

**Kentucky Justice and Public Safety Cabinet**  
**DEPARTMENT OF CRIMINAL JUSTICE TRAINING**  
Funderburk Bldg. 521 Lancaster Ave  
Richmond, KY 40475



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## **LESSON PLAN**

**Course: Basic Breath Test Operators**

**Class Title: Introduction to Breath Testing**

**Effective Date: April 22, 2014**

## **COVER PAGE**

**TIME:** 180 Minutes  
**COURSE :** Basic Breath Test Operator's  
**CLASS TITLE:** Introduction to Breath Testing  
**CLASS LEVEL:** Basic Students  
**OBJECTIVES:** See page 3

**METHOD OF INSTRUCTION:** Lecture  
**METHOD OF TESTING:** Written  
**TRAINING AIDS:** Computer, Proxima, Screen,  
PowerPoint, Alcohol  
Simulator, Administration  
Sheet,

**REFERENCES:** See page 4

**COMPLETED BY:** Thomas G. Blankenship  
**DATE:** 14 January 2008  
**REVISIONS BY:** Danny J. Dailey  
**DATE OF REVISIONS:** April 22, 2014

**APPROVED BY (signature):**

**DATE APPROVED:**


**OBJECTIVES:**

AT THE END OF THE SESSION EACH LEARNER WILL BE ABLE TO:

Explain the principle of Henry's Law and how it pertains to the simulator and the human body.

Explain the principle of the 20 minute observation period.

Explain the Alcohol and Drug Influence Report Form along with other documents.

Explain the major breath testing defense challenges.

Understand the application of the Implied Consent Warning.

Explain the responsibilities of an instrument operator as they apply to the related KAR's.

**REFERENCES:**

Kentucky Administrative Regulations, Kentucky Revised Statutes,  
Tests for BAC in Highway Safety and Expert Testimony Course  
Notebook, Center for Law in Action Indiana University, 1986

## Introduction to Breath Testing

- Explain the principle of Henry's Law and how it pertains to the simulator and the human body.
- Explain the principle of the 20 minute observation period.
- Explain the Alcohol and Drug Influence Report Form along with other documents.

### LEC: INTRO

The purpose of this block of instruction is to explain in simple terms the science of breath alcohol testing and the administrative regulations governing its application.

Explain the principle of Henry's Law and how it pertains to the simulator and the human body.

Explain the principle of the 20 minute observation period.

Explain the Alcohol and Drug Influence Report Form along with other documents.

## Introduction to Breath Testing

- Explain the major breath testing defense challenges.
- Understand the application of the Implied Consent Warning.
- Explain the responsibilities of an instrument operator as they apply to the related KAR's.

### LEC:

Explain the major breath testing defense challenges.

Understand the application of the Implied Consent Warning.

Explain the responsibilities of an instrument operator as they apply to the related KAR's.

## 500 KAR 8:010 SECTION 1

1. Must be DOCJT TRAINED
2. STANDARDIZED WRITTEN EXAMINATIONS
3. 40 HOURS OF TRAINING

### LEC

Paragraph (1) The DOCJT is the only department in KY to train officers on the Intoxilyzer 5000. We train federal agencies, local, airport police, state police, university police, correctional agencies, etc.

Paragraph (2) Must receive a passing score on standardized written test and practical proficiency exam. We report only P/F grade to records and registration not the numerical results.

Paragraph (3) Tells us the course will be a minimum of 40 hours long. Course will cover physiological effects of alcohol in the human body, general instrument theory and operation of approved instruments, which measure alcohol concentration

## 500 KAR 8:010 SECTION 2

1. Certification is for two (2) years
2. After two years - "EXPIRED"
3. 6 month grace period for recertification training  
Cannot run tests during grace period
4. Expires during his or her service on active duty shall be eligible for recertification for a period of six (6) months following his or her return to employment as a peace officer.

### LEC

Paragraph (1) Certification is valid for 2 years from the date you passed the written final exam.

Paragraph (2) 2 years after your examination date your certification is expired and you can not run any more tests.

Paragraph (3) After the 2 year mark, an operator has a 6 month grace period to attend the 4 hour recertification course. However, once the 6 months has expired, and the operator has not recertified they are terminated/revoked from the program and will have to attend the 40 hour Basic Breath Test Operator Course.

Paragraph (4) Military personnel returning from active duty will have 6 months from the time they return to their agency to recertify.

**TIME: 5 MINUTE**



## 500 KAR 8:010 SECTION 3

1. Certified operator shall review standards and procedures for a minimum of four (4) hours of recertification
2. An operator whose certification expires and fails to obtain recertification shall repeat the forty (40) hour Breath Test Operator Certification training program

### LEC

Paragraph (1) Operators shall review standards and procedures during the recertify every 2 years to maintain certification, this can be done on-line or in classroom if offered.

Paragraph (2) Operators whose certification expires (2 years and 6 months) shall repeat the 40 hour Basic Breath Test Course at the Department of Criminal Justice Training.

## 500 KAR 8:010 SECTION 4

### Grounds for Revocation of Certification

1. Misuse of the instrument
2. Refusal or failure to perform procedures in an acceptable manner
3. Failure to testify in court proceedings

#### LEC

Paragraph (1) An operator can lose their certification for:

1. Misuse of instrument. Running tests for "Other Than" evidentiary purposes (i.e. for profit / for fun). Subpoena for defense tests. If received, you need to contact the Central Forensic Lab in Frankfort. They will conduct the testing.
2. Refusal or failure to perform procedures in an acceptable manner.
3. Failure to testify in court as an operator, without just cause.

