INTOXILYZER 5000

OPERATOR'S TRAINING MANUAL

Idaho Department of Law Enforcement
Idaho State Police
Forensic Services
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CONTENTS

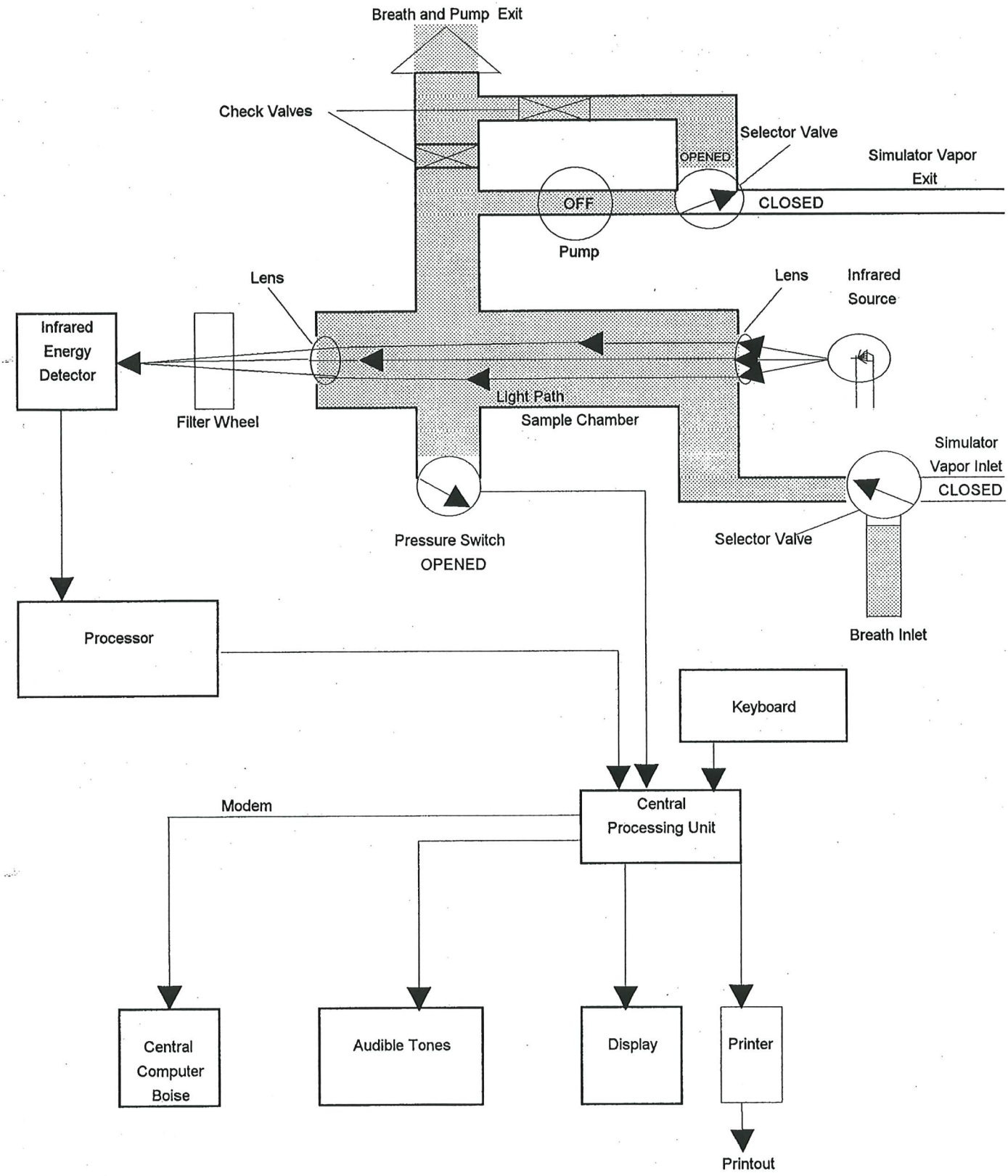
GENERAL INFORMATION

Depending on their physical size and structure, molecules absorb energy of specific frequencies. For example, alcohol molecules absorb certain frequencies of infrared energy. Accordingly, the Intoxilyzer 5000 breath analysis instrument uses an infrared energy absorption technique to find the alcohol concentration of a breath sample.

