Colorado Department of Public Health & Environment
Laboratory Services Division

Evidential Breath Alcohol Testing Program

Revision 2.08

INTOXILYZER 5000EN INSTRUCTOR COURSE

INTOXILYZER 5000EN INSTRUCTOR COURSE

- Colorado Department of Public Health and Environment
- Laboratory Services Division
- Evidential Breath Alcohol Testing (EBAT) Program

(Rev 2.08)

INTOXILYZER 5000EN INSTRUCTOR COURSE

1. Name Placards

2. Attendance Sheets

3. Manual

4. Building
   - A. Restrooms
   - B. Break Area
   - C. Smoking

5. Breaks and Lunch

INTOXILYZER 5000EN INSTRUCTOR COURSE

1. Introduction
2. Colorado Board of Health Rules and Regulations for Tests for Alcohol and Other Drugs
3. Alcohol
4. Metric System
5. Human Physiology and Alcohol
6. Intoxilyzer 5000EN Theory/Operation
7. Factory Technical Specifications
8. Technical Description
9. Standard Equipment Setup
10. Complete Evidential Breath Alcohol Test (EBAT)

INTOXILYZER 5000EN INSTRUCTOR COURSE

11. Instructor Menu #1
12. Intoxilyzer 5000EN Error Messages
13. Simulator Theory and Operation
14. Intoxilyzer 5000EN Laboratory Practical
15. Accuracy and Precision
16. Responsibilities of the Certified Instructor
17. Facility Inspections
18. Legal Defensibility
19. Appendix
20. Review
21. Final Exam

Colorado Department of Public Health & Environment

Laboratory Services Division

Evidential Breath Alcohol Testing (EBAT) Program

EBAT Program Responsibilities

- Certification & Approval of EBAT Devices
- Certification of Instructors & Operators
- Approval of EBAT Facilities
- Court Testimony
- Preparation of Alcohol Standards

Instrument Certification

- Performed at CDPHE by EBAT Personnel
- Certified Annually
- Certified for a specific location
  - Mobile vans are separate location

EBAT PROGRAM STAFF

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STATE BOARD OF HEALTH RULES PERTAINING TO TESTING FOR ALCOHOL AND OTHER DRUGS

5 CCR1005-2

EFFECTIVE JANUARY 30, 2007

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Appendix 2C DUI and DUID laboratory onsite inspection standards

Part 1 - General

- **Purpose and Scope**
  - Establish minimum standards for certification and approval of entities and processes utilized for alcohol and drug testing
  - Applies to DUI, DWAI, driving with excessive alcohol content, vehicular assault and homicide and consumption of alcohol by underage persons
  - Department has determined that the results obtained from the Intoxilyzer 5000EN are scientifically accurate, precise and reliable
  - Collection of delayed breath specimen is not required
  - EBAT facilities operate under Part 5 prior to software update
  - EBAT facilities operate under Part 6 after software update
  - Software update was completed by June 30, 2007
  - Laboratory testing of delayed breath specimens operates under Part 5
  - Blood and urine testing operates under Parts 5 and 6

Part 1 - General

- **Definitions**
  - Alcohol Percent(%)
  - Appropriate Clinical or Public Safety Facility
  - Certification
  - Certified Instructor
  - Certified Laboratory
  - Certified Operator
  - Delayed Breath Alcohol Specimen
  - Department
  - Evidential or Evidentiary
  - Evidential Breath Alcohol Test (EBAT)
  - Evidential Breath Alcohol Test (EBAT) Device
  - Facility
  - Proficiency Testing
  - Representative of a Certified Laboratory

Part 2: Certified Operators and Instructors of Evidential Breath Alcohol Test (EBAT) Devices

- Certification of EBAT Operators
  - Initial Certification
    - » Employed by law enforcement agency or CDPHE
    - » 8 hour class
    - » 80% or greater on written test
    - » Comprehensive practical exam
    - » Certificate with operator name, course instructor(s) and initial date of certification
  - Maintain Certification
    - » Proficiently perform without errors, 1 EBAT following Appendix 2A in the presence of a certified instructor within 180 day period
    - » Operator and Instructor sign printout
    - » Agency retains printout

Part 2: Certified Operators and Instructors of Evidential Breath Alcohol Test (EBAT) Devices

■ Certification of EBAT Operators

- Failure to maintain certification
  - » Decertified
  - » Repeat 8 hour operator course
- Certification after military service
  - » Proof of active duty (not to exceed 2 years)
  - » Proof of last operator certification prior to active duty
  - » 80% or greater on current operator test
  - » Proficiently perform without errors, 1 EBAT following Appendix 2A in the presence of a certified instructor
  - » Send documentation to CDPHE
  - » Certificate will indicate operator name, agency instructor, date of certification and “Reinstatement After Military Service”
- Facility retain records of operator’s original date of certification and all subsequent dates of certification

Part 2: Certified Operators and Instructors of Evidential Breath Alcohol Test (EBAT) Devices

- Certification of EBAT Operator Instructors
  - Initial Certification
    - » Employed by Law Enforcement agency or CDPHE
    - » Current certified EBAT operator
    - » 16 hour class
    - » 80% or greater on written exam
    - » Comprehensive practical exam
    - » Certificate with Instructor's name, CDPHE course trainer(s) and initial date of certification
  - Maintain Certification
    - » Teach 1 operator class or
    - » Take a written instructor certification test within 365 days

Part 2: Certified Operators and Instructors of Evidential Breath Alcohol Test (EBAT) Devices

- Certification of EBAT Operator Instructors
  - Failure to maintain certification
    - » Decertified and repeat 16 hour instructor course
  - Certification after military service
    - » Proof of active duty (not to exceed 2 years)
    - » Proof of last instructor certification prior to active duty
    - » 80% or greater on current instructor test
    - » Proficiently perform without errors, 1 EBAT following Appendix 2A in the presence of a certified instructor
    - » Send documentation to CDPHE
    - » Certificate will indicate instructor name, agency name, Department Program Manager or designee, date of certification and “Reinstatement After Military Service”
    - » Facility retain records of instructor's original date of certification and all subsequent dates of certification

Part 3: Blood Testing

- Evidential Specimen Collection
  - Living Persons
    - » Collected in presence of arresting officer or other responsible person who can authenticate the specimens
    - » Collected by physician, nurse, paramedic, emergency medical technician, medical technologist or persons whose training and duties include withdrawing blood specimens
    - » Collected only in appropriate clinical or public safety facility
    - » Collection will not interfere with provision of essential medical care or emergency services
    - » Collected using sterile equipment
    - » Aqueous nonvolatile antiseptic. No alcohol or phenolic antiseptics

Part 3: Blood Testing

- Evidential Specimen Collection
  - Deceased Persons
    - » Collected per 42-4-1304, C.R.S.
    - » By a person whose training and normal duties include collection of blood specimens from deceased persons
  - Living and Deceased Persons
    - » Collected into two sterile tubes resulting in a na/fl concentration greater than 0.90 percent weight
    - » Inverted several times to mix blood and na/fl
    - » Affix ID label and evidence seal
    - » Ship to certified lab
    - » If shipment is delayed more than 72 hours, refrigerate at less than 8^0C in secure storage
    - » Must be shipped in 7 days

Part 3: Blood Testing

- Evidential Specimen Collection
  - Certified laboratory Responsibilities
    - » 1 tube analyzed for state's test(s) within 15 days of collection
    - » Second tube refrigerated by the certified lab at less than 8^0C for a minimum of 12 months from collection date
    - » Second tube may be released if requested and is received by a representative of another certified lab
    - » Second specimen must be analyzed within 15 days of its receipt by the certified lab representative

Part 4: Urine Testing

- Urine specimens are not used for alcohol testing
- This section will not be discussed

Blood vs. Urine for Drugs

- Blood
  - Decreased court time and testimony
  - Preserved and stable sample
  - Quantified results
  - What is the blood system at the time of collection
- Urine
  - Unpreserved sample
  - Typically only reported as a qualitative (pos/neg) test
  - Can only confirm that the subject had taken the drug at some time in the past
  - Typically results do not stand on their own and must be supported by other evidence

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Establishes minimum standards for certification and approval of entities and processes utilized for alcohol and drug testing after installation of Intoxilyzer 5000EN software revision 1358.XX
- Evidential Specimen Collection
  - Breath
    - » Must be analyzed on EBAT device approved by CDPHE
    - » Intoxilyzer 5000EN is only EBAT device approved for EBAT testing
    - » EBAT device is certified initially and annually thereafter

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Evidential Specimen Collection
  - Breath
    - » Certificate issued initially and after each annual
    - » EBAT specimen must only be collected and tested by certified EBAT operators or instructors using a certified EBAT device and following the steps outlined in these regulations

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Evidential Specimen Collection
  - Breath
    - » Specimen consists of end expiratory alveolar air
    - » Subject must be given a choice of evidential breath alcohol test or evidential blood alcohol test or refusal
    - » Nothing in this regulation is intended to exempt or exonerate an individual from the penalties proscribed in 42-4-1301.1 and 42-4-1301.2 or any other relevant law, for failure to submit to such test

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Evidential Specimen Collection
  - Breath
    - » Before subject is given a choice of which test to take include the following information
    - » “You are required to take, complete or cooperate in completing an evidential chemical test to determine the alcoholic content of your blood or breath. The chemical test you choose is the test you will be taking. You cannot choose a different test later. If you choose a blood test, two tubes of blood will be drawn. One tube belongs to you and you may have it tested at a Health Department Certified Independent Laboratory of your choice. If you choose a breath test, two breath samples will be analyzed by a certified evidential breath alcohol testing device following an approved standard operating procedure. You will not receive a sample to have independently tested by a certified laboratory.”

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Evidential Specimen Collection
  - Breath
    - » “If you refuse to take, complete or cooperate in completing an evidential chemical test to determine the alcoholic content of your blood or breath your driving privilege may be revoked.”
- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
    - » Operator or instructor must follow procedures specified in these rules
    - » Must document compliance by completing the Department checklist

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
    - » Checklist is found in Appendix 2A
    - » Steps 1 through 7 must not be changed in any way
    - » Steps 1 through 7 must be performed in the order listed
    - » Certified Operator or instructor must initial inside parentheses to left of each step
    - » Initialing each step indicates proper completion

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
  - Appendix 2A, Checklist
    - » Step 1. “Turn power switch on or observe the power switch has been activated. If the EBAT device is in the standby mode, press the start test switch.”
      - EBAT device always on. Small red light below power switch is illuminated
      - First entering room determine if the EBAT device is in standby mode (display blank, red light on and simulator displays “idle”)
      - If in standby mode, press START TEST SWITCH
      - If in ready mode, proceed to Step 2

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
  - Appendix 2A, Checklist
    - » Step 2. “The subject must remove foreign objects from the nose and mouth including dentures. The subject must be closely and continuously observed for 20 minutes prior to testing to assure no belching, regurgitation or intake of any foreign material by nose or mouth has occurred. If such occurs, another 20 minutes of close and continuous observation must elapse under the same conditions.”

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
  - Appendix 2A, Checklist
  - Step 2 (Continued)
    - » Dentures – 2 types
      - Permanent – Leave in (Won't effect test)
      - Removable – Must come out
    - » Observation Period
      - Close enough to detect belching, regurgitation or intake of foreign material
      - Conduct at EBAT Facility
      - Conducted by certified operator, instructor or law enforcement officer
      - Not conducted in patrol car

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
  - Appendix 2A, Checklist
  - Step 2 (Continued)
    - » Observation Period
      - Start and stop times must be recorded from the EBAT device or facility dispatch clock
  - Step 3. “ Verify that the external breath tube and simulator vapor tube are both warm.”
    - » Touch both tubes to ensure they are warm
    - » If either tube is cold, stop the test and call an instructor

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
  - Appendix 2A, Checklist
    - » Step 4. “Observe the simulator temperature is between 33.8 degrees centigrade and 34.2 degrees centigrade.”
      - Simulator equilibrate for minimum of 10 minutes after reaching correct temperature when it has been in standby or turned off.
    - » Step 5. “Press the start test switch.”

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
  - Appendix 2A, Checklist
    - » Step 6. “ Follow the instructions and sequence of events as they appear on the EBAT device display.”
      - System blank(s) analysis must be used
      - Results of analyzing Department certified reference standard(s) must agree with target value within $\pm$10%
      - Analysis of more than one standard of same value must agree with each other within $\pm$10%

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
  - Appendix 2A, Checklist
    - » Step 6. (Continued)
      - Subject breath tests must agree within 0.020g/210L
      - During 2 minute period between subject breath tests observe subject same as 20 minute observation period
      - Subject must be removed from area in close proximity to the EBAT device
      - Use a clean mouth piece each time the subject blows into the instrument

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
  - Appendix 2A, Checklist
    - » Step 7. “Retain all printouts generated by the EBAT device with the DUI packet. (ie., error message printouts)”
      - Sign the checklist and completed printout(s)
      - Retain all printouts including error message printouts
      - All records pertaining to EBAT specimens retained for 2 years

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN Software Revision 1358.XX

- Methods of Analysis
  - Alcohol in Evidential Breath Specimens
  - Appendix 2A, Checklist
    - » Step 7. (continued)
      - New checklist for each EBAT performed
      - A completed evidential breath alcohol test (EBAT) is one in which the checklist, Appendix 2A, is followed and a printout with no error messages is obtained.

Part 7. Certification of Laboratories

- This Part outlines standards and procedures that laboratories must meet to be certified by the Department to perform blood-alcohol, blood-drug or urine-drug tests under these regulations.
- This Part will not be covered during this class.

Part 8. Violations and Remedies

- It is a violation to perform testing without an appropriate certificate
- Violation may result in denial, suspension or revocation of certification
- Violation will not be cited if:
  - Unavoidable to prevent loss of life, personal injury, severe damage or there were no alternatives
  - Proper notification was given to CDPHE
  - Beyond control of facility or laboratory

Part 8. Violations and Remedies

- Right to appeal the denial, suspension or revocation of certification
  - Any facility, laboratory, operator or instructor whose certification is denied, suspended or revoked may seek appeal pursuant to section 24-4-105, C.R.S. (2006)

Part 8. Violations and Remedies

- Denial, Suspension or Revocation of Certification
  - Falsification of data or other deceptive practices
  - False statements by omission or commission relevant to the certification process
  - Gross incompetence or negligent practices
  - Willful or repeated violation of any lawful rule, regulation or order of CDPHE or the Board of Health or its officers
  - Inadequate space, equipment or methods utilized for testing

Part 8. Violations and Remedies

- Denial, Suspension or Revocation of Certification (Continued)
  - Submission of any test results of another person as those of the subject being evaluated
  - For a laboratory, failure to continuously participate in proficiency testing
  - For a laboratory, 2 consecutive “unsatisfactory” evaluations or failure in 2 of any 3 consecutive PT events
  - For a laboratory, contact with another laboratory concerning PT results prior to due date for those results
- Injunction
  - Department may seek for failure to comply with these rules and regulations

Web Sites

- Internet address for the EBAT Program:

http://www.cdphe.state.co.us/lr/Certification/EBAT.htm

- Rules & Regulations:

http://www.cdphe.state.co.us/regulations/labregs/100502alcoholdrugtesting.pdf

- For Latest Fact Sheet Data use:

http://www.nhtsa.dot.gov/people/ncsa/factshet.html

QUESTIONS?

ALCOHOL

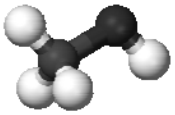
- ⇨ Characteristics of Alcohol
- ⇨ Types of Alcohol
- ⇨ Ethanol
- ⇨ Ethanol Production

CHARACTERISTICS OF ALCOHOL

- **Aliphatic:** Compounds composed of carbon and hydrogen atoms.
- **Hydroxyl groups:** molecules consisting of an oxygen atom and a hydrogen atom.
- **Hydrophilic:** substances that can enter into a charged interaction with water molecules.
- **Tasteless**
- **Poisonous**

TYPES OF ALCOHOL

METHANOL:

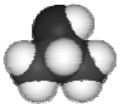


CH_3OH

- ➔ Simplest form of alcohol.
- ➔ Commonly referred to as wood alcohol
- ➔ Common uses include solvents, Paint remover, and fuel.
- ➔ Lethal dose ≅ 4 fluid ounces (100 – 125 ml)

TYPES OF ALCOHOL

ISOPROPANOL:



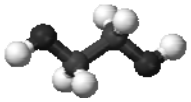
C_3H_8O

- ➔ Commonly referred to as rubbing alcohol.
- ➔ Common uses include disinfectant and common solvents.
- ➔ Twice as toxic as ethanol.

Used with sterilizing pads.

TYPES OF ALCOHOL

ETHYLENE GLYCOL:

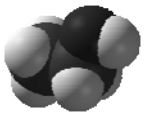


$C_2H_4(OH)_2$

- ➔ Common use as automotive antifreeze.
- ➔ Lethal dose ≅ 1 fluid ounce 30ml).

TYPES OF ALCOHOL

ETHANOL:



C_2H_5OH

- ➔ Commonly referred to as grain alcohol or drinking alcohol.
- ➔ Commonly used as fuel additive, alcoholic beverages, and antiseptics.
- ➔ Lethal dose ≅ 4.5 fluid ounces (≅ 130ml).

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Used with medical wipes and antibacterial hand sanitizers.

ETHANOL

Ethanol Production

- Produced by the process of natural fermentation
- Sugar + Yeast = Alcohol and Gas CO_2
- Malting process used for grains
  - Process of converting starches to sugar
  - Allow the grain to sprout and add an enzyme (beta amylase) to break down starch and release the sugar
  - Resulting mixture is called MASH

ETHANOL

Ethanol Production

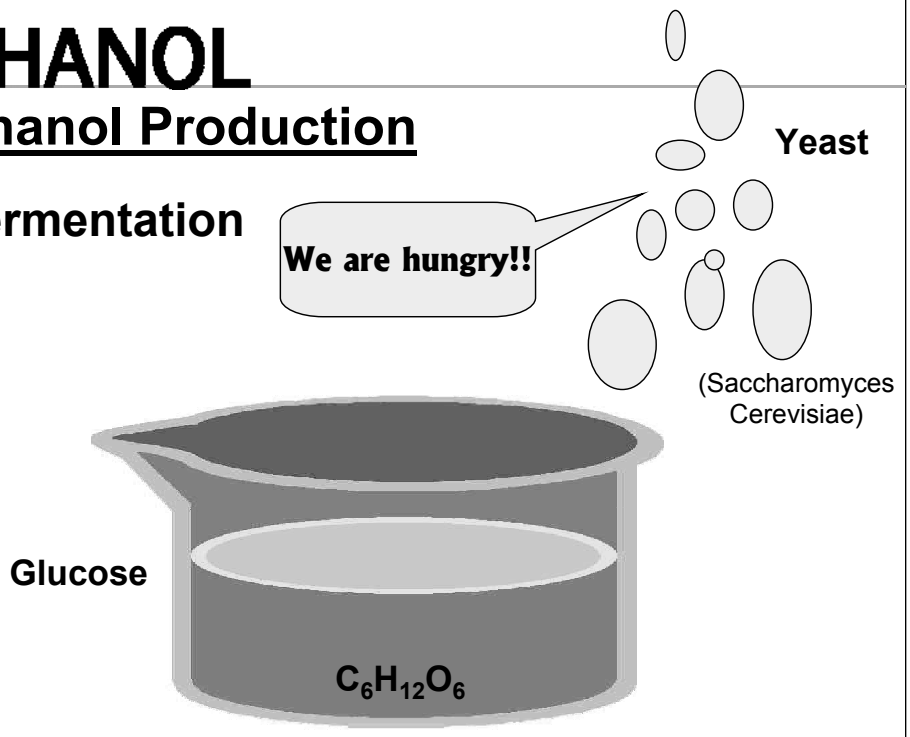
Fermentation

- Begin with a sugar substance
  - fruit, grapes, grains,
  - Carbon, Hydrogen, Oxygen
- Add yeast
- Results
  - Alcohol: C_2H_5OH
  - Gas: CO_2

ETHANOL

Ethanol Production

Fermentation



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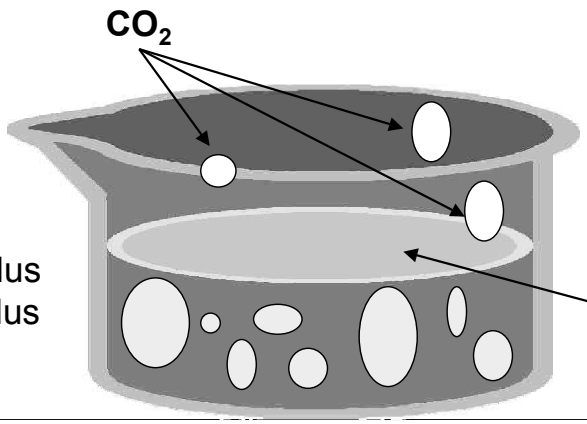
Saccharomyces Cerevisiae also referred to as brewers yeast.

ETHANOL

Ethanol Production

Fermentation

The container must be sealed and the oxygen removed.



⇨If oxygen is not removed from the fermentation container, the end product will be CO_2 and H_2O instead of CO2 and C_2H_5OH.

⇨The fermentation process will end when the alcohol concentration reaches approximately 15%. The yeast will be destroyed at this level of alcohol concentration.

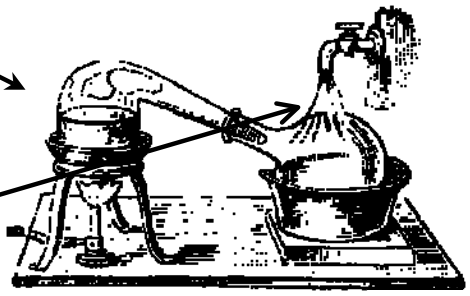
ETHANOL

Ethanol Production

Distillation: the process of removing the
ethanol from the fermented solution.

This is accomplished by heating the solution to 78°C (boiling point of ethanol.

The vapor is then cooled, converting it back to liquid.



⇨The distillation process can result in a liquid of 95.6% ethanol.

⇨Freeze distillation is a process were the water in the mixture is frozen, leaving ethanol in a liquid form. Also called Mongol Distillation. Common product is Applejack.

ETHANOL

Ethanol Production

Congeners: are added for aroma and flavoring of alcoholic beverages. They **DO NOT** contribute to intoxication.

⇨During the aging process the activated carbon of charred wooden kegs adds aroma and flavor to the ethanol. Charring the inside of the wooden barrel crystallizes the sugars in the wood and they mix with the ethanol to produce the odor and flavor of the beverage.

ETHANOL

Ethanol Production

Proof: The term originated in the 18th century, when payments to British sailors included rations of rum. To ensure that it had not been watered down and was of good quality, it was "proved" by dousing gunpowder in the liquor, and testing to see if it would ignite. If it did not, the solution contained too much water—and the alcohol content was considered low or "underproof"

⇨A "proven" solution was defined as 100 degrees proof.

ETHANOL

Ethanol Production

Proof = 2 X Concentration.

- ➔ **86 proof = 43% volume is pure alcohol**
- ➔ **100 proof = 50% volume is pure alcohol**
- ➔ **200 proof = 100% volume is pure alcohol**

ETHANOL

They All Pack The Same Punch Per Drink

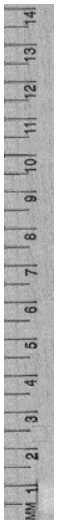
12 oz

4 oz

1 oz

Questions

The Metric System

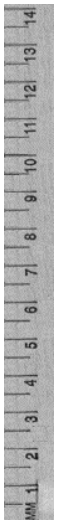


LENGTH – METER

VOLUME – LITER

WEIGHT - GRAM

The Metric System



Length

- 1 METER = 39.37 INCHES
- 0.914 METERS = 1 YARD
- 2.54 CENTIMETERS = 1 INCH
- 1 CENTIMETER = 100 MILLIMETERS
- Intoxilyzer optical bench focal length =
  1 foot = 12 inches = 30.48 centimeters

➔The metric system is based on the distance between the North Pole and the Equator. A line running from the North Pole to the Equator can be divided into 10 million equal parts. Each part is equal to 1 meter or 39.37 inches. From this measurement, the units of volume and mass or weight are derived.

The Metric System

Volume

- 1 Liter = 1.05 Quarts
- 0.946 Liter = 1 Quart
- 210 Liters of breath = 55 gallons
- 1 Cubic Centimeter = 1 Milliliter

Intoxilyzer sample chamber volume

81 cc = 81 ml ≅ 2.74 fl. oz.

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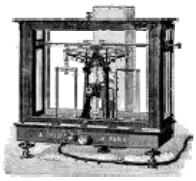
Volume is area of space that an object takes up or its cubic contents.
The Liter is used to measure volume in the metric system.
1 Liter is equal to 1000 Cubic Centimeters.
A container 1 Centimeter wide X 1 Centimeter tall X 1 Centimeter deep will have a volume of 1 Milliliter. (1cm x 1cm x 1cm = 1 ml)

The Metric System

Weight

- ⇨ 1 Gram = 0.035 Ounce
- ⇨ 28.35 Grams = 1 Ounce
- ⇨ Weight of a Sugar Packet = 1 Gram
- ⇨ 1 Cubic Centimeter ≅ 1 Gram



The Metric System

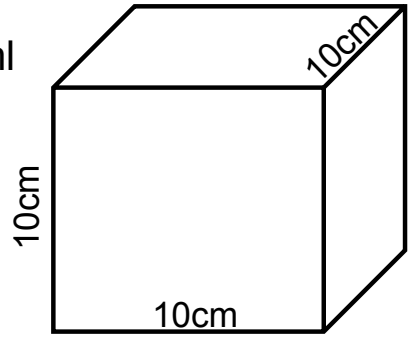
Relationships

➔Volume = Length X Width X Height

➔Volume = 10cm X 10cm X 10cm = 1,000cc

➔1,000cc= 1liter = 1,000ml

➔Therefore 1ml = 1cc

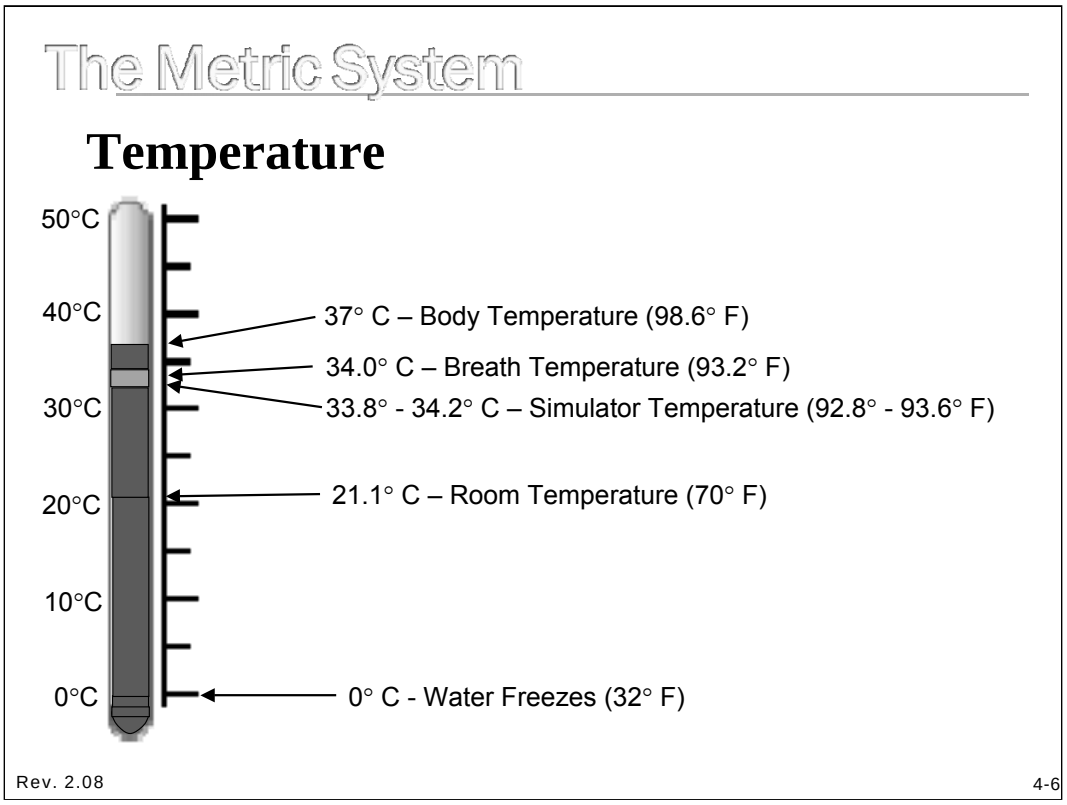


Rev. 2.08

4-5

By adding Latin prefixes to the three basic units of measure in the metric system we get the fractions of the units.
Deci = 1 tenth (decimeter, deciliter, decigram)
Centi = 1 hundredth (centimeter, centiliter, centigram)
Mili = 1 thousandth (millimeter, milliliter, milligram)

By adding Greek prefixes to the three basic units of measure in he metric system we get the multiples of the units.
Deka = 10 times (dekameter, dekaliter, dekagram)
Hecto = 100 times (hectometer, hectoliter, hectogram)
Kilo = 1,000 times (kilometer, kiloliter, kilogram)



We normally use the Fahrenheit (F) scale where the boiling point of water is 212º and the freezing point is at 32º.
Scientific measurements are made using the Celsius or Centigrade (C) scale where water boils at 100º and freezes at 0º

Body temperature is 98.6ºF or 37ºC.
Breath temperature is 93.2^0F or 34ºC.
Room temperature is 70ºF or 21.1ºC.
Boiling Point of Ethanol is 78° C.
Boiling Point of Water is 100° C.

The Metric System

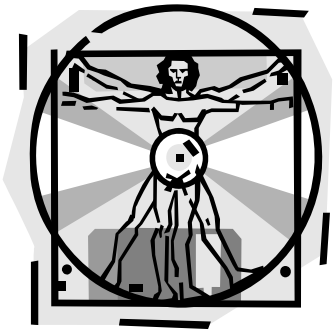
Human Physiology and Alcohol

Rev 2.08

5-1

Physiology of Alcohol

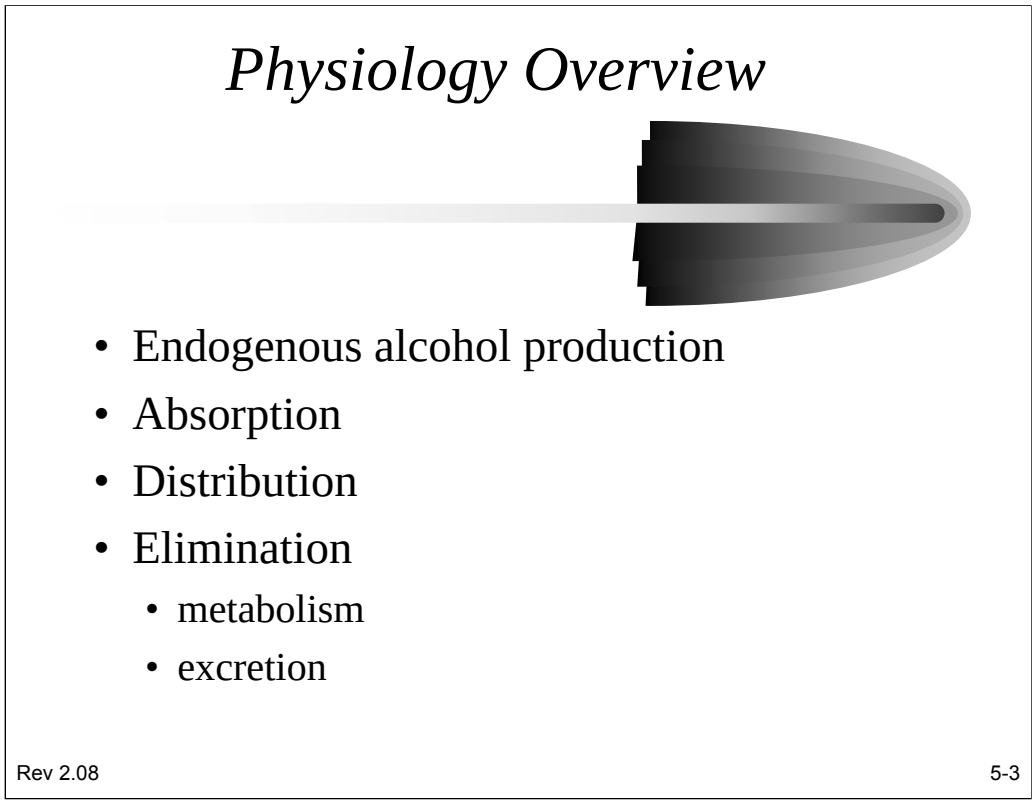
- The biological science of essential & characteristic life processes, activities & functions



- Endogenous Alcohol
- Absorption
- Distribution
- Elimination

Rev 2.08

5-2

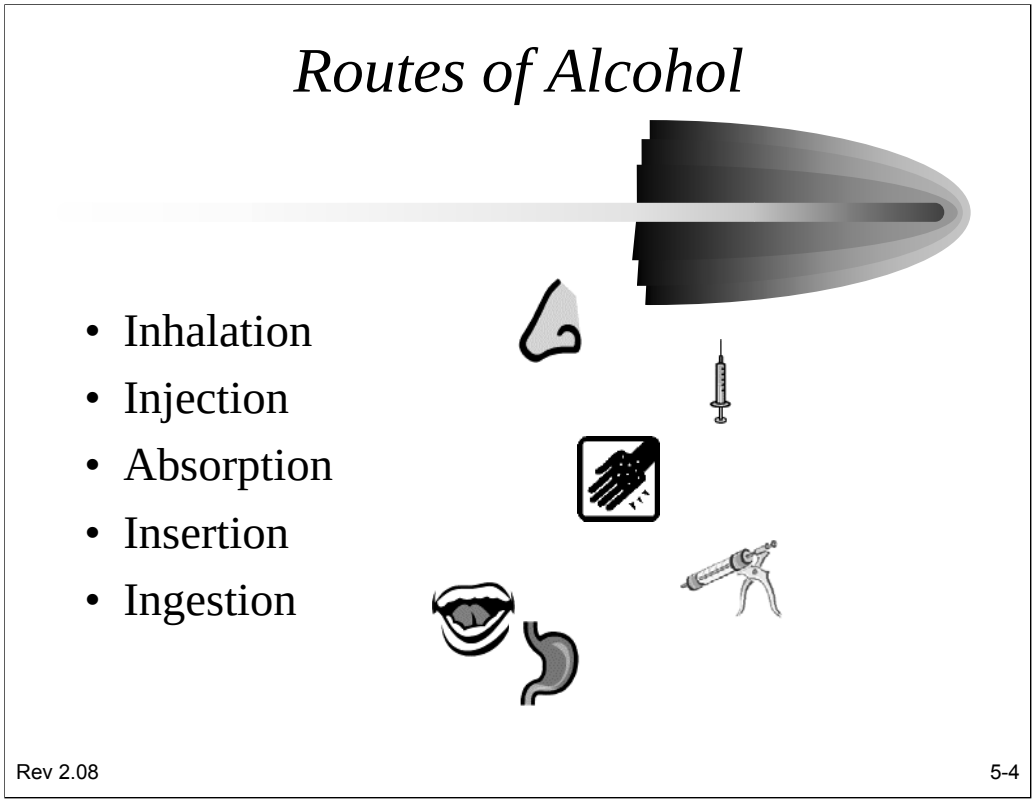


Endogenous alcohol is the naturally occurring generation of alcohol in the body.

Experts disagree whether it exits at all. Researched values don't exceed .003 and most report less than .001. This minute level is of no medico-legal significance.

An example of this would be a diabetic with a bladder infection.

It is true a diabetic with a high glucose level would spill over into the urine where the bacteria and sugar would produce endogenous alcohol, but it is still not at a high enough concentration to affect a B_rAC.



How alcohol gets into the body:

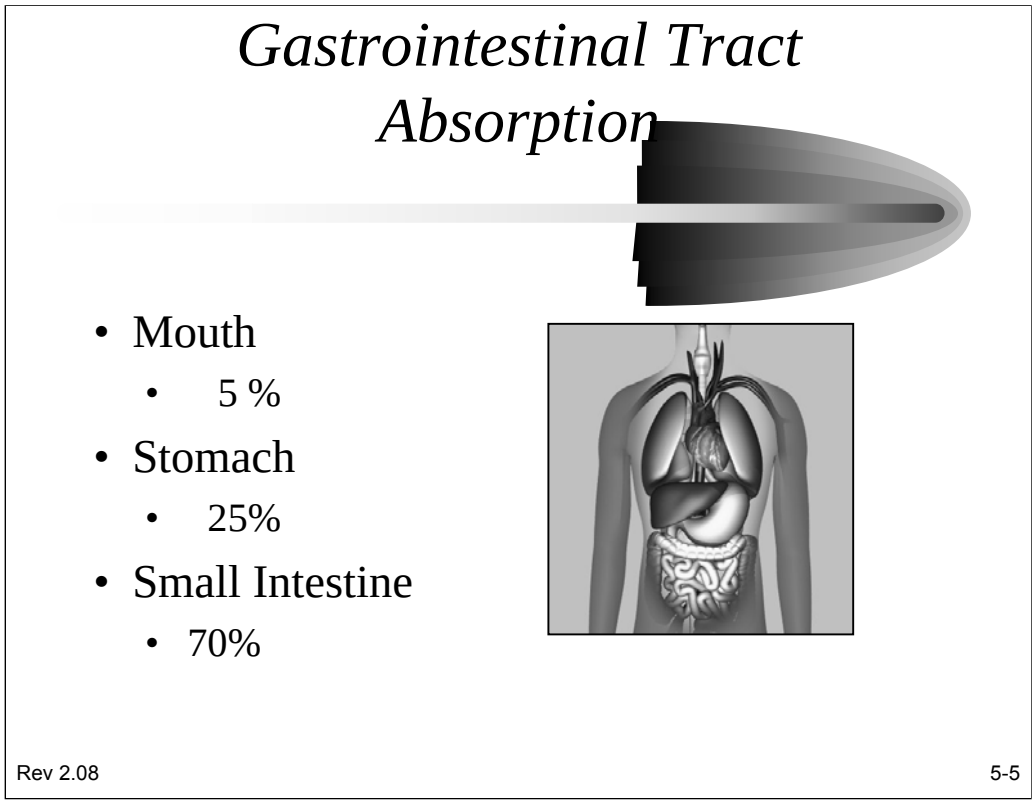
Inhalation causes sever irritation to the nasal & bronchial linings when present in high concentrations.

Injection by syringe or transfusion is very dangerous and causes lysing of red blood cells.

Absorption - The skin is the largest organ of the body and alcohol can be readily absorbed. However, absorption is at less than the rate of metabolism. So there are no detectable levels

Insertion by enema or douche

ingestion is the most common



Alcohol is absorbed only 5% by Mouth, since the beverage doesn't stay in the mouth very long.

25% of alcohol is absorbed by the stomach. This varies with the stomachs contents.

70% of alcohol is absorbed by the small intestine. This is where most of the alcohol is absorbed

Alcohol will diffuse into the circulatory system from the gastrointestinal tract.

Diffusion is the process of alcohol traveling across cell membranes in an unchanged form

Absorption and Distribution

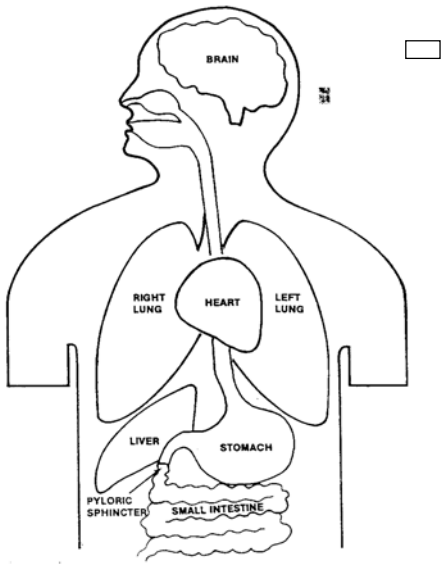
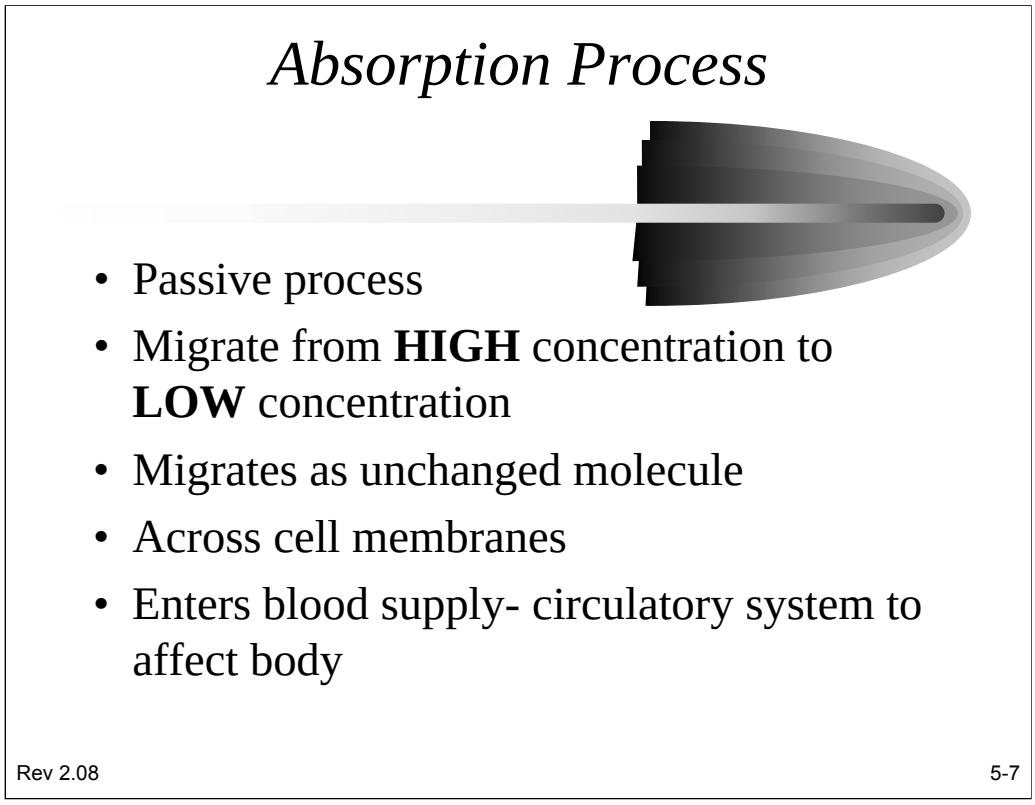
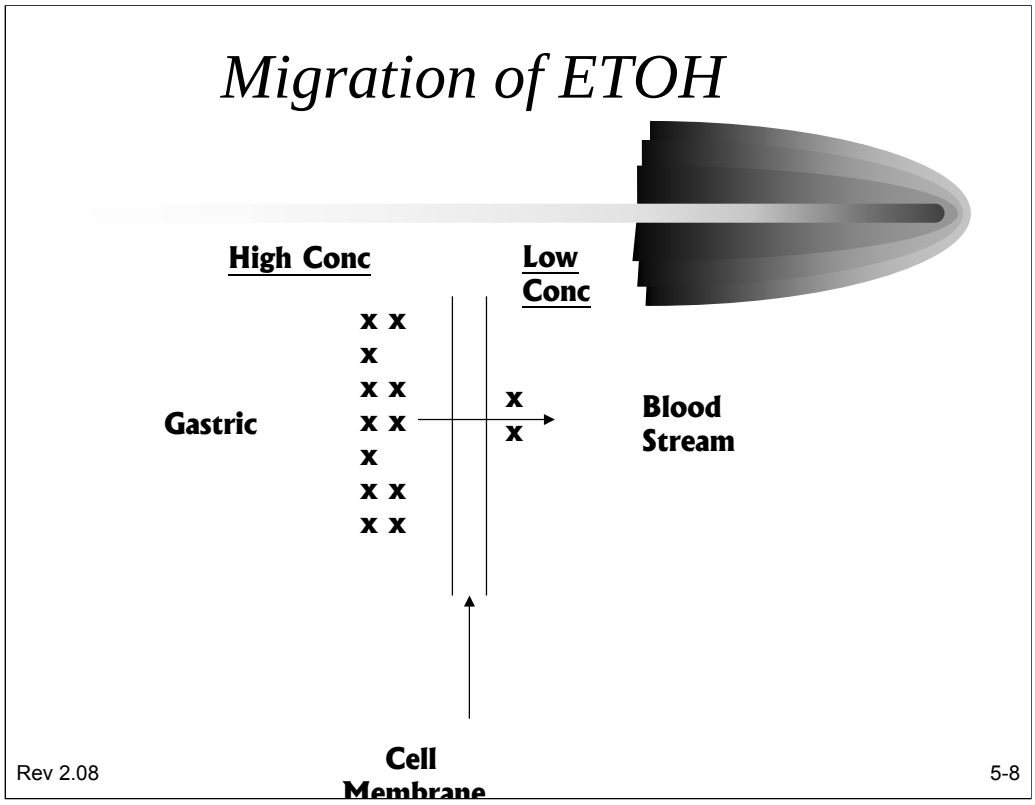


FIGURE 1: A REPRESENTATION OF HUMAN ANATOMY AS IT APPLIES TO ETHYL ALCOHOL ABSORPTION AND DISTRIBUTION

Alcohol enters the mouth, down the esophagus to the stomach. When the pyloric sphincter of the stomach relaxes and allows the stomach contents to flow into the first part of the intestine, called the duodenum, the remainder of alcohol is absorbed. This happens within the first 6-8 inches of the small intestine



If alcohol stayed in the digestive tract it wouldn't effect you. However, alcohol is absorbed into the blood stream and is carried to the brain. Alcohol is distributed throughout the body by the circulatory system.


Migration of ETOH
High Conc
Low Conc
Gastric
Blood Stream
Cell Membrane
Rev 2.08
5-8

Distribution

- Alcohol distributed throughout body by circulatory system blood supply
- Some organs receive more volume blood than others
- some organs and body parts have more water content than others

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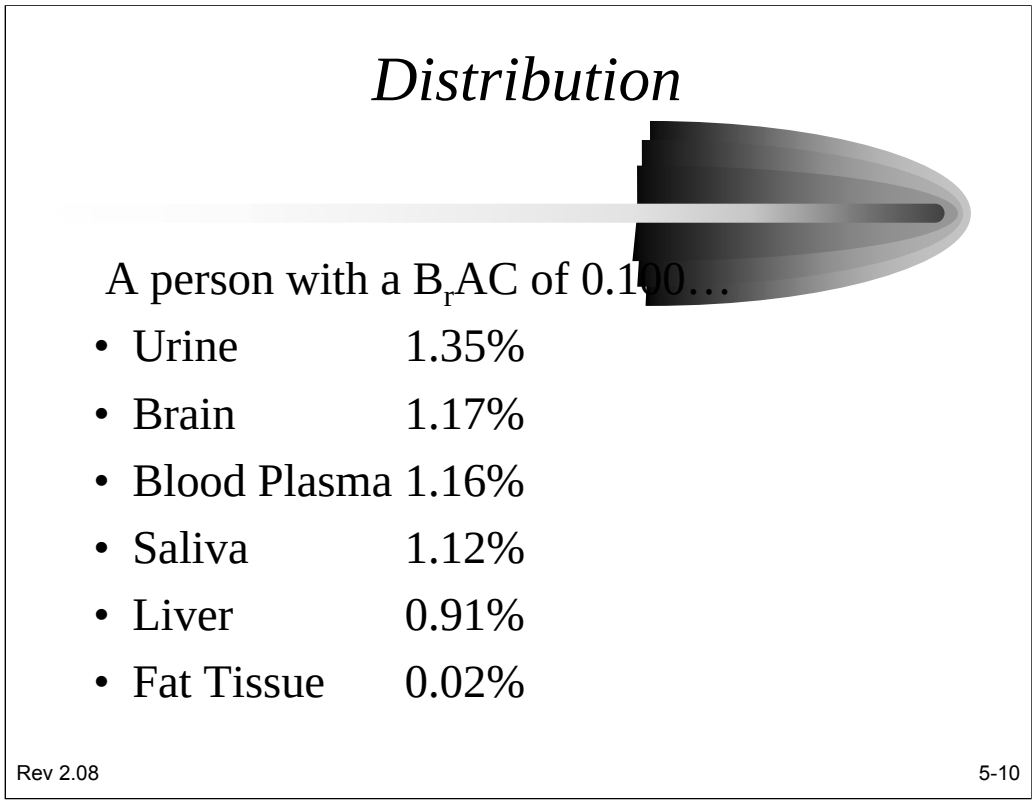
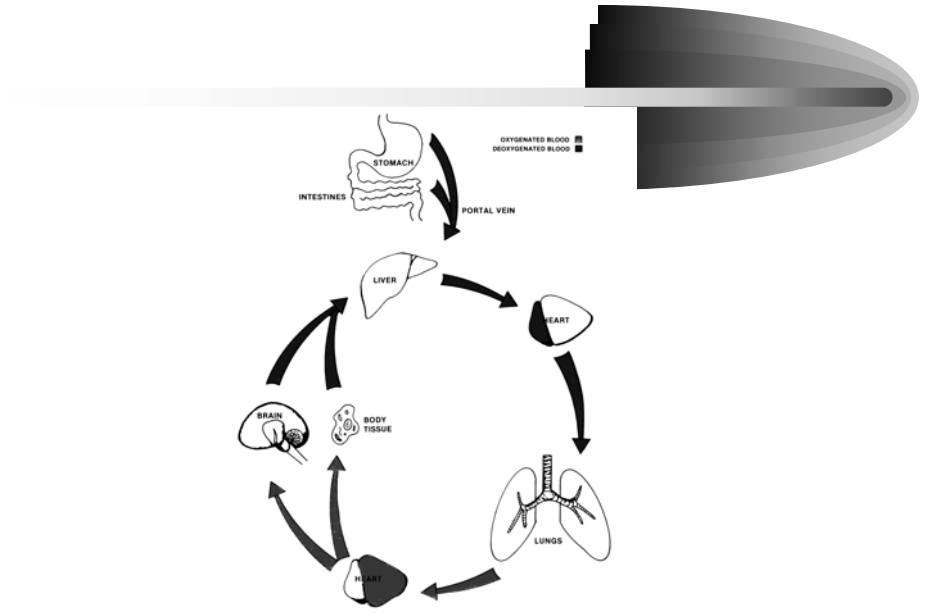


Alcohol is water loving so the parts of the body which have more water content will accumulate alcohol in a higher proportion

The above ratios are from different samples when the B_rAC is .100.

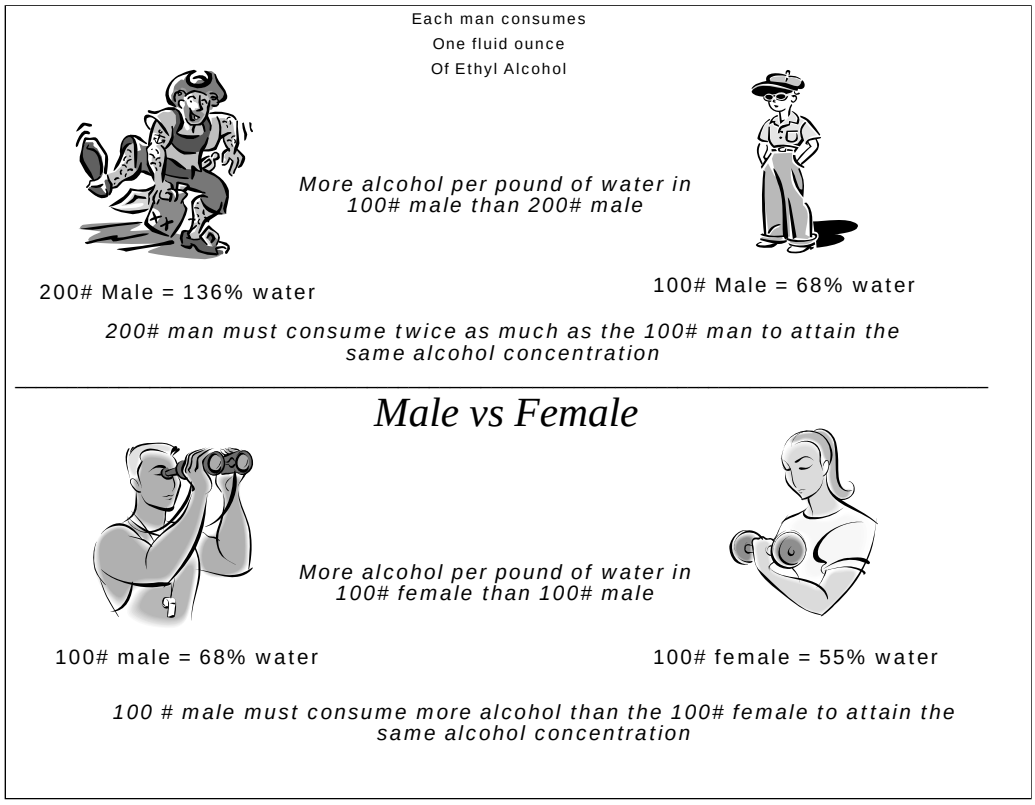
ETOH Distribution Pathways



Representation of Ethyl Alcohol Distribution Pathways

Rev 2.08

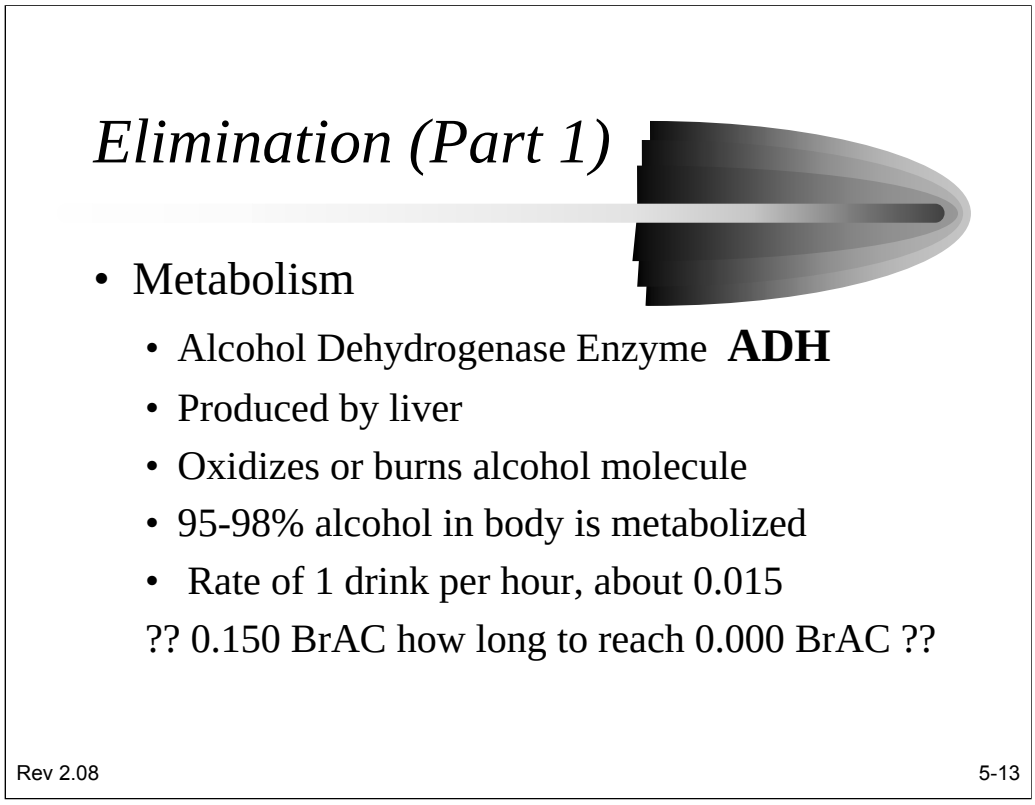
5-11



A 100 lb male has more alcohol / lb than a 200 lb male

So it would take a 200 lb male twice as many drinks to attain the same alcohol concentration.

Since a 100 lb male has 68% water content compared to 55% in a 100 lb female, the 100 lb male would have to consume more alcohol to attain the same alcohol content as the 100 lb female. The female would get drunk sooner then the male.



There are two parts to the elimination phase: Metabolism & Excretion

The majority of alcohol in the body (95% to 98%) is metabolized in the liver. An enzyme that is produced by the liver called Alcohol Dehydrogenase (ADH) oxidizes or burns up the alcohol molecule. The rate of metabolism is 1 drink/ hour or approximately 0.015/hour.

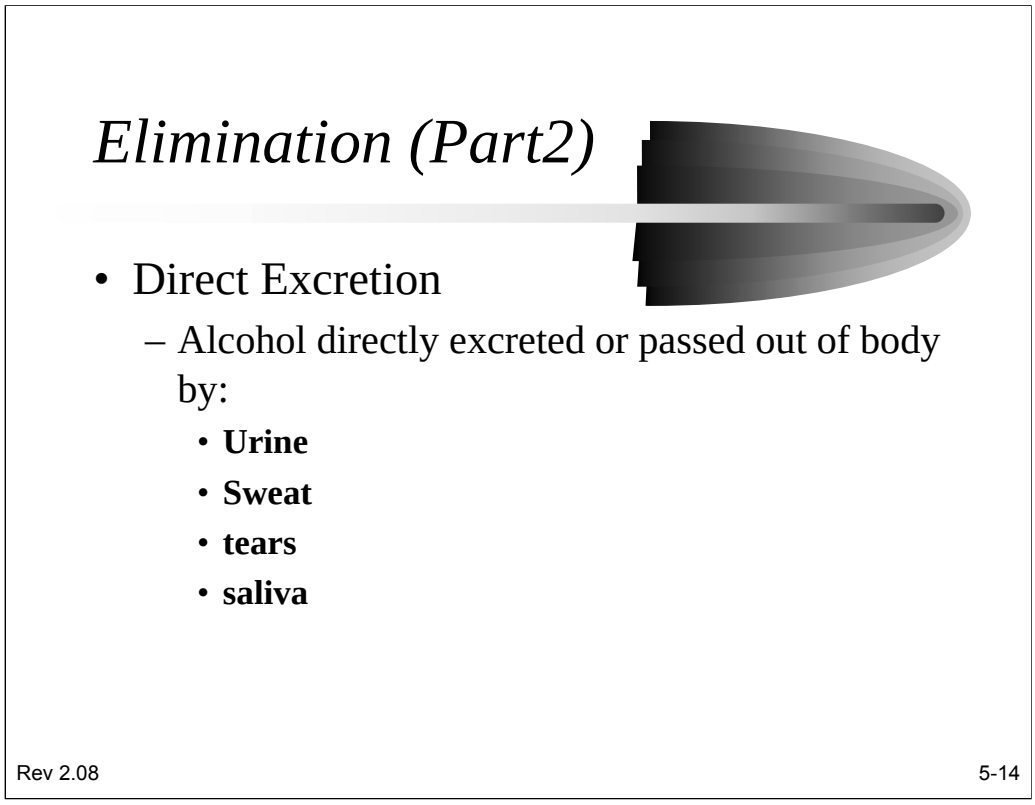
So if a person has an alcohol concentration of 0.150 B_rAC when they stop drinking, it will take 10 hours to completely detoxify.

There is no way to speed up metabolism.

If you give a drunk coffee, you have a wide awake drunk.

If you make them exercise, you have a tired drunk.

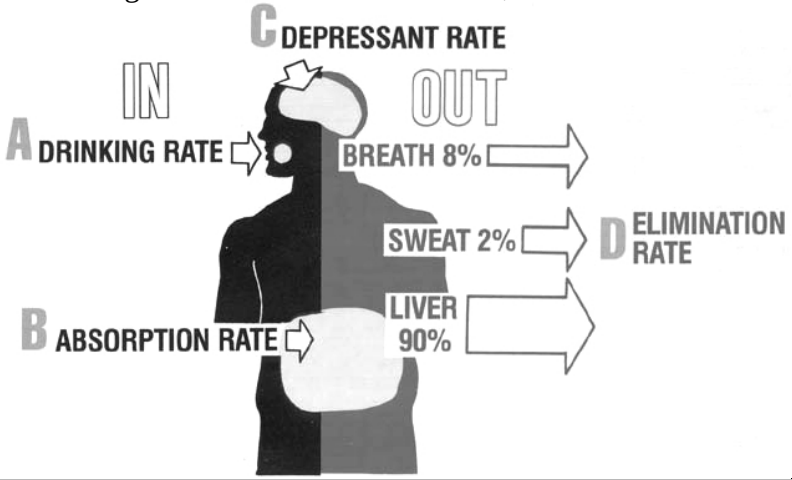
If you give them a shower, you have a clean drunk.