## KRS 189A.010(1) DUI

- SUBSECTION A - BLOOD OR BREATH AT 0.08 GRAMS OR MORE (PER SE LAW) TAKEN WITHIN 2 HOURS OF CESSATION OF OPERATION OR PHYSICAL CONTROL OF A MOTOR VEHICLE
- SUBSECTION B - DRIVING UNDER THE INFLUENCE OF ALCOHOL
- SUBSECTION C - DRIVING UNDER THE INFLUENCE OF A SUBSTANCE OR COMBINATION OF SUBSTANCES

### LEC

Violation of KRS 189A.010 (1) [DUI Law] There are 5 different ways an individual can be charged for violation of the DUI law.

*Subparagraph a* - It is illegal to drive with an alcohol concentration in breath or blood at .080 grams or more. This is the "Per se" Law.

*Subparagraph b* - Driving while under the influence of alcohol. From .050 to .079 reading plus other evidence to get conviction.

*Subparagraph c* - Under the influence of substance or combination of substances such as huffing glue and smoking marijuana.

## KRS 189A.010(1) DUI

- SUBSECTION D – WHILE THE PRESENCE OF A CONTROLLED SUBSTANCE LISTED IN SUBSECTION 12 IS DETECTED IN THE BLOOD, TAKEN WITHIN 2 HOURS OF CESSATION OF OPERATION OF M.V.
- SUBSECTION E - DRIVING UNDER THE INFLUENCE OF ALCOHOL AND SUBSTANCES
- SUBSECTION F - BLOOD OR BREATH ALCOHOL CONCENTRATION OF 0.02 OR MORE TAKEN WITHIN 2 HOURS OF CESSATION OF OPERATION OR PHYSICAL CONTROL OF A MOTOR VEHICLE IF UNDER THE AGE OF 21.

### LEC

*Subsection d* – While the presence of a controlled substance listed in subsection (12) of this section is detected in the blood... taken within 2 hours of cessation of operation or physical control of a motor vehicle. (Subsection 12 includes any Schedule I drugs, except marijuana, and alprazolam, amphetamine, buprenorphine, butalbital, carisoprodol, cocaine, diazepam, hydrocodone, meprobamate, methadone, metamphetamine, oxycodone, promethazine, propoxyphene and zolpidem.

*Subparagraph e* - Under the influence of alcohol and any other substance which impairs driving.

*Subparagraph f* - Under the age of 21 it is illegal to have a alcohol concentration of .02 or above.

When you write your citation you are not required to state the exact a, b, c, d subparagraph of the DUI Law. The prosecutor should evaluate the evidence you present and focus the charge.

Required 20 MINUTE OBSERVATION PERIOD is found in the following two places:

- 500 KAR 8:030, Section 1, Paragraph (1)
- KRS 189A.103, paragraph (3), subparagraph (a)

LEC

500 KAR 8:030. Administration of breath alcohol tests and chemical analysis tests.

Section 1. The following procedures shall apply to breath alcohol tests:

A certified operator shall have continuous control of the person by *present sense perception* for at least twenty (20) minutes prior to the breath alcohol analysis. During that period the subject shall not have oral or nasal intake of substances which will affect the test.

KRS 189A.103

Consent to tests for alcohol concentration or substance which may impair driving ability – Test procedures – Who may administer – Personal testing.

The following provisions shall apply to any person who operates or is in physical control of a motor vehicle or a vehicle that is not a motor vehicle in this Commonwealth:

The breath, blood, and urine tests administered pursuant to this section shall be administered at the direction of a peace officer having reasonable grounds to believe the person has committed a violation of KRS 189A.010(1) or 189A.520(1).

Tests of the person's breath, blood, or urine, to be valid pursuant to this section, shall have been performed according to the administrative regulations promulgated by the secretary of the Justice Cabinet, and shall have been performed, as to breath tests, only after a peace officer has had the person *under personal observation* at the location of the test for a minimum of twenty (20) minutes.



## OBSERVATION PERIOD

### BREATH ALCOHOL ANALYSIS ONLY

- *Who:* Must be a CERTIFIED breath test operator
- *What:* Anything that would affect the outcome of the test.
- *When:* For at least twenty (20) minutes prior to the breath test

#### LEC

*Who:* Must be a CERTIFIED breath test operator

Point out that a student can be trained for 40 hours but unless they successfully complete both the practical and written exam they will not be certified.

*What:* Anything that would affect the outcome of the test.

Do not allow anything in their mouth or nasal passages because something as simple as cold water may affect the results of a breath test.

*When:* For at least twenty (20) minutes prior to the breath test

## OBSERVATION PERIOD

### BREATH ALCOHOL ANALYSIS ONLY

- *Where:* The observation time will be conducted at the location of the test.
- *How:* Under personal observation  
Present sense perception
- *Why:* It is the law!

#### LEC

***Where:*** The observation time will be conducted at the location of the test.

***How:*** Under personal observation (KRS 189A103 Paragraph 3, subparagraph (a))

***Present sense perception*** (500 KAR 8:030 Section Paragraph 1)

***Why:*** It is the law!

## **OBSERVATION PERIOD**

**BREATH ALCOHOL ANALYSIS ONLY**

The observation period is one of five key scientific safeguards necessary for admissibility of evidence in court.

