

# **Intoxilyzer 9000 Operator Presentation Material**

Arizona Department of Public Safety  
Central Regional Crime Laboratory  
Forensic Alcohol Unit  
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## **FOR TRAINING USE ONLY**

The information provided herein is for training purposes only. Should a conflict occur between the information presented in this course and Agency Policy and Procedure, or State or Federal Law, Policy and Procedure, or State or Federal Law shall take precedence.



# INTOXILYZER 9000 OPERATOR TRAINING



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## Making the Grade

- Attend the entire course
- Pass a practical examination by demonstrating proficiency in operating the Intoxilyzer(s) properly
- Pass a comprehensive written examination with at least a score of 80%
  - 40 out of 50 questions correct

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## Performance Objectives

- Explain the effects of alcohol
- Explain the physiological principles to breath alcohol testing
- Explain the basic working of the operation of the instrument

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**Performance Objectives**

- Identify the criteria for an admissible breath test and a valid breath sample
- Identify exception messages for the instrument(s)
- Perform a successfully completed test sequence(s)

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**Characteristics of Ethanol**

- Mixes with water
- Colorless
- Light odor
- Volatile (evaporates)
- Burning taste
- CNS depressant

Ethanol is the alcohol in alcoholic beverages

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**Other Sources of Ethanol**

- Ethanol can be found in other products
  - Cold preparations (Nyquil ~10%)
  - Baking Extracts (Vanilla ~35%, Orange ~80%, Cherry ~90%)
  - Mouthwashes
  - Perfumes and colognes

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### What is a Standard Drink?

- A mug of beer
  - 12oz of beer at 5% alcohol = 0.6 oz of pure ethanol
- A glass of wine
  - 5oz of wine at 12% alcohol = 0.6 oz of pure ethanol
- A shot of liquor
  - 1.5oz of liquor at 40% alcohol = 0.6 oz of pure ethanol

No matter the source of the alcohol, the contribution of one drink will give the same alcohol concentration in the body




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### NOT a Standard Sized Drink

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### Absorption

- How Ethanol gets into the body to cause effects:
  - Oral consumption
  - Injection
  - Inhalation
  - Transdermal
  - Enema
  - Suppository

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### Distribution of Alcohol

- The process by which alcohol gets into the tissues through out the body
- The concentration of alcohol is directly proportional to the amount of water in the body
- Heavier the person = Greater water content = Lower the AC
- In theory, a 200 lb. man needs twice as much alcohol as a 100 lb. man to obtain the same alcohol concentration

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70 LBS. WATER      140 LBS. WATER

WEIGHT = 100 LBS.      WEIGHT = 200 LBS.

More ethanol per pound of water in the 100-lb. male than the 200-lb. male. 200-lb. man must consume twice as much as the 100-lb. man to attain the same ethanol concentration.

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### Differences Between Men and Women

In general, women have more fatty tissues

therefore...

women have less water per pound of body weight

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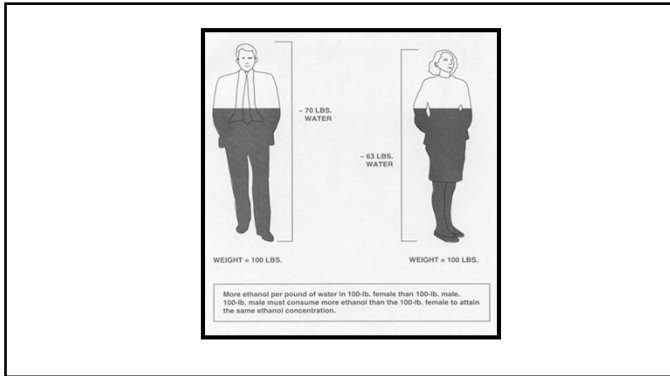
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### Elimination Rates

- Rate at which ethanol leaves the body varies from person to person
- Elimination rates range from 0.010% to 0.030% per hour
- Example:
  - From a 0.100 it will take about **6 hours** to get down to a 0.040 if a person eliminates ethanol at 0.010% per hour
  - From a 0.100 it will take about **2 hours** to get down to a 0.040 if a person eliminates ethanol at 0.030% per hour

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### Henry's Law

- The fundamental law to **ALL** breath testing
- The concentration of a volatile in the air above a liquid corresponds to the concentration of the volatile in the liquid
- The concentration of alcohol in the breath is related to the concentration of alcohol in the blood in a blood to breath ratio

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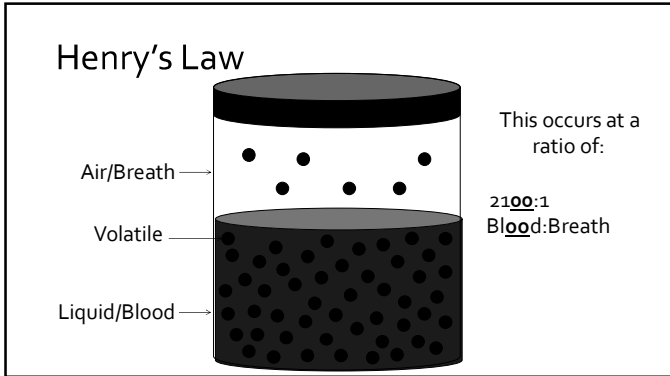
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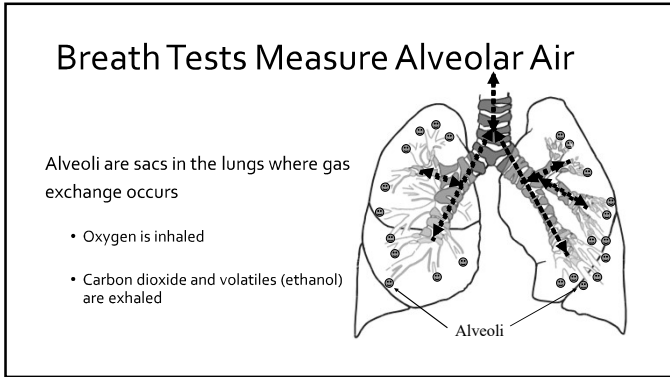
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### Blood Compared with Breath

