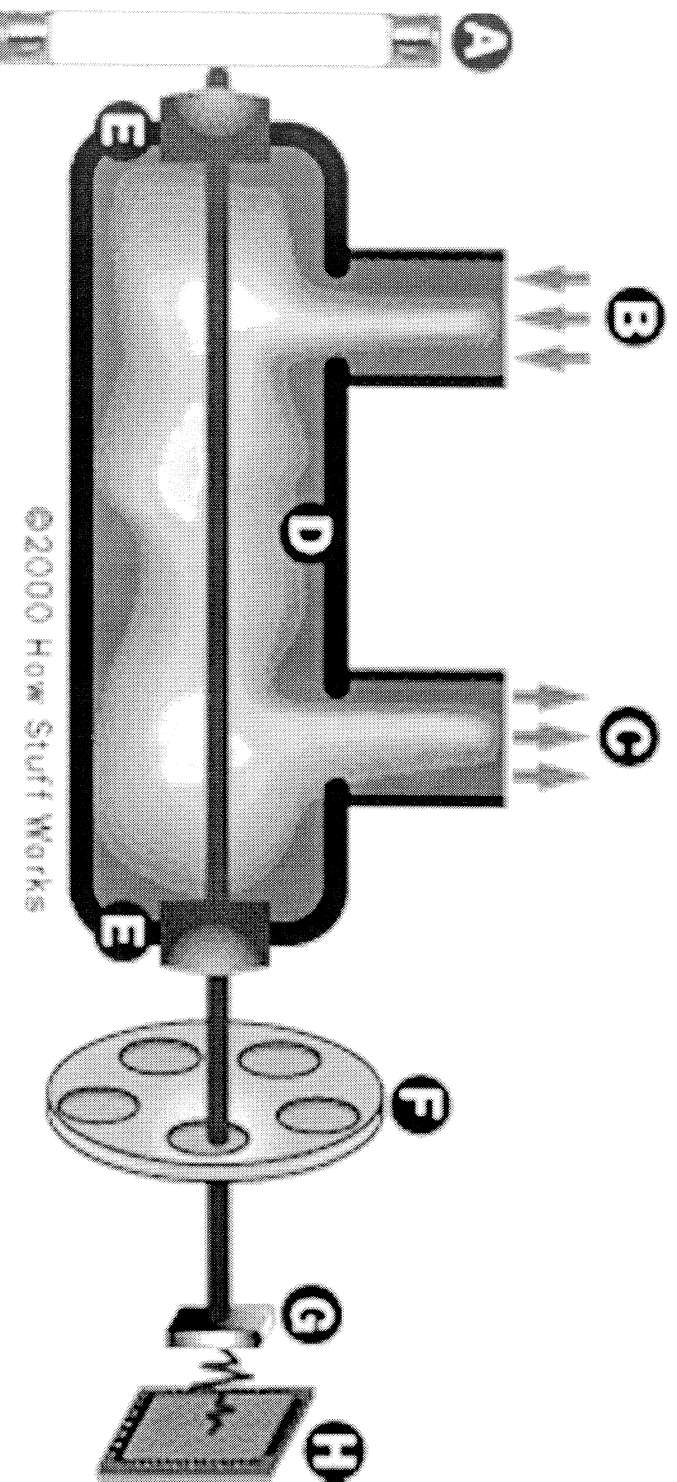
Through a sample chamber or folded light path in which the client's breath is inserted.

Any alcohol present in the subject's breath will absorb the infrared energy.

The more alcohol vapor in the chamber, the more infrared energy will be absorbed by that vapor which will result in a corresponding drop in the amount of energy reaching the detector cell.

Fundamentals of Infrared Spectrophotometry

A Quartz lamp (IR source)	E Lenses
B Breath input	F Filter wheel
C Breath outlet	G Photocell
D Sample chamber	H Microprocessor