### **LEC**

The observation period is one of five key scientific safeguards necessary for admissibility of evidence in court.

Later in class the five key scientific safeguards will be discussed in detail.



## STATEMENT USED BEFORE THE OBSERVATION PERIOD BEGINS

"During the next 20 minutes you are not allowed to eat, drink, smoke or place anything in your mouth or nasal passages. Do you have anything in your mouth at this time?"

*Do not make suggestive comments i.e. burping or belching.*

### LEC

"During the next 20 minutes you are not allowed to eat, drink, smoke or place anything in your mouth or nasal passages. Do you have anything in your mouth at this time?"

Explain to the class that at this time we are not indicating that you have to look into their mouth, but if there is any question that they have an empty mouth or not be aware that anything they have in their mouth could affect the breath test and make your evidence inadmissible.

Also, do not tell them not to burp or belch. This could plant the thought. A dry burp or belch is not going to affect the results.

## **IMPLIED CONSENT WARNING**

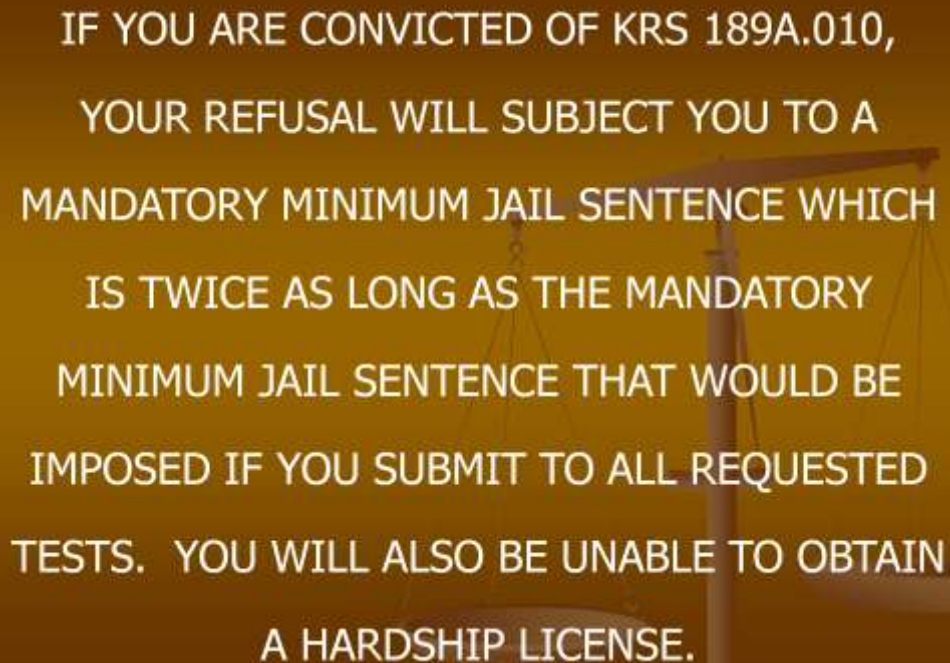
I WILL BE REQUESTING THAT YOU SUBMIT TO A TEST OF YOUR BREATH, BLOOD OR URINE OR ANY COMBINATION OF THESE TESTS. IF YOU REFUSE TO SUBMIT TO ANY TEST THAT I REQUEST, YOUR REFUSAL MAY BE USED AGAINST YOU IN COURT AS EVIDENCE OF YOUR VIOLATION OF KRS 189A.010 AND YOUR DRIVER'S LICENSE WILL BE REVOKED.

### **LEC**

I will be requesting that you submit to a test of your breath, blood or urine or any combination of these tests. If you refuse to submit to any test which I request, your refusal may be used against you in court as evidence of your violation of KRS 189A.010 and your driver's license will be revoked.

We are a bright line state. As a peace officer you have the right to ask for any one or combination of tests. The results of one test may not contain the evidence necessary to show impairment.

A breath test alone may only indicate a small amount of alcohol in the subject's system but the extent of his impairment may be from drugs and a blood or urine test must be necessary.



IF YOU ARE CONVICTED OF KRS 189A.010,  
YOUR REFUSAL WILL SUBJECT YOU TO A  
MANDATORY MINIMUM JAIL SENTENCE WHICH  
IS TWICE AS LONG AS THE MANDATORY  
MINIMUM JAIL SENTENCE THAT WOULD BE  
IMPOSED IF YOU SUBMIT TO ALL REQUESTED  
TESTS. YOU WILL ALSO BE UNABLE TO OBTAIN  
A HARDSHIP LICENSE.