Blood	Breath
• Permit required	• Permit required
• Calibrated instrument	• Calibrated instrument
• Quality controls	• Quality controls
• Duplicate tests	• Duplicate tests

**BOTH ARE EQUALLY ACCURATE AND SCIENTIFICALLY VALID**

Arizona law gives the officer the right to choose what test(s)

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### Breath Alcohol Results

- The Intoxilyzer does NOT tell you how much alcohol the subject consumed
- The Intoxilyzer measures the ethanol concentration of the subject's breath

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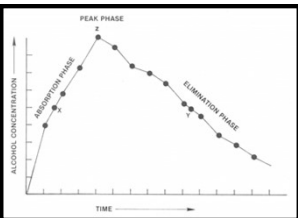
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### Alcohol Concentration Curve

- It can NOT tell if their alcohol concentrations is rising or falling.
- Duplicate subject tests do NOT determine where a person is on the alcohol curve.



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### Intoxication vs Impairment

<p><b>Intoxication</b></p> <ul style="list-style-type: none"> <li>• Outward signs of drinking</li> </ul>	<p><b>Impairment</b></p> <ul style="list-style-type: none"> <li>• Measurable decrease in the persons ability to perform a specific task</li> </ul>
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### Alcohol Related Impairment

- Acts as a Central Nervous System (CNS) Depressant
- Continuum of effects
  - Cognitive – the first effects of ethanol are on **judgement**
  - Sensory
  - Motor
- Death by respiratory arrest

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### Continuum Effects of Alcohol

COGNITIVE	SENSORY	MOTOR FUNCTION
Judgment impaired	Near to far vision	Fine muscle control
Sense of caution diminished	Visual acuity	Speech
Drivers often become aggressive risk takers, impulsive	Glare resistance	Balance
Lack self-criticism	Glare recovery	Coordination
Attribute to themselves many qualities which they do not possess	Binocular vision	Walking
Brain's ability to integrate information becomes impaired	Reaction time to optical and acoustical stimuli	Horizontal gaze nystagmus
Thoughts clouded	Complex coordination tasks	
Loss of finer grades of attention, observation and comprehension		
Unaware of errors and omissions		
Impairment of short-term memory		

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### Impairment



According to the National Safety Council (NSC), **all people** are impaired for the **task** of operating a motor vehicle by the time they reach a 0.08 alcohol concentration.

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### Significant Ethanol Levels



- 0.40 "Fatal" dose
- 0.08 Illegal per se level in most of the US  
All Drivers Impaired (NSC)
- 0.05 Illegal per se level in Utah  
AMA recommendation
- 0.04 DOT Rule Offense for CDL
- 0.02 Impairment begins – Judgement  
DOT screening level  
Illegal per se in Sweden

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### Divided Attention

- Having to focus on more than one task at the same time:
  - Requires more time to read, recognize, and respond to traffic signs and signals
  - Look at fewer sources of information and acquire less total information per unit of time




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### Tolerance

- Results from the chronic use of a drug when a larger dose is needed to achieve the desired effect – "the buzz"
  - Impairment occurs **without** the outward signs of intoxication
  - Absence of "the buzz" does **not** equate to absence of impairment

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### Acute Tolerance

- Acute Tolerance within same night of drinking
- Despite this functional tolerance, the person is EQUALLY impaired at points X and Y
- Only their perception is different

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### Factors Mimicking Alcohol Impairment

- Low alcohol concentration with drugs
- Drugs alone
- Head trauma
- **Uncontrolled** diabetics

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### Acetone

- Volatile
- Not an alcohol
- "Fruity" odor of acetone can be detected on the breath of:
  - Uncontrolled diabetics
  - Fasting subjects
- Acetone can be detected by the Intoxilyzer (Interferent Detect)

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### Review – Ethanol Overview

- CNS Depressant
- Increasing alcohol content impairs, in order
  - Cognitive (Judgement)
  - Sensory
  - Motor
- All persons are impaired for the task of driving at 0.080
- Uncontrolled diabetes, head trauma, and other drugs may mimic alcohol impairment
- Alcohol content is proportional to water in the body
  - Less water = Higher AC

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### Review – Breath Testing Principles

- Henry's Law
  - Fundamental to all breath testing
  - The concentration of a volatile in the air above a liquid is directly proportion to the concentration of that volatile in the liquid
- Blood to Breath ratio - 2100:1
- Deep Lung/Alveolar air

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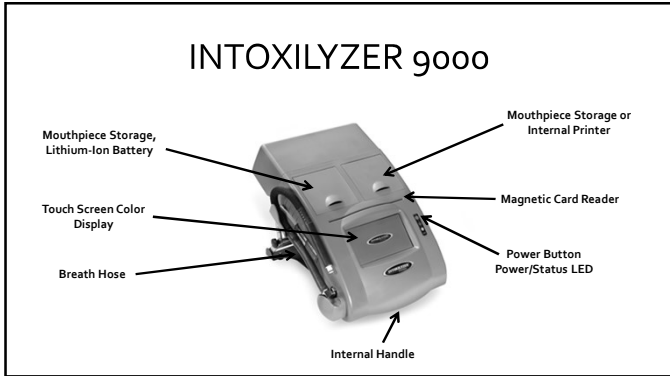
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### Infrared (IR) Analysis

