



San Diego Police Department
Forensic Chemistry Unit



BREATH ALCOHOL INSTRUMENT OPERATOR TRAINING MANUAL

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BREATH TESTING ALCOHOL TRAINING PROGRAM

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1. ALCOHOL AND THE HUMAN BODY

Summary

This Breath Alcohol Instrument Operator Training manual serves as the written instructions for subject testing using the Intoxilyzer 8000 breath alcohol testing instrument. These written instructions are a supplement to the live training provided in the breath test certification course. This training encompasses all of the instrumental, sampling, and procedural instructions contained here-in, and provides operators with hands-on training in the use of the Intoxilyzer 8000.

Training is provided only by those qualified as a Forensic Alcohol Analyst (FAA), Forensic Alcohol Supervisor (FAS), or Forensic Alcohol Analyst Trainee (FAAT) by the State of California Health and Human Services Agency, California Department of Public Health, and employed in the San Diego Police Department, Forensic Science Section, Forensic Chemistry Unit.

Breath test operators may only perform subject testing after the completion of this training course. This training course must include, at a minimum, the following subjects:

- Theory of operation;
- Detailed procedure of operation;
- Practical experience;
- Precautionary checklist;
- Written and/or practical examination.

1.1 Absorption

When ingested, ethyl alcohol is absorbed through the mucous surfaces of the body. Approximately 25% of the absorption occurs through the membrane walls of the stomach and 75% in the upper portion of the small intestine. The alcohol passes through these membrane walls by simple diffusion without first being acted upon by enzymes, as is the case with other food materials.

The rate of absorption is dependent, among other things, on the quantity of alcohol ingested, the type of alcoholic beverage consumed, and whether or not there is food in the stomach. When a single alcoholic beverage is ingested, most of the alcohol will be absorbed into the bloodstream within minutes.

1.2 Distribution

As soon as alcohol is absorbed, it enters the blood stream and is then distributed through the entire body to all of the tissues and organs in an amount directly proportional to the water content of the tissues and organs.

1.3 Elimination

Approximately 90% of the alcohol consumed is eliminated from the body by oxidation metabolism occurring largely in the liver. The remaining alcohol is excreted through the breath, urine, and perspiration. Elimination of small amounts of alcohol through the breath and urine makes it possible to use urine or breath samples to determine the blood or breath alcohol concentration.

In the case of urine, water and metabolic wastes are removed from the blood in the kidneys. The small amount of water removed will carry with it the same concentration of alcohol as water in the blood. This is because alcohol and water are infinitely soluble. It has been well established that the concentration of alcohol found in the urine will reflect the concentration of alcohol in the blood by a ratio that has been determined to be 1.3 to 1. Because the kidneys are constantly producing urine, it is necessary to have a subject void his bladder before giving a urine sample for analysis. The void process eliminates the urine that could have been collecting in the bladder for several hours, which could distort the blood alcohol calculations. A sample collected at least 20 minutes after the void reflects the blood alcohol level over that previous 10-minute period.

In the case of breath, circulating blood travels throughout the lung tissues. The blood exchanges gases with the lung air. At body temperature (37°C), a small amount of alcohol will become a gas. The amount of alcohol in 2100 milliliters of alveolar breath is equivalent to the amount of alcohol in 1 milliliter of blood. The equilibrium between blood and breath is established almost instantly in millions of tiny "pockets" in the lungs called alveoli (deep lung tissue). The breath in the channels leading to the alveoli (throat, trachea, bronchial tubes, etc.) contains various mixtures of room air and deeper lung air. Consequently, this "top lung" air does not reflect the subject's true breath alcohol concentration. It is a varying amount, less in alcohol concentration, than deep lung breath. For this reason the first part of an exhale has the lowest concentration of alcohol in the breath. The highest concentration is reached from the last part of an exhale and contains the breath that reflects the true blood alcohol concentration.

The total rate of elimination of alcohol (metabolism, breath, excretion) varies from person to person, but is reasonably constant for any one individual. This rate is approximately 0.02% of blood alcohol concentration per hour.

1.4 Tolerance

There are two types of impairment, mental and physical. Mental impairment occurs first. Individuals who regularly consume alcoholic beverages may

become “tolerant” to the physical effects and learn to compensate, or mask, the physical signs of impairment. Mental impairment, however, remains.

1.5 Physiological Nature of Alcohol

Alcohol is a drug that acts as a depressant to the central nervous system. It first affects inhibition and judgment and then impairs motor performance of all kinds, including vision, hearing, and muscular coordination. The effect of alcohol on the brain is always a deterioration of function and never an improvement.

1.6 Tests for Intoxication

It is illegal for a person to drive a vehicle with a blood alcohol concentration of 0.08% or higher. The legal limit for commercial drivers is 0.04%, and for drivers under the age of 21 the legal limit is 0.05%.

The California Vehicle Code section 23152 states: “(a) It is unlawful for any person who is under the influence of any alcoholic beverage or drug, or under the combined influence of any alcoholic beverage and drug, to drive a vehicle. (b) It is unlawful for any person who has 0.08 percent or more, by weight, of alcohol in his or her blood to drive a vehicle. For the purpose of this article, and Section 34501.16, percent, by weight of alcohol in a person’s blood is based upon grams of alcohol per 100 milliliters of blood, or grams of alcohol per 210 liters of breath.”

The current policy of the American Medical Association supports a blood alcohol content (BAC) limit for drivers at 0.05% for adults and 0.02% for drivers under the age of 21. All states have set adult driver BAC limits at 0.08%, with lower limits for commercial drivers. A standard limit of 0.00% to 0.02% BAC for drivers under the age of 21 is gradually being adopted by most states.