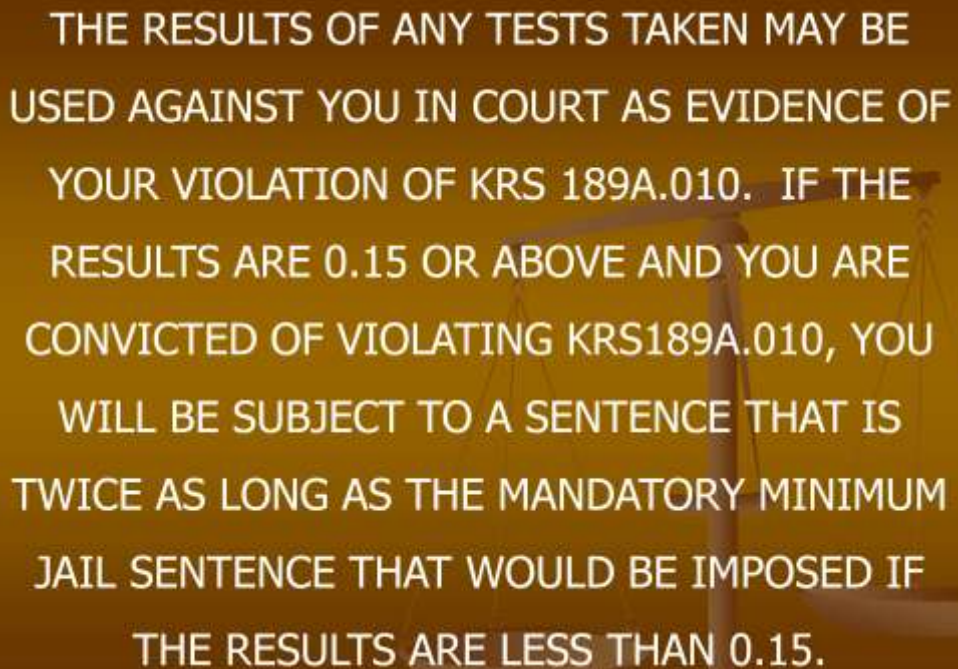
**LEC**

If you are convicted of KRS 189A.010, your refusal will subject you to a mandatory minimum jail sentence which is twice as long as the mandatory minimum jail sentence that would be imposed if you submit to all requested tests. You will also be unable to obtain a hardship license.

**NTF:**

Supreme Court of Kentucky in the COMMONWEALTH v. HERNANDEZ-GONZALEZ. No. 2001-SC-0600-CL case upheld the Implied Consent as it is written.

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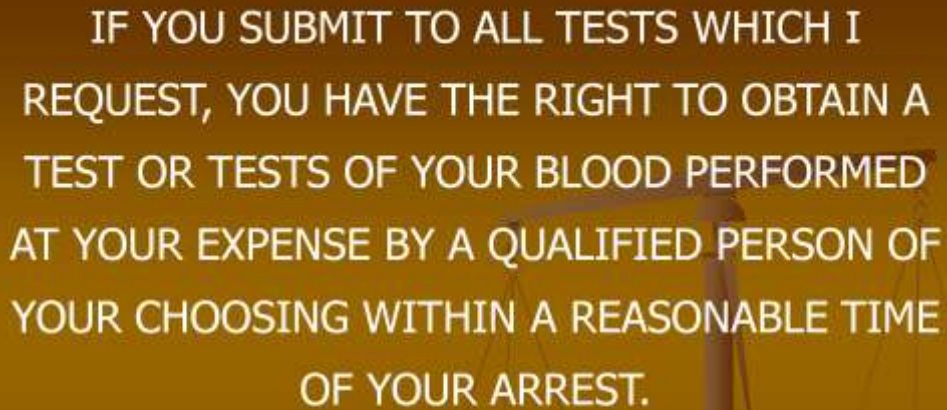


THE RESULTS OF ANY TESTS TAKEN MAY BE USED AGAINST YOU IN COURT AS EVIDENCE OF YOUR VIOLATION OF KRS 189A.010. IF THE RESULTS ARE 0.15 OR ABOVE AND YOU ARE CONVICTED OF VIOLATING KRS189A.010, YOU WILL BE SUBJECT TO A SENTENCE THAT IS TWICE AS LONG AS THE MANDATORY MINIMUM JAIL SENTENCE THAT WOULD BE IMPOSED IF THE RESULTS ARE LESS THAN 0.15.

**LEC**

The results of any tests taken may be used against you in court as evidence of your violation of KRS 189A.010. If the results are 0.15 or above and you are convicted of violating KRS 189A.010, you will be subject to a jail sentence that is twice as long as the mandatory minimum jail sentence that would be imposed if the results are less than 0.15.





IF YOU SUBMIT TO ALL TESTS WHICH I  
REQUEST, YOU HAVE THE RIGHT TO OBTAIN A  
TEST OR TESTS OF YOUR BLOOD PERFORMED  
AT YOUR EXPENSE BY A QUALIFIED PERSON OF  
YOUR CHOOSING WITHIN A REASONABLE TIME  
OF YOUR ARREST.

**NOTE:** *ONCE THE IMPLIED CONSENT HAS BEEN  
READ YOU MUST READ THE FOLLOWING*

**LEC**

If you submit to all tests which I request, you have the right to obtain a test or tests of your blood performed at your expense by a qualified person of your choosing within a reasonable time of your arrest.

*[NOTE: Once the implied consent has been read, you must read the following]*

**NTF**

There is nothing in the law stating the subject must understand the implied consent, nor is there anything that states it must be read in any language other than English. Some jurisdictions have made decisions that an officer must find a linguist. You will have to do what ever is expected of you in your jurisdiction until a prosecutor appeals a judge's decision to the court of appeals.

YOU HAVE AT LEAST 10 MINUTES, BUT NOT MORE THEN 15 MINUTES TO ATTEMPT TO CONTACT AND COMMUNICATE WITH AN ATTORNEY. DO YOU WISH TO ATTEMPT TO CONTACT AN ATTORNEY AT THIS TIME?