95-98% alcohol is metabolized by the liver…only a small % is eliminated

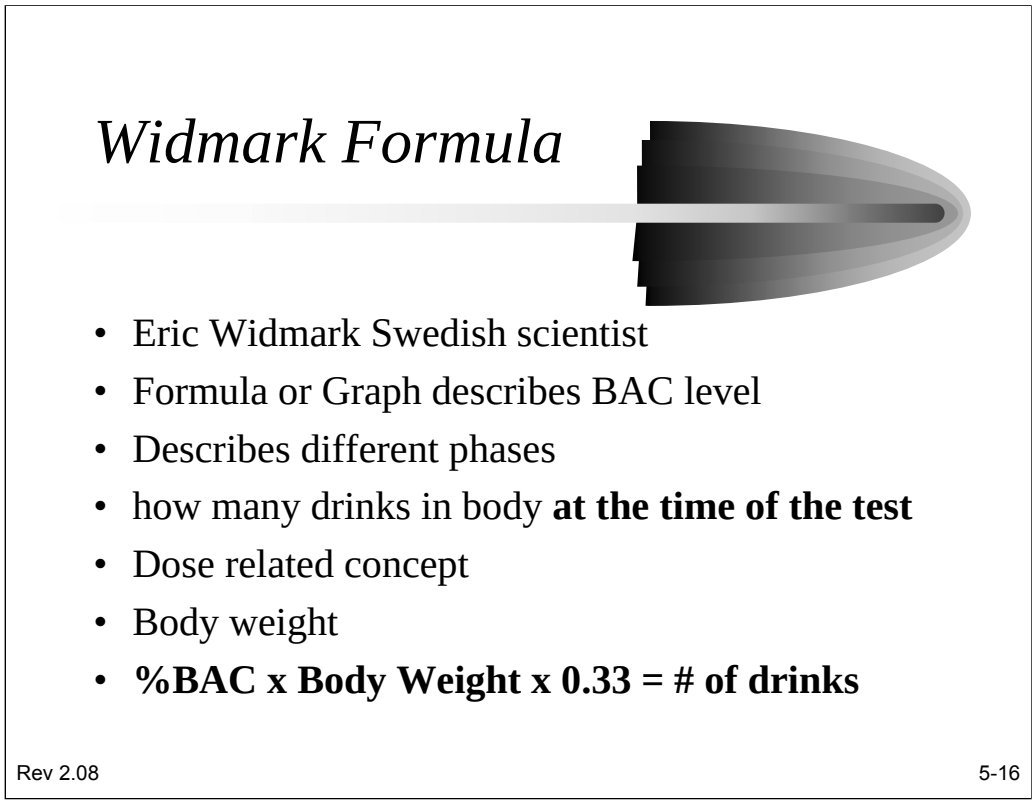
Alcohol In / Out

When drinking rate exceeds elimination rate, the brain becomes sedated



Rev 2.08

5-15



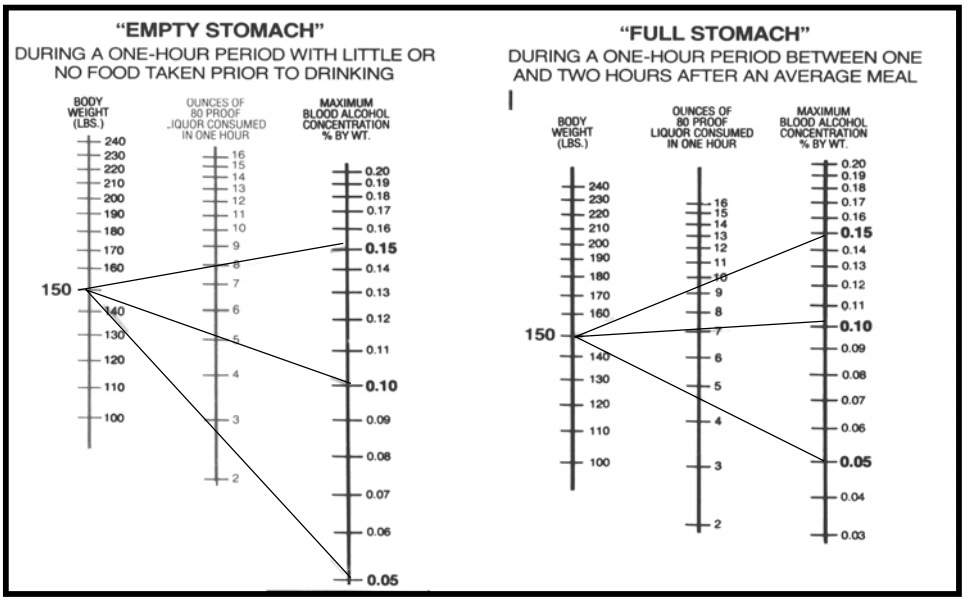
Eric Widmark from Lund Sweden was a scientist who developed the method to determine how many drinks a person would have in their system when the blood alcohol level was known as well as the body weight

%BAC x body weight x 0.33 = # of drinks

So if a 180 lb man has a BAC of 0.160, using Widmarks formula:

0.16 x 180 x 0.33 = 8.6 or 9 drinks

ESTIMATED AMOUNT OF 80 PROOF LIQUOR NEEDED TO REACH GIVEN LEVELS OF ALCOHOL IN THE BLOOD



Using the previous formula: .10 BAC x 150 lbs x 0.33 = 4.95 Drinks

If there is food in the stomach—it delays the rate of absorption because it will take longer for the food to empty from the stomach

Widmark Graph

- **Three parts of blood alcohol curve**
  - **absorptive phase**
  - **peak phase**
  - **elimination phase**

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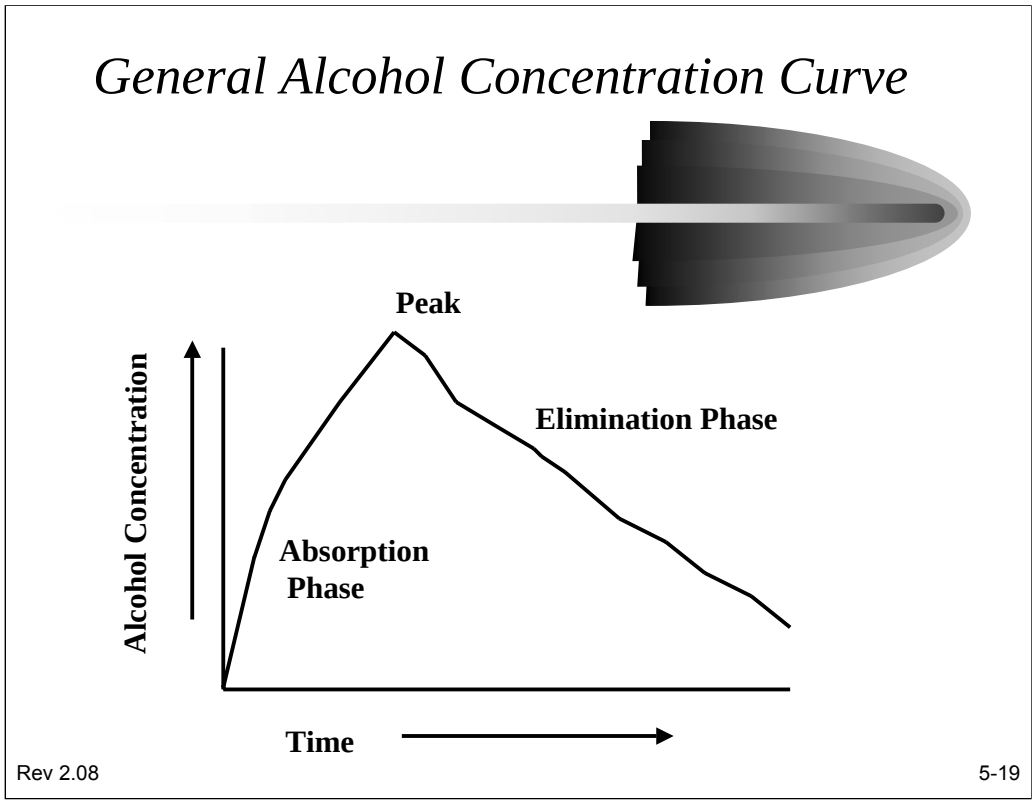
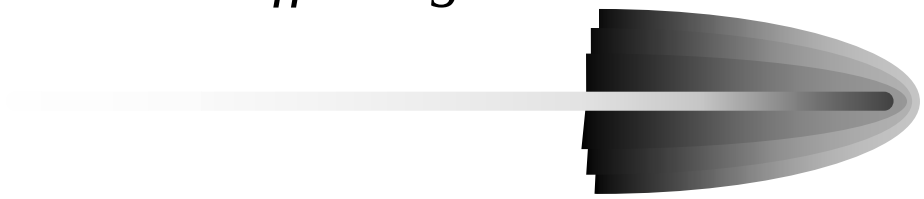

General Alcohol Concentration Curve
Peak
Elimination Phase
Alcohol Concentration
Absorption Phase
Time
Rev 2.08
5-19

Factors affecting Widmark curve



- Food in the stomach
- Amount or number of drinks consumed
- Body weight
- Time

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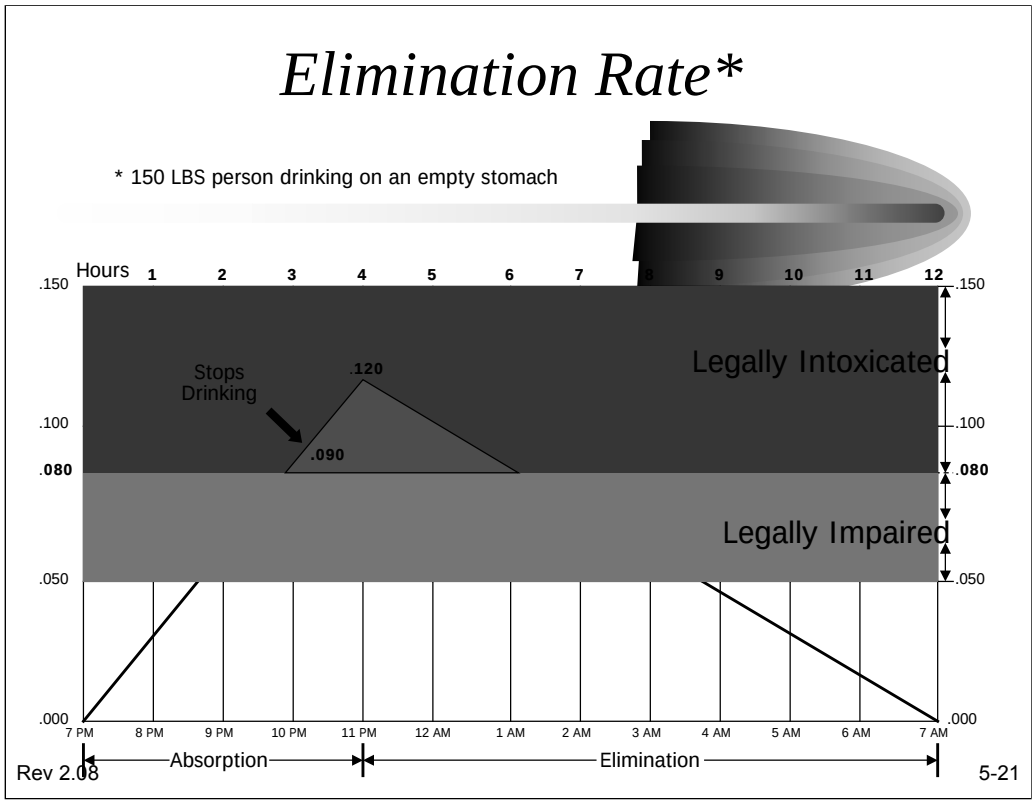
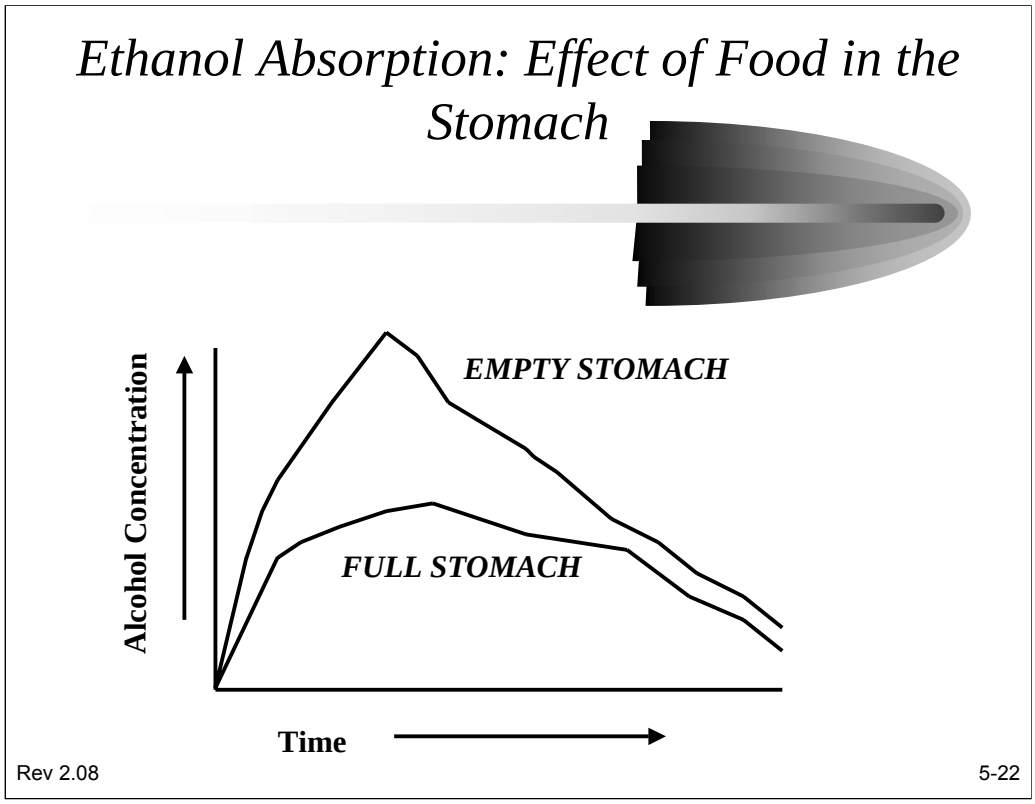
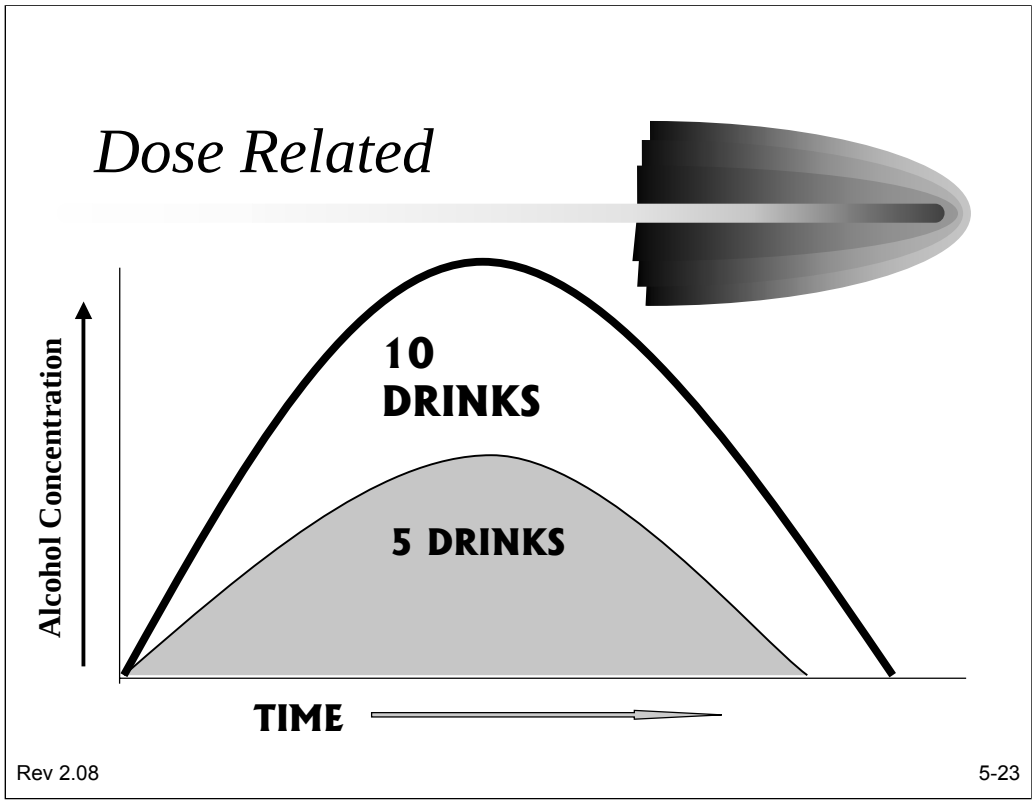
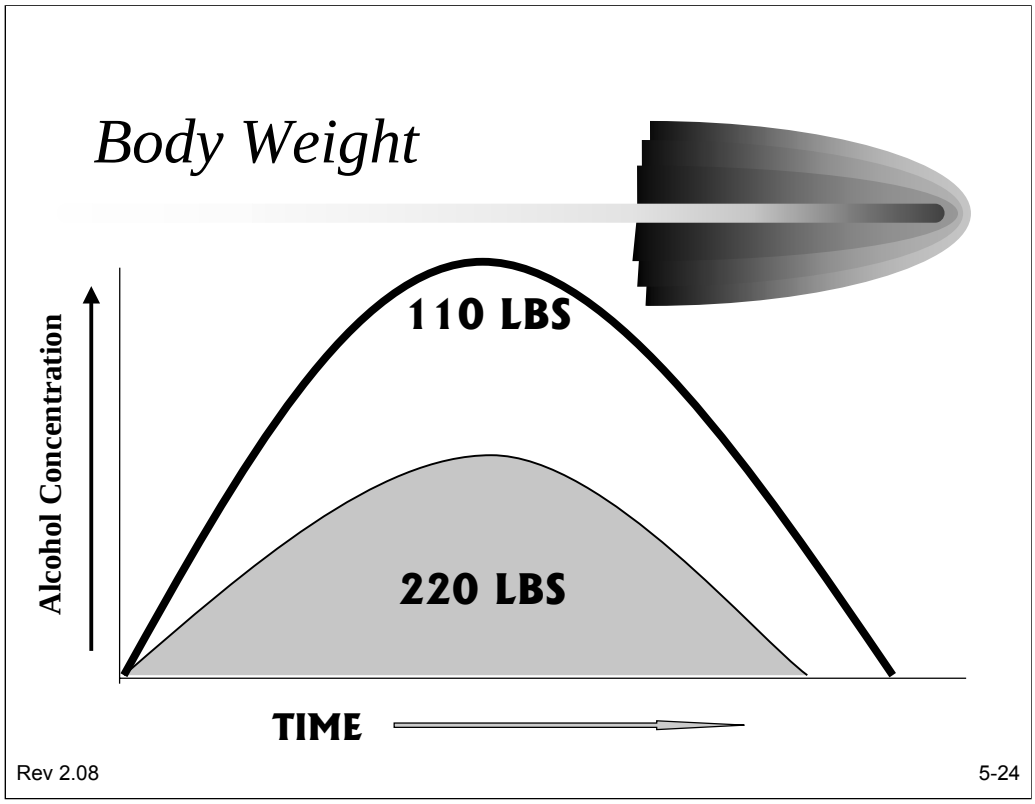
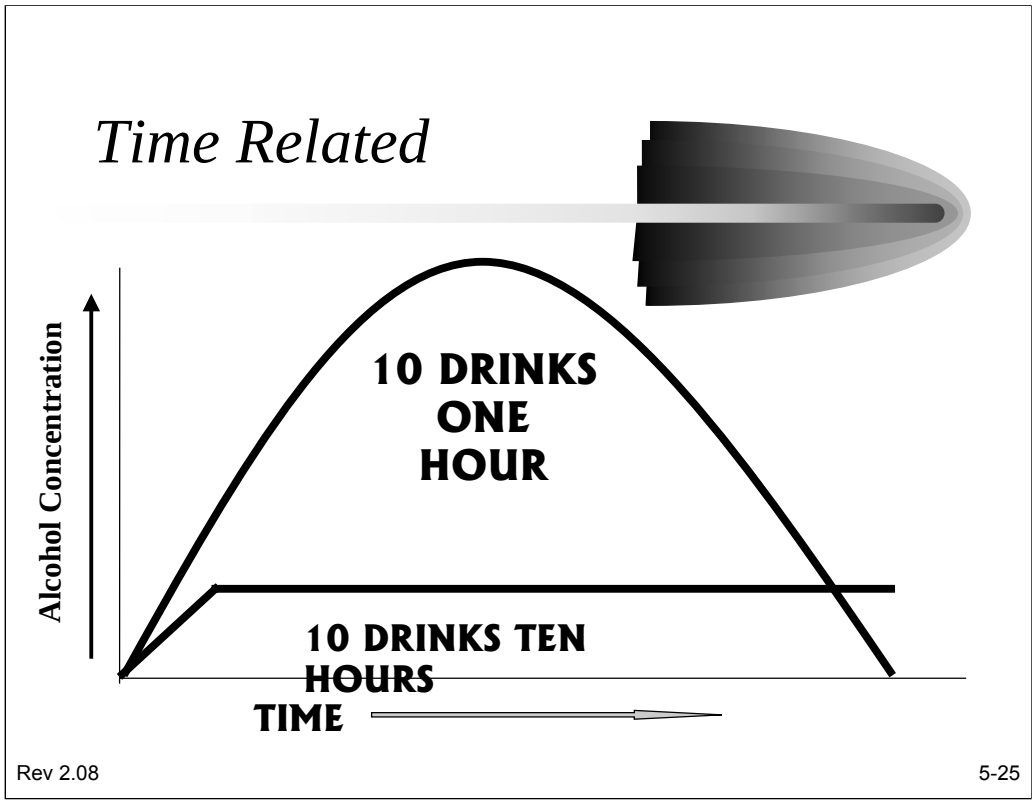
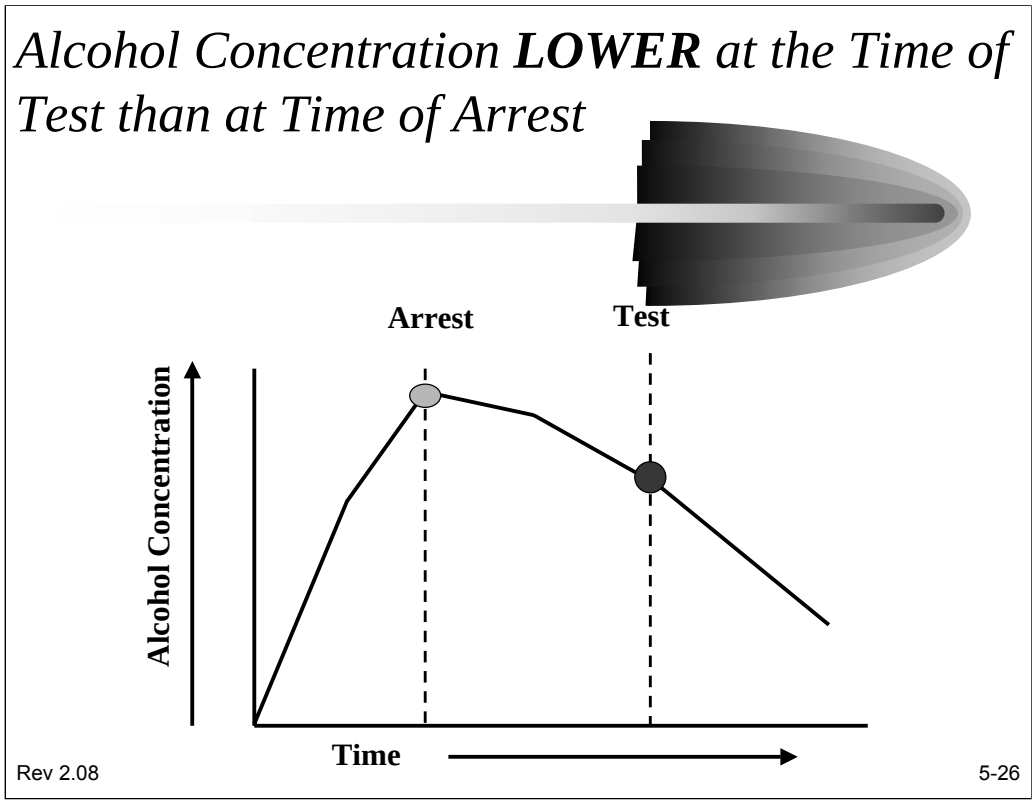

Elimination Rate*
* 150 LBS person drinking on an empty stomach
Hours
1
2
3
4
5
6
7
8
9
10
11
12
.150
.100
.080
.050
.000
Stops Drinking
.120
.090
Legally Intoxicated
Legally Impaired
7 PM
8 PM
9 PM
10 PM
11 PM
12 AM
1 AM
2 AM
3 AM
4 AM
5 AM
6 AM
7 AM
Absorption
Elimination
Rev 2.08
5-21

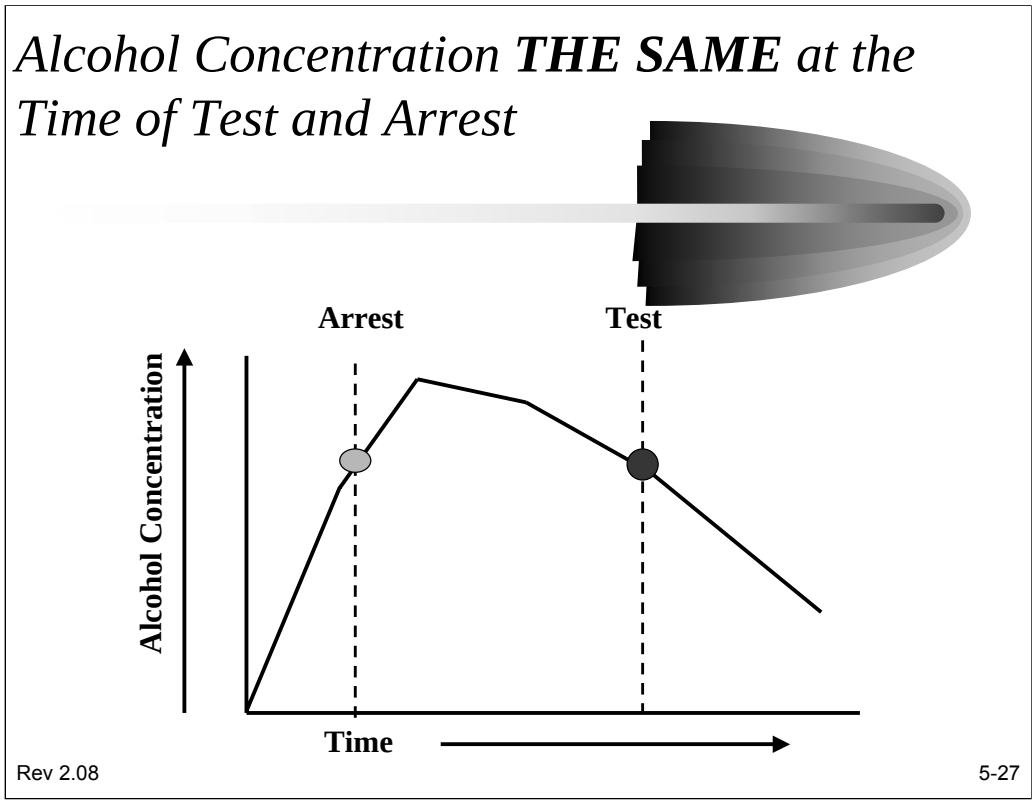

Ethanol Absorption: Effect of Food in the Stomach
EMPTY STOMACH
FULL STOMACH
Alcohol Concentration
Time
Rev 2.08
5-22


Dose Related
Alcohol Concentration
10
DRINKS
5 DRINKS
TIME
Rev 2.08
5-23

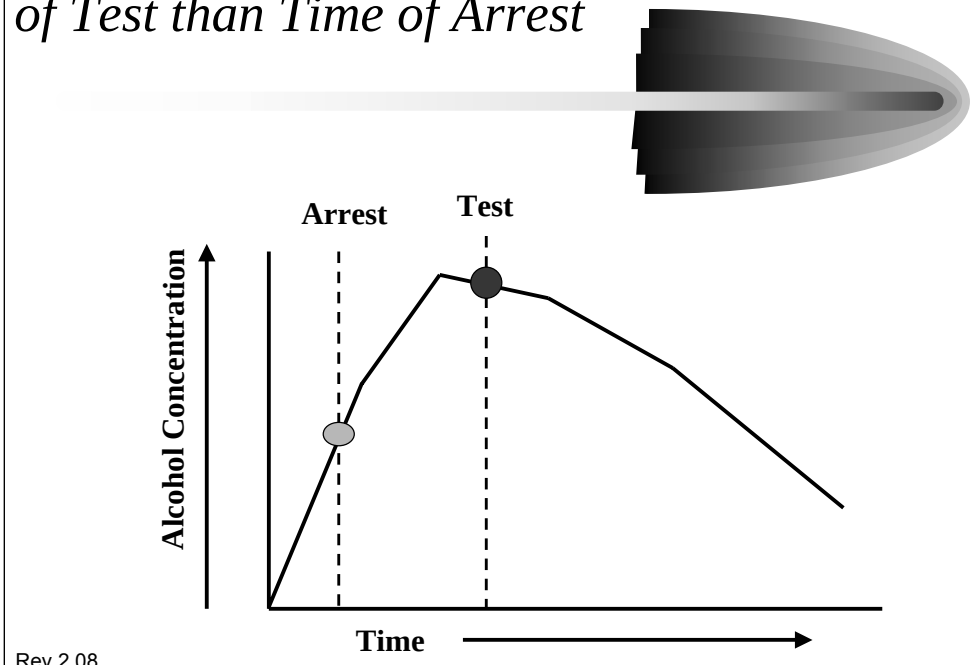

Body Weight
110 LBS
220 LBS
Alcohol Concentration
TIME
Rev 2.08
5-24


Time Related
Alcohol Concentration
10 DRINKS
ONE
HOUR
10 DRINKS TEN
HOURS
TIME
Rev 2.08
5-25


Alcohol Concentration LOWER at the Time of Test than at Time of Arrest
Arrest
Test
Alcohol Concentration
Time
Rev 2.08
5-26


Alcohol Concentration THE SAME at the Time of Test and Arrest
Arrest
Test
Alcohol Concentration
Time
Rev 2.08
5-27

*Alcohol Concentration **HIGHER** at the Time of Test than Time of Arrest*



Rev 2.08

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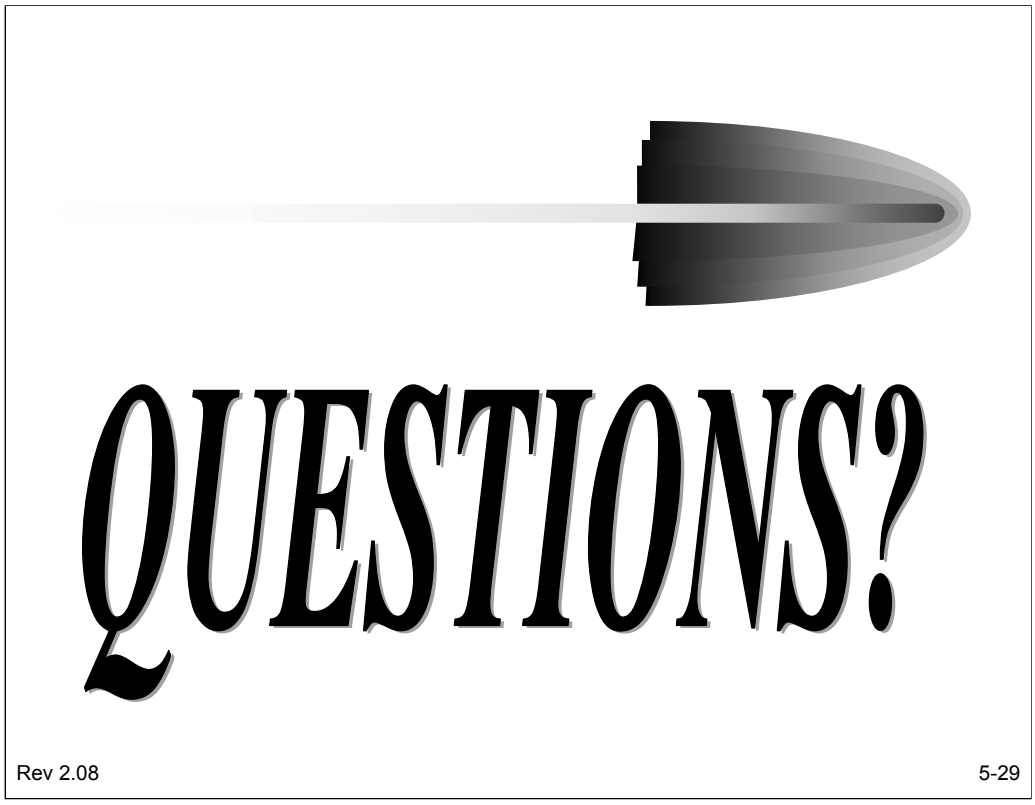
QUESTIONS?
Rev 2.08
5-29

PHARMACOLOGY OF ALCOHOL

EFFECTS OF ALCOHOL ON THE HUMAN BODY

EFFECTS OF ALCOHOL

- DEPRESSANT - NOT A STIMULANT
- DOSE RELATED
  - *more drinks,greater influence, increased impairment*
- AFFECTS CENTRAL NERVOUS SYSTEM
  - *brain*

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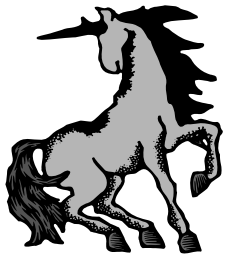
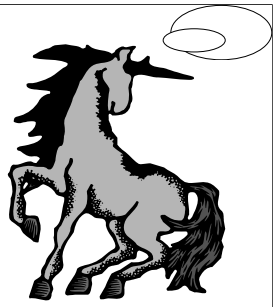
Alcohol acts as a depressant on the central nervous system, mainly the brain. The effects of alcohol on the brain are dose related. The effect of alcohol on the brain is dose related. Therefore, the more drinks a person ingests the greater the influence the alcohol has on the brain and impairment is increased.



Myths vs Facts

alcohol



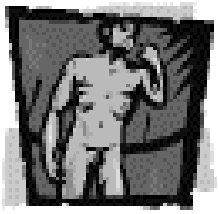
- It is a Stimulant
- It has Nutrients
- It increases Mental and Physical ability
- In given amounts alcohol affects individuals in the same way
- There are ways to sober up quickly
- Any amount will cause bodily damage

- It is a Depressant
- It has Calories
- It decreases Mental and Physical ability
- In given amounts alcohol affects individuals in different ways
- Time is the only way to sober up
- It will cause bodily damage if consumed in excess

Greek & Roman Banquets




- Alcohol excess was recognized as:
- participants vomiting and relieving themselves during festivities



First Description of Effects of Wine by Eubulus

Health

Pleasure

Sleep

Violence

Uproar

Revel

Black Eyes

To Policemen

Biliousness

Hurling Furniture

Eubulus - (c.405 - c.335 BC) was a statesman of ancient Athens, probably the most important of the period 355-342 and notable for his focus on Athenian finances. Greek philosopher who was the first to described the effects of wine.

Biliousness - A term used in the 18th and 19th centuries pertaining to bad digestion, stomach pains, constipation, and excessive flatulence (passing gas). The quantity or quality of the bile was thought to be at fault for the condition. Hence, the name "biliousness." ("Bilious" derives from the French "bilieux," which in turn came from "bilis," the Latin term for "bile.") Biliousness was generally laid to high living. The "cure" was moderation and frequent visits to the doctor.

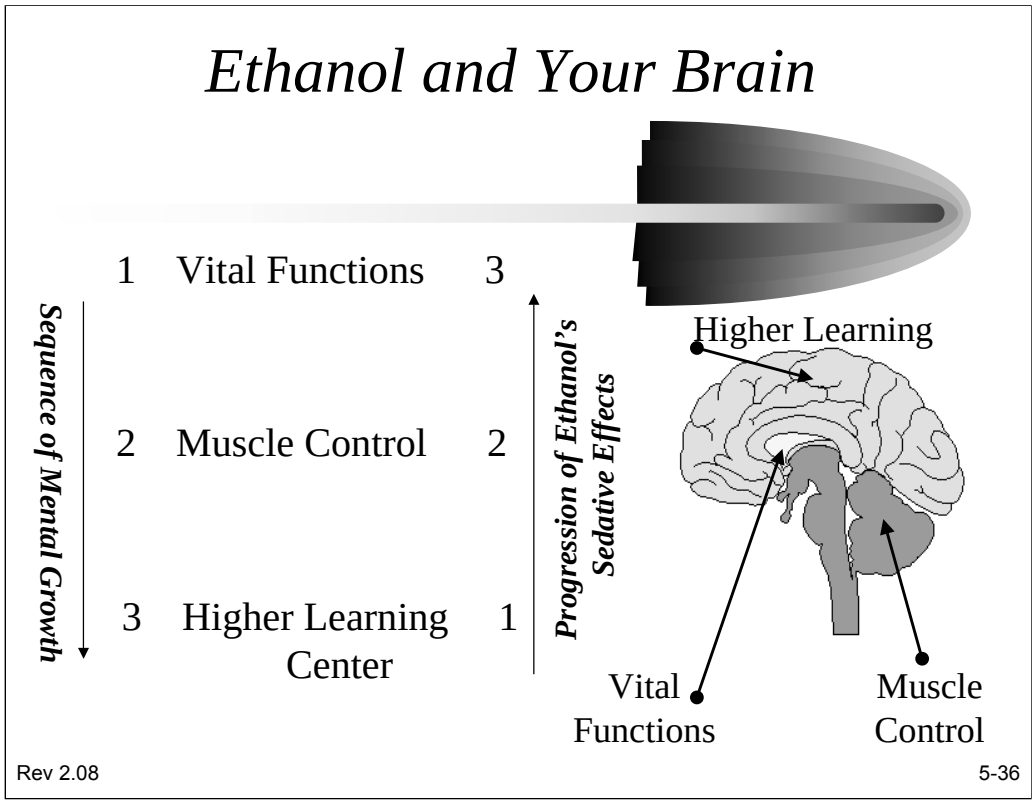
.

The effects of alcohol on the human body can be expressed as visible or invisible signs.

Invisible signs are described as the affects alcohol has on a persons brain and mental ability.

Visible signs are noted as the degree of influence alcohol has based on observing performance of a specific task, such as road side maneuvers. Visible signs of alcohol impairment are:

- Loss of hearing volume – A person talks louder to compensate
- Slurred speech
- Blurred vision, glassy stare - Nystagmus
- Taste and smell sensations are reduced
- Red flushed face caused by vasodilatation of the blood vessels
- Body heat loss or hypothermia and rapid heat gain or hyperthermia can be dangerous


Ethanol and Your Brain
1 Vital Functions 3
2 Muscle Control 2
3 Higher Learning Center 1
Sequence of Mental Growth
Progression of Ethanol's Sedative Effects
Higher Learning
Vital Functions
Muscle Control
Rev 2.08
5-36

Stages of Intoxication

	Begins	Ends
Sobriety	0.00	0.05
Euphoria	0.03	0.12
Excitement	0.09	0.25
Confusion	0.18	0.30
Stupor	0.27	0.40
Coma	0.35	0.50
Death	0.35	0.50

In the sober state a person's behavior appears normal by observation.

Euphoria causes the person to be more sociable and talkative. They have increased self confidence. The person has diminished attention span, judgment, and dexterity.

The Excitement phase causes emotional instability, erosion of social inhibitions, loss of critical judgment and impairment of memory and comprehension. Some muscular coordination is lost.

Confusion severely erodes a persons abilities. They exhibit mental confusion, dizziness, disorientation, impaired balance, muscular coordination, slurred speech and a staggering gait.

Stupor causes apathy and beginning paralysis. The person is semi conscious, sleepy or in a stupor. This condition is dangerous since vomiting could cause suffocation.

Coma is a completely anesthetized state with complete unconsciousness. Body temperature is below normal. The circulatory system and respiration are compromised. Death is a distinct possibility.

Death is usually due to respiratory failure.

VISABLE SIGNS

- Confusion
- Sleepiness
- Disorderly/sloppy appearance
- Slurred, thick tongued speech
- Nausea
- Red, flushed face
- Glassy, watery eyes, staring

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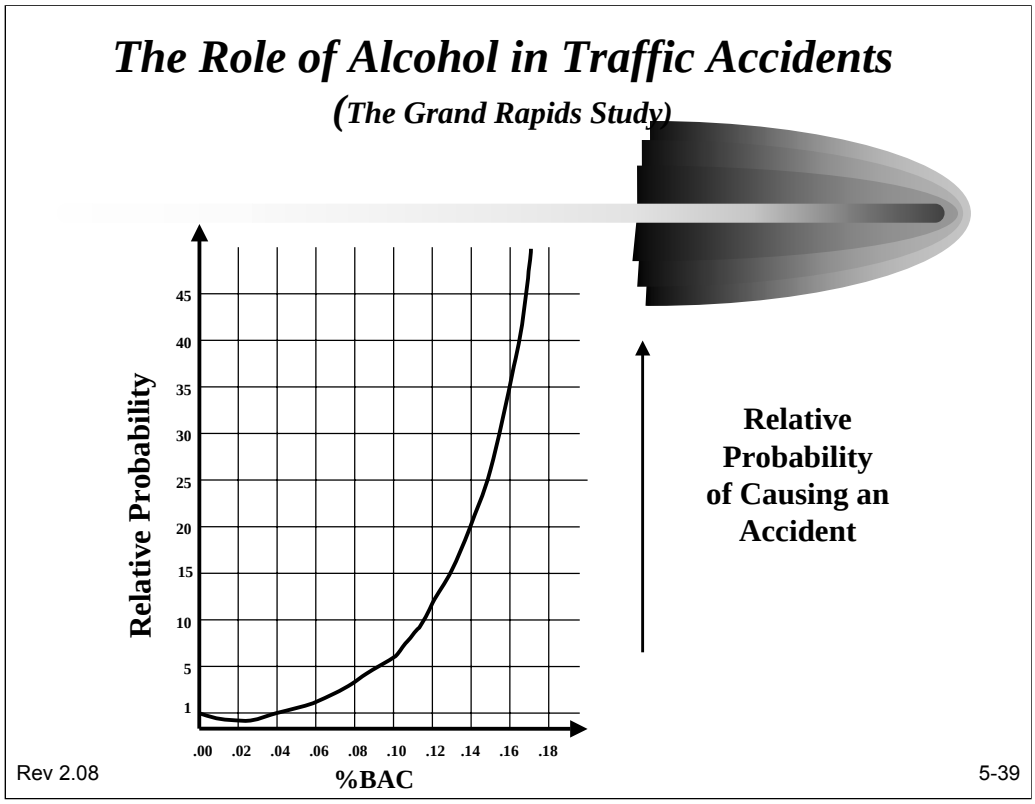
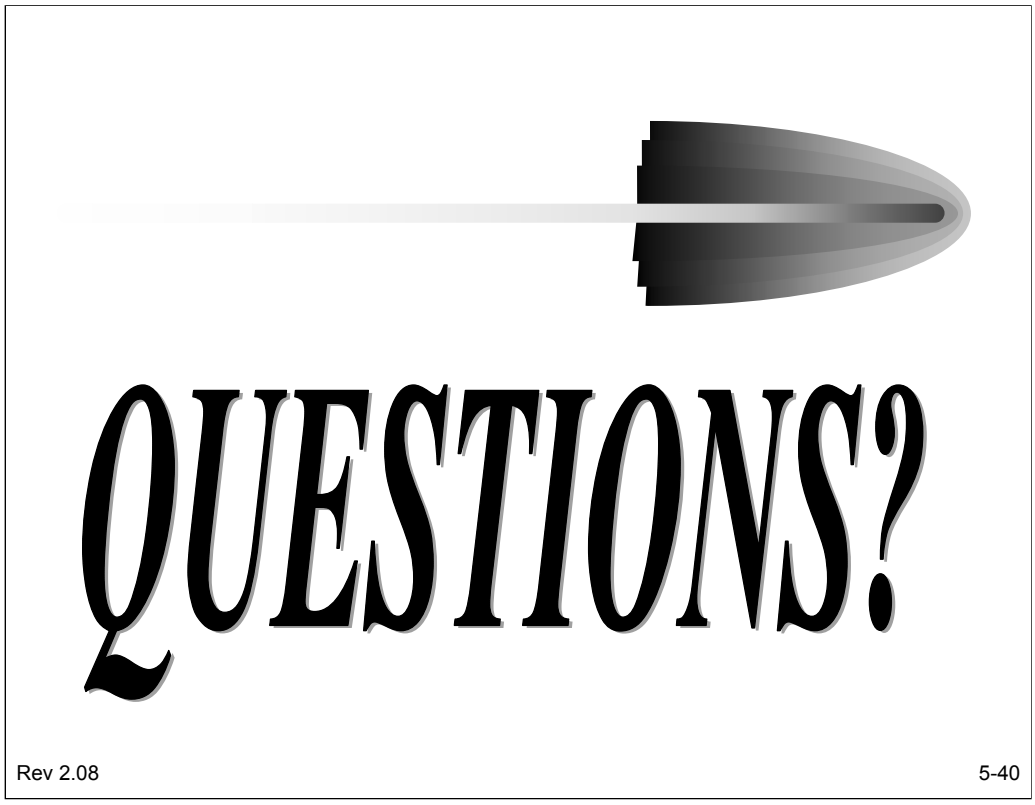
The above signs are detectable by direct observation, such as odor on the breath, swaying, staggering or unsteadiness standing or walking and poor muscular coordination.



Land Mark Study done by Dr. Borkenstein


QUESTIONS?
Rev 2.08
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Physiology of Respiration
Vital Processes

- Function of Respiration
- Mechanism of Respiration
- Alveolar Sac
- Henry's Law

Rev 2.08 5-41

Basically respiration is Breath in and Breath out.

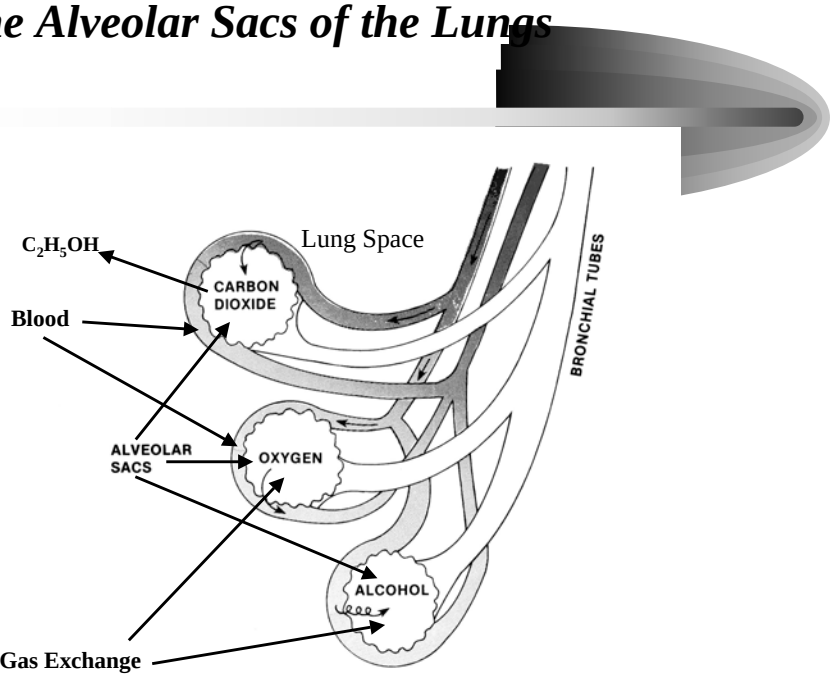
The primary function of respiration is to supply the body cells with oxygen.

A secondary purpose of respiration is to remove the byproduct of respiration, carbon dioxide.

Other gases, i.e.. Cigarette smoke, anesthetics, exhaust fumes and alcohol are also removed.

This is accomplished through diffusion or the process of a substance moving from a high concentration to a lower one. This is done in the lungs across a membranous barrier in the alveolar sacs.

Exchange of ETOH Between Blood & Breath in the Alveolar Sacs of the Lungs



Rev 2.08

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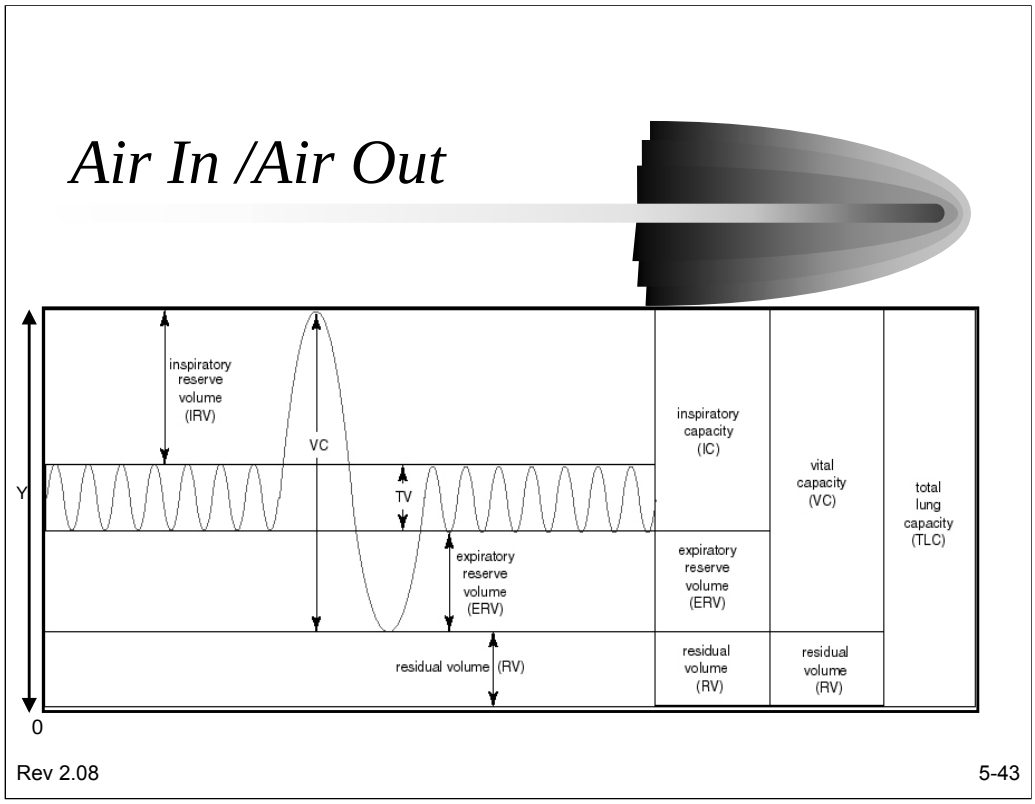


TV= Tidal Volume
TLV= Total Lung Volume
VC= Vital Capacity
IRV= Inspiratory Reserve Volume
ERV= Expiratory Reserve Volume
RV= Residual Volume

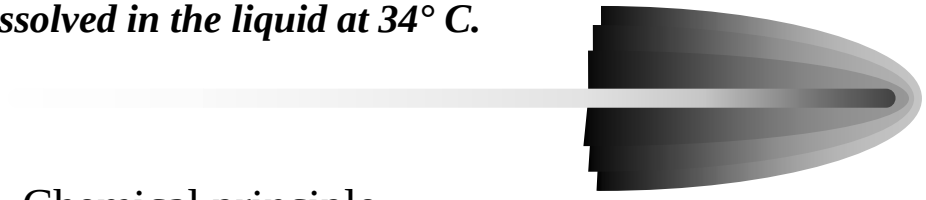
Larger volumes	**Smaller volumes**
Males	Females
Taller people	Shorter people
Non-smokers	Smokers
Athletes	Non-athletes
People at high alt.	People living at low alt.

This is a prototypical output of a 'spirometer'. The y-axis signifies the volume, with the bottom left corner equaling 'zero volume'. The sinusoid comes from repeated resting state breathing (small amplitude sinusoid) 'Tidal Volume', one inspiratory segment to maximum volume (large positive spike) 'Total Lung Volume', a forced expiratory segment to the lowest physiologically possible lung volume (large negative spike), 'Residual Volume', and then concludes with another segment of resting state breathing at tidal volume.

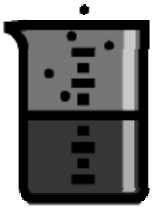
All of the lung volumes commonly referred to in the literature are labeled. The most important lung volumes are probably 'Tidal Volume' (resting breathing oscillations), 'Functional Residual Capacity', 'Residual Volume' and 'Vital Capacity' (The total volume that the subject has control over).

A person who is born and lives at sea level will develop a slightly smaller lung capacity than a person who spends their life at a high altitude. This is because the atmosphere is less dense at higher altitude, and therefore, the same *volume* of air contains fewer molecules of all gases, including oxygen. In response to higher altitude, the body's diffusing capacity increases in order to be able to process more air.

Henry's Law:The vapor pressure that a gas exerts above a liquid is directly proportional to the weight of the gas dissolved in the liquid at 34° C.



- Chemical principle
- partitioning ratio between gas and liquid phase
- occurs at equilibrium
  - balance, no net change
- occurs at 34°C
- occurs in a breath sample



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Henry's Law

- Simulator at 34ºC
- alcohol and water mixture
- 1 to 2100 ratio for alcohol
- Similar to breath sample
- Higher temp = higher reading
- lower temp = lower reading

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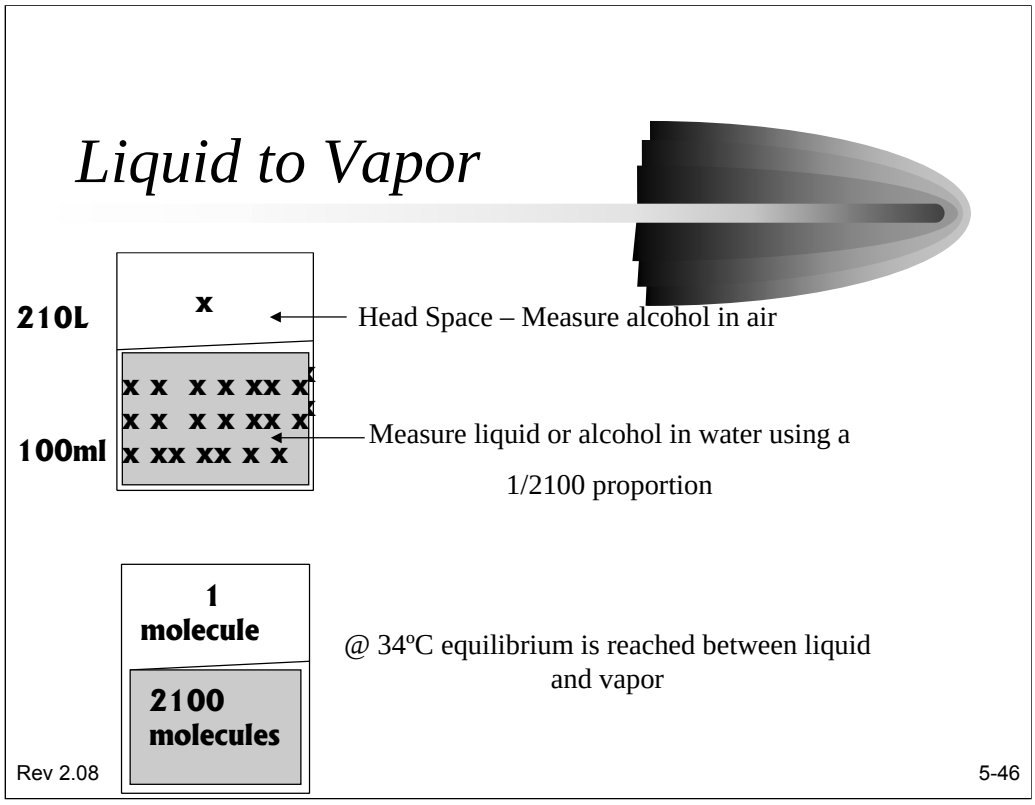
34°C is breath temperature for a human being. Henry's Law is the same principle used to test a known alcohol content using a simulator with the Intoxilyzer.

Henry's law uses a 1 to 2100 ratio of alcohol in vapor to alcohol in a liquid.


Liquid to Vapor
210L
x
Head Space – Measure alcohol in air
100ml
x x x x xx x
x x x x xx x
x xx xx x x
Measure liquid or alcohol in water using a
1/2100 proportion
1
molecule
2100
molecules
@ 34ºC equilibrium is reached between liquid
and vapor
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Henry's Law

Alcohol in Solution	Alcohol in Vapor
2100 molecules	1 molecule
4200 molecules	2 molecules
6300 molecules	3 molecules
8400 molecules	4 molecules
10500 molecules	5 molecules
21000 molecules	10 molecules

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You can use a breath sample to reflect how much alcohol is in the blood sample.

Henry's Law

- The alcohol breath test based on Henrys Law
- Breath sample is "End Expiratory Air" from lungs
- Partitioning ratio is 1 to 2100
- Breath has 1/ 2100th as much alcohol as found in blood
- Blood has 2100 times as much alcohol as breath

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Henry's Law

- Grams of alcohol per
  - BrAC = 210 liters breath
  - BAC = 100 mls of blood
- Reported as Weight per Volume
- grams alcohol /210 liters breath
- grams alcohol / 100 milliliters blood

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In Colorado breath analysis for alcohol is reported in grams / 210 Liters breath. And there is no requirement to convert the breath concentration to a blood concentration according to CRS 42-4-1301

Advantages of Breath Testing

- *Immediate Results*
- *Lower Cost*
- *Non Invasive Procedure*
- *No Medical Personnel Needed*
- *Not Possible for Operator to Alter Results*
- *Fewer Witnesses for Court*

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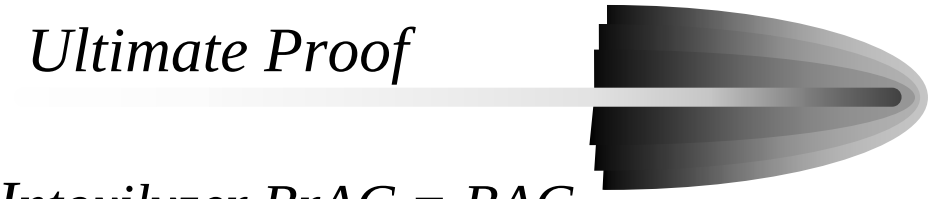
Ultimate Proof



Intoxilyzer BrAC = BAC

The ultimate proof that the Intoxilyzer is an accurate scientific instrument comes from research which shows that simultaneous Blood & Breath tests had similar results.

This type of research is also conducted using a simulator with a known alcohol content. This is the method used for checking the calibration of Intoxilyzers in Colorado.

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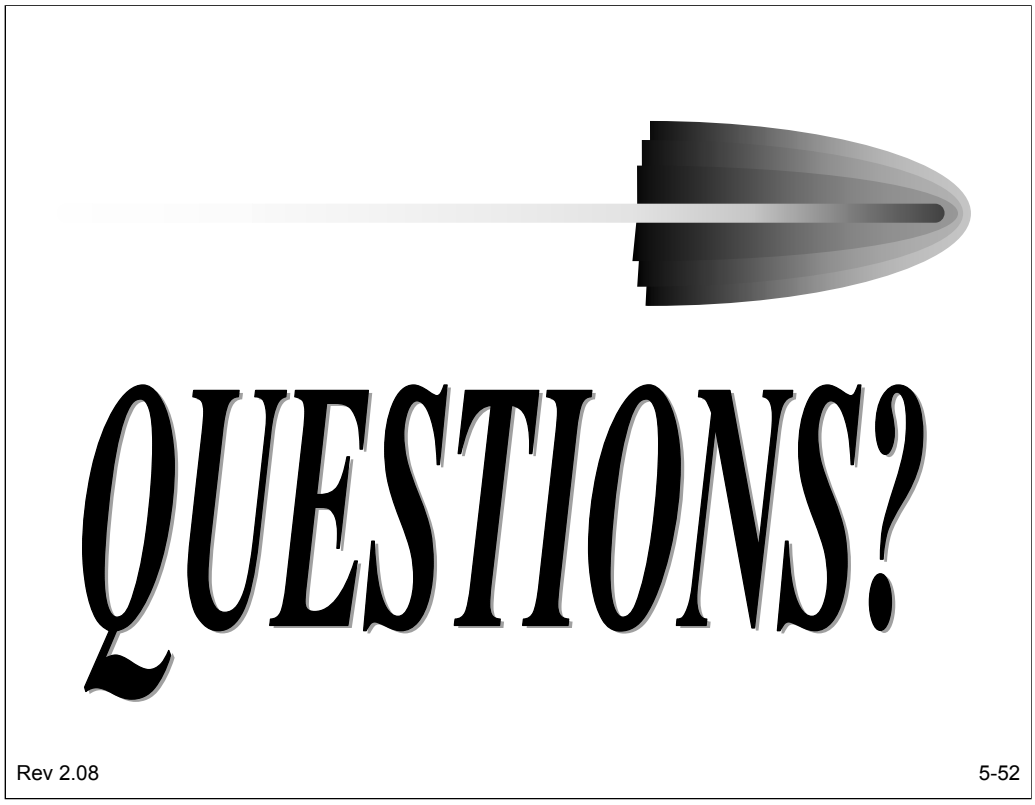
QUESTIONS?
Rev 2.08
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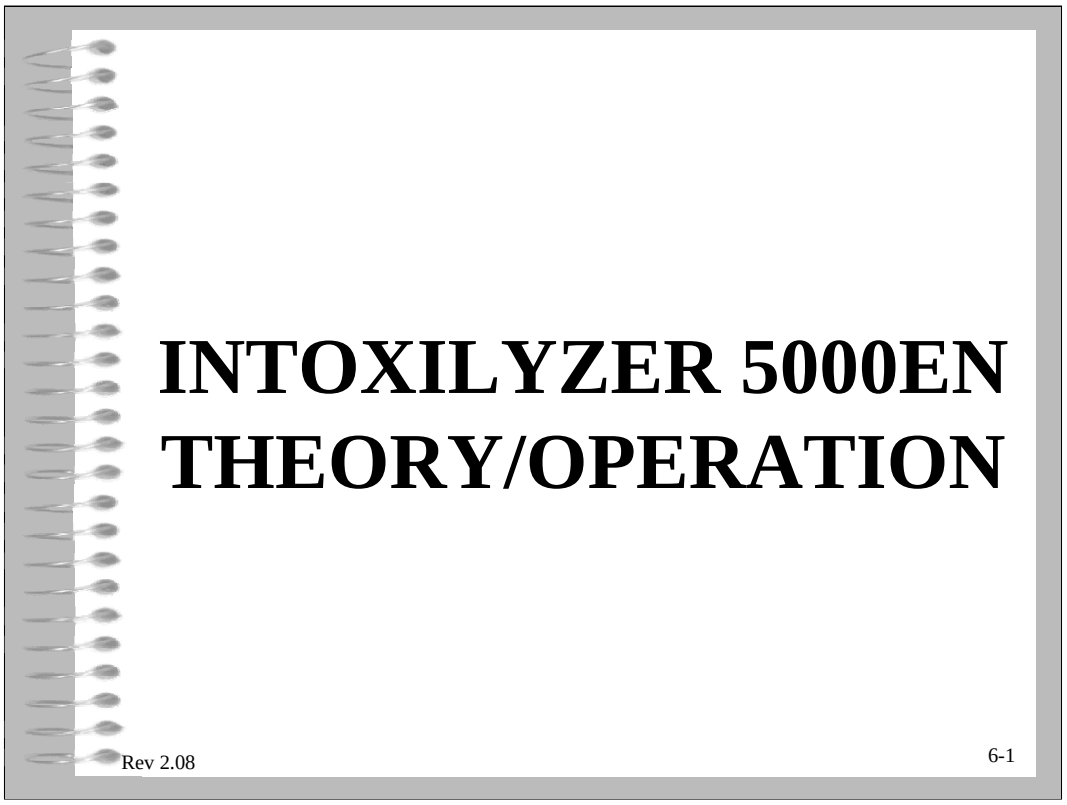
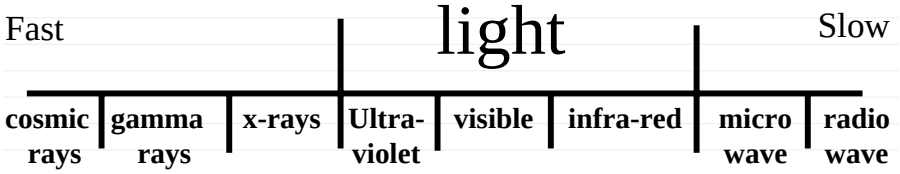


The Intoxilyzer 5000EN is an evidentiary breath testing instrument designed to detect and measure hydrocarbons present on a person's breath. The principle target is the hydrocarbon portion of ETHANOL. The testing procedure utilizes the principles of Spectrophotometry to perform analytical measurements of concentration. The Model 5000EN incorporates two monitoring systems; one that requires the subject to deliver a specimen of breath that is essentially alveolar in composition and an interference detection system that allows for the systematic screening for the presence of other substances.

Infra- Red Light Absorption

Infra - Red light is a form of energy known as:

ELECTROMAGNETIC RADIATION



The Electromagnetic Scale

All things will absorb

ELECTROMAGNETIC RADIATION

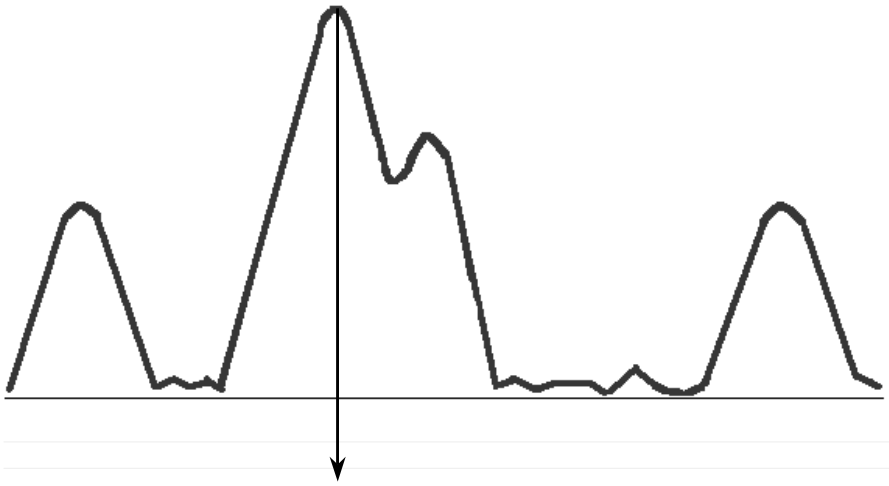
in their own

unique and consistent manner

THEREFORE
All things will absorb
INFRARED LIGHT
in their own
unique and consistent manner

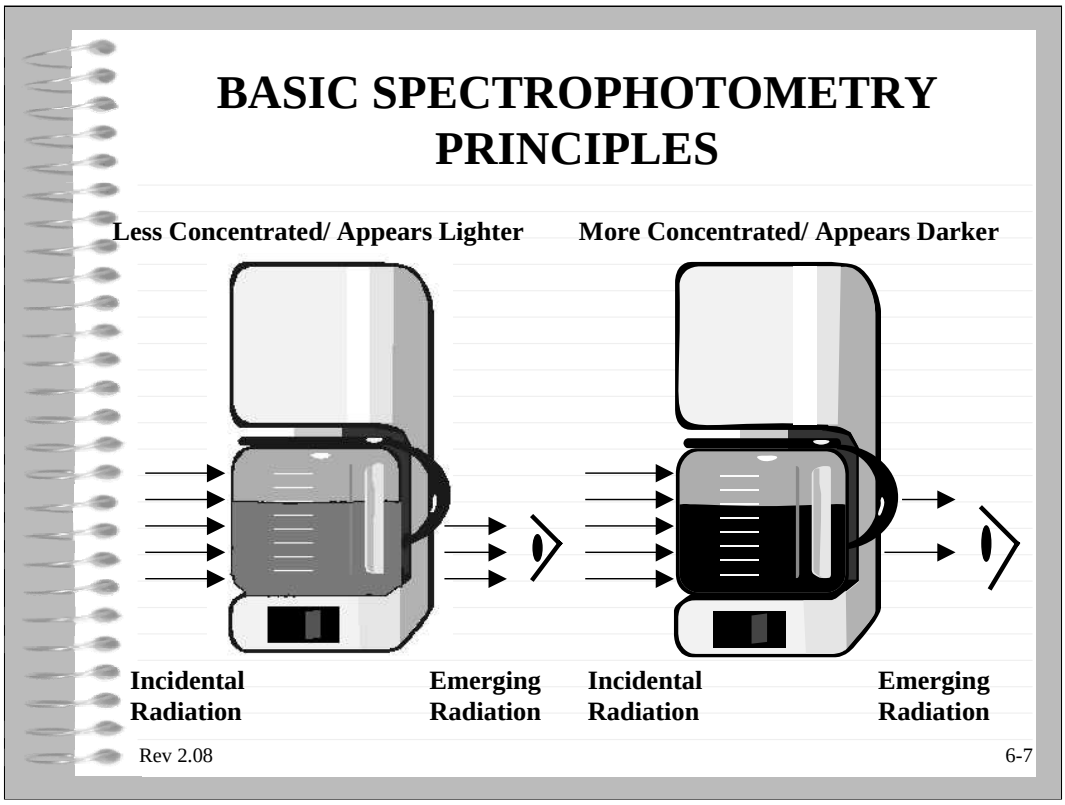
And will create their own
unique and consistent
absorption pattern

THE IR FINGERPRINT OF ETHANOL



SPECTROPHOTOMETRY

The science of measuring the absorption of light or radiant energy to identify and quantify a substance



A basic example of spectrophotometric principles can be illustrated with two glass coffee pots with different strength coffee in each one. If we have equal amounts of light entering each coffee pot on the left and observe the amount of light leaving the coffee pots on the right with our eye, we can make some deductions about the the coffee in each pot. The coffee on the left appears lighter because the coffee molecule are blocking less light. Therefore, the coffee looks lighter and we can deduce that it is less concentrated than the coffee in the pot on the right.

