

Intoxilyzer 8000/9000 Combo Operator Material

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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 8000 & 9000
OPERATOR TRAINING**



1

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

2

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)
- Explain the differences between the Intoxilyzer 8000 and 9000

3

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)

4

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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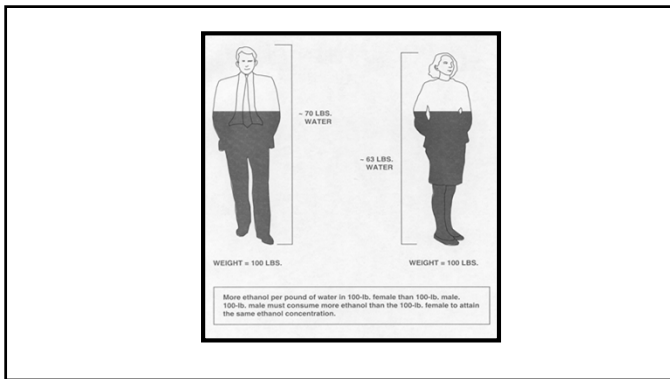
Differences Between Men and Women

In general, women have more fatty tissues

therefore...

women have less water per pound of body weight

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Elimination Rates

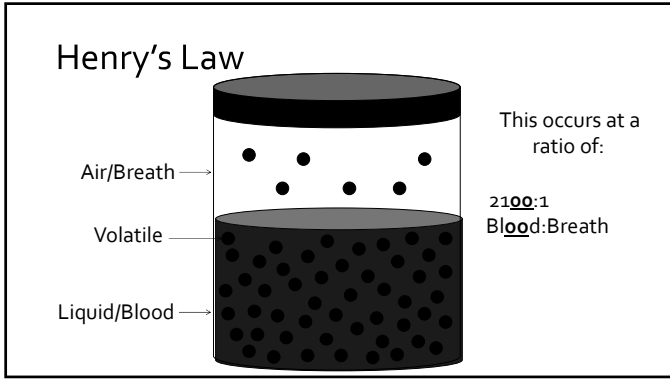
- Rate at which ethanol leaves the body varies from person to person
- Elimination rates range from 0.010% to 0.030% per hour
- Example:
 - From a 0.100 it will take about **6 hours** to get down to a 0.040 if a person eliminates ethanol at 0.010% per hour
 - From a 0.100 it will take about **2 hours**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

14

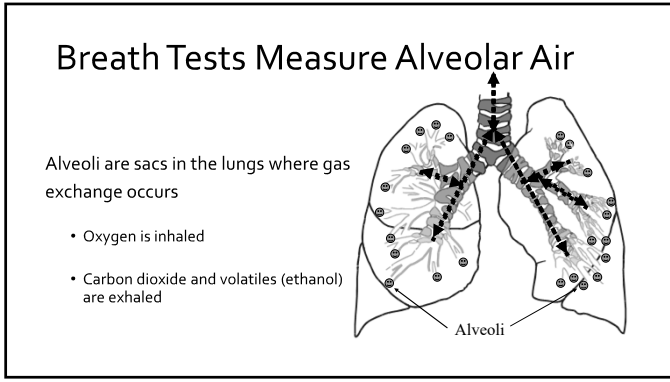
Henry's Law

- 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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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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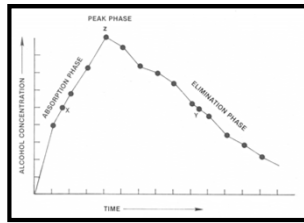
Breath Alcohol Results

- 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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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

Intoxication

- Outward signs of drinking



Impairment

- Measurable decrease in the persons ability to perform a specific task

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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	Binoocular 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