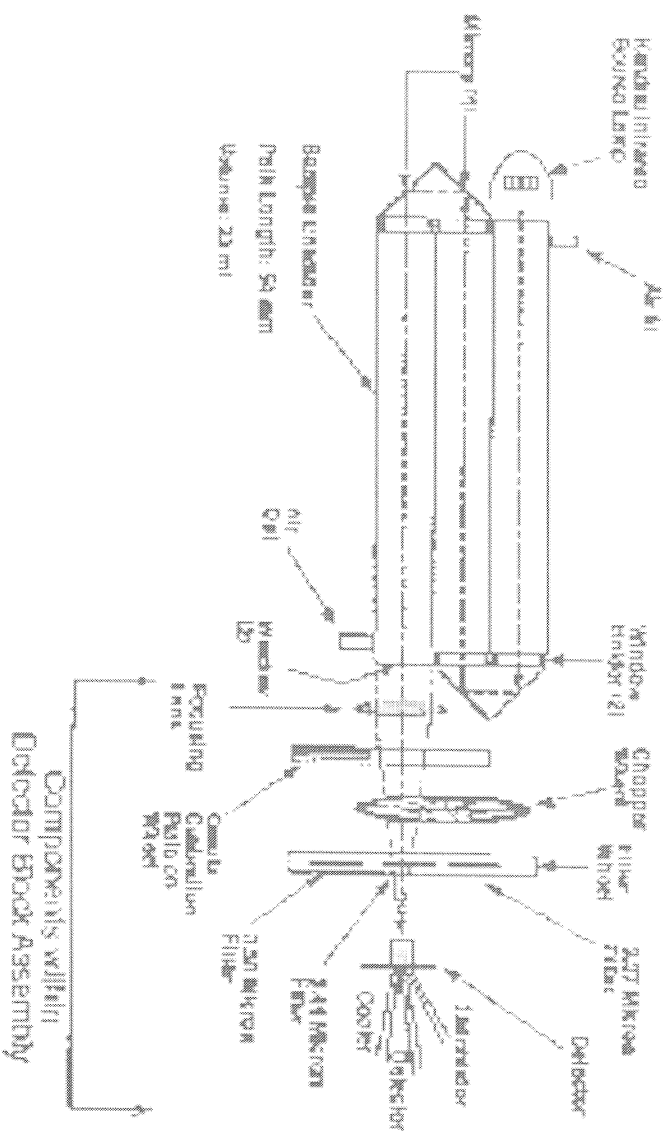


Figure 6: Diode-Pumped Dye Laser Optical Bench

THE SECRET TO WINNING THESE CASES
STARTS WITH YOUR BELIEF THAT THE
METHODS USED CANNOT BE TRUSTED TO
GIVE AN ACCURATE QUANTITATIVE
ANALYSIS

SOFT Guidelines

6.1.4 “Whenever possible, the amount of specimen collected should be sufficient to ensure that enough remains for subsequent re-analysis if required.” **Tox trap?**

8.2.1 As a general matter of scientific and forensic principle, the detection or initial identification of drugs and other toxins should be confirmed whenever possible by a second technique based on a different chemical principle.

Single sample?

8.2.4 For ethanol, although false positives are unlikely, confirmation using a second analytical system is encouraged. The second analysis should be performed on a separate aliquot of the specimen, or an alternate specimen from the same case. **They mean it with alcohol!**

8.3.6 Linearity of the procedure should be established by typically using at least three calibrators. **Not just .10!**

The best answers are derived from knowledge not numbers

Get the operators manual for your machine. Sources include your expert, other attorneys and subpoena the manufacturer itself.

Discovery is essential.

INITIALS

1. JS ☐ Turn on Intoxilyzer and simulator and/or bring out of standby.
☒ Intoxilyzer and simulator already on.

2. JS Subject was under direct observation for at least 20 minutes prior to the obtaining of the breath sample(s). Subject did not have anything to eat, drink or smoke and did not vomit or regurgitate during the 20 minute period or during the test(s).

3. JS Observe Display: "CMI Inc. INTOXILYZER ALCOHOL ANALYZER 5000" - Push Button To Start Test - Push Button - verify "TIMEDATE".

4. JS Push GREEN Start Test Button. Insert Test Record Card.

If the keyboard is used the following entries will be prompted for, and must be entered. After entering information hit RETURN key.