The coffee molecules in the pot on the right block more light. Therefore, the coffee appears darker and we can deduce that the coffee is stronger.

This is the sample principle that the Intoxilyzer uses. The infrared detector measures the amount of infrared light that is aborbed by the alcohol molecules in the sample.

SPECTROPHOTOMETER

An instrument that is able to use light or radiant energy to identify and quantify a substance

SPECTROPHOTOMETER (INTOXILYZER 5000EN)

An instrument that is able to use light (Infrared Light) or radiant energy to identify and quantify a substance (Ethanol).

SPETROPHOTOMETRIC RELATIONSHIPS

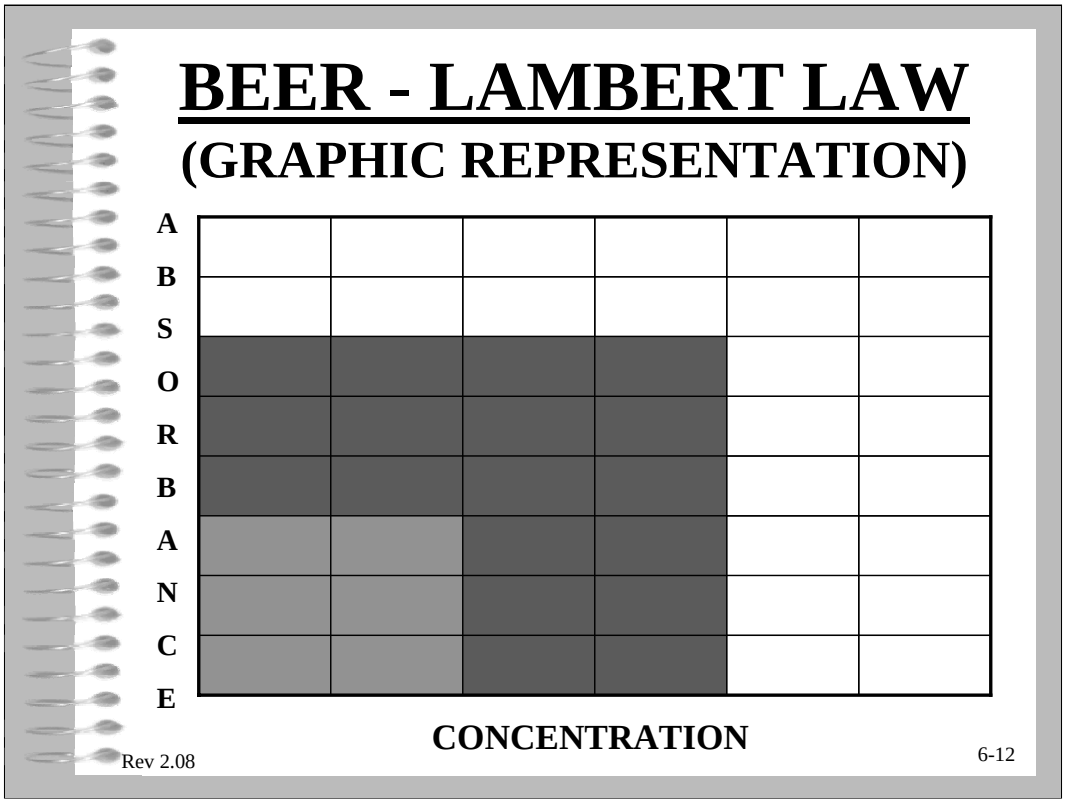
1. Measurements determine concentration.

2. Measurements are made relative to a standard (known) concentration.

3. Quantitative analysis is governed by the BEER- LAMBERT LAW.

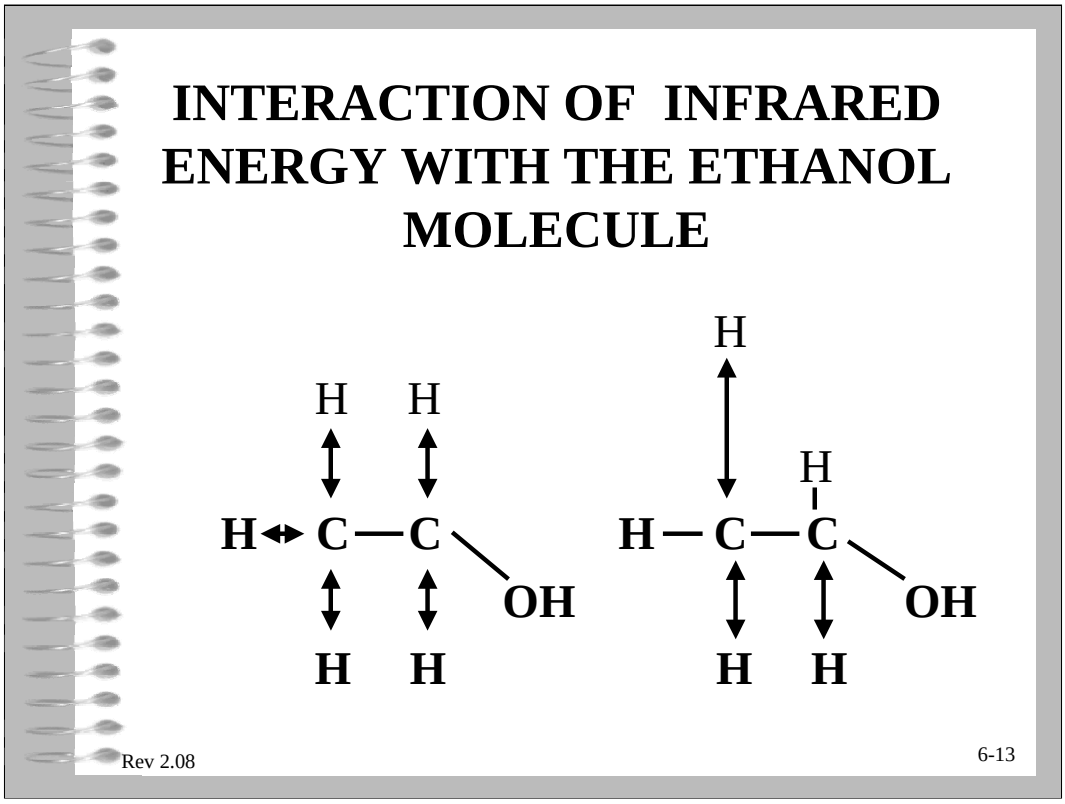
BEER - LAMBERT LAW

Absorption is directly proportional to concentration.



Applying the Beer-Lambert law to the graph above, if we double the concentration of alcohol in the sample chamber, the amount of absorption of infrared light doubles.

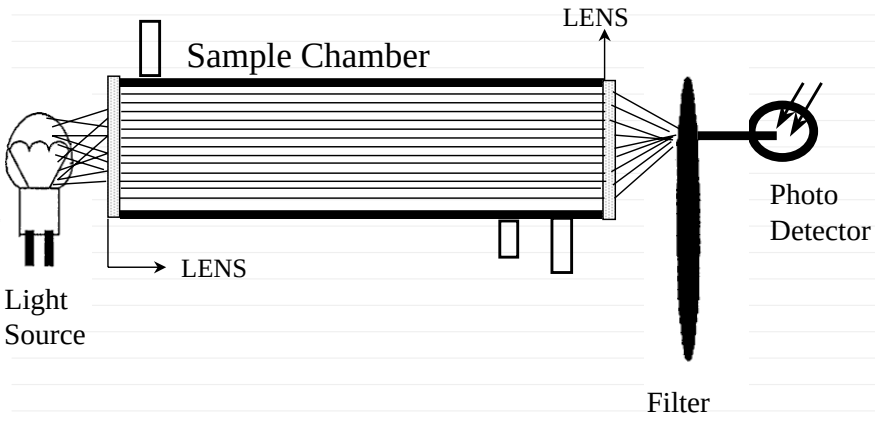
The infrared detector at the end of the sample chamber will see a decrease in the amount of infrared light striking it because more infrared light is being absorbed in the sample chamber.



The above drawing represents the interaction between infrared light and the ethanol molecule. When the infrared light strikes the ethanol molecules, it causes the hydrogen atoms to expand and contract in relation to the carbon atoms. This expansion and contraction of the hydrogen atoms causes friction. The friction is what causes the infrared light to be absorbed.

BREATH SAMPLE ANALYSIS

STEP # 1



the light striking the photo detector produces a level of energy labeled as X

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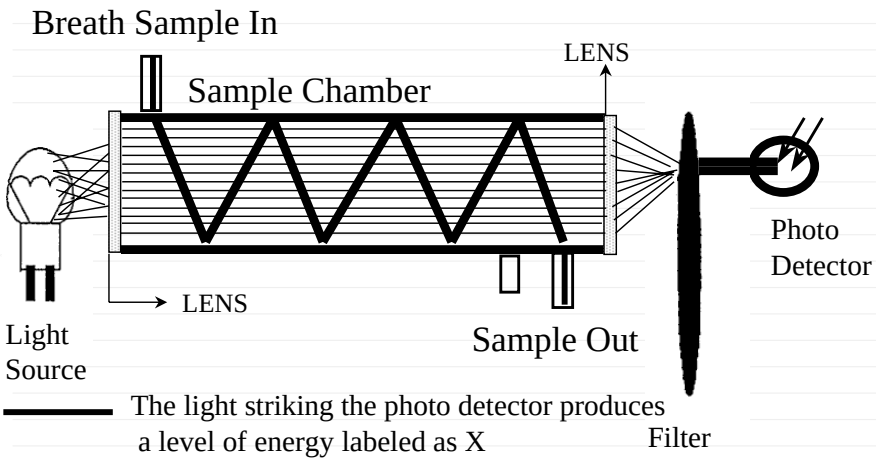
Step 1 is the measurement of the amount of infrared light striking the detector with no alcohol present in the sample chamber. This occurs during the Air Blank when we are establishing our zero reference point. This value is called X.

BREATH SAMPLE ANALYSIS

STEP # 2



The light striking the photo detector produces a level of energy labeled as X

The light striking the detector after alcohol is introduced produces a different level of energy labeled as Y

Infra-Red Theory

If we establish the amount of IR light able to pass through a chamber with no alcohol present

X

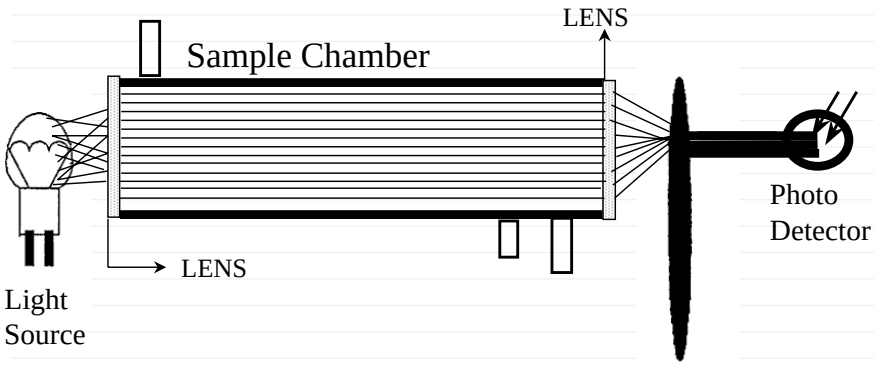
Then establish the amount of IR light able to pass through a chamber with alcohol present

Y

Then

X - Y = Alcohol Concentration

BREATH SAMPLE ANALYSIS



3.80 - Reference Filter

3.36, 3.40, 3.52 - Interferents

3.47 - Alcohol

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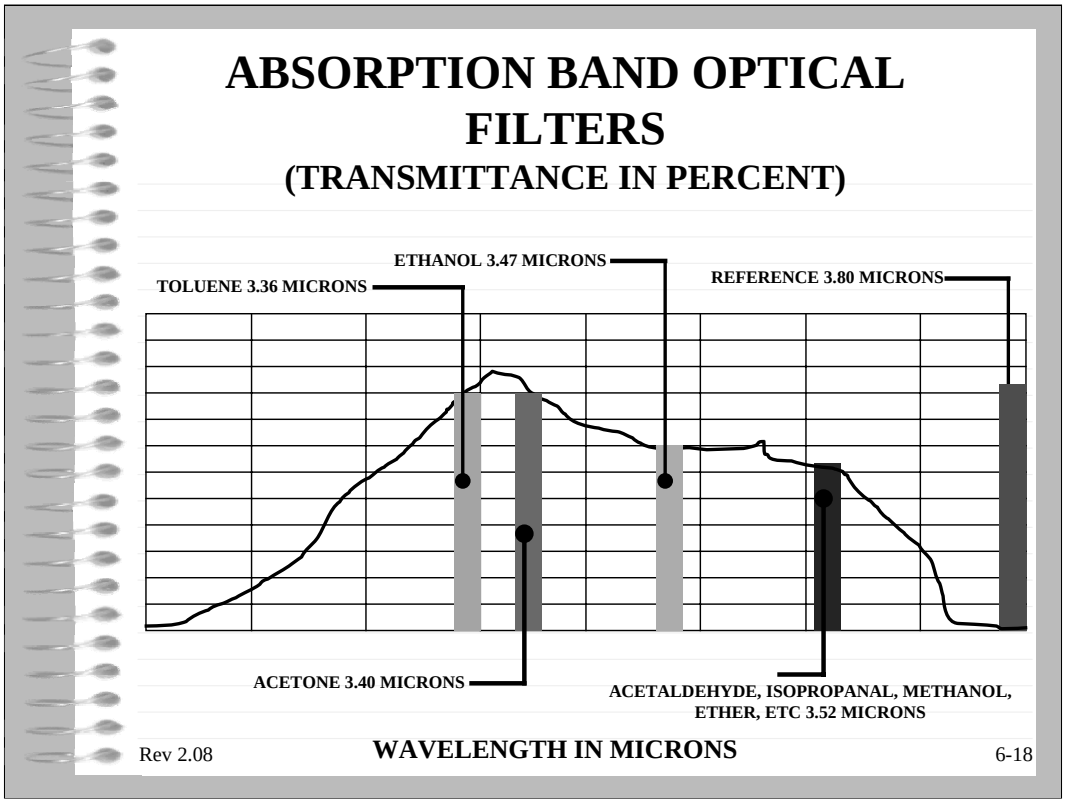

The **3.80** micron wavelength is the **Reference** wavelength. It is selected as the reference because there is no interaction between infrared light and ethanol at this wavelength.

The **3.52** micron wavelength identifies the presence of **Acetaldehyde, Isopropanol, Methanol, Ether** and other **Common Alcohols** in the breath sample**.**

The **3.47** micron wavelength identifies and quantifies the amount of **Ethanol** in the breath sample.

The **3.40** micron wavelength identifies and quantifies the amount of **Acetone** in the breath sample.

The **3.36** micron wavelength identifies the presence of **Toluene** in the breath sample.

The amount of **Acetone** is subtracted from the amount of **Alcohol** in the breath sample to give an accurate **Ethanol** reading.


QUESTIONS?
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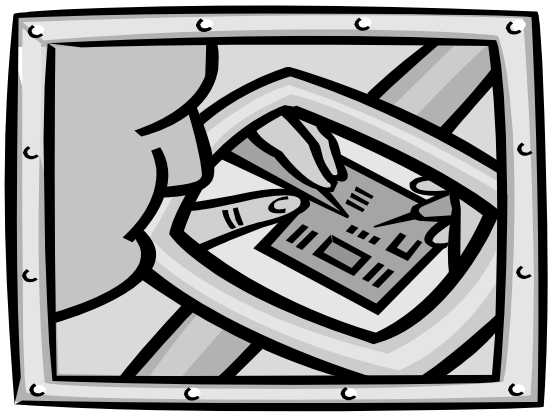
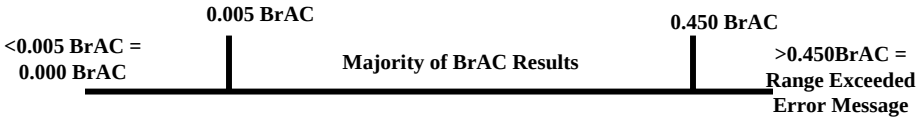
Intoxilyzer 5000EN
Factory Technical Specifications



Intoxilyzer 5000EN
Factory Technical Specifications

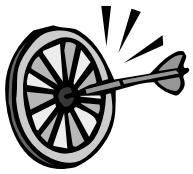
- RANGE: 0.005 to 0.450 BrAC grams/210 liters



  - Majority of BrAC results are between 0.005 BrAC and 0.450 BrAC
  - Results less than 0.005 BrAC = 0.000 BrAC on display
  - Results greater than 0.450 Brac = Range Exceeded Error Message

Intoxilyzer 5000EN Factory Technical Specifications

- Accuracy: ±3% or ±0.003 BrAC which ever is greater
  - Same accuracy as similar laboratory equipment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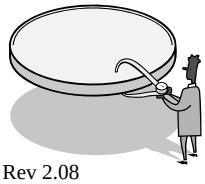
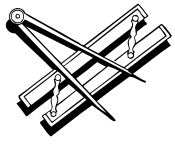
Intoxilyzer 5000EN Factory Technical Specifications

- Precision: Standard Deviation of 0.003 BrAC or better
  - If 10 tests of a known ethanol solution were run on the instrument, all results would be within 0.003 BrAC of each other



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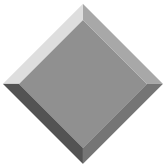
Intoxilyzer 5000EN Factory Technical Specifications

- Test Time: Approximately 7 minutes
  - For Colorado test sequence data entry time + (ACABAIA2ABACA)

Intoxilyzer 5000EN Factory Technical Specifications

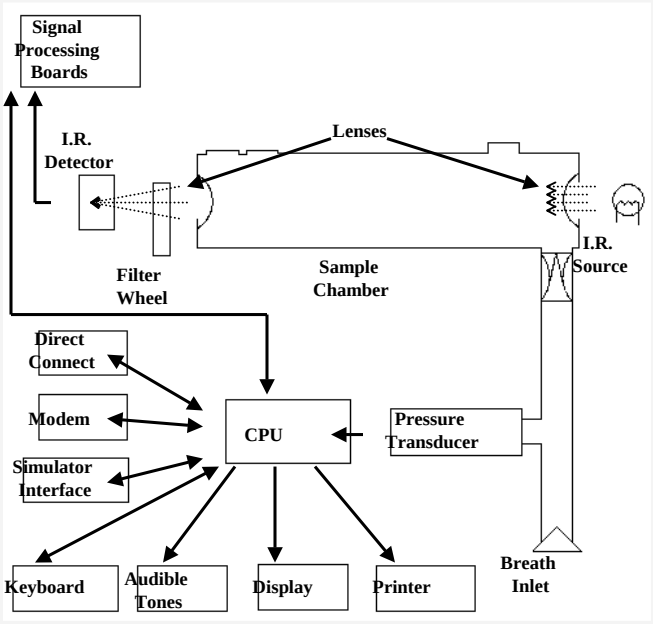
- **Operating Temperature:**
  - 68° F to 86° F (20° C to 30° C) room temperature
  - Keep room temperature at approximately 75° F



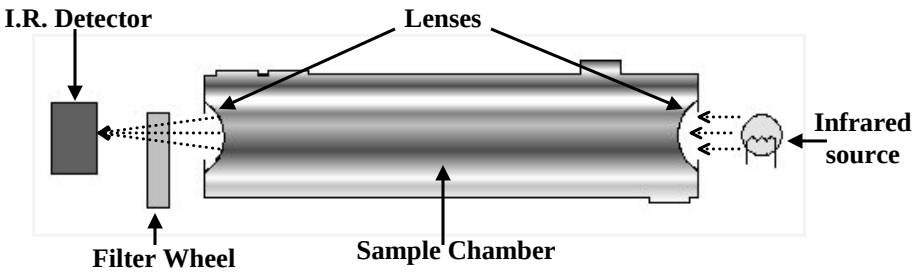
QUESTIONS?

5000EN Technical Description

Block Diagram



Optical Bench



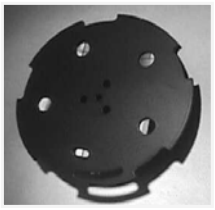
- The “heart of the instrument”
- Sample measurement occurs here
- Infrared source, sample chamber, filter wheel and cooled I.R. detector
- Focal length - 12”
- I.R. source – quartz iodide lamp

Sample Chamber

- Polished aluminum
- Thin walled
  - Allows precise temperature control
  - (45 to 48°C)
  - Short warm up period from stand-by mode
- Volume is only 81cc
- Lenses are designed for an optimum signal focusing at 12”

Filter Wheel

- Five Filters - Specific for ethanol
- Five wavelengths
  - **3.80 Microns** - Reference
  - **3.47 Microns** – Ethanol
  - **3.40 Microns** - Acetone
  - **3.52 Microns** - Acetaldehyde/ Isopropanol/ Methanol/Ether / ETC.
  - **3.36 Microns** - Toluene
- Wheel notched for timing

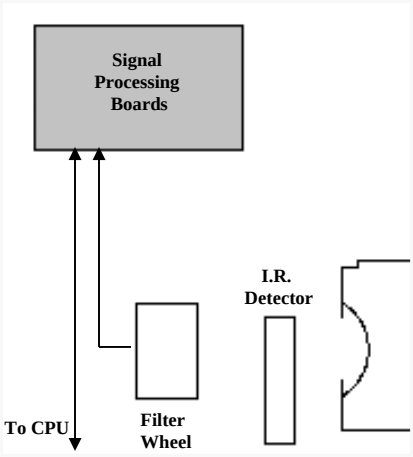


Cool Detector

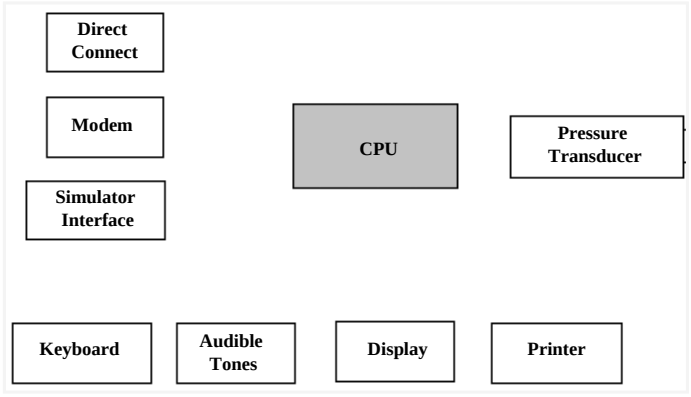
- Electronically cooled to +5°C
  - Reduces signal noise level
  - Makes small signals easier to detect
- Precision and accuracy at lower BrAC levels

Processor Circuitry

- 2 Boards
  - Analog
  - Digital
- One electronic path for all five wavelength signals
  - Fast and reliable signal processing

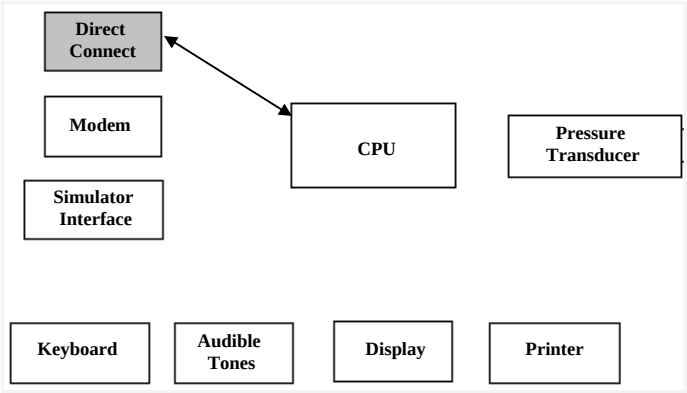


Central Processing Unit



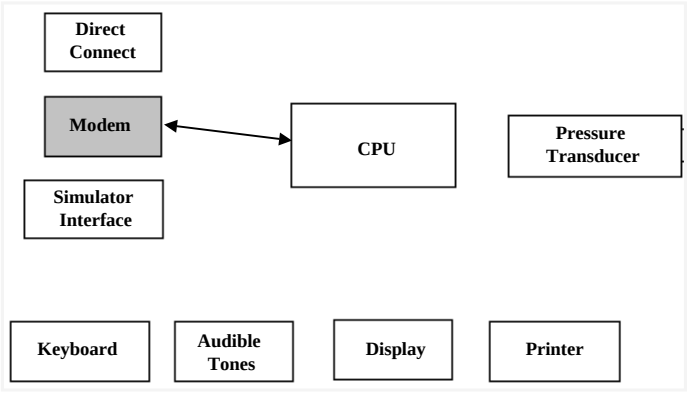
- Brains of instrument
- One EPROM (56k) programming capability
- Memory (32k)
- Interfaces with all devices surrounding it

Direct Connect



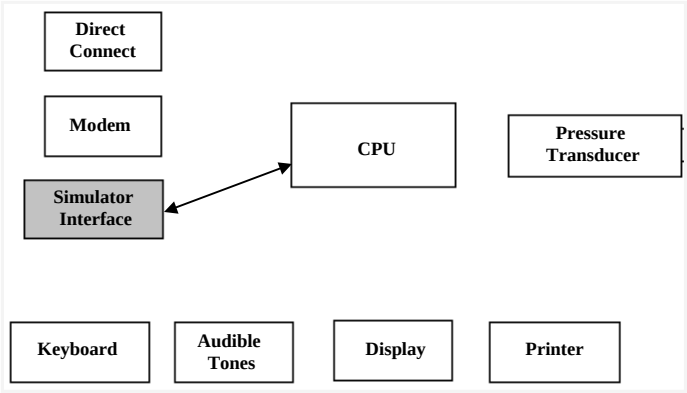
- Circuitry allows instrument and a PC to to talk to each other
- This connection is made at CDPHE/EBAT facility to download instrument data directly into the ***COBRA*** (***C****omputer* ***O****nline* ***BR****eath* ***A****rchive*) data management application.

Modem/Direct Connect



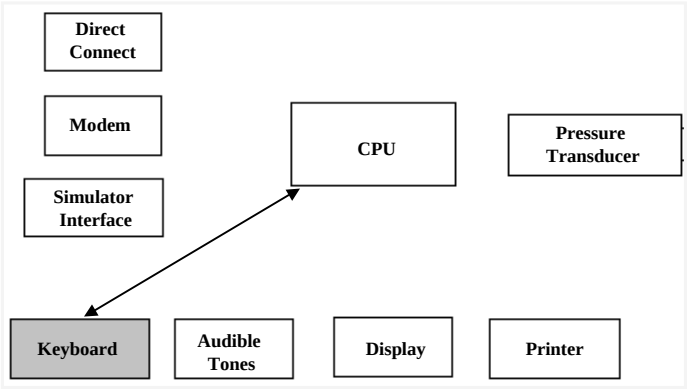
- Connects instrument to the CDPHE/EBAT Central PC
- Must be connected to an analog phone line
- Used with the ***COBRA*** data management application

Simulator Interface



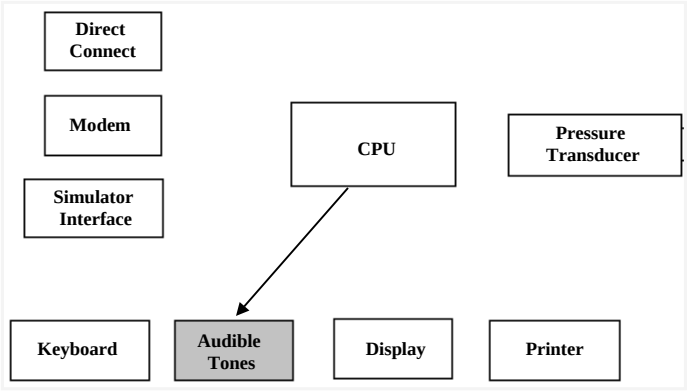
- Circuitry allows simulator and instrument to talk to each other
- Intoxilyzer can detect errors and prohibits test initiation

Keyboard



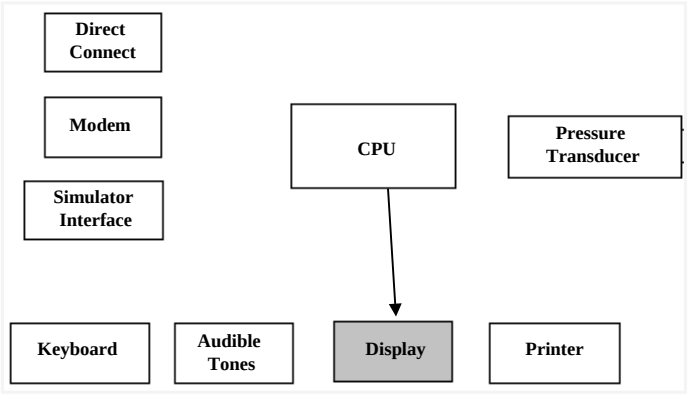
- All Operator /Instructor communication is accomplish through the keyboard

Audible Tones



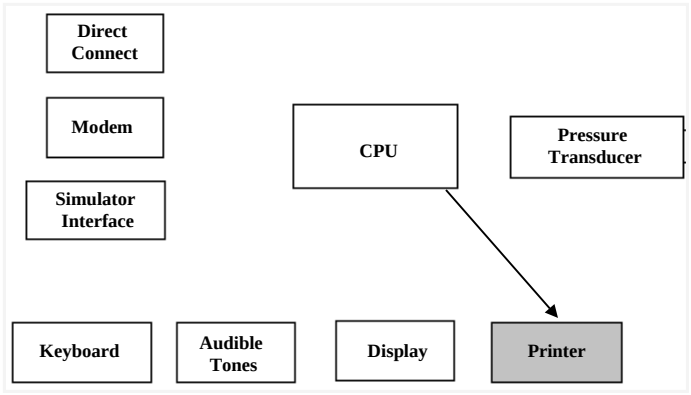
- Constant tone can be heard when a breath sample is submitted and the four requirements are met
- Dual tone is enabled when an error message is encountered
- A short yet constant tone is encountered when the Intoxilyzer and simulator have momentarily lost communication

Display



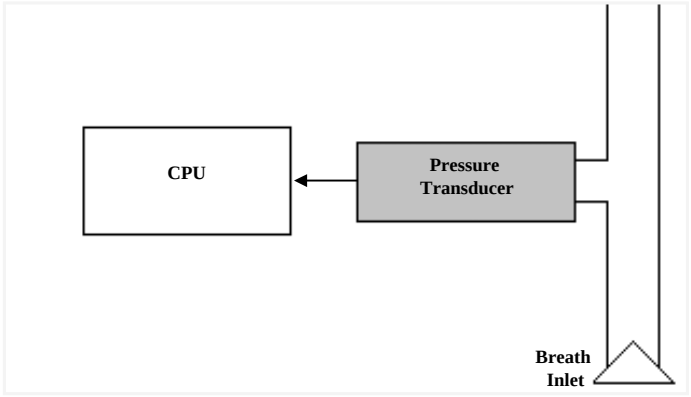
- 16 Character alphanumeric
- Displays operation, operator instructions and test results

Printer



- Laserjet printer
- Parallel port printers only
- Only approved printers may be used with Intoxilyzer 5000EN and not to be shared with other equipment

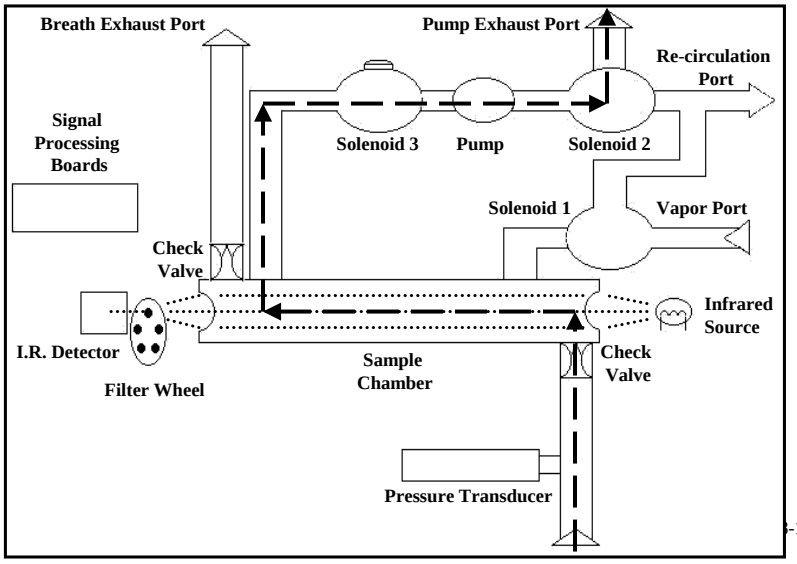
Pressure Transducer (Flow Gauge)



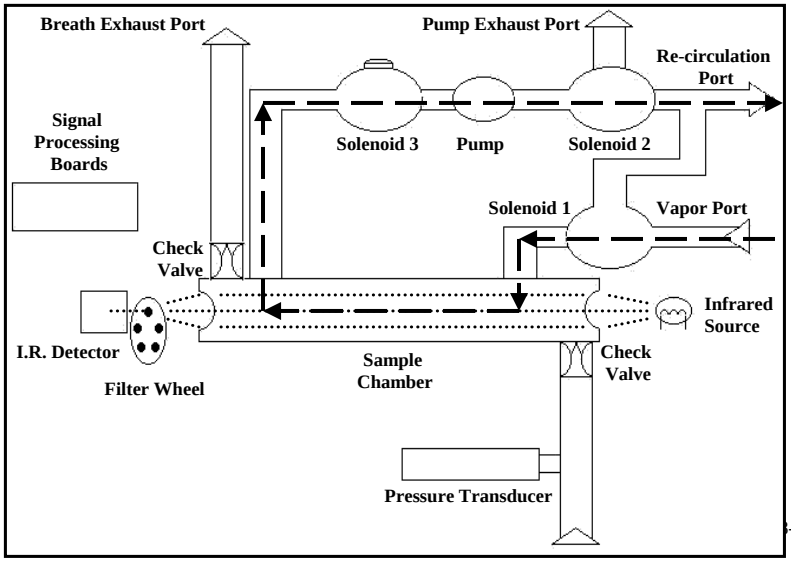
- Measures the flow rate of air subject blows into instrument
- Delivers signal to CPU to calculate the volume of air blew into instrument
- Volumes are printed out on tests

Airflow Through The Intoxilyzer 5000EN

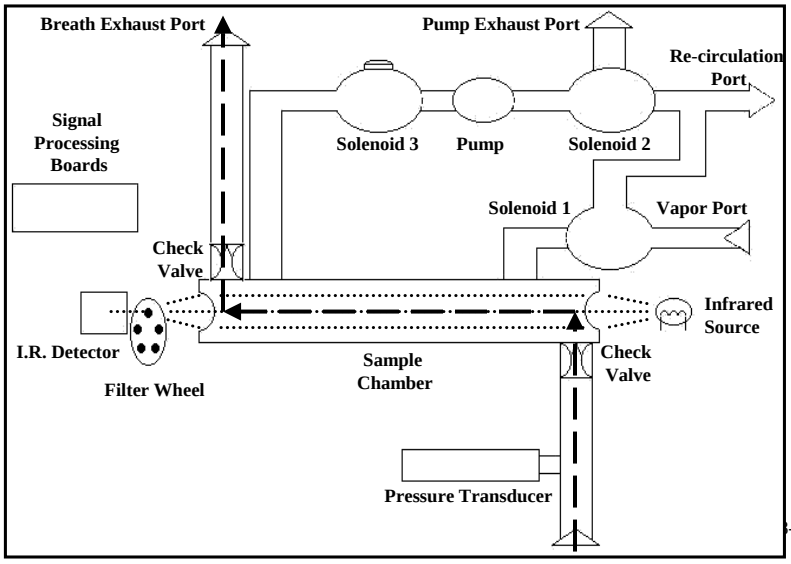
Air Flow During an Air Blank



Air Flow During Calibration Check



Air Flow During Breath Test



QUESTIONS?

Standard Equipment Set-Up

Direct Breath Testing Facility

- Standard equipment set-up
  - Intoxilyzer Model 5000EN with simulator bracket securely attached
  - Approved Keyboard
  - Approved Printer(s)
  - GUTH 2100 Digital Simulator(s)
  - Simulator Heated and Return Tubes
  - Organization Stand

•Basic set-up

•Attach bracket for use at facility and remove it before for any servicing by CDPHE-Philips #2, 8”-10 “ screwdriver

•HP 6L, 1100, 1200, 1300, 1320 or Brother HL-2070N are the currently approved printers to work with the Intoxilyzer 5000EN

•**Two** Guth 2100 simulators are required

A.Main and back-up

B. Simulator return tubing

1. Don’t remove or modify simulator tubing from simulator inlet tube
2. Keep “C” clamp attached to simulator return tube surrounding inlet tube.

NOTES:

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Direct Breath Testing Facility

- Standard equipment set-up
  - Surge Protector
  - Power Cord
  - Printer Interface Cable
  - Simulator Interface Cable
  - Data Phone Line

•External surge protection required, approved list available

•Phone line requirements

1. Direct In Dial (DID)
   - Can not dial through PBX or switchboard
2. Analog Line

OR

3. Phone Switch
   - Use with fax, voice lines
   - For lower volume use locations

NOTES:

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Direct Breath Testing Facility

- ❑Standard equipment set-up
  - ❑Supplies
    - ❑Simulator Standard Solution
    - ❑Paper - letterhead or watermark
    - ❑Mouthpieces

•Review supplies required to perform an EBAT

•Mouthpieces **<u>are not</u>** supplied by CDPHE

•Don’t use a letter head, It will not fit

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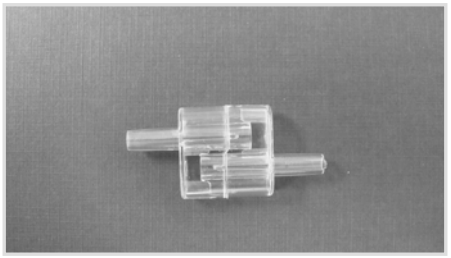
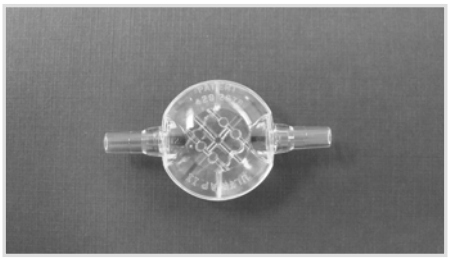
Mouthpieces

- CMI Inc.



- Guth Inc.



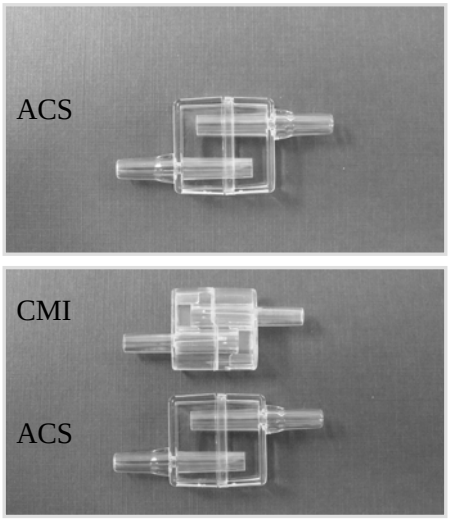
CMI Inc. 1-800-835-0690

Guth Inc. 1-800-238-2388

NOTES:

Mouthpieces

- Alcohol Countermeasure Systems (ACS)
- Comparison



CDPHE recommends **not** purchasing Alcohol Countermeasures mouth-pieces

NOTES:

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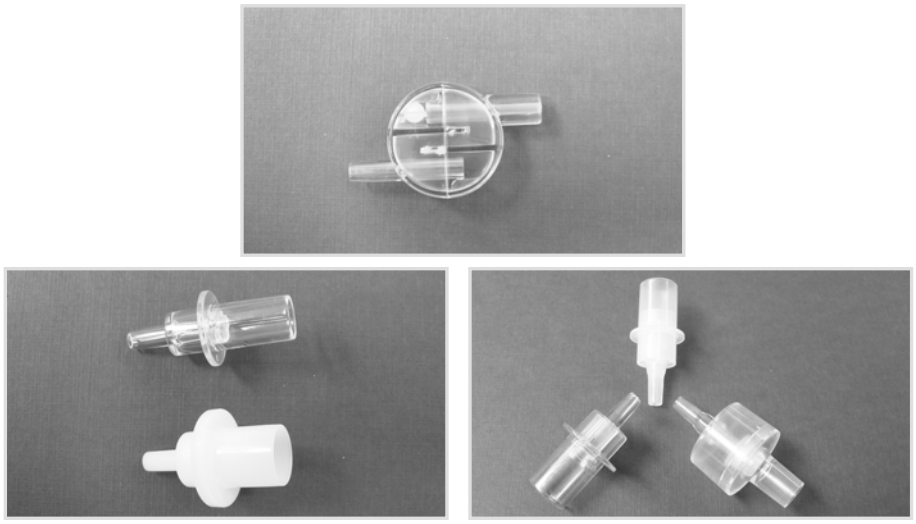
Mouthpieces



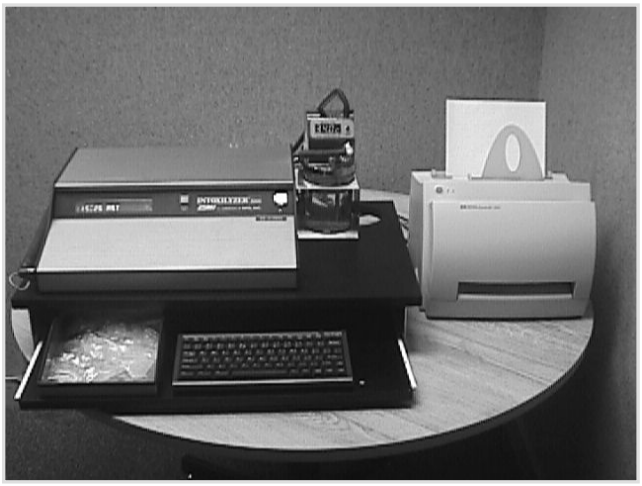
Rev 2.08

Various mouth pieces that are approved to work with the Intoxilyzer 5000EN.

Before purchasing mouthpieces that are not familiar to you, contact CDPHE/EBAT staff.

NOTES:

Equipment Set-up



This is an example of a 5000EN set-up

NOTES:

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Intoxilyzer 5000EN Parts and Controls

1. Show and discuss the External Parts and Controls of the Intoxilyzer 5000EN

NOTES:

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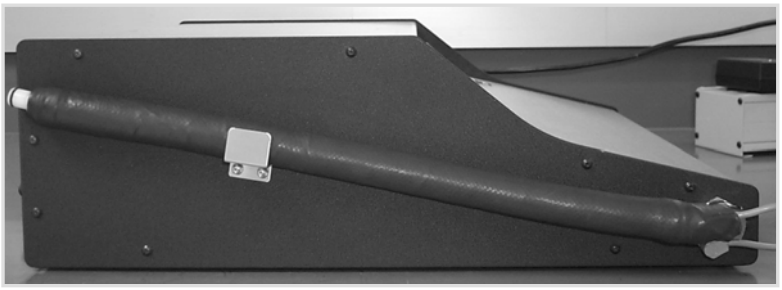
Breath Tube

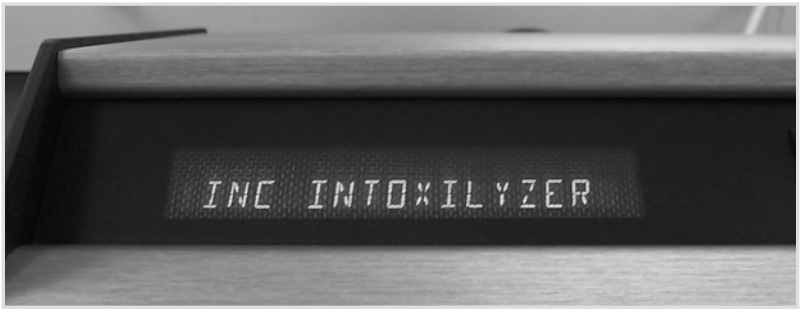
- Large inside diameter tubing
- Heated 45°C to 48 °C to prevent condensation
- Contains R.F.I. antenna



NOTES:

Display

- 16 character alphanumeric
- Relates instructions and test results



ALPHANUMERIC= letters and/or numbers

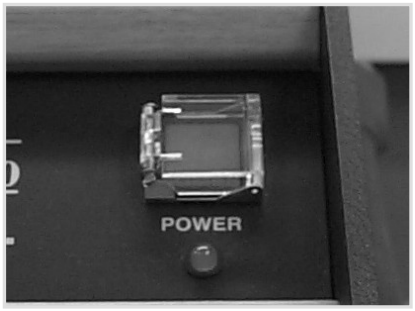
Start Test Button

- Brings instrument out of stand-by mode
- Initiates test sequence

NOTES:

Power Button and Power On Indicator Light

- Applies AC power to instrument
- Red LED under power switch
- LED is on whenever power is applied to instrument



NOTES:

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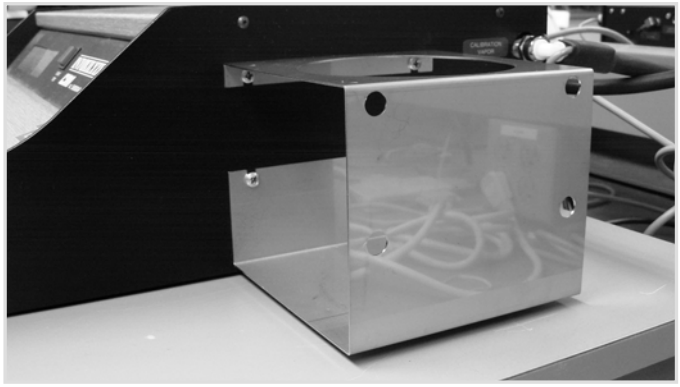
Simulator Bracket

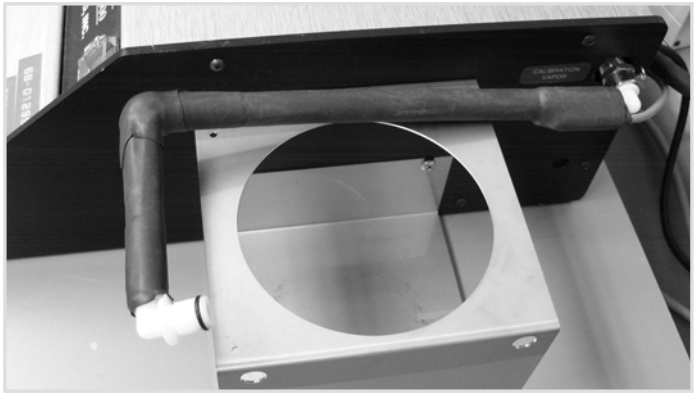
- Supports the the Guth 2100 Simulator in the proper position to connect the heated simulator tube



NOTES:

Heated Simulator Hose

- ❑Heated 45°C to 48 °C to prevent condensation
- ❑Connects Simulator to instrument vapor port



NOTES:

Simulator Vapor Port

- ❑Chrome female locking fitting
- ❑Passes ETOH vapor from simulator to instrument

NOTES:

The Back Panel

NOTES:

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Simulator Hose Heater Connector

- Applies 15 D.C. to simulator tube heater
- Reduces condensation

15VDC= 15 Volts D.C.

Use black snap connector on chrome fitting to disconnect hose heater power from Intoxilyzer.

NOTES:

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Simulator Return Port

- Used during calibration check
- Directs air from instrument to simulator to bubble solution
- Returns vapor from sample chamber to simulator

NOTES:

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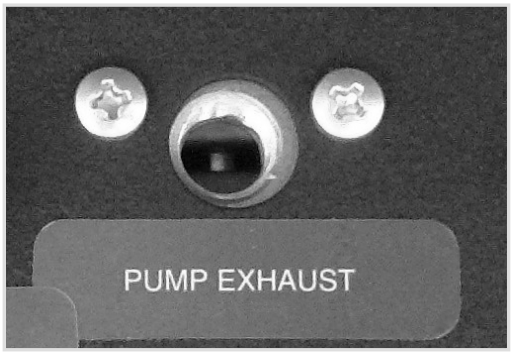
Pump Exhaust

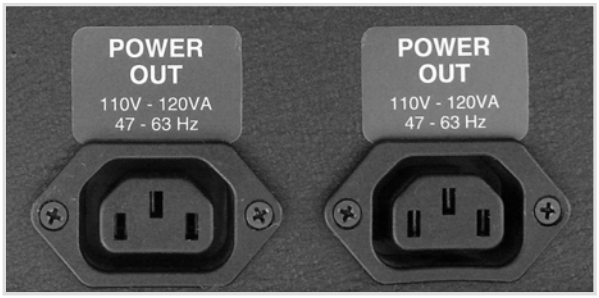
- Air from from instrument exits here during air blanks



NOTES:

Auxiliary Power Plugs

- A.C. from instrument to power simulator and / or printer
- All accessories are controlled by instrument if these plugs are used



NOTES:

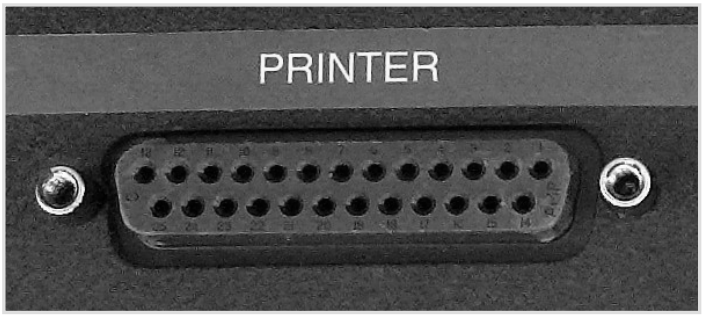
Simulator Interface Connector

- Enables instrument and simulators to exchange data enables
- Enables instrument to detect simulator condition, report error and abort test

NOTES:

Printer Connector

- Allows data to flow between instrument and printer



NOTES:

Direct Data Interface Connector

- Instrument interface with PC for data acquisition

NOTES:

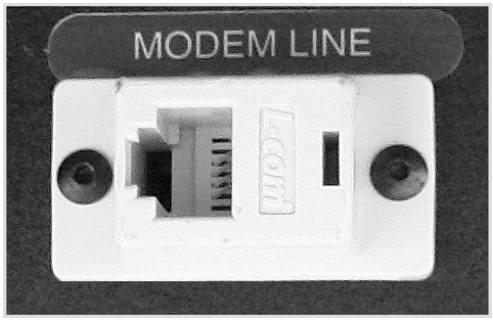
Keyboard Connector

- Keyboard interface with instrument
- All communication with instrument is through keyboard

NOTES:

Modem Line Connector

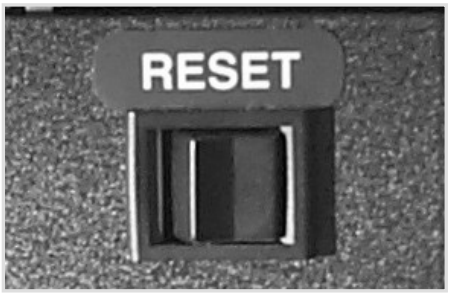
- Interface between instrument and PC via an analog phone line
- Used with data management and online troubleshooting application



NOTES:

Reset Switch

- ❑ Reboots instrument minus 30 minute wait period
- ❑ Cancels all operations and returns instrument to ready state
- ❑ Instrument performs turn on diagnostic checks



USE IF INSTRUMENT IS ALREADY GONE THROUGH WARM UP PERIOD AND DIAGNOSTICS.

USE THIS FEATURE IF INSTRUMENT IS NOT RESPONDING AFTER WARM UP PERIOD AND DIAGNOSTICS.

NOTES:

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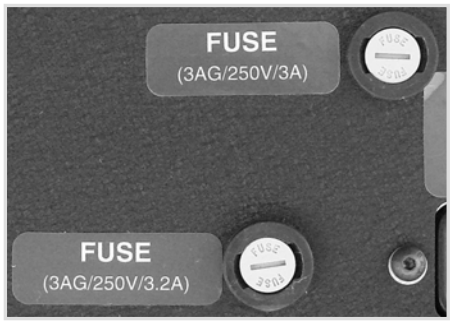
Fuses

Top

- ❑ 3 Amp, slow blow
- ❑ Fuse for auxiliary power connectors



Bottom

- ❑3.2 Amp, fast blow
- ❑Main fuse for instrument

BEFORE ATTEMPTING A FUSE REPLACMENT CONTACT THE EBAT PROGRAM **FIRST!!**

NOTES:

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120 A.C. Power Connector

- Supplies 120 A.C. from external surge protector
- Main power in

NOTES:

Breath Exhaust Port

- Air from instrument exits here when subject is blowing into instrument
- Once instrument air capacity is reached, excess air exists here

NOTES:

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NOTES:

The Complete EBAT

(Evidential Breath Alcohol Test)

Colorado Department of Public Health and Environment
Laboratory Services Division
EBAT Program

Rev. 2.08

10-1

CONTENT

1. Appendix 2A Review
2. Functions Key
3. Stand By Mode
4. Warm Up Period
5. Diagnostic Tests
6. Ready Mode
7. Test Sequence (ACABAIA2ABACA)
8. EBAT Print Out

APPENDIX 2A

APPENDIX 2A

Colorado Department of Public Health and Environment Laboratory Services
Division Breath Alcohol Testing Program

Approved checklist for Evidential Breath Alcohol Test(s) after upgrade to Intoxilyzer 5000EN software revision 1358.XX, in compliance with the Colorado Board of Heath Rules and Regulations concerning testing for alcohol and other drugs, 5-CCR1005-2, as amended.

SUBJECT: _____

DATE:_____

Certified operator or instructor conducting the EBAT must initial inside the parentheses to the left of each step and sign in the space provided at the bottom.

( ) 1. **Turn power switch on or observe the power switch has been activated. If the EBAT device is in the STANDBY mode, press the START TEST switch.**

( ) 2. **The subject must remove foreign objects from the nose and mouth including dentures. The subject must be closely and continuously observed for 20 minutes prior to testing to assure no belching, regurgitation or intake of any foreign material by nose or mouth has occurred. If such occurs, another 20 minutes of close and continuous observation must elapse under the same conditions.**

Start Time: _____ Stop Time: _____

( ) 3. **Verify that the external breath tube and simulator vapor tube are both warm.**

( ) 4. **Observe the simulator temperature is between 33.8 degrees Centigrade and 34.2 degrees Centigrade.**

( ) 5. **Press the START TEST switch.**

( ) 6. **Follow the instructions and sequence of events as they appear on the EBAT device display.**

( ) 7. **Retain all printouts generated by the EBAT device with the DUI packet. (i.e. Error message printouts)**

THIS EVIDENTIAL BREATH ALCOHOL TEST WAS CONDUCTED IN ACCORDANCE WITH THE COLORADO BOARD OF HEALTH RULES AND REGULATIONS, 5-CCR1005-2.

_____
Certified Operator or Instructor Conducting Test

Rev. 2.08 10-3

Refer to
5 CCR 1005-2
page 25.

Appendix 2A

1. Turn power switch on or observe the power switch has been activated. If the EBAT device is in the STANDBY mode, press the START TEST switch.

Rev. 2.08

10-4

⇒ **When the instrument is in the Stand By mode, depressing the Start Test switch will initiate the Warm Up Period.**

Appendix 2A

2. The subject must remove foreign objects from the nose and mouth including dentures. The subject must be closely and continuously observed for 20 minutes prior to testing to assure no belching, regurgitation or intake of any foreign material by nose or mouth has occurred. If such occurs, another 20 minutes of close and continuous observation must elapse under the same conditions.

Start Time:_____ Stop Time: _____

Rev. 2.08 10-5

⇒**CLOSE and CONTINUOUS observation of the subject during the 20 minutes observation <u>MUST</u> be performed.**

⇒**Use the time from the Intoxilyzer for both the start and stop times.**

⇒**The Stop Time must not be after the time of the first air blank indicated on the EBAT printout.**

Appendix 2A

3. Verify that the external breath tube and simulator vapor tube are both warm.

Rev. 2.08 10-6

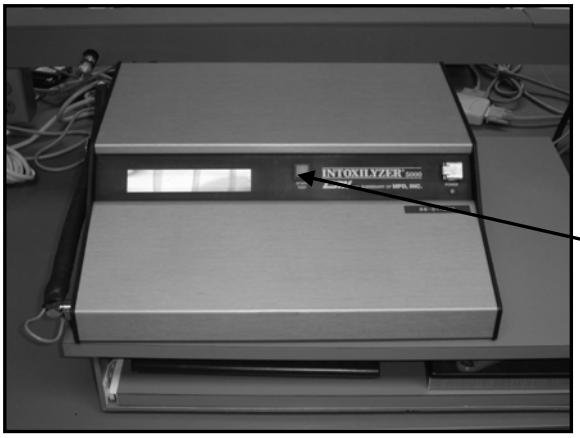
⇒**Both tubes must be warm to the touch.**

Appendix 2A

4. Observe the simulator temperature is between 33.8 degrees Centigrade and 34.2 degrees Centigrade.

Appendix 2A

5. Press the START TEST switch.



Rev. 2.08 10-8

⇒**Pressing the Start Test switch initiates the Intoxilyzer test sequence.**

Appendix 2A

6. Follow the instructions and sequence of events as they appear on the EBAT device display.

⇒**Refer to Data Entry and Test Sequence.**

Appendix 2A

7. Retain all printouts generated by the EBAT device with the DUI packet. (i.e. Error message printouts)

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⇒**Sign EBAT printout.**

⇒**All EBAT printouts (including error message printouts) must be maintained for two years plus the current year.**

Function Keys

F1: EBAT Printout

- Prints the last EBAT test record.
- Active when the Intoxilyzer 5000EN is in the Ready Mode and the printer buffer still contains the results of the last EBAT performed.

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⇒ **If the F2 key is pressed, the last EBAT can no longer be printed.**

Function Keys

F2: Print Simulator Log

- Prints the current simulator log.
- Active when the Intoxilyzer 5000EN is in the Ready Mode.
- When depressed, it clears the printer buffer. The F1 key will no longer print the last EBAT due to the printer buffer being cleared.

Function Keys

F5: Data Entry Return Key

- Returns the Intoxilyzer 5000EN to the Ready Mode when in a data entry operation.
- Is active only when in a data entry mode.

Function Keys

F6: Subject Non-Compliance Key

- Aborts the Test Sequence.
- Is active only from the end of the 2nd Air Blank until the end of the 2nd Breath Sample.

Used only when the subject belches, regurgitates, or intakes a foreign material into their nose or mouth before the successful completion of the second breath test.

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Not to be used as a Refusal.

Stand By Mode

The purpose the the Stand By mode is to extend the life of critical electronic components in the Intoxilyzer 5000EN. These include:

- ⇨ IR Source
- ⇨ Chopper Motor
- ⇨ Cooled IR Detector
- ⇨ External Breath Tube (heater tape)
- ⇨ Internal Breath Tube (heater tape)
- ⇨ Sample Chamber Heater Tape
- ⇨ Heat Simulator Vapor Tube (heater tape)
- ⇨ Cooling Fan

Stand By Mode

The power to the heater tapes is reduced during the Stand By mode. This allows the Sample Chamber, External Breath Tube, Internal Breath Tube, and Heated Simulator Tube to warm up quickly to their proper operating temperatures within ten minutes when the Start/Test Switch is depressed.

The Stand By mode is automatically entered whenever the instrument is in-active for 120 minutes.

Stand By Mode

Three indications that the instrument is in the Stand By Mode are:

- ⇨ The Intoxilyzer 5000EN display is blank.
- ⇨ The red LED below the Power On switch is lit.
- ⇨ The Guth 2100 Simulator displays ‘IDLE’.

Stand By Mode

To bring the Intoxilyzer 5000EN out of the Stand By mode and into the Ready mode, depress the Start/Test Switch.

The instrument will display the following message:

NOT READY

And perform a short air purge

Stand By Mode

The instrument will now display:

WARM UP PERIOD

XX:XX MST/MDT

Current Time

DATE XX/XX/XXXX

Current Date

Message repeats

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⇒**Message will repeat until the instrument has reached its proper operating temperature.**

Stand By Mode

The *'WARM UP'* period allows the Intoxilyzer 5000EN and Guth 2100 Simulator to warm up to their proper operating temperatures.

After the Warm Up period, the instrument will perform self diagnostic tests. These tests will ensure the Intoxilyzer 5000EN is ready to accurately perform Evidential Breath Alcohol tests.

Once all these tests have passed, the instrument will enter the Ready mode.

Diagnostic Tests

PROM CHECK

Ensures that the programs located in the CPU EEPROM are valid utilizing a checksum parity check.

PROM CHECK A2F2

XXXX identifies the revision level of the program.

RAM CHECK #

Checks each byte in the CPU RAM (Random Access Memory) for possible failures. "#" is a number indicating the portion of RAM currently being tested.

⇒PROM Check: Currently two revisions (1358.40 and 1358.43). By the end of 2008, all instruments will be upgraded to software revision 1358.43.

Diagnostic Tests

TEMP CHECK

Checks the temperature of the Sample Chamber to ensure it is between 45°C and 54°C.
If this test fails, the instrument will pause the Diagnostic Tests and display the current temperature of the Sample Chamber. Once the temperature is correct, the Diagnostic Tests will continue.

Diagnostic Tests

VER 75_2240 1744

Checks the following on the instrument.

⇒ The stability and range of the processor signal.

⇒ Stability of the Chopper Motor.

⇒ The auto calibration status (previous calibration data).

⇒ Slave processor serial number match. Compares the hardwired serial number located on the Motherboard to the last calibration data serial number.

⇒ Validity of the Slave Processor EEPROM program and the Slave RAM.

- ☞ ’75’ indicates the type of filter wheel (5 filters)
- ☞ ‘2240’ indicates the revision of software of the Slave Processor EEPROM.
- ☞ ‘1744’ indicates the last four numbers of the instrument’s serial number.

Diagnostic Tests

PRINTER CHECK

Tests the interface between the instrument and printer. Printer error information is displayed if detected. This error information will be displayed until the error is corrected (i.e. Printer offline, Out of Paper).

RTC CHECK

Checks the Real Time Clock for an invalid date or time format. If detected, 'CLOCK ERROR' will appear on the display. Correct the time and/or date in the instructor menu, option 'E'. Date format is XX/XX/XXXX. Time format is XX:XX, 24 hour clock.

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☞The RTC check does not check for correct time or date. It only checks for a valid time and date. (i.e. 2/30/2008 is not a valid date, 2401 hours is not a valid time.)