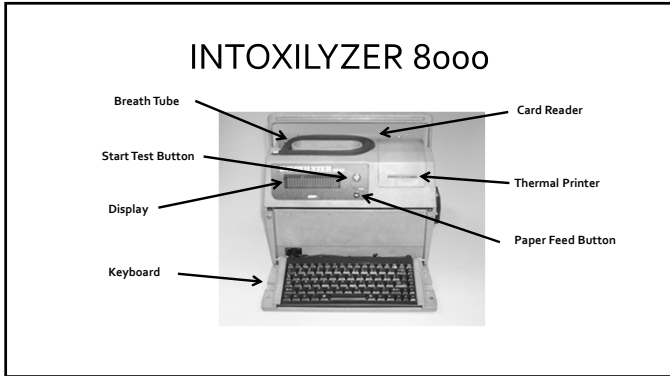
- CNS Depressant
- Increasing alcohol content impairs, in order
 - Cognitive (Judgement)
 - Sensory
 - Motor
- All persons are impaired for the task of driving at 0.080
- Uncontrolled diabetes, head trauma, and other drugs may mimic alcohol impairment
- Alcohol content is proportional to water in the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

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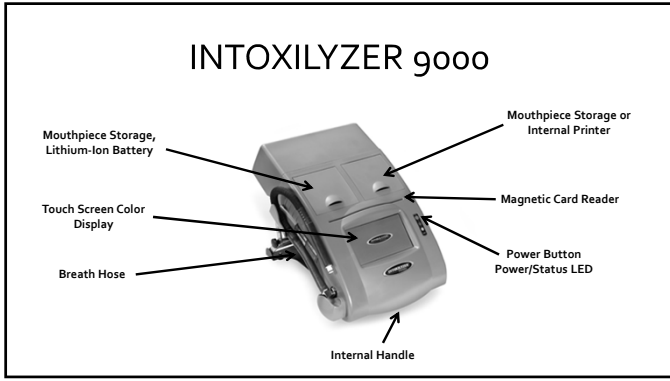
Review – Breath Testing Principles

- 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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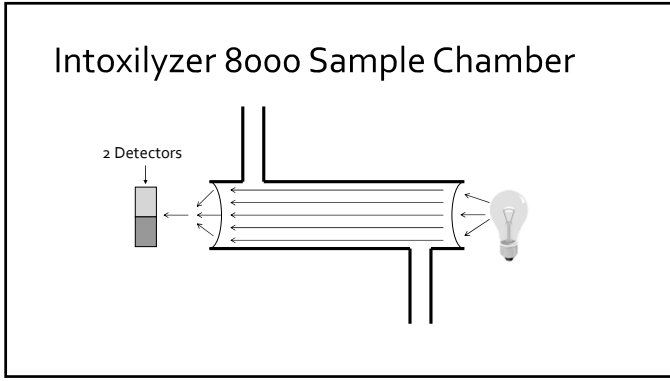


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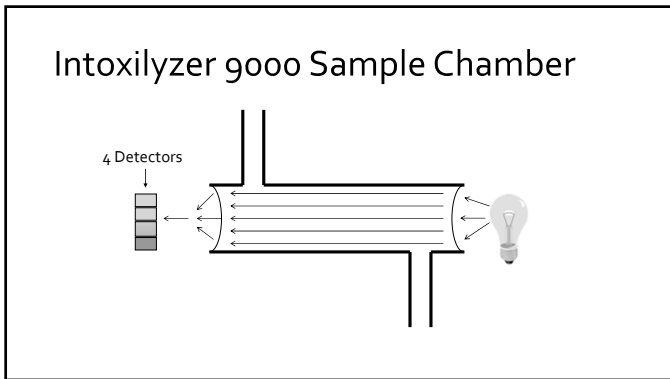
Infrared (IR) Analysis

- The Intoxilyzer 8000 and 9000 measure 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