A. Observation Time B. Subject's Last Name C. Subject's First Name D. Subject's Middle Name
 E. Operator's Serial Number F. CTS No. G. Review Data Y/N

OR

A. Subject's Last, First, Middle Names, DOB, Sex B. Arresting Officer's Last, First Name, Serial No. C. Operator's Last, First Name, Serial No.
 D. Assignment Number

5. JS Observe Display: "AIR BLANK"

6. JS Check simulator temperature 34 Degrees C.

7. JS Observe Display: "CAL. CHECK"

8. JS Observe Display: "AIR BLANK"

9. JS Observe Display: "PLEASE BLOW/IR INTO MOUTHPIECE UNTIL TONE STOPS."
 "PLEASE BLOW/IR" Listen for tone to stop.

10. JS Secure breath sample from subject.

11. JS Observe Display: "AIR BLANK"

12. JS Test complete. Automatically prints Test Record Card.

SIMULATOR NO. <u>3048</u>		BY WHOM <u>BRIGANDI</u>		SIMULATOR LOT NO. <u>12110</u>		DATE CERTIFIED <u>11/5/12</u>	
INTOXILYZER NO. <u>11722</u>		MODEL <u>5000</u>		DATE CERTIFIED <u>11/5/12</u>		BY WHOM <u>BRIGANDI</u>	

RECORD OF INTOXILYZER 5000 CALIBRATION

PCOEN 296 REV M12

DATE	INSTRUMENT SERIAL NO	SIMULATOR SERIAL NO	SIMULATOR SOLUTION LOT NO
11/5/12	11722	3048	12110

Solutions

Breath Tube Heater	OK	DB	Calibration	OK	DB
Insufficient Sample	OK	DB	Acetone	OK	DB
RFI	OK	DB	Invalid Test	OK	DB
Reset	OK	DB	Print Test	OK	DB
Digital Display	OK	DB			
General Condition	Excellent				

CALIBRATION TESTS

1. 0.101
2. 0.102
3. 0.102
4. 0.102
5. 0.101

I, Alm Page certify that this calibration of the Intoxilyzer 5000 was conducted under my authority as a supervisor pursuant to my duties as a New York State Certified Technical Supervisor pursuant to the New York State Department of Health Administrative Rules and Regulations, Part 59.9

Return Instrument To Proper Test Mode DACABA Initials DB

Comments NONE

CALIBRATION CHECKED AND CERTIFIED BY	SIGNATURE	SERIAL NO
	<u>[Signature]</u>	7139

NASSAU COUNTY POLICE DEPT.
INTOXILYZER - ALCOHOL ANALYZER
MODEL 5000EN
11/05/2012
SN 68-011722

TEST	%BAC	TIME
AIR BLANK	.000	08:34 EST
CAL. CHECK	.101	08:34 EST
AIR BLANK	.000	08:35 EST
CAL. CHECK	.102	08:35 EST
AIR BLANK	.000	08:35 EST
CAL. CHECK	.102	08:36 EST
AIR BLANK	.000	08:36 EST
CAL. CHECK	.102	08:36 EST
AIR BLANK	.000	08:36 EST
CAL. CHECK	.101	08:37 EST
AIR BLANK	.000	08:37 EST
NO. OF SAMPLES:	05	
MEAN:	.1016	
STD. DEVIATION:	.0005476	

NASSAU COUNTY POLICE DEPT.
INTOXILYZER - ALCOHOL ANALYZER
MODEL 5000EN SN 68-011722
11/05/2012

DIAGNOSTIC TEST 08:46 EST

PROM CHECK PASSED

Z80 VER - G2026.04
SLAVE 75_2242

RAM CHECK PASSED

TEMP CHECK PASSED

PROCESSOR CHECK PASSED

MOTOR CHECK PASSED

EEPROM CHECK PASSED

SERIAL NO. MATCH PASSED

RANGE/STABILITY PASSED

AUTO CAL STATUS PASSED

RTC CHECK PASSED

INTERNAL STD PASSED

DIAGNOSTIC PASSED

PRINTER CHECK

ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789

John M. Brigid
Technician's Signature Date 11/5/12
John M Brigid

Original Breath Card

POLICE DEPARTMENT, COUNTY OF NASSAU, N.Y.

BOOK 255 - REV 4/95

SIMULATOR MAINTENANCE LOG

UNIT 3048

DATE RECEIVED 8/1/12	REASON FOR SHOP WORK check-out / In Service	DATE 8/1/12	DATE IN SERVICE 8/1/12	LOCATION CTS
TEMPERATURE (34° to 70°) 34°C	MECHANICAL CONDITION New	SOLUTION LOT NO. 12060	EQUIVALENT B.A.C. (%) 0.10	
REPAIRS MADE None				
CERTIFIED BY PO. IZIGANDI	DATE 8/1/12	DATE IN SERVICE 8/1/12	LOCATION CTS	
TECHNICAL SUPERVISOR PO. NOUGES				