Diagnostic Tests

INTERNAL STD

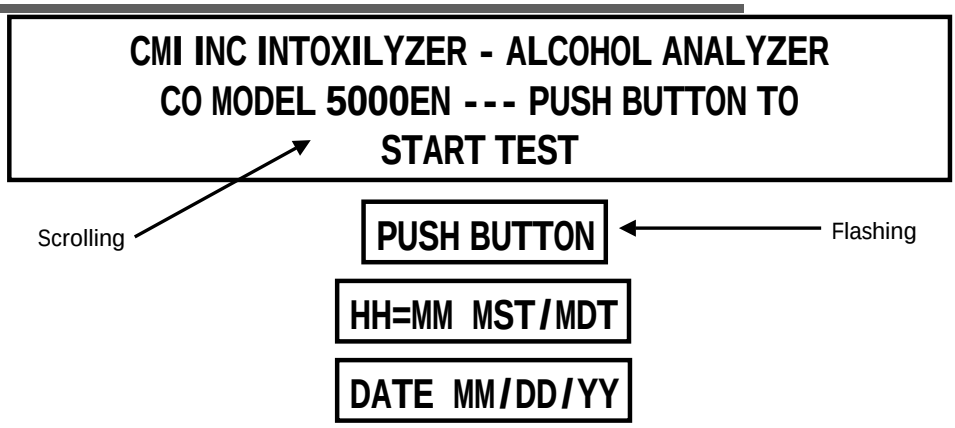
Checks the instrument's calibration using internal electronic standards that equate to alcohol values of **0.100**, **0.200**, and **0.300** BrAC.
These values must be within ±5% of the target values.
If one or more fall outside these limits, the instrument will abort the Diagnostic Tests and print out the Internal Standard that failed and its value.
The instrument will abort the diagnostic tests and enter the DVM mode.

Diagnostic Tests

DIAGNOSTIC OK

Indicates all tests have passed. These Diagnostic Test are the same tests that are performed via the Instructor's Menu, option 'L' and 'D'.

Ready Mode



The above messages will continue to repeat until the Start Test Switch is depressed or
after 120 minutes of inactivity and the
instrument will go into the Stand By Mode.

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☞To initiate the test sequence, depress the Start Test switch.

☞If the instrument is idle for 120 minutes, it will enter the Stand By Mode.

Data Entry

ENTRY	MESSAGE	MAX CHAR	TYPE	FORMAT	REQUIRED	PRINTED	STORED	NOTES
1	SUB LAST NAME =	15	Alpha/Numeric	None	Yes	Yes	Yes	
2	SUB FIRST NAME =	15	Alpha/Numeric	None	Yes	Yes	Yes	
3	SUB MIDDLE NAME =	15	Alpha/Numeric	None	Yes	Yes	Yes	
4	SUB DOB =	6	Numeric	MMDDYY	Yes	Yes	Yes	
5	SUB SEX=	1	Alpha/Numeric	M or F	Yes	Yes	Yes	
6	ZIP CODE =	5	Numeric	XXXXX	No	No	Yes	
7	SSN=	11	Numeric	XXX-XX-XXXX	No	No	Yes	
8	STATE OF ISSUE =	2	Alpha	None	No	No	Yes	
8A	SUB DRIV LIC =	15	Alpha/Numeric	XX-XXX-XXXX	No	No	Yes	Colorado
		15	Alpha/Numeric	XX-XXX-XXXX	No	No	Yes	Other
9	CRASH Y/N	1	Alpha	Y or N	Yes	No	Yes	
9A	INJURY Y/N	1	Alpha	Y or N	Yes	No	Yes	
10	ARREST OFFICER =	20	Alpha	None	Yes	Yes	Yes	
11	AGENCY =	15	Alpha	None	Yes	Yes	Yes	New Entry
12	OPER NAME =	20	Alpha	None	Yes	Yes	Yes	
13	AGENCY =	15	Alpha	None	Yes	Yes	Yes	New Entry
14	OPER CERT DATE =	6	Numeric	MMDDYY	Yes	Yes	Yes	See Notes
14A	OPER CERT DATE =	6	Numeric	MMDDYY	Yes	Yes	Yes	
15	CASE NO. =	15	Alpha/Numeric	None	No	Yes	Yes	New Entry
16	REVIEW DATA? Y/N	1	Alpha	Y or N	Yes	Yes	No	

Enter <SPACE> + 'INSTR' + <ENTER>

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☞Step 14: Instructor must enter Instructor Password. This extends the time between re-certifications from 180 days (operators) to 365 days (instructors).

☞Step 14A: Instructor enters last certification date. Instructors have 365 days between re-certifications.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Air Blank

At the start of the of the first Air Blank, the sequence number is incremented and the instrument displays:

AIR BLANK . . . . . .

The dots indicate the instrument is performing the Reference Channel Stability test. This internal test checks the stability of all the electronic/electrical components that are utilized in determining Breath Alcohol results. They are referred to as Reference Dots.

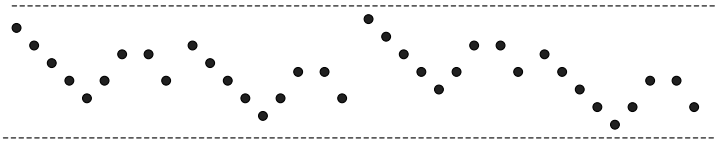
Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

Reference Stability Test

During this test, 32 reference averages (each reference average consists of 14 reference channel readings) are taken and compares for excessive positive or negative drift.

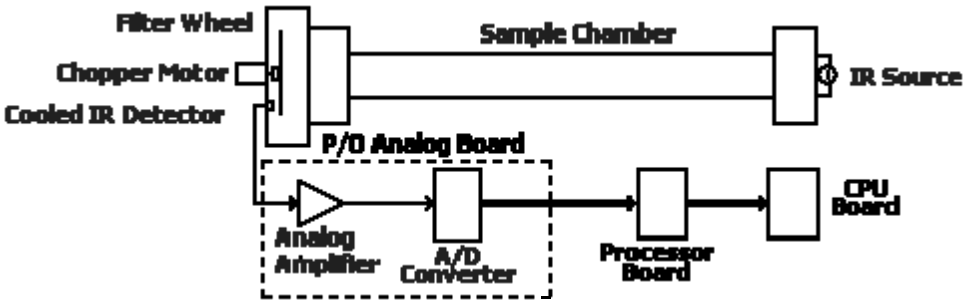
If an excessive drift is detected, the error message 'Stability Fail' will be displayed and the test aborted.



Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

Reference Stability Test



All of the above components are tested to ensure their stability. On the filter wheel, only the reference channel filter is tested. This test ensures the reproducibiliy of the Breath Alcohol (BrAC) test results.

Rev. 2.08 10-31

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Air Blank (continued).

Instrument will display the current time and date and the air pump will turn on. While the air pump is on, room air is circulated through the Sample Chamber. The length of time the pump is on varies depending on were in the Test Sequence the Air Blank occurs.

XX:XX MST/MDT

DATE XX/XX/XXXX

AIR BLANK

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Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Air Blank (continued).

At the end of the Air Blank, a new zero reference value will be determined. This is accomplished by comparing the last Air Blank reading, which was stored, to the current Air Blank reading. When they are equal, the air pump will be turned off.

The instrument will now check of any ambient and interferent conditions. If either of these interferents are detected, the appropriate error message will be generated and the instrument will abort the test sequence.

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☞The Zero Reference value equals to the X value in the Beer-Lambert Law.

☞Ambient condition would indicate the presents of ethanol in the sample chamber.

☞Interference condition would indicate the presents of acetone and/or toluene.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Air Blank (continued).

When all internal results are acceptable, the instrument will display the new Air Blank value and the current zero reference value will be stored.

AIR BLANK .000

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Air Blank (continued).

Functions of an Air Blank:

1. Purge: Circulates room air through the sample chamber. Length of time varies depending on were in the test sequence the Air Blank occurs.
2. Establish new zero reference value. The current zero reference is compared to the previously stored zero reference. The air pump remains 'ON' until the two values are equal. Zero reference = X in the Beer-Lambert Law.
3. Checks the sample chamber for any ambient or interferent conditions.
4. Displays the results of the Air Blank (.000) and stores the new zero reference value.

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☞All seven Air Blanks in the test sequence perform the same functions as described above.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st CAL Check

Reference Dots

CAL. CHECK

Pump On

The standard simulator solution vapor is circulated through the sample chamber and back to the simulator. This closed loop circulation allows for calibration checks to be performed more then two hundred times without a significant drop in its value (<3%).

Rev. 2.08 10-36

☞Refer to pages 28 thru 30 for an explanation of the reference stability test (reference dots).

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st CAL Check (continued)

While the standard simulator solution vapor is being circulated through the sample chamber, the instrument is looking for a level slope. Once this level slope is detected, the air pump will turn off.

The instrument will check for any interferent conditions within the sample chamber.

Finally the instrument will determine the results of the CAL Check utilizing the Beer-Lambert Law (BrAC = X – Y).

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st CAL Check (continued)

The results of the CAL Check is must fall within a range of 0.090 BrAC to 0.110 BrAC. If the CAL Check result is outside these limits, an 'Extern STD Fail' error message will be generated and the test sequence will be aborted.

If all results are acceptable the instrument will display the CAL Check reading.

CAL. CHECK .###

Were .### is the CAL Check reading.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st CAL Check (continued)

Functions of the CAL Check:

1. Perform a wet bath check of the standard simulator solution.
2. Check for interferent conditions (acetone, toluene, and other common alcohols).
3. Determine the BrAC of the CAL Check.
4. Check the results to ensure it falls within a range of 0.090 BrAC and 0.110 BrAC. Target value of the standard simulator solution = 0.100.

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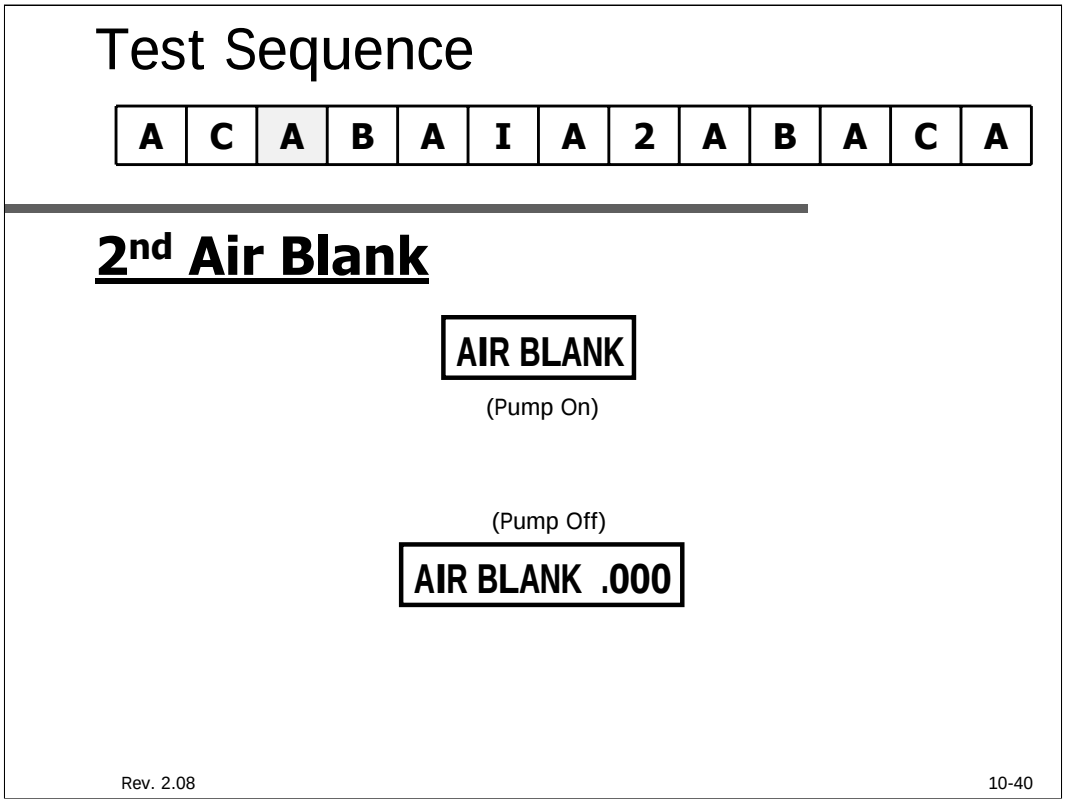
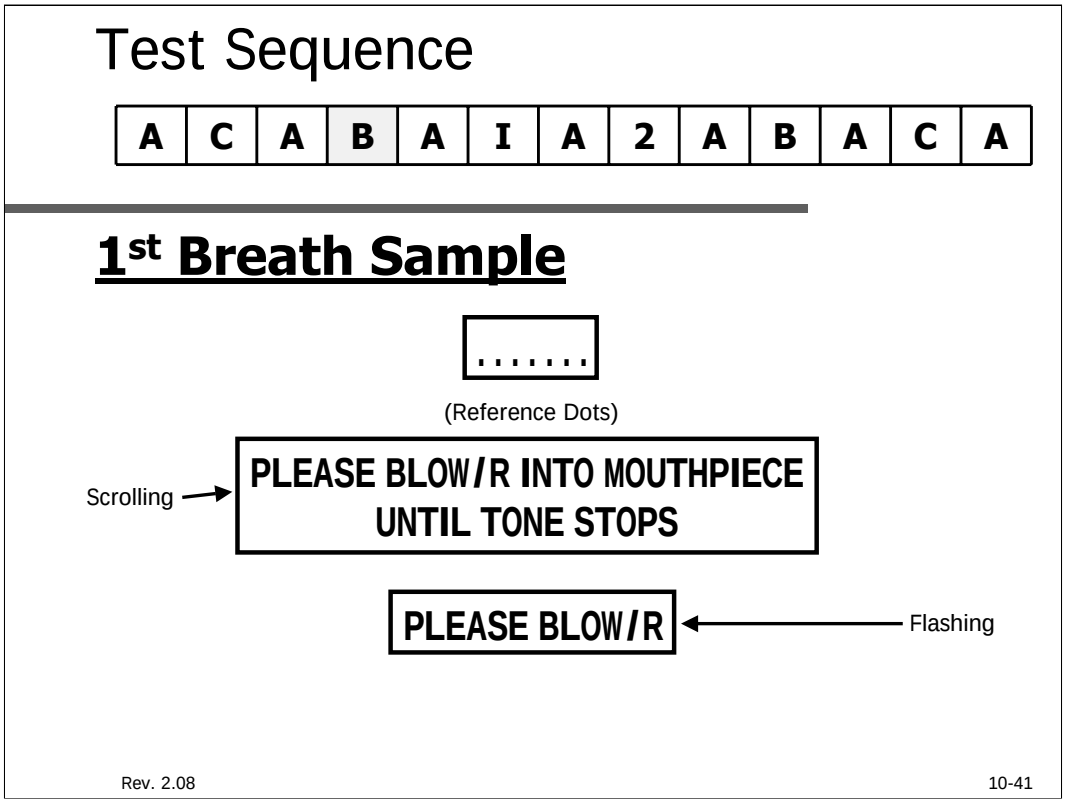
☞The above functions are also perform during the 2nd CAL Check.



☞The functions of the 2nd Air Blank is the same as the 1st Air Blank (refer to page 34). The only difference is the 1st Air Blank performs the Reference Stability test. All the other Air Blank do not.

☞This zero reference value (X) will be use to determine the 1st Breath Sample value.



The instrument has up to this point:

1. Ensured there are no Ambient or Interferent conditions existing in the room air (2 Air Blanks).
2. Checked the stability of the reference channel (3 times).
3. Verified calibration is within acceptable range (CAL CHECK).

THE INTOXILYZER 5000EN IS READY TO PERFORM THE FIRST BREATH TEST

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Breath Sample (continued)

DEFICIENT SAMPLE: At this time the subject has approximately 3 minutes to provide the instrument with a valid breath sample. If not, a 'DEFICIENT SAMPLE' error will occur and the test will be aborted.

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→The Deficient Sample three minute time limit occurs for both Breath Samples.

Test Sequence

A	**C**	**A**	**B**	**A**	**I**	**A**	**2**	**A**	**B**	**A**	**C**	**A**

1st Breath Sample (continued)

REFUSAL:

1. As long as 'PLEASE BLOW/R' is displayed, the operator has the option to do a refusal. Type 'R' and <ENTER> on the keyboard. The instrument will display the error message 'REFUSED' and abort the test.

2. Used for subjects who refuse to cooperate in providing a valid breath sample.

3. This option is only available until the subject blows hard enough to activate the pressure transducer. The '/R' will disappear and the REFUSAL option is no longer available.

A subject that will not provide a valid breath samples can have their license immediately revoked for up to one year.

Rev. 2.08 10-43

→The Refusal option is available during the 1st and 2nd Breath Sample.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Breath Sample (continued)

PLEASE BLOW

PLEASE BLOW: Once the subject blows hard enough to activate the pressure transducer, this message will appear on the display and a continuous tone will sound indicating that the minimum flow rate is being met. The ability to perform a REFUSAL is no longer available to the operator.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Breath Sample (continued)

PLEASE BLOW ← Will not flash while the subject is blowing

PLEASE BLOW: Once the subject blows hard enough to activate the pressure transducer, this message will appear on the display and a continuous tone will sound indicating that the minimum flow rate is being met. The ability to perform a REFUSAL is no longer available to the operator.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Breath Sample (continued)

Valid Breath Sample: **There are four requirements for a successful breath sample. They are:**

1. **Flow Rate**
2. **Time**
3. **Volume**
4. **Slope**

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Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Breath Sample (continued)

Valid Breath Sample

1. Flow Rate: The subject must blow into the instrument at a rate of ≥.15L / second. This minimum flow rate must be maintained until all the requirements are met. If at any time the flow rate drops below this value, before the requirements are met, the instrument will start the breath requirements over. A tone will sound while flow rate is above the minimum requirement.
2. Time: The subject must blow (at an acceptable flow rate) for a minimum of 1 second.

Test Sequence

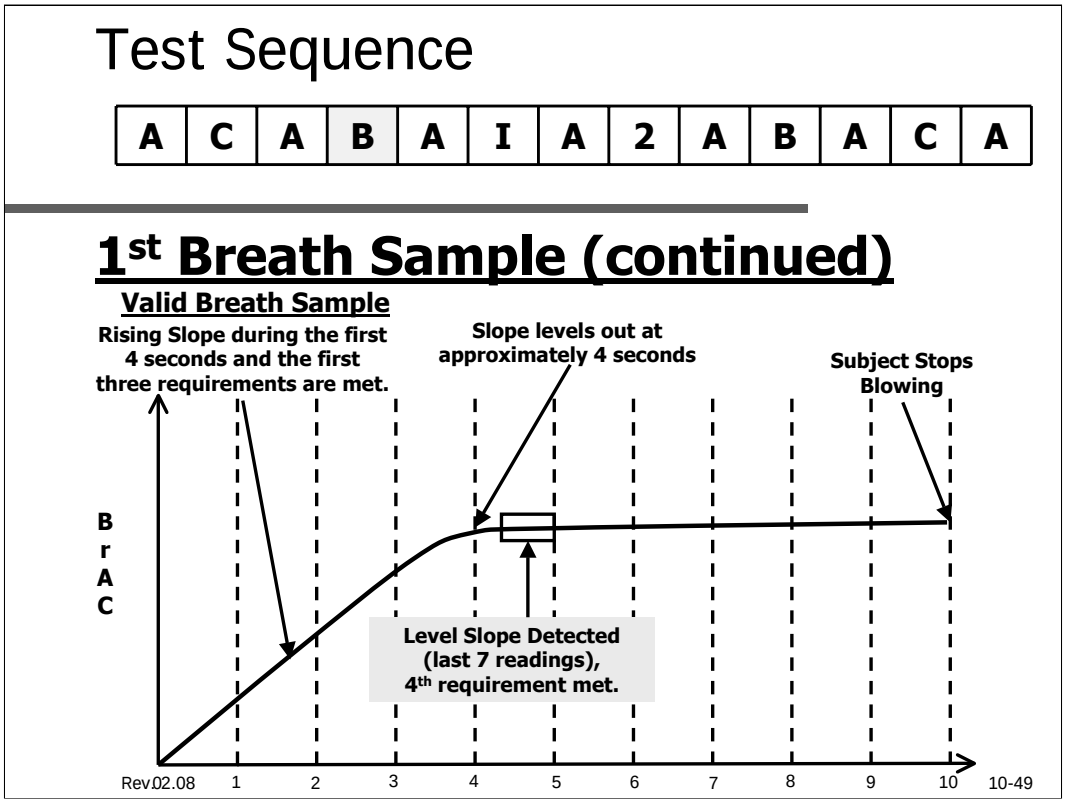
A	C	A	B	A	I	A	2	A	B	A	C	A

1st Breath Sample (continued)

Valid Breath Sample

3. Volume: The subject must provide (at an acceptable flow rate) a minimum of 1.1 Liters (L) of breath. (Flow Rate * Time.)

4. Slope: Once the first three requirements are met, the instrument will determine the slope of the breath sample. It bases its calculations on the last seven readings on the slope (updated every 100 msec). When all of these 7 points fall within a +≤ 3.2% / second change and a -≤1.6% / second change, compared to the average, the breath sample sequence is complete (Level Slope).



→ Valid Breath Sample Requirement

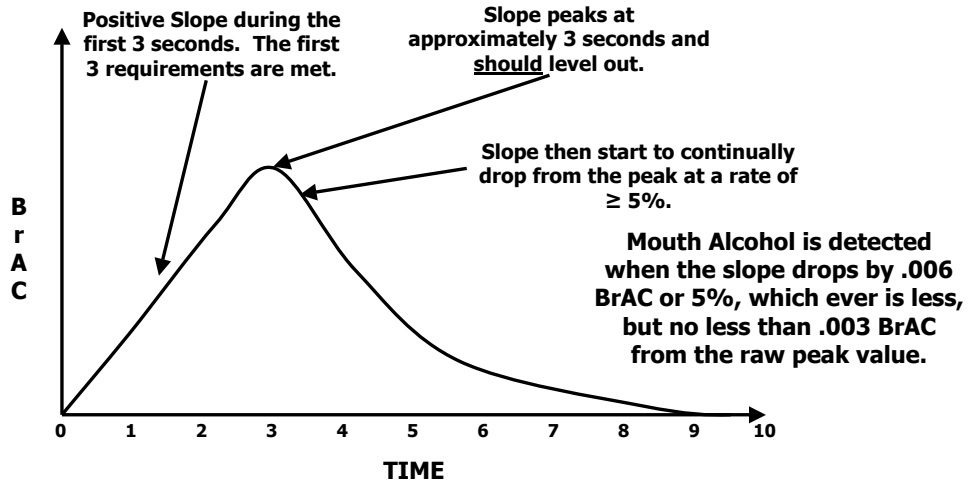
1. Flow Rate
2. Time
3. Volume
4. Slope

→ In the above example, the first three requirement of a valid breath sample have been met.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

Mouth Alcohol:



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Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

1st Breath Sample (continued)

Instrument checks for interferent conditions.
(Acetone, Toluene, and other common alcohol.)

NOTE: If an interferent condition is detected, the instrument will display INTERF DETECTED. After a few seconds, if the instrument displays SUBTRACTED, it indicates to the operator that the interferent was Acetone.

Acetone has similar effects on the human brain as does Ethanol. A diabetic with an improper blood sugar level can naturally produce Acetone in their body, and in some cases exhibit the same mannerism as an individual who is intoxicated.

The subject needs immediate medical assistance!

Test Sequence

A	**C**	**A**	**B**	**A**	**I**	**A**	**2**	**A**	**B**	**A**	**C**	**A**

1st Breath Sample (continued)

(Subject Stops Blowing after Meeting all Four Requirements.)

The instrument now calculates the BrAC of the subject's breath contained in the sample chamber based upon the Beer-Lambert law.

'Absorption is directly proportional to concentration.'

The following basic formula is used for this calculation:

X – Y = Alcohol Concentration (BrAC)

Were:

X = Previous Air Blank value (IR Concentration).
Y = Current sample chamber value (IR Concentration).

Results are not displayed at this time.

Test Sequence

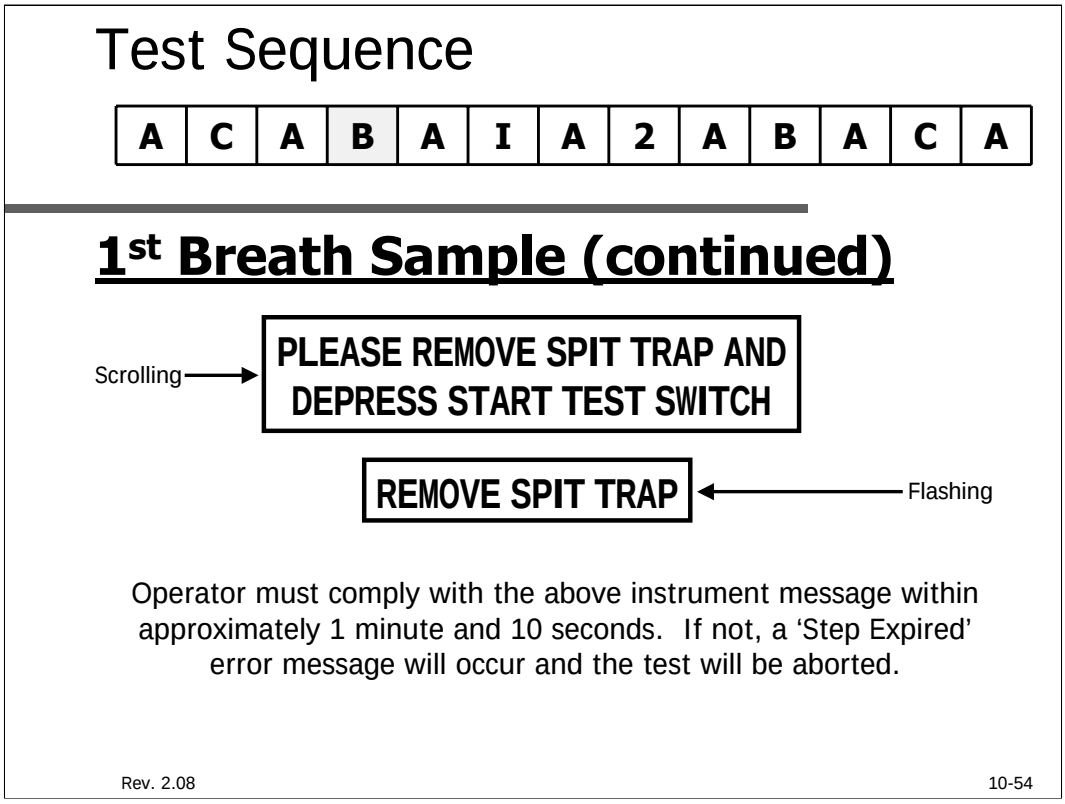
A	C	A	B	A	I	A	2	A	B	A	C	A

1st Breath Sample (continued)

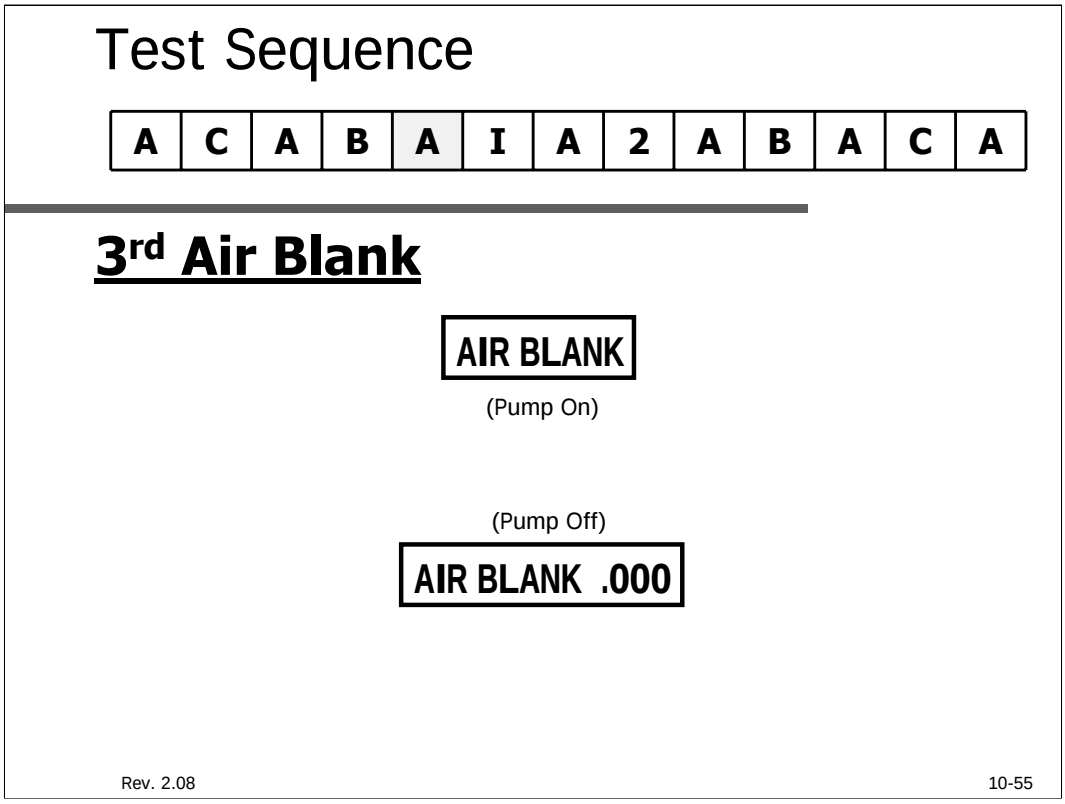
SUBJECT TEST . - - -

The instrument will not display the results of the breath test.

This helps in ensuring the subject will provide a second valid breath sample later in the test sequence.



→NOTE: At the completion of the first breath sample, the F6 (non-compliance) key becomes active.



☞The functions of the 3rd Air Blank is the same as the 1st Air Blank (refer to page 34). The only difference is the 1st Air Blank performs the Reference Stability test. All the other Air Blank do not.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

Internal Standard Test

INTERNAL STD

1. **This is a check of the instrument's calibration and linearity using internal electronics values that equate to BrAC values of 0.100, 0.200, and 0.300. The results of all three Internal Standards must be within +/- 5% of the target values.**
2. **The addition of this step brackets the subject's 1st and 2nd breath test with an instrument calibration and linearity check.**
3. **Will reduce challenges to the breath test accuracy by demonstrating the instrument was working properly after and before the subject provided the two breath samples.**
4. **Same Internal Standards test that is performed during the Diagnostic Checks.**

INTERNAL PASS

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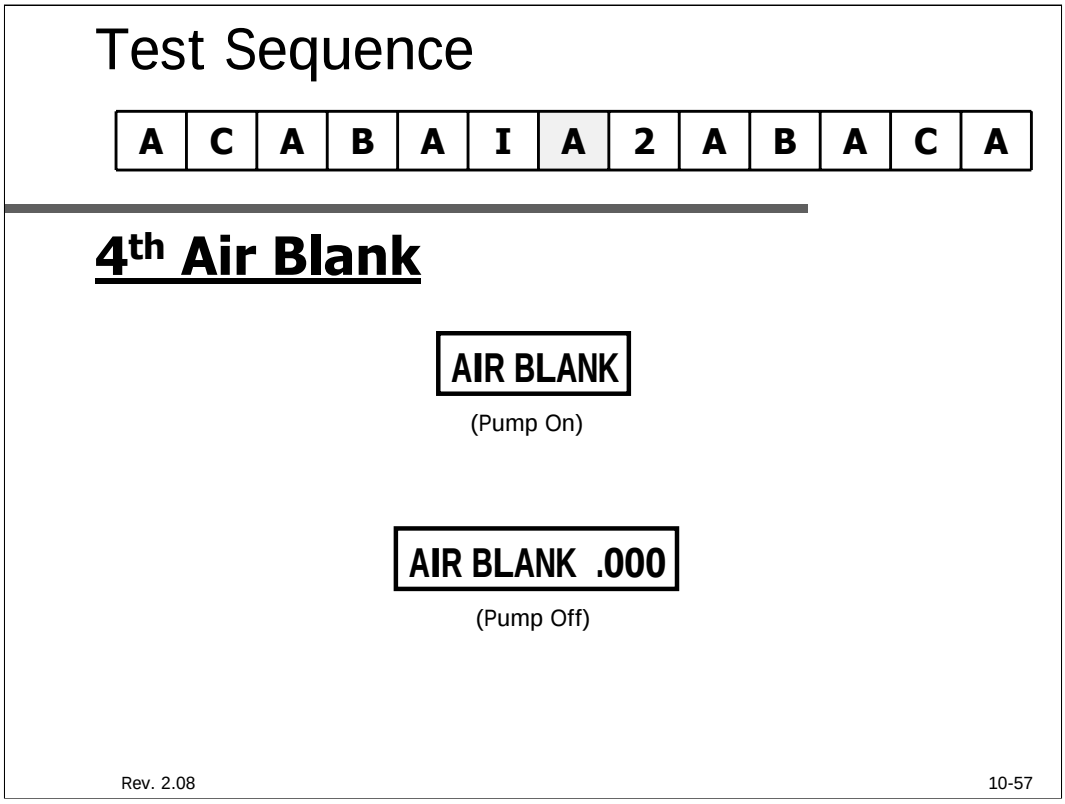
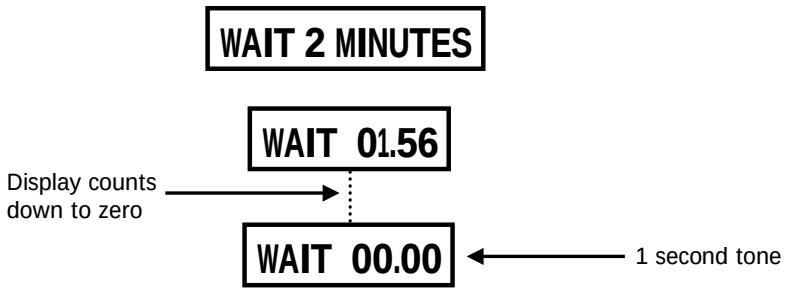


→The functions of the 4th Air Blank is the same as the 1st Air Blank (refer to page 34). The only difference is the 1st Air Blank performs the Reference Stability test. All the other Air Blank do not.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

2 Minute Wait



Allows the subject's lungs to equilibrate to the 1:2100 ratio based on Henry's Law.

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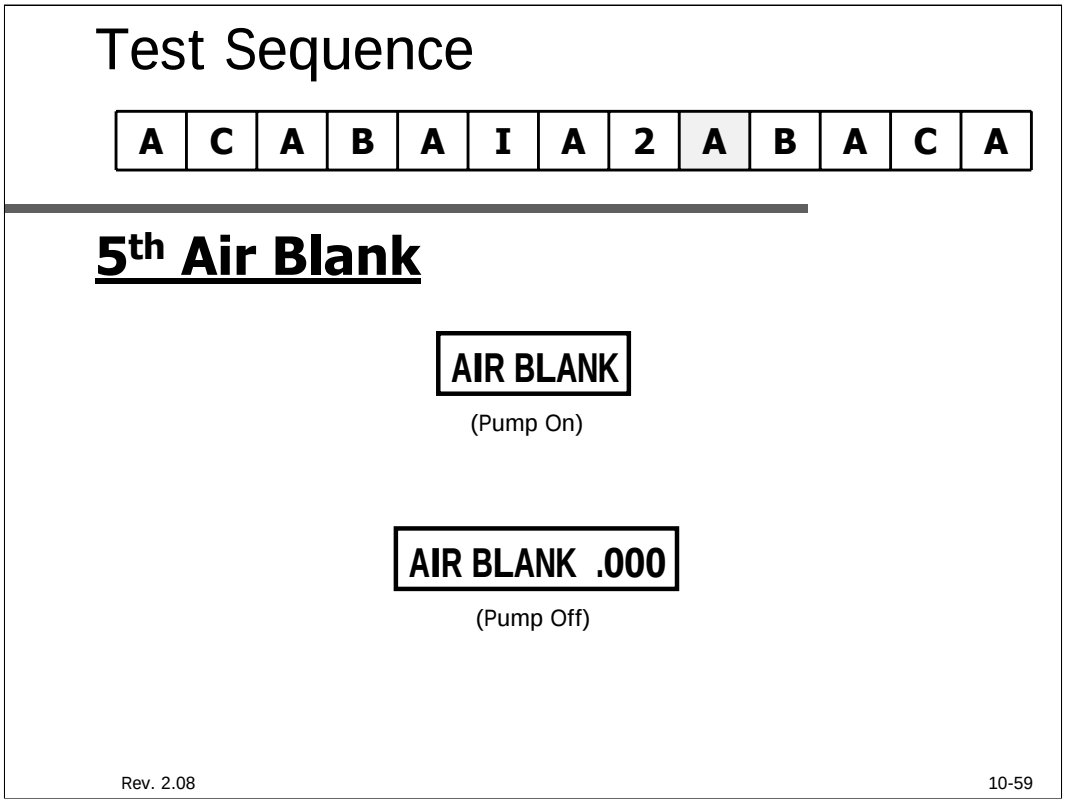
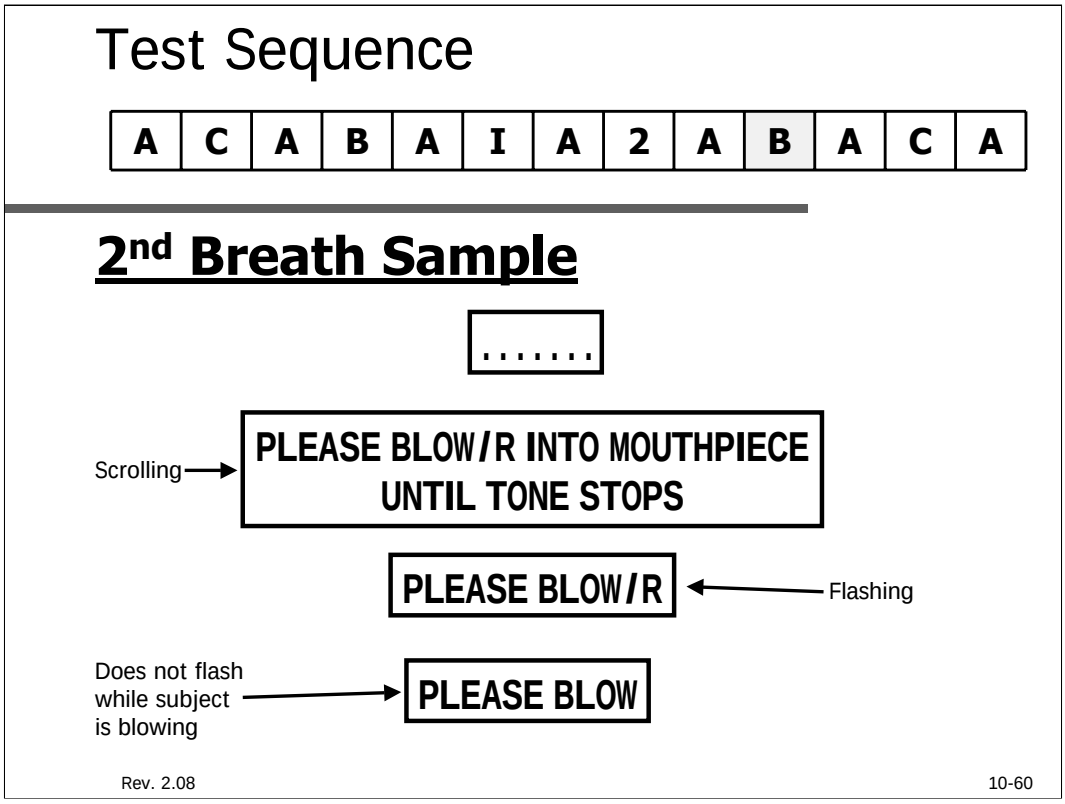
→At the end of the 2 minute wait period, there will be a one second tone indicating the instrument is ready to continue the Test Sequence.

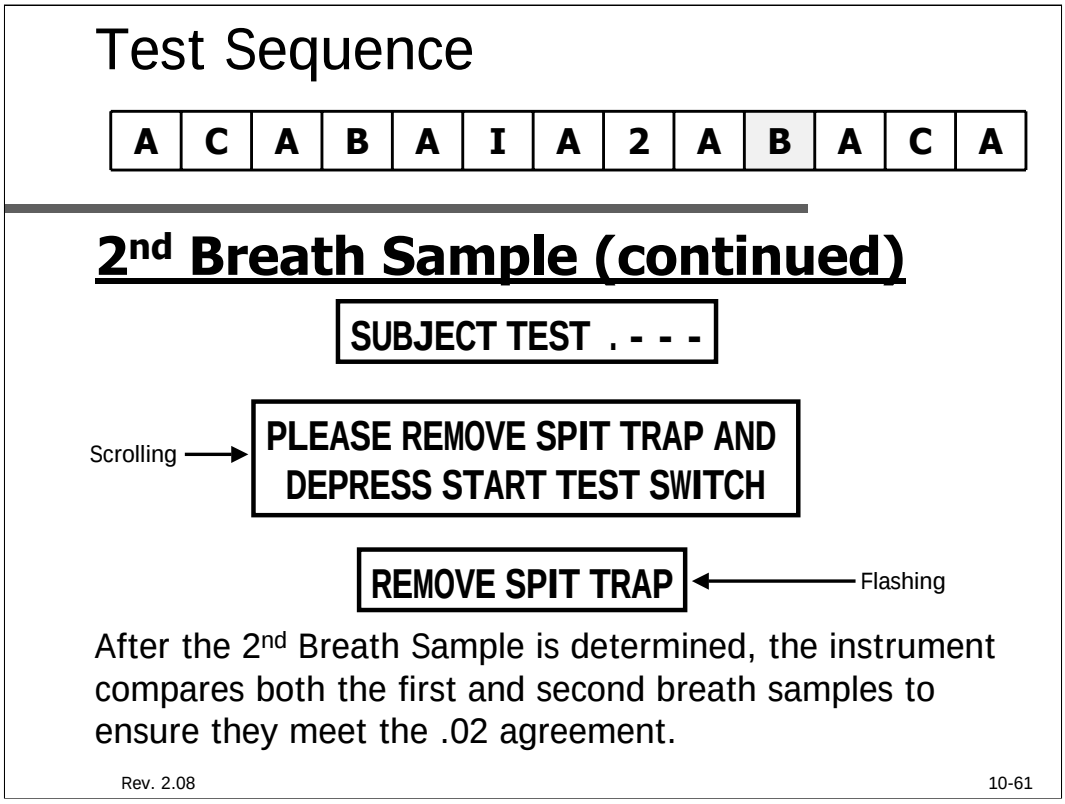


→The functions of the 5th Air Blank is the same as the 1st Air Blank (refer to page 34). The only difference is the 1st Air Blank performs the Reference Stability test. All the other Air Blank do not.

→The zero reference valve (X) of the 5th Air Blank will be use in the determination of the 2nd Breath Sample.

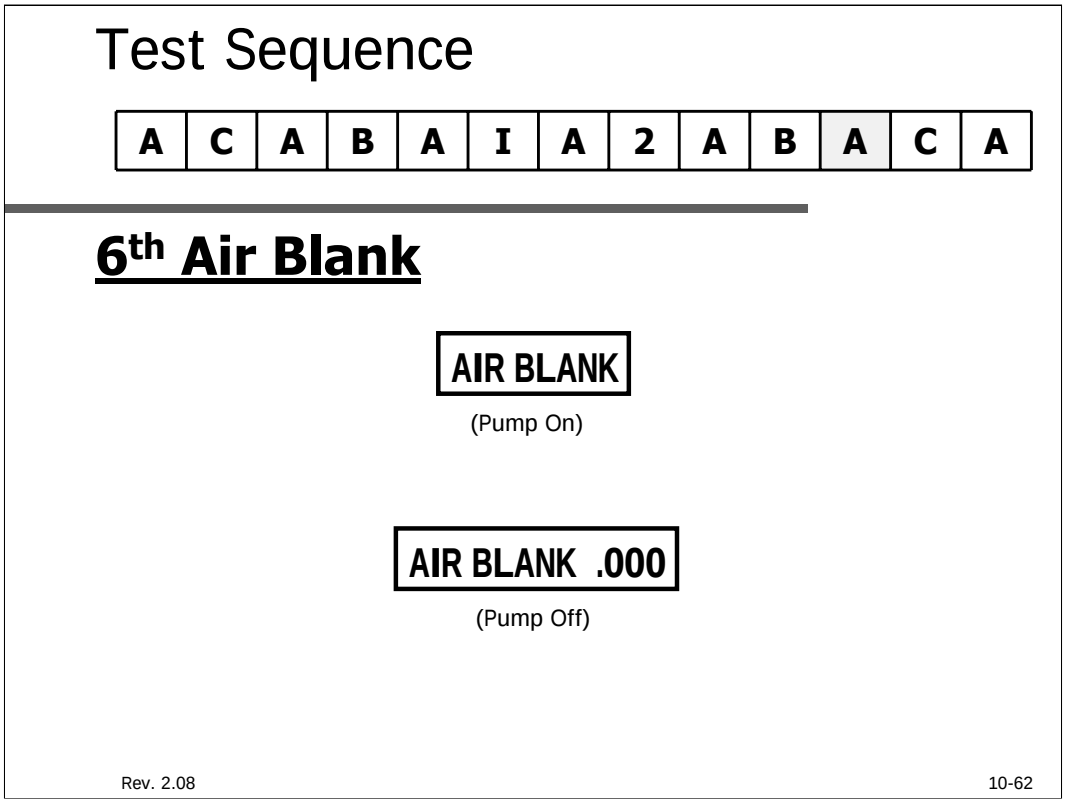


→Functions of the 2nd Breath Sample is the same as the 1st Breath Sample (refer to pages 40 thru 53).



→At the end of the 2nd Breath Sample, the F6 (non-compliance) key is de-activated.

→If the first and second breath sample are not within 0.02 of each other, the 'NO .02 AGREEMENT' error will be generated.



→The functions of the 6th Air Blank is the same as the 1st Air Blank (refer to page 34). The only difference is the 1st Air Blank performs the Reference Stability test. All the other Air Blank do not.

→The zero reference valve (X) of the 6th Air Blank will be use in the determination of the 2nd CAL Check.

Test Sequence

A	C	A	B	A	I	A	2	A	B	A	C	A

2nd CAL Check

CAL CHECK

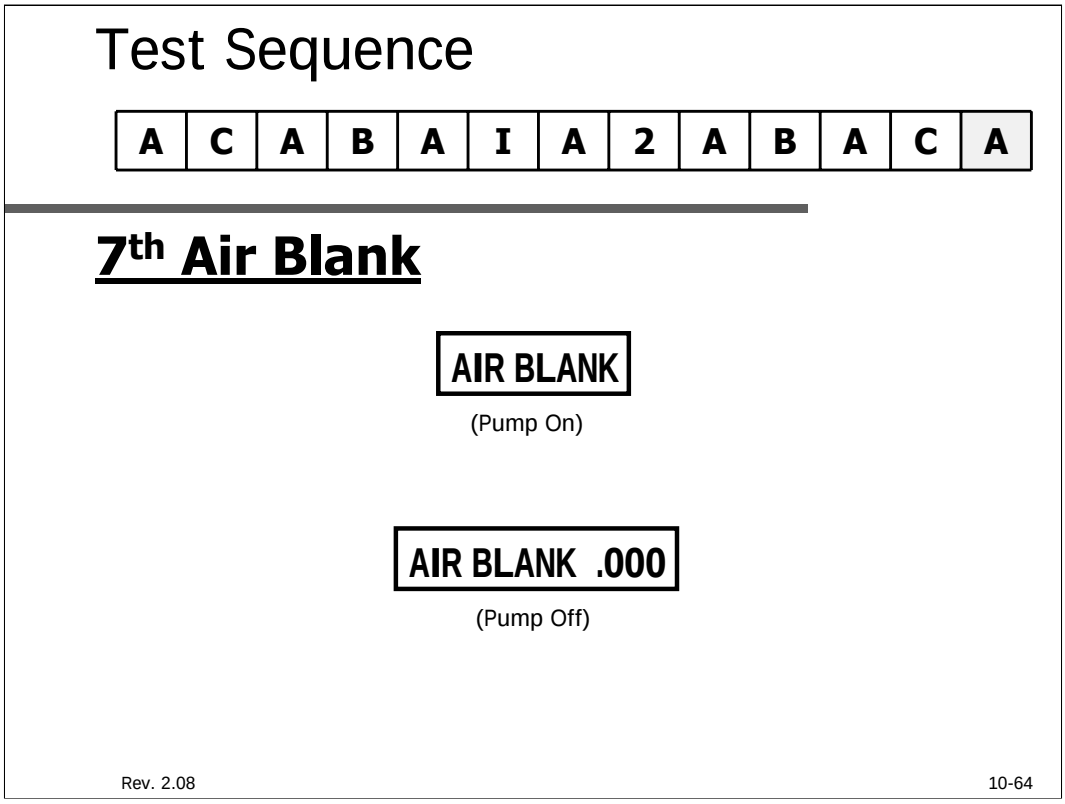
(Pump On)

CAL CHECK .###

(Pump Off)

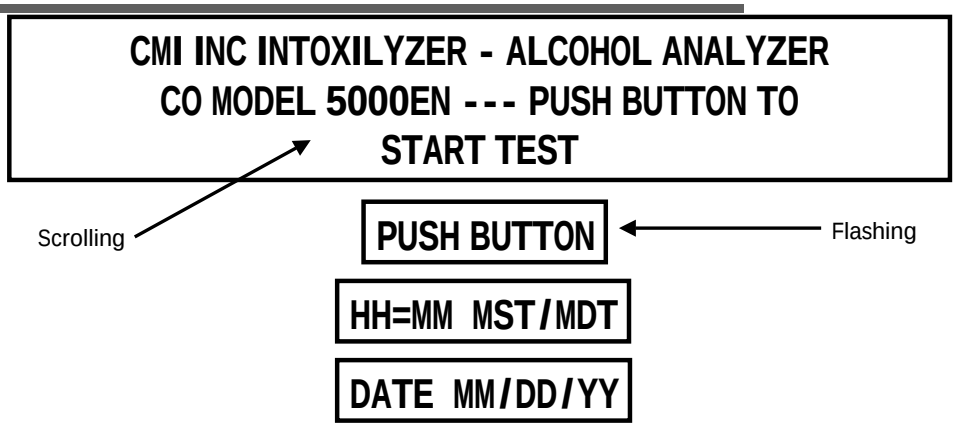
At the end of the 2nd CAL Check, the 2nd CAL Check is compared to the 1st CAL Check and must be within 10% of the first. If not, a 'No Calibration Correlation' error is generated.

→The 2nd CAL Check performs the same functions as the 1st CAL Check (refer to pages 35 thru 38).



→The functions of the 7th Air Blank is the same as the 1st Air Blank (refer to page 34). The only difference is the 1st Air Blank performs the Reference Stability test. All the other Air Blank do not.

Ready Mode



The above messages will continue to repeat until the Start Test Switch is depressed or
after 120 minutes of inactivity and the
instrument will go into the Stand By Mode.

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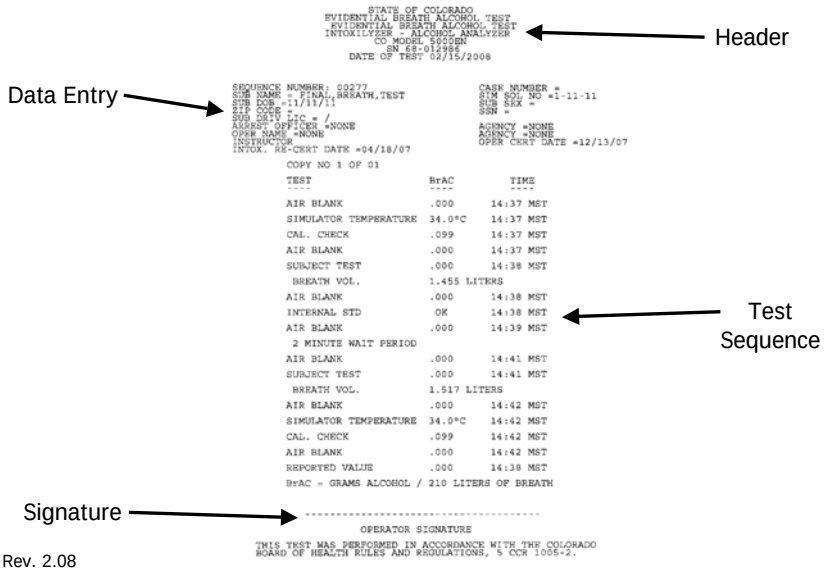
☞To initiate the test sequence, depress the Start Test switch.

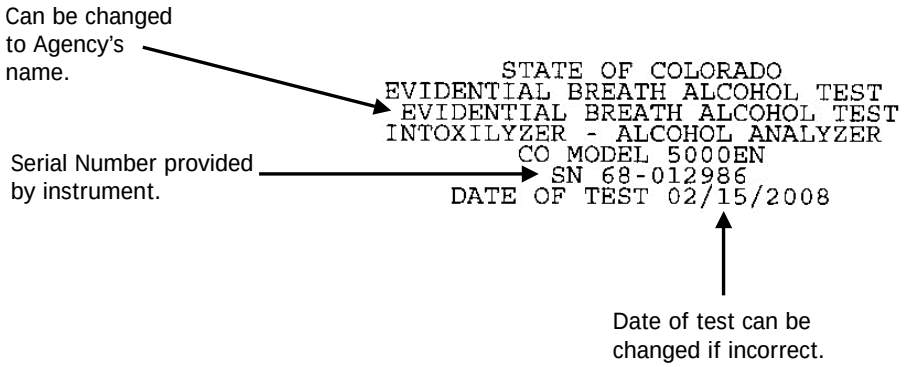
☞If the instrument is idle for 120 minutes, it will enter the Stand By Mode.

EBAT PRINT OUT



EBAT PRINT OUT

Header



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→To change the third line of the header, enter the Instructor Menu and select option 'E'.

→To change the date, enter the Instructor Menu and select option 'E'.

→All other information contained in the header is hardwired.

EBAT PRINT OUT

Data Entry

SEQUENCE NUMBER: 00277
SUB NAME = DOE, JOHN, Q
SUB DOB = 11/24//90
ZIP CODE = 99999
SUB DRIV LIC = CO / 999-99-9999
OPER NAME = SMITH

INTOX. RE-CERT DATE = 04/18/07

CASE NUMBER = 01724
SIM SOL NO = 11-11-11
SUB SEX = M
SSN = 999-99-9999

AGENCY = CDPHE
AGENCY = CDPHE
OPER CERT DATE = 12/11/07

COPY NO X OF XX

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→The following information provided by the Intoxilyzer:

Sequence Number **Sim Sol No**
Intox Re-Cert Date

→Information provided during data entry:

Case Number **Sub Name**
Sub DOB **Sub Sex**
Zip Code **SSN**
Sub Driv Lic **Arrest Officer**
Arrest Officer Agency **Oper Name**
Oper Agency **Operator Cert Date**
Copy No X of X

→Number of copies printed can be change by the Instructor Menu, option 'E'.

EBAT PRINT OUT

Test Sequence

Displays the test sequence along with the results of each step. Includes simulator temperatures and breath volumes.

Times of the completion of each step are also printed.

Reported value equals the lesser of the two independent breath samples.

Rev. 2.08

TEST	BrAC	TIME
AIR BLANK	.000	14:37 MST
SIMULATOR TEMPERATURE	34.0°C	14:37 MST
CAL. CHECK	.099	14:37 MST
AIR BLANK	.000	14:37 MST
SUBJECT TEST	.000	14:38 MST
BREATH VOL.	1.455 LITERS	
AIR BLANK	.000	14:38 MST
INTERNAL STD	OK	14:38 MST
AIR BLANK	.000	14:39 MST
2 MINUTE WAIT PERIOD		
AIR BLANK	.000	14:41 MST
SUBJECT TEST	.000	14:41 MST
BREATH VOL.	1.517 LITERS	
AIR BLANK	.000	14:42 MST
SIMULATOR TEMPERATURE	34.0°C	14:42 MST
CAL. CHECK	.099	14:42 MST
AIR BLANK	.000	14:42 MST
REPORTED VALUE	.000	14:38 MST
BrAC = GRAMS ALCOHOL / 210 LITERS OF BREATH		

→The reported value displays the results and the completion time for the lesser of the two breath tests.

EBAT PRINT OUT

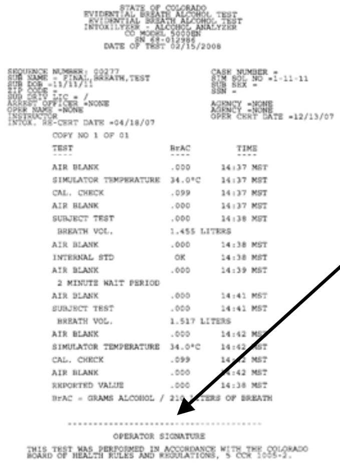
Signature

Operator must sign the signature line of the EBAT printout

OPERATOR SIGNATURE

THIS TEST WAS PERFORMED IN ACCORDANCE WITH THE COLORADO BOARD OF HEALTH RULES AND REGULATIONS, 5 CCR 1005-2.

THE COMPLETED EBAT



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVIDENTIAL BREATH ALCOHOL TEST
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012986
DATE OF TEST 02/15/2008

SEQUENCE NUMBER: 00277
SUB NAME = FINAL,BREATH,TEST
SUB DOB =11/11/11
ZIP CODE =
SUB DRIV LIC = /
ARREST OFFICER =NONE
OPER NAME =NONE
INSTRUCTOR
INTOX. RE-CERT DATE =04/18/07

CASE NUMBER =
SIM SOL NO =1-11-11
SUB SEX =
SSN =

AGENCY =NONE
AGENCY =NONE
OPER CERT DATE =12/13/07

COPY NO 1 OF 01

TEST	BrAC	TIME
AIR BLANK	.000	14:37 MST
SIMULATOR TEMPERATURE	34.0°C	14:37 MST
CAL. CHECK	.099	14:37 MST
AIR BLANK	.000	14:37 MST
SUBJECT TEST	.000	14:38 MST
BREATH VOL.	1.455 LITERS	
AIR BLANK	.000	14:38 MST
INTERNAL STD	OK	14:38 MST
AIR BLANK	.000	14:39 MST
2 MINUTE WAIT PERIOD		
AIR BLANK	.000	14:41 MST
SUBJECT TEST	.000	14:41 MST
BREATH VOL.	1.517 LITERS	
AIR BLANK	.000	14:42 MST
SIMULATOR TEMPERATURE	34.0°C	14:42 MST
CAL. CHECK	.099	14:42 MST
AIR BLANK	.000	14:42 MST
REPORTED VALUE	.000	14:38 MST

BrAC = GRAMS ALCOHOL / 210 LITERS OF BREATH

OPERATOR SIGNATURE

THIS TEST WAS PERFORMED IN ACCORDANCE WITH THE COLORADO BOARD OF HEALTH RULES AND REGULATIONS, 5 CCR 1005-2.

1. Sign the completed Appendix 2A.
2. Sign EBAT printout.

QUESTIONS

1. Appendix 2A Review
2. Functions Key
3. Stand By Mode
4. Warm Up Period
5. Diagnostic Tests
6. Ready Mode
7. Test Sequence (ACABAIA2ABACA)
8. EBAT Print Out

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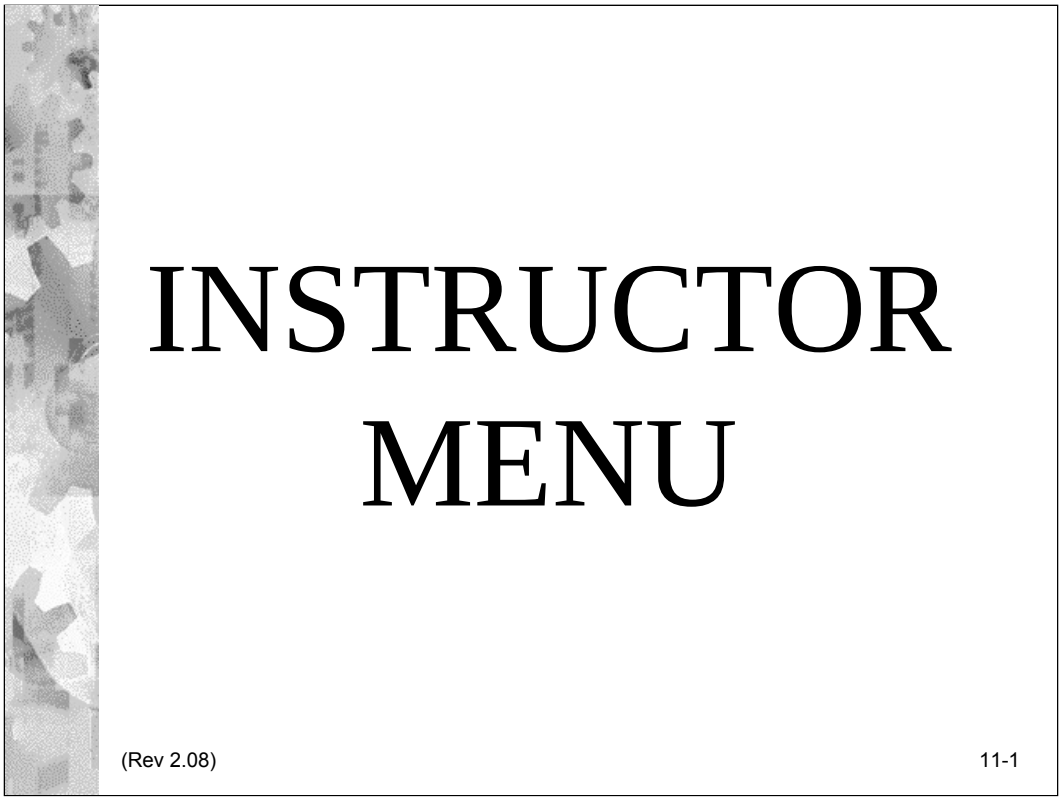
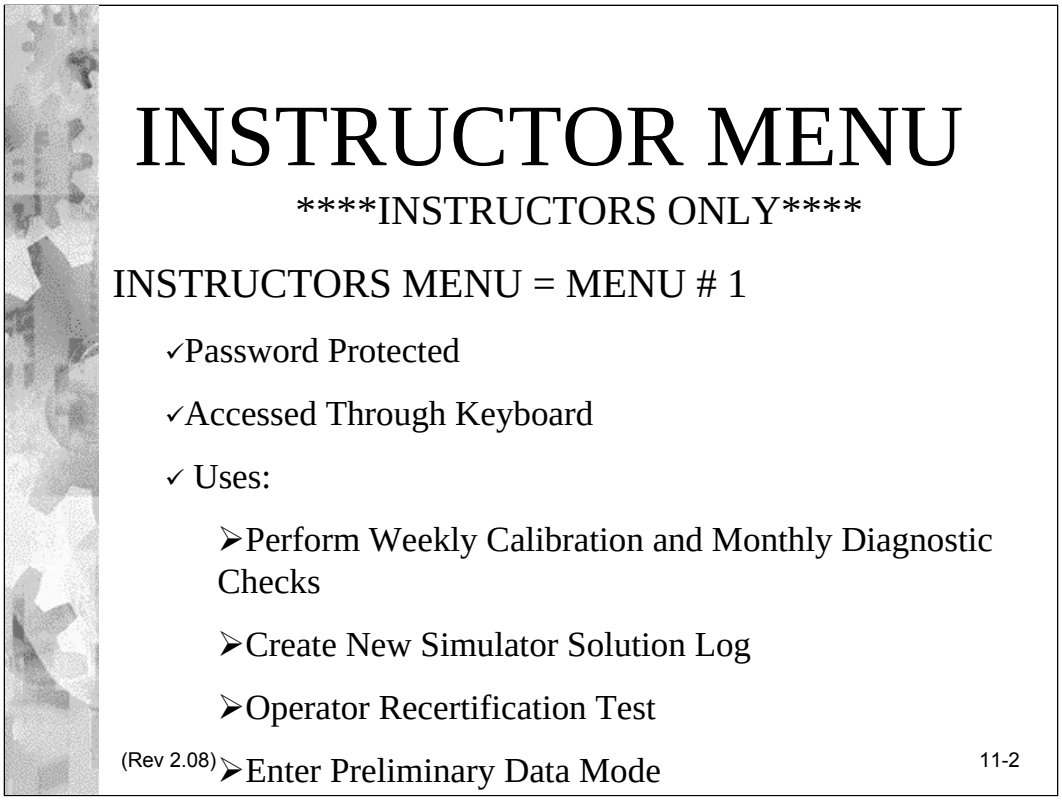
→ **Be able to describe the following:**

Describe what comprises a Complete EBAT (Evidential Breath Alcohol Test).

Describe the operation of the Intoxilyzer 5000EN and what occurs during each step of the Test Sequence.