**NOTE:** AFTER THE PERSON ATTEMPTS TO CONTACT AND COMMUNICATE WITH AN ATTORNEY OR DECLINES YOUR OFFER, YOU MUST REQUEST THE TEST AS FOLLOWS:

**LEC**

You have at least 10 minutes, but not more than 15 minutes to attempt to contact and communicate with an attorney. Do you wish to attempt to contact an attorney at this time?

*[NOTE: After the person attempts to contact and communicate with an attorney or declines your offer, you must request the test as follows*

**NTF:**

There is nothing in the law indicating that the subject has any expectation of privacy. This is occurring during the 20 minute observation period and you must maintain that “Present sense perception”. Anything discussed that could be used as evidence, i.e. “I drank a twelve pack” or “I smoked some marijuana” should be made note of on the uniform citation.

Be sure the 20 min. observation period is  
complete.....then read.....

BASED UPON THE INFORMATION WHICH WAS  
PREVIOUSLY READ TO YOU, I AM NOW  
REQUESTING YOU TO SUBMIT TO A TEST OF  
YOUR \_\_\_\_\_ (*INSERT BREATH, BLOOD OR  
URINE AS APPROPRIATE*).

WILL YOU NOW SUBMIT TO THE TEST?

## LEC

Based upon the information which was previously read to you, I am now requesting you to submit to a test of your \_\_\_\_\_ (*Insert breath, blood or urine as appropriate*). WILL YOU NOW SUBMIT TO THE TEST?

Prior to requesting the test you must insure that the 20 minute observation period is complete, this means that the time on the instrument is 20 minutes after the observation began time on the evidence card.

Only request the test that you are about to administer, do not shot gun it here and request all three test at the same time.

The subject does not have the right to re-contact their attorney. Remember at the beginning of the warning you told them all three tests were possible.

If after the first test you intend on requesting a second test reread this paragraph, again inserting the appropriate test.

**QUALIFYING QUESTION to be asked at the  
“PLEASE BLOW” command**

**“IN THE LAST TWENTY MINUTES HAVE YOU  
BROUGHT ANYTHING UP FROM YOUR  
STOMACH INTO YOUR MOUTH”?**

**LEC**

In the last twenty minutes have you brought anything up from your stomach to your mouth?

This should be asked at the “Please Blow/R” mode of the breath test. If asked before it may give the subject something to think about and cause an invalid test.

If the subject refuses to answer or answers the question to the affirmative there is nothing keeping the officer from going ahead and getting the test as long as the subject provides a sample. If in actuality the subject brought something up and it contained alcohol the instrument will detect the residual mouth alcohol and alert the officer.

**TIME: 100 MINUTES**



***NOTE: IF THE PERSON TAKES ALL THE TESTS YOU REQUESTED, YOU MUST READ THE FOLLOWING***

SINCE YOU HAVE SUBMITTED TO ALL REQUESTED TESTS, YOU NOW HAVE THE RIGHT TO HAVE A TEST OR TESTS OF YOUR BLOOD, PERFORMED AT YOUR EXPENSE BY A PHYSICIAN, REGISTERED NURSE, PHLEBOTOMIST, MEDICAL TECHNICIAN OR MEDICAL TECHNOLOGIST OF YOUR CHOOSING WITHIN A REASONABLE TIME OF YOUR ARREST.

DO YOU WANT SUCH A TEST?

**LEC**

Since you have submitted to all requested tests, you now have the right to have a test or tests of your blood, performed at your expense by a physician, registered nurse, phlebotomist, medical technician or medical technologist of your choosing within a reasonable time of your arrest. DO YOU WANT SUCH A TEST”?

**NTF:**

Prior to reading this paragraph it is important to ensure that you have all the evidence you need to take to court. If you are going to request additional tests do not read this until all requested tests are complied with. If the subject refuses any requested test he or she does not have the right to this test. It is in the officers’ best interest to get this independent blood test as soon as possible after a breath test. This will minimize the difference between the two tests



# ALCOHOL AND DRUG INFLUENCE REPORT FORM

## **DISC**

May be filled out during the 20 minute observation period or after the breath test is conducted. Such as an interview / handwriting / observations.

Questions can be incriminating so you must read Miranda to the individual. Remember, at this point they are under arrest for DUI. At road side you are only investigating a possible DUI and they are not under arrest at this point.

Do not read Miranda at road side before reading the Implied Consent Warning! This only confuses the individual when deciding to take or refuse the chemical test w/o an attorney present.

**Most important question:**

**“WHEN DID YOU STOP DRINKING?”**

**2 am- pulled over**

**11pm- said last drink was consumed**

**3 am- received a breath test**

**\*It's been 4 HOURS since LAST DRINK!**

**He was LIKELY HIGHER at the time of  
DRIVING than at the time of the test.**

**(RETROGRADE EXTRAPOLATION)**

**LEC**

Important questions on form - When they ate last? What and how much they ate? High protein items and amount consumed will affect the absorption rate.

Most important question - When did they stop drinking?

2 AM Pulled over

11 PM Stated stopped drinking

3 AM Receive breath test (Result .110)

It had been 4:00 hours since his last drink by his own statement!