DATE RECEIVED 09-20-12	REASON FOR SHOP WORK Returned in service	DATE 09-20-12	DATE IN SERVICE 09-20-12	LOCATION CTS
TEMPERATURE (34° to 70°) 34°C	MECHANICAL CONDITION EXCELLENT	SOLUTION LOT NO. 12080	EQUIVALENT B.A.C. (%) 0.10%	
REPAIRS MADE NONE				
CERTIFIED BY PO. BELICANI/BARIETTO	DATE 09-20-12	DATE IN SERVICE 09-20-12	LOCATION CTS	
TECHNICAL SUPERVISOR PO. JENNY				

DATE RECEIVED 11/5/12	REASON FOR SHOP WORK Solution change	DATE 11/5/12	DATE IN SERVICE 11/5/12	LOCATION CTS
TEMPERATURE (34° to 70°) 34°C	MECHANICAL CONDITION Excellent	SOLUTION LOT NO. 12110	EQUIVALENT B.A.C. (%) 0.10%	
REPAIRS MADE None				
CERTIFIED BY PO. BRIGANTI	DATE 11/5/12	DATE IN SERVICE 11/5/12	LOCATION CTS	
TECHNICAL SUPERVISOR PO. NOUGES				

POLICE DEPARTMENT, COUNTY OF NASSAU, N.Y.
INTOXILYZER/BREATHALYZER MAINTENANCE LOG INSTRUMENT NO. 11722

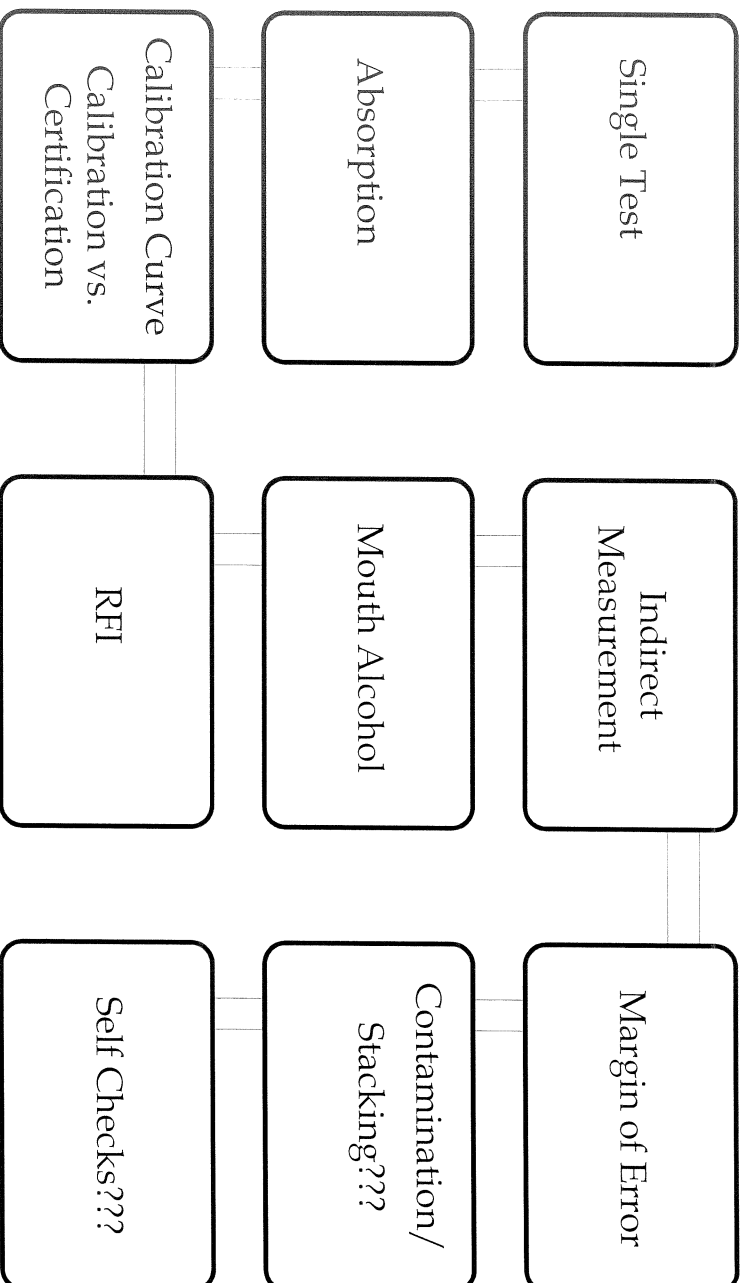
IN

DATE ENTER SERVICE	NAME MEMBER TAKING OUT OF SERVICE	CERTIFICATIONS	REASON FOR SHOP WORK
09-20-12	BRIGANDI		OPS CHECK / Renew no service
REMARKS PARTS REPLACED, ETC.			
UPGRADES / UPDATES FOR BENCH TRAINING. Annual Service.			
NAME MECHANIC ASSIGNED	DATE CALIBRATED	DATE IN SERVICE	LOCATION
BRIGANDI / BRIGANDI	09-20-12	09-20-12	NEPD CTS
TECHNICAL SUPERVISOR	DATE		
TO DeW BQ	09-20-12		

DATE OUT OF SERVICE	NAME MEMBER TAKING OUT OF SERVICE	REASON FOR SHOP WORK
11/5/12	BRIGANDI	60 check / ops check
REMARKS PARTS REPLACED, ETC.		
NONE		
NAME MECHANIC ASSIGNED	DATE CALIBRATED	DATE IN SERVICE
BRIGANDI	5/30/12	11/5/12
TECHNICAL SUPERVISOR	DATE	LOCATION
TO DeW BQ	11/5/12	CTS

DATE OUT OF SERVICE	NAME MEMBER TAKING OUT OF SERVICE	REASON FOR SHOP WORK
REMARKS PARTS REPLACED, ETC.		
NAME MECHANIC ASSIGNED		
DATE CALIBRATED	DATE IN SERVICE	LOCATION
TECHNICAL SUPERVISOR	DATE	

Attacks on Machine Accuracy



Stacking

TEST	%BAC	TIME
DIAGNOSTIC PASSED		
AIR BLANK	.000	15:43 EST
CAL. CHECK	.102	15:43 EST
AIR BLANK	.000	15:44 EST
SUBJECT TEST	.134	15:44 EST