INSTRUCTOR
MENU
(Rev 2.08)
11-1



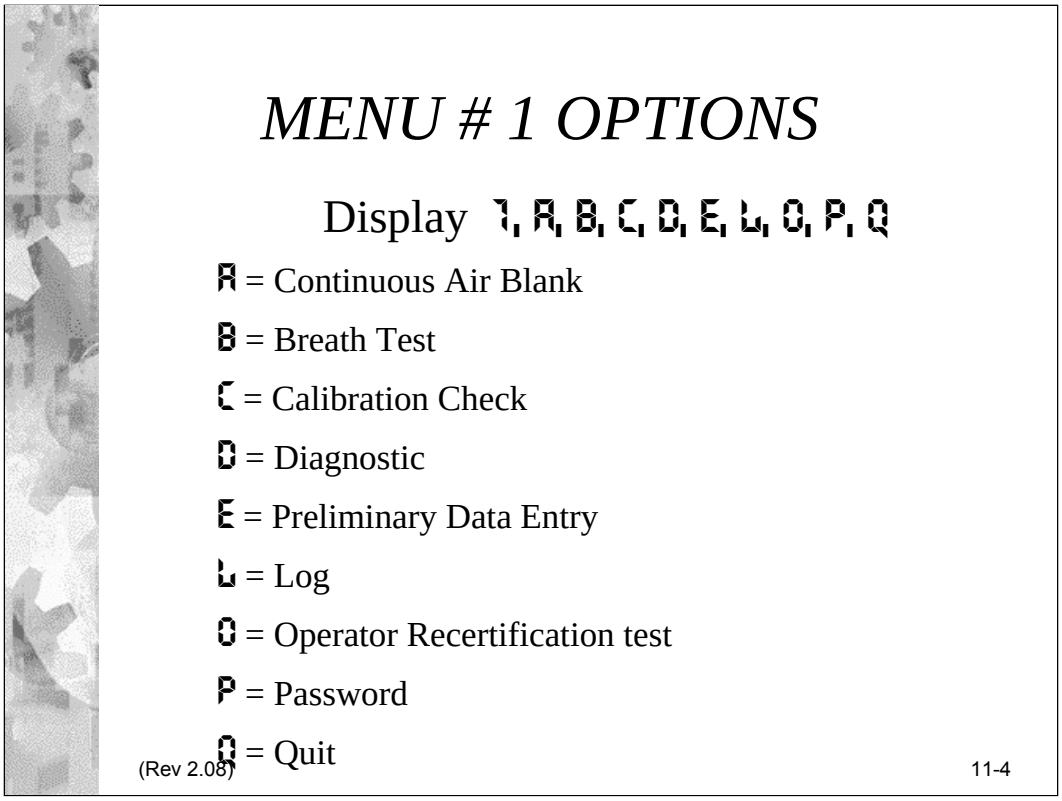
1. **<u>Menu # 1 is for Instructors only</u>**. There are 3 menus for this instrument. Menus # 2 and # 3 are for CDPHE Laboratory use.

2. All three menus are password protected.

3. Menu # 1 is used to perform weekly calibration, monthly diagnostic checks, Log Access and Operator Re-certification Test on the instrument.

TO ACCESS INSTRUCTOR MENU # 1

- ✓ Press ESC key twice in rapid succession during idle mode
- ✓ Display will show PASSWORD =
- ✓ Instructor password is ?
  displayed as "X" on screen
- ✓ Hit Enter key



1. Each of these options may be accessed by typing the LETTER and ENTER.

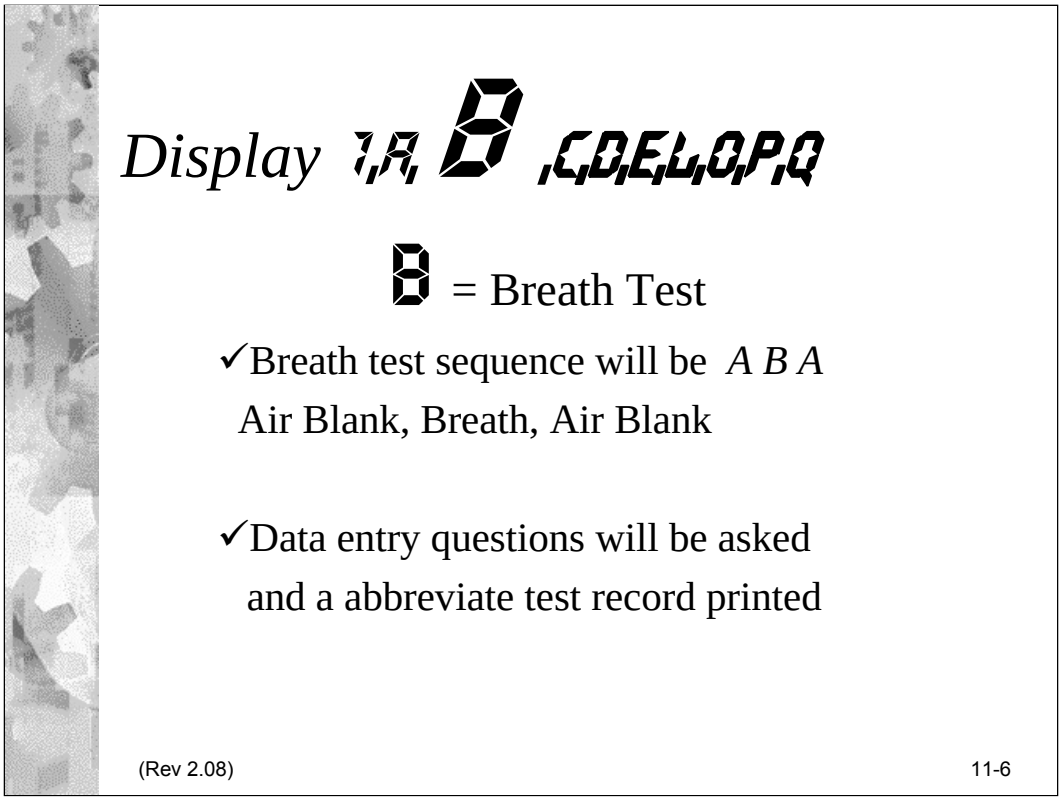
2. Most of the options may be accessed without re-entering the password.

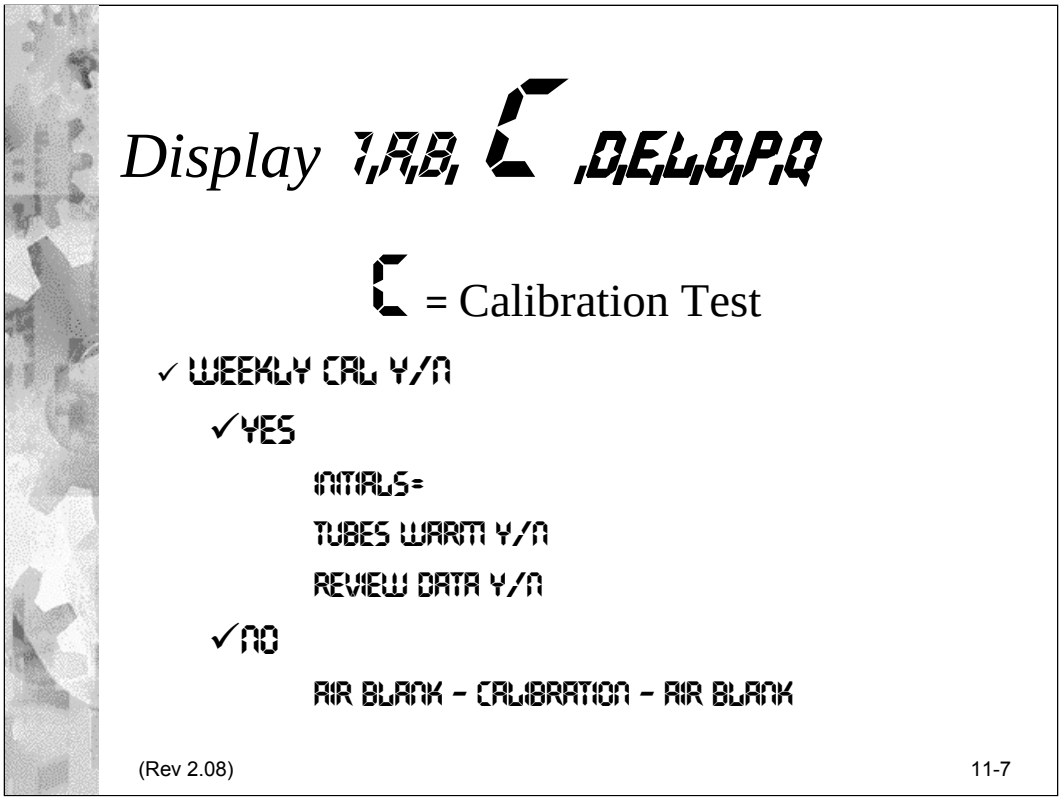
3. When ready to exit Menu # 1, type Q and ENTER.

Display 1, A ,B,C,D,E,L,O,P,Q

A = Air Blank

- ✓Air pump is turned on for continuous air blank
- ✓Stays on until START TEST button is pressed


Display 1,A, B ,C,D,E,L,O,P,Q
B = Breath Test
✓Breath test sequence will be A B A
Air Blank, Breath, Air Blank
✓Data entry questions will be asked
and a abbreviate test record printed
(Rev 2.08)
11-6



Weekly Cal (y/n)

Yes

Initials= Enter Instructor Initials

Tubes Warm y/n

Review data y/n

No

Air blank . . . . .

Air blank – calibration – air blank

Display 1,A,B,C, D ,E,L,O,P,Q

D = Instrument Diagnostic Tests

✓This option performs the same diagnostic checks at warm up and prints a record of the results

Display 1,AB,CD, E ,L,OP,Q

E = Preliminary Data Entry Mode

- ✓ Allows instructor to check and /or change the following entries

Preliminary Data Entry

- ENTER TIME HHMM
  - ✓ Set in 24 hour mode
- NORM TIME ZONE
  - ✓ Mountain standard time/mountain daylight time as MST or MDT
- DATE= MMDDYYYY
  - ✓ Set date

Preliminary Data Entry

- INSTR LOCATION=
  - ✓ Set name to your location

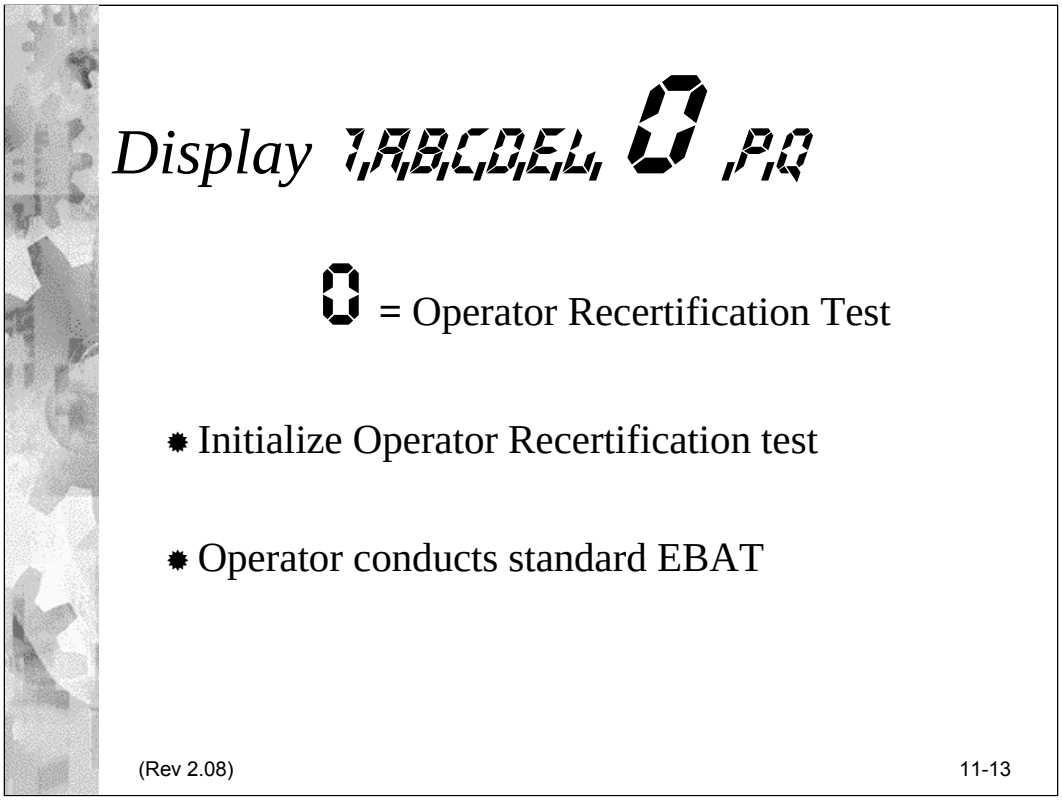
OR

  - ✓ Evidential Breath Alcohol Test

- SIM. LOW VALUE=
  - ✓ Enter lowest acceptable simulator standard Calibration value: 0.090 BrAC

Preliminary Data Entry

- SIM. HIGH VALUE=
  - ✓ Enter highest acceptable simulator standard calibration value 0.110 BrAC
- NO OF PRINTOUTS=
  - ✓ Enter how many print-outs of test are desired



Operator Re-certification Test

Instructor chooses Operator Recertification from Menu #1.

Operator conducts error free EBAT to recertify in the presence of a certified Instructor within 180-days.

Display 1,AB,CD,EL,0, P ,0

P = Password

✓Change Instructor Password

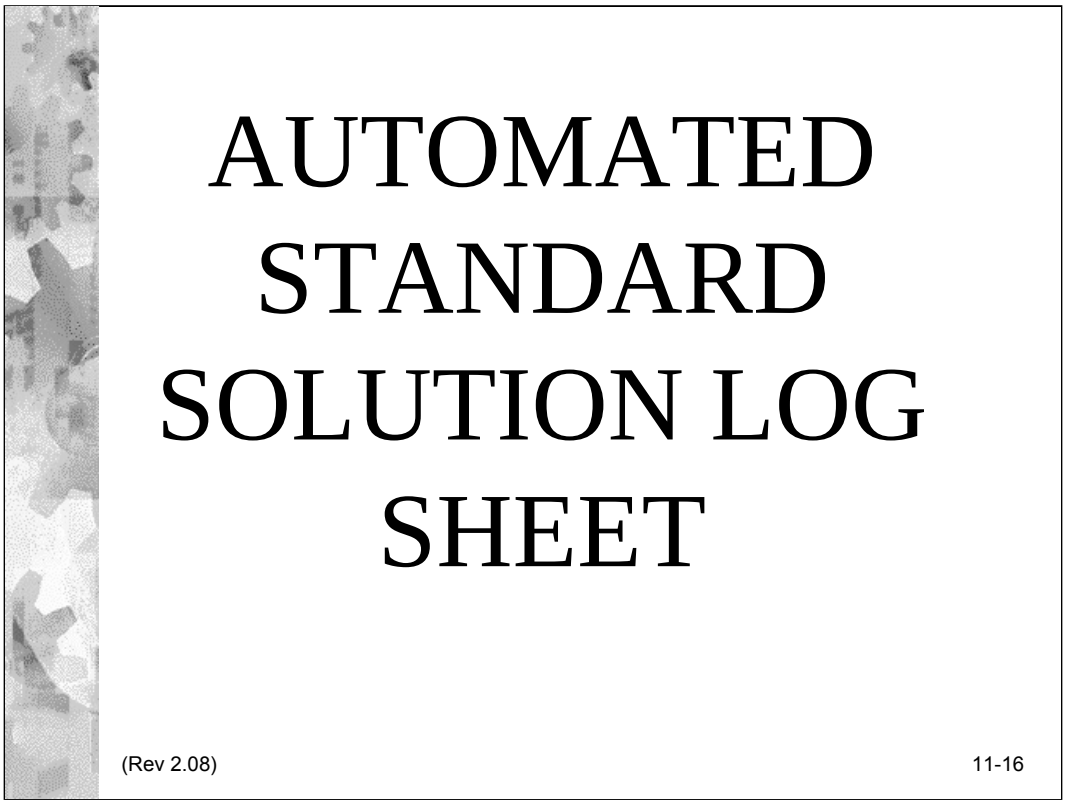
✓Display will show "PASSWORD = "

✓Type in new password and press Enter Key

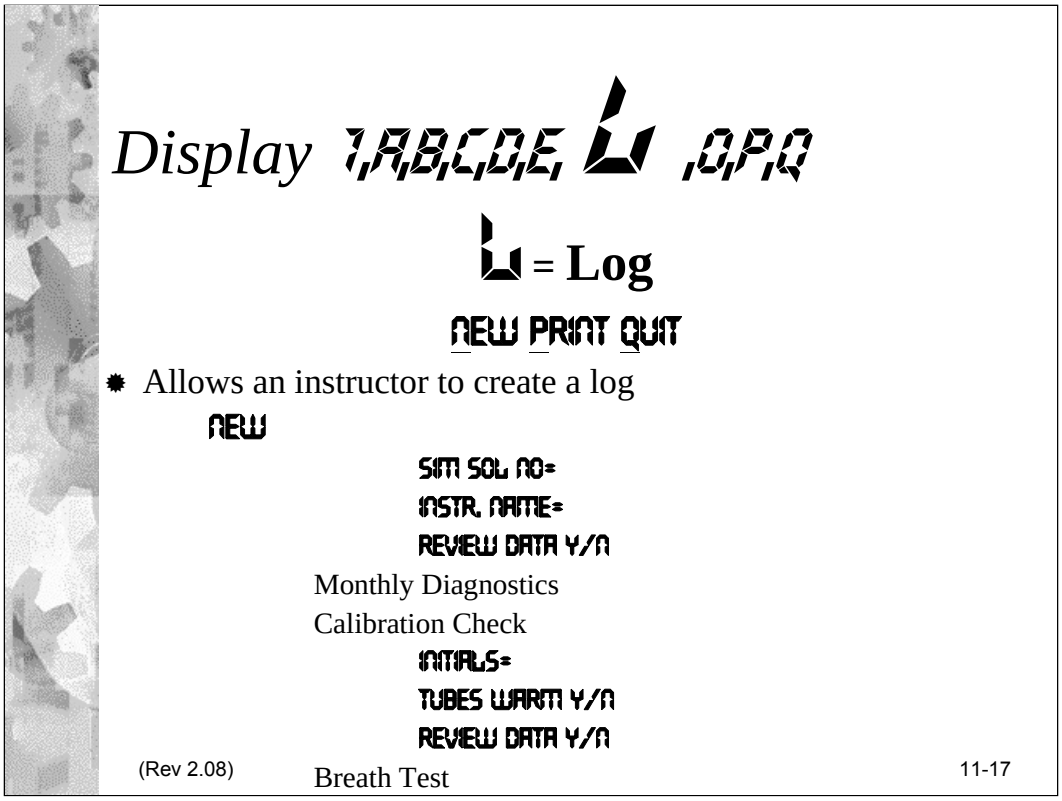
Display 1,A,B,C,D,E,L,O,P, Q

Q = Quit

- Typing Q and Enter Key will return instrument to the Ready Mode



NOTES:



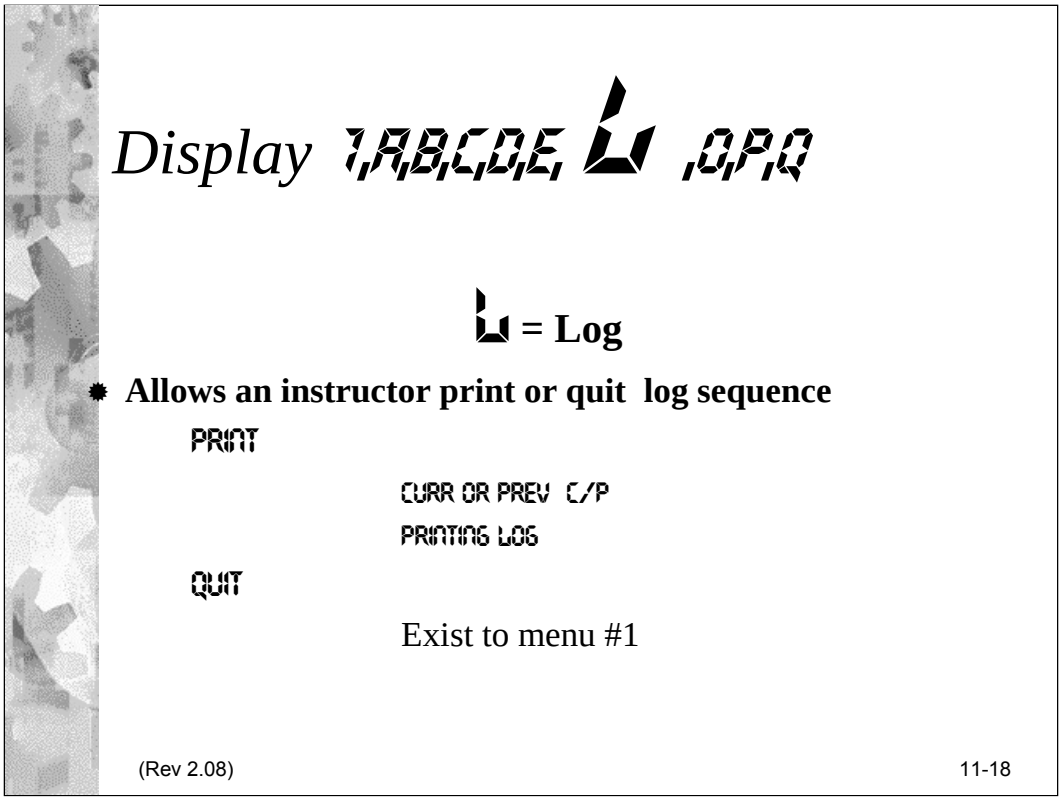
New:

SIM SOL NO=	Enter Solution Number
INSTR. NAME=	Enter Instructor Last Name
	Review data y/n

Monthly Diagnostics

Calibration Check

Initials=	Enter Instructor Initials
	Tubes Warm y/n
	Review data y/n
	Breath Test
	No extra data entry is required.
	Test Sequence is Air Blank, Breath, Air Blank (ABA)



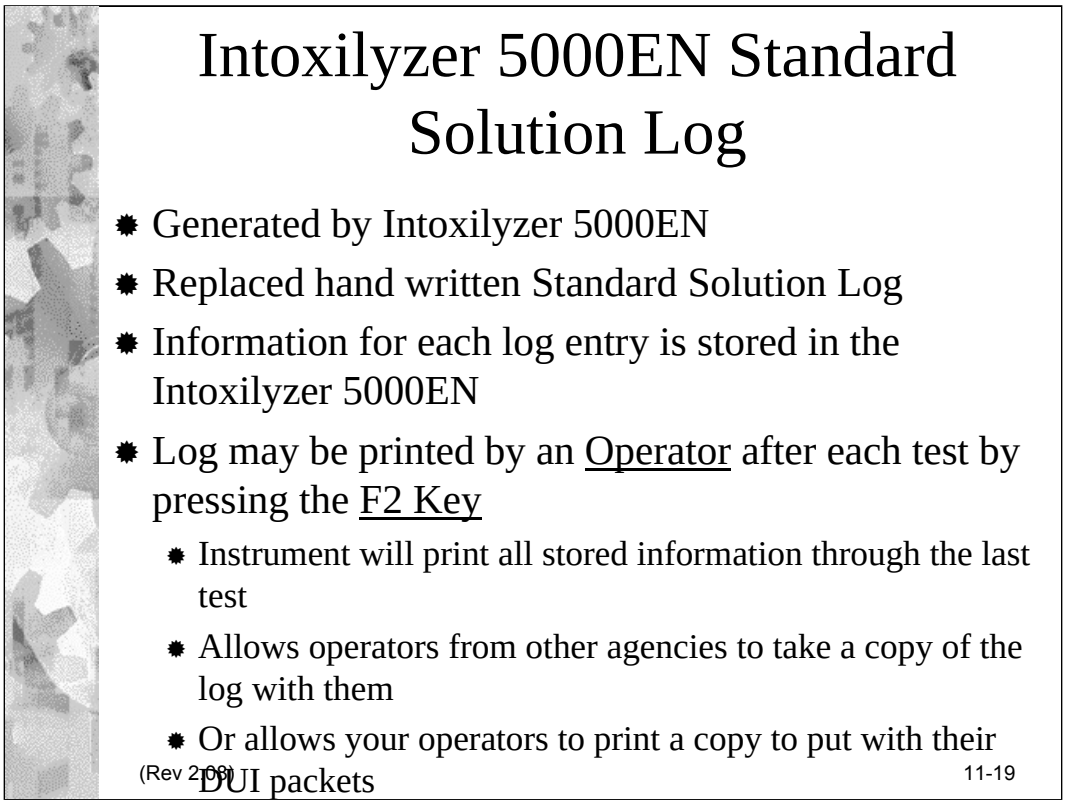
Print:

1.Current Log- Allows Instructor to print current log

- C- Option prints current log to include last test conducted through Start Test Button

2.Previous Log- Allows Instructor to print previous log

- P- Option prints only the last simulator solution log


Intoxilyzer 5000EN Standard Solution Log
Generated by Intoxilyzer 5000EN
Replaced hand written Standard Solution Log
Information for each log entry is stored in the Intoxilyzer 5000EN
Log may be printed by an Operator after each test by pressing the F2 Key
Instrument will print all stored information through the last test
Allows operators from other agencies to take a copy of the log with them
Or allows your operators to print a copy to put with their DUI packets
(Rev 2-08)
11-19

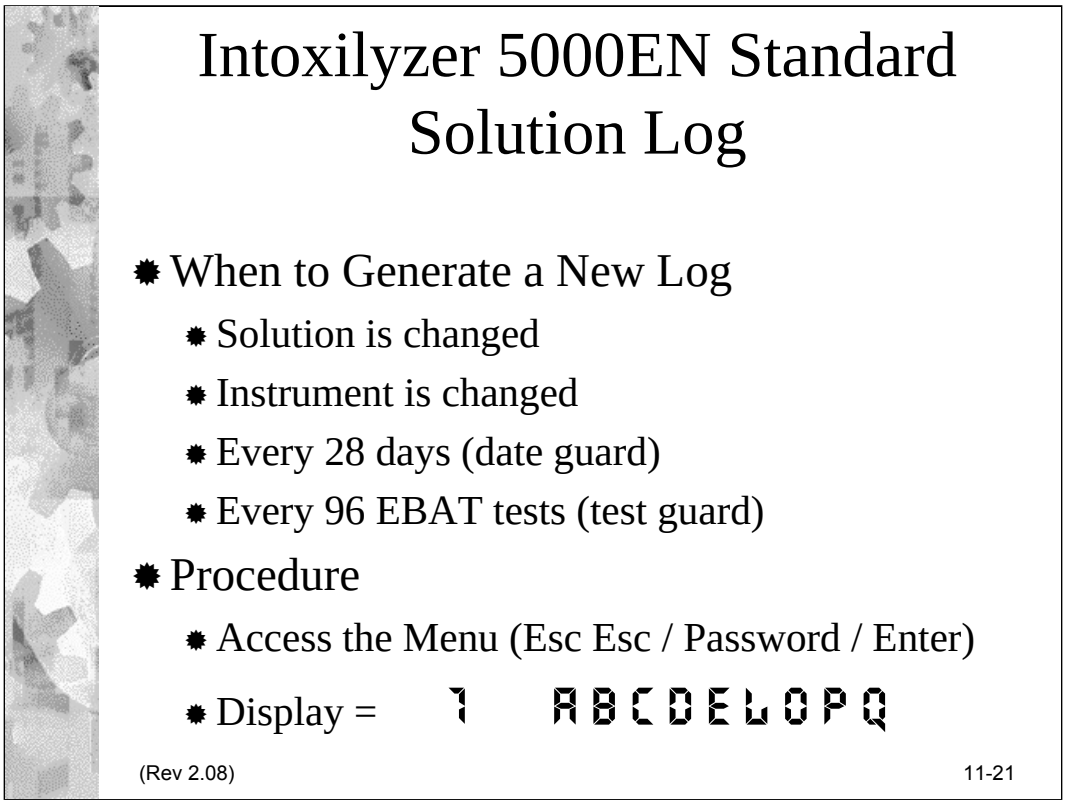
NOTES:

Intoxilyzer 5000EN Standard Solution Log

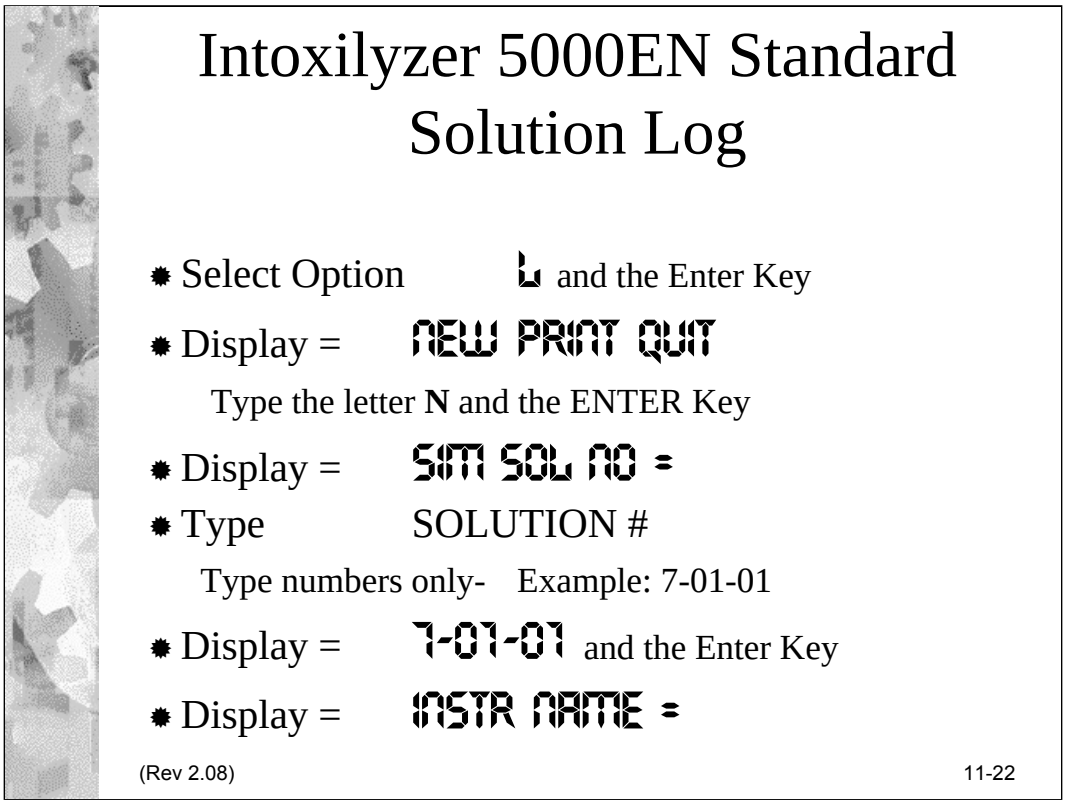
- Log may be printed by an Instructor at any time by pressing or accessing MENU # 1
  - Recommend printing and reviewing the log
    - When a new one is generated
    - After each weekly calibration check
    - At the end of the month or 100 tests, whichever comes first
  - Instructors may use MENU # 1 or the F2 Key when printing the log

(Rev 2.08) 11-20

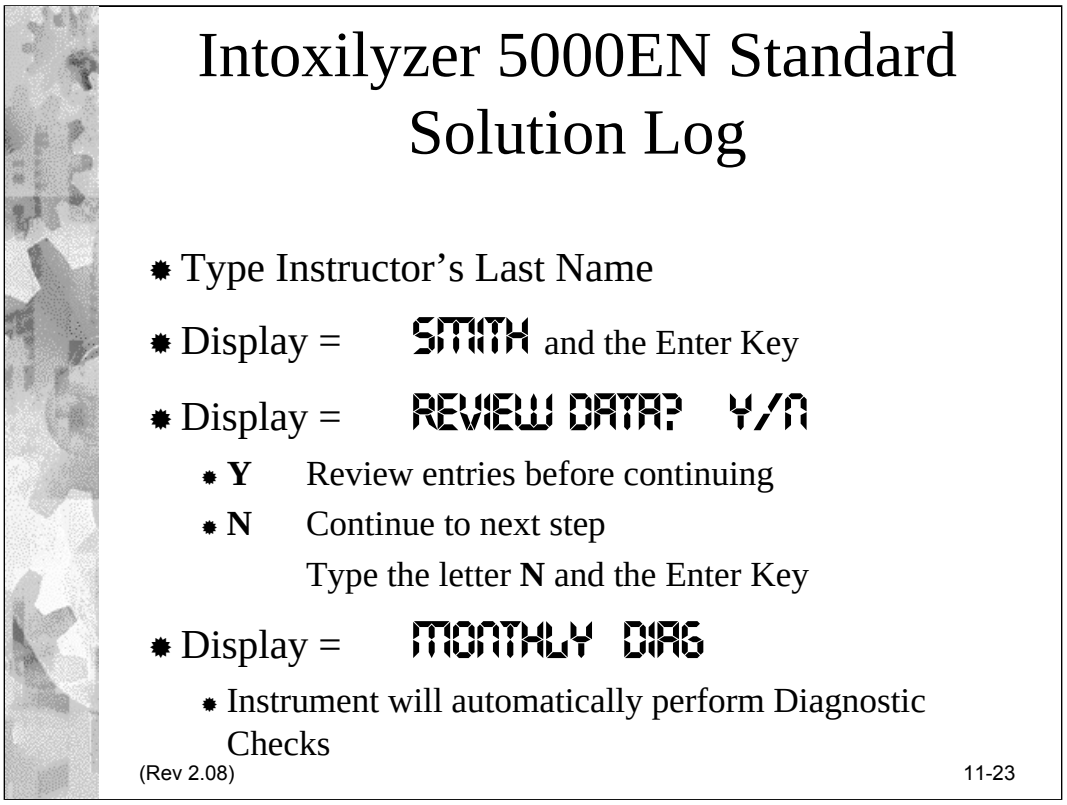
NOTES:


Intoxilyzer 5000EN Standard Solution Log
When to Generate a New Log
Solution is changed
Instrument is changed
Every 28 days (date guard)
Every 96 EBAT tests (test guard)
Procedure
Access the Menu (Esc Esc / Password / Enter)
Display =
(Rev 2.08)
11-21

NOTES:


Intoxilyzer 5000EN Standard Solution Log
Select Option 6 and the Enter Key
Display = NEW PRNT QUIT
Type the letter N and the ENTER Key
Display = SIM SOL NO =
Type SOLUTION #
Type numbers only- Example: 7-01-01
Display = 7-01-01 and the Enter Key
Display = INSTR NAME =
(Rev 2.08)
11-22

NOTES:


Intoxilyzer 5000EN Standard Solution Log
Type Instructor's Last Name
Display = SMITH and the Enter Key
Display = REVIEW DATA? Y/N
Y Review entries before continuing
N Continue to next step
Type the letter N and the Enter Key
Display = MONTHLY DIAG
Instrument will automatically perform Diagnostic Checks
(Rev 2.08)
11-23

NOTES:

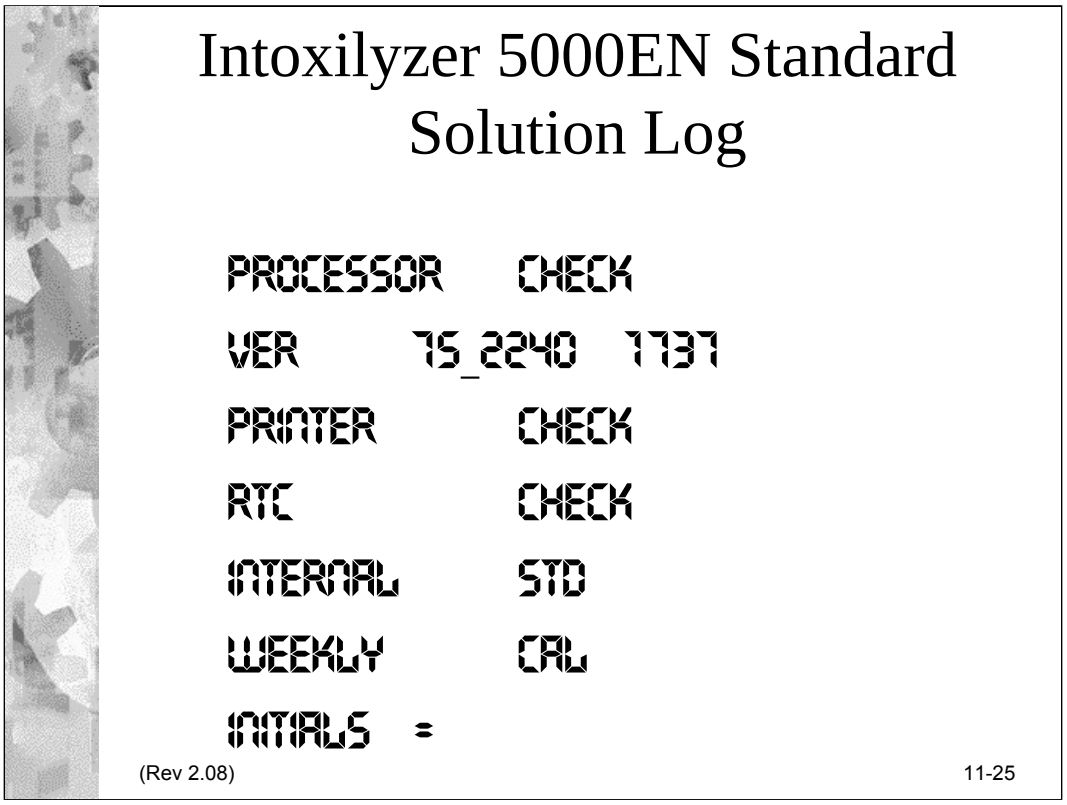
Intoxilyzer 5000EN Standard Solution Log

- Display = MONTHLY DIAG (continued)
  - Instrument will automatically perform diagnostic checks
  - Display will show the following while each check is performed:

PROM	CHECK	8495
RAM	CHECK	
TEMP	CHECK	

(Rev 2.08) 11-24

NOTES:


Intoxilyzer 5000EN Standard Solution Log
PROCESSOR CHECK
VER 75_2240 1737
PRINTER CHECK
RTC CHECK
INTERNAL STD
WEEKLY CAL
INTRLS =
(Rev 2.08)
11-25

NOTES:

Intoxilyzer 5000EN Standard Solution Log

- Type Instructor's Initials
- Display = JS and the Enter Key
- Display = TUBES WARM Y/N
  - Check External Breath Tube and Simulator Vapor Tube for proper heating
    - If either tube is not warmer than your hand to the touch
      - Type N and Enter Key
      - Instrument aborts procedure and returns to Ready Mode
      - Do not attempt any EBAT's on subjects
      - Contact the EBAT Program immediately

(Rev 2.08) 11-26

NOTES:

Intoxilyzer 5000EN Standard Solution Log

- If both tubes are warmer than your hand to the touch
  - Type Y and Hit the Enter Key
- Display = REVIEW DATA? Y/N
  - Type Y and the Enter Key to review the Initials and Heated Tubes warming status
  - Type N and the Enter Key to continue
- Display = N and the Hit Enter Key to continue
- Display = AIR BLANK

(Rev 2.08) 11-27

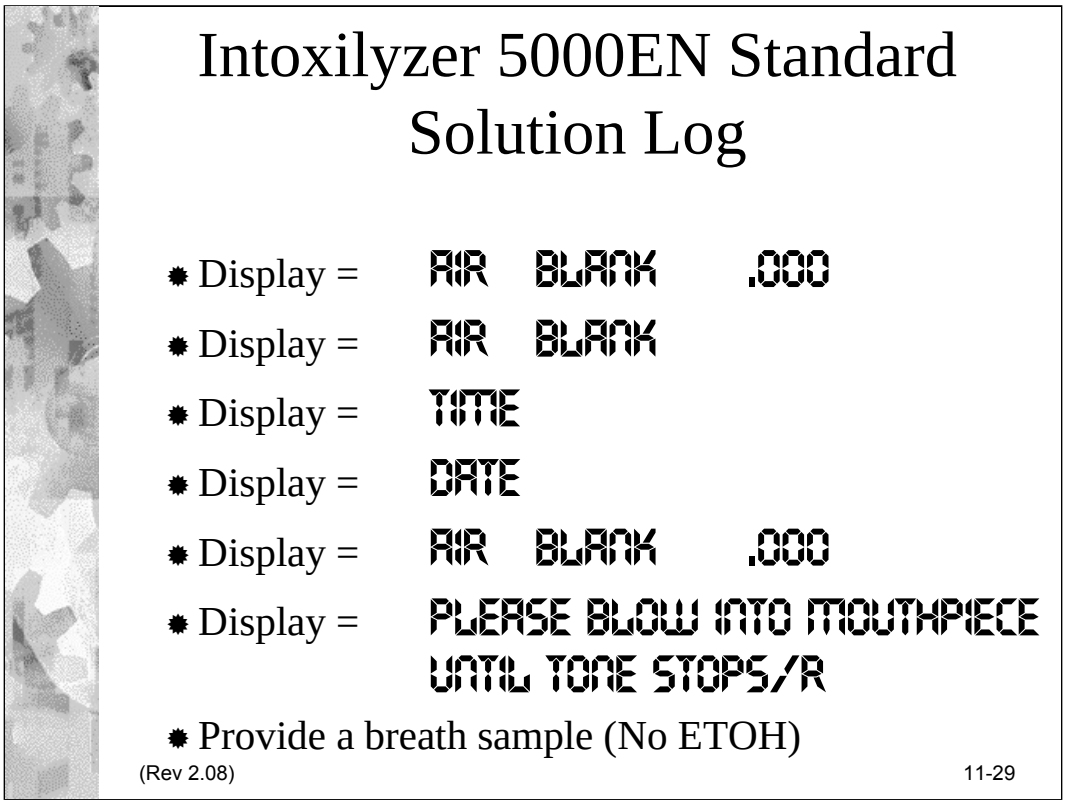
NOTES:

Intoxilyzer 5000EN Standard Solution Log

- Display = TIME
- Display = DATE
- Display = AIR BLANK .000
- Display = ... (Reference checks)
- Display = CAL CHECK
- Display = CAL CHECK .100
- Display = AIR BLANK

(Rev 2.08) 11-28

NOTES:


Intoxilyzer 5000EN Standard Solution Log
Display = AIR BLANK .000
Display = AIR BLANK
Display = TIME
Display = DATE
Display = AIR BLANK .000
Display = PLEASE BLOW INTO MOUTHPIECE UNTIL TONE STOPS/R
Provide a breath sample (No ETOH)
(Rev 2.08)
11-29

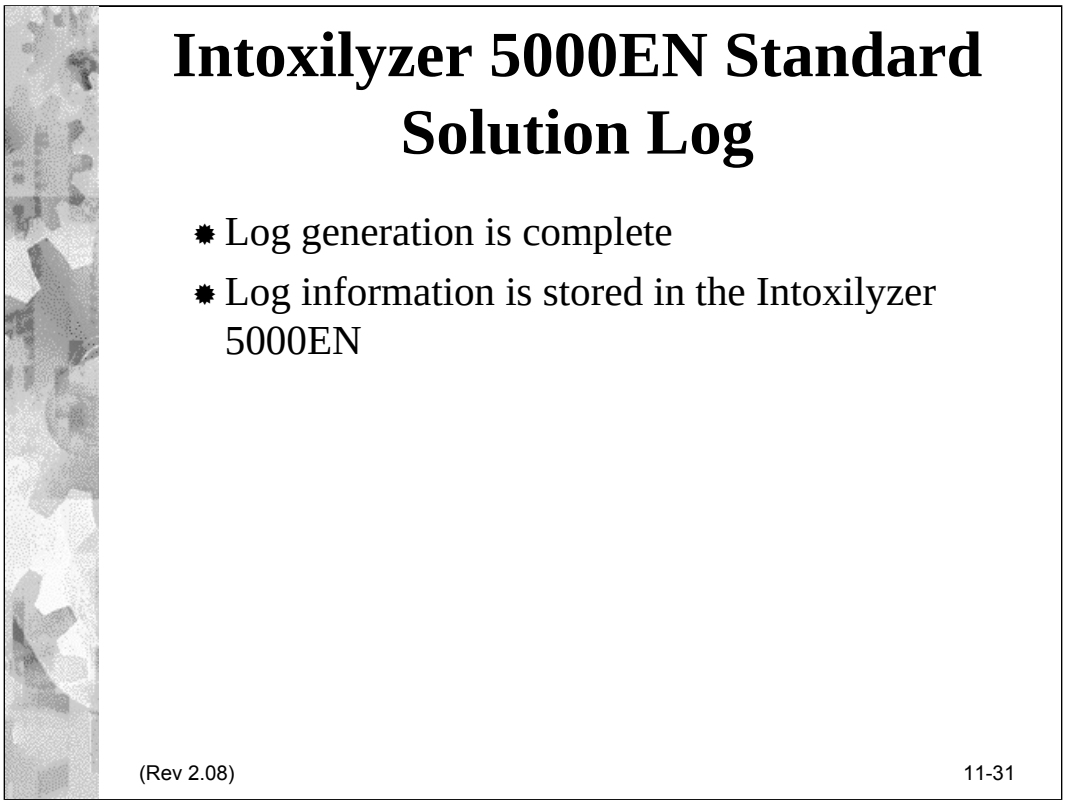
NOTES:

Intoxilyzer 5000EN Standard Solution Log

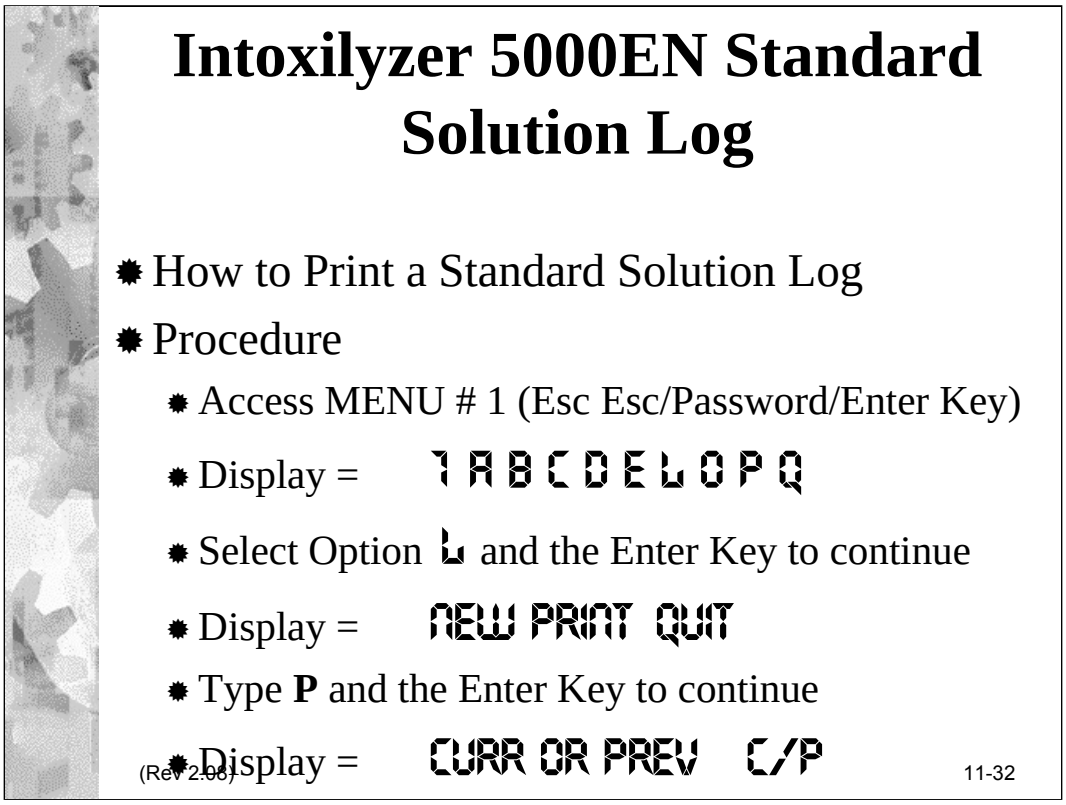
- Display = SUBJECT TEST .- - -
- Display = PLEASE REMOVE SPIT TRAP AND DEPRESS START TEST SWITCH (Scrolls)
- Display = AIR BLANK
- Display = AIR BLANK .000
- Display = TEST COMPLETE
- Display = SAVING LOG REC
- Returns to Ready Mode (Scrolling Mfg Information)

(Rev 2.08) 11-30

NOTES:


Intoxilyzer 5000EN Standard Solution Log
Log generation is complete
Log information is stored in the Intoxilyzer 5000EN
(Rev 2.08)
11-31

NOTES:


Intoxilyzer 5000EN Standard Solution Log
How to Print a Standard Solution Log
Procedure
Access MENU # 1 (Esc Esc/Password/Enter Key)
Display = ? A B C D E L O P Q
Select Option L and the Enter Key to continue
Display = NEW PRNT QUIT
Type P and the Enter Key to continue
Display = CURR OR PREV C/P
(Rev 2.08)
11-32

NOTES:

Intoxilyzer 5000EN Standard Solution Log

- Type **C** and the Enter Key to continue
  - Prints Current standard solution log
- Type **P** and the Enter Key to continue
  - Prints Previous standard solution log
- Display = PRINTING LOG
- After the log is printed
- Display = 1 ABCDELOPQ
- Type Q and the Enter Key to continue
- Returns to Ready Mode (Scrolling Mfg Information)

(Rev 2.08) 11-33

NOTES:

Intoxilyzer 5000EN Standard Solution Log

- Standard Solution Log Quit Option
  - Used to exit Option **L**
- **Procedure**
  - Access **MENU # 1** (Esc Esc / Password / Enter)
  - Display = 1 ABCDELOPQ
  - Select Option L and the Enter Key to continue
  - Display = NEW PRINT QUIT
  - Type **Q** and the Enter Key to continue
  - Display = 1 ABCDELOPQ

(Rev 2.08) 11-34

NOTES:

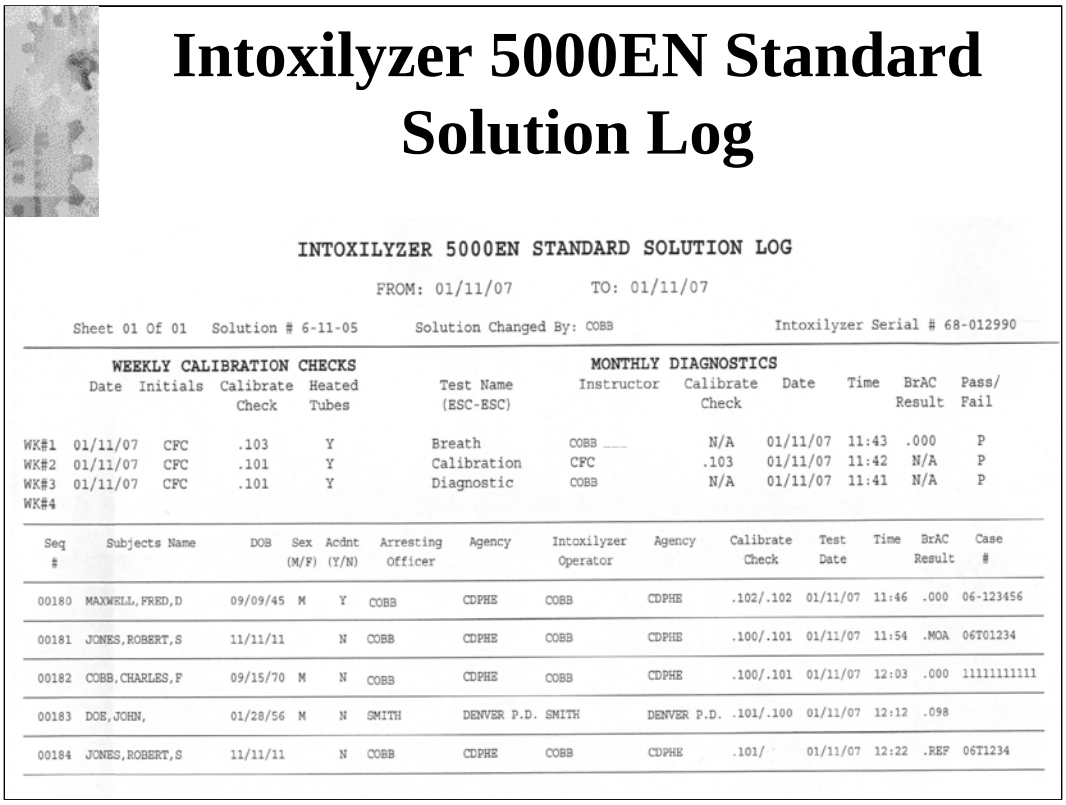
Intoxilyzer 5000EN Standard Solution Log

- Type Q again and the Enter Key to continue
- Returns to Ready Mode (Scrolling Mfg Information)

(Rev 2.08) 11-35

NOTES:

Intoxilyzer 5000EN Standard Solution Log



INTOXILYZER 5000EN STANDARD SOLUTION LOG

FROM: 01/11/07 TO: 01/11/07

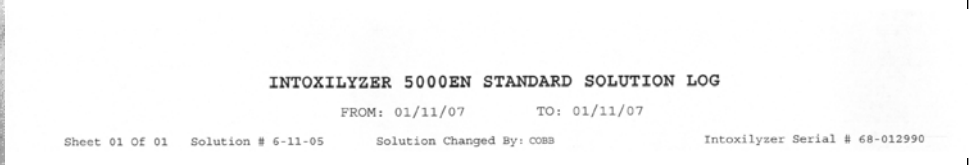
Sheet 01 Of 01 Solution # 6-11-05 Solution Changed By: COBB Intoxilyzer Serial # 68-012990

	WEEKLY CALIBRATION CHECKS				MONTHLY DIAGNOSTICS					
	Date	Initials	Calibrate Check	Heated Tubes	Test Name (ESC-ESC)	Instructor	Calibrate Check	Date	Time	BrAC Result	Pass/ Fail
WK#1	01/11/07	CFC	.103	Y	Breath	COBB ____	N/A	01/11/07	11:43	.000	P
WK#2	01/11/07	CFC	.101	Y	Calibration	CFC	.103	01/11/07	11:42	N/A	P
WK#3	01/11/07	CFC	.101	Y	Diagnostic	COBB	N/A	01/11/07	11:41	N/A	P
WK#4											

Seq #	Subjects Name	DOB	Sex (M/F)	Acdnt (Y/N)	Arresting Officer	Agency	Intoxilyzer Operator	Agency	Calibrate Check	Test Date	Time	BrAC Result	Case #
00180	MAXWELL,FRED,D	09/09/45	M	Y	COBB	CDPHE	COBB	CDPHE	.102/.102	01/11/07	11:46	.000	06-123456
00181	JONES,ROBERT,S	11/11/11		N	COBB	CDPHE	COBB	CDPHE	.100/.101	01/11/07	11:54	.MOA	06T01234
00182	COBB,CHARLES,F	09/15/70	M	N	COBB	CDPHE	COBB	CDPHE	.100/.101	01/11/07	12:03	.000	11111111111
00183	DOE,JOHN,	01/28/56	M	N	SMITH	DENVER P.D.	SMITH	DENVER P.D.	.101/.100	01/11/07	12:12	.098	
00184	JONES,ROBERT,S	11/11/11		N	COBB	CDPHE	COBB	CDPHE	.101/	01/11/07	12:22	.REF	06T1234

NOTES:

Intoxilyzer 5000EN Standard Solution Log



INTOXILYZER 5000EN STANDARD SOLUTION LOG

FROM: 01/11/07 TO: 01/11/07

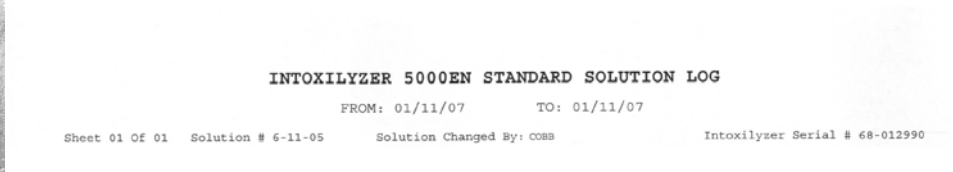
Sheet 01 Of 01 Solution # 6-11-05 Solution Changed By: COBB Intoxilyzer Serial # 68-012990

- From: MM/DD/YY
  - The date the log was created
  - Populated by instrument
- To: MM/DD/YY
  - Date the log is printed or end date
  - Populated by instrument
- Sheet 01 Of 01
  - # of sheets for this log
  - Populated by instrument

(Rev 2.08) 11-37

NOTES:

Intoxilyzer 5000EN Standard Solution Log



INTOXILYZER 5000EN STANDARD SOLUTION LOG

FROM: 01/11/07 TO: 01/11/07

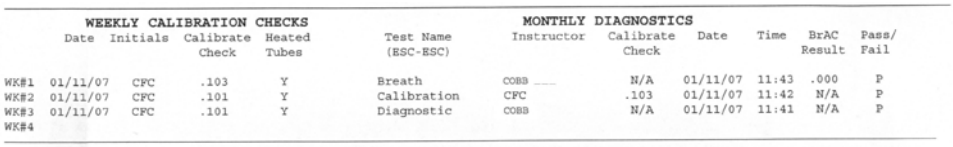
Sheet 01 Of 01 Solution # 6-11-05 Solution Changed By: COBB Intoxilyzer Serial # 68-012990

- Solution #
  - Batch Number of Solution from Solution Label
  - Populated from Data Entry During New Log Generation
- Solution Changed By:
  - Last Name of Instructor who changed the Solution and started new Log
  - Populated from Data Entry During New Log Generation
- Intoxilyzer Serial # 68-012990
  - Populated By instrument

(Rev 2.08) 11-38

NOTES:

Intoxilyzer 5000EN Standard Solution Log



	WEEKLY CALIBRATION CHECKS				MONTHLY DIAGNOSTICS						
	Date	Initials	Calibrate Check	Heated Tubes	Test Name (ESC-ESC)	Instructor	Calibrate Check	Date	Time	BrAC Result	Pass/ Fail
WK#1	01/11/07	CFC	.103	Y	Breath	COBB ____	N/A	01/11/07	11:43	.000	P
WK#2	01/11/07	CFC	.101	Y	Calibration	CFC	.103	01/11/07	11:42	N/A	P
WK#3	01/11/07	CFC	.101	Y	Diagnostic	COBB	N/A	01/11/07	11:41	N/A	P
WK#4											

- Weekly Calibration Checks
  - Date: Populated by instrument
  - Calibration Check: Populated by instrument
  - Initials: Populated from data entry
  - Heated Tubes: Populated from data entry
    - Must be performed as part of new log creation or every 7 days or before
    - Date Guard disables instrument if calibration check is not performed before or on the 7th day
      - Calibration Checks must be conducted on the 7th day to enable future EBAT's on the instrument

(Rev 2.08) 11-39

NOTES:

Intoxilyzer 5000EN Standard Solution Log

	WEEKLY CALIBRATION CHECKS				MONTHLY DIAGNOSTICS						
	Date	Initials	Calibrate Check	Heated Tubes	Test Name (ESC-ESC)	Instructor	Calibrate Check	Date	Time	BrAC Result	Pass/ Fail
WK#1	01/11/07	CFC	.103	Y	Breath	COBB ____	N/A	01/11/07	11:43	.000	P
WK#2	01/11/07	CFC	.101	Y	Calibration	CFC	.103	01/11/07	11:42	N/A	P
WK#3	01/11/07	CFC	.101	Y	Diagnostic	COBB	N/A	01/11/07	11:41	N/A	P
WK#4											

- Monthly Diagnostics
  - TEST NAME: Populated by instrument
  - INSTRUCTOR: Populated from data entry
  - CALIBRATE CHECK: Populated by instrument
  - DATE: Populated by instrument
  - TIME: Populated by instrument
  - BrAC RESULTS: Populated by instrument
  - PASS/FAIL: Populated by instrument
    - Must be performed when a new log is started or every 28 days or 96 tests
    - Date guard disables instrument if monthly diagnostics are not performed before or on the 28^{h} day
    - Test guard disables instrument if new log is not started by the 96th test
    - New log must be started to enable instrument

(Rev 2.08) 11-40

Intoxilyzer 5000EN Standard Solution Log

Seq #	Subjects Name	DOB	Sex (M/F)	Acdnt (Y/N)	Arresting Officer	Agency	Intoxilyzer Operator	Agency	Calibrate Check	Test Date	Time	BrAC Result	Case #
00180	MAXWELL,FRED,D	09/09/45	M	Y	MAXWELL	CDPHE	MAXWELL	CDPHE	.102/.102	01/11/07	11:46	.000	06-123456
00181	JONES,ROBERT,S	11/11/11		N	COBB	CDPHE	COBB	CDPHE	.100/.101	01/11/07	11:54	.MOA	06T01234
00182	COBB,CHARLES,F	09/15/70	M	N	BATES	CDPHE	BATES	CDPHE	.100/.101	01/11/07	12:03	.000	11111111111
00183	DOE,JOHN,	01/28/56	M	N	SMITH	DENVER P.D.	SMITH	DENVER P. D.	.101/.100	01/11/07	12:12	.098	
00184	JONES,ROBERT,S	11/11/11		N	COBB	CDPHE	COBB	CDPHE	.101/	01/11/07	12:22	.REF	06T1234

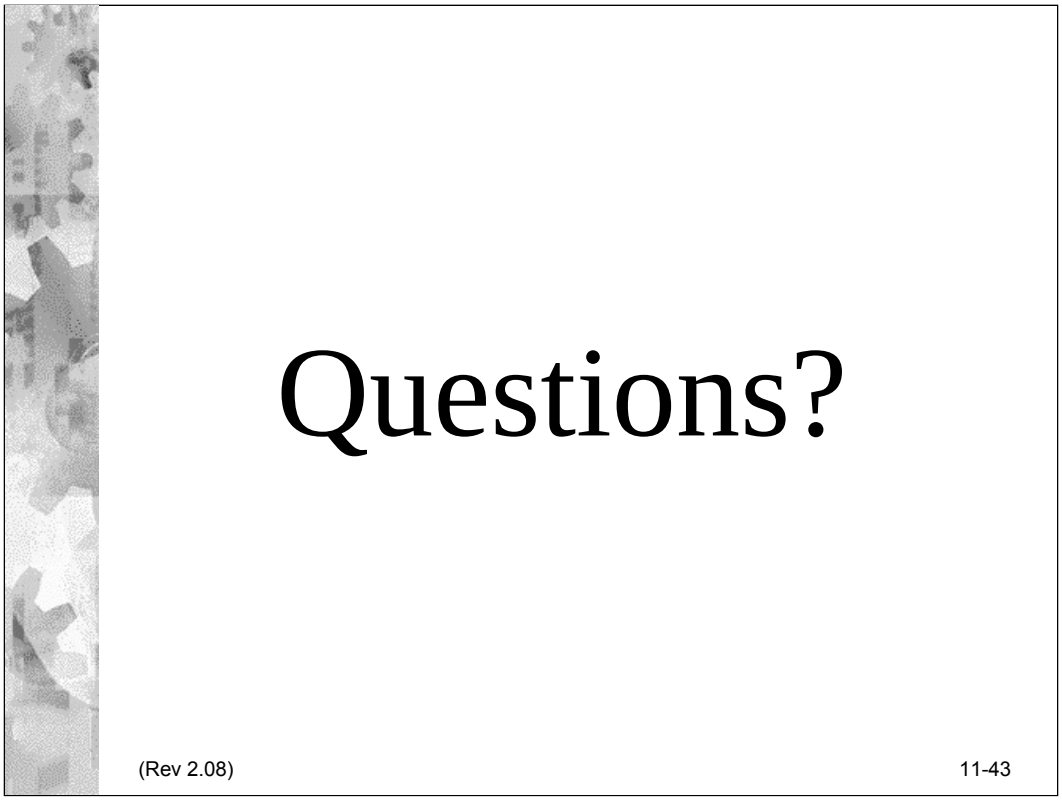
- Breath Alcohol Test Entries
  - SEQ #: Populated by instrument
  - SUBJECTS NAME: Populated from data entry
  - DOB: Populated from data entry
  - SEX (M/F): Populated from data entry
  - ACDNT: Populated from data entry
  - ARRESTING OFFICER: Populated from data entry
  - AGENCY: Populated from data entry
  - INTOXILYZER OPERATOR: Populated from data entry

NOTES:

Intoxilyzer 5000EN Standard Solution Log

Seq #	Subjects Name	DOB	Sex (M/F)	Acdnt (Y/N)	Arresting Officer	Agency	Intoxilyzer Operator	Agency	Calibrate Check	Test Date	Time	BrAC Result	Case #
00180	MAXWELL,FRED,D	09/09/45	M	Y	MAXWELL	CDPHE	MAXWELL	CDPHE	.102/.102	01/11/07	11:46	.000	06-123456
00181	JONES,ROBERT,S	11/11/11		N	COBB	CDPHE	COBB	CDPHE	.100/.101	01/11/07	11:54	.MOA	06T01234
00182	COBB,CHARLES,F	09/15/70	M	N	BATES	CDPHE	BATES	CDPHE	.100/.101	01/11/07	12:03	.000	11111111111
00183	DOE,JOHN,	01/28/56	M	N	SMITH	DENVER P.D.	SMITH	DENVER P. D.	.101/.100	01/11/07	12:12	.098	
00184	JONES,ROBERT,S	11/11/11		N	COBB	CDPHE	COBB	CDPHE	.101/	01/11/07	12:22	.REF	06T1234

- Breath Alcohol Test Entries Continued
  - INTOXILYZER OPERATOR: Populated from data entry
  - AGENCY: Populated from data entry
  - CALIBRATE CHECK: Populated by Intoxilyzer
  - TEST DATE: Populated by Intoxilyzer
  - TIME: Populated by Intoxilyzer
  - BrAC RESULT: Populated by Intoxilyzer
  - CASE #: Populated from data entry


Questions?
(Rev 2.08)
11-43

ERROR MESSAGES

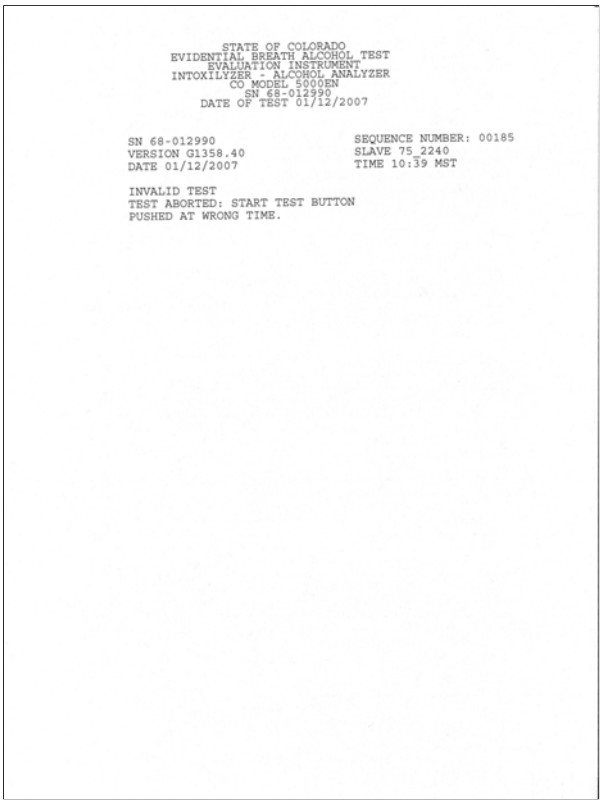
NOTES:

INVALID TEST

- **DISPLAY**- INVALID TEST
- **PRINTED INFORMATION**- INVALID TEST
  TEST ABORTED: START TEST BUTTON PUSHED AT WRONG TIME
- **LOG**- .INV
- **CAUSE**- OPERATOR PUSHED **START TEST BUTTON** AT WRONG TIME
- **ACTION**- RESTART TEST

The Operator aborted test by pressing Start Test Button at a time other than when requested by the Intoxilyzer.