- The Intoxilyzer 9000 measures the amount of ethanol on a person's breath (BrAC)
  - They measure the decrease in the intensity of the IR light reaching the detector
- The breath alcohol concentration is proportional to the amount of infrared energy absorbed by the ethanol in the breath sample

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### Intoxilyzer 9000 Sample Chamber

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### Delivering a Breath Sample

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**Delivering a Breath Sample**

- When a subject blows into the instrument they are replacing the air in the sample chamber with the air from their lungs
- The breath hose & sample chamber are heated, and the temperatures are internally monitored
  - Condensation may result in a low reading

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**Measurement**

Intoxilyzer 9000

- 4 Wavelengths of infrared light
- 4 Detectors

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**Criteria for Admissible Breath Tests**

ARS § 28-1323

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**Criteria for Admissible Breath Tests**

ARS § 28-1323

- Approved breath testing device
- Valid Operator's permit
- Duplicate tests
- Follow an operational checklist
- Instrument in proper operating condition

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**Criteria for Admissible Breath Tests**

ARS § 28-1323

- **Approved breath testing device**
- Valid Operator's permit
- Duplicate tests
- Follow an operational checklist
- Instrument in proper operating condition

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**Approved Breath Testing Devices**

- Intoxilyzer 5000, 5000 EN
- Intoxilyzer 8000
- Alcosensor RBT AZ
  - AZ Game & Fish for non-evidentiary use
- Intoxilyzer 9000

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**Criteria for Admissible Breath Tests**

ARS § 28-1323

- Approved breath testing device
- **Valid Operator's permit**
- Duplicate tests
- Follow an operational checklist
- Instrument in proper operating condition

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**Valid Operator Permit**

- Issued by the Department of Public Safety
  - Attend entire Operator class
  - Complete written and practical tests
- Valid for 5 years
- On-line renewal

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**Criteria for Admissible Breath Tests**

ARS § 28-1323

- Approved breath testing device
- Valid Operator's permit
- **Duplicate tests**
- Follow an operational checklist
- Instrument in proper operating condition

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**Duplicate Tests Requirements**

- Deprivation Period
- Two consecutive subject breath tests
- Provide a reasonable opportunity for an independent test

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**Deprivation Period**

- At least a 15-minute period immediately prior to a quantitative, duplicate test during which the subject has not ingested any alcoholic beverages or other fluids, vomited, eaten, smoked or placed any foreign object in the mouth
  - R13-10-101.8
- Ensure the mouth is clear before beginning
- Can be conducted under the officer's indirect attention

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**Deprivation Period**

- **A safeguard against mouth alcohol** (Invalid Sample)
- If anything violates the deprivation period, start a **new** deprivation period
- The Intoxilyzer 9000 verifies and records the length of the deprivation period and will begin a countdown timer if it has not been a full 15 minutes – note who performed it on <sup>1</sup>

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**Duplicate Tests**     R13-10-104.C

- Two tests must be within 5-10 minutes apart
  - Intoxilyzer is programmed with a 5 minute wait
- Two consecutive tests within 0.020 agreement of each other
- **A safeguard against mouth alcohol** (Invalid Sample)

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**Reasonable Opportunity**

- Subjects must be given an opportunity to arrange for their own independent test
- Reasonable opportunity is providing them access to a phone and phone directory or internet access

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**Duplicate Breath Test Advisory**

- Duplicate Breath Test Advisory should be read to each defendant
- A signed acknowledgement of the defendant's right to an independent test should be obtained

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DUPLICATE BREATH TEST ADVISORY	
<p>AFTER COMPLETING THE TESTS OF YOUR BREATH, YOU WILL BE GIVEN A REASONABLE OPPORTUNITY TO ARRANGE FOR ANY PHYSICIAN, REGISTERED NURSE, OR OTHER QUALIFIED PERSON OF YOUR OWN CHOOSING TO OBTAIN AN INDEPENDENT TEST OR TESTS IN ADDITION TO ANY ADMINISTERED BY A LAW ENFORCEMENT OFFICER.</p>	
ACKNOWLEDGMENT	
<p>I UNDERSTAND THAT I HAVE THE RIGHT TO A REASONABLE OPPORTUNITY TO ARRANGE FOR AN INDEPENDENT TEST OF MY BLOOD, BREATH, OR OTHER BODILY SUBSTANCE.</p>	
SUBJECT (please #) _____	DATE/TIME _____
OFFICER (please #) _____ B.A.D.O.E.# _____	DATE/TIME _____

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**Criteria for a Valid Breath Sample**

- **H** : Hard enough blow – minimum pressure/flow
- **E** : Enough quantity blown – minimum volume
- **L** : Long enough blow – minimum time
- **L** : Level slope is reached while blowing
  - **Another safeguard against mouth alcohol (Invalid Sample)**