The blood alcohol concentration indicates the condition of the person at the time the test was taken. What a person’s blood alcohol concentration was at the time of arrest or accident can be inferred with reasonable accuracy if one can establish the time of drinking. When chemical tests for intoxication are properly made and interpreted, they constitute the best and most impartial objective method for the measurement of levels of alcohol and a measurement of impairment from alcohol.

2. INTOXILYZER THEORY

The Intoxilyzer 8000 is an infrared analyzer that uses no chemicals for the determination of the concentration of alcohol in breath. This instrument measures a physical property, the absorption of infrared energy by a gas, following Lambert-Beer's Law of Absorption.

Where $I = I_0 e^{-kabc}$

I is the energy emerging from the gas absorption cell.

I₀ is the incident energy entering the gas absorption cell.

e is the natural logarithm base.

k is a constant which converts blood alcohol concentration to breath alcohol concentration.

a is the absorption coefficient for ethyl alcohol at the wavelength in question

b is the light path length in the gas absorption cell.

c is the concentration of alcohol in the blood.

Since **I** and **I₀** are measured by the instrument, and **k**, **a**, and **b** are all constants, **c** (concentration) is readily determinable.

The Intoxilyzer 8000 employs a slope detector and requires that a number of minimum parameters are met to ensure the sample is adequate and alveolar. These minimum parameters include a continuous breath sample 6 seconds in duration, a minimum volume of 1.1 liter, and a minimum flow rate of 0.15 liters per second. The slope and each of these parameters are automatically monitored by the Intoxilyzer 8000. If the minimum requirements are not met, a sample result will not be obtained.

The Intoxilyzer 8000 assures that alveolar breath samples are consistently obtained. All operator functions for these instruments are automatically prompted and controlled by a microprocessor. Once a test sequence is initiated, a programmed test procedure is indicated by visual instructions on a digital display. The current status or mode of the test cycle prompts the

operator through the programmed test procedure. The test results, date, time, and instrument serial number, are printed on a test record card.

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3. BASIC OPERATING FEATURES

- 3.1 Infrared Energy Absorption Principle: (see page 29 for the Intoxilyzer 8000 diagram). The Intoxilyzer measures the degree to which alcohol absorbs infrared energy. The more alcohol present, the greater the absorption of infrared energy. To generate infrared energy, the Intoxilyzer 8000 uses a pulsating infrared source. The infrared energy travels through a sample chamber containing the subject's breath or vapor from a breath alcohol simulator. The energy is focused by a lens onto a highly sensitive photo detector that converts the result into an electrical impulse. An electronic processor interprets the impulses and displays the percent Blood Alcohol Concentration (BAC) on the digital display. Acetone is measured separately, as a precautionary measure.

The Intoxilyzer 8000 contains features that the trained operator may need to access. The features are found in a level 1 menu. This menu is accessed by pressing the "esc" key twice on the keyboard.

Menu 1 Options: after pressing the "esc" key twice, select an option by pressing its corresponding letter on the keyboard.

"A" Continuous Air Blank

This option will turn on the air pump and purge the sample chamber until the green START TEST button is pressed. This procedure can be followed to clear the breath chamber if the operator receives an error message of "Ambient Fail" during the testing procedure.

"C" COBRA Phone Number

This option allows the COBRA phone number to be changed if the phone number used for downloading changes. The COBRA phone number is programmed by the Forensic Chemistry Unit. The operator can change this number if it was incorrectly programmed by the lab. (See Section 4.1.5).

"D" Diagnostic Check

This option will initiate a diagnostic test. The operator can perform a diagnostic check to ensure the Intoxilyzer 8000 is working properly prior to beginning subject testing.

"E" Preliminary Data Entry

This option allows the user to change the time, date, and location, if necessary.

“P” Printer Test

This option will command the printer to perform a print check. This option is best used after the paper roll is changed.

“R” Reprint Last Ticket

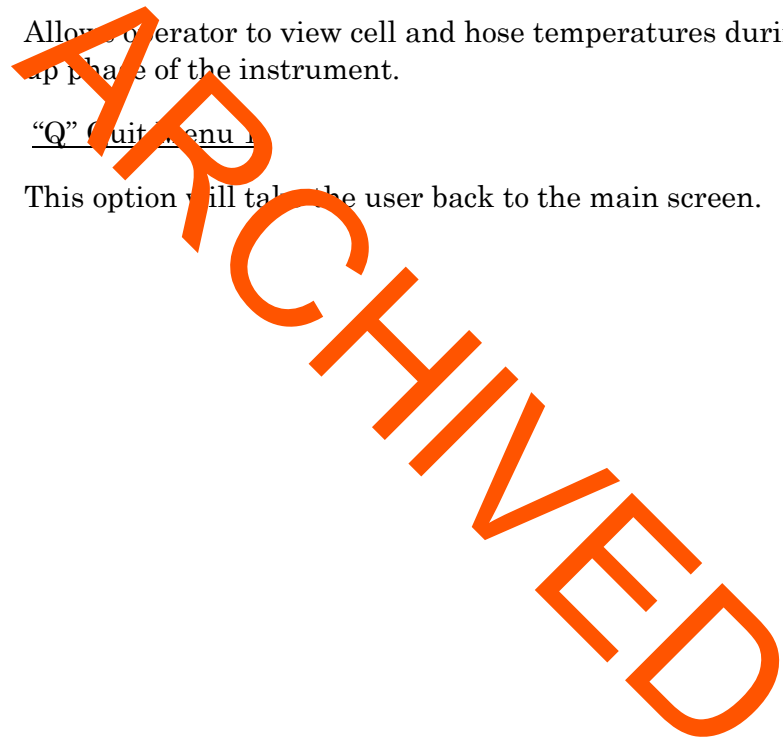
The last test ticket will be printed. Note: this option is the same as pressing F1 on the keyboard. This option can be used to print multiple copies of a test record.