**NTF:**

He said he stopped drinking at 11 PM. From 11 PM to 3 AM is 4 hours. If the breath test was .110 at 3:00 it is highly unlikely that the individual was still absorbing when the last drink taken at 11 PM (4hrs earlier). Therefore, he was probably no longer absorbing more alcohol at 2 AM, but eliminating alcohol. If he was eliminating and still a .110 at 3 PM, at 2 PM he was likely higher than .110 test result.

## NTF: DISC

However, you do not know at the time of the test that the individual was absorbing, eliminating, or the same at the time of the crime.

Attorneys will try to get the officer to admit that the individual was still absorbing, that way the breath test is going to appear lower at the time of driving than at the time of the test. They will try a technique called retrograde extrapolate, subtracting from the breath test result. The problem in trying to use retrograde extrapolation is that you would have to rely on the evidence provided by the accused (i.e. type and amount of food consumed, duration of alcohol consumption, quantity of alcohol consumed, proof of the alcohol, time alcohol consumption ceased).

KY Supreme Court case, *Commonwealth v Michael Allen Wirth*, September 1996. Court ruled that the alcohol concentration at the time of the offense is not required for the prosecution to make prima facie case for a per se violation. Prosecution does not have to show that the individual was at or above per se at the time of driving. However, it does not preclude the defense based on expert testimony attempt to establish the alcohol level at time of driving.

Are they ill? If they have a temperature greater than 98.6 degrees it will elevate the test results slightly. To have an effect the body temperature must vary by at least 2 degrees. For example, a subject with an alcohol concentration of .100 and had a fever of 2 degrees above normal would produce a breath alcohol result of no greater than .106. But, this is actually a moot point since you do not know an individuals temperature at the time of the test.

Have they seen a dentist lately? If given medication for tooth ache, should probably not be operating car. Or if speech is sounding slurred could be Novocain.

Are they diabetic or epileptic? Symptoms could appear to be intoxicated. Epileptics take Phenobarbital and Dilanta which are drugs causing impairment. Diabetic suffering from high blood sugar.

Do they have a glass eye? Important to know if used HGN at road side.

Denture issue. Do they have false teeth? A common defense tactic. Studies conducted by Dr. Forney in the late 1950's with 50 volunteers showed if a 20 minute observation period was conducted. Residual Mouth Alcohol would not have an effect on the test results. Set dentures in alcohol for 48 hours waited 20 minutes and blew into the instrument and got .000. Took cotton ball soaked with alcohol placed under dentures waited 20 minutes and got .000. Took a tea spoon of 100 proof whiskey placed in mouth waited 20 minutes and blew into the instrument and got .000. Conclusion: the dental appliance will not retain alcohol beyond the 20 min wait. All alcohol was either absorbed or evaporated in the 20 minutes. You do not have to remove the dentures. However, if your judge wants you to remove them then do what you have to do to get your evidence admitted.

**NTF:**

Hand writing specimen. Is the sample readable? Is it within the box?

Record all comments by subject. "I could not pass this test even if I were sober".

Be sure to record what they looked like the night you arrested them. Defense will try to impeach your credibility because you can't remember. It may be 3 months till you get to trial. Defense will have the subject cleaned up hoping you will assume the person is the one you arrested. You can honestly testify that the person you arrested that night did not fit the description you made of the subject in your report.

Odor of an alcoholic beverage. Alcohol itself does have an odor! Some attorneys are taught that it is odorless and colorless. You can testify to the fact that you smell an alcoholic beverage but you are unable to determine the ethanol content of the drink. Don't acquaint strong odor to a specific alcohol level. Remember there are non-alcoholic beverages available that do smell like the real thing. O'Doul's and Sharps are non-alcohol beers.

What was their speech like the evening you stopped them. If it was slurred and you expect to testify to that try to hear how the individual speaks prior to court when they are not suppose to be intoxicated. Could be they do have a speech impediment and you though the speech was due to alcohol.

Observer's opinion: You are qualified to provide an opinion of the individuals alcoholic beverage intake based on attendance to this course and your professional experience.

Bottom of form has the Implied Consent Warning again. Some agencies have the individual sign that you have read it to them, but it is not required by law.

# UNIFORM CITATION

Post Arrest Complaint Block:

Breath -

Blood -

Urine -

## LEC

Use the citation information as your input medium for the Intoxilyzer 5000. The information you need can come from the citation.

You have to write Breath, Blood, and Urine on the paper citation, E-citation will automatically insert this if it is a DUI related charge.





# BREATH TEST LOGBOOK

## Log all breath test cards

Serial Number of Instrument  
Citation Number  
Subject's Name, Operator License Number (include state of issue)  
Date, Time of Test (taken from subject test time on evidence card)  
Alcohol Result  
Arresting Officer, Testing Operator  
Service Comments (for technician only)

### LEC

Log all breath test cards. If you receive a card, log it.

If you end up with three cards from testing one subject i.e. Check Ambient Conditions, Inhibited RFI, and then a Completed Card with BrAC results log all three in the order in which you completed the test.

The test results are in the memory of the instruments, your failure to log test could be used against you in court by the defense after they compare the memory to the logbook.



Alcohol results as they appear on the evidence card. This also includes any words such as Invalid Test, Deficient Sample, or RFI.

Name as it appears on the Operator's License

Date on the evidence card.

Arresting officer's full name.