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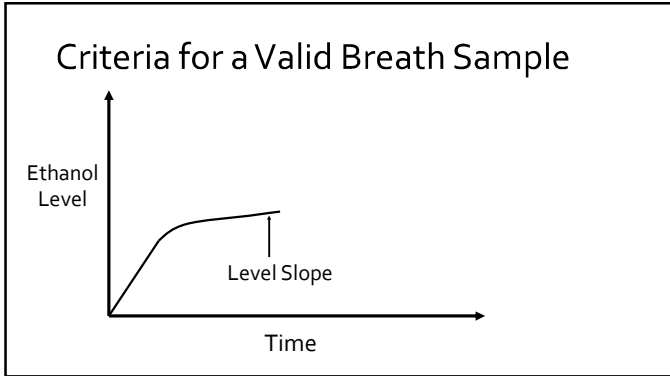
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### Criteria for a Valid Breath Sample

When all 4 criteria have been met:

- A zero will appear before the decimal of the breath alcohol value
- The breath alcohol value will change to red on the 9000  
0.258
- If all 4 criteria are not met, it will display **Deficient Sample**
- If subject does NOT blow, it will display **No Sample Given** on 9000

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### Duplicate Test Examples

- |  |   |
|--|---|
| • Breath Sample 0.105                    | • Breath Sample 0.105   |
| • 5 minute wait                          | • 5 minute wait   |
| • Breath Sample 0.130                    | • Breath Sample 0.130   |
| • 5 minute wait                          | • 5 minute wait   |
| • Breath Sample 0.131                    | • Breath Sample 0.100   |
| • "Successfully Completed Test Sequence" | • "Not a Successfully Completed Test Sequence" (no 0.020 agreement) |
|  | • Start a new test  |

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### Criteria for Admissible Breath Tests

ARS § 28-1323

- Approved breath testing device
- Valid Operator's permit
- Duplicate tests
- **Follow an operational checklist**
- Instrument in proper operating condition

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g900 Checklist

EXHIBIT 1.1  
OPERATIONAL CHECKLIST  
STANDARD OPERATIONAL PROCEDURE  
ARIZONA DEPARTMENT OF PUBLIC SAFETY  
INTOXILYZER MODEL 9000  
DUPLICATE BREATH TEST

SUBJECT: \_\_\_\_\_  
 AGENCY: \_\_\_\_\_ OPERATOR'S BADGE: \_\_\_\_\_  
 INTOXILYZER SERIAL # \_\_\_\_\_ REPRESENTATION BY: \_\_\_\_\_

Ensure proper degasification period.  
 Flush the airway before use the screen.  
 Perform announced prompts on the instrument display.

Note: Duplicate breath tests shall be administered at intervals of not less than 5 minutes nor more than 10 minutes apart and the two consecutive tests shall agree within 0.02 alcohol concentration.

COMMENTS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DPS Form 9000 3.1

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Criteria for Admissible Breath Tests

ARS § 28-1323

- Approved breath testing device
- Valid Operator's permit
- Duplicate tests
- Follow an operational checklist
- **Instrument in proper operating condition**

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ARS § 28-1323.5

The device used to conduct the test was in proper operating condition. Records of periodic maintenance that show that the device was in proper operating condition are admissible in any proceeding as prima facie evidence that the device was in proper operating condition at the time of the test. **Calibration checks with a standard alcohol concentration solution bracketing each person's duplicate breath test are one type of records of periodic maintenance that satisfies the requirements of this section.** The records are public records.

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**Validation at Time of Testing**

- The Intoxilyzer performs calibration checks and diagnostic checks at the time of the subject test
  - Performed before and after a subject test (bracketing)
  - Performed by the Operator
- Additionally, the QAS performs testing that checks the calibration, diagnostics, and operation of the instrument

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**Calibration Checks**

- Regulations require that the Calibration Checks of breath testing devices must meet an acceptable accuracy limit of  $\pm 10\%$  or  $\pm 0.01$  g/210L of breath **whichever is greater**
- Calibration **Checks** are conducted by the Operators and the Quality Assurance Specialists through the testing sequence
- **Calibration** is only done by laboratory personnel

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**Calibration Check Ranges**

What are the lowest and highest acceptable readings for a 0.100 standard?

- $\pm 10\%$   
0.090 – 0.110
- $\pm 0.01$  g/210L  
0.090 – 0.110

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### Review - Admissibility

- Instruments for breath testing must be approved
- Operator Permit issued by DPS (valid for 5 years)
- Duplicate Tests
  - 15-minute deprivation period prior to testing (no eating/drinking/vomiting)
  - 2 consecutive breaths, 5-10 minutes apart, within 0.020 of each other
  - Provide a reasonable opportunity for an independent test
    - Duplicate Breath Test Advisory
- Follow the I-1 checklist for the 9000
- Successful calibration checks show the instrument is in proper operating condition.

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### 9000 Display Messages During Testing

- Standby (yellow button) or Ready Mode (green button)
- Push green "START" button
- Evidentiary Test?
- Push green "√" button
- Method of input – swipe or scan
- Please swipe/scan card
- Displays card information
- Push green "√" button
- Driver's License Input – type, swipe, or scan (last 2 only for AZ)
- Push grey "➡" button to view information
- Deprivation start time
- Select "Review" or "Continue"

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### 9000 Display Messages During Testing

- Air Blank
- Diagnostics
- Air Blank
- Reference
- Calibration
- Air Blank
- Attach new and clean mouthpiece then push blue button
- Reference
- Please Blow
- Remove and discard mouthpiece then push blue button
- Air Blank
- Please Wait with 5 minute countdown

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### Data Input

Intoxilyzer 9000

- Magnetic swipe card
- Touch screen keyboard
- External USB keyboard
- 2-D barcode scanner