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SN 68-012990
VERSION G1358.40
DATE 01/12/2007

SEQUENCE NUMBER: 00185
SLAVE 75_2240
TIME 10:39 MST

INVALID TEST
TEST ABORTED: START TEST BUTTON
PUSHED AT WRONG TIME.

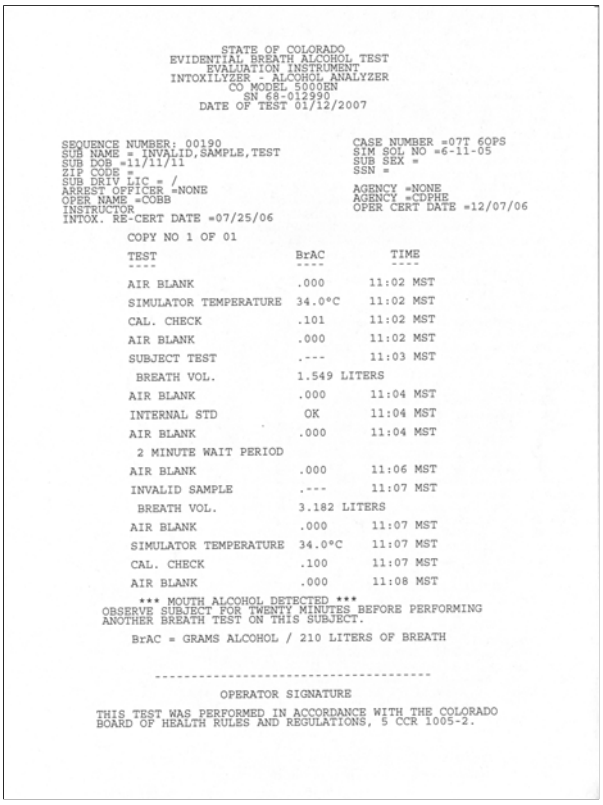
NOTES:

INVALID SAMPLE

- **DISPLAY** - INVALID SAMPLE
- **PRINTED** - INVALID SAMPLE .- - -
  MOUTH ALCOHOL DETECTED
  OBSERVE SUBJECT FOR TWENTY MINUTES BEFORE PERFORMING ANOTHER BREATH TEST ON THIS SUBJECT ALL TEST INFORMATION IS PRINTED
- **LOG**- .MOA (MOUTH ALCOHOL)
- **CAUSE** - INDICATES MOUTH ALCOHOL PRESENT.
- **ACTION** - OPERATOR **MUST** REPEAT **20** MINUTE OBSERVATION PERIOD BEFORE STARTING ANOTHER EBAT

This action **must** be separated by another 20 minute observation or the following EBAT test will be considered forensically invalid and not of evidentiary quality.

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SEQUENCE NUMBER: 00190
SUB NAME = INVALID,SAMPLE,TEST
SUB DOB =11/11/11
ZIP CODE =
SUB DRIV LIC = /
ARREST OFFICER =NONE
OPER NAME =COBB
INSTRUCTOR
INTOX. RE-CERT DATE =07/25/06

CASE NUMBER =07T 6OPS
SIM SOL NO =6-11-05
SUB SEX =
SSN =

AGENCY =NONE
AGENCY =CDPHE
OPER CERT DATE =12/07/06

COPY NO 1 OF 01

TEST	BrAC	TIME
AIR BLANK	.000	11:02 MST
SIMULATOR TEMPERATURE	34.0°C	11:02 MST
CAL. CHECK	.101	11:02 MST
AIR BLANK	.000	11:02 MST
SUBJECT TEST	.---	11:03 MST
BREATH VOL.	1.549 LITERS	
AIR BLANK	.000	11:04 MST
INTERNAL STD	OK	11:04 MST
AIR BLANK	.000	11:04 MST
2 MINUTE WAIT PERIOD		
AIR BLANK	.000	11:06 MST
INVALID SAMPLE	.---	11:07 MST
BREATH VOL.	3.182 LITERS	
AIR BLANK	.000	11:07 MST
SIMULATOR TEMPERATURE	34.0°C	11:07 MST
CAL. CHECK	.100	11:07 MST
AIR BLANK	.000	11:08 MST

*** MOUTH ALCOHOL DETECTED ***
OBSERVE SUBJECT FOR TWENTY MINUTES BEFORE PERFORMING ANOTHER BREATH TEST ON THIS SUBJECT.

BrAC = GRAMS ALCOHOL / 210 LITERS OF BREATH

OPERATOR SIGNATURE

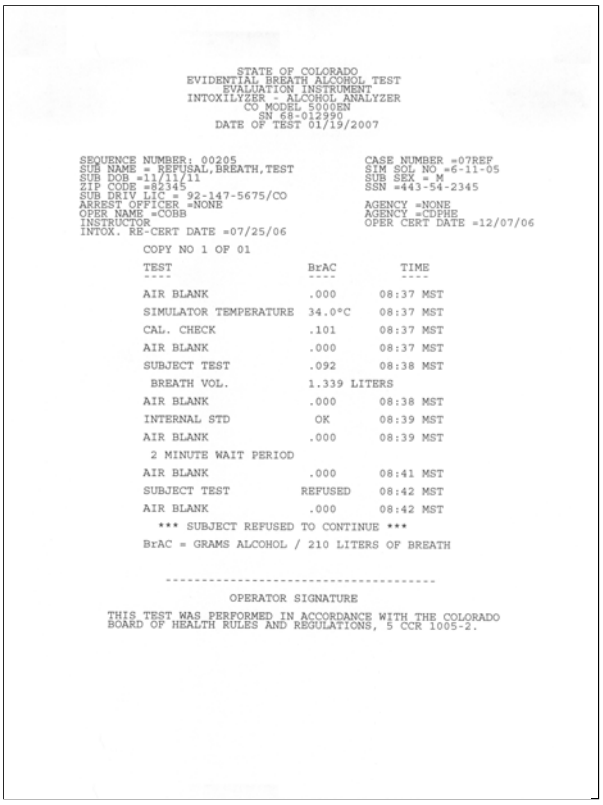
THIS TEST WAS PERFORMED IN ACCORDANCE WITH THE COLORADO BOARD OF HEALTH RULES AND REGULATIONS, 5 CCR 1005-2.

NOTES:

REFUSAL

- **DISPLAY**- REFUSED
- **PRINTED**- SUBJECT REFUSED TO CONTINUE.
  ALL TEST INFORMATION IS PRINTED
- **LOG**- .REF
- **CAUSE-** SUBJECT REFUSED TO COMPLY
- **ACTION**- OPTION AVAILABLE DURING BOTH SUBJECT BREATH TEST STEPS AS LONG AS "**PLEASE BLOW/R"** IS ON THE DISPLAY. TYPE "**R**" AND THEN "**ENTER**" ON THE KEYBOARD. OPTION CAN ONLY BE USED IF BREATH SAMPLE HAS NOT BEEN PRESENTED

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/19/2007

SEQUENCE NUMBER: 00205
SUB NAME = REFUSAL,BREATH,TEST
SUB DOB =11/11/11
ZIP CODE =82345
SUB DRIV LIC = 92-147-5675/CO
ARREST OFFICER =NONE
OPER NAME =COBB
INSTRUCTOR
INTOX. RE-CERT DATE =07/25/06

CASE NUMBER =07REF
SIM SOL NO =6-11-05
SUB SEX = M
SSN =443-54-2345

AGENCY =NONE
AGENCY =CDPHE
OPER CERT DATE =12/07/06

COPY NO 1 OF 01

TEST	BrAC	TIME
AIR BLANK	.000	08:37 MST
SIMULATOR TEMPERATURE	34.0°C	08:37 MST
CAL. CHECK	.101	08:37 MST
AIR BLANK	.000	08:37 MST
SUBJECT TEST	.092	08:38 MST
BREATH VOL.	1.339 LITERS	
AIR BLANK	.000	08:38 MST
INTERNAL STD	OK	08:39 MST
AIR BLANK	.000	08:39 MST
2 MINUTE WAIT PERIOD		
AIR BLANK	.000	08:41 MST
SUBJECT TEST	REFUSED	08:42 MST
AIR BLANK	.000	08:42 MST

*** SUBJECT REFUSED TO CONTINUE ***

BrAC = GRAMS ALCOHOL / 210 LITERS OF BREATH

OPERATOR SIGNATURE

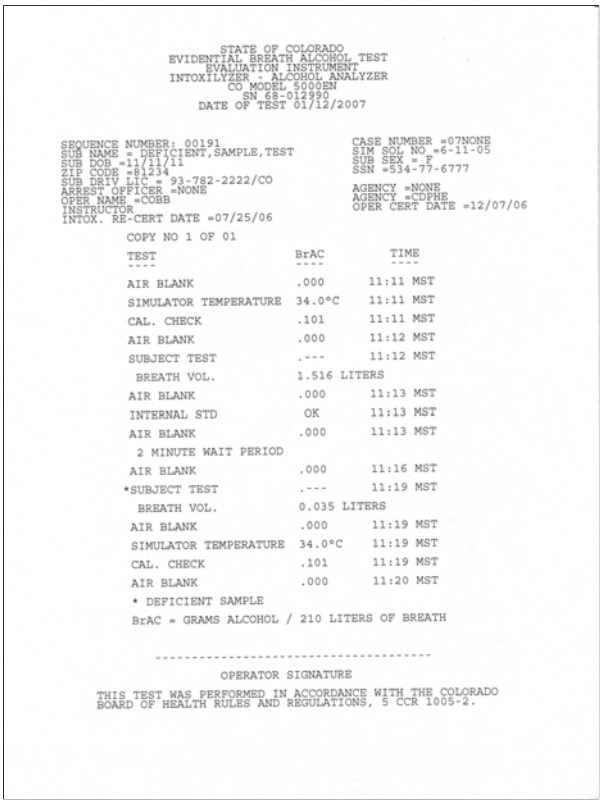
THIS TEST WAS PERFORMED IN ACCORDANCE WITH THE COLORADO BOARD OF HEALTH RULES AND REGULATIONS, 5 CCR 1005-2.

NOTES:

DEFICIENT SAMPLE

- **DISPLAY-** DEFICIENT SAM
  SUBJECT TEST .- - -
- **PRINTED**- SUBJECT TEST .- - -
  DEFICIENT SAMPLE
- **LOG**- .DEF
- **CAUSE**- THE 3 MINUTE ALLOWABLE WINDOW EXPIRED WITHOUT THE REQUIREMENTS OF FLOW RATE, VOLUME, TIME AND SLOPE BEING SATISFIED
- **ACTION**- RESTART TEST OR TREAT AS REFUSAL

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SEQUENCE NUMBER: 00191
SUB NAME = DEFICIENT,SAMPLE,TEST
SUB DOB =11/11/11
ZIP CODE =81234
SUB DRIV LIC = 93-782-2222/CO
ARREST OFFICER =NONE
OPER NAME =COBB
INSTRUCTOR
INTOX. RE-CERT DATE =07/25/06

CASE NUMBER =07NONE
SIM SOL NO =6-11-05
SUB SEX = F
SSN =534-77-6777

AGENCY =NONE
AGENCY =CDPHE
OPER CERT DATE =12/07/06

COPY NO 1 OF 01

TEST	BrAC	TIME
AIR BLANK	.000	11:11 MST
SIMULATOR TEMPERATURE	34.0°C	11:11 MST
CAL. CHECK	.101	11:11 MST
AIR BLANK	.000	11:12 MST
SUBJECT TEST	.---	11:12 MST
BREATH VOL.	1.516 LITERS	
AIR BLANK	.000	11:13 MST
INTERNAL STD	OK	11:13 MST
AIR BLANK	.000	11:13 MST
2 MINUTE WAIT PERIOD		
AIR BLANK	.000	11:16 MST
*SUBJECT TEST	.---	11:19 MST
BREATH VOL.	0.035 LITERS	
AIR BLANK	.000	11:19 MST
SIMULATOR TEMPERATURE	34.0°C	11:19 MST
CAL. CHECK	.101	11:19 MST
AIR BLANK	.000	11:20 MST

* DEFICIENT SAMPLE
BrAC = GRAMS ALCOHOL / 210 LITERS OF BREATH

OPERATOR SIGNATURE

THIS TEST WAS PERFORMED IN ACCORDANCE WITH THE COLORADO BOARD OF HEALTH RULES AND REGULATIONS, 5 CCR 1005-2.

NOTES:

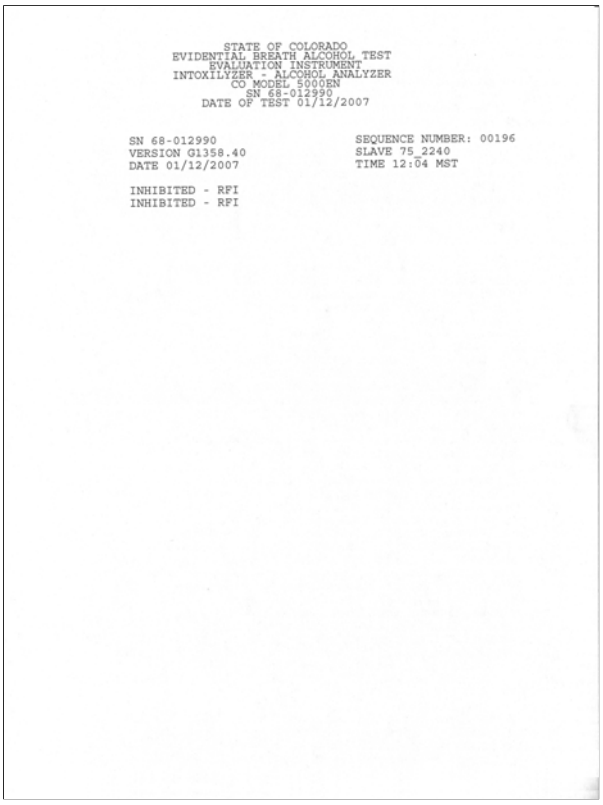
INHIBITED - RFI

- **DISPLAY**- INHIBITED - RFI
- **PRINTED**- INHIBITED - RFI
- **LOG- .**RFI
- **CAUSE**- R.F.I. RADIO FREQUENCY INTERFERENCE DETECTED
- **ACTION**- LOCATE SIGNAL SOURCE AND ELIMINATE
- RESTART TEST

May occur if.

An officer keys his radio pack during the evidential breath alcohol test.

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SN 68-012990
VERSION G1358.40
DATE 01/12/2007

SEQUENCE NUMBER: 00196
SLAVE 75_2240
TIME 12:04 MST

INHIBITED - RFI
INHIBITED - RFI

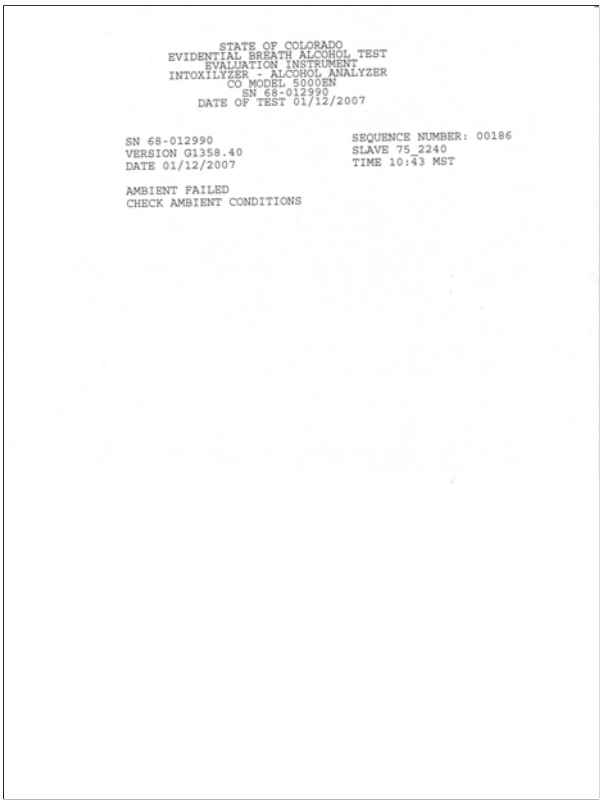
NOTES:

AMBIENT FAILED

- **DISPLAY**- AMBIENT FAILED
- **PRINTED INFORMATION**- INVALID TEST CHECK AMBIENT CONDITIONS
- **LOG**- .AMB
- **CAUSE**- OCCURS DURING ANY AIR BLANK DUE TO PRESENCE OF IR ABSORBING SUBSTANCE IN ROOM AIR
- **ACTION**- REMOVE SUBSTANCE SOURCE TO INCLUDE SUBJECT
- RESTART TEST

CDPHE strongly recommends **not** conducting the 20 minute and the 2 minute observation periods next to the instrument to reduce possible room air contamination while the EBAT is administered.

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SN 68-012990
VERSION G1358.40
DATE 01/12/2007

SEQUENCE NUMBER: 00186
SLAVE 75_2240
TIME 10:43 MST

AMBIENT FAILED
CHECK AMBIENT CONDITIONS

NOTES:

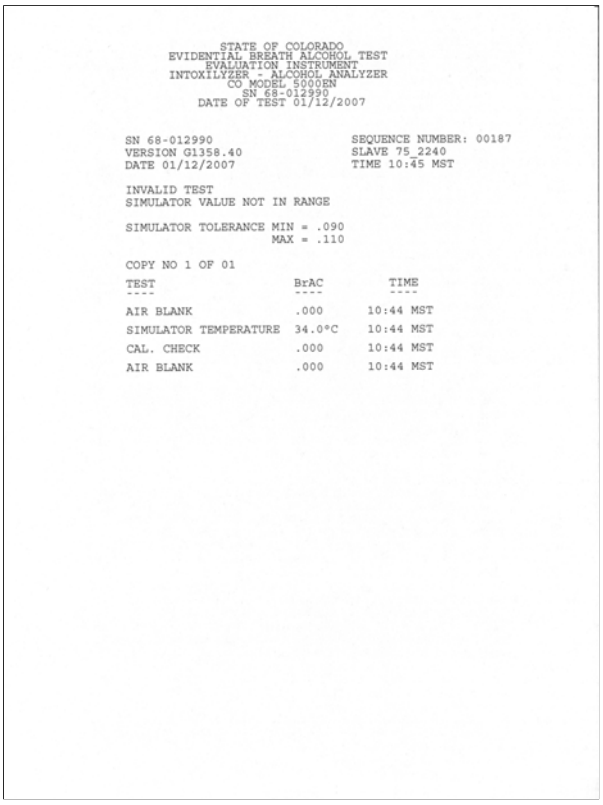
NOT IN RANGE

- **DISPLAY**- EXTERN STD FAIL
  (EXTERNAL STANDARD FAIL)
- **PRINTED INFORMATION**- INVALID TEST, SIMULATOR TOLERANCE, SIMULATOR TEMPERATURE, CALIBRATION CHECK VALUE NOT IN RANGE AND ALL AIR BLANK RESULTS
- **LOG**- .TOL
- **CAUSE**- CALIBRATION RESULT WAS OUTSIDE OF ALLOWABLE LIMITS, CHECK SIMULATOR FOR A LEAK, ERROR MESSAGE, TEMPERATURE RANGE OR AGE OF SOLUTION
- **ACTION**- RESTART TEST

Printed Information Details:

1. Simulator value not in range.
2. Simulator tolerances.
3. Initial air blank.
4. Simulator temperature.
5. Calibration check value and air black results.

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SN 68-012990 SEQUENCE NUMBER: 00187
VERSION G1358.40 SLAVE 75_2240
DATE 01/12/2007 TIME 10:45 MST

INVALID TEST
SIMULATOR VALUE NOT IN RANGE

SIMULATOR TOLERANCE MIN = .090
MAX = .110

COPY NO 1 OF 01

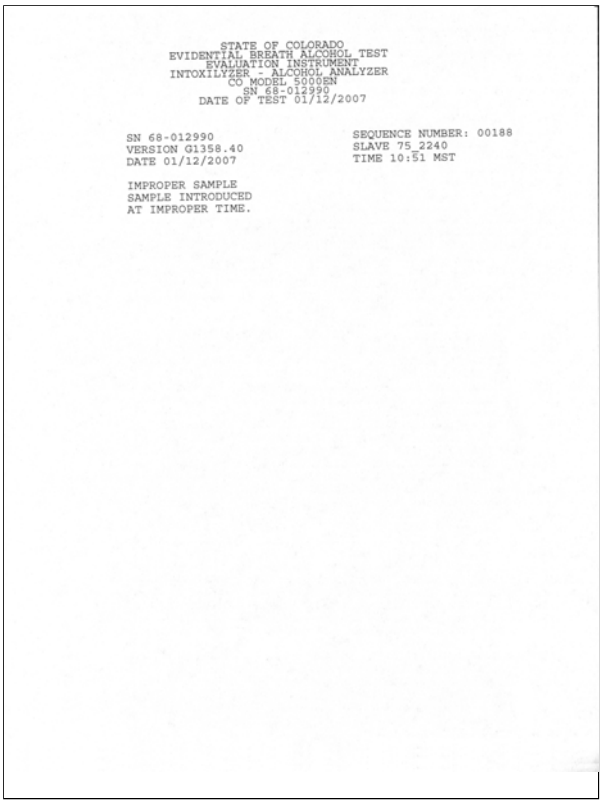
TEST	BrAC	TIME
AIR BLANK	.000	10:44 MST
SIMULATOR TEMPERATURE	34.0°C	10:44 MST
CAL. CHECK	.000	10:44 MST
AIR BLANK	.000	10:44 MST

NOTES:

IMPROPER SAMPLE

- **DISPLAY**- IMPROPER SAMPLE
- **PRINTED**- INVALID TEST SAMPLE INTRODUCED AT IMPROPER TIME
- **LOG**- .IMP
- **CAUSE**- BREATH SAMPLE SUBMITTED BEFORE OR AFTER REQUESTED TIME
- **ACTION**- RESTART TEST

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SN 68-012990
VERSION G1358.40
DATE 01/12/2007

SEQUENCE NUMBER: 00188
SLAVE 75_2240
TIME 10:51 MST

IMPROPER SAMPLE
SAMPLE INTRODUCED
AT IMPROPER TIME.

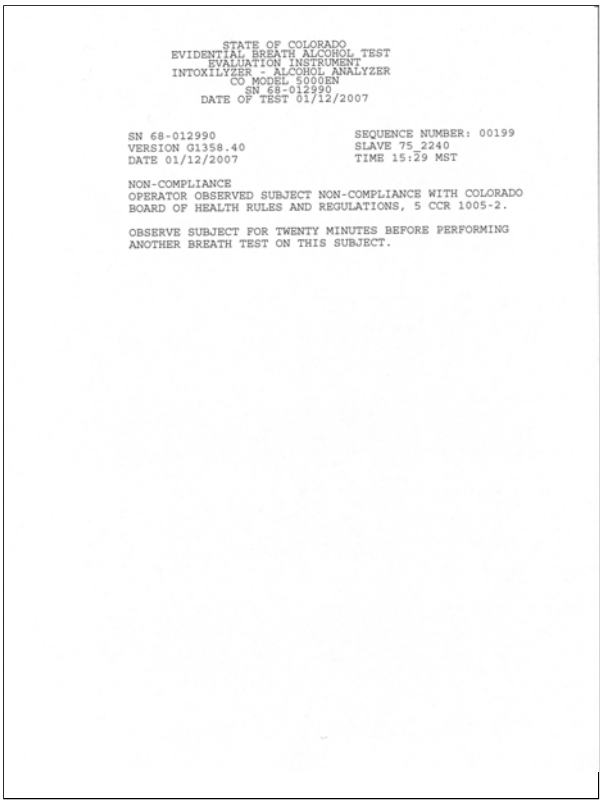
NOTES:

NON-COMPLIANCE

- **DISPLAY**- NON-COMPLIANCE
- **PRINTED INFORMATION**-
  NON-COMPLIANCE
  OPERATOR OBSERVED SUBJECT NON COMPLIANCE WITH COLORADO BOARD OF HEALTH RULES AND REGULATIONS, 5 CCR 1005-2. OBSERVE SUBJECT FOR TWENTY MINUTES BEFORE PERFORMING ANOTHER TEST ON THIS SUBJECT
- **LOG**- .NON
- **CAUSE**- OPERATOR DEPRESSED THE NON-COMPLIANCE OPTION BUTTON **(F6)**
- **ACTION**- REPEAT THE 20 MINUTE OBSERVATION PERIOD
- RESTART TEST

(F6) - Option available from the First Reference Channel Stability Check "……" to the end of the Second Breath Sample Segment.

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SN 68-012990
VERSION G1358.40
DATE 01/12/2007

SEQUENCE NUMBER: 00199
SLAVE 75_2240
TIME 15:29 MST

NON-COMPLIANCE
OPERATOR OBSERVED SUBJECT NON-COMPLIANCE WITH COLORADO
BOARD OF HEALTH RULES AND REGULATIONS, 5 CCR 1005-2.

OBSERVE SUBJECT FOR TWENTY MINUTES BEFORE PERFORMING
ANOTHER BREATH TEST ON THIS SUBJECT.

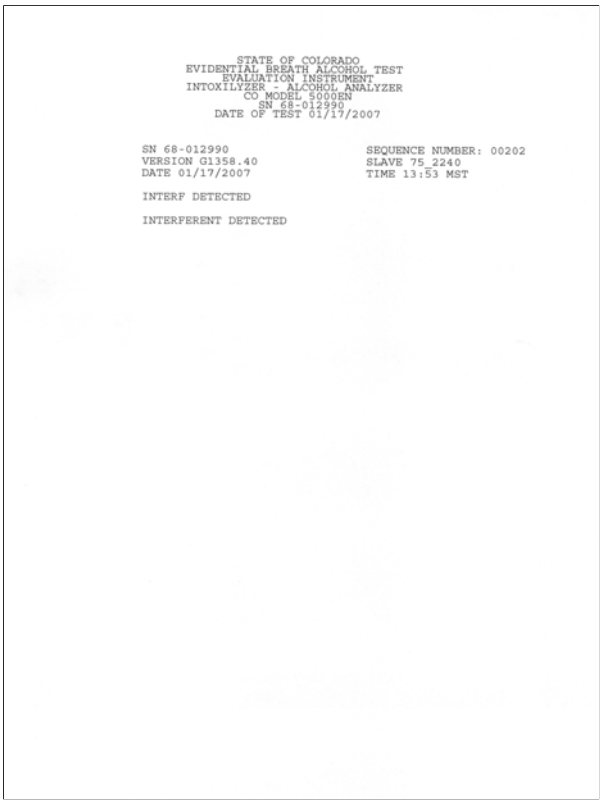
NOTES:

INTERFERENT

- **DISPLAY** - INTERF DETECTED
  SUBTRACTED
  INTERF DETECTED
  (During Air Blank)
- **PRINTED** - INVALID TEST
  INTERFERENT DETECTED
- **LOG**- .INT
- **CAUSE** - THE INSTRUMENT REGISTERED THE PRESENCE OF ANOTHER IR ABSORBING SUBSTANCE
- **ACTION - SEEK MEDICAL ATTENTION FOR THE SUBJECT**

Another IR absorbing substance is present in room air or breath sample. Officer **must** seek medical attention for subject and disregard EBAT results.

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/17/2007

SN 68-012990
VERSION G1358.40
DATE 01/17/2007

SEQUENCE NUMBER: 00202
SLAVE 75_2240
TIME 13:53 MST

INTERF DETECTED

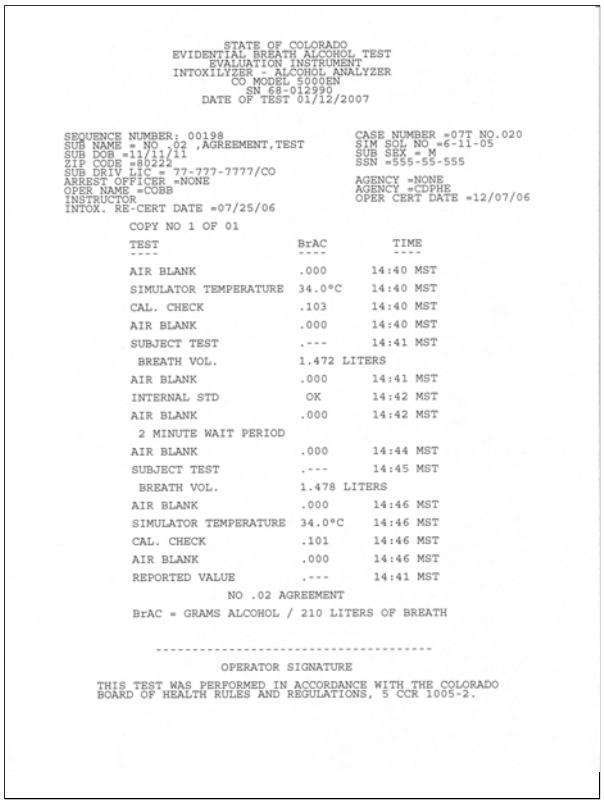
INTERFERENT DETECTED

NOTES:

NO .02 AGREEMENT

- **DISPLAY**- NO .02 AGREEMENT
- **PRINTED INFORMATION**-
  SUBJECT TEST .- - - , CALIBRATION CHECKS, SIMULATOR TEMPERATURE, SUBJECT BREATH VOLUMES, AIR BLANK RESULTS, NO .02 AGREEMENT
- **LOG**- .NO2
- **CAUSE**- THE SUBJECT BREATH RESULTS DID NOT CORRELATE WITHIN .020 OF EACH OTHER
- **ACTION**- REPEAT THE 20 MINUTE OBSERVATION PERIOD
- RESTART TEST

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SEQUENCE NUMBER: 00198
SUB NAME = NO .02 ,AGREEMENT,TEST
SUB DOB =11/11/11
ZIP CODE =80222
SUB DRIV LIC = 77-777-7777/CO
ARREST OFFICER =NONE
OPER NAME =COBB
INSTRUCTOR
INTOX. RE-CERT DATE =07/25/06

CASE NUMBER =07T NO.020
SIM SOL NO =6-11-05
SUB SEX = M
SSN =555-55-555

AGENCY =NONE
AGENCY =CDPHE
OPER CERT DATE =12/07/06

COPY NO 1 OF 01

TEST	BrAC	TIME
AIR BLANK	.000	14:40 MST
SIMULATOR TEMPERATURE	34.0°C	14:40 MST
CAL. CHECK	.103	14:40 MST
AIR BLANK	.000	14:40 MST
SUBJECT TEST	.---	14:41 MST
BREATH VOL.	1.472 LITERS	
AIR BLANK	.000	14:41 MST
INTERNAL STD	OK	14:42 MST
AIR BLANK	.000	14:42 MST
2 MINUTE WAIT PERIOD		
AIR BLANK	.000	14:44 MST
SUBJECT TEST	.---	14:45 MST
BREATH VOL.	1.478 LITERS	
AIR BLANK	.000	14:46 MST
SIMULATOR TEMPERATURE	34.0°C	14:46 MST
CAL. CHECK	.101	14:46 MST
AIR BLANK	.000	14:46 MST
REPORTED VALUE	.---	14:41 MST

NO .02 AGREEMENT

BrAC = GRAMS ALCOHOL / 210 LITERS OF BREATH

OPERATOR SIGNATURE

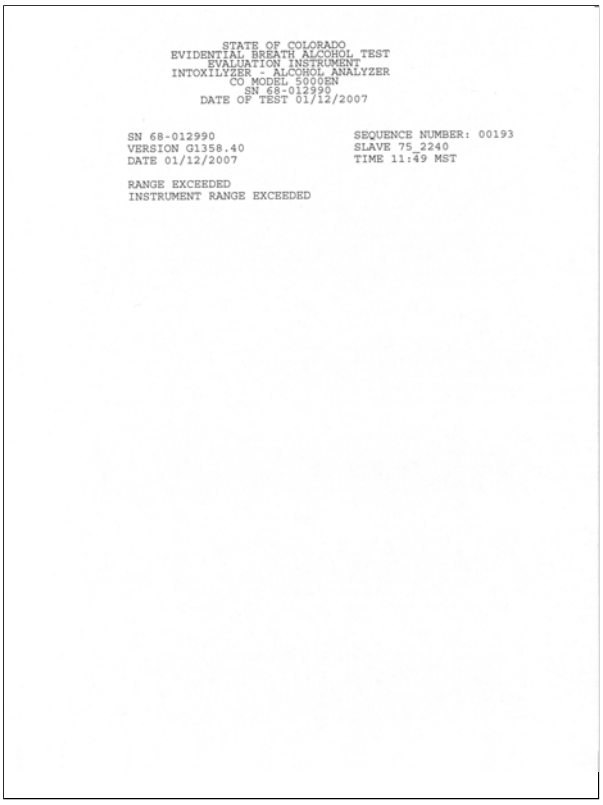
THIS TEST WAS PERFORMED IN ACCORDANCE WITH THE COLORADO BOARD OF HEALTH RULES AND REGULATIONS, 5 CCR 1005-2.

NOTES:

RANGE EXCEEDED

- **DISPLAY-** RANGE EXCEEDED
- **PRINTED INFORMATION-**
  INVALID TEST
  INSTRUMENT RANGE EXCEEDED
- **LOG**- .RGE
- **CAUSE**- THE BRaC EXCEEDED THE INSTRUMENT UPPER LIMIT (>.450) OR THE AIR BLANK EXCEEDED THE INSTRUMENT LOWER LIMIT (<.000)
- **ACTION- SEEK IMMEDIATE MEDICAL ATTENTION FOR THE SUBJECT IF ERROR OCCURS DURING BREATH SAMPLING SEQUENCE**. CONTACT INSTRUCTOR IF ERROR OCCURS DURING AIR BLANK SEQUENCE

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SN 68-012990
VERSION G1358.40
DATE 01/12/2007

SEQUENCE NUMBER: 00193
SLAVE 75_2240
TIME 11:49 MST

RANGE EXCEEDED
INSTRUMENT RANGE EXCEEDED

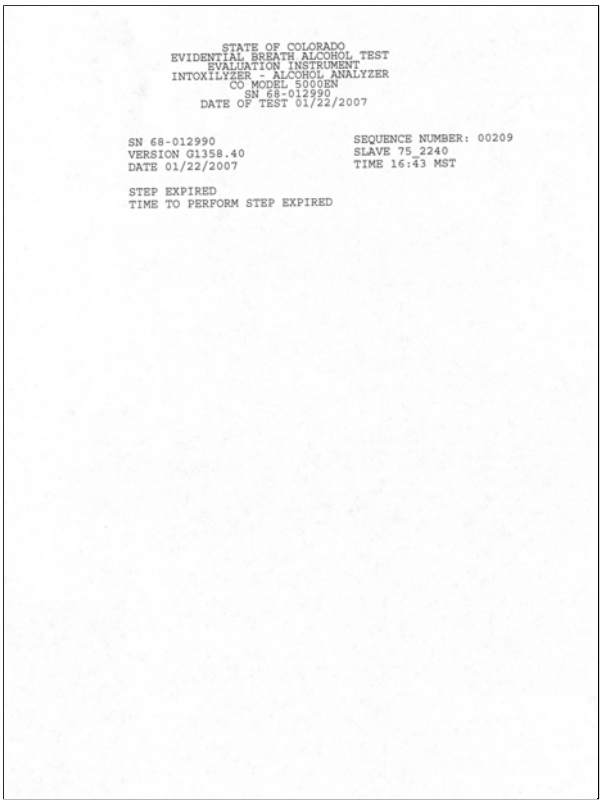
NOTES:

STEP EXPIRED

- **DISPLAY**- STEP EXPIRED
- **PRINTED INFORMATION**- STEP EXPIRED
  TIME TO PERFORM STEP EXPIRED
- **LOG**- .STE
- **CAUSE**- OPERATOR NEGLECTED TO PUSH **START TEST BUTTON** WITHIN REQUIRED TIME LIMIT (75 SECONDS)
- **ACTION**- RESTART TEST

The Operator neglected to push the Start Test Button within 75 seconds after the subject submitted an accepted breath sample and the Intoxilyzer requested mouth piece removal.

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/22/2007

SN 68-012990
VERSION G1358.40
DATE 01/22/2007

SEQUENCE NUMBER: 00209
SLAVE 75_2240
TIME 16:43 MST

STEP EXPIRED
TIME TO PERFORM STEP EXPIRED

NOTES:

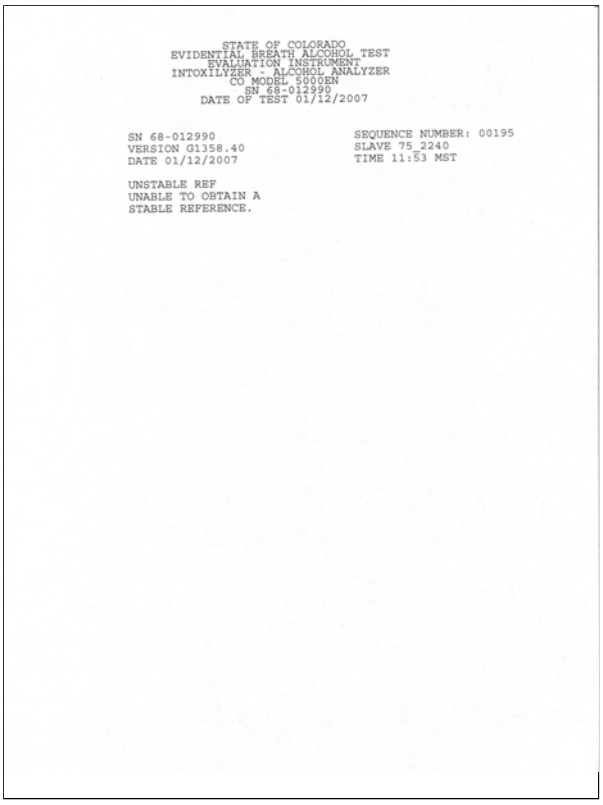
UNSTABLE REFERENCE

- **DISPLAY**- UNSTABLE REFERENCE
  (During Air Blank)
- **PRINTED INFORMATION**- INVALID TEST
  UNABLE TO OBTAIN A STABLE REFERENCE
- **LOG**- .USR
- **CAUSE**- OCCURS ONLY WHEN " **. . . . . .** " APPEAR ON THE DISPLAY. INDICATES REFERENCE CHANNEL INSTABILITY
- **ACTION**- RESTART TEST. IF PROBLEM PERSISTS CONTACT INSTRUCTOR

May occur if.

1. Instrument is first turned on from a cold start and forced to initialize instrument weekly or monthly tests before reference channel stabilizes. Allow instrument to warm up for entire 30 minute period.
2. If subject blows at the inappropriate time into instrument when the reference dots "……" appears on the display.
3. Reference channel is not stable and aborts test.

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SN 68-012990
VERSION G1358.40
DATE 01/12/2007

SEQUENCE NUMBER: 00195
SLAVE 75_2240
TIME 11:53 MST

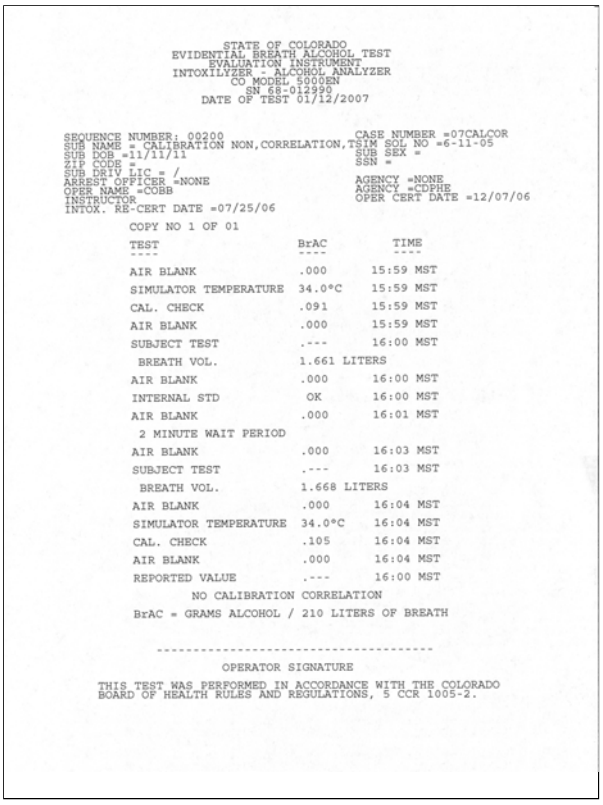
UNSTABLE REF
UNABLE TO OBTAIN A
STABLE REFERENCE.

NOTES:

NO CALIBRATION CORRELATION

- **DISPLAY**- NO CALIBRATION CORRELATION
- **PRINTED INFORMATION**- NO CALIBRATION CORRELATION
- **LOG**- .NSC
- **CAUSE**- SECOND CALIBRATION CHECK DID NOT FALL WITHIN 10% OF THE FIRST CALIBRATION CHECK
- **ACTION**- PRESS START TEST BUTTON AT BEGINNING OF 20-MINUTE OBSERVATION PERIOD TO AWAKEN INSTRUMENT AND ALLOW SIMULATOR TO EQUILIBRATE

NOTES:



STATE OF COLORADO
EVIDENTIAL BREATH ALCOHOL TEST
EVALUATION INSTRUMENT
INTOXILYZER - ALCOHOL ANALYZER
CO MODEL 5000EN
SN 68-012990
DATE OF TEST 01/12/2007

SEQUENCE NUMBER: 00200 CASE NUMBER =07CALCOR
SUB NAME = CALIBRATION NON,CORRELATION,TSIM SOL NO =6-11-05
SUB DOB =11/11/11 SUB SEX =
ZIP CODE = SSN =
SUB DRIV LIC = / AGENCY =NONE
ARREST OFFICER =NONE AGENCY =CDPHE
OPER NAME =COBB OPER CERT DATE =12/07/06
INSTRUCTOR
INTOX. RE-CERT DATE =07/25/06

COPY NO 1 OF 01

TEST	BrAC	TIME
AIR BLANK	.000	15:59 MST
SIMULATOR TEMPERATURE	34.0°C	15:59 MST
CAL. CHECK	.091	15:59 MST
AIR BLANK	.000	15:59 MST
SUBJECT TEST	.---	16:00 MST
BREATH VOL.	1.661 LITERS	
AIR BLANK	.000	16:00 MST
INTERNAL STD	OK	16:00 MST
AIR BLANK	.000	16:01 MST
2 MINUTE WAIT PERIOD		
AIR BLANK	.000	16:03 MST
SUBJECT TEST	.---	16:03 MST
BREATH VOL.	1.668 LITERS	
AIR BLANK	.000	16:04 MST
SIMULATOR TEMPERATURE	34.0°C	16:04 MST
CAL. CHECK	.105	16:04 MST
AIR BLANK	.000	16:04 MST
REPORTED VALUE	.---	16:00 MST

NO CALIBRATION CORRELATION

BrAC = GRAMS ALCOHOL / 210 LITERS OF BREATH

OPERATOR SIGNATURE

THIS TEST WAS PERFORMED IN ACCORDANCE WITH THE COLORADO BOARD OF HEALTH RULES AND REGULATIONS, 5 CCR 1005-2.

NOTES:

WEEKLY CALIBRATION FAIL

- **DISPLAY**- WEEKLY CAL FAIL-
  DISABLED
- **PRINTED INFORMATION**- NONE
- **LOG**- NONE
- **CAUSE**- OCCURS WHEN AN OPERATOR DEPRESSES THE **START TEST BUTTON** AND IF AN INSTRUCTOR FAILED TO CONDUCT THE WEEKLY CALIBRATION CHECK AFTER SEVEN DAYS
- **ACTION**- CONTACT AN INSTRUCTOR

NOTES:

SIMULATOR TEMPERATURE NOT IN TOLERANCE

- **DISPLAY**- SIMULATOR TEMPERATURE IS NOT IN TOLERANCE
- **PRINTED INFORMATION**- NONE
- **LOG**- NONE
- **CAUSE**- TEST ATTEMPTED WITHOUT WAITING FOR THE SIMULATOR TO REACH THE PROPER OPERATING TEMPERATURE (10 MINUTES)
- **ACTION**- WAIT FOR SIMULATOR TEMPERATURE TO STABILIZE TO 34.0°C

May occur if operator does not wait the appropriate time to obtain proper simulator operating temperature range. (10 minutes)

NOTES:

SIMULATOR TEMPORARILY LOST CONNECTION

- **DISPLAY-** SIMULATOR TEMPORARILY COMM. LOST RECONNECTING DR#### OK
- **PRINTED**- NONE
- **LOG**- NONE
- **CAUSE**- SIMULATOR HAS MOMENTARILY LOST COMMUNICATION WITH INTOXILYZER
- **ACTION**- CHECK SIMULATOR POWER CONNECTION AND INTERFACE CABLE CONNECTIONS

The corrective action is listed below:

"SIMULATOR TEMPORARILY LOST CONNECTION RECONNECTING"
Message posts twice with tone, Followed by the simulator serial number "DR#### OK"

This Error Message may occur at two different times during the test sequence.

A. **Error Message occurs during the start of Data Entry**.

1.To correct the problem, press the **START TEST** button.

2.The instrument will return to the first step of Data Entry.

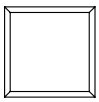
B. **Error Message occurs after Data Entry.**

1.The disconnection is self correcting. Wait is less than 45 seconds for Intoxilyzer and simulator to restore communication.

2.Test will continue with the first calibration check

NOTES:

QUESTIONS?



NOTES:

Simulator Theory and Operation

NOTES:

Use and Theory

- EACH BREATH TEST MUST BE PRECEEDED BY A REFERENCE ANALYSIS
- REQUIRED BY THE CDPHE RULES AND REGULATIONS, 5 CRR 1005-2
- THE DEVICE USED TO GENERATE THE REFERENCE VAPOR IS CALLED BREATH ALCOHOL SIMULATOR OR “SIMULATOR”
- H2O AND ETOH IS USED IN LUE OF BLOOD AND ETOH

Rev 2.08 13-2

•The simulator is designed to simulate human breath giving off ethyl alcohol vapors.

•**NOTES:**

Use and Theory

- THE AMOUNT OF ETOH IN 2100 ml OF DEEP LUNG AIR AT 34.0°C ≅ ETOH IN 1 ml OF ATERIAL BLOOD
- SIMULATOR SOLUTION

  0.100 grams OF ETOH PER 2100 Liters OF AIR AT 34.0°C
- PREPARED BY CERTIFICATION UNIT
- VALIDATES THE PERFORMANCE OF THE 5000EN

Rev 2.08 13-3

•General agreement in the scientific community is that the amount of alcohol in 2100 milliliters of end expiratory air (deep lung air) at the exhaled temperature of 34.0°C has the same amount of alcohol as 1 milliliter of circulating pulmonary arterial blood

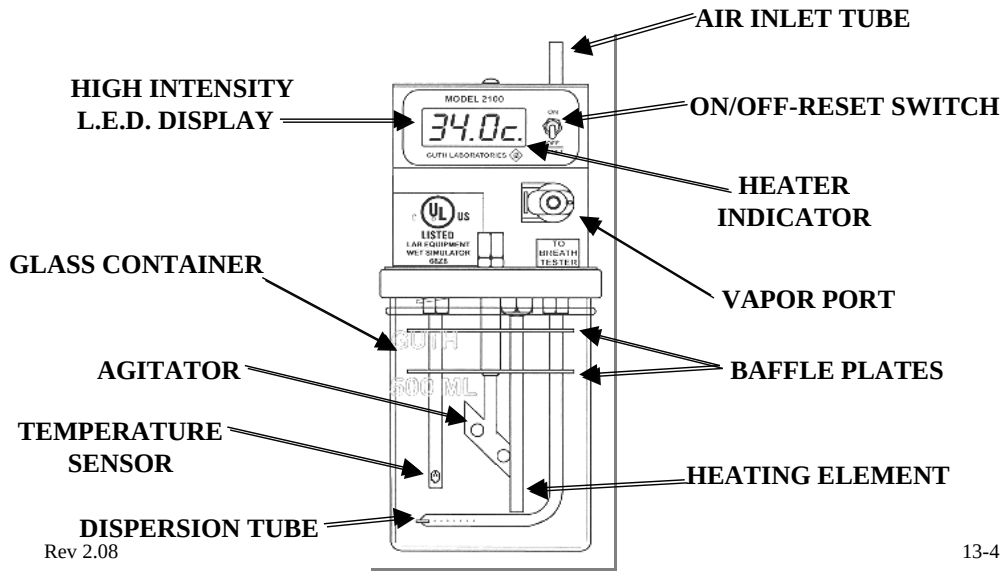
•This partitioning ratio for ETOH to H2O can be stated as the amount of alcohol in 2580 mls of **vapor** has the same as the amount of ETOH in as 1 milliliters of H2O in **liquid** state. While the partitioning ratio isn't exactly the same for breath to blood, it is close enough to use a simulator with an ETOH-H2O solution as a reference sample.

•The solution is certified to deliver a vapor concentration of Ethanol of 0.100 grams of ethanol per 210 liters of air at 34.0°C ± 0.2°C

•Each Colorado Model 5000EN Intoxilyzer is certified to perform within certain specifications as prescribed by the CDPHE Rules and Regulations and the simulator solution is used to validate that the instrument is performing accurately for each and every test in the event that the evidence is used against an individual charged with DUI.

•NOTES:

Functional Structure



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CONTAINER

•Made of laboratory glass and holds 500 milliliters of ETOH-H2O solution.

•The container lip must fit snuggly and seat into the rubber gasket under the lid to insure the equilibrium vapor is sealed in the simulator

LID

•Contains the heater bar, electronically controlled to 34.0°C ± 0.2°C by the thermostat.

• The L.E.D. display provides an operator with visual input about the temperature and status of simulator

•Motor rotates an agitator paddle to evenly circulate and heat the solution

•Dispersion tube forces air to bubble through the solution

•Vapor exit tube conducts emerging vapors to the 5000EN through the heated simulator tube

•**NOTES:**

_____

_____

_____

_____

Exclusive Features of the Guth Model 2100 Simulator

- MICROPROCESSOR ENHANCED:
  - -**PERFORMS** INTERNAL DIAGNOSTICS
  - -**MONITERS** TEMPERATURE SENSOR, RFI CIRCUITRY
  - -**CONTROLS** AGITATOR MOTOR, DISPLAY DRIVER, COMMUNICATIONS AND A/V INFORMATION

NOTES:

Exclusive Features of the Guth Model 2100 Simulator

- TEMPERATURE SENSOR:

  -RUGGED DESIGN: STAINLESS STEEL, BRASS

  -STABLE TEMPERATURE RANGE: MAINTAINS A PRECISE RANGE OF 34°C ± .02°C

  -ACCURACY OF INSTRUMENT TEMPERATURE READING IS ± .O5°C

NOTES:

Exclusive Features of the Guth Model 2100 Simulator

- ELECTRONICALLY PROTECTED:

  -INTERNAL POWER TRANSFORMER AND OPTICALLY ISOLATED CONTROL COMPONENTS PREVENTS A.C. LEAKAGE TO ELECTRONICS

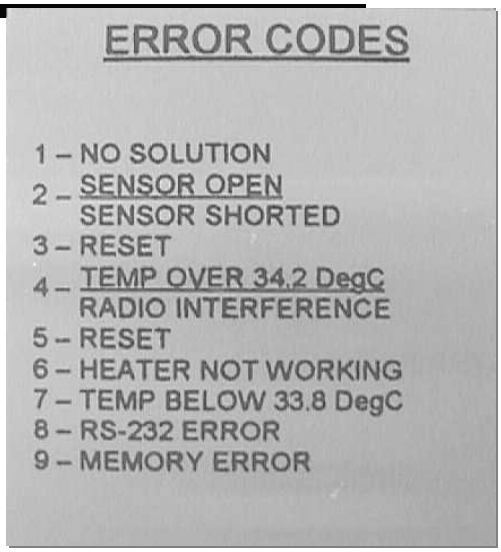
  -R.F.I. PROTECTED

  -HEATING ELEMENT PROTECTED FROM OVER HEATING WHEN TEMPERATURE SENS0R IS DEFECTIVE **OR** REMOVED FROM SOLUTION

  -EXTERNAL FUSE PROVIDES PROTECTION IN CASE OF ELECTRICAL MALFUNCTION

NOTES:

Guth Simulator Error Codes



MESSAGE PLATE

MOUNTED ON SIMULATOR

QUICK REFERENCE GUIDE

Rev 2.08

13-8

NOTES:

Guth Simulator Error Codes

CAUSE:
NO SOLUTION IN CONTAINER OR SIMULATOR WAS POWERED UP WITHOUT TOP HOUSING ATTACHED TO CONTAINER.

REMEDY:
TURN OFF THE SIMULATOR, FILL WITH SOLUTION AND REASSEMBLE.

CAUSE:
THE TEMPERATURE SENSOR IS OPEN OR SHORTED. COMPUTER IS RECEIVING NO SIGNAL TO ALLOW IT TO CONTROL THE TEMPERATURE.

REMEDY:
THIS CAN'T BE REMEDIED IN THE FIELD. REQUIRES SERVICE *

CAUSE:
THE ELECTRONICS NEED TO BE RESET.

REMEDY: TURN OFF, WAIT 3-5 SECONDS, THEN TURN ON. IF THE SIMULATOR REPEATS THIS ERROR CODE. CALL FOR ASSISTANCE *

* NOTIFY CDPHE

NOTES:

Guth Simulator Error Codes

Err.4	Err.5	Err.6
CAUSE: TEMPERATURE OF THE SOLUTION IS ABOVE 34.2°C OR RFI HAS BEEN DETECTED.	CAUSE: ELECTRONICS NEED TO BE RESET.	CAUSE: EXCESSIVE AMOUNT OF TIME TO OBTAIN OPERATING TEMPERATURE (+15 MINUTES). THE HEATING ELEMENT MAYBE OPEN OR THE SOLUTION WAS TOO COLD.
REMEDY: REMOVE THE SOURCE OF THE INTERFERENCE OR CHANGE THE LOCATION OF THE SIMULATOR. RESET THE SIMULATOR.	REMEDY: RESET THE SIMULATOR.	REMEDY: RESET THE SIMULATOR. IF THE SIMULATOR DOES NOT HEAT, THE HEATING ELEMENT MAY BE DEFECTIVE. REQUIRES SERVICE *

* NOTIFY CDPHE

NOTES:

Guth Simulator Error Codes

CAUSE:
THE TEMPERATURE OF THE SOLUTION IS BELOW 33.8°C AFTER IT HAS INITIALLY OBTAINED 34.0°C.

REMEDY:
RESET THE SIMULATOR. IF THE SIMULATOR DOES NOT HEAT, THE HEATING ELEMENT MAY BE DEFECTIVE. REQUIRES SERVICE*

CAUSE:
AN ERROR HAS OCCURRED WITH THE RS-232 COMMUNICATIONS EXTERNAL CONTROL OPTION.

REMEDY:
RESET THE SIMULATOR. IF THE SIMULATOR REPEATS THIS ERROR CODE. CALL FOR ASSISTANCE *

CAUSE:
AN ERROR HAS OCCURRED WITH THE READ OR WRITE MEMORY OPTION COMMAND.

REMEDY:
RESET THE SIMULATOR. IF THE SIMULATOR REPEATS THE ERROR CODE, CALL FOR ASSISTANCE *(THIS ERROR SHOULDN"T OCCUR WITH COLORADO SIMULATORS!)*

* NOTIFY CDPHE

NOTES:

Correct Positioning of Simulator Tubing and Clamp

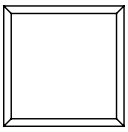
#1 Shows the correct orientation of the Simulator Tubing Elbow

#2 Shows the correct positioning of the Simulator Clamp

- Make sure the clamp is tightened all the way closed
- When sending the simulator in for repairs, remove the tubing at the clamp and disconnect the heated tube at the disconnect joint
- Keep all tubing and the jar at your location

NOTES:

QUESTIONS?



NOTES:

LABORATORY

PRACTICAL

SECTIONS

1. KEYBOARD MENU #1:
2. PERFORMING AN EVIDENTIAL BREATH ALCOHOL TEST
3. ERROR MESSAGES
4. FUNCTION KEY
5. RESET PROCEDURE

SECTION I: KEYBOARD MENU # 1

1. **PERFORM ALL OPTIONS FROM MENU**
   SELECT OPTIONS A,B,C,D,E,L,O,P,Q

2. **PERFORM OPTIONS A AND Q LAST. THEY WILL EXIT MENU # 1 WHEN FINISHED**

3. **OBSERVE INSTRUMENT OPERATION AND DISPLAY MESSAGES DURING OPTIONS OPERATION**

Do Not select Option **P!!!** This option should only be selected to change the PASSWORD for menu #1.

SECTION II: PERFORMING EVIDENTIAL BREATH ALCOHOL TEST

1. **EACH STUDENT MUST PERFORM THE THREE SIMULATOR INTOXICATED SUBJECT TESTS (DRUNK B,&C)**

2. **USE INFORMATION IN EACH SCENARIO FOR DATA ENTRY QUESTIONS**

3. **FOLLOW STANDARD OPERATING PROCEDURE MINUS 20 MINUTE WAIT PERIOD**

4. **KEEP SIMULATORS PLUGGED INTO AC OUTLETS**

5. **OBSERVE INSTRUMENT OPERATION AND DISPLAY MESSAGES DURING THE TEST**

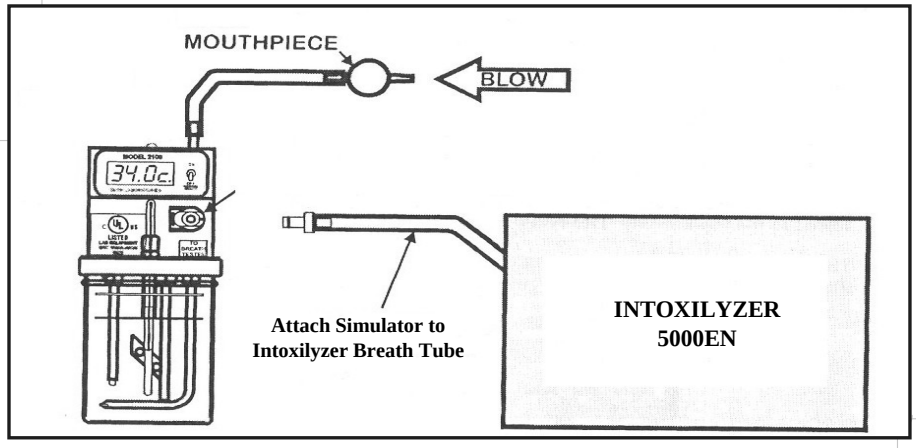
SECTION II & III: DRUNK A,B& C SIMULATOR CONNECTIONS

1. **CONNECT SIMULATOR DRUNK TO INTOXILYZER AS SHOWN**

2. **DO NOT CONNECT THE SIMULATOR UNTIL DISPLAY READS PLEASE BLOW**

3. **DISCONNECT THE SIMULATOR FROM INTOXILYZER *WHEN FINISHED BLOWING***

SECTION II: A,B & C CONNECTIONS



SECTION III: ERROR MESSAGES

1. EACH STUDENT MUST GENERATE EACH ERROR MESSAGE

2. FOLLOW DIRECTIONS IN MANUAL FOR GENERATING THE ERROR MESSAGE

3. OBSERVE INSTRUMENT OPERATION AND DISPLAY MESSAGES

Drunk A, the acetone simulator, only needs to be done once for each student. If it is done during Section I, it does not need to be repeated in this section.

SECTION III: FUNCTION KEYS

1. **FOLLOW THE DIRECTIONS IN THE SECTION FOR F2 AND F6 OPTIONS**

2. **EACH STUDENT MUST COMPLETE THIS SECTION**

SECTION V: RESET PROCEDURE

1. DEPRESS RESET SWITCH ON REAR PANEL OF INTOXILYZER

2. OBSERVE INSTRUMENT OPERATION AND DISPLAY MESSAGES

LABORATORY: INSTRUMENTS

1. **PAIR UP - 2 STUDENTS / INSTRUMENT**
2. **CABLES ARE DISCONNECTED**
3. **IN STANDBY MODE**
4. **PRESS START TEST SWITCH**
5. **FILL SIMULATOR AND TURN ON FIRST**
6. **CONNECT ALL CABLES**
   (EBAT STAFF CHECK BEFORE PROCEEDING)
7. **USE PASSWORD FOR OPERATOR CERTIFICATION DATE**

LABORATORY: GENERAL RULES

1. NO FOOD OR DRINK
2. LOCKED DOORS - NOTIFY IF LEAVING
3. TAKE MANUAL
4. ASK QUESTIONS IF CONFUSED OR DO NOT UNDERSTAND

QUESTIONS?

INTOXILYZER 5000EN
LABORATORY PRACTICAL

(INSTRUCTOR)

INTRODUCTION

The Laboratory Practical will provide the opportunity for **"HANDS ON"** use of the Intoxilyzer 5000EN. The practical will cover all aspects of error messages, displays, operation and situations that may occur when performing an Evidential Breath Alcohol Test. It is of utmost importance for students to learn and understand the proper operation, principles and procedures for conducting an Evidential Breath Alcohol Test on the Intoxilyzer. At the conclusion of this session all operator/instructors must be proficient in Intoxilyzer operation and conducting a breath test. At the end of the practical a review will be conducted to discuss alcohol breath test results and other material presented.

SECTION I: KEYBOARD MENU #1, PASSWORD AND OPTIONS

This section of the practical will consist of each student performing the three new menu functions on the Intoxilyzer.

SECTION II: PERFORMING EVIDENTIAL BREATH ALCOHOL TEST

This section of the practical will consist of a two subject breath tests

SECTION III: ERROR MESSAGES

This section will familiarize you with the various notifications the instrument created depending on the error encountered

SECTION IV: FUNCTION KEYS

This section will familiarize operator with the 2 new function key options.