The heart of the Intoxilyzer 5000 instrument is its sample chamber. At one end of the chamber, a quartz iodide lamp emits infrared energy, which is directed through the chamber by a lens. At the opposite end of the chamber, a second lens focuses the energy leaving the chamber through three rotating filters and onto an infrared energy detector. The filters however, allow only certain wavelengths through.

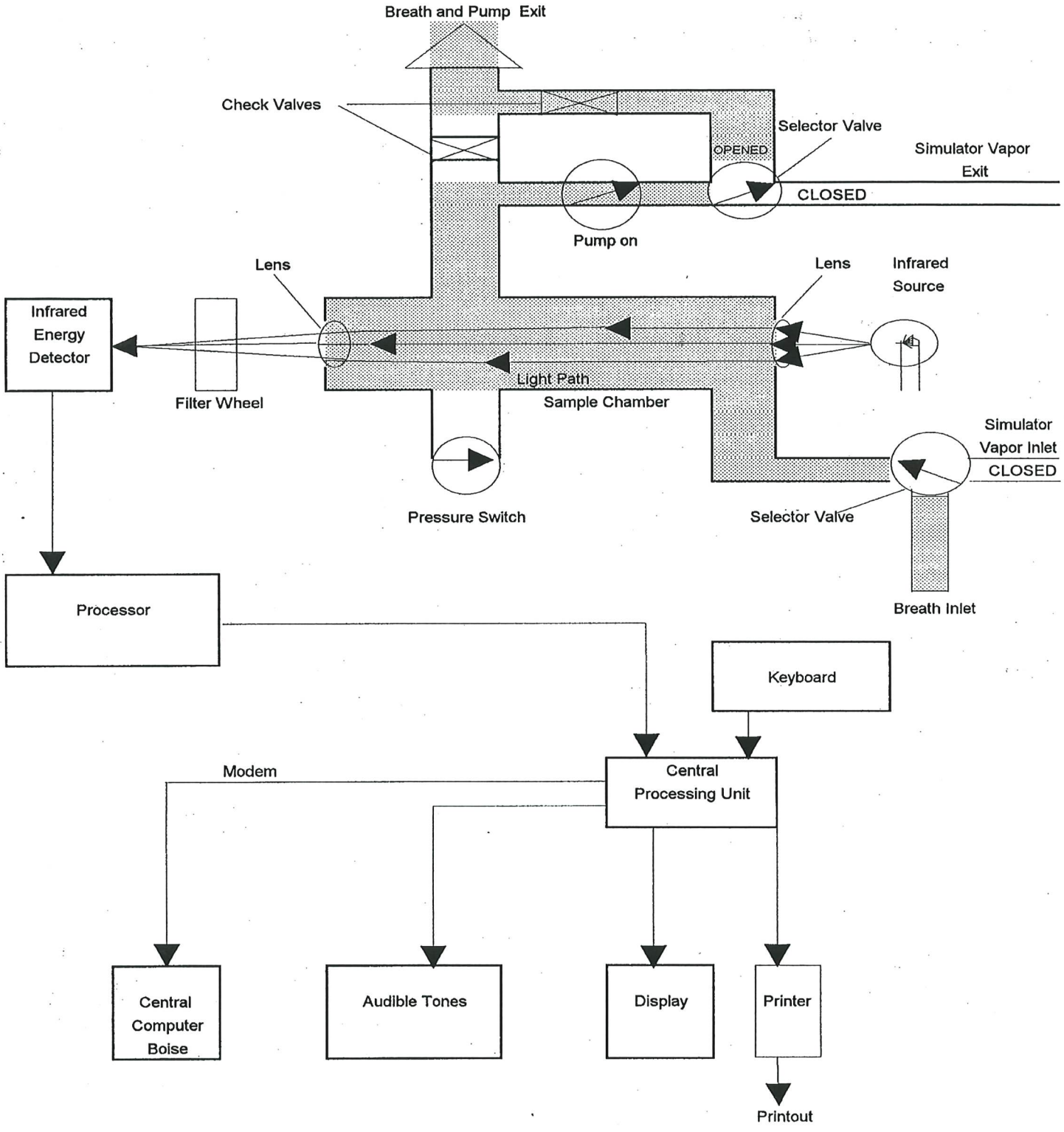
Initially, the instrument establishes a zero reference point by measuring the amount of infrared energy striking the detector when the sample chamber is filled with room air. During a breath test, as the amount of alcohol vapor in the chamber rises, the amount of infrared energy reaching the detector falls. Therefore, by finding the difference between the zero reference point and the breath test measurement, the instrument determines breath alcohol concentration. The unit displays the result in grams of alcohol per 210 liters. To assure accurate test results, the Intoxilyzer 5000 breath analysis instrument also detects and compensates for acetone which absorbs the same infrared frequencies as alcohol.