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### Magnetic Swipe Card

- Swipe card with magnetic stripe down and facing away from you
- If swiped correctly, three beeps will sound
- Re-swipe if necessary



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### Optional 2-D Bar Code Scanner

- When prompted, select the bar code scanner icon for data entry
- Scan driver's license



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**9000 Subject Information**

- Last Name\*
- First Name\*
- Middle Name
- Driver's License #
- Gender\*
- Date of Birth\*
- Age\* (autopopulates)
- Weight\*
- State of Issue
- Driver's License Expiration

\* Mandatory fields

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**9000 Subject Information**

- Enter DOB using MMDDYYYY format
  - September 10, 1975 = 09101975
- Enter Gender as M, F or O

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**How to Enter a Practice Test**

- First name : "Test"
- Last name : "Test"
- No entry for middle name

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**Diagnostics**

- If any of the diagnostics fail, attempt another test
- If the error repeats, leave the instrument ON, place an "Out of Service" sign on it, and contact the QAS

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**Date or Time Not Correct**

If the date and/or time are incorrect:

- Proceed with the test
- Document the correct date and/or time
- Notify the QAS so they can update it

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**Mouthpiece**



- The gooo will prompt you when it's time to insert and remove the mouthpiece – you must push the blue button to continue
- Failure to remove the mouthpiece could damage the instrument or affect the subsequent air blanks or calibration checks

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### Printing

Intoxilyzer 9000

- Extra wide internal thermal printer
- USB for external printer



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### Power

Intoxilyzer 9000

- 110 VAC or 220 VAC
- 12 VDC
- Battery backup



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### 9000 Backup Battery



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**Intoxilyzer 9000 Additional Feature**

- Ready mode
- Standby mode
  - Preserves the life of the light source

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**Review - Instrumentation**

- Infrared Light is used to determine breath alcohol content
  - When less alcohol is present, more Infrared light reaches the detector
  - With higher alcohol content, **decreased** infrared light reaches the detector
- 9000 - 4 detectors
- Testing bracketed by calibration checks and diagnostic checks

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**Review – Instrumentation**

- Data entry: Keyboard and Mag Stripe Reader
  - USB ports for external keyboard or 2-D scanner
- Powered by 120V, 220V, or 12V DC
  - Battery Backup
- Documentation of Deprivation Period
  - Deprivation start time entered on instrument

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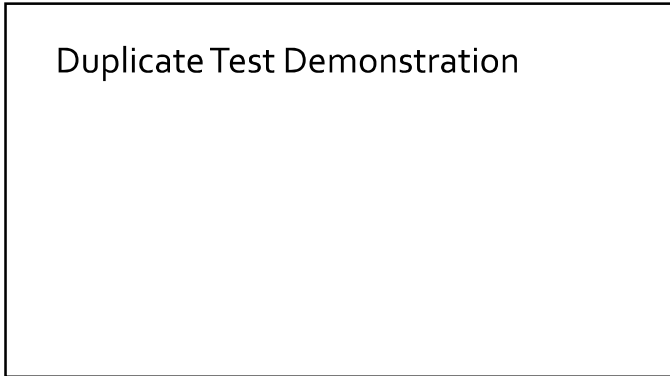
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9000  
Successful Test  
(External Printer)

**RESULTS**  
Subject Test 1: 0.000 g/210L  
Subject Test 2: 0.000 g/210L

Successfully Completed Test Sequence

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9000  
Not a Successful Test  
(Internal Printer)

Not a Successfully Completed Test Sequence

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Possible Exception Messages

- Invalid Sample
- Deficient Sample
- RFI Detected
- No 0.020 Agreement
- Interferent Detect
- Ambient Fail
- Purge Fail
- Calibration Check Out of Tolerance
- Range Exceeded
- Improper Sample
- Sequence Aborted
- Diagnostic Fail
- Unstable Signal

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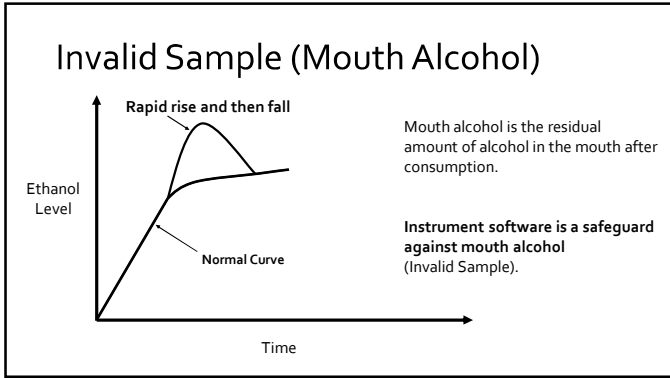
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### 9000 Invalid Sample (Mouth Alcohol)

Test	g/210L	Time
Air Blank	0.000	10:46:07
Diagnostic Test	PASS	10:46:42
Air Blank	0.000	10:47:19
Calibration Chk	0.098	10:47:41
Air Blank	0.000	10:48:20
Subject Test 1	INV*	10:48:43
Air Blank	0.000	10:49:25

\*Invalid Sample - Begin new deprivation period

**EXCEPTION MESSAGES**

\* Invalid Sample - Begin new deprivation period

If "retest" button is selected, the Intoxilyzer 9000 will automatically start a 15-minute countdown for the new deprivation period