“T” Temperature Monitor

Allows operator to view cell and hose temperatures during the warm-up phase of the instrument.

“Q” Quit Menu

This option will take the user back to the main screen.



4. LABORATORY PAPERWORK REQUIREMENTS FOR BREATH TESTING AND SAMPLE COLLECTION

4.1 Paper work requirements

Breath tests are assigned unique numbers by each breath testing instrument for tracking purposes. The unique numbers are comprised of the instrument's serial number, followed by a numerically sequential number generated at the start of each new subject test.

Breath tests collected with the Intoxilyzer 8000s are stored in the instrument's database for subsequent uploading to the Forensic Chemistry Unit's database. Specialized instruction is given to the DUI officers with mobile units by trained personnel. This training consists of the demonstrations of the modem connections, as well as use of the Control "U" function on the keyboard. The data from the stationary units is transferred by trained laboratory personnel only.

- 4.2 Blood, breath, and urine samples collected in room 138 are given unique barcode numbers for tracking. The numbers are generated by the FileOnQ system, and are referenced from the arrest incident number. The sample information is entered into the FileOnQ database. For blood and urine samples, this barcode number is used as a laboratory control number for subsequent paperwork generated during the testing process.

FileOnQ DATA ENTRY

- 4.2.1 FileOnQ is accessed by opening the Online Property Room program. To access the program, the user must login with his or her LAN ID and password.

- 4.2.2 Breath, blood, and urine sample collection information is entered into FileOnQ by selecting "New evidence" from the home screen. The following information must be placed into the corresponding fields.

- Incident Number
- Charge(s)
- Code Type, such as "Health and Safety"
- Incident date
- Suspect name and date of birth (In "Owner" fields)

- In the “Category” field, select “Evidence”
- In the “Item Type” field, select “Breath Sample,” “Blood Sample,” “1st Void Urine,” “ or “2nd Void Urine” for the corresponding sample type
- “Recovered by” is the officer performing the breath test or witnessing the blood draw or urine collection
- “Recovered Date” and “Time” refers to the time the sample was collected, or the breath test was initiated
- “Recovery Address” refers to where the sample was collected or where the subject was tested, such as Headquarters, Room 138.
- For blood and urine samples, the “Alcohol Testing” and/or “Drug Testing” box(es) must be checked depending on which type of analysis is being requested. Agency (if not SDPD)
- “
- “Blood Drawn By” refers to the phlebotomist performing the blood draw or the officer witnessing the urine collection.

4.2.3 After the information is entered into FileOnQ, a barcode label is printed from the database and affixed to the sample container for blood and urine samples, and the chain of custody tube for blood samples. The following information is printed on the barcode label:

- The suspect’s name (listed as the “owner”)“The barcode and incident numbers
- “Collected By,” “Date,” and “Time” “Witnessing Officer/ID#” The charge(s) for which the suspect was arrested
- “1st VOID” Urine (For Drugs) or “2nd VOID” Urine (For Alcohol), collected no sooner than 20 minutes after voiding the bladder.

4.2.4 The following information is recorded on the Toxicology Request Form if drugs are suspected. The information is automatically populated in the corresponding boxes on the request forms and can be printed from the FileOnQ. (page 15)

- Barcode Number (Listed as the Lab ID number) Sample Type (blood or

urine)

- Charge(s)
- Requesting officer's name, ID number, and e-mail address
- The drug panel requested for analysis.

4.2.5 Samples collect at locations other than SDPD headquarters, such as at local hospitals, must be labeled at the time the sample is drawn, using a pre-printed label with the information hand written by the witnessing officer. The label must be filled out with the following information in the corresponding fields:

- Incident Number (if known)
- Suspect name and Date of Birth
- Charge(s)
- Type of Testing, Alcohol/Drugs
- Witnessing Officer's Name, ID Number, and Assignment
- "Collected By," "Date," and "Time" are filled in by the officer witnessing the urine collection, or the phlebotomist performing the blood draw.

4.2.6 The precautionary checklist for the Intoxilyzer 8000 is posted with the instrument and is incorporated into the instrument prompts; therefore, it does not require any recording of information. (page 25)

PLACE EVIDENCE SEALING TAPE HERE ACROSS ENTIRE FLAP

COLLECTION INSTRUCTIONS

**For collections not performed in Room 138 and
when persons other than the witnessing officer delivers the sample to the locked box.**

Instructions for the Person Drawing Blood:

- The officer must be present to observe the collection procedure.
- Cleanse the area of skin to be punctured with Benzalkonium Chloride or other non-alcoholic, non-volatile disinfectant swab.
- Use gray top, 10 mL Vacutainer tubes or equivalent; obtain one blood vial for misdemeanors or two vials for felony cases.
- After the blood sample collection, invert the vial several times to make sure the anticoagulant and preservative are thoroughly mixed with the blood.
- Obtain label containing the witnessing officer's entries.
- Fill out the blood container label including the signature of the person drawing blood and the date and location of the blood draw.
- Place the label on the vial.

Instructions for Officer's Collecting the Samples

- Collect the sample in the 25-mL specimen bottle provided.
- Fill out the container label completely and indicate if the sample is a 1st or 2nd void.

INSTRUCTIONS TO OFFICERS

Witnessing Officer

- Sign the label and insure the other information on the label is complete.
 - Place evidentiary sealing tape on the vial sample or outer plastic container for blood vials.
 - Complete the items of information shown on the envelope.
- Place the sealed sample in this envelope and place evidentiary sealing tape over the envelope flap.

Intermediate Officer

- All persons who handle the sample must complete the chain of possession on the front of this envelope.

Transporting Officer

- Final transporting officer will complete the Master Log entry.
 - Write the master Log # on the envelope.
 - Deposit the sample in the locked box in Room 138.