FUNCTIONAL DIAGRAM



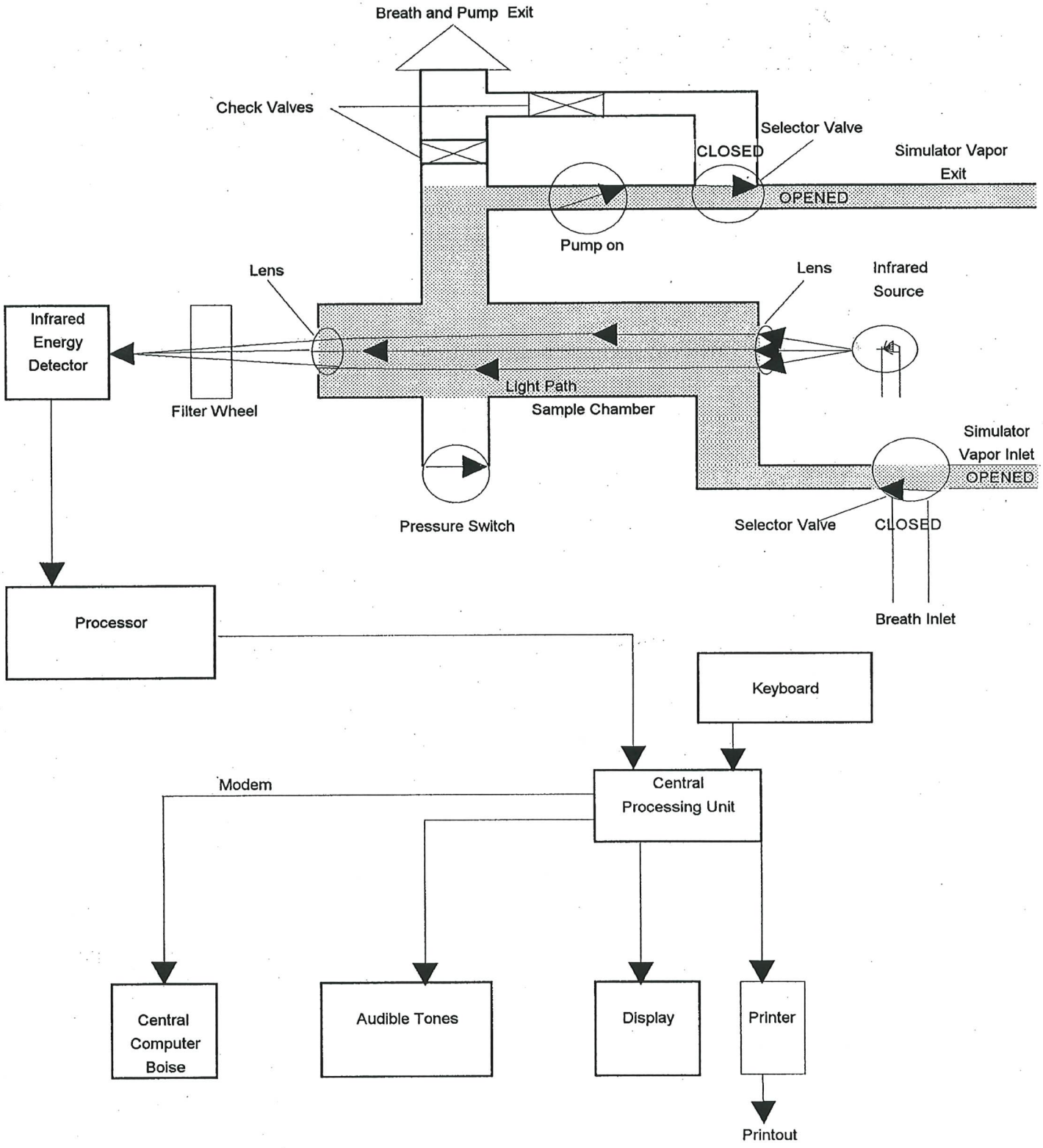
BREATH FLOW

FUNCTIONAL DIAGRAM



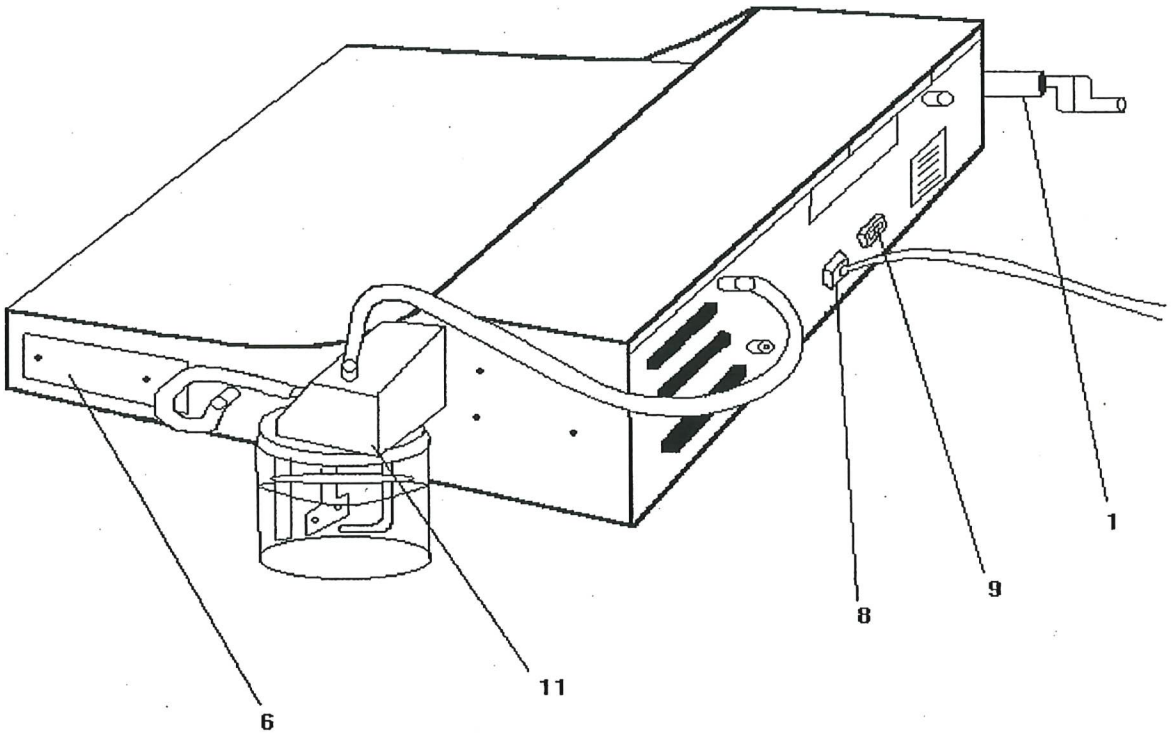
AIR BLANK

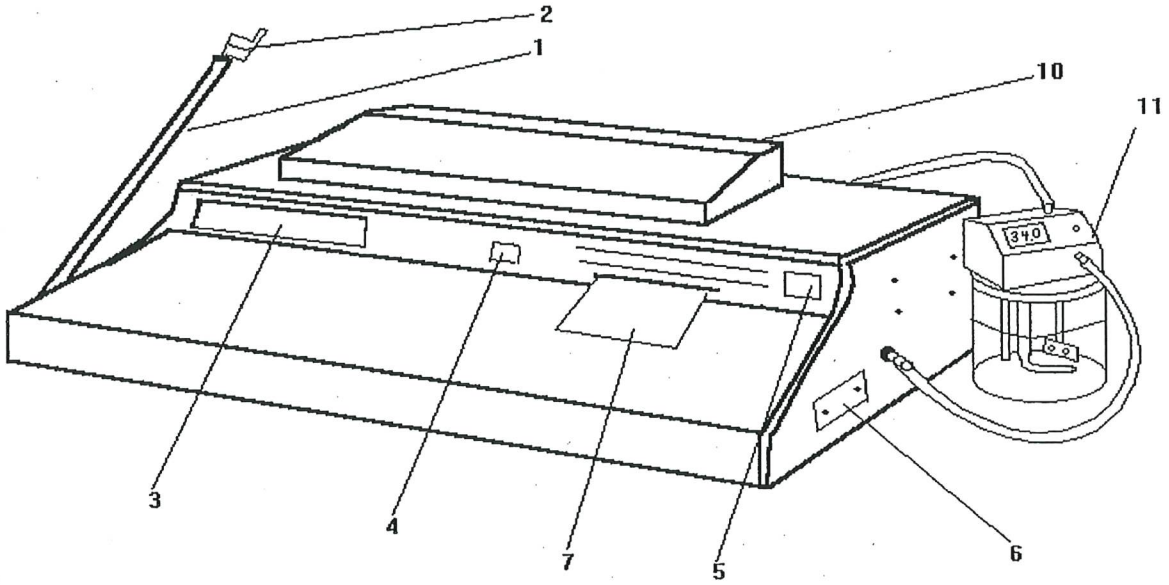
FUNCTIONAL DIAGRAM



CALIBRATION CHECK

FRONT AND BACK VIEWS OF THE INTOXILYZER 5000





PARTS OF THE INTOXILYZER 5000

To familiarize yourself with the parts, controls, and indicators of the Intoxilyzer 5000 breath analysis instrument, refer to the illustration on the previous page and the cross-referenced explanations listed below.

1. Breath Tube - A heated reinforced plastic tube through which the subject blows. It also acts as an antenna to detect RFI.

2. Mouthpiece - A disposable, clear plastic part which fits in the end of the breath tube, accepts the subject's breath, and prevents unwanted substances from entering the instrument.

3. Digital Display - A sixteen character alpha-numeric readout that relates which operation the instrument is performing, alerts the operator to required actions, and expresses Breath Alcohol Concentration in grams/210 liters.