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- ### Deficient Sample
- During the "Please Blow" period, the subject has an **unlimited number** of chances to deliver an acceptable breath sample
  - The instrument allows a 3 minute time period during the "Please Blow" period
  - If the subject does not meet the four criteria for a breath samples a result of "DEF\*" will print along with "Deficient Sample"
  - If the subject refuses to blow into the **9000** a result of "NSG" will print along with "No Sample Given"

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### 9000 Deficient Sample

Air Blank	0.000	14:29:41
Diagnostic Test	PASS	14:30:17
Air Blank	0.000	14:30:54
Dry Standard 1	0.098	14:31:15
Air Blank	0.000	14:31:55
Subject Test 1	DEF*	14:35:07
Air Blank	0.000	14:36:03
Air Blank	0.000	14:36:43
Subject Test 2	0.197	14:37:23
Air Blank	0.000	14:39:08
Wait		14:43:11
Air Blank	0.000	14:43:40
Subject Test 3	DEF*	14:47:02
Air Blank	0.000	14:47:56
Dry Standard 2	0.097	14:48:17
Air Blank	0.000	14:48:57
Diagnostic Test	PASS	14:49:32
Air Blank	0.000	14:50:09

**EXCEPTION MESSAGES**

- \* Deficient Sample
- \*\* Deficient Sample

\*Deficient Sample

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### Radio Frequency Inference

Air Blank	RFI*	07:20:28
Air Blank	0.000	07:21:06

\*RFI Detect

**EXCEPTION MESSAGES**

- \* RFI Detect

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### No 0.02 Agreement

Air Blank	0.000	09:55:48
Diagnostic Test	PASS	09:56:23
Air Blank	0.000	09:57:00
Dry Standard 1	0.095	09:57:21
Air Blank	0.000	09:58:01
Subject Test 1	0.100	09:58:54
Air Blank	0.000	09:59:53
Wait		10:03:57
Air Blank	0.000	10:04:34
Subject Test 2	0.078	10:05:00
Air Blank	0.000	10:05:53
Wait		10:09:56
Air Blank	0.000	10:10:33
Subject Test 3	0.102*	10:10:57
Air Blank	0.000	10:11:47
Dry Standard 2	0.095	10:12:08
Air Blank	0.000	10:12:48
Diagnostic Test	PASS	10:13:24
Air Blank	0.000	10:14:01

**EXCEPTION MESSAGES**

- \* No .020 Agreement

\*No .020 Agreement

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### Interferent Detect

- The instrument can detect volatiles other than ethanol.
- **Uncontrolled** diabetics expiring acetone will trigger this exception message
- "Huffing" or inhalants may also trigger this exception message
- Even if alcohol is present, a value will **not** be given
- Get medical attention and a blood sample for ethanol analysis
- A breath sample from a **controlled** diabetic will not cause this exception message

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### Interferent Detect

Test	g/210L	Time
Air Blank	0.000	16:38:59
Subject Test	INT*	16:39:23
Air Blank	0.000	16:40:04

\*Interferent Detect

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### Purge Fail vs. Ambient Fail

- A purge fail can occur during an air blank after an analytical test
  - Subject test
  - Calibration check
- An ambient fail can occur during an air blank at any other time during the testing sequence

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### Purge

Test	g/210L	Time
Air Blank	0.000	10:07:07
Diagnostic Test	PASS	10:07:42
Air Blank	0.000	10:08:19
Calibration Chk	0.094	10:08:41
Air Blank	0.000	10:09:21
Subject Test 1	0.000	10:09:45
Air Blank	PUR*	10:10:26
Air Blank	0.000	10:11:16

\*Purge Fail

**EXCEPTION MESSAGES**  
\* Purge Fail

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### Ambient

Test	g/210L	Time
Air Blank	AMB*	10:05:33
Air Blank	0.000	10:06:12

\*Ambient Fail

**EXCEPTION MESSAGES**  
\* Ambient Fail

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### Calibration Check Out of Tolerance

±10% or 0.01 (0.090-0.110)

Test	g/210L	Time
Air Blank	0.000	10:31:32
Diagnostic Test	PASS	10:32:07
Air Blank	0.000	10:32:44
Calibration Chk	0.088*	10:33:06
Air Blank	0.000	10:33:45

\*Calibration Check Out of Tolerance

**EXCEPTION MESSAGES**  
\* Calibration Check Out of Tolerance

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### Range Exceeded

Test	g/210L	Time
Air Blank	0.000	10:05:45
Diagnostic Test	PASS	10:06:20
Air Blank	0.000	10:06:58
Dry Standard 1	0.101	10:07:19
Air Blank	0.000	10:07:59
Subject Test 1	RNG*	10:08:20
Air Blank	0.000	10:09:19

**EXCEPTION MESSAGES**  
\* Range Exceeded

\*Range Exceeded

Intox **9000** range is 0.000-0.650

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100

### Improper Sample (Blew at the Wrong Time)

Test	g/210L	Time
Air Blank	0.000	10:41:09
Diagnostic Test	PASS	10:41:46
Air Blank	0.000	10:42:23
Calibration Chk	0.097	10:42:44
Air Blank	0.000	10:43:24
Subject Test 1	0.029	10:43:48
Air Blank	IMP*	10:44:05
Air Blank	0.000	10:44:42

\*Improper Sample

**EXCEPTION MESSAGES**  
\* Improper Sample

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### Additional Exceptions

- Diagnostic Fail
- Unstable Signal

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### Reprinting a Test

- The Intoxilyzer 9000 allows the operator to reprint a subject test anytime
- To reprint a test:
  - Touch the blue "Options" button
  - Select the mag card button and swipe Operator permit
  - Enter the known information to find the Analytical Report you want
    - Leave any field blank you do not wish to include in your search criteria
  - Select "Continue" to locate the matching records
  - Select the blue button next to the record you want
  - Press the print button to print the Analytical Report