TO BE COMPLETED BY WITNESSING OFFICER

PLEASE PRINT ONLY

1. Full Name of Subject _____
DOB _____

Last First Middle

2. Officer's Assignment

3. Sample collected at

4. Sample drawn/collected _____ Date:

Time: _____

5. Signature of Witnessing Officer

CHAIN OF POSSESSION OF SAMPLE

Every person who handles the sample must fill in at least two lines below.

The person delivering the sample to the laboratory should use the appropriate space.

Released By:

Received By: _____ Date

Time _____

Released By:

Received By: _____ Date

Time _____

Released By:

Received By: _____ Date

Time _____

Delivered to Room 138 Locked Box on :

Date _____ Time _____

By

5. RECORDS

5.1 Operator Training Records:

Class attendees must sign in, pass a practical and written test, and receive a certificate upon successful completion of their training. The certificates are filed in the Police Department's In-Service Training Division for the length of the operator's employment. The laboratory keeps a database of current, qualified operators.

5.2 Breath Test Records

The results of each test and the identity of the operator performing the test, is recorded on the instrument test strip as well as in the database. This information, as well as all other pertinent information regarding the breath tests and the accompanying quality assurance, is kept in the laboratory for at least seven years.

1. ADMINISTRATION OF THE BREATH TEST

1.1 Subject Observation Requirements

The State of California Department of Public Health regulations for forensic alcohol testing, known as Title XVII (Section 1219.3) require that “a breath sample shall be expired breath which is essentially alveolar in composition. The quantity of breath sample shall be established by direct volumetric measurement. The breath sample shall be collected only after the subject has been under continuous observation for a least fifteen minutes prior to collection of the breath sample, during which time the subject must not have ingested alcoholic beverages or other fluids, regurgitated, vomited, eaten, or smoked.” The Intoxilyzer 8000 will ask if this fifteen minute observation was completed and require a yes (“Y”) keyboard response in order for the test to continue.

Using the Breath Instrument

In conjunction with the Precautionary Checklist available near each instrument (see page 25), the instrument prompts the operator to administer the breath test. Before starting the test, ensure the breath test hose is warm and the Gaseous Ethanol Breath Standard (GEBBS) tank is attached to the instrument. The steps for performing a subject breath test are as follows:

- 1.2.1 Verify the Intoxilyzer 8000 is plugged into a 120-Volt AC or 12-Volt DC power supply. Power the instrument on and press the green START TEST button to ready the instrument for testing. The instrument will take approximately 20 minutes from the time it is turned on to warm up.
- 1.2.2 When “READY MODE” is displayed, press the green START TEST button. The instrument will then sound a short tone and display “Operator last name” followed by “Operator ID#”. Type in the necessary information and press enter. After the information has been entered, the instrument will display “Review data y/n?” If “n” is selected or, the operator does not select either option in the ensuing 5 seconds, the instrument will proceed with subject information prompts. If “y” is selected, then the instrument will display the operator’s name and allow the user to make corrections using the keyboard. It will then proceed to the operator’s ID # and allow the user to make corrections.

- 1.2.3 The instrument will display “swipe subject DL or press enter.” By default, the instrument waits for a card swipe. If, after 10 seconds, no card swipe occurs, the instrument will display “Subject Last Name?” The user will be allowed to enter the name using the keyboard. Dashes can be used for unknown information. The instrument will then display “Subject First Name?” The user will be allowed to enter the name with the keyboard. After the name has been entered, the instrument will display “Subject Middle Name?” The user will be allowed to enter the name using the keyboard. After the subject’s name has been entered, the instrument will display the following: “Drivers license #?” The user will be allowed to enter the # using the keyboard. After the license # has been entered the instrument will display “State of issue?” The user will be allowed to enter the state using the keyboard. The instrument will then display “Charge?” After a charge has been entered, the instrument will display, “Beat of Arrest?” The user will be able to enter the beat of arrest if known, or dashes if unknown. The instrument will then display, “Review data Y/N?” If after five seconds no key keystroke has been made, the test will automatically start. If the “Y” key was pressed each piece of information will be displayed on the screen at which time the user will be allowed to review and correct them. If the keystroke equaled “N,” the test continues.
- 1.2.4 The instrument will display “15 min obs (y/n)?” If the subject has been continuously observed for 15 minutes immediately prior to the start of the test, select “y” for yes. The test will proceed. If the subject has not been continuously observed for 15 minutes immediately prior to the start of the test, or if the subject has vomited, belched, regurgitated, or has had anything in his/her mouth during the observation period, select “n” for no. If “n” is selected, indicating that the observation period has not been successfully completed, the instrument will lock itself out for 15 minutes allowing for the completion of the 15 minute observation period. Also, if “n” is selected and the instrument is temporarily locked out, test information will be saved for use in the next test sequence for the same subject.
- 1.2.5 The instrument will sound a short tone and display “Air Blank.” It will then proceed to clear the sample chamber by forcing air through it. Leave the breath hose in the cradle. At the end of the cycle the display will show “Rslt 0.00.”
- 1.2.6 Instrument will perform a Diagnostic Check.
- 1.2.7 The instrument will sound a short tone and display “Air Blank.” It will then proceed to clear the sample chamber by forcing air through it. Leave the breath hose in the cradle. At the end of the cycle the display will show “Rslt 0.00.” If the instrument does not show a value 0.00, the message “AMBIENT FAIL” and “NOT A SUCCESSFUL TEST” will print. If this

occurs, the operator must restart the test, choose another instrument, or choose another test.