4. Start Test Switch - A green push button switch used to initiate a test or obtain a refusal.

5. Power Switch - A red push button switch used to apply AC power to the instrument.

6. Key Latch - A hardened steel plate that may be unlocked with a key to expose the mode selection switches. Older instruments (66 series) only.

7. Evidence Card - A multi-copy card that provides a printed record of the date, model and serial number of the instrument, test results, time of test, and subject and operator information. It also contains a lot number and simulator check results which are important in determining the instruments approval status. Some instruments utilize an external printer which provide a printed record on a 8.5 x 11 sheet of paper.

8. Power Cord - A cord that supplies power to the instrument.

9. Computer Reset Switch - A rocker switch activated only in isolated circumstances to cancel all operations and return the instrument to its initial "Not Ready" condition.

10. Keyboard - A standard computer keyboard which allows the operator to type answers to questions.

11. Simulator - An apparatus that introduces a alcohol vapor of know concentration into the breath testing instrument to evaluate the calibration of the instrument.

12. Modem - (Not shown) An electronic device allowing the Idaho State Police Forensic Services (ISPFS) to communicate with the Intoxilyzer 5000 "on site". Call-ups of the instruments will typically occur between 4:00 am and 8:00 am Friday mornings. Operators using the instrument will not be affected by the call-up. The modem can be used to diagnose instrument problems, or to recover test data if the printer fails.

SIMULATORS

Alongside the Intoxilyzer 5000 you will notice a Glass Jar with a top containing a thermometer, a heating device, and a propeller. This apparatus is called a simulator. Its purpose is to simulate a breath sample which can be introduced into the Intoxilyzer 5000 and check the calibration of the instrument. **It is essential to the breath testing sequence that the simulator be on and connected properly, if it is not, the instrument will abort its testing sequence and no results will be obtained.**

Things to remember about the simulator.