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### Scenarios

- If you get...
  - Invalid Sample
  - INV (9000)
  - No subject test value on the report
- What could it be?
  - Mouth Alcohol
- Can this be used as a valid test?
  - **NO**, "Not a Successfully Completed Test Sequence"
- What do you do?
  - Start a **new** deprivation period
  - Perform duplicate tests
  - 9000 will do an automatic 15 minute deprivation period if the "retest" button is selected

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### Scenarios

- If you get...
  - Interferent Detect
  - INT
- What could it be?
  - Acetone, Isopropanol, etc.
- Can this be used as a valid test?
  - **NO**, "Not a Successfully Completed Test Sequence"
- What do you do?
  - Get medical attention
  - Draw blood

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**Scenarios**

- If you get...
  - RFI Detect
  - RFI
- What could it be?
  - Radio frequency interference from a radio transmission or cell phone (incoming or outgoing)
- Can this be used as a valid test?
  - **NO**, "Not a Successfully Completed Test Sequence"
  - Testing will end if RFI is detected
- What do you do?
  - Remove the source of the RFI
  - Perform duplicate tests

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**Scenarios**

- If you get...
  - Deficient
  - DEF
  - No Sample Given
  - NSG
- What could it be?
  - Subject did not meet the minimum requirements for a valid test
  - Refusal/Did not blow
- Can this be used as a valid test?
  - **NO**, "Not a Successfully Completed Test Sequence"
- What do you do?
  - Perform another test
  - If Deficient on first breath sample, a Successful Test can still be accomplished

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**Scenarios**

- If you get...
  - Range Exceeded
  - RNG
- What could it be?
  - Breath alcohol above a 0.650
- Can this be used as a valid test?
  - **NO**, "Not a Successfully Completed Test Sequence"
- What do you do?
  - Get medical attention
  - Draw blood

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**Scenarios**

- If you get...
  - Ambient Fail
  - AMB
  - Purge Fail
  - PUR
- What could it be?
  - Small room
  - Subject too close to breath hose
  - Mouthpiece left on breath hose
- Can this be used as a valid test?
  - **NO**, "Not a Successfully Completed Test Sequence"
- What do you do?
  - Check the surroundings for the cause and make adjustments
  - Perform another test

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**Scenarios**

- If you get...
  - Improper Sample
  - IMP
- What could it be?
  - Subject blew at some other time than "Please Blow"
- Can this be used as a valid test?
  - **NO**, "Not a Successfully Completed Test Sequence"
- What do you do?
  - Perform another test
  - Make sure the subject is only blowing during the "Please Blow"

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**Scenarios**

- For all scenarios:
  - Retain the printouts of all tests

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Breath Test Operator

**Review**

112

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**Review**

- What is Henry's Law?
  - Henry's law is the fundamental law to all breath testing
  - The amount of alcohol, a volatile, in a liquid will correspond to the amount of alcohol in the air space above the liquid
- What is the relationship between blood and breath, in terms of alcohol?  
2100:1

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**Review**

- Who performs calibration checks on the Intoxilyzer?  
Operators and QAS
- What is the first thing affected at low alcohol concentrations?  
Judgement

114

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**Review**

- What are the three safeguards against mouth alcohol?
  - 15-minute Deprivation Period
  - Duplicates within 0.020
  - Level Slope
- How long is the Operator permit valid?  
5 years

115

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**Review**

- What does alveolar breath refer to?  
Deep lung air
- Prior to administering duplicate test, what should be read to the subject?  
Duplicate Breath Test Advisory

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**Review**

- T/F Alcohol is a stimulant.  
False
- T/F Alcohol is a drug.  
True

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**Review**

- Why are the breath hose and sample chamber heated?  
To prevent condensation
- What would happen to the alcohol result if they weren't heated?  
The result would be lower than the true alcohol concentration

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**Review**

- How often are calibration checks run?
  - Before and after each subject test
  - Every 31-Days
- What are the two accuracy limits for the calibration checks?
  - ± 10% or
  - 0.010, whichever is greater

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**Review**

- Does the Intoxilyzer 9000 print the time of the deprivation period?  
Yes
- Does the Intoxilyzer 9000 have an option of a "Retest" button after some exception messages?  
Yes

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**Review**

- Is it important to keep all copies of the printouts as judicial evidence?  
Yes
- Does the duplicate test determine where a person is on a concentration curve?  
No

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**Review**

- Do you need to follow the operational checklist when conducting a breath test?  
Yes
- What is the form of this check list for the gooo called?  
I-1

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**Review**

- What does the exception message Interferent Detect mean?  
Another volatile beside ethanol is present (acetone, "huffing" paints or dust-off, etc.)
- What should you do if your test has an Interferent Detect exception ?  
Seek medical attention and get a blood draw

123

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**Review**

- T/F Anyone who exhibits symptoms of intoxication is drunk.  
False
- What is a deprivation period?  
A period of at least 15 minutes immediately prior to a breath test where nothing is put into or comes out of the mouth of the subject

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**Review**

- If a man and a woman (weighing the same) each have 4 shots of vodka, who will have the higher alcohol concentration?  
The woman
- Why?  
She has less body water than the man does

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**Review**

- What types of issues can be caused by leaving the mouthpiece on during the testing process?  
Ambient fail, purge fail, calibration check out of tolerance, or pump issues
- What is the maximum value that the Intoxilyzer 9000 can measure?  
0.650 above this will give a "Range Exceeded"

126

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**Review**

- Will the Intoxilyzer complete a successful test if there is a problem with the instrument?  
No
- What prints at the bottom of the Test for a successful duplicate test?  
Successfully completed test sequence

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**Review**

- What type of light is used in the Intoxilyzer?  
Infrared light
- Does the Intoxilyzer use the differences in infrared light detected to determine the alcohol concentration?  
Yes, the instrument looks at the **decrease** in the amount of light that reaches the detectors.