PART V: RESET SWITCH

Part IV will consist of each student pressing "RESET" switch and observing the reboot operations of the instrument.

SECTION I: KEYBOARD MENU # 1, PASSWORD AND OPTIONS

An Instructor as part of a weekly and monthly maintenance routine performs diagnostic function checks. These tasks enable consistent vigilance over instrument performance.

THE DIRECTIONS ARE AS FOLLOWS:

1. On the keyboard, press the **ESCAPE** key twice in rapid succession.
2. The display will show **PASSWORD**
3. Type in your Instructor **PASSWORD** and press **ENTER**
4. If the password is accepted the display will show **1 A, B, C, D, E, O, L, Q**
5. Choose an Option by entering **A, B, C, D, E, O, L** or **Q** and pressing **ENTER** on the keyboard. Select Options **A** and **Q** last. They will exit **MENU # 1** when finished.
6. Follow instructions as they appear on the display.

The function of each new Option is outlined below.

L = STANDARD SIMULATOR LOG

Mode for changing the following.

NEW LOG
PRINT CURRENT OR PREVIOUS LOG
QUIT LOG SEQUENCE

NEW

SIM SOL NO=	Enter simulator solution number. The simulator solution number will self populate on all EBAT's for that log period.
INSTR. NAME=	Enter Instructor last name
REVIEW DATA? Y/N	Answer "Y" for yes. Option scrolls through the data with the Enter key to verify information correctness. Answer "N" for no, the instrument enters diagnostics sequence.

INITIALS =	Enter Instructor initials.
TUBES WARM Y/N	Yes or No. If yes, instrument steps to next question. If no, instrument returns to tubes warm prompt. Contact CDPHE if either tube is cold to the touch after sufficient time was given for tubes to warm up. Do not conduct an EBAT until this is resolved.
REVIEW DATA? Y/N	Answer "Y" for yes. This option scrolls through the data with the Enter key to verify information correctness. Answer "N" for no, the instrument enters an automated air blank, calibration check, air blank sequence.
EBAT=	Instrument enters the automated air blank, breath test, air blank sequence.

No test record printed. Top of Simulator Log Sheet is now completed.

PRINT

CURR OR PREV C/P Print Current or Previous Simulator Solution Log. Only the last previous log can be retrieved from the instrument when choosing previous log option. Instrument pauses and displays “Printing Log”.

QUIT

Quit	Exits Log Sequence to Menu #1

A = CONTINUOUS AIR BLANK

Air Pump is turned on for continuous Air Blank
Turn off with the start test button

B = BREATH TEST

Breath test sequence will be **A B A**
Air blank, Breath, Air Blank
All data entry questions will be asked
Test record printed

Breath test - allows training/ review of information pertinent to a breath test. The Colorado Model will ask for the following information.

SUBJECT DATA:

SUB LAST NAME=	Last name
SUB FIRST NAME=	first name
SUB MIDDLE NAME=	middle name
SUB DOB MMDDYY=	date of birth
SUB SEX =	M/F gender of subject tested
ZIP CODE =	zip code as stated on drivers license
SSN =	social security number
STATE OF ISSUE =	two letter abbreviation for state of issue
SUB DRIV LIC =	subjects drivers license number ##-###-####

TEST DATA:

CRASH (Y/N) =	yes or no answer yes the Intox will prompt an injury question.
INJURIES (Y/N) =	yes or no If answer is no it will go directly to next question.
ARREST OFFICER=	name of arresting officer
OPER NAME=	name of instrument operator
OPER CERT DATE=	operator re-certification date (must be current)
SIM SOL NO=	simulator solution number 0-00-00
REVIEW DATA? Y/N =	answer "y" for yes. Scroll through the data with the return key to verify correctness of information. Answer "n" for no, the instrument enters an automated air-blank, breath, air-blank, save cycle.

NOTE: The preliminary data, the information at the very top of the page, is stored by the instrument. This includes the instrument re-certification date that is printed in the test data section. The instrument re-certification date is the last date the Intoxilyzer had an annual inspection

C = CALIBRATION CHECK

Performs an automated weekly calibration check that runs the standard solution.
The following steps will be taken, questions will be asked

Weekly **Y**/N

Yes

INITIALS =	Enter Your initials
TUBES WARM Y/N	If yes, next question is asked. If No, instrument returns to tubes warm prompt, Contact CDPHE if either tube is cold

to the touch after sufficient time was given for tubes to warm up. Do not conduct an EBAT until this is resolved.

REVIEW DATA? Y/N — Answer "**Y**" for yes. Option scrolls through the data with the Enter key to verify information correctness. Answer "**N**" for no, the instrument enters an automated air blank, calibration check, air blank sequence.

No test record printed. Weekly calibration check box is filled.

Weekly Y/**N**

No

If no, the instrument enters an automated air blank, calibration check, air blank sequence.

The simulator solution log is populated with a Sequence Number, Subject Name: CAL, CHECK, single Calibration Check result, Test Date and Time.

The Intoxilyzer must measure the standard solution within the tolerance requirements as established by the Colorado Board of Health Rules and Regulations. The calibration reading must be 0.090 to 0.110 BrAC.

D = DIAGNOSTICS

Performs automated diagnostic tests check. Includes the following internal electronic checks.

PROM CHECK PASSED
Z80 VER - XXXXX.XX
SLAVE 75_XXXX
RAM CHECK PASSED
TEMP CHECK PASSED
PROCESSOR CHECK
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

PROM CHECK: Compares program check bytes to internal checksum
Verifies EPROM is valid
Prints Z80 version number and slave version number

RAM CHECK: Random access memory
Checks each byte in Random Access Memory for possible failure
RAM is where calculations and other test data stored

TEMP CHECK: Sample chamber temperature is checked

PROCESSOR CHECK: will monitor the following areas:
Motor check
EPROM check
Serial Number match
Range and stability
Auto calibrate status

RTC CHECK: Real Time Clock
Checks the time and date circuit, if invalid time & date detected a “CLOCK ERROR” will show on digital display

INTERNAL STD: Internal Standard check. The internal standard check of 1, 2, and 3 correspond to 0.100, 0.200 and 0.300 BrAC levels.

DIAGNOSTIC: Results of Diagnostic Function Checks

PRINTER CHECK: Checks function and operation on printer

If any of the above functions fail, a display message will indicate what section has failed (ie. Prom error, ram error, temp error, printer error, or processor error 1,2,3,4, or 5).

Note: the Intoxilyzer will automatically cycle through the diagnostic check sequence when the instrument is powered up or after an electrical interruption. Also, when the reset switch is activated to "reboot" the instrument. The Intoxilyzer must pass all diagnostic checks in order for it to proceed to a ready mode. There will be no print out of this diagnostic check. However, if

the diagnostic sequence is initiated by the escape-escape command there will be printouts.

If a section of the diagnostic function fails it will appear on the display. If this occurs note the display reading and notify the EBAT Program.

E= PRELIMINARY DATA ENTRY

"ENTER TIME HHMM"
"NORM TIME ZONE="
"DATE= MMDDYY"
"INSTR. LOCATION="
"TIMEOUT IN MIN.="
"SIM LOW VALUE"
"SIM HIGH VALUE"
"NO PRINTOUTS="

"ENTER TIME HHMM"
set in 24 hour mode

"NORM TIME ZONE"
Mountain standard time/mountain daylight time as "MST OR MDT

"DATE= MMDDYY
Set date

"INSTR. LOCATION="
set to your location OR
Evidential Breath Alcohol Test

"SIM. LOW VALUE="
Enter lowest acceptable simulator standard Calibration value 0.090 BrAC

"SIM. HIGH VALUE="
Enter highest acceptable simulator standard calibration value 0.110 BrAC
Values are saved by instrument
High and low calibration values are compared to readings during calibration check.
If out of tolerance VALUE NOT IN RANGE is displayed

NO OF PRINTOUTS="

Enter how many print-outs of test are desired

O = OPERATOR RECERTIFICATION TEST

Performs an automated breath test and is used to evaluate Operator proficiency with the Intoxilyzer 5000EN.
All data entry questions will be asked

SUB LAST NAME =	Last name
SUB FIRST NAME =	First name
SUB MIDDLE NAME =	Middle name
SUB DOB MMDDYY =	Date of birth
SUB SEX =	M/F gender of subject tested
ZIP CODE =	Zip code as stated on drivers license
SSN =	Social Security Number
STATE OF ISSUE =	Two letter abbreviation for state of issue
SUB DRIV LIC =	Subject drivers license number ##-###-####
CRASH (Y/N) =	Yes or No, If answer is yes the Intoxilyzer will prompt an injury question. If answer is no it will go directly to following question.
INJURIES (Y/N) =	Yes or No
ARREST OFFICER =	Arresting officer last name
AGENCY =	Arresting officer's agency
OPER NAME =	Instrument operator last name
AGENCY =	Instrument operator's agency
OPER CERT DATE =	Operator certification date (must be current)
CASE NUMBER =	Not required for operator re-certification test.
REVIEW DATA? Y/N =	Answer "Y" for yes. Option scrolls through the data with the enter key to verify information correctness. Answer "N" for no, the instrument begins the EBAT sequence.

Test record printed. Operator and Instructor must sign test record sheet. Take note of re-certification date at bottom of test form.

P = PASSWORD

To change your password in the instrument choose P
"Password=" will appear on the screen and this is when you enter your new Password.
TAKE CARE IN TYPING IN YOUR NEW PASWRD AND SHARE IT WITH THE

OTHER ISNTRCTORS AT YOUR AGENCY

Q = QUIT FUNCTION

Return to the ready mode.

SECTION II: PERFORMING EVIDENTIAL BREATH ALCOHOL TEST

Working in pairs, one person will act as the subject; the other will perform the Evidential Breath Alcohol Test on the Intoxilyzer. Using the information provided for each scenario and following the standard operating procedure conduct the breath test simulating a real life situation. This will include completing all required paper work. Use the current standard simulator solution lot number provided on the label and a current operator re-certification date. The subject will submit a breath sample by blowing through the simulator to simulate the breath alcohol of an intoxicated person. This is a very straightforward breath test to acquaint you with how breath tests are to be conducted. **NOTE, IN REAL LIFE, SUBJECTS DO NOT BLOW THROUGH SIMULATORS.** The EBAT will be performed following the operational checklist as outline by the Colorado Board of Health Rules and Regulations. While performing the test, follow and pay close attention to the messages as they appear on the digital display. Also observe the operation and functioning of the Intoxilyzer.

SIMULATOR B

> You have arrested Santa B. Clause after failing roadside maneuvers. Perform an alcohol breath test on Mr. Clause. His birthday is January 1, 1900. His zip code is 10000, he has no drivers license and never had a social security number.

SIMULATOR C

> On New Years Eve you observe a vehicle stopped at a green traffic light. After inability to perform any roadside maneuvers Mr. Happy go lucky is taken to the police station for a breath test. His birth date is June 14, 1920.

PART III: ERROR MESSAGES

PART two will consist of exercises to demonstrate the error messages that could occur during a test. The error messages are outlined on a sheet for your reference. When an error message is generated take note of the following;

1. What message is displayed on the display?
2. An intermittent beeping to alert the operator that an error has occurred.
3. The message that is printed on the evidence printout
4. What is the cause of the error message?
5. What corrective action should be taken?

For this second section each person will follow the directions to generate error messages that may occur during testing.

INVALID TEST:

Initiate a breath test. During an air blank depress the start test switch.

DISPLAY:	INVALID TEST
LOG:	.INV
PRINTED MESSAGE:	INVALID TEST ABORTED: START TEST BUTTON PUSHED AT WRONG TIME

CAUSE: The start test switch was pressed at wrong time.

CORRECTIVE ACTION: Start test again and follow display commands.

IMPROPER SAMPLE:

Initiate a breath test. During an air blank blow into the instrument.

DISPLAY:	IMPROPER SAMPLE
LOG:	.IMP
PRINTED MESSAGE:	INVALID TEST SAMPLE INTRODUCED AT IMPROPER TIME

CAUSE: Breath sample given before or after the requested time.

CORRECTIVE ACTION: Repeat test, submit breath sample ONLY when display

INVALID SAMPLE:

With the breath spray provided, prior to subjects test, contaminate the mouth with alcohol. Blow into the instrument when requested by the display.

DISPLAY:	INVALID SAMPLE
LOG:	MOA. (MOUTH ALCOHOL)
PRINTED MESSAGE:	INVALID SAMPLE .XXX ***MOUTH ALCOHOL DETECTED*** OBSERVE SUBJECT FOR TWENTY MINUTES BEFORE PERFORMING ANOTHER BREATH TEST ON THIS SUBJECT (All test information is printed)

CAUSE:Indicates mouth alcohol is present.

CORRECTIVE ACTION: Repeat twenty-minute observation period and start test

AMBIENT FAILS:

During the first air blank of a test, hold the breath tube close to mouth after using the breath spray. Slightly blow across breath tube inlet during air blank.

DISPLAY:	AMBIENT FAILED
LOG:	AMB
PRINTED MESSAGE:	INVALID TEST CHECK AMBIENT CONDITIONS

CAUSE: During any air blank the presence of an I.R. absorbing substance was detected in the room air

CORRECTIVE ACTION: Find source of contamination and ventilate room.

NOT IN RANGE:

Disconnect the simulator vapor port going into the Intoxilyzer. Run a breath test.

DISPLAY: EXTERN STD FAIL

LOG: .TOL

PRINTED MESSAGE: INVALID TEST
SIMULATOR VALUE NOT IN RANGE;
SIMULATOR TOLERANCES; INITIAL AIR BLANK, SIMULATOR TEMPERATURE;
CALIBRATION CHECK AND FINAL AIR BLANK RESULTS,

CAUSE: The calibration result was outside the allowable limits.

CORRECTIVE ACTION: Check simulator for error message, temperature, a leak or age of standard solution.

REFUSAL:

During a breath test, when the display reads "please blow/r", press ”**R**” on the keyboard and the **ENTER Key**.

DISPLAY: REFUSED

LOG: .REF

PRINTED MESSAGE: SUBJECT TEST - REFUSED
SUBJECT REFUSED TO CONTINUE
(All test information is printed)

CAUSE: Available during subject breath test step during scrolling or flashing as long as “**PLEASE BLOW/R**” is on the display. Activated by typing “**R**” and **ENTER** on the keyboard. May only be used if breath sample has not been presented.

CORRECTIVE ACTION: Subject has refused a breath test even though they were

placed in front of Intoxilyzer and afforded the opportunity to submit a sample.

DEFICIENT SAMPLE:

During the breath cycle blow into the instrument in short breaths or puffs of breath. Allow the instrument to time out without satisfying the three requirements for a complete breath test.

DISPLAY:	DEFICIENT SAM SUBJECT TEST .- - -
LOG:	DEF.
PRINTED MESSAGE:	*SUBJECT TEST .- - - *DEFICIENT SAMPLE (All test information is printed)

CAUSE: The sampling requirements of time, volume and level slope were not satisfied. The 3.0-minute allowable time has elapsed.

CORRECTIVE ACTION: Repeat the test. The subject must satisfy the breath sample requirements within the3 minute window for a completed test.

INTERFERANT:

SIMULATOR A

While on traffic patrol on the night of August 26, of this year you observed a vehicle weaving in traffic. After roadside maneuvers Mr. I. M. Diabetic was taken to the police station to be given a breath test. The subjects' birthday is October 23, 1949. Colorado drivers' license number 98-053-0234 and Zip Code is 80020. The subject cannot remember his social security number.

DISPLAY:	INTERF DETECTED SUBTRACTED INTERF DETECTED - during Air Blank
LOG:	.INT
PRINTED	MESSAGE: INVALID TEST INTERFERANT DETECTED

CAUSE: The instrument has registered the presence of another IR absorbing

substance.

CORRECTIVE ACTION: Seek medical attention for the subject and request a blood test.

RANGE EXCEEDED:

With the mouth spray provided spray a heavy dose in your mouth and blow into the instrument.

DISPLAY:	RANGE EXCEEDED
LOG:	.RGE
PRINTED	MESSAGE: INVALID TEST INSTRUMENT RANGE EXCEEDED

CAUSE: The breath alcohol reading was higher than the instrument upper limit. The air Blank reading was lower than the instrument lower limit.

CORRECTIVE ACTION: Possible strong mouth alcohol or alcohol poisoning. Seek medical attention for the subject if error occurs during breath test. Call Instructor if error occurs during Air Blank.

NO .02 AGREEMENT:

Use the B and C simulators. Use one simulator for the first blow and the other simulator for the second blow into the instrument.

DISPLAY:	NO .02 AGREEMENT
LOG:	.NO2
PRINTED	Message: Subject Test .---, calibration checks, simulator, temperature, subject breath volumes, air blank results, No .02 agreement

CAUSE: The subject breath results did not correlate within .020 of each other.

.

CORRECTIVE ACTION: Repeat 20-minute observation on this subject and repeat test

INHIBITED - RFI:

In the middle of a test we will use a radio pack for transmission. RFI = radio frequency interference.

DISPLAY:	INHIBITED – RFI
LOG:	.RFI
PRINTED MESSAGE:	INVALID TEST INHIBITED - RFI

CAUSE: A radio signal causing RFI to be detected by the antenna in the breath tube

CORRECTIVE ACTION: Eliminate source of signal. Start test

Section IV: FUNCTION KEYS

F6 = Non Compliance Option
F2 = Print current Log

F6 = Non Compliance Option

Begin by conducting a standard EBAT.

SUB LAST NAME =	Last name
SUB FIRST NAME =	First name
SUB MIDDLE NAME =	Middle name
SUB DOB MMDDYY =	Date of birth
SUB SEX =	M/F gender of subject tested
ZIP CODE =	Zip code as stated on drivers license

SSN =	Social security number
STATE OF ISSUE =	Two letter abbreviation for state of issue
SUB DRIV LIC =	Subject drivers license number ##-###-####
CRASH (Y/N) =	Yes or No, If answer is yes the Intoxilyzer will prompt an injury question. If answer is no it will go directly to following question.
INJURIES (Y/N) =	Yes or No
ARREST OFFICER =	Arresting officer last name
AGENCY =	Instrument operator last name
OPER NAME =	Instrument operator last name
AGENCY =	Instrument operator last name
OPER CERT DATE =	Operator certification date (must be current)
CASE NUMBER =	Agency format choice
REVIEW DATA? Y/N =	Answer "Y" for yes. Option scrolls through the data with the Enter key to verify information correctness. Answer "N" for no, the instrument enters automated test sequence.

Present a sample during the first breath sample segment. When the second breath sample segment starts: PLEASE BLOW /R appears on the screen, press the **F6** key. Observe that the instrument aborts the test and requires another 20-minute observation period.

NON-COMPLIANCE
OPERATOR OBSERVED SUBJECT NON COMPLIANCE WITH BOARD OF HEALTH RULES AND REGULATIONS, 5CCR 1005-2.

OBSERVE SUBJECT FOR ANOTHER 20 MINUTES BEFORE PERFORMING ANOTHER TEST ON THIS SUBJECT.

F2 = Print current Log

Press **F2** key. Observe current log prints. Take note that the last test should be the one last conducted as per the log.

PART V: RESET SWITCH

1. Depress the spring loaded "RESET" switch located in the rear center of the Intoxilyzer.

2. Observe that the instrument performs the following sequence.

A. Displays "NOT READY"
B. Short Air Purge
C. Performs DIAGNOSTIC CHECKS
D. Returns to Ready Mode (Scrolling Display)

This concludes the Intoxilyzer 5000EN Instructor Practical.

Updated 2//2008 CFC

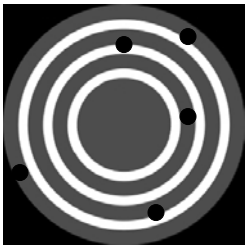
ACCURACY AND PRECISION

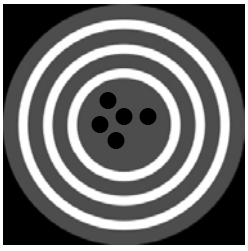
Accuracy vs. Precision

ACCURACY: The measure of correctness of truth of a laboratory test
(Ability to hit a target)

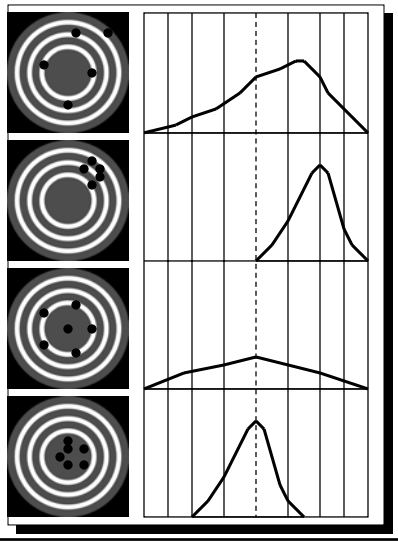
PRECISION: The measure of variability in a test process (Reproducibility) (Ability to hit a target more than once)

Player A	Player B	Player C
Poor Precision and Poor Accuracy	Good Precision and Poor Accuracy	Good Precision and Good Accuracy





CONCEPTS OF ACCURACY AND PRECISION



A. LOW ACCURACY/LOW PRECISION measurements form a diffuse off-center pattern.

B. LOW ACCURACY/HIGH PRECISION measurements form a tight off-center pattern.

C. HIGH ACCURACY/LOW PRECISION measurements form an evenly distributed pattern distant from the center of the target.

D. HIGH ACCURACY/HIGH PRECISION measurements are clustered at the center of the target.

QUESTIONS?

Responsibility of the Certified Instructor

CONTENT

1. General
2. Instrument Care
3. Standard Simulator Solution
4. Instrument Records
5. Operator Training

GENERAL

- Agency's Alcohol Program Administration
- Direct link between CDPHE and your Agency's DUI program
- State's expert at your agency
- Know and follow the Rules and Regulations of the Department of Health

INSTRUMENT CARE

1. Instrument Maintenance

⇒ Keep intoxilyzer and surrounding area clean and organized.

⇒ Maintain an acceptable environment (i.e. proper temperature and ventilation)

⇒ Notify CDPHE with problems or questions.

→The area around and under the EBAT device must be free of dust and dirt.

→Temperature must be maintained between 70°F and 80°F in the room.

→The facility must have adequate ventilation to prevent vapor build up around the EBAT device to be ventilated.

→Ensure intoxilyzer room does not contain any alcohol base cleaners or other compounds.

INSTRUMENT CARE

2. Basic Troubleshooting

⇒ Erratic Operation: Turn power off, wait 10 seconds, turn power on or press Reset Button.

⇒ Ensure operators check the External Breath Tube and the heated Simulator Vapor Tube are warm prior to running a Evidential Breath Alcohol Test (EBAT).

⇒Ambient Failure (remove subject from area).

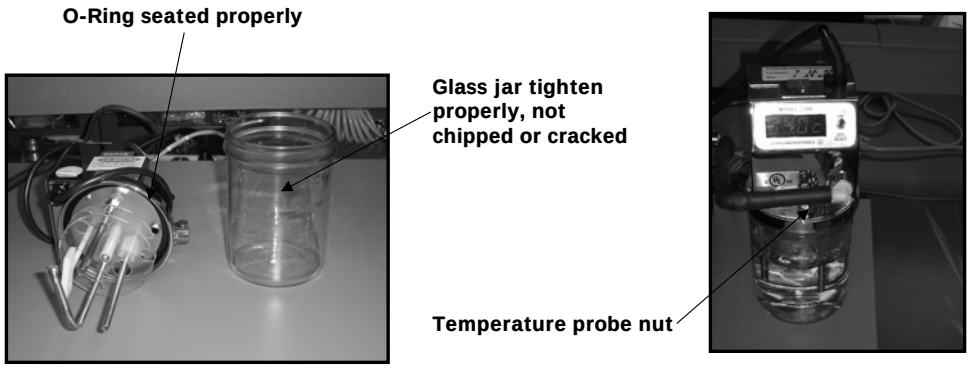
→Turning the intoxilyzer's power off and waiting 10 seconds before turning power back on causes the CPU in the instrument to perform a hard boot up of the software. The reset switch causes the CPU to perform a soft boot up of the software. It does not always clear internal registers and counters.

→If you experience ambient failures, remove the subject from the area and allow the room air to clear. Also performing a continuous purge of the instrument will clear the sample chamber of ambient conditions. (Instructor's menu, option 'A'.)

INSTRUMENT CARE

2. Basic Troubleshooting (continued)

⇒ Low CAL Checks.



Rev. 2.08

16A-6

→Check the following:

The glass jar is tighten properly (snug)
O-Ring is seated properly
Glass jar is not chipped or cracked
Temperature probe nut is tight

Change Standard Simulator Solution

→When troubleshooting CAL Check problems, run addition CAL Check under the instructor menu, option 'C'.

INSTRUMENT CARE

2. Basic Troubleshooting (continued)

⇒ No repairs are to be done by instructors or any one else. All repairs will be done by CDPHE staff.

⇒ Instruments are not to be opened in the field under any circumstances. Opening the instrument will invalidate its certification.

→Instructors can replace components external to the intoxilyzer.
External Breath Tube
Heated Simulator Vapor Tube
Simulator Interface Cable
Printer Interface Cable
Guth Simulator

→When a problem develops, verify the malfunction, then notify CDPHE and describe the symptoms. A replacement instrument will be provided as needed.

→If an instrument is hand transported to CDPHE, notify our staff before bringing in the instrument.

INSTRUMENT CARE

3. Ordering and Stocking Supplies

⇒ Mouth pieces (2 per EBAT)

⇒ Blood Alcohol Kits

⇒ DMV and other forms

→Mouth pieces should be ordered from CMI (800-835-0690) or Guth (800-545-4572) only.

→Standard Simulator Solution is obtained from CDPHE.

→Blood Alcohol Kits can be obtained the CDPHE Toxicology program (303-692-3680)

→Maintain an adequate supply to ensure your agency is always stocked with the necessary items.

INSTRUMENT CARE

3. Ordering and Stocking Supplies

⇒ Standard Simulator Solution

When you use the last bottle of simulator solution, fill out the enclosed form indicating your agency and date the last bottle was used. Mail this form and the four empty bottles of solution to the CDPHE.

→Use the box the Standard Simulator Solution was shipped to you in. No packing is needed when you use this box.

→If necessary, call and request additional simulator solution from the CDPHE.

→If you do not fill out the replacement solution form, it indicates to the CDPHE that your agency does not need additional standard solution.

→Do not use initials for your agency when filling out the solution replacement form. Many agencies use the same initials.

INSTRUMENT CARE

4. Shipping the Intoxilyzer 5000EN.

⇒ When your agency's Intoxilyzer requires an annual certification. CDPHE will provide a loaner instrument.

⇒ If your instrument requires repair, CDPHE will provide a loaner.

→Agencies with multiple instruments may not receive a loaner instrument.

INSTRUMENT CARE

4. Shipping the Intoxilyzer 5000EN (continued).

⇒ Use the shipping container you receive to ship back your instrument or loaner.

⇒ Ship back the instrument and external breath tube ONLY.

Rev. 2.08

→Instruments are shipped by United Parcel Service in a specially designed shipping carton. DO NOT insure the instrument. You will be held liable for damage that occurs if the Intoxilyzer is shipped in any other container.

→CDPHE is responsible for the cost of shipping the instrument to your agency.

→Your agency is responsible for the cost of shipping the instrument to CDPHE.

→When you receive an instrument, return your agency's instrument or the CDPHE loaner as soon as possible. This allows CDPHE to provide the necessary loaners to other agencies.

INSTRUMENT CARE

4. Placement or Relocation of Instruments.

⇒ Refer to the Annual Facility Inspection for requirement of placing or relocating the Intoxilyzer.

Standard Simulator Solution

1. Replacing the Standard Simulator Solution.

⇒ The Standard Simulator Solution MUST be changed every 100 tests (96 EBATs and 4 CAL Checks) or every 28 days which ever occurs first.

⇒ The following procedures must be followed when changing the simulator solution.

Remove the simulator and empty the old solution by removing the glass jar.

→The old solution contains water and < 1% alcohol that can be safely poured down any standard drain. .

→When removing the simulator from the Intoxilyzer, disconnect the interface cable from the simulator, not the Intoxilyzer.

Standard Simulator Solution

1. Replacing the Standard Simulator Solution (continued).

   Rinse and dry the simulator components and the glass jar.

NOTE: Rinse simulator components with water and at a 45° angle.

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→Simulator components include:
Agitator, heater, temperature probe, paddle, baffles, and metal plate.

Standard Simulator Solution

1. Replacing the Standard Simulator Solution (continued).

   Open a new bottle of standard simulator solution and pour the contents into the glass jar.

   Tighten the glass jar to the top of the simulator snuggly. DO NOT over tighten.

→Bottles of standard simulator solution are sealed in plastic bags to ensure quality of the solution.

→The glass jar should tighten snuggly to the top portion of the simulator. Over tightening will crack the glass jar and cause low CAL Check reading.

→Ensure that the:

O-Ring is seated properly
Glass jar is not chipped or cracked
Temperature probe nut is tight

Refer to page 6 of this section.

Standard Simulator Solution

1. Replacing the Standard Simulator Solution (continued).

   Re-connect the simulator to the Intoxilyzer 5000EN.

   Ensure the interface cable, simulator vapor tube, and simulator input tube, and electrical plug are all connected correctly.

Standard Simulator Solution

2. Generating a New Simulator Log.

⇒ Press the <ESC> key twice in rapid succession.

PASSWORD

⇒ Type your agency's password and press <ENTER>.

1 A, B, C, D, E, L, O, P, Q

Standard Simulator Solution

2. Generating a New Simulator Log (continued).

⇒ Type ‘L’ and press <ENTER>.

New, print, quit

⇒ Type ‘N’ and press <ENTER>.

⇒ Following the instructions on the instrument display.

⇒ When done, press F2 to print an simulator log.

→After printing the new simulator log, check to ensure all information is correct.

Standard Simulator Solution

3. Weekly Calibration Checks

⇒ To perform a weekly CAL Check enter the instructor menu (menu #1) by pressing the <ESC> key twice in rapid succession.

PASSWORD

⇒ Type your agency's password and press <ENTER>.

Standard Simulator Solution

3. Weekly Calibration Checks (continued).

```
1 A, B, C, D, E, L, O, P, Q
```

⇒ Select option ‘C’.

```
WEEKLY Y/N
```

⇒ Press ‘Y’ and enter.

⇒ Follow instructions on instrument display.

→Print a simulator log and ensure the weekly CAL check is populated correctly.

INSTRUMENT RECORDS

1. The following records must be maintained by your agency for two years plus the current year.

⇒ Standard Simulator Log
⇒ Standard Simulator Label
⇒ All EBAT Printouts
⇒ Annual Certification Certificates

→Prior to changing the Standard Simulator Solution, print the current simulator log and save.

→When changing the Standard Simulator Solution, sign and date the Standard Simulator Label.

→All EBAT printouts, including error messages, must be attached to its associated Standard Simulator Log. If your agency requires additional copies for the DUI packet, set the number of printouts per test to 2 or more as necessary.

→Annual Certification Certificates for your agency and all loaner you have received must be maintained.

→The above records must be available for inspection during an Annual Facility Inspection.

OPERATOR TRAINING

1. Scheduling the Class

⇒ Choose a tentative class date(s). CDPHE requires a minimum of a two week notice prior to your tentative class date.

⇒ Contact CDPHE to reserve your class kit. Phone, e-mail, or FAX is acceptable. Class kit is not reserved until you receive confirmation from CDPHE.

⇒ Provide class date and total number of students.

→If your agency has a training officer, work closely with them to ensure you can give CDPHE a minimum of a two week notice.

→Even with two weeks notice, class kits may not be available.

OPERATOR TRAINING

2. Material Required

⇒ Intoxilyzer 5000EN & associated equipment.

⇒ Class Kit:

- 3 simulators
- 3 simulator solutions (A, B, & C).
- Class Packet:
  - Answer Sheets
  - Test Booklets
  - Operator Class CD
  - Intox Operator Class cover sheet

→CDPHE will provide up to 20 test booklets. These test booklets can be copied if you class will require additional booklets.

TEACHING THE CLASS

1. Teach the operator manual or operator class CD. They contain the minimum information necessary to be presented to your students.

⇒ Start at the front and work to the back.

⇒ Students must participate in a thorough lecture, comprehensive laboratory practical, and pass the written exam with a score of 80% or better.

→The instructor(s) may teach additional material based upon experience and agency's requirements.

TEACHING THE CLASS

2. Laboratory Practical

⇒ All students must perform both simulators B and C.

⇒ Do not connect the simulator until the instrument displays

PLEASE BLOW/R

→Simulator solution A can be performed as a group . CDPHE suggests group be limited to 10 students.

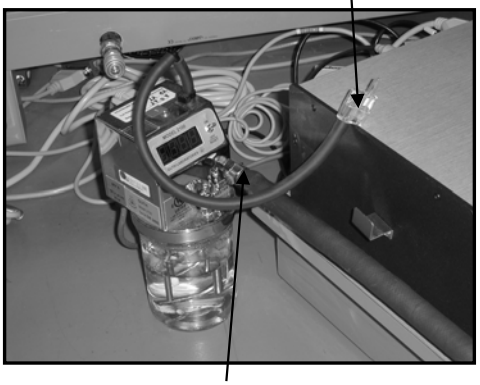
TEACHING THE CLASS

2. Laboratory Practical (continued).

⇒ Connect simulator as shown with mouth piece.

⇒ Have student blow into mouth piece and satisfy the 4 requirement of a valid breath sample.

⇒ Disconnect the simulator before pressing the Start/Test switch to continue the test.



→Once the instrument displays 'PLEASE BLOW/R', the student has 3 minutes to satisfy the four requirements of a valid breath sample.

→When the instrument displays 'REMOVE SPIT TRAP', disconnect the External Breath Tube from the simulator's quick disconnect before pressing the Start/Test switch. Failure to do so can cause fluid from the simulator to be pulled into the Intoxilyzer 5000EN. This will cause major damage to the Intoxilyzer. If this does occur, enter the instructor's menu at once and perform a 'CONTINUOUS PURGE' for a minimum of 5 minutes.

TEACHING THE CLASS

2. Laboratory Practical (continued).

⇒ Simulator A solution and the error messages can be performed as a group of up to 10 students.

Explain the purpose of the error messages to students.

Review the EBAT printouts with students.

→CDPHE suggest group be limited to 10 students.

TEACHING THE CLASS

2. Laboratory Practical (continued).

⇒ The following error messages must be performed.

- Invalid Test
- Ambient Failed
- Not in Range
- Improper Sample
- Refusal
- Invalid Sample
- Deficient Sample
- Range Exceeded
- Inhibited RFI
- No .02 Agreement

→Refer to the Instructor Manual, laboratory practical for the correct methods of demonstrating the error messages.

TEACHING THE CLASS

3. Conducting the class (small class).

⇒ Teach the lecture, perform the laboratory, and take the written exam in the same day.

Takes 8 to 10 hours to teach the class in this way.

Works only if the class is small (10 students or less per Intoxilyzer.

TEACHING THE CLASS

3. Conducting the class (larger classes).

$\Rightarrow$ Second method of teaching the class.

Teach the lecture and give the written exam in one day.

Schedule groups of students, at different times, over the next few days to perform the laboratory practical.

$\rightarrow$Works well for large classes.

$\rightarrow$More efficient use of time and equipment.

TEACHING THE CLASS

4. Returning Class Kit and Training Packet.

⇒ Return the 3 simulators and 3 empty solution bottles. Simulators must be emptied of solution prior to shipping.

⇒ Return the test booklets provided by CDPHE.

⇒ Return operator CD.

⇒ Return the answer sheets, simulator A, B, & C printouts, and error messages as described in the Intoxilyzer Operator Class Cover Sheet.

→Failure to empty the solution from the simulator can cause damage to the simulators and other material contained in the class kit.

→Return un-used answer sheets.

TEACHING THE CLASS

4. Returning Class Kit and Training Packet (continued).

⇒ Return the class kit ASAP once you have completed the operator training.

⇒ All material must be returned before processing of your class will occur.

→No tests will be graded until the class kit and all associated materials are received by CDPHE.

QUESTIONS

⇒ General

⇒ Instrument Care

⇒ Standard Simulator Solution

⇒ Records

⇒ Operator Training

RESPONSIBILITIES OF THE CERTIFIED INSTRUCTOR

Operator Class Documentation & Record-keeping

Topics to be covered—

1. Policy and Procedures
2. Criteria for Becoming a Certified Operator
3. Teaching the Initial Operator Certification Class
   - Instructor's role
   - EBAT's role
4. Recertification
   - Operators
   - Instructors
5. Record-keeping
6. The Future

Policy & Procedures

- The policies and procedures for certifying operators and instructors, teaching an operator class and maintaining records are found in 5 CCR 1005-2.
- You are responsible for ensuring that your agency is following these policies and procedures as presented today.

Failure to follow these procedures will result in –

- Delays in operator certification.

And may result in –

- Decertification of operators.
- Decertification of instructors.

To become a Certified Operator, an officer must –

- "Be currently employed by a law enforcement agency or the Department;
- Attend a minimum of eight (8) hours of instruction following the Department's Operator Training Manual'
- Score 80% or greater on a written exam, and
- Complete a comprehensive practical as specified in the Department Operator Training Manual."

5CCR1005-2(2.1)2.11)(2.1.1.2-4)

Operator Certification: Eight hours of instruction

- The Department's Operator Training Manual must be used for operator certification classes.
  - This manual contains the minimum information to be presented for operator certification.
  - Agencies may present additional information specific to the agency or jurisdiction.
- It must be taught from beginning to end in the same order.

Operator Certification: Score 80% or greater on the written exam

- Each student must take the exam individually, without notes or the manual.
- The exam must be completed in class.
- An instructor must proctor the exam.

Operator Certification: Complete a comprehensive practical exam.

The purpose of the practical exam is—

- To give hands-on experience with various types of subjects.
- To illustrate common error messages.

The practical exam is composed of 13 EBATs (*evidential breath alcohol tests).*

- Two EBAT's are performed individually by each student.
- Eleven EBAT's are demonstrated as a group.

Two Individual EBATs

- **Simulator B**
  - Demonstrates a subject with less than or equal to .100
  - Use “Santa B. Claus” as the subject name.
- **Simulator C**
  - Demonstrates a subject with greater than or equal to .120
  - Use “Happy Go Lucky” as the subject name.

Notes on Individual EBATs

- Instructors will turn in one printout per student for each individual EBAT (one Simulator B printout & one Simulator C printout per student).
- The operator field should show the student’s name.
- Each student should sign their printout with their name and badge number.

Eleven Group EBATs

- **Simulator A**
  - Demonstrates a diabetic subject in ketone acidosis.
  - Use “I.M. Diabetic” as the subject name.
- **10 Error Messages:**
  - Invalid Test
  - Ambient Failed
  - Not in Range
  - Improper Sample
  - Refusal
  - Invalid Sample
  - Deficient Sample
  - Range Exceeded
  - Inhibited RFI
  - No .02 Agreement

Notes on Group EBATs

- Group EBATs should be demonstrated by the instructor or a student while all other students observe.
- The instructor must ensure that each student fully understands each test and printout.
- Instructors should turn in one printout for each Group EBAT with every student's signature and badge number.
- Signatures and badge numbers need to be legible.

Group EBATs— If an error message fails…

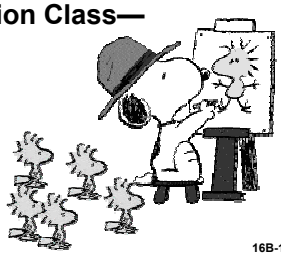
1. Repeat the attempt.
2. Print the error message received.
3. Document on the back of the printout what actions were taken in the attempt to obtain the error message.
4. Turn this printout in with class materials.

Inhibited RFI Error Message

- This error message is created by radio frequency interference (RFI).
- Newer style radios have higher frequencies that do not interfere with the Intoxilyzer 5000EN.
- If you are unable to create the Inhibited RFI error message, use the procedure for when an error message fails.

Teaching the Initial Operator Certification Class—

8 Steps



(Rev 2.08) 16B-16

Step 1:
Instructor fills out agency and class info on Class Cover.

Your agency's facility code is ➡

INTOXILYZER OPERATOR CLASS COVER

AGENCY NAME: _____ Agency Type: PD SO CSP Military Other	INSTRUCTOR(S):
Mail class results to:	PHONE: FAX:
	Date of Class:

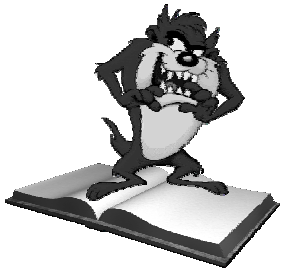
(Rev 2.08) 16B-17

Step 2:
Students print name, badge # & home agency (if different from teaching agency).

STUDENT ROSTER (*Each student prints name & badge number on same line*)	Home Agency		Home Agency
1.		15.	
2.		16.	
3.		17.	
4.		18.	
5.		19.	
6.		20.	
7.		21.	
8.		22.	
9.		23.	
10.		24.	
11.		25.	
12.		26.	
13.		27.	
14.		28.	

(Rev 2.08) 16B-18

Step 3:
Instructor must teach class from CD of operator manual included in class kit.

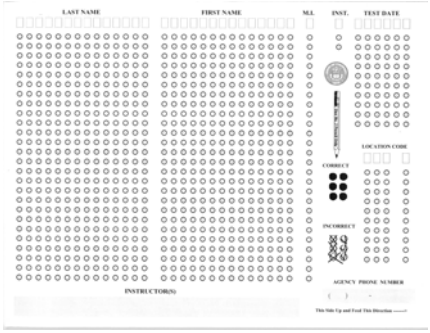


Step 4:
Instructor and students complete individual and group practicals.

INDIVIDUAL	GROUP
Simulator B	Simulator A
Simulator C	10 Error Messages

1. Invalid Test
2. Ambient Failed
3. Not in Range
4. Improper Sample
5. Refusal
6. Invalid Sample
7. Deficient Sample
8. Range Exceeded
9. Inhibited RFI
10. No .02 Agreement

Step 5:
Instructor administers written exam.



Step 6:
Instructor reviews paperwork using checklist on Class Cover.

INSTRUCTOR CHECKLIST		
CLASS COVER SHEET		Submit one class cover sheet per class. Additional students may print and sign their name on the back.
Answer sheets		Submit one answer sheet per student.
Simulator B *Santa B. Claus*		Submit one Simulator B and one Simulator C per student.
Simulator C *Happy Go Lucky*		
Invalid Test		Submit one page for Simulator A and each error message with every students' signature and badge number.
Ambient Failed		
Not in Range		
Improper Sample		
Refusal		
Invalid Sample		
Deficient Sample		
Simulator A *I.M. Diabetic*		
Range Exceeded		
Inhibited RFI		
No .02 Agreement		

Step 7:
Instructor copies tests sheets (front & back) and all practicals.

- Creates a temporary file for agency records.
- Safeguards against incomplete documentation being submitted.
- Safeguards against class documentation being lost.

Step 8:
Instructor mails complete paperwork and class kit to EBAT Program.

- Cover sheet on top.
- All written exam answer sheets.
- All Simulator B printouts.
- All Simulator C printouts.
- All group practical printouts (Simulator A plus 10 error messages)

Please **DO NOT** staple pages.

Class Tips

- Give your operators No. 2 pencils with erasers.
- DO NOT mark in test booklets.
- Use the appropriate subject names for the three simulators.
- Use acceptable subject names for the error messages.

When can an operator begin running tests?

An operator is considered certified once the instructor has received the operator's certificate,

OR

the instructor receives an email notification from an EBAT Program staff member stating that the operator is certified and may begin testing.

The EBAT Program's Role in Certifying Operators

- Determine if class documentation is acceptable by reviewing it for
  - Meeting regulatory requirements,
  - Completeness, and
  - Accuracy.

Accuracy and completeness is important—

- To comply with regulations and prevent legal issues.
- To ensure the State can efficiently certify operators.
- To ensure agencies can effectively staff shifts 24/7.

If class documentation is acceptable, the EBAT Program will—

- Grade the tests,
- Create a class report for all students,
- Create operator certificates,
- Record class statistics, and
- Return certificates and reports in 7 days.

For unacceptable class documentation, the EBAT Program will—

- Note issues on the class cover and return class materials to the instructor within 7 days.
- Instructors will have 21 days from the date the class is mailed back (postmark) to correct errors and return it to the EBAT Program.
- Failure to correct errors within the 21 days will result in the class being void.

Numbers to contemplate

- The State of Colorado has approximately:
  - 5,000 Certified Operators
  - 450 Certified Instructors
  - 194 Intoxilyzer instruments
- The EBAT Program serves the legal community by providing records, responding to subpoenas, and testifying in court approximately 150 times per month.
- The EBAT Program has 3 full-time employees.

The Program Assistant

- Assigned 50% to the EBAT Program.
- Assigned 50% to the Certification Program, mainly for CLIA.
  (CLIA is a federal regulatory program for medical laboratory testing certifying 2,700 laboratories across Colorado.)
- Handles all certifications for 5,450 officers in Colorado.

RECERTIFICATION & RECORD-KEEPING

To maintain certification, an Operator must—

- Proficiently perform, without errors, one EBAT following the specified procedure in Appendix 2A of the regulations in the presence of a Certified Instructor within 180 days.
- The printout obtained must be signed and dated by both the Certified Instructor and the operator who is recertifying.
- The printout must be retained by the Instructor. It becomes part of the operator certification record.

5 CCR 1005-2(2.1.2)

(Rev 2.08) 16B-34

An operator who fails to recertify in 180 days must—

- Be decertified by the instructor, and
- Attend an 8-hour operator class in order to become certified as an operator again.

5 CCR 1005-2(2.1.3)

NOTE: *For expired operators returning from active military duty there is a shorter process for recertifying.*
5 CCR 1005-2(2.1.4)

(Rev 2.08) 16B-35

To maintain certification, an Instructor must—

- Actively participate in teaching one EBAT operator certification class

OR

- Pass a written instructor certification examination

within a 365-day period.

5 CCR 1005-2(2.2.4)

(Rev 2.08) 16B-36

An instructor who fails to recertify in 365 days—

- Will be decertified by the EBAT Program.
- Must retake the operator and instructor certification classes to recertify as an instructor.

5 CCR 1005-2(2.2.5)

Decertification of Instructors

"The Department may deny, suspend or revoke the certification of EBAT device(s) located in a facility, the certification of an operator, the certification of an operator instructor or the certification of a laboratory for one or more of the following causes:

- Falsification of data or other deceptive practices including false statements by omission or commission relevant to the certification process.
- Gross incompetence or negligent practice.
- Willful or repeated violation of any lawful rule, regulation or order of the Department or the Board of Health and its officers."

5 CCR 1005-2(8.3.1—8.3.1.3)

Maintaining Records

"A facility must retain records showing each certified operator's date of original certification and all subsequent dates of certification."

5 CCR 1005-2(2.1.5)

Maintaining Records: Certifying operators from another agency

- Instructors who teach students from other agencies must provide the original records to the law enforcement agency that the student is currently employed with.
- A photocopy should be retained in the instructor's files.

Maintaining Records: When a certified operator transfers to another agency

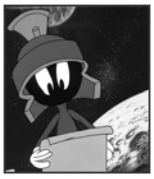
- When a certified operator transfers to another agency, the instructor must provide the original records to the law enforcement agency that the operator is currently employed with.
- A photocopy should be retained in the instructor's files.

Maintaining Records: When an instructor transfers to another agency

- If an instructor transfers to another agency, the original documentation for students taught while the instructor was employed by the former agency must remain at the former agency.
- The instructor may choose to retain copies of the documentation.

The Future

- An instructor-only website is being designed. Each instructor will have a user name and password.
- The website will provide a central resource and location to:



  - Access job aides, forms & FAQ's.
  - Receive broadcast communications from the EBAT Program.
  - Order class kits.
  - Register and pay for instructor classes.
  - Keep agency and instructor information up-to-date.
  - Take the instructor recertification test.

And more…stay tuned!

Any questions?

1. Policy and Procedures
2. Criteria for Becoming a Certified Operator
3. Teaching the Initial Operator Certification Class
   - Instructor's role
   - EBAT's role
4. Recertification
   - Operators
   - Instructors
5. Record-keeping
6. The Future

Thank you!

Annual Facility Inspection Report

Questions

STATE OF COLORADO

Bill Ritter, Jr., Governor
James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

www.cdphe.state.co.us/lr

Colorado Department of Public Health and Environment

INSPECTION REPORT
EVIDENTIAL BREATH ALCOHOL TESTING DEVICE FACILITY

To:		**From:**	**Frederick C. Cobb**
Agency:			**EBAT Program**
Address:			Laboratory Services Division 8100 Lowry Boulevard Denver, CO 80230
Phone:			303-692-3292
E-mail:			fred.cobb@state.co.us
Date:		**Type of Inspection:**	Annual Inspection

On an on-site Evidential Breath Alcohol Test device Facility Inspection was performed for the location of the Intoxilyzer 5000EN S.N. 68-01 at the .

Attached are the results of the on-site inspection. Carefully review the inspection checklist used to evaluate your facility. Deficient items are marked "not acceptable". These must be corrected to obtain compliance under Colorado Board of Health Rules and Regulations relating to tests for alcohol and other drugs (5CCR 1005-2), Appendix B.

Please respond with a written plan of correction—including the date corrections will be completed, no later than .

Your written plan of correction should be mailed to me at the address referenced above. Please do not hesitate to contact me for clarification or questions.

Thank you,

Inspection date:
Location:
Intoxilyzer SN: 68-01

1. INITIAL CERTIFICATION PROCEDURE

1.a. Facilities must submit in writing to the Department a request for approval of an EBAT facility.

☐ Not Applicable
☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

1.b. The Department will supply a copy of Appendix B of these Rules and Regulations to the requesting facility.

☐ Not Applicable
☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

1.c. Written verification of compliance with the requirements of Appendix B is required from the facility.

☐ Not Applicable
☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

1.d. The Department will perform an initial facility inspection to verify compliance with the requirements of Appendix B. Facility inspections will be performed periodically thereafter by Department staff.

☐ Not Applicable
☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

1.e. The EBAT device may not be moved from its initial approved facility without authorization from the Department.

☐ Not Applicable
☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

Inspection date:
Location:
Intoxilyzer SN: 68-01

2. POWER REQUIREMENTS—PERMANENT LOCATION

2.a.1.A. AC line voltage of 120 volts, 60 Hz with grounded, 3-prong outlets and a 20-ampere or less circuit breaker must be provided.

Voltage 120 ± 10% (=108-132) .....Grounded Outlet .....3-prong Outlet

	Grounded Outlet	3-prong Outlet
	☐ Yes	☐ Yes
	☐ No	☐ No

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

2.a.1.B. The power line to the EBAT device must be an isolated line. A certified electrician must provide written verification of compliance with this requirement to the Department.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

2.a.1.C. A surge protection device approved by the Department must be placed between the EBAT device and the power source.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

Inspection date:
Location:
Intoxilyzer SN: 68-01

2. POWER REQUIREMENTS—MOBILE LOCATION

2.a.2.A. Acceptable power sources are:

1. **Square wave power inverter capable of generating an AC line voltage of 140 volts RMS.**
2. **Power inverter/sine wave converter combinations that generate 120 volts AC from 14 volts DC.**

☐ Not Applicable
☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

2.a.2.B. Electric motor/generator combinations that use a 12-volt DC motor to run a 120-volt AC 60 Hz generator.

☐ Not Applicable
☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

2.a.2.C. The power line to the EBAT device must be an isolated line. Verified by the Department.

☐ Not Applicable
☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

2.a.2.D. Surge protection is required as stated in step a1C above.

☐ Not Applicable
☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

Inspection date:
Location:
Intoxilyzer SN: 68-01

3. ENVIRONMENT

3.a. The temperature of the EBAT device facility must be maintained between 70 and 80 degrees Fahrenheit.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments: °F.

3.b. The facility must have adequate lighting.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

3.c. The area around and under the EBAT device must be free of dust and dirt. The immediate area around the evidential breath alcohol-testing device must be kept orderly.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

3.d. The EBAT device and breath alcohol simulator must be placed on the organizer stand. The stand will be placed on a solid and adequate work surface.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

3.e. The EBAT device shall be in a smoke-free environment.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

3. ENVIRONMENT (*continued*)

3.f. The facility must be ventilated.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

3.g. Automobile emissions are not allowed in Mobile EBAT Facilities.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

3.h. The facility must not be used to store any cleaning compounds or volatile organics to include gasoline and petroleum products.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

3.i. The location will be secure and not readily accessible to unauthorized personnel.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

Inspection date:
Location:
Intoxilyzer SN: 68-01

4. DOCUMENTS

4.a. The following documents relating to EBAT devices must be posted at the facility:

1. **Certificate of Approval**..... ☐ Acceptable ..... ☐ Not Acceptable
2. **Standard Operator Procedure conforming to Appendix A.**
   ..... ☐ Acceptable ..... ☐ Not Acceptable
3. **Error Message Sheet**..... ☐ Acceptable ..... ☐ Not Acceptable
4. **Current list of Certified Operators & Certified Operator-Instructors, including date of recertification**. ..... ☐ Acceptable ..... ☐ Not Acceptable

Comments:

4.b. A Standard Simulator Log must be maintained with the EBAT device.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

4.c. Records pertaining to EBAT specimens must be retained by the facility for 2 years.

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

5. SUPPLIES

5.a. The facility must have available an adequate supply of:

1. **Mouth pieces**..... ☐ Acceptable ..... ☐ Not Acceptable

2. **Standard Simulator Solution** ..... ☐ Acceptable ..... ☐ Not Acceptable
   Lot #:

Comments:

Inspection date:
Location:
Intoxilyzer SN: 68-01

6. EQUIPMENT

6.a. The facility must have properly functioning equipment:

1. **Intoxilyzer Test Sequence**..... ☐ Acceptable ..... ☐ Not Acceptable

2. **Intoxilyzer Time and Date**..... ☐ Acceptable ..... ☐ Not Acceptable

3. **Intoxilyzer Certification Date on the printout must correspond to the date on the posted Certificate from the Department.**..... ☐ Acceptable ..... ☐ Not Acceptable
   Certification date:
   Posted Certification Date:

4. **Current list of Certified Operators & Certified Operator-Instructors, including date of recertification.** ..... ☐ Acceptable ..... ☐ Not Acceptable

5. **External Breath Tube Heating** ..... ☐ Acceptable ..... ☐ Not Acceptable

6. **Simulator Vapor Tube Heating** ..... ☐ Acceptable ..... ☐ Not Acceptable

7. **Dedicated Phone Line** ..... ☐ Acceptable ..... ☐ Not Acceptable

   Phone #:

Comments:

Inspection date:
Location:
Intoxilyzer SN: 68-01

7. SIMULATOR TEMPERATURE CHECK:

6.a. The facility must have properly functioning simulators operating in a temperature range between 33.8°C and 34.2°C.

1. Active Simulator
Display Reading: 34.2°C
Digital thermometer reading: °C

2. Back-up Simulator
Display Reading: 34.2°C
Digital thermometer reading: °C

3. Back-up Simulator
Display Reading: 34.2°C
Digital thermometer reading: °C

4. Loaner Simulator
Display Reading: 34.2°C
Digital thermometer reading: °C

5. Loaner Simulator
Display Reading: 34.2°C
Digital thermometer reading: °C

☐ Acceptable
☐ Not Acceptable/Correction Required
Comments:

Inspection date:
Location:
Intoxilyzer SN: 68-01

8. RECORD REVIEW

8.a. 0.100 BrAC Standard Simulator Solution.

Standard Trend:

☐ Acceptable

☐ Not Acceptable/Correction Required

Comments:

8.b. The record review must not indicate an unacceptable number of error messages.

☐ Acceptable

☐ Not Acceptable/Correction Required

Comments:

8.c. Standard Simulator Solutions changed every 28 days or every 96 error free EBAT'S.

☐ Acceptable

☐ Not Acceptable/Correction Required

Comments:

8.d. 7-Day calibration checks performed.

☐ Acceptable

☐ Not Acceptable/Correction Required

Comments:

8.e. 28 day diagnostic checks performed retained for a two-year period.

☐ Acceptable

☐ Not Acceptable/Correction Required

Comments:

8.f. All sequence numbers are being logged.

☐ Acceptable

☐ Not Acceptable/Correction Required

Comments:

8.g. Number of tests per month:

Legal Defensibility

- **Colorado Board of Health Rules and Regulations**
- **Human Physiology and Alcohol**
- **Intoxilyzer 5000EN Theory/Operation**
- **Factory Technical Specifications**
- **Technical Description**
- **Standard Equipment Setup**
- **The Complete EBAT**
- **Instructor Menu #1**
- **Intoxilyzer 5000EN Error Messages**
- **Simulator Theory and Operation**
- **Intoxilyzer 5000EN Laboratory Practical**
- **Accuracy and Precision**
- **Responsibilities of the Certified Instructor**
- **Facility Inspections**
- **Other**

18-1

Intoxilyzer 5000EN
Instructor Manual
Appendix

Colorado Department
of Public Health
and Environment

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Laboratory Services Division

5 CCR 1005-2

RULES PERTAINING TO TESTING FOR ALCOHOL AND OTHER DRUGS (PROMULGATED BY THE STATE BOARD OF HEALTH)

Last amended 11/15/06, effective 1/30/07

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Laboratory Services Division

5 CCR 1005-2

STATE BOARD OF HEALTH
RULES PERTAINING TO TESTING FOR ALCOHOL AND OTHER DRUGS

Table of Contents

Part 1: General

1.1 Purpo se and Scope

This rule establishes minimum standards for certification and approval of entities and processes utilized for alcohol and drug testing. This rule is applicable to: samples taken while driving under the influence, driving while impaired, driving with excessive alcohol content; vehicular assaults and vehicular homicides involving an operator while under the influence of alcohol or one or more drugs or both; the testing of samples of blood or other bodily substances from the bodies of pilots in command, motorboat or sailboat operators in command, or drivers and pedestrians fifteen years of age or older who die within four hours after involvement in a crash involving a motor vehicle, a motorboat, a sailboat or an aircraft; and consumption of alcohol by underage persons and records related thereto.

1.2 Based on evidence gathered through testing and evaluation by the Colorado Department of Public Health and Environment and presented to the Board, the Department and the State Board of Health have determined that the results obtained from the Intoxilyzer 5000EN with software 1358.XX installed are scientifically accurate, precise and reliable, and the collection and preservation of a delayed breath alcohol specimen is not required when this device is properly operated as described in these rules and regulations.

1.3 Evidential Breath Alcohol Testing (EBAT) facilities will operate under Part 5 of these rules and regulations until their Intoxilyzer 5000EN software is upgraded. After an EBAT facility's Intoxilyzer 5000EN software is upgraded, the EBAT facility will operate under Part 6 of these rules and regulations. All EBAT facilities performing direct evidential breath alcohol tests must comply with Part 6 of these rules and regulations by June 30, 2007.

1.4 Testing of delayed breath specimens operates under Part 5 of these rules and regulations. Testing of blood alcohol, blood drugs and urine drugs operates under Parts 5 and 6 of these rules and regulations.

1.5 Definition s

"Alcohol Percent (%)" – grams of ethanol per 100 milliliters of blood or grams of ethanol per 210 liters of breath.

"Appropriate clinical or public safety facility" – provides for the health and safety of a person whose blood is collected (subject) and meets the following criteria: 1) provide for the washing or cleansing of hands of the blood collection personnel, 2) provide a comfortable chair for the subject with arm supports to assure the elbow remains straight and both arms are accessible to the blood collection personnel, 3) have precautions to assure the subject does not fall out of the chair, 4) provide for cot or other reclining surfaces for subjects who prefer to lie down or who have adverse response to the blood collection procedures, 5) provide for the adverse response to blood collection by providing procedures and equipment for subjects who become faint, nauseous, vomit, bleed excessively, or convulse including the provision of drinking water, and 6) provide for the cleaning and disinfect ion of the blood collection area.

"Certification" – the official approval by the Department of an evidential breath alcohol test (EBAT) DEVICE, operator, operator instructor or laboratory to function under these rules and regulations.

"Certified Instructor" – an employee of any approved law enforcement agency or the Colorado Department of Public Health and Environment who meets the requirements of Section 2.2 *Et. Seq*. of these regulations.

"Certified Laboratory" – a laboratory certified by the Department to perform analytical testing of bodily fluids for alcohol or other drugs.

"Certified Operator" – an employee of any approved law enforcement agency or the Colorado Department of Public Health and Environment who meets the requirements of Section 2.1 *Et. Seq.* of these regulations.

"Delayed Breath Alcohol Specimens" – the saved ethanol or other analytical components of the EBAT specimen(s).

"Department" – refers to The Colorado Department of Public Health and Environment, Laboratory Services Division.

"Evidential" or "Evidentiary" – refers to a sample which, when tested, gives rise to test results that are sufficiently reliable to be admissible as evidence in a court of law.

"Evidential Breath Alcohol Test (EBAT)" – is an evidentiary breath alcohol test performed using a certified evidential breath alcohol test device approved by the Department as described by Section 42-4-1301, C.R.S. (2006).

"Evidential Breath Alcohol Test (EBAT) device" – any instrument certified to perform "Evidential" Breath Alcohol Tests as identified in Section 42-4-1301, C.R.S. (2006). The Intoxilyzer 5000EN is the only evidential breath alcohol testing device certified for use in performing evidential breath alcohol tests.

"Facility" – any location that meets the requirements of these regulations and which is approved by the Department to perform evidential breath alcohol testing.

"Proficiency Testing" – The evaluation of unknown specimens supplied by a provider which determines target values for those unknown specimens.

"Representative of a certified laboratory" – any employee of a certified laboratory or a courier employed by or contracted by the certified laboratory to transport specimens for the certified laboratory.

Part 2: Certified Operators and Instructors of Evidential Breath Alcohol Test (EBAT) Devices

2.1 Certification of Operators of EBAT Devices to Determine Alcohol Concentration of Breath Specimens.

2.1.1 To initially be certified as an EBAT operator an individual must:

2.1.1.1 be currently employed by a law enforcement agency or the Department;

2.1.1.2 attend a minimum of eight (8) hours of instruction following the Department's Operator Training Manual;

2.1.1.3 score 80% or greater on a written exam; and

2.1.1.4 complete a comprehensive practical exam as specified in the Department Operator Training Manual.

2.1.1.5 upon successful completion of the course requirements, a certificate shall be issued by the Department stating the operator's name, the course instructor(s) and the initial date of certification.

2.1.2 To maintain certification an operator must:

2.1.2.1 profic iently perform without errors, one EBAT following the procedure specified in Appendix 2A of this regulation in the presence of a certified instructor within a 180 day period.

2.1.2.2 the test performed must be a complete EBAT test.

2.1.2.3 the printout obtained from the certification test shall be signed and dated by the certifying operator and the instructor.

2.1.2.4 the printout must be retained by the law enforcement agency as proof that the certification test was performed in accordance with this regulation.

2.1.3 An operator who fails to certify within the 180 day period must:

2.1.3.1 be decertified by the instructor, and

2.1.3.2 must repeat the 8-hour operator course.

2.1.4 Operators who return after being called to active military service may renew their expired certification by completing the following procedure:

2.1.4.1 document proof of active duty (period of absence must not exceed 2 years.);

2.1.4.2 document proof of last operator certification prior to going on active duty;

2.1.4.3 pass the current operator test with a score of 80% or better;

2.1.4.4 profici ently perform without errors, one Evidential Breath Alcohol Test (EBAT) following the procedure specified in Appendix 2A in the presence of a certified instructor;

2.1.4.5 the documented proof of active duty, documented proof of last operator certification prior to going on active duty, operator test material and *print-out* of the certification EBAT must be sent to the Department's Evidential Breath Alcohol Testing Program.

2.1.4.6 upon successful completion of the requirements in Section 2.1.4 *Et. Seq.*, a certificate shall be issued by the Department indicating the operator name, the agency certified instructor, the date of certification and "Reinstatement After Military Service."

2.1.5 A facility must retain records showing each certified operator's date of original certification and all subsequent dates of certification.

2.2 Certification of Operator Instructors of EBAT Devices to Determine Alcohol Concentration of Breath Specimens

2.2.1 To initially be certified as an EBAT instructor an individual must:

2.2.1.1 be currently employed by a law enforcement agency or the Department;

2.2.1.2 be a currently certified EBAT operator;

2.2.1.3 attend a minimum of sixteen (16) hours of instruction provided by the Department using the Instructor Training Manual;

2.2.1.4 score 80% or greater on a written exam; and

2.2.1.5 complete a comprehensive practical exam as specified in the Department Instructor Training Manual.

2.2.2 Upon successful completion of the course requirements, a certificate shall be issued by the Department stating the instructor's name, the Department's course trainer(s) and the initial date of certification.