- 1.2.8 The instrument will display “Reference” and then perform an accuracy check using the GEBS. If the value is within +/- .01 % of the known value, the test will continue. If the instrument is not within +/- .01 % of the known value, the test will be aborted and it will print “NOT A SUCCESSFUL TEST.” If this occurs, the operator must choose a different instrument or choose a different test.
- 1.2.9 The instrument will sound a short tone and display “Air Blank.” It will then proceed to clear the sample chamber by forcing air through it. Leave the breath hose in the cradle. At the end of the cycle the display will show “Rslt 0.00.”
- 1.2.10 The display will read “Reference.” The instrument will then sound a short tone and the instrument display will read “Please blow until tone stops/R.” Attach a new mouthpiece to the breath hose, and instruct the subject to blow into the mouthpiece. The mouthpiece will be attached in the following manner:
- The plastic bag enclosing the mouthpiece is opened at one end.
 - The distal end of the mouthpiece is exposed and inserted in to the breath hose, the operator inserting the mouthpiece while holding it with the plastic bag.
 - The remaining plastic is then removed, and the subject is asked to blow into the mouthpiece.
- A continuous tone will sound as the subject blows into the mouthpiece. Instruct the subject to blow continuously until the tone stops. The subject’s breath alcohol concentration will then be displayed on the screen.
- 1.2.11 The operator will remove and discard the used mouthpiece with the plastic bag originally containing the mouthpiece.
- 1.2.12 The instrument will sound a short tone and display “Air Blank.” It will then proceed to clear the sample chamber by forcing air through it. Leave the breath hose in the cradle. At the end of the cycle the display will show “Rslt 0.00.”
- 1.2.13 The instrument will then display a 1 ½ -minute countdown.
- 1.2.14 The instrument will sound a short tone and display “Air Blank.” It will then proceed to clear the sample chamber by forcing air through it. Leave the

breath hose in the cradle. At the end of the cycle the display will show “Rslt 0.00.”

- 1.2.15 The display will read “Reference.” The instrument will then sound a short tone and the instrument display will read “Please blow until tone stops/R.” Attach a new mouthpiece to the breath hose (using steps outlined in 1.2.10) and instruct the subject to blow into the mouthpiece. A continuous tone will sound as the subject blows into the mouthpiece. Instruct the subject to blow continuously until the tone stops. The subject’s breath alcohol concentration will then be displayed on the screen.
- 1.2.16 Remove and discard the used mouthpiece as outlined in 1.2.11.
- 1.2.17 The instrument will sound a short tone and display “Air Blank.” It will then proceed to clear the sample chamber by forcing air through it. Leave the breath hose in the cradle. At the end of the cycle the display will show “Rslt 0.00.”
- 1.2.18 If the two tests agree within 0.02%, the instrument will proceed to a second GEBS check. After completion of the second GEBS check, the instrument will perform a second diagnostic test. After completion of the second diagnostic test, the instrument will perform a final air blank. In this way, every successful subject test will be bracketed by both a diagnostic and GEBS check.
- 1.2.19 If the two breath test sample readings do not agree within 0.02%, repeat steps outlined in 1.2.15 – 1.2.16.
- 1.2.20 The instrument will display “Trombetta Admon Given?” Provide the Trombetta Admonishment (Page 26). Select “y” for yes or “n” for no. If the operator responds by typing “n” the instrument will instruct the user to give Trombetta Admonishment, wait 15 seconds and repeat question, “Trombetta Admon Given?”
- 1.2.21 The instrument will then print out a test record containing the statement “SUCCESSFULLY COMPLETED TEST” or, the statement, “NOT A SUCCESSFULLY COMPLETED TEST.” Only test records with the phrase, “SUCCESSFULLY COMPLETED TEST” are considered completed breath tests. Two additional copies must be printed by pressing the “F1” key on the keyboard, once for each additional copy to be printed. The arresting officer must sign each of the printed test reports.

2. TEST COMPLETION AND PAPERWORK DISTRIBUTION

- 2.1 The test is complete if two valid breath results are obtained and the test record contains the phrase “SUCCESSFULLY COMPLETED TEST.”. The two breath test results must be within +/- 0.02 grams % of each other. If the first two tests are not within +/- 0.02 grams %, the instrument will request the subject provide a third sample. If two of the three breath results do not agree within +/- 0.02 grams %, the test is not valid. The subject must perform another breath test or a have a blood sample taken. If the subject performs a second breath test, the previous test record must be retained along with any successful test record. To start another breath test, the operator must follow the precautionary checklist as in the first test.
- 2.1.1 The test report provides proof that the breath test sequence was started. If the subject refuses to complete a breath test, the operator may press the “R” key to identify the test as a refusal at the “Please Blow” prompt. If the subject is unable to complete the test, the operator has the option of pressing the “R” key to identify the test as a refusal, or the GREEN START TEST key to abort the test.
- 2.1.2 Triplicate copies of Intoxilyzer 8000 test result must be printed. Of the three copies printed, one copy is provided to the subject, one copy is provided to the court, and the remaining copy is retained in the officer’s records to be retained or distributed according to the policies of the officer’s area command.
- 2.1.3 Inspect the test printouts and verify that the date and time are correct. Make any necessary corrections on the test printout and initial the correction.
- 2.1.4 Distribute all paperwork as indicated in the Precautionary Checklist, and according to the procedures of the officer’s area command.
- 2.2 Paperwork Distribution
- 2.2.1 Distribute incomplete test paperwork as you would for completed test paperwork according to the procedures of the officer’s area command.
- 2.2.2 Distribute paperwork for all initial, subsequent, and/or terminated testing as indicated previously in this section, on the precautionary checklist, and according to the procedures of the officer’s area command.

3. MESSAGES THAT MAY BE ENCOUNTERED DURING BREATH TESTING

If the test strip contains the phrase “NOT A SUCCESSFUL TEST”, one of the following messages will appear:

---"IMPROPER SAMPLE"

Meaning: The subject blew into the mouthpiece before the instrument panel indicated “PLEASE BLOW.” If this occurs, start a new test.