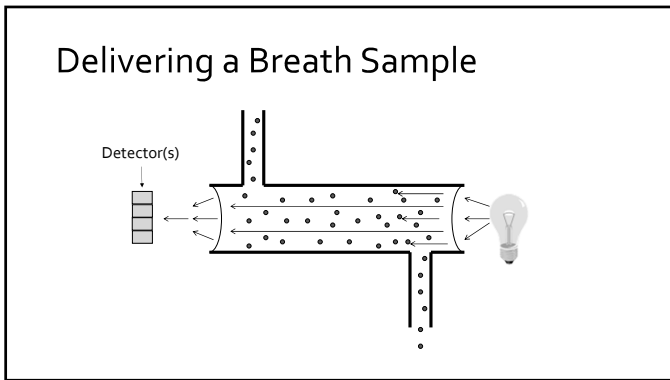
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Delivering a Breath Sample

- 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 Comparison

Intoxilyzer 8000	Intoxilyzer 9000
• 2 Wavelengths of infrared light	• 4 Wavelengths of infrared light
• 2 Detectors	• 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 8000 does **NOT** record the 15-minute deprivation period – fill out on G1 and note who performed it
- 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 11

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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		
<small>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.</small>		
ACKNOWLEDGMENT		
<small>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.</small>		
<small>SUBJECT (please #gn)</small>	<small>DATE/TIME</small>	
<small>OFFICER (please #gn) BADGE#</small>	<small>DATE/TIME</small>	

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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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Criteria for a Valid Breath Sample

The graph illustrates the ethanol level over time during a breath sample. The y-axis is labeled 'Ethanol Level' and the x-axis is labeled 'Time'. The curve begins at the origin (0,0), rises steeply, and then levels off. A vertical line is drawn at the end of the 'Level Slope' phase, indicating when the ethanol level has stabilized.

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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 gooo
 $\underline{0.258}$
- If all 4 criteria are not met, it will display **Deficient Sample**
- If subject does NOT blow, it will display **No Sample Given** on gooo

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Duplicate Test Examples

- Breath Sample 0.105
- 5 minute wait
- Breath Sample 0.130
- 5 minute wait
- Breath Sample 0.131
- "Successfully Completed Test Sequence"

- Breath Sample 0.105
- 5 minute wait
- Breath Sample 0.130
- 5 minute wait
- Breath Sample 0.100
- "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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8000 Checklist

EXHIBIT G-1
OPERATIONAL CHECKLIST
ARIZONA DEPARTMENT OF PUBLIC SAFETY
STANDARD OPERATIONAL PROCEDURE
INTOXILIZER MODEL 8000
DUPLICATE BREATH TEST

SUBJECT NAME: _____ DATE: _____
 AGENCY: _____ OPERATOR: _____
 INSTRUMENT SERIAL #: _____ LOCATION: _____
 TEST RESULTS: _____
 FROM: _____ TO: _____

1. Subject reads "PRESS BUTTON TO START"
2. Push Start Test button.
3. Color wheel and instrument on instrument display.
4. If test record reads "Not a Successfully Completed Test Sequence" go to step 5.
5. If test record reads "Not a Successfully Completed Test Sequence", and subject will be tested again, ensure test record and go to step 1.
6. If test record reads "Not a Successfully Completed Test Sequence", and subject will not be tested again, go to step 5.
7. If test record reads "Not a Successfully Completed Test Sequence", and subject will not be tested again, go to step 5.

Note: Duplicate test results shall be administered at intervals of not less than 7 minutes nor more than 10 minutes apart and the two consecutive test results agree within 0.020 alcohol concentration.

DPS Form 8000-1 (Rev 01-1)

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gooo Checklist

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

SUBJECT: [redacted] DATE: [redacted]
 AGENCY: [redacted] OPERATOR'S BADGE: [redacted]
 INTOXILYZER SERIAL # [redacted] REPRIVATION BY: [redacted]

Ensure proper degasification period.
 Flush the unit before use the system.
 Follow all 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:
 [redacted]
 [redacted]
 [redacted]

SIGNATURE: [redacted]

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 ± 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
- ± 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 G-1 checklist for the 8000 and the I-1 checklist for the 9000
- Successful calibration checks show the instrument is in proper operating condition.