1. The hoses need to be hooked up in a very specific order. If they are not the Intoxilyzer 5000 may be flooded and put out of service. **If at any time the hoses are disconnected DO NOT try to reconnect the hoses or proceed with a breath test without first consulting your BTS.**

2. The simulator contains a solution of alcohol and water. In the event that the simulator is knocked over or the glass jar is broken a potential for electrical shock may be produced. The safety of the operator and the subject are of prime concern. **DO NOT PROCEED WITH THE BREATH TEST.**

3. When the simulator is knocked over there is a potential for solution to enter the hoses and be sucked into the instrument during the calibration check. This may flood the instrument and put it out of service. **DO NOT proceed with a breath test if the simulator has been knocked over without first consulting with your BTS.**

4. The simulator should be running for approximately 15 min before proceeding with a breath test. If it has not, there is a potential that the calibration check will not be in range and the testing sequence will be aborted.

   NOTE: A good check to evaluate if the simulator is ready to provide a simulated sample is to see if the simulator temperature is between 33.5 °C and 34.5 °C.

5. Your Breath Testing Specialist is trained to handle the majority of problems that may arise. Inform BTS if you experience any problems that prevent you from obtaining a valid breath test.

6. **If at anytime you are unable obtain a valid breath test, obtain a sample using another method and inform your BTS.**

FIFTEEN MINUTE WAITING PERIOD

The mucous lining of the mouth cavity and nasal passages stores alcohol for some time after a person consumes alcohol. Normal body processes eliminate residual mouth alcohol within 15 minutes.

Monitor the subject for 15 minutes. During this time, the subject may not smoke, consume alcohol, eat, belch, vomit, use chewing tobacco, or have gum or candy in the mouth. If belching or vomiting does occur or something is found in the mouth, have it removed and wait an additional 15 minutes.

OPERATING PROCEDURE FOR A BREATH TEST:

Observe subject for 15 minutes.
The subject should not drink, smoke or use **any** type of oral medication during this time.
Insert a new mouthpiece in the end of the BREATH TUBE.
To conduct a breath test, push the green START TEST button and respond to the displayed messages and commands.

REFUSAL: If the subject refuses to provide a sample during the test sequence wait until the message **"PLEASE BLOW/R"** is displayed and then press the green **START TEST** button. After the message **"PLEASE BLOW/R"** is displayed the instrument will automatically printout a refusal if a sample is not obtained within (3) three minutes.

The print card will show: SUBJECT TEST REFUSED TIME
SUBJECT REFUSED TO CONTINUE

TEST SEQUENCE	DISPLAY READS	REQUIRED OPERATOR ACTION
1. Push Green Start Button	"INSERT CARD" (flashing)	Insert an evidence card into the card slot located on the front panel of the instrument
2. Question series for Idaho	See question series on page 15	Answer each question and press the return/enter button to save the information
3. Air blank	"AIR BLANK", displayed then scrolls through the time (TIME HR:MIN ZONE), the date (DATE MM/DD/YY), and then displays the result of the air blank (AIR BLANK .##) where .## is the alcohol concentration obtained during the air blank.	No action needed