----"RFI DETECTED"

Meaning: High-level radio frequency interference is present. The instrument will automatically cancel the test. Ensure that there are no radio transmissions in the area. Start a new test.

----"SEQUENCE ABORTED"

Meaning: The START TEST button was pressed before the test was completed. If a subject refuses a breath test after it has begun, allow the test to complete on its own (this takes about six minutes), or press the “R” key on the keyboard to indicate a subject refusal to complete the test.

----"INTERFERENT DETECTED"

Meaning: The subject's breath sample contains an interfering substance such as acetone. The instrument will terminate the test and “INTERFERENT CHOOSE ANOTHER TEST” will be printed on the test record. Conduct a different test.

----"DEFICIENT SAMPLE"

Meaning: The subject did not supply an adequate breath sample within two minutes. "DEFICIENT SAMPLE" is printed on the test record. Choose another test. If another breath test is selected,

Instruct the subject to provide a continuous breath sample into the mouthpiece for at least six seconds.

Each test sequence gives the subject three opportunities of two minutes each to provide a proper sample. The test can be **stopped** by pushing the GREEN START TEST button or the “R” key on the

keyboard when “PLEASE BLOW” appears on the screen. Previous test information is then preserved and will be printed on the test printout. If a proper test is not obtained, and there was no 0.02% agreement by the third breath sample, the error code “NO 0.02% BAC AGREEMENT-REPEAT TEST” will be printed on the test record. Start a new test, or choose a blood test instead.

----"INVALID SAMPLE"

Meaning: The instrument detected the presence of mouth alcohol in the sample being provided. The test will automatically be aborted and “INVALID SAMPLE” will be displayed on the screen. “WAIT 15 MINUTES-REPEAT TEST” will be printed on the test record.

----“AMBIENT FAIL”

Meaning: The sample chamber did not return to 0.00% after purging. The instrument automatically cancels the test. Ensure that the breath nose remains in the cradle and start a new test.

----“SUBJECT TEST REFUSED”

Meaning: Activated by the operator by pressing the “R” key when the instrument displays the words, “PLEASE BLOW”.

----“CAL CHECK FAIL”

Meaning: The Intoxilyzer 8000 needs a new GEBS tank, or the tank is not properly connected. Correct the problem and repeat the test. If the problem persists, report the problem to laboratory staff.

----“DIAGNOSTIC FAIL”

Meaning: One of the nine parameters is out of tolerance. Instrument will display information identifying the problem. If the instrument indicates it is out of paper, correct the problem and repeat the test. For all other problems, the operator should choose another instrument or choose another test.

----“LOW TANK PRESSURE”

Meaning: The GEBS tank pressure is below 50 psi. Unscrew the tank from the regulator by turning the tank three turns in a counter-clockwise rotation about the center axis of the tank. Exchange this empty tank for a full tank at the Watch Commander’s Desk or the laboratory. Attach full tank by reversal of the above method. The unit

is now ready for use. Note: The Intoxilyzer 8000 will not go into READY MODE if the tank pressure falls below 20 psi.

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----“MEM FULL”

Meaning: The Intoxilyzer 8000’s memory is full. No more tests may be stored. This message should not be encountered as laboratory staff ensures regular downloads. If the operator were to get this message on an instrument, he or she should choose another instrument, or choose another test.

If none of the corrections result in a properly functioning instrument, the operator should use another instrument or choose another test. The operator should notify laboratory personnel that he or she has encountered a malfunctioning instrument. If messages other than those listed above are encountered, the operator should choose another instrument or choose another test.

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4. INTOXILYZER 8000 PRECAUTIONARY CHECKLIST

1. Continuously observe the subject for fifteen minutes before beginning the test. During this time, the subject must not ingest alcoholic beverages or other fluids, regurgitate, vomit, eat, or smoke.
2. Press the green START TEST button to start. If the instrument is in STANDBY MODE, a 60 second countdown will bring the instrument into READY MODE.
3. When the display shows READY MODE, press the green START TEST button.
4. Use the Intoxilyzer's keyboard to enter the case information, or swipe the subject's driver's license when directed. The subject's name must be entered as LAST NAME, FIRST NAME, and MI. Review the data when it is displayed.
5. **15 Min Obs (y/n?)** Respond accordingly. Wait another 15 minutes if necessary.
6. **Air Blank**; leave the breath hose in the cradle. Verify the result is 0.00g%.
7. **Diagnostic Check** – Instrument does this automatically.
8. **Air Blank**; leave the breath hose in the cradle. Verify the result is 0.00g%.
9. The instrument will display **Reference** and then perform a GEBS check.
10. **Air Blank**; leave the breath hose in the cradle. Verify the result is 0.00g%.
11. The instrument will again display **Reference** then prompt **Please Blow**. Place a **new** mouthpiece onto the breath hose.
12. Have the subject blow into the mouthpiece until he/she is out of breath.
13. Remove and discard the mouthpiece. Return breath hose to cradle.
14. **Air Blank**; leave the breath hose in the cradle. Verify the result is 0.00g%.
15. The instrument will complete a 1½ minute countdown.
16. **Air Blank**; leave the breath hose in the cradle. Verify the result is 0.00g%.