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8000 Display Messages During Testing

- | | |
|---|---------------------------|
| • Standby or Ready Mode | • Is Info Correct? |
| • Push button to start | • AZ Mag License Y/N? |
| • Evidentiary Test? | • Edit Info Y/N? |
| • Please swipe Operator card | • 15 Min Deprivation? Y/N |
| • Displays card information <ul style="list-style-type: none"> • Officers name, badge & agency | |

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8000 Display Messages During Testing

- | | |
|---------------|---------------------------------------|
| • Air Blank | • Air Blank |
| • Diagnostics | • Reference |
| • Air Blank | • Please Blow |
| • Reference | • Air Blank |
| • Calibration | • Please Wait with 5 minute countdown |

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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 Comparison

Intoxilyzer 8000	Intoxilyzer 9000
• Magnetic swipe card	• Magnetic swipe card
• Built in keyboard	• 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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9000 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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8000 Subject Information

- Last Name
- First Name
- Middle Initial
- Date of Birth
- Sex
- Subject Weight

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8000 Subject Information

- Enter middle initial with no period
- If no middle name, hit enter
- Enter DOB using MMDDYYYY format
 - September 10, 1975 = 09101975
- Enter Sex as M or F

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9000 Subject Information

• Last Name*	• Date of Birth*
• First Name*	• Age* (autopopulates)
• Middle Name	• Weight*
• Driver's License #	• State of Issue
• Gender*	• 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 8000 will **NOT** prompt you when it's time to insert and remove the mouthpiece
- The 9000 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 Comparison


Intoxilyzer 8000	Intoxilyzer 9000
<ul style="list-style-type: none"> • Internal thermal printer • Parallel port for external printer 	<ul style="list-style-type: none"> • Extra wide internal thermal printer • USB for external printer



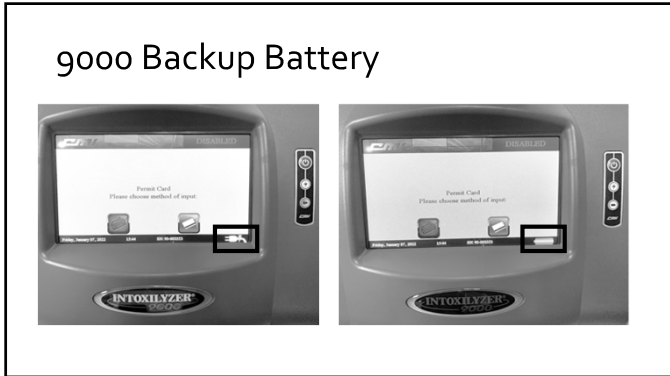
83

Power Comparison

Intoxilyzer 8000	Intoxilyzer 9000
<ul style="list-style-type: none"> • 110 VAC or 220 VAC • 12 VDC • No Battery backup 	<ul style="list-style-type: none"> • 110 VAC or 220 VAC • 12 VDC • Battery backup



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Review – 8000 vs 9000

- 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

8000 - 2 detectors	9000 - 4 detectors
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- Testing bracketed by calibration checks and diagnostic checks

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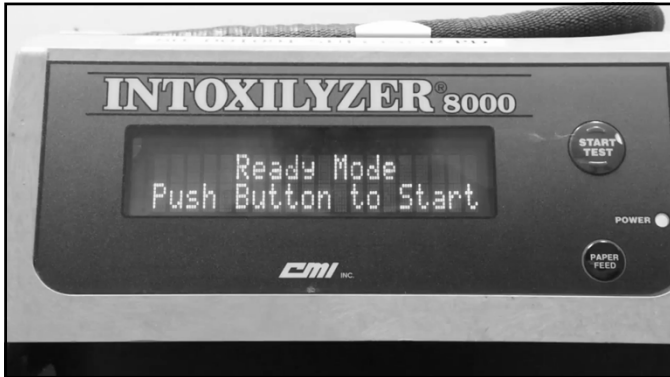
Review – 8000 vs 9000

- Data entry: Keyboard and Mag Stripe Reader
 - 9000 - USB ports for external keyboard or 2-D scanner
- Powered by 120V, 240V, or 12V DC
 - 9000 - Battery Backup
- Documentation of Deprivation Period
 - 8000 - Record deprivation period on G-1
 - 9000 - Deprivation start time entered on instrument