2.2.3 A certified instructor is also a certified operator and is authorized to train and certify operators of EBAT devices.

2.2.4 To maintain certification an instructor must:

2.2.4.1 participate in teaching one EBAT operator certification class, or

2.2.4.2 pass a written instructor certification examination within a 365-day period.

2.2.5 An instructor who fails to certify in the 365-day period must be decertified by the Department and must repeat the 16-hour instructor course provided by the Department.

2.2.6 EBAT Instructors who return after being called to active military service may renew their expired certification by completing the following procedure:

2.2.6.1 document proof of active duty (period of absence must not exceed 2 years.);

2.2.6.2 document proof of last instructor certification prior to going on active duty;

2.2.6.3 pass the current instructor test with a score of 80% or better; and

2.2.6.4 profic iently perform without errors, one EBAT test following the procedures specified in Appendix 2A in the presence of a certified instructor.

2.2.6.5 the documented proof of active duty, documented proof of last instructor certification prior to going on active duty, instructor test material and *print-out* of the certification EBAT must be sent to the Department's Evidential Breath Alcohol Testing Program.

2.2.7 Upon successful completion of the above requirements, a certificate shall be issued by the Department stating the instructor's name, the agency certifying the instructor, the Department's Program Manager or designee, the date of certification and "Reinstatement After Military Service."

2.2.8 A facility must retain records showing each certified instructor's date of original certification and dates of all classes taught and written exams taken.

Part 3 Blood Testing

3.1 Evidential Specimen Collection

3.1.1 Living Persons

3.1.1.1 Evidential Blood specimen(s) must be:

3.1.1.1.1 collected in the presence of the arresting officer or other responsible person who can authenticate the specimens.

3.1.1.1.2 collected by venipuncture by a physician, nurse, paramedic, emergency medical technician, medical technologist, or a person whose training and normal duties include withdrawing blood specimens under the supervision of a physician or nurse.

3.1.1.1.3 collected only in an appropriate clinical or public safety facility (e.g., hospital, medical clinic, ambulance, police station, fire station or other approved facility). In no event will the collection of blood specimens interfere with the provision of essential medical care or the ready availability of emergency medical services to the public.

3.1.1.1.4 collected using sterile equipment. The skin at the area of puncture must be thoroughly cleansed and disinfected with an aqueous solution of nonvolatile antiseptic. Alcohol or phenolic solutions must not be used as a skin antiseptic.

3.1.2 De ceased Persons

3.1.2.1 Colle ction of specimens from deceased persons is conducted as per Section 42-4-1304, C.R.S. (2006), by a person whose training and normal duties include the collection of blood specimens from deceased persons.

3.1.3 Living and Deceased Persons

3.1.3.1 After collection, evidential blood specimens must be:

3.1.3.1.1 dispensed or collected directly into two sterile tubes resulting in a sodium fluoride concentration greater than 0.90 percent weight.

3.1.3.1.2 inverted several times to properly mix the blood with the sodium fluoride.

3.1.3.1.3 affixed with an identification label and evidence seal.

3.1.3.1.4 shipped to a certified laboratory. If shipment is delayed for more than 72 hours, the specimens must be placed in secured temporary refrigerated storage at less than 8 degrees Centigrade until shipped but not to exceed 7 days.

3.1.3.2 At the Certified Laboratory:

3.1.3.2.1 one tube of blood must be analyzed for the State's test(s). The State's test(s) must be completed within 15 days of collection.

3.1.3.2.2 the second tube of blood must be refrigerated by the certified laboratory at less than 8 degrees Centigrade for a period of not less than 12 months from the date of collection.

3.1.3.2.3 The second specimen may be released if it is requested and receipted for by a representative of another Certified Laboratory.

3.1.3.2.4 The second specimen must be analyzed within 15 days of its receipt by the Certified Laboratory representative.

Part 4: Urine Testing

4.1 Evidential Specimen Collection

4.1.1 Living Persons

4.1.1.1 Urine specimen(s) must be collected in the presence of collection personnel who can authenticate the specimen(s).

4.2 D eceased Persons

4.2.1 Collection of specimens from deceased persons is conducted as per Section 42-4-1304, C.R.S. (2006) by a person whose training and normal duties include the collection of urine samples from deceased persons.

4.3 Living and Deceased Persons

4.3.1 Urine specimen(s) must be:

4.3.1.1 collected in a clean container.

4.3.1.2 affixed with an identification label and evidence seal.

4.3.1.3 shipped to a laboratory certified by the Department. If shipment is delayed for more than 72 hours, the specimens must be placed in secured temporary refrigerated storage at less than 8 degrees Centigrade until shipped but not to exceed 7 days.

4.3.2 At the Certified Laboratory:

4.3.2.1 The State's test must be completed within 15 days of collection.

4.3.2.2 Any remaining specimen(s) must be retained by the laboratory in frozen storage for a period of not less than 12 months unless requested and receipted for by a representative of another Certified Laboratory.

4.3.2.3 The second specimen must be analyzed by a certified laboratory designated by the defendant or defendant's legal counsel within 15 days of its receipt by the representative of that Certified Laboratory.

Part 5 Evidential Breath Testing - Collection and Testing Procedures Under Intoxilyzer 5000EN Software Prior to Software Upgrade

5.1 Scope

5.1.1 Part 5 establishes minimum standards for certification and approval of entities and processes utilized for alcohol and drug testing prior to the installation of Intoxilyzer 5000EN software revision 1358.XX.

5.2 Evidential Specimen Collection

5.2.1 Breath – Evidential

5.2.1.1 Evidential breath specimens must be analyzed on EBAT devices approved by the Department. Approval or disapproval of EBAT devices will be based on scientific standards of performance established by the Department. The Intoxilyzer 5000EN is the only EBAT device that may be used for evidential breath alcohol testing.

5.2.1.2 The Department must certify each EBAT device initially and annually thereafter.

5.2.1.3 The Department must issue a certificate for each certified EBAT device after initial certification and after each annual certification. The certificate must reflect the EBAT device approved facility name, the EBAT device serial number and the inclusive dates for the certification period. The certificate for EBAT devices placed in approved mobile facilities must also include the vehicle identification number.

5.2.1.4 An evidential breath alcohol test specimen must only be collected and tested by certified EBAT operators or instructors using a certified EBAT device and following the steps outlined in these regulations.

5.2.1.5 Breath specimens consisting of end-expiratory alveolar air are analyzed to determine their ethyl alcohol concentration.

5.2.2 Breath – Delayed

5.2.2.1 A delayed breath alcohol specimen must be collected with each evidential breath alcohol test pursuant to Appendix 1A.

5.2.2.2 Delayed breath alcohol specimens are considered the personal property of the defendant and retained by the facility for 12 months from the date of collection unless requested and receipted for by a representative of another Certified Laboratory.

5.3 Methods of Analysis

5.3.1 Alcohol in Evidential Breath Specimens

5.3.1.1 The checklist for Evidential Breath Alcohol Tests must be followed as found in Appendix 1A.

5.3.1.2 A system blank(s) analysis must be used with each EBAT.

5.3.1.3 For each EBAT, a Department certified reference standard(s) of known ethanol concentration must be used.

5.3.1.4 A completed EBAT is one in which the checklist contained within Appendix 1A is followed and a printout obtained.

5.4 Laboratory Analysis of Delayed Breath Specimens

5.4.1 Laboratories must be certified by the Department to provide analysis. Certification is based on successful on-site inspection, successful participation in proficiency testing and ongoing compliance.

5.4.2 Laboratories will be certified to perform tests for delayed breath alcohol.

5.4.3 Laboratories must meet standards of performance as established by these regulations. Standards of performance will include personnel qualifications, standard operating procedure manual, analytical process, proficiency testing, quality control, security, chain of custody, specimen retention, space, records, and results reporting.

5.4.4 Laboratory inspections must be performed prior to initial certification and annually thereafter by Department staff as established by these regulations. A laboratory meeting the certification requirements of these regulations will be issued a certificate initially. Recertification shall be required each July 1.

Part 6: Evidential Breath Testing - Collection and Testing Procedures After Installation of Intoxilyzer 5000EN software revision 1358.XX

6.1 Purpo se and Scope

6.1.1 Part 6 establishes minimum standards for certification and approval of entities and processes utilized for alcohol and drug testing after installation of Intoxilyzer 5000EN software revision 1358.XX.

6.2 Evidential Specimen Collection

6.2.1 Breath

6.2.1.1 Evidential breath specimens must be analyzed on EBAT devices approved by the Department. Approval or disapproval of EBAT devices will be based on scientific standards of performance established by the Department. The Intoxilyzer 5000EN is the only EBAT device that may be used for Evidential Breath Alcohol Testing.

6.2.1.2 The Department must certify each EBAT device initially and annually thereafter.

6.2.1.3 The Department must issue a certificate for each certified EBAT device after initial certification and after each annual certification. The certificate must reflect the EBAT device approved facility name, the EBAT device serial number and the inclusive dates for the certification period. The certificate for EBAT devices placed in approved mobile EBAT facilities must also include the vehicle identification number.

6.2.1.4 An evidential breath alcohol test specimen must only be collected and tested by certified EBAT operators or instructors using a certified EBAT device and following the steps outlined in these regulations.

6.2.1.5 Breath specimens consisting of end-expiratory alveolar air are analyzed to determine their ethyl alcohol concentration.

6.2.1.6 Unless otherwise provided by law, the subject must be given a choice of which type of evidential chemical test they wish to take to determine the alcohol concentration in their body (evidential breath alcohol test or evidential blood alcohol test) or they may refuse to take either evidential chemical test. Nothing in this regulation is intended to exempt or exonerate an individual from the penalties proscribed in Sections 42 42-4-1301.1 and 42-4-1301.2, C.R.S, or any other relevant law, for the failure to submit to such test.

6.2.1.7 Before the subject is given the choice of the type of evidential chemical test they will take, the certified operator or instructor will include the following information:

"You are required to take, complete or cooperate in completing an evidential chemical test to determine the alcoholic content of your blood or breath (C.R.S. 42-4- 1301.1(2) (A) (I). The chemical test you choose is the test you will be taking. You cannot choose a different test later. (C.R.S. 42-4- 1301.1(2) (A) (II). If you choose a blood test, two (2) tubes of blood will be drawn. One tube belongs to you and you may have it tested at a Health Department Certified Independent Laboratory of your choice. If you choose a breath test, two (2) breath samples will be analyzed by a certified evidential breath alcohol testing device following an approved standard operating procedure. You will not receive a sample to have independently tested by a certified laboratory.

If you refuse to take, complete or cooperate in completing an evidential chemical test to determine the alcoholic content of your blood or breath your driving privilege may be revoked. (C.R.S. 42-2-126(2)(A)(II))"

6.3 Methods of Analysis

6.3.1 Alcohol in Evidential Breath Specimens

6.3.1.1 The EBAT operator or instructor must follow the procedures specified in these regulations for evidential breath alcohol tests.

6.3.1.2 The EBAT operator or instructor must document compliance with these testing procedures by completion of the Department's checklist form, which is available in Appendix 2A of these regulations or on the Department's website.

6.3.1.2.1 Information included in Steps 1 through 7 of Appendix 2A must not be changed in any way.

6.3.1.2.2 Steps 1 through 7 must be performed in the order listed.

6.3.1.3 The certified operator or instructor conducting the EBAT test must initial inside the parentheses to the left of each step (1 through 7). Initialing each step indicates that step is properly completed.

6.3.1.4 Step 1. "Turn power switch on or observe the power switch has been activated. If the EBAT device is in the standby mode, press the start test switch."

6.3.1.4.1 EBAT devices at approved EBAT facilities must always be powered on. This is indicated by the small red light below the power switch being illuminated.

6.3.1.4.2 When the certified operator or instructor first enters the EBAT room he/she shall determine if the EBAT device is in the standby mode. The EBAT device is in the standby mode if the display is blank, the small red light under the power switch is lit and the simulator display reads "idle."

6.3.1.4.3 If the EBAT device is in the standby mode, press the start test switch.

6.3.1.4.4 If the EBAT device is in the ready mode, instrument display scrolling or flashing and simulator display lit, proceed to Step 2.

6.3.1.5 Step 2. “The subject must remove foreign objects from the nose and mouth including dentures. The subject must be closely and continuously observed for 20 minutes prior to testing to assure no belching, regurgitation or intake of any foreign material by nose or mouth has occurred. If such occurs, another 20 minutes of close and continuous observation must elapse under the same conditions.”

6.3.1.5.1 Check the subject for foreign objects in the nose or mouth including dentures. There are two types of dentures, permanent and removable. Permanent dentures are typically anchored to the mouth and cannot be removed. Permanent dentures need not be removed. They will not interfere with the results obtained during the EBAT. Removable dentures are typically held in place by an adhesive and must be removed.

6.3.1.5.2 During the observation period the operator or instructor must be close enough to the subject to detect any belching, regurgitation or intake of foreign material.

6.3.1.5.3 The observation period must be conducted at the EBAT facility by a certified operator, instructor or law enforcement officer.

6.3.1.5.4 The observation period must not be conducted in the patrol car while driving to the EBAT facility.

6.3.1.5.5 Start and stop times for the observation period must be recorded from the EBAT device or the facility dispatch clock.

6.3.1.6 Step 3. “Verify that the external breath tube and simulator vapor tube are both warm.”

6.3.1.6.1 Touch the external breath tube to ensure that it is warm.

6.3.1.6.2 Touch the simulator vapor tube to ensure that it is warm.

6.3.1.6.3 If either tube is cold to the touch, stop the test and call an intoxilyzer instructor for assistance.

6.3.1.7 Step 4. “Observe the simulator temperature is between 33.8 degrees centigrade and 34.2 degrees centigrade.”

6.3.1.7.1 Allow the simulator to equilibrate for a minimum of ten (10) minutes after reaching the correct temperature when it has been in standby mode or is first turned on.

6.3.1.8 Step 5. “Press the start test switch.”

6.3.1.8.1 Press the green start test switch to initiate the automated test sequence.

6.3.1.9 Step 6. “Follow the instructions and sequence of events as they appear on the EBAT device display.”

6.3.1.9.1 A system blank(s) analysis must be used during the test sequence of each evidential breath alcohol test.

6.3.1.9.2 For each EBAT, Department certified reference standard(s) of known ethanol concentration must be analyzed. The results of such analysis must agree with the reference standard(s) target value (s) of 0.100 grams of alcohol/210 liters of breath within ±10% (0.090 – 0.110 grams of alcohol/ 210 liters of breath).

6.3.1.9.3 The results of analyzing more than one reference standard of the same value for each EBAT must agree with each other within ±10%.

6.3.1.9.4 If the ±10% calibration correlation is not obtained, the instrument will abort the test and print a “No Calibration Correlation” error message.

6.3.1.9.5 For each EBAT, the results of the two subject breath alcohol tests must agree with each other within 0.020 grams of alcohol/210 liters of breath.

6.3.1.9.5.1 If the 0.020 grams of alcohol/210 liters of breath correlation is not obtained, the instrument will abort the test and print a “No .02 agreement” error message.

6.3.1.9.5.1.1 The EBAT operator must perform the EBAT test procedure over again after another 20-minute observation period. A new checklist, Appendix 2A, must be filled out for this test.

6.3.1.9.6 During the two minute period between subject breath tests the subject must be closely and continuously observed and the operator or instructor must be close enough to the subject to detect any belching, regurgitation or foreign material in the mouth or nose.

6.3.1.9.7 During the two minute period between subject breath tests the subject must be removed from the area in close proximity to the EBAT device.

6.3.1.9.8 A clean mouth piece will be used each time the subject blows into the intoxilyzer.

6.3.1.10 Step 7. “Retain all printouts generated by the EBAT device with the DUI packet. (ie., error message printouts)

6.3.1.10.1 The officer conducting the EBAT must sign the checklist(s) and completed EBAT printout(s).

6.3.1.10.2 All printouts generated by the EBAT device must be retained with the DUI packet, including error message printouts.

6.3.1.10.3 All records pertaining to the EBAT specimens must be retained by the facility for 2 years.

6.3.1.10.4 A new checklist, Appendix 2A, must be filled out for each EBAT performed.

6.3.1.10.4.1 A completed evidential breath alcohol Test (EBAT) is one in which the checklist, Appendix 2A, is followed and a printout with no error messages is obtained.

Part 7: Certification of Laboratories

7.1 Laboratory Analysis of Blood, and Urine Specimens

7.1.1 Laboratories must be certified by the Department to provide analysis. Certification is based on successful on-site inspection, successful participation in proficiency testing and ongoing compliance.

7.1.2 Laboratories will be certified to perform tests for one or more of the following categories: blood alcohol, blood drugs, and urine drugs.

7.1.3 Laboratories must meet standards of performance as established by these regulations. Standards of performance will include personnel qualifications, standard operating procedure manual, analytical process, proficiency testing, quality control, security, chain of custody, specimen retention, space, records, and results reporting.

7.1.4 Laboratory inspections must be performed prior to initial certification and annually thereafter by Department staff as established by these regulations. A laboratory meeting their certification requirements of these regulations will be issued a certificate initially. Recertification shall be required each July 1.

7.2 Initial Application

7.2.1 Laboratory directors must submit to the Department a written request for certification of their laboratory.

7.2.2 The Department will acknowledge request and provide a copy of the rules and regulations.

7.2.3 To be certified, laboratories shall meet all requirements in Part 7 of these regulations and pass an on-site inspection.

7.3 Application for Continued Certification

7.3.1 Annually the laboratory director must provide a completed application (Appendix 2B) to the Department to be considered for continued certification.

7.3.2 Laboratories must be recertified every July 1.

7.3.3 In order to be recertified on July 1, laboratories must submit their applications for continued certification no later than June 1, which is 30 days prior to the date for recertification.

7.3.4 To maintain certification, laboratories shall meet all requirements in Part 7 of these regulations and pass an on-site inspection.

7.4 Gene ral Requirements

7.4.1 In addition to the laboratory's application, the laboratory must provide the following information to the Department: written evidence concerning the education, scientific training, and experience of the laboratory director and personnel performing the testing.

7.4.2 Prior to independently analyzing samples, testing personnel must demonstrate acceptable performance on precision, accuracy, specificity, reportable ranges, blanks, and unknown challenge samples (proficiency samples or internally generated quality controls). The laboratory must have a system to evaluate employee competency at regular intervals, not to exceed 12 months.

7.4.3 The laboratory must notify the Department in writing within thirty days of any changes pertaining to Laboratory location, personnel, and analytical methods.

7.4.4 The laboratory director is directly responsible for the accuracy of the tests performed, the accuracy of the reports issued, and adherence to these regulations.

7.4.5 The laboratory must have adequate space, equipment, materials, and controls available to perform the tests reported.

7.4.5.1 Samples which serve as test controls must be of such quality as could be determined "Certifiable" by National Institute of Standards and Technology ("NIST") standards, although such samples need not actually be NIST-Certified. Relevant documentation must be available for inspection.

7.4.5.2 If non-traceable standards are used, the laboratory must establish a system to identify each standard, document its preparation, and data to prove agreement within 5% of the expected value when compared to a NIST traceable standard.

7.4.6 The laboratory must document evidence of the utilization of a written method of analysis (Standard Operating Procedure (SOP)) to perform the tests reported. Critical elements that must be addressed in the SOP are in Appendix 2C, Section B5 (a-t).

7.4.7 The laboratory must demonstrate compliance with these regulations through a successful on-site inspection conducted by Department staff prior to certification. Certified laboratories will be inspected on an annual announced basis. Certified laboratories will be inspected on an unannounced basis to evaluate complaints.

7.4.8 The laboratory must maintain all records related to analysis for a minimum of two years. Records to be maintained include instrument maintenance, quality control and quality assurance of all analyses performed, specimen processing, results and reports of analysis, dates of analysis and the identity of the person performing the analysis. Retained records must be open to inspection by Department personnel.

7.5 Proficiency Testing of Blood and Urine Samples

7.5.1 Proficiency Testing (PT) is the evaluation of unknown specimens supplied by a provider that determines target values for those unknown specimens. PT is required for each approved category.

7.5.2 Prior to initial certification the laboratory must have successfully participated in one proficiency test event within the past 12 months.

7.5.3 To maintain continued laboratory certification, a laboratory must participate in the PT program and maintain satisfactory performance.

7.5.4 PT samples shall be tested by the same procedure used for all samples, including, but not limited to, the same number of replicate analyses, the same standards, same testing personnel and equipment, and all other pertinent factors.

7.5.5 Blood Alcohol

7.5.5.1 The Department will make arrangements to provide blood alcohol PT samples to the laboratories through a PT provider.

7.5.5.2 A laboratory must participate in PT testing through 3 events per year, consisting of 5 specimens each. The laboratory will submit results to the PT provider. The PT provider will evaluate the results and forward them to the laboratory as well as the Department.

7.5.5.3 Other volatile forensically significant interferents, such as acetone or toluene, may be included in one or more samples. The inclusions of interferents determine the laboratory's capability of differentiating the volatile interferent from ethyl alcohol. Identification of these interfering volatiles will be used as a criterion for acceptable performance.

7.5.5.4 Grading Criteria for Blood Alcohol Proficiency Testing

7.5.5.4.1 Proficiency test results must be returned to the PT provider within the time specified by the PT provider. Results received after the due date will not be graded and will be considered an unsatisfactory performance resulting in a score of 0 for the testing event. The laboratory must contact the PT provider if extenuating circumstances prevent timely response to a PT event.

7.5.5.4.2 The laboratory must investigate any score less than 100% and undertake corrective action as needed. The investigation outcome and corrective action shall be submitted to and approved by the Department.

7.5.5.4.3 The PT provider will score each event as "satisfactory or "unsatisfactory". If a laboratory has two consecutive "unsatisfactory" evaluations, or achieves an "unsatisfactory" score in 2 of any 3 consecutive PT events, the PT performance is deemed "unsuccessful". The "unsuccessful" determination may result in a "directed plan of correction" specified by the Department, or suspension/ limitation of certification for the failed analyte.

7.5.6 Urine-drugs and Blood-drugs

7.5.6.1 For blood and urine drug analyte screening and confirmation certification a laboratory must successfully participate in the appropriate College of American Pathologists (CAP) proficiency test programs.

7.5.6.1.1 For blood-drug certification the required program is the Forensic Toxicology (Criminalistics) FTC.

7.5.6.1.2 For urine-drug certification the required program is Urine Drug Testing (Confirmatory) UDC.

7.5.6.2 A satisfactory event score is the identification of 80% of the target analytes present with no false positives.

7.5.6.3 The laboratory must request CAP to mail a consultant copy of their survey results to:

Colorado Department of Public Health and Environment
Laboratory Services Division
Certification Program
8100 Lowry Boulevard
Denver, CO 80230-6828

7.5.6.4 A laboratory will be suspended from a category if two consecutive unsuccessful PT events occur. A laboratory may be reinstated to active status after successful participation in the next test event. Failure to successfully participate in the next test event will result in the denial, suspension or revocation of the certificate and require two successful PT events before the laboratory may reapply for certification. The laboratory may request the PT provider to send, at the expense of the laboratory, one extra set of PT samples when in suspension status.

7.6 On-Site Laboratory Inspection

7.6.1 On-site laboratory inspections must be performed prior to initial certification and annually thereafter by the Department.

7.6.2 The on-site inspection will include a review of the laboratory's practices to assure compliance with these regulations. The requirements are in checklist format in Appendix 2C.

7.6.3 Laboratories will be contacted to arrange routine inspection dates approximately three weeks prior to a proposed date. A letter confirming the inspection date will be sent to the laboratory.

7.6.4 The on-site inspection's checklist will be used systematically to evaluate and assess a laboratory's compliance. Each item listed on the checklist will be answered by the department inspector as, Yes ("Y"), No ("N") or Not Applicable ("NA"). Each item answered as "N" will be described in a report to include the noncompliant practice, the source of information and the scope and extent of the noncompliant practice.

7.6.5 Following the on-site inspection, a written report will be prepared and reviewed by a peer inspector or supervisor prior to mailing. The report should be mailed to the laboratory within 15 days of inspection.

7.6.6 The laboratory must provide a written response to the report when noncompliant practices are identified. The laboratory must provide a written plan of correction within 15 days of receipt of the written inspection report for each noncompliant item cited as a result of items marked "N" on the inspection checklist. A response will not be required from the laboratory if all items on an inspection checklist are marked either "Y" or "NA".

7.6.7 The written plan of correction will be reviewed by the inspector and if appropriate will be approved. Any items requiring clarification will be resolved by phone or written correspondence.

7.6.8 Documents must be provided to the Department by the laboratory within 90 days of the inspection for verification and proof of implementation of the corrections described in the

written plan of correction. A subsequent on-site inspection will be conducted if the verification documents are not received, if compliance with corrective actions are difficult to verify by documentation, or if practices subject to correction have significant potential for direct impact on the quality of laboratory results.

7.6.9 Identification of noncompliant practices directly resulting in inaccurate laboratory reports, failure to provide a plan of correction or failure to correct adequately any noncompliant practice may result in inspector's recommendation to deny initial certification or limit, deny, suspend or revoke the laboratory certificate. Such action shall be governed by section 24-4-105, C.R.S.

7.6.10 A certificate will be issued by the Department to the laboratory to show certification has been approved. The certificate will reflect the laboratory name, location, the analytical categories approved and the effective dates of the certification period. The certification period will not exceed twelve months.

7.6.11 The Department will annually publish a list of certified laboratories.

7.7 Standards for approved permanent, temporary and mobile Evidential Breath Alcohol Testing (EBAT) facilities

7.7.1 Evidential Breath Alcohol Test(s) must be conducted only in facilities that have been approved by the Department.

7.7.2 Department standards for all approved EBAT facilities are specified in these regulations.

7.7.3 All approved EBAT facilities must meet standards of performance as established by this section of these regulations.

7.7.4 Inspections of permanent, temporary and mobile facilities must be performed prior to initial approval and once in a calendar year thereafter by Department staff.

7.7.5 Initial inspections of permanent and temporary EBAT facilities must be conducted by Department staff using sections 7.7.12.1 *Et. Seq.* to 7.7.12.7 *Et. Seq.* of these regulations.

7.7.6 Annual, complaint and follow up inspections of permanent and temporary EBAT facilities must be conducted by Department staff using sections 7.7.12.2 *Et. Seq.* to 7.7.12.8 *Et. Seq.* of these regulations.

7.7.7 Initial inspections of mobile EBAT facilities must be conducted by Department staff using sections7.7.12.1 *Et. Seq.*; 7.7.12.3 *Et. Seq.* to 7.7.12.7 *Et. Seq.*; and 7.7.12.9 *Et. Seq.* of these regulations.

7.7.8 Annual complaint and follow up inspections of mobile EBAT facilities must be conducted by Department staff using sections 7.7.12.3 *Et. Seq.* to 7.7.12.9 *Et. Seq.* of these regulations.

7.7.9 Mobile EBAT facilities, the EBAT device and its associated equipment must be brought to the Department each time a facility inspection is required.

7.7.10 An EBAT device that is used in a mobile EBAT facility must not be used at a permanent or temporary facility unless approved by the Department.

7.7.11 An EBAT device that is used in a permanent or temporary facility must not be used at a mobile facility unless approved by the Department

7.7.12 Department inspection procedure for permanent, temporary and mobile Evidential Breath Alcohol Test Facilities

7.7.12.1 Initial approval – permanent, temporary and mobile EBAT facilities

7.7.12.1.1 Facilities must submit a written request to the Department for approval of an EBAT facility.

7.7.12.1.2 After receipt of the written request for approval, the Department shall supply a copy of these regulations to the requesting facility.

7.7.12.1.3 The facility EBAT device instructor or DUI enforcement officer is responsible for monitoring the construction of the EBAT facility and verifying compliance with the requirements of this section.

7.7.12.1.4 After the facility is constructed and ready for use, written verification of compliance with the requirement of this section must be sent to the Department by the facility. The written verification must include a letter from a certified electrician that the power line to the EBAT device is an isolated line.

7.7.12.1.5 Department staff must perform an initial facility inspection to verify compliance with the requirements of this section. Subsequent facility inspections must be performed once in a calendar year by department staff.

7.7.12.1.5.1 The EBAT device must not be moved from its approved location within the approved facility without authorization from the department.

7.7.12.2 Power requirements – permanent and temporary facilities

7.7.12.2.1 AC line voltage of 120VAC ±10%, 60 HZ with a grounded 3 prong outlet(s) and a 20 ampere or less circuit breaker.

7.7.12.2.2 The power line to the EBAT device must be an isolated line. Written verification of compliance with this requirement from a certified electrician must be provided to the Department.

7.7.12.2.3 A surge protection device approved by the Department must be placed between the EBAT device and the isolated power outlet.

7.7.12.2.4 Only the EBAT device and its associated equipment shall be connected to the surge protection device or the isolated power outlet.

7.7.12.3 Environment – permanent, temporary and mobile EBAT facilities

7.7.12.3.1 The temperature of the EBAT device facility must be maintained between 70 and 80 degrees Fahrenheit.

7.7.12.3.2 The facility must have adequate lighting so the EBAT operator can see to safely conduct the evidential breath alcohol test and complete the required forms.

7.7.12.3.3 The area around and under the EBAT device must be free of dust and dirt.

7.7.12.3.4 The Evidential Breath Alcohol Testing facility must be kept orderly.

7.7.12.3.5 The EBAT device and breath alcohol simulator must be located on the organizer stand.

7.7.12.3.6 The organizer stand must be placed on a sturdy and adequate work surface.

7.7.12.3.7 The EBAT device shall be in a smoke free environment.

7.7.12.3.8 The facility must have adequate ventilation to prevent vapor build up around the EBAT device be ventilated.

7.7.12.3.9 The facility must not be used to store any cleaning compounds or volatile organics to include gasoline and petroleum products.

7.7.12.3.10 The facility must be secure and not readily accessible to unauthorized individuals.

7.7.12.4 Documents – Permanent, temporary and mobile EBAT facilities

7.7.12.4.1 The following documents must be maintained at the EBAT facility with the EBAT device.

7.7.12.4.1.1 Current original certificate for the Evidential Breath Alcohol Testing device.

7.7.12.4.1.2 Checklist, Appendix 2A

7.7.12.4.1.3 No Smoking sign (not necessary if facility is in a no smoking building)

7.7.12.4.1.4 Error message sheet

7.7.12.4.1.5 Current list of certified operators and instructors from all agencies that regularly use this EBAT device to include original date of certification, date of last certification and date next certification is due.

7.7.12.4.1.6 Current Standard Solution Log Sheet.

7.7.12.5 Supplies – permanent, temporary and mobile EBAT facilities

7.7.12.5.1 The following supplies must be maintained at the EBAT facility with the EBAT device.

7.7.12.5.1.1 Mouth pieces;

7.7.12.5.1.2 Standard simulator solution;

7.7.12.5.1.3 Printer paper; and

7.7.12.5.1.4 DMV and DUI forms.

7.7.12.6 Evidential Breath Alcohol device functions – permanent, temporary and mobile EBAT facilities

7.7.12.6.1 EBAT device time and date must be correct.

7.7.12.6.2 External breath tube must be heating.

7.7.12.6.3 Simulator vapor tube must be heating

7.7.12.6.4 EBAT device test sequence must be correct.

7.7.12.6.5 EBAT device certification date on the printout must be the same as the EBAT device certification date on the posted EBAT device certificate.– Permanent locations only.

7.7.12.6.6 EBAT device must be connected to an active analog telephone line at all times – Permanent locations only.

7.7.12.7 Simulator functions – Permanent, temporary and mobile EBAT facilities

7.7.12.7.1 Active simulator

7.7.12.7.1.1 Record serial number

7.7.12.7.1.2 Display must read between 33.8°C and 34.2°C.

7.7.12.7.1.3 Simulator solution temperature must be between 33.8°C and 34.2°C measured by a calibrated, NIST traceable, digital thermometer.

7.7.12.7.1.4 Simulator must be functioning properly.

7.7.12.7.2 Backup simulator(s)

7.7.12.7.2.1 Record serial number(s).

7.7.12.7.2.2 Display(s) must read between 33.8°C and 34.2°C.

7.7.12.7.2.3 Simulator solution temperature must be between 33.8°C and 34.2°C measured by a calibrated, NIST traceable, digital thermometer.

7.7.12.7.2.4 Simulator must be functioning properly.

7.7.12.8 Records review – Permanent, temporary and mobile EBAT facilities.

7.7.12.8.1 Review of the Standard Solution Log Sheets must show precise standard results within ±10% of the target value.

7.7.12.8.2 Review of the Standard Solution Log Sheet must not indicate an unacceptable number of error messages.

7.7.12.8.3 The Standard Simulator Solution must be changed every 30 days or 100 tests, whichever comes first.

7.7.12.8.4 Diagnostic checks must be performed every 30 days and printouts must be retained with the Standard Solution Log Sheet.

7.7.12.8.5 Calibration checks must be performed every 7 days and printouts must be retained with the Standard Solution Log Sheet.

7.7.12.8.6 All EBAT sequence numbers must be recorded on the Standard Solution Log Sheet.

7.7.12.8.7 All records pertaining to Evidential Breath Alcohol Tests must be retained by the EBAT facility for 2 years.

7.7.12.9 Additional requirements for mobile EBAT facilities

7.7.12.9.1 Powe r

7.7.12.9.1.1 Acce ptable power sources are:

7.7.12.9.1.1.1 Square wave power inverter capable of generating an AC line voltage of 140 volts RMS± 10%.

7.7.12.9.1.1.2 Powe r inverter/sine wave converter combination that generates 120 volts AC ± 10% from 14 VOLTS DC.

7.7.12.9.1.1.3 Electri c motor/generator combinations that use a 12 volt AC ± 10% 60 HZ generator.

7.7.12.9.1.1.4 The isolated power line to the EBAT device must be verified by Department staff.

7.7.12.9.1.1.5 A surge protection device approved by the Department must be placed between the EBAT device and the isolated power outlet.

7.7.12.9.1.1.6 Only the EBAT device and its associated equipment shall be connected to the surge protection device or the isolated power outlet.

7.7.12.9.2 Environment

7.7.12.9.2.1 Automobile emissions must not be allowed in the EBAT facility.

PART 8: Violations and Remedies

8.1 Violations

8.1.1 It is a violation of these rules and regulations to perform testing without an appropriate certificate.

8.1.2 Violation of these rules and regulations may result in denial, suspension or revocation of certification as outlined in Part 8 of these rules and regulations.

8.1.3 Generally, a violation will not be cited if:

8.1.3.1 The violation was unavoidable to prevent loss of life, personal injury or severe property damage or there were no feasible alternatives, and provided that proper notification was given to the Department.

8.1.3.2 The violations resulted from matters beyond the control of the facility or laboratory, such as equipment failures that were unavoidable by reasonable quality assurance measures or management controls.

8.2 Right to appeal the denial, suspension or revocation of certification.

8.2.1 Any facility, laboratory, operator or operator instructor whose certification is denied, suspended or revoked under these regulations may seek appeal of that determination pursuant to section 24-4-105, C.R.S. (2006).

8.3 Denial, Suspension or Revocation of Certification:

8.3.1 The Department may deny, suspend or revoke the certification of EBAT device(s) located in a facility, the certification of an operator, the certification of an operator instructor or the certification of a laboratory for one or more of the following causes:

8.3.1.1 Falsification of data or other deceptive practices including false statements by omission or commission relevant to the certification process.

8.3.1.2 Gross incompetence or negligent practice.

8.3.1.3 Willful or repeated violation of any lawful rule, regulation or order of the Department or the Board of Health and its officers.

8.3.1.4 Inadequate space, equipment, or methods utilized for testing.

8.3.1.5 Submission of any test results of another person as those of the subject being evaluated.

8.3.1.6 For a laboratory, failure to continuously participate in proficiency testing.

8.3.1.7 For a laboratory, the receipt of two consecutive “unsatisfactory” evaluations, or achievement of an “unsatisfactory” score in 2 of any 3 consecutive proficiency test events.

8.3.1.8 For a laboratory, contact with another laboratory concerning proficiency test results prior to the due date of those results.

8.4 Injunctio n

8.4.1 The Department may seek an injunction against any entity for failure to comply with these rules and regulations.

APPENDIX 1A

TITLE: Checklist for Evidential Breath Alcohol Test(s).

1. The subject must remove foreign objects from the nose and mouth to include dentures. The subject must be closely and continuously observed for 20 minutes prior to testing to assure no belching, regurgitation or intake of any foreign material by nose or mouth has occurred. If such occurs, another 20 minutes of close and continuous observation must elapse under the same conditions.

2. Turn power switch on and/or observe the power switch has been activated.

3. Observe the simulator temperature is between 33.8 degrees centigrade and 34.2 degrees centigrade.

4. Activate the Start Test switch.

5. Follow the instructions and sequence of events as they appear on the device display.

6. After the sequence of events has been completed package and seal the Delayed Breath Alcohol specimen.

7. Record the evidential breath alcohol test information on the standard simulator log sheet.

APPENDIX 2A

Colorado Department of Public Health and Environment
Laboratory Services Division
Breath Alcohol Testing Program

Approved checklist for Evidential Breath Alcohol Test(s) after upgrade to Intoxilyzer 5000EN software revision 1358.XX, in compliance with the Colorado Board of Heath Rules and Regulations concerning testing for alcohol and other drugs, 5-CCR1005-2, as amended.

SUBJECT: _____

DATE:_____

Certified operator or instructor conducting the EBAT must initial inside the parentheses to the left of each step and sign in the space provided at the bottom.

( ) 1. Turn power switch on or observe the power switch has been activated. If the EBAT device is in the STANDBY mode, press the START TEST switch.

( ) 2. The subject must remove foreign objects from the nose and mouth includingdentures. The subject must be closely and continuously observed for 20 minutes prior to testing to assure no belching, regurgitation or intake of any foreign material by nose or mouth has occurred. If such occurs, another 20 minutes of close and continuous observation must elapse under the same conditions.

Start Time: _____ Stop Time: _____

( ) 3. Verify that the external breath tube and simulator vapor tube are both warm.

( ) 4. Observe the simulator temperature is between 33.8 degrees Centigrade and 34.2 degrees Centigrade.

( ) 5. Press the START TEST switch.

( ) 6. Follow the instructions and sequence of events as they appear on the EBATdevice display.

( ) 7. Retain all printouts generated by the EBAT device with the DUI packet. (ie. Error message printouts)

THIS EVIDENTIAL BREATH ALCOHOL TEST WAS CONDUCTED IN ACCORDANCE WITH THE COLORADO BOARD OF HEALTH RULES AND REGULATIONS, 5-CCR1005-2.

_____

Certified Operator or Instructor Conducting Test

APPENDIX 2B

DUI and DUID Laboratory Certification Application

Laboratories are certified by the Colorado Department of Public Health and Environment as authorized by the Colorado Board of Health Rules and Regulations 5 CCR 1005-2, Testing for Alcohol and Other Drugs

(for re-certification, complete the following and submit at least 30 days prior to the current expiration date)

LABORATORY NAME: _____

ADDRESS (LOCATION): _____

ADDRESS MAIL: _____
(if different from above)

CONTACT PERSON
TO ADDRESS MAIL: _____
(nam e) (title)

E MAIL ADDRESS: _____

PHONE NUMBER: _____

FAX NUMBER: _____

ANALYTICAL CATEGORIES:

Screening or Initial Testing	method (list)	number of samples in past year		**Confirmation or Repeat Testing**	method (list)	number of samples in past year
Blood Alcohol				Blood Alcohol		
Blood drug				Blood Drug		
Urine Drug				Urine Drug		

For each director, supervisor and analyst, submit a current Curriculum Vitae with this application.

Return signed and completed application to:

Certification

Colorado Department of Public Health and Environment
Laboratory Services Division
Program
8100 Lowry Blvd
Denver CO 80230-6928

This information is a true and accurate representation of the methods and personnel employed by this laboratory on the date of this application.

_____ _____ _____
(signature of director or designated responsible party) (Title) (Date)

APPENDIX 2C

DUI and DUID Laboratory Certification Onsite Evaluation Standards

Laboratory Name:

_____

Inspector(s) Name:_____**Date of inspection**:_____

Laboratory Staff interviewed:_____

A. PERSONNE L

1. Y N NA Does the laboratory have a director?

2. Y N NA Does the director have a Bachelor degree in chemical, physical or biological science or medical technology, forensic science, or equivalent, from an accredited institution, and 2 years of laboratory experience?

   (Answer NA if question #4 is Yes)

3. Y N NA Is the director responsible for the overall management and operation of the laboratory? How is this documented? What documented tasks does the director perform relating to management and operation of the laboratory?

4. Y N NA If the director does not supervise the daily function of the laboratory, has this responsibility been delegated to a qualified technical supervisor (TS)? (See question 2 in this section for qualifications) How is this documented? What documented tasks does the TS perform relating to management and operation of the laboratory?

5. Y N NA Do the analysts have at minimum an associate degree in a laboratory science or one year training in a nationally recognized accredited laboratory program or one year documented on the job laboratory training?

6. Y N NA Does the laboratory director or TS ensure laboratory personnel are adequately trained? What system is used to evaluate and ensure personnel competency? (Such as observation, written test, analysis of unknown samples or quality control materials)

7. Y N NA Does the laboratory maintain documentation for the director and all personnel's education, training and experience?

8. Does the laboratory maintain records of personnel training and annual competency checks in the following areas:

   Y N NA a) sample processing procedures

   Y N NA b) theory of instrument operation and software

Y N NA c) analytical procedures

Y N NA d) quantitation and calculations

Y N NA e) reporting results

9. Y N NA Does each laboratory position have a written job description?

B. STANDARD OPERATING PROCEDURE MANUAL

1. Y N NA Does the laboratory have a written procedure manual for the performance of all methods of analytes it reports?

1.1 Y N NA Do the Standard Operating Procedures (SOP) contain the critical elements in this Appendix 2C, section B5 (a-t)?

2. Y N NA Has the current laboratory director or technical supervisor approved, signed and dated each procedure?

3. Y N NA Has the laboratory director or technical supervisor approved, initialed and dated each change in the procedure?

4. Y N NA Does the laboratory have a written procedure manual available to the laboratory analyst at the bench? What system is used to ensure all staff are familiar with the SOP, including any revisions?

5. Does the procedure manual include criteria and process for:

Y N NA a) specimen receiving?

Y N NA b) specimen accessioning?

Y N NA c) specimen storage?

Y N NA d) identifying and rejecting unacceptable specimens?

Y N NA e) recording discrepancies?

Y N NA f) security of specimens, aliquots or extracts?

Y N NA g) validating a new or revised method prior to testing specimens for accuracy, precision, specificity (interferences), detection limits and reporting range?

Y N NA h) aliquoting specimens to avoid contamination and/or carry-over?

Y N NA I) sample retention to assure stability for one year?

Y N NA j) disposal of specimens?

Y N NA k) the theory and principles behind each assay?

Y N NA l) preparation and identification of reagents, standards, calibrators and controls? How does the laboratory ensure all standards are traceable to NIST as specified in section D?

Y N NA m) special requirements and safety precautions involved in performing assays?

Y N NA n) frequency and number of control and calibration materials?

Y N NA o) recording and reporting assay results?

Y N NA p) protocol and criteria for accepting or rejecting analytical data?

Y N NA q) procedure to verify the accuracy of the final report?

Y N NA r) pertinent literature references for each method?

Y N NA s) current step by step instructions with sufficient detail to perform the assay to include equipment operation?

Y N NA t) a documented review system of control, standard, tests results, clerical errors, analytical errors and any unusual analytical results? How are corrective actions implemented and documented? What system does the laboratory use to contact affected clients?

6. Y N NA Does the laboratory maintain copies of previous standard operating procedures and the dates they were in effect and analytical results for a least 5 years from date last used?

C. PROFICIE NCY TESTING

1. Y N NA Has the laboratory successfully participated in approved proficiency test (PT) programs for the categories in which they are seeking certification?

Identify programs and results:

_____
_____
_____
_____
_____
_____
_____

2. Y N NA Does the laboratory participate in additional proficiency testing programs other than those required under these standards?

3. Y N NA Does the laboratory analyze PT samples with the same number of replicates, standards, equipment and testing personnel as used for specimen testing?

4. Y N NA Does the laboratory maintain a copy of all records and documentation for a minimum of two years from the date of the proficiency testing event?

5. Y N NA Has the laboratory director reviewed and evaluated all PT results?

6. Y N NA Has the laboratory taken and documented remedial action for unacceptable PT and specimen results?

D. QUALITY ASSURANCE AND QUALITY CONTROL

1. Y N NA Are there records of preventive maintenance, repair and calibration of all instruments used to perform approved tests?

2. Y N NA Does the laboratory check and document the accuracy of automatic and/or adjustable pipettors and other measuring devices when placed into service and annually thereafter?

3. Y N NA Does the laboratory have the analytical balances cleaned, serviced and checked annually by qualified service personnel?

4. Y N NA Does the laboratory record temperatures daily on all equipment where temperature control is specified in SOP's, such as water baths, heating blocks, incubators, ovens, refrigerators, and freezers?

5. Y N NA Does the laboratory properly label reagents as to identity, concentration, date of preparation, storage conditions, expiration date and identity of the preparer?

6. Y N NA If the laboratory prepares its own calibrators and controls, are these made using independently prepared stock drug solutions? How does the laboratory ensure / document agreement with NIST traceable standards within 5%?

7. Y N NA Does the laboratory avoid mixing different lots of reagents in the same analytical run?

8. Y N NA Does the laboratory perform and document calibration curve for each assay performed using a blank and at least three calibrators throughout the reporting range to include the "detection limit" at least every six months or whenever there is a change in or to a procedure or equipment used?

9. Y N NA Does the laboratory analyze two levels of calibrators and/or controls with each batch of specimens?

10. Y N NA Does the laboratory analyze an appropriate matrix blank and control with each batch of specimens analyzed?

11. Y N NA Does the laboratory analyze calibrators and controls in the same manner as unknowns?

12. Y N NA Does the laboratory define control limits for all assays?

13. Y N NA Does the laboratory monitor and document the performance of calibrators and control specimens?

14. Y N NA Does the laboratory have written criteria for corrective action of unacceptable control, standard, or instrument performance?

15. Y N NA Does the laboratory take remedial action if control results exceed reference ranges?

16. Y N NA Is the remedial action documented?

17. Y N NA Does the laboratory maintain records of validation data for new and modified assays to include interferent studies?

18. Y N NA Does the analyst follow the SOP for the tests performed?

E. CHAIN OF CUSTODY-SECURITY-SPECIMEN RETENTION FACILITY SPACE

1. Y N NA Is there a system to document the complete chain of custody of all forensic specimens from receipt to disposal?

2. Y N NA Does the laboratory issue instructions to user agencies, including the types and amount of specimens required?

3. Y N NA Does the laboratory document the condition of the external package and individual evidence seals?

4. Y N NA Does the laboratory compare the evidence seals against requisition and document any discrepancies? How are discrepancies resolved?

5. Y N NA Does the laboratory document the condition of the specimens at the time of receipt?

6. Y N NA Does the laboratory document all persons handling the original specimens, aliquots, and extracts?

7. Y N NA Does the laboratory document all transfers of specimens, aliquots, and extracts when requested for by defendant's legal counsel and sent to another certified laboratory?

8. Y N NA Does the laboratory maintain a current list of authorized personnel?

9. Y N NA Does the laboratory restrict entry into the laboratory to only authorized personnel?

10. Y N NA Does the laboratory have provisions for securing the laboratory during non-working hours?

11. Y N NA Does the laboratory secure short and long term storage areas when not in use?

12. Y N NA Does the laboratory log-in and aliquot specimens in a secure area?

13. Y N NA Are urine specimens stored for at least 1 year at -20 degrees C. or less?

14. Y N NA Are blood specimens stored for at least 1 year at less than 8 degrees C.?

15. Y N NA Does the laboratory document the disposal of samples, aliquots, and extracts?

16. Y N NA Is there adequate space to perform the analyses?

17. Y N NA Is the lighting, ventilation and temperature control adequate?

F. RECORDS -- REPORTING

1. Y N NA Are records of analyses and instrumentation printouts maintained by the testing laboratory for a period of not less than 5 years?

2. Y N NA Are all specimens identified as positive on an initial drug test confirmed using a second analytical procedure utilizing different technique and chemical principle from the initial test?

3. Y N NA If blood samples are screened for ethanol by gas chromatography, is a separate aliquot from the original specimen used for confirmation? i.e. (two separate aliquots should be tested for blood alcohol)

4. Y N NA Does the laboratory maintain records, accession numbers, specimen type, QC results, acceptable reference range parameters, analyst and date of analysis for at least 5 years?

5. Y N NA Does the laboratory adequately document the available external chain of custody information?

G. ANALYTI CAL PROCESS

G.1 Gas Chromatography

1. Y N NA Does the laboratory document the conditions of the gas chromatograph, including the detector response daily?

2. Y N NA Does the laboratory document changes of septa as specified in the SOP?

3. Y N NA Is there documentation of liners being cleaned or replaced as specified in the SOP?

4. Y N NA Does the laboratory document the performance of new columns before use?

6. Y N NA Does the laboratory use an internal standard for qualitative and quantitative analysis?

7. Y N NA For quantitative analysis does the internal standard have similar chemical and physical properties to that of the analyte?

8. Y N NA Does the laboratory monitor the response (area or peak height) for the internal standard to ensure consistency of the analytical system over time?

G2. Gas Chromatography Mass Spectrometry (GC-MS)

1. Y N NA Does the laboratory maintain records of mass spectrometric tuning?

2. Y N NA Does the laboratory have written criteria for an acceptable mass-spectrometric tune?

3. Y N NA If the tune is unacceptable, is corrective action documented?

4. Y N NA If the laboratory uses full scan mass spectral identification through library searching, are there documented criteria for acceptability?

5. Y N NA If the laboratory uses selected ion monitoring for identification does it compare ion ratios and retention times between calibrators, controls and specimens?

6. Y N NA If the laboratory has written its' own software, has it been documented and the accuracy verified?

G3. Immumoassays

1. Y N NA Do the calibrators give adequate separation or measurement units (absorbance intensity or counts per minute)?

2. Y N NA If the laboratory uses radioimmunoassay does it determine background counts before each run or daily, including the background in each well of a multi-well counter?

3. Y N NA Do the background counts meet the acceptable criteria?

G4. Thin Layer Chromatography

1. Y N NA Does the laboratory apply unextracted standards to each thin layer chromatographic plate?

2. Y N NA Does the laboratory evaluate new thin layer chromatographic plates before placing them into service? How does the laboratory establish and document acceptable performance?

3. Y N NA Does the spotting technique preclude the possibility of contamination and/or carry-over? How is this verified?

4. Y N NA Does the laboratory measure all appropriate RF values for qualitative identification purposes?

5. Y N NA If the laboratory uses sequential color reactions, are these recorded?

6. Y N NA Does the laboratory maintain records of thin layer chromatographic plates?

7. Y N NA Does the laboratory analyze an appropriate matrix blank with each batch of specimens analyzed?

G5. High Pressure Liquid Chromatography (HPLC)

1. Y N NA Does the laboratory evaluate the performance of new columns before use? How?

2. Y N NA If the laboratory recycles eluting solvents, are there standards for acceptability?

3. Y N NA Does the laboratory use an internal standard with each batch of specimens for qualitative and quantitative analysis?

4. Y N NA If an internal standard is used for quantitative analysis, are its chemical and physical properties similar to the analyte?

5. Y N NA Does the laboratory monitor the response (area or peak height) for the internal standard to ensure consistency of the analytical system over time?

COMMENTS SECTION:

STATE OF COLORADO

Bill Owens, Governor
Douglas H. Benevento, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Located in Glendale, Colorado

http://www.cdphe.state.co.us

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8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

January 5, 2004

DUI Enforcement Officers/ Intoxilyzer 5000EN Operator/ Instructors

Subject: Guth 2100 Backup Simulators

Dear Operator/ Instructors

Effective January 1, 2006, the Colorado Department Public Health and Environment, Laboratory Services Division will require all direct breath testing facilities purchase a spare Guth 2100 simulator to be used as a back up for the simulator that is used with the Intoxilyzer 5000EN.

The back up simulator will reduce down time at the direct breath testing facility when there is a problem with the simulator in use with the Intoxilyzer 5000EN. The back up simulator can also be used to determine if a problem exists with the Intoxilyzer or the main simulator in some instances.

The back up simulators may be purchased from CMI Inc. (1-800-835-0690) or Guth Laboratories Inc. (1-800-233-2338).

If you have comments, questions or need information please contact Fred Maxwell at 303.692.3293 or Fred Cobb at 303.692.3292 or e-mail at fred.maxwell@state.co.us or fred.cobb.@state.co.us.

Thank you for your cooperation and assistance in this matter.

Dave Butcher, Director
Laboratory Services Division

STATE OF COLORADO

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Douglas H. Benevento, Executive Director

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Colorado Department
of Public Health
and Environment

January 5, 2004

DUI Enforcement Officers/ Intoxilyzer 5000EN Operator/Instructors

Subject: Intoxilyzer 5000EN COBRA System

Dear Operator/ Instructors

Effective January 1, 2006, the Colorado Department Public Health and Environment, Laboratory Services Division will require all Intoxilyzers located at direct breath testing facilities be connected to a direct analog telephone line. This is necessary so that the instruments can be connected to the Computerized Online BReath Archive (COBRA) system.

The COBRA system is designed to download test data stored in the Intoxilyzer to a central location. That location is located at the Colorado Department of Public Health and Environment/Certification Program/ Alcohol Testing Unit. Instruments will be downloaded on a weekly or monthly time period, depending on the number of tests performed at each location.

The collected data will be provided to the direct breath testing agency for their use, to prosecuting and defense attorneys for use in court and to anyone else who has a need for this information. In addition to collecting test data, the COBRA system will be used to troubleshoot the Intoxilyzer at the direct breath testing facility when it has problems. This will expedite the repair process. It also allows us to determine and change, if necessary, forgotten instrument passwords provide missing simulator log sheet information and provide print out information.

The telephone line must be a direct analog line, like a FAX line, that does not go through a switch board. The line must be dedicated to only the Intoxilyzer. An alternative and maybe more cost effective method of connecting to the COBRA system would be to purchase a telephone switching device called the STICK, if there is a direct line already installed near the Intoxilyzer room, like a FAX line. This existing line along with the STICK can be used to connect the Intoxilyzer to the COBRA system. The advantage of this method is there is a one-time purchase of the STICK and use of a phone line that is already paid for. Also, there is no additional monthly cost to rent an extra phone line. All instructors who have attended the CDPHE instructor course in the last two years have information on the STICK in their training manual or contact us at the numbers listed below to obtain the information.

After the Intoxilyzer is connected to the telephone line, please contact the CDPHE/LSD/Alcohol Testing unit staff with the telephone number for the instrument.

If you have comments, questions, need information or to give us the instrument telephone number please contact Fred Maxwell at 303.692.3293 or Fred Cobb at 303.692.3292 or e-mail at fred.maxwell@state.co.us or fred.cobb.@state.co.us.

Thank you for your cooperation and assistance in this matter.

Dave Butcher, Director
Laboratory Services Division

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Colorado Department
of Public Health
and Environment

APPROVED PRELIMINARY BREATH TESTING (PBT) DEVICE

DEVICES APPROVED TO PERFORM A PRELIMINARY SCREENING TEST FOR COLORADO DUI AND DUID ENFORCEMENT

Published August 30, 2004

Pursuant to Colorado Revised Statutes 42-4-1301,11 C.R.S. (1997) section (6). "Following the lawful contact with a person who has been driving a vehicle, and when a law enforcement officer reasonably suspects that a person was driving a vehicle while under the influence of or while impaired by alcohol, the law enforcement officer may conduct a preliminary screening test using a device approved by the executive director of public health and environment after first advising the driver that the driver may either refuse or agree to provide a sample of the driver's breath for such preliminary test..."

List revised 8-30-04. Previous revision 3-18-04

List revised as follows:

Add Draeger Safety Diagnostics Inc. ALCOTEST 6510, Alcohol Breath Analyzer

STATE OF COLORADO

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Colorado Department
of Public Health
and Environment

TO: WHOM IT MAY CONCERN

FROM: CERTIFICATION PROGRAM
LABORATORY SERVICES (LSD) DIVISION

DATE: July 15, 2004

SUBJECT: APPROVED PRELIMINARY BREATH TESTING (PBT) DEVICE

Pursuant to Colorado Revised Statutes 42-4-1301,11 C.R.S. (1997) section (6) the following PBT devices have been approved for use in the State of Colorado.

ALCO-SENSOR III Intox	imeters, Inc
ALCO-SENSOR IV	8110 Lackland Road
ALCO SENSOR III –	St. Louis, MO. 63114
SERIAL #'s 1200000 AND UP	1.314.429.4000
ALCO SENSOR FST	1.800.451.8639

CMI Intoxilyzer S-D2	CMI, Inc
(Formerly Alcometer S-D2)	316 East Ninth St
CMI MODEL 300	Owensboro, KY. 42301
CMI MODEL 400	1.800.835.0690
CMI Intoxilyzer SD-5	

PBA 3000	Lifeloc	Technologies
PHOENIX		12441 West 49th Avenue Unit 4
FC 10/20	Wheatridge,	CO. 80033
		1.303.431.9500
		1.800.722.4872

BREATHALYZER 7410 National Draeger, Inc.
ALCOTEST 6510 Breathalyzer Division
185 Suttle St., Suite 105
Durango, CO. 81301-7911
1.800.385.8666

STATE OF COLORADO

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Colorado Department
of Public Health
and Environment

FROM: **Fred Maxwell**
Biomedical Equipment Technician IV

DATE: **April 21, 2004**

SUBJECT: **Recommended Surge Protectors**

A. The following surge protectors are recommended by the Colorado Department of Public Health and Environment/ Certification Program for use with the 5000EN, evidential breath alcohol testing devices.

1. Tripp Lite Isobar, Model 4, 6 or 8 Ultra
2. Tripp Lite Isotel, Model 4, 6 or 8 Ultra

B. If a different surge protection device is used, it must meet the minimum specifications listed below and a copy of the surge protectors technical specifications must be sent to the Colorado Department of Public Health and Environment/ Certification Program for review.

1. Clamping Time:	5 picoseconds or less
2. Total Maximum Energy Dissipation:	180 joules, minimum
3. Surge Current:	11,000amps, minimum
4. Suppressed Voltage Rating:	330 volts, maximum
5. Protection Mode:	Line to Neutral, Line to Ground, & Neutral to Ground
6. Noise Suppression:	5dB to 30dB from 100KHz to 1000MHz
7. UL 1449 Rated	

If there are any questions, contact Fred Maxwell (303) 692-3293 or Fred Cobb (303) 692-3292.

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Colorado Department
of Public Health
and Environment

MEMORANDUM

TO: **DUI Enforcement Officers/ Intoxilyzer Instructors**

FROM: **Colorado Department of Public Health and Environment/ Laboratory Services Division/Certification Program**

DATE: **January 23, 2004**

SUBJECT: **Colorado Vender for The STICK**

==========

A Colorado Vender for the STICK is

American Electric
127 West Moreno
Colorado Springs, Co 80903
719-475-8160
FAX 719-475-2503
Contact: Frank Smolik or Tim McEldowney

Call them for a price quote or to order the STICK

"Add Equipment Without Adding Phone Lines"

Over 16 Years of Manufacturing Excellence

Superior Toll Free Technical Support

The Stick® gives you benefits you can count on:

- Eliminate Dedicated Line Costs
- Automatic Fax Detection
- Barge-In Protection
- Fully Programmable
- Screen Junk Calls to Answering Machine
- Call Grab and Silent Transfer
- 3 Independent Devices, 4 ports
- Compatible with Phone Systems
- One Year Warranty

Rev 2.08

THE STICK®

Reduce your phone bill with The Stick®! It's that easy!

Take a look at the bottom line. Dedicated data/fax phone lines, used just minutes a day, are not exactly a "cost-effective" method of doing business or communicating. With the national average monthly cost per telephone line at $50, eliminating an extra line can save you an average of $600 per year!

The Stick® Call Processor automatically screens and routes all voice, fax and modem calls to the right equipment every time, eliminating the need for a rarely used dedicated phone line. It is even compatible with virtually all multi-line KSU and PBX phone systems. When installed on the last incoming line before a PBX or KSU, **The Stick** will route fax and modem calls directly to those devices and voice calls through the phone system.

While once upon a time people were impressed if you had a separate dedicated fax line, now it is just the opposite. The convenience of one phone number is welcomed by all.
It just makes sense.

MULTI-LINK INC.®
"better communications management"

IT'S EASY TO USE! IT'S COST EFFECTIVE! IT MAKES SENSE!

How *The Stick* Can Save You Money

You can maximize the use of a single line by "sharing" it with the telephone, fax, modem or other devices.

Why pay for an extra telephone line that is used less than 1 hour a day?

Besides being cost-effective, **The Stick** Call Processor can offer you security, remote access, automatic fax detection, barge-in protection and even lets you screen junk calls to your answering machine!

If you can answer "yes" to any of the following questions, then you could benefit from using **The Stick!**

- *Do you have a dedicated fax or modem line used only minutes a day?*
- *Would you like added security on your line?*
- *Do you need to poll data once or more a day?*
- *Do you need data disruption protection for your check and credit card readers or point-of-sale polling?*
- *Would you like the convenience of transferring calls to your answering machine, fax, or modem?*

yes

How *The Stick* Works

When installed on a phone line, **The Stick** Call Processor automatically answers inbound calls and "screens" for fax tones (CNG) and Security Access Codes (in the form of DTMF/touch tones). While performing the "screening" function for both types of tones, **The Stick** is transmitting a high quality simulated "ring-back" to the calling party. After the screening function is performed, the call is routed to the proper device.

Ask Our Technicians

Our staff of technicians is available to answer any questions you may have about the programming or installation of **The Stick.** We can even test and program your unit over the telephone! You won't find better customer service anywhere.

Phone: 1-800-535-4651
M-F 8 a.m. to 6 p.m. EST

Just call. We're here to help!

DIMENSIONAL SPECIFICATIONS:

HEIGHT.....2.4"
LENGTH .....8.15"
WIDTH .....1.4"

MULTI-LINK INC.®
"better communications management"

225 Industry Pkwy., Nicholasville, KY 40356 USA
USA: 1-800-535-4651
Canada: 1-800-661-8371
Int'l: 1-859-885-6363
Fax: 1-859-885-6619

E-mail: sales@multi-link.net
Web Site: www.multi-link.net

FEATURES

Automatic Fax Detection
Routes all calls producing CNG tones to the fax port or fax modem.

Unanswered Call Silent Transfer
Routes calls from one designated port to another after a selected number of rings.

Programmable Security Access Codes
User-defined access codes secure programming and control.

Fully Programmable
Program all features via telephone key pad.

Remote Diagnostics and Programming
Our technical support team is available toll-free to program or diagnose *The Stick* over the phone!

Quality "Ring-Back"
The Stick transmits a "ring-back" that sounds just like the telephone company's. Callers won't know the difference!

Manual Transfer Capability
Transfer a call to any device port during a call.

Data Disruption Protection
The Stick protects data transmissions by "barge-in" protection from other devices.

Non-Volatile Memory
Programming is preserved in the event of a power outage.

One Year U.S.A. Warranty

230V Version Available • CE-Certified

Tuesday 11/15/2005

Search

HOME NEWS PRODUCTS MANUALS COMPANY SUPPORT

The Stick® is a state-of-the art telephone line sharing device (1x4) that screens and automatically routes all voice, fax, and modem calls to the right equipment every time - eliminating the need for costly dedicated phone lines.

Also known as a fax switch, call processor, call router, call director, line concentrator/consolidator. Highly flexible programming and a rich feature set make this unit adaptable to a wide range of working environments, industries, and applications.

The Stick® works on a standard POTS line and answers inbound calls at the first sign of ring voltage. After The Stick® goes off-hook, it immediately screens for CNG (fax) and DTMF

transfer codes. During this ≈ 5.5 sec processing period, a bell spec “ring back” is issued out to the calling party. Once a transfer command is received, the call is routed to the corresponding port. In the absence of fax/transfer codes, the call is defaulted to the voice ports. Outbound calls are processed in the normal fashion with barge-in protection.

The Stick® is programmed by touch tones from a phone key pad.

The Stick® Features

- **One Year Warranty**
- **Extremely flexible touchtone programming**
- **User defined transfer codes**
- **Caller ID and DSL Compatible**
- **Broad compatibility with telephony equipment and Telco services**
- **Barge-in protection**
- **Stackable**
- **Non-Volatile programming**
- **Auto fax detect**
- **No loss of data throughput speed or integrity…invisible to call transaction**
- **Toll free tech support**

The Stick® Benefits

- **SAVES MONEY BY ELIMINATING DEDICATED PHONE LINES!!**
- **Add equipment without adding lines**
- **Precision routing**
- **ROI within 3 to 6 months**

Download