17. The instrument will again display **Reference** then prompt **Please Blow**. Place a **new** mouthpiece onto the breath hose.
18. Have the subject blow into the mouthpiece until out of breath.
19. Remove and discard mouthpiece. Return breath hose to cradle.
20. **Air Blank**; leave the breath hose in the cradle. Verify the result is 0.00g%.
21. If the two breath test results do not agree within 0.02%, the instrument will automatically require a third breath test. Repeat steps 17-20.
22. If the two breath results agree within 0.02%, the instrument will continue the sequence.
23. The instrument will display **Reference** and then perform a GEBS check.
24. **Air Blank**; leave the breath hose in the cradle. Verify the result is 0.00g%.
25. **Diagnostic Check** – Instrument does this automatically.
26. **Air Blank**; leave the breath hose in the cradle. Verify the result is 0.00g%.
27. When the LED prompt reads **Tombetta Adm Given?**, administer the admonishment and press the “y” key.
28. The instrument will print the test results. Verify that “**Successfully Completed Test**” is printed. This message must print or the subject test is not successful and must be repeated.
29. Print at least two additional copies of the test results by pressing “F1” for each copy on the keyboard. Verify all information is correct, add observation time, and sign each copy.
30. Paperwork Distribution: One copy is provided to the subject, one copy is provided to the Court; one copy is retained for record.

5. TROMBETTA ADMONISHMENT

The following admonishment will be published in Room 138 in both English and Spanish.

1. The breath testing equipment does not retain any breath sample for later analysis by you or anyone else.
2. If you want a sample retained, you may provide a blood or urine sample that will be retained, at no cost to you. If you do so, the blood or urine sample may be tested for alcohol or drug content by either party in a criminal prosecution.

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6. OVERVIEW

The CMI, Inc. INTOXILYZER® 8000 is an infrared-based device, as is shown in the diagram below, and has been designed for both mobile and stationary evidential breath alcohol testing. It has a revolutionary design with several features and software configurations that are shown in the diagram below.

1. Mouthpiece storage area is heated to minimize the likelihood of condensation during the breath test.
2. The breath hose is coiled in the top recess of the instrument to allow easy access. Thirty-six inches in length, the hose is flexible but non-kinking, non-collapsible, and is heated to ensure that no condensation forms when a breath sample is supplied. The temperature of the breath hose is under digital temperature control. Despite this, it is advised that at all ambient temperatures, when not in use, the hose be positioned correctly within the housing. The hose accepts standard mouthpieces.
3. The instrument display panel utilizes vacuum fluorescence technology.
4. The drop-down standard PS/2 keyboard may be detached from main unit to enable data entry to be performed remotely from the testing location.
5. The printer unit, either the “impact” or “thermal” type, has a paper roll that, when it is almost out, displays a thin red line along the edge of the roll. When this occurs, it will be possible to perform no more than five more custom test printouts until the end of the paper is reached.
6. The Start Button is used to run an evidential breath test.
7. The Simulator Return Port is located on the right side of the instrument for simulator use by laboratory personnel only.
8. The Calibration Inlet Port is located on the right side of the instrument for use in dry gas calibrations and accuracy checks by laboratory personnel only.
9. The Power Socket is located on the back of the instrument to connect the instrument to a power source. In a patrol car this would be the 12V DC car battery. In the laboratory this would be the 110V AC wall plug.
10. The Power Switch is located on the back of the instrument. This turns the instrument on and off.

Breath Hose

Mouthpiece
Storage

Printer
Unit

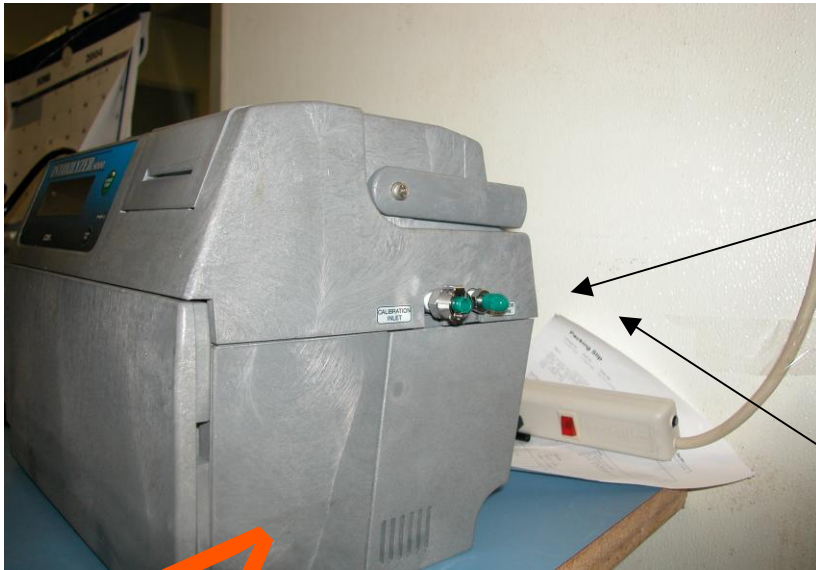
Instrument



Start
Button

Power
Socket and
Power
Switch

Keyboard



Calibration Inlet

Simulator
Return

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SAN DIEGO PD
Intoxilyzer - Alcohol Analyzer
Model 8000 SN 80-002331
10/20/08 15:26

Lab ID# = 233100781
GEBS Value = 0.100 g/210L
Operator Last Name = TEST
Operator ID# = 1111
Subject Last Name = TEST1
Subject First Name = T
Subject Middle Name = T
Driu Lic = 123/CA
Charge = 123
15 min observation before sequence? Yes

Test	g/210L	Time
Air Blank	0.000	15:27
Diagnostic Test	Pass	15:27
Air Blank	0.000	15:27
GEBS Check	0.098	15:28
Air Blank	0.000	15:28
Subject Test	0.00	15:29
Air Blank	0.000	15:29
Air Blank	0.000	15:31
Subject Test	0.00	15:32
Air Blank	0.000	15:32
GEBS Check	0.098	15:32
Air Blank	0.000	15:33
Diagnostic Test	Pass	15:33
Air	0.000	15:33

Successfully
Completed Test

Tronbetta Admonishment Given

Time First Observed: _____

Observed by: _____

Operator's Signature

7. INTOXILYZER 8000 PRACTICAL TEST

1. Learn Menu 1 options, perform a diagnostic check.
2. Administer an evidentiary test to another individual using his or her driver's license.
3. Generate copies of this test.
4. Stop a breath test during the breath sequence, after entering all the subject information to simulate a refusal.
5. Replace the printer paper.
6. Simulate mouth alcohol while performing a breath test.
7. Learn how to connect, disconnect, and replace a GEBS tank.