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Duplicate Test Demonstration

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8000
Successful Test
(Internal Printer)

```

*****Data Print*****
Location: OTC INC
Serial Number: 80-000027
11-19-2022 15:46:49
-----
Standard Lock: 12409760
Last Charged By: L. HASEE 4323333
-----
DNE L. HASEE 4323333
OTC ENGINEERING
Operator: L. HASEE 4323333
OTC ENGINEERING
-----
Subject: TEST T. TEST
DOB: 11/19/2021
Sex: F Weight: 111
15 Minute Depuration Period: Yes
-----
Test          g/20Lb.  Time
-----
Diagnostic Test  Pass  15:45:44
Air Blank       0.100  15:46:19
0.100 Air Check 0.100  15:46:46
Air Blank       0.100  15:47:17
Subject Test    0.100  15:47:42
Air Blank       0.100  15:48:13
Flow Volume Unit 0.100  15:48:47
Air Blank       0.100  15:49:14
Subject Test    0.100  15:49:42
0.100 Air Check 0.100  15:50:29
Air Blank       0.100  15:50:59
Diagnostic Test  Pass  15:51:31
-----
Successfully
Completed
Test Sequence
          
```

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8000
Not a Successful Test
(Internal Printer)

```

*****Data Print*****
Location: OTC INC
Serial Number: 80-000027
11-19-2022 15:53
-----
Standard Lock: 12409760
Last Charged By: L. HASEE 4323333
-----
DNE L. HASEE 4323333
OTC ENGINEERING
Operator: L. HASEE 4323333
OTC ENGINEERING
-----
Subject:
DOB:
Sex: F Weight: 155
15 Minute Depuration Period: Yes
-----
Test          g/20Lb.  Time
-----
Diagnostic Test  Pass  15:52:23
Air Blank       0.100  15:52:44
0.100 Air Check 0.100  15:53:14
Air Blank       0.100  15:53:25
Subject Test    0.100  15:53:25
Air Blank       0.100  15:53:26
Flow Volume Unit 0.100  15:53:31
Air Blank       0.100  15:53:31
-----
Not a Successfully
Completed
Test Sequence
          
```

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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)

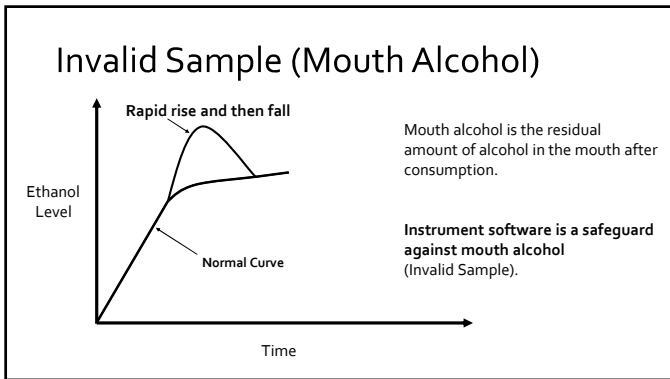
Not a Successfully Completed Test Sequence

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Possible Exception Messages

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

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8000 Invalid Sample (Mouth Alcohol)

Air Blank	0.000	13:55:33
Subject Test	XXX*	13:55:48
Air Blank	0.000	13:56:23

*Invalid Sample
Begin new deprivation period

98

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

99

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 refuses to blow into the **8000** 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"

100

8000 Deficient Sample

```
Air Blank      0.000    10:46:33
Subject Test   0.055*    10:49:41
Air Blank      0.000    10:50:08
*Deficient Sample
```

If the subject attempts to deliver a breath sample, the last value obtained will print. This is **NOT** a valid test result.