	A	B	C	D	E	F	G
	SERIAL NUMBER	CITATION NUMBER	SUBJECT'S NAME OPERATOR LICENSE NUMBER	DATE TIME	ALCOHOL RESULTS	ARRESTING OFFICER TESTING OPERATOR	SERVICE COMMENTS (TECHNICIAN USE ONLY)
1							

Found in two places: on the evidence card and the back of the instrument

Found on the bottom right side of the citation.

OL number to include the state of issue, i.e. KY, TN, OH, NC, FL

Time that is shown next to subject test on the evidence card. (Time of Test)

Operator's full name.

## LEC

It is a standard procedure for all breath tests to be logged in. Fill the entry out completely.

- Serial number
- Citation number
- Name (As it is shown on the OL)
- License number (include the state of issue i.e. KY, IL, OH and such)
- Date
- Time of test (Subject Test Time)
- Alcohol results (What ever the results of the test were i.e. Check Ambient Condition)
- Arresting officers name (Even if the operator and arresting officer is the same)
- Operator's name

If you forget how to fill out the logbook, look at the inside cover and it explains in detail. If you make a mistake while entering the data just line through the incorrect information, initial it, and put in the correct data. Once the sheet is complete, DO NOT throw the sheets out, keep them for record. Record the test results after you complete the test not several hours later. We manually record tests even though the instrument's memory maintains a record of the test, because the KSP Forensic Lab has asked us to keep a written record of all tests.

## HENRY'S LAW

(Law of EQUILIBRATION)

" The weight of any gas that dissolves in a definite volume of a liquid is **DIRECTLY PROPORTIONAL** to the pressure that the gas exerts above the liquid".

### LEC

The weight of any gas that dissolves in a definite volume of liquid is directly proportional to the vapor pressure that the gas exerts above the liquid. The alcohol concentration in the vapor above the liquid is proportional to the amount of alcohol found in the liquid at specific temperatures.

Use the simulator at this point to relate Henry's Law to Breath Test.

## BREATH ALCOHOL SIMULATOR

- Simulates your lungs
- Expired breath is 34° C or 93.2 ° F
- Used during the Cal Check Mode

### LEC

Simulator simulates your lungs. Expired breath is 34 degrees C or 93.2 degrees F. Simulator is set for 34 C. Simulator is attached to the Intoxilyzer and during the Cal Check phase it draws a sample of the air vapor.

To get the solution to read a .080 per se (grams of alcohol per 210 liters of breath), take a 500 ml beaker, 492ml is distilled water the other 8ml is alcohol solution mixed and heat to 34 C. If heated to 37 C the temperature drives more alcohol molecules out of the liquid and into the vapor and the content may increase to .086. This is also known as the Law of Equilibration. As the temperature of the solution increases so does the amount of alcohol molecules released into the airspace above the liquid.

Per KRS 189A.005

Alcohol concentration: Grams of alcohol per 210 Liters of breath or grams of alcohol per 100 milliliters of blood

Based upon 2100:1

2100 ml of Breath to 1 ml of Blood

Breath to Blood ratio

11.7% of the population has a ratio higher than 2100:1

86% of the population has ratio of 2100:1 (Standard)

2.3% of the population has a ratio lower than 2100:1

Examples

2300:1 Blood test result will be HIGHER than their breath test

1900:1 Blood test result will be LOWER than their breath test

## LEC

grams per 210 liters of breath (Breath test)

Or

grams per 100 milliliters of blood (Blood test)

This is found in KRS 189A.005 as definition of an alcohol concentration.

The instrument measures the breath alcohol concentration found in the sample. The processor uses a breath to blood ratio of 2100 ml of breath to 1 ml of blood to determine the concentration.

How does the 2100:1 ratio relate back to the KRS?

Convert 210L to ml = 210,000 Now you have 210,000 ml breath and 100 ml blood. To simplify remove two 0's and you have 2100:1.

The following pages are for your reference, not necessarily to be covered in class

## NTF:

The 2100:1 breath to blood ratio means each given volume of blood has as much alcohol as 2100 equal volumes of breath.

Do not use % in BrAC results. Why? Convert .100% BAC to decimal = .00100.

The size of the sample chamber of the Intoxilyzer 5000 is 81.4 ml or cc. 81.4ml is what part of 2100ml? You divide 81.4 into 2100 = 1/25.79 parts of 2100

2100 ml:1 ml      81.4 ml      1/25.79 {fractional amount of air gathered}  
{2100 divided by 81.4 = 25.79}

Everyone does not have the same breath to blood ratio. The breath to blood ratio has no bearing on body size or lung capacity. What determines it involves many factors such as a person's hematocrit which is the number of red blood cells per 1 cc of tissue, body temperature. The ratio can vary hour to hour and day to day.

Research has shown that:

- 2.3%            1500:1  
              1900:1 (Lower ratio)      73.6ml sample chamber  
              Difference of 7.8 ml less
- 86%            2100:1                            81.4ml sample chamber
- 11.7%            3400:1  
              2300:1 (Higher ratio)      89.1ml sample chamber  
              Difference of 7.6 ml more

Before we go further, at 1900:1 ratio what should the sample chamber size be?

We know the sample chamber is 1/25.79 parts of 2100. Divided 1/25.79 into 1900 = 73.6ml, we collected too much breath for the individuals 1900:1 ratio. In that extra breath sample we drew in alcohol molecules that increased the breath test results.