Turn in your printouts.

Take written test. (A score of 80% or higher is mandatory to pass this course.)

8. INTOXILYZER 8000 WRITTEN TEST

1. How long do state regulations require that the subject be under continuous observation before collecting a breath sample during which time he hasn't ingested alcoholic beverages or other fluids, regurgitated, vomited, eaten, or smoked?
 - a) at least 15 minutes
 - b) at least 20 minutes
 - c) at least 25 minutes

2. The Intoxilyzer 8000 uses the following method for measuring alcohol in the breath:
 - a) a wet chemical method
 - b) oxidation-reduction action
 - c) an infra-red absorption method
 - d) an ultra-violet absorption method

3. Which agency controls the regulations governing alcohol analysis, as found in the California Code of Regulations?
 - a) Department of Justice
 - b) Department of Public Health
 - c) Department of Motor Vehicles

4. What is the maximum allowable deviation between the two breath samples run on an individual suspected of driving under the influence of alcohol?
 - a) 0.02%
 - b) 0.03%
 - c) 0.01%

5. The Intoxilyzer 8000 is ready for testing when:
 - a) the "START TEST" button is pushed
 - b) the screen is scrolling a message
 - c) the screen flashes "READY MODE"

6. The sample chamber of the Intoxilyzer 8000 is kept at a temperature of 47° C to keep the breath:
 - a) moving fast through the chamber
 - b) from condensing in the chamber
 - c) full of alcohol

7. The Intoxilyzer automatically runs an accuracy check (GEBS):
 - a) every day
 - b) every 5 days or 50 subject tests
 - c) at the beginning and end of each test sequence

8. If the subject has alcohol contamination in his mouth, the Intoxilyzer 8000 screen will display "INVALID SAMPLE" and "XXX" will be printed. The operator must do the following:
 - a) wait 15 minutes and repeat the test
 - b) go to another instrument and start another test immediately
 - c) either a or b

9. How long after the introduction of a breath sample into the Intoxilyzer 8000 before the test results are known:
- a) immediately
 - b) 30 seconds
 - c) 90 seconds
10. The officer is responsible for providing court testimony regarding:
- a) the internal working of the Intoxilyzer 8000
 - b) the regulations covered in the Title 17
 - c) the operations involved in conducting the breath test
11. The Intoxilyzer 8000 is designed to determine the breath alcohol level by measuring alcohol present in the test subject's:
- a) mouth
 - b) blood stream
 - c) deep lung air
12. When the subject blows into the Intoxilyzer 8000 with adequate pressure:
- a) the green light will stay on
 - b) the screen flashes "PLEASE BLOW"
 - c) the instrument emits a continuous tone
13. If the subject does not have a driver's license, or has an out of state driver's license that does not have a magnetic strip, you must:
- a) have a blood sample drawn

- b) enter the subject information using the keyboard
- c) abort the test and use your PAS device
14. If three breath sample results are obtained and the values are 0.15%, 0.18%, and 0.16% the Intoxilyzer 8000 will:
- a) produce a valid test card
- b) require a fourth breath sample
- c) signal the operator to start a new test
15. The alveolar breath contains the highest concentration of alcohol in the breath:
- a) true
- b) false
16. If after giving a first breath sample a test subject refuses to blow a second time into the Intoxilyzer 8000, the operator must:
- a) push the "R" key on keyboard when the Intoxilyzer 8000 displays "PLEASE BLOW" to record refusal
- b) push the green start button when the Intoxilyzer 8000 displays "PLEASE BLOW"
- c) either a or b
- d) both a and b
17. The correct manner for conducting a test on the Intoxilyzer 8000 is:
- a) practicing on the instrument before testing
- b) following the Precautionary Checklist
- c) asking for assistance from other qualified operators

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18. If during the 15-minute waiting period, the subject is observed placing anything into his mouth, the appropriate step to take is:
- to write the test up as a refusal
 - to request that a blood sample be taken
 - to clear the mouth and wait an additional 15 minutes
19. If, while conducting a breath test, the Intoxilyzer 8000 detects radio frequency interference, the instrument will display:
- “INVALID TEST”
 - “INTERFERENT DETECTED”
 - “RFI DETECTED”
20. When “DEFICIENT SAMPLE” appears on the display of the Intoxilyzer 8000 it means:
- the subject was not blowing hard enough
 - the subject blew at the wrong time
 - both of the above
21. If the Intoxilyzer 8000 does not appear to be working properly, the operator should:
- request a blood sample, or use a different instrument for testing
 - notify the Forensic Science Section or watch commander
 - all of the above
22. If the subject's breath contains acetone, the Intoxilyzer 8000 will display “INTERFERENT DETECTED.” The operator must do the following:
- get a blood sample taken
 - use a different instrument

- c) either a or b
23. Persons authorized to perform breath tests on subjects using the Intoxilyzer 8000 include:
- a) any law enforcement officer
 - b) certified operators who have completed the Intoxilyzer 8000 course
 - c) any crime lab personnel
24. When a printout is generated from the Intoxilyzer 8000 and a correction is needed with date and or time:
- a) the operator must draw a line through, initial and date the error, then write in the correction
 - b) tear up the printout
 - c) ignore the error
25. The same mouthpiece can be used for both subject tests:
- a) True
 - b) False