101

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    14:43:48
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

*Deficient Sample
```

EXCEPTION MESSAGES
 * Deficient Sample
 ** Deficient Sample

102

Radio Frequency Inference

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

*RFI Detect

EXCEPTION MESSAGES
* RFI Detect

103

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

*No .020 Agreement

EXCEPTION MESSAGES
* No .020 Agreement

104

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

105

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

106

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

107

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

108

Ambient

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

*Ambient Fail

EXCEPTION MESSAGES
* Ambient Fail

109

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

110

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 **8000** range is 0.000-0.600
Intox **9000** range is 0.000-0.650

111

**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

112

Sequence Aborted (8000 Only)

Air Blank	ABT*	14:36:59
Air Blank	0.000	14:37:26

*Sequence Aborted

Pressed green start button after the testing sequence began

113

Additional Exceptions

- Diagnostic Fail
- Unstable Signal

114

Reprinting a Test - 8000

- The Intoxilyzer 8000 allows the operator to reprint a subject test only within 24 hours of initial test
- To reprint a test:
 - Hit "Esc" button twice then swipe Operator permit
 - Select "R" for "24 hour test recall"
 - Press "Enter" to select displayed record date
 - Display will show the number of records for that date then press "Enter" to get to the individual record display
 - Use "Page Up" or "Page Down" buttons to scroll through the chronological records
 - Press "Enter" to reprint record of interest

115

Reprinting a Test - 9000

- 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

116

Scenarios

<ul style="list-style-type: none"> • If you get... <ul style="list-style-type: none"> • Invalid Sample • INV (9000) or XXX (8000) • No subject test value on the report • What could it be? <ul style="list-style-type: none"> • Mouth Alcohol 	<ul style="list-style-type: none"> • Can this be used as a valid test? <ul style="list-style-type: none"> • NO, "Not a Successfully Completed Test Sequence" • What do you do? <ul style="list-style-type: none"> • Start a new deprivation period • Perform duplicate tests • 9000 will do an automatic 15 minute deprivation period if the "retest" button is selected
--	--

117

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

118

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

119

Scenarios

- If you get...
 - Deficient
 - DEF
 - No Sample Given (9000)
 - NSG (9000)
- 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

120

Scenarios

- If you get...
 - Range Exceeded
 - RNG
- What could it be?
 - Breath alcohol above a 0.600 (8000) or 0.650 (9000)
- Can this be used as a valid test?
 - **NO**, "Not a Successfully Completed Test Sequence"
- What do you do?
 - Get medical attention
 - Draw blood

121

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

122

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"

123

Scenarios

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

124

Breath Test Operator

Review

125

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

126

Review

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

127

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

128

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

129

Review

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

130

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

131

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

132

Review

- Does the Intoxilyzer 8000 print the time of the deprivation period?
No
- Does the Intoxilyzer 9000 print the time of the deprivation period?
Yes

133

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

134

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 8000 called?
G-1

135

Review

- What is the form of this check list for the gooo called?
I-1
- What should you do if your test has an Interferent Detect exception ?
Seek medical attention and get a blood draw

136

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

137

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

138

Review

- What is the maximum value that the Intoxilyzer 8000 can measure?
o.600 above this will give a "Range Exceeded"
- What is the maximum value that the Intoxilyzer 9000 can measure?
o.650 above this will give a "Range Exceeded"

139

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

140

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

141

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

142

Review

- How many detectors does the Intoxilyzer 8000 use to analyze a sample?
Two
- How many detectors does the Intoxilyzer 9000 use to analyze a sample?
Four

143

Review

- How is data entry accomplished on the Intoxilyzer 8000?
Data entry is accomplished using the magnetic stripe reader or the attached keyboard
- 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

144

Review

- If the exception message "Sequence Aborted" is displayed, what does that mean?
The start test button was pressed at the wrong time.
- What prints at the bottom of a test if the duplicate test is NOT completed?
Not a successfully completed test sequence

145

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

146

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

147

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)
- Explain the differences between the Intoxilyzer 8000 and 9000

148

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)

149

Thank you

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Information for the Director cannot be pertained without consultation, determination and approval of the quality assurance division or superintendent.	
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