NOTES: 1/25.79 divided into 1900 = 73.6 ml

1/25.79 divided into 2300 = 89.1 ml

Everyone has heard the myth: "Blood test results always will be higher than breath test results". That is not always a correct statement.

## NTF:

If someone had a lower ratio than what the instrument was set for, what result could we expect from the BLOOD test results?

Here is how you figure that:  $\frac{2100}{1900} = .100$  BrAC

$$1900 \quad X \quad BAC$$

$$\frac{2100X}{2100} = \frac{190}{2100}$$

$$2100 \quad 2100$$

$$X = .090 \text{ BAC}$$

The blood test RESULT is lower then the breath test results "WHY?"

Possibly because we collected at a breath to blood ratio of 2100ml:1ml instead of 1900ml : 1ml of the subject. Using the 2100:1 ratio the sample chamber size is 81.4ml. At 1900:1 we should have used a chamber size of 73.6 ml.

Instrument gathered +7.8ml more than necessary, thereby resulting in a higher breath test.

If someone had a higher ratio than what the instrument was set for, what result could we expect from the BLOOD test results?

Here is how you figure that:  $\frac{2100}{2300} = .150$  BrAC

$$2300 \quad X \quad BAC$$

$$\frac{2100X}{2100} = \frac{345}{2100}$$

$$2100 \quad 2100 \quad X = .164 \text{ BAC}$$

*Possibly because we collected at a breath to blood ratio of 2100ml:1ml instead of 2300ml:1ml of the subject. Using the 2100:1 ratio the sample chamber size is 81.4ml. At 2300:1 we should have used a chamber size of 89.1ml. Instrument gathered -7.7ml less than necessary, thus lowering the breath reading possibly due to not collecting enough sample which contained alcohol molecules.*

*If the breath and blood results are significantly not the same and without doing the math can you determine if an individuals breath to blood ratio is higher or lower then the average 2100 : 1?*

Yes

*Rule of thumb to determine if ratio is higher then average or lower then the average:*

*The ratio is higher than 2100:1, if the blood test result is higher than breath test result.*

*The ratio is lower than 2100:1, if the blood test result is lower than the breath test result.*

*BrAC .098 Breath*

*BAC .110 Blood*

*Without a calculator what would you expect the individuals' ratio to be?*

**NTF:** Higher than 2100:1, the ratio all instruments are set up to use.

How can you determine a persons Breath to Blood ratio?

Need to have a blood test conducted at a reasonable time after the breath test. This reduces the absorption or elimination possibility when both tests are done in close time of each other.

Optional comment: To determine an individuals  
breath to blood ratio:

BrAC .110 Breath

BAC .100 Blood

BAC X 2100 = Breath to Blood Ratio

BrAC

.100 X 2100 = 1909

.110

Breath to Blood Ratio = 1909:1

In this case the blood test is lower than the breath test. The person's ratio is lower then what the instrument is set up for. So we collected too much breath!

Recent research has actually shown that the majority of population does not have a 2100:1 ratio but actually it is higher 2300:1. If we changed the sample chamber size to reflect 2300:1 ratio how much more would we hurt the 2.3% with a 1500:1 ratio? It is better to let one guilty man go free then to falsely convict ten.





**QTC**

What agency does the training for breath testing instruments in Kentucky?

**AR**

**QTC**

DOCJT, DUI Enforcement Section

How long is the course according to the Kentucky Administrative Regulations?

**AR**

**QTC**

40 Hours

How long is an officers Breath Test Operator Certification valid?

**AR**

2 years

**QTC**

Can an officer run test after 2 years, while they are in the 6 month grace period?

**AR**

No

**QTC**

True/False an officer could have their certification revoked if they failed to perform procedures in an acceptable manner?

**AR**

True



<b>QTC</b>	Who can conduct a 20 minute observation period?
<b>AR</b>	Only a certified breath test operator
<b>QTC</b>	Why is a 20 minute observation period done?
<b>AR</b>	To insure nothing affects the test.
<b>QTC</b>	True/False a certified breath test operator can start the observation time prior to arriving at the site where the breath test will be administered?
<b>AR</b>	False, the observation time must be done at the site where the test will be administered.
<b>QTC</b>	True/False the qualifying question “In the last twenty minutes have you brought anything up from your stomach to you mouth should be asked at the “Please Blow/R” mode of the instrument?
<b>AR</b>	True
<b>QTC</b>	What do write in the BA block located on the citation?
<b>AR</b>	Nothing, leave this block blank.
<b>QTC</b>	Where on the uniform citation do you put the results of a test?
<b>AR</b>	Post arrest complaint block
<b>QTC</b>	True/False you only have to write down the test that you have results for on the citation?
<b>AR</b>	False, all three will be written on the citation.
<b>QTC</b>	True/False the observation time for an Intoxilyzer 5000 EN is logged in the Alcohol Log Book?
<b>AR</b>	False, the time the subject blew (subject test time) is logged.



**QTC** Is it necessary to log evidence cards that do not show a BrAC result?

**AR** Yes, all breath test cards are logged.

**QTC** What is Henry's Law?

**AR** The law of equilibration.

**QTC** If someone's Breath to Blood Ratio was 2300:1, would their blood test be higher or lower than their breath test. Taking into consideration that both tests were given in close time to each other?

**AR** Higher