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**Review**

- What four criteria must be met for a valid breath sample?  
The subject must blow long enough, hard enough, provide enough volume, and reach a level alcohol slope
- What do you do if the display on the instrument shows the wrong time or date?  
Perform the test, note the correct time and/or date on the paperwork, and notify a QAS

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**Review**

- During the "Please Blow" phase, can the subject start and stop blowing into the instrument?  
Yes, an unlimited number of times within the 3 minutes
- How many detectors does the Intoxilyzer 9000 use to analyze a sample?  
Four

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**Review**

- What is the maximum number of subject breath samples that the instrument will allow to get a successful test?  
3
- How is data entry accomplished on the Intoxilyzer 9000?  
Data entry is accomplished using the magnetic stripe reader, the on-screen keyboard, or, if attached, an optional USB keyboard or optional 2D barcode scanner

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**Review**

- What does the exception message Improper Sample indicate?  
That the subject blew at some point other than the "Please Blow" phase
- What prints at the bottom of a test if the duplicate test is NOT completed?  
Not a successfully completed test sequence

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**Review**

- If an "RFI Detect" is displayed, what is the corrective action?  
Remove the source of the RFI and perform another test
- What does the message "Invalid Sample" indicate?  
The instrument has detected a rise, then fall in alcohol, indicating the presence of mouth alcohol

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**Review**

- What is a breath test measuring?  
The concentration of alcohol in a person's breath
- What agreement must the two consecutive tests be within?  
0.020

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**Performance Objectives**

- Explain the effects of alcohol
- Explain the physiological principles to breath alcohol testing
- Explain the basic working of the operation of the instrument(s)

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## Performance Objectives

- Identify the criteria for an admissible breath test and a valid breath sample
- Identify exception messages for the instrument(s)
- Perform a successfully completed test sequence(s)

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## Thank you

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LICENSEE											
<b>APPLICATION FOR BREATH ALCOHOL OPERATOR PERMIT</b> ARIZONA DEPARTMENT OF PUBLIC SAFETY      GO NOT WRITE <small>2000 W. TUCKER ROAD      PHOENIX, ARIZONA 85004</small> <small>2000 W. TUCKER ROAD      PHOENIX, ARIZONA 85004</small> <small>(602) 223-2294</small>											
<small>Information for an Operator Permit is subject to the following conditions: (1) Information and materials must be submitted in duplicate and must be accurate.</small> <small>THE BIC COMPLETED BY APPLICANT. ALL BIC MUST BE CLEAR.</small> <small>ALL BIC MUST BE COMPLETED. UNACCEPTED BIC WILL BE REJECTED.</small>											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"> <small>APPLICANT'S NAME (Last, First, Middle)</small>  <small>(Last)</small>      (First)      (Middle)           </td> <td style="width: 50%;"> <small>APPLICANT'S SOCIAL SECURITY NUMBER</small>  <small>(Last 4)</small> </td> </tr> <tr> <td colspan="2"> <small>APPLICANT'S ADDRESS (Street, City, State, Zip)</small>  <small>(Street)</small>      (City)      (State)      (Zip)           </td> </tr> <tr> <td colspan="2"> <small>APPLICANT'S PHONE NUMBER (Home, Office, Mobile)</small>  <small>(Home)</small>      (Office)      (Mobile)           </td> </tr> <tr> <td colspan="2"> <small>APPLICANT'S SIGNATURE (Print Name)</small>  <small>(Signature)</small> </td> </tr> <tr> <td colspan="2"> <small>APPLICANT'S SIGNATURE (Print Name)</small>  <small>(Signature)</small> </td> </tr> </table>		<small>APPLICANT'S NAME (Last, First, Middle)</small> <small>(Last)</small> (First)      (Middle)	<small>APPLICANT'S SOCIAL SECURITY NUMBER</small> <small>(Last 4)</small>	<small>APPLICANT'S ADDRESS (Street, City, State, Zip)</small> <small>(Street)</small> (City)      (State)      (Zip)		<small>APPLICANT'S PHONE NUMBER (Home, Office, Mobile)</small> <small>(Home)</small> (Office)      (Mobile)		<small>APPLICANT'S SIGNATURE (Print Name)</small> <small>(Signature)</small>		<small>APPLICANT'S SIGNATURE (Print Name)</small> <small>(Signature)</small>	
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<small>APPLICANT'S SIGNATURE (Print Name)</small> <small>(Signature)</small>											
<small>THE BIC COMPLETED BY APPLICANT</small> <small>Agency Contact Name</small> <small>Date and Location of Training</small> (Date)      (Location) <small>Agency Department of Public Safety License or Operator Permit</small> <small>Has applicant successfully completed the course? (Yes/No)</small> (Yes)      (No) <small>(Date of Test Date)</small> (First Name)      (Last Name)											
<a href="mailto:intox@azdps.gov">intox@azdps.gov</a>											

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