AIR BLANK	.000	15:45 EST



MOUTH ALCOHOL

Slope detector is software that measures rise over time

How is it tested?

Importance of observation tells all

How does law enforcement do the observation period –
Examples...

INSUFFICIENT SAMPLE CASES

Admissible, yes, but...

It is an error message!

Suggested procedure by manufacturer

“Value printed is highest obtained”

Is true value higher? We do not know... Henry's Law

Insufficient is manufacturer's label not ours.

CALIBRATION V. CERTIFICATION

DEFINITIONS

CALIBRATION IS THE PROCESS OF PRESENTING A KNOWN SAMPLE TO A MACHINE, AND INSTRUCTING THE MACHINE TO RESET ITSELF SO THAT IF THE IDENTICAL STIMULUS IS OBSERVED IN THE FUTURE, THE MACHINE WILL REPORT THE MEASUREMENT THAT IS COMMUNICATED AS PART OF THE CALIBRATION. A CALIBRATION CHANGES THE WAY THE MACHINE OPERATES FOR ALL FUTURE USES, WHEREAS A CERTIFICATION DOES NOT.

CERTIFICATION IS OFTEN INCORPORATED WITHIN THE PROTOCOL FOR A SUBJECT BREATH TEST, AND WHEN INCORPORATED, THE SUBJECT TEST IS SAID TO BE INVALID WHEN THE CERTIFICATION FAILS TO MEASURE WITHIN THE PERMITTED ERROR RANGE.

Defenses that require an expert:

GERD

Mouth alcohol

Diabetes

Insufficient sample, etc.

KNOW YOUR ENEMY.

“The supreme art of war is to subdue the enemy without fighting. ... know your enemy and know yourself and you can fight a hundred battles without disaster” Sun Tzu “The Art of War”

NOT AN EXPERT WITNESS

Operator has a limited understanding of machine and science of breath testing.

Be careful how you handle this. You want to be able to conduct a meaningful cross examination and the more he knows the more you can ask.

YOU CAN MAKE IT WORK IN THE COURT!

You need something independent of the science that contradicts the result – I call this your hook, such as:

1. Good driving;
2. A good video;
3. Good SFSTs;
4. Questionable credibility; or
5. Questionable procedures.
6. Your knowledge is a must to get the jury to believe you!