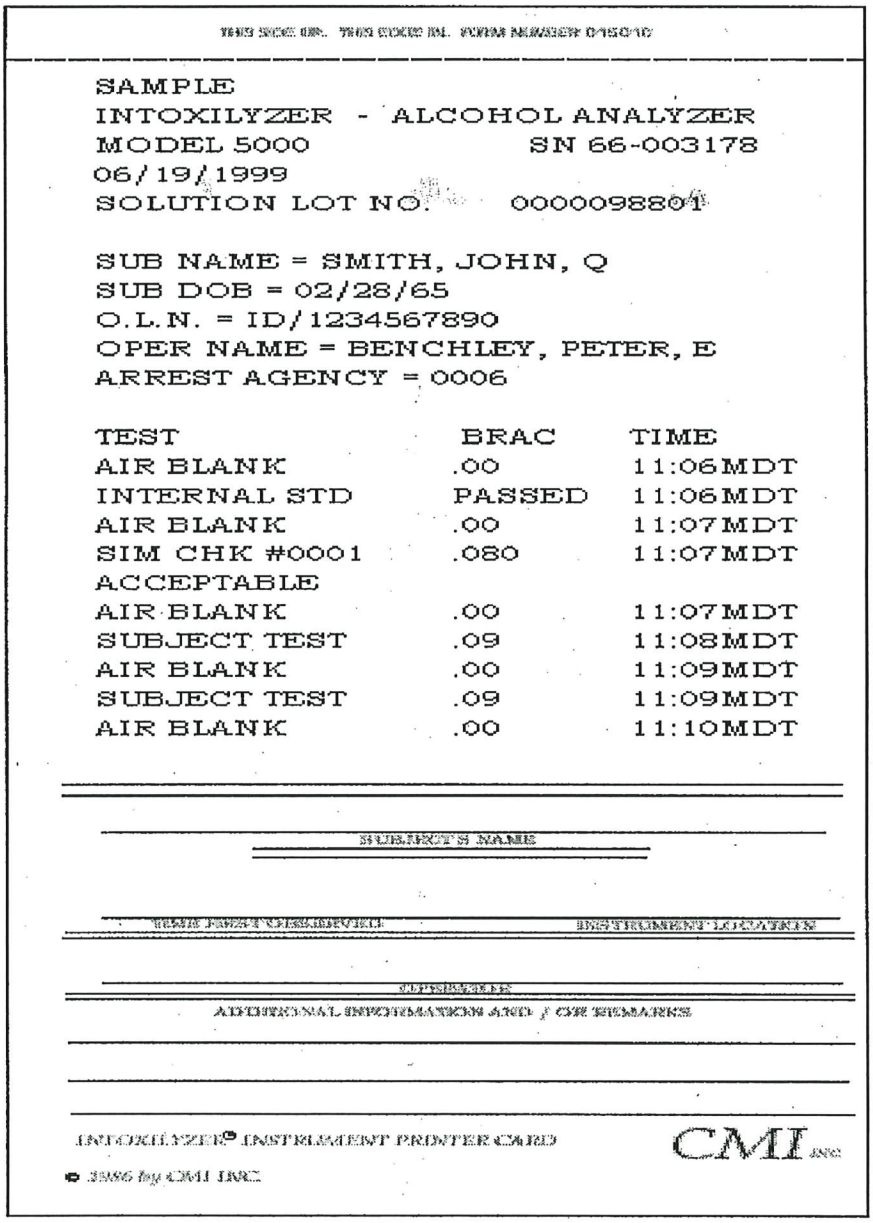
TEST SEQUENCE	**DISPLAY READS**	**REQUIRED OPERATOR ACTION**
4. Internal Standard Check	"INTERNAL STD" A. If the internal standards pass "INT STD PASS" will be displayed and the test sequence will continue. B. If the internal standards do not pass "INTERNAL FAILED" will be displayed and the test sequence ends. (See step 11)	 No action needed. Test sequence continues to step 5. **IF THE INTERNAL STANDARDS FAIL THE INSTRUMENT WILL NOT LET YOU CONTINUE TESTING. FIND ANOTHER METHOD TO OBTAIN A SAMPLE AND THEN INFORM YOUR BTS OF THE PROBLEM.**
5. Air Blank	"AIR BLANK .##" where .## is the alcohol concentration obtained during the air blank.	No action needed
6. Calibration Check	"}}}}}..." Instrument is establishing a zero reference point. "CAL. CHECK " a. If the calibration check passes "CAL CHECK .###" is displayed where .## is the alcohol concentration of the simulator solution. B. If the calibration check does not pass " OUT OF TOLERANCE" is displayed and the testing sequence ends. (See step 11)	 No action needed. Test sequence continues to step 7. **IF THE CALIBRATION CHECK DOES NOT PASS THE INSTRUMENT WILL NOT LET YOU CONTINUE TESTING. FIND ANOTHER METHOD TO OBTAIN A SAMPLE AND THEN INFORM YOUR BTS OF THE PROBLEM.**

TEST SEQUENCE	DISPLAY READS	REQUIRED OPERATOR ACTION
7. Air Blank	"AIR BLANK .##" where .## is the alcohol concentration obtained during the air blank.	No action needed
8. Breath Test #1	"}}}}}..." Instrument is establishing a zero reference point. "PLEASE BLOW INTO MOUTHPIECE UNTIL TONE STOPS" "PLEASE BLOW/R" (flashing) If the subject stops blowing before providing a sufficient sample, "PLEASE BLOW" flashes on the display and a beep sounds every 5 seconds. "SUBJECT .##" is then displayed where .## is the BrAC obtained.	Request the subject to blow into the mouthpiece until you tell him/her to stop. Request the subject to blow into the mouthpiece until he/she hears the tone stop or until you tell him/her to stop. The subject has 3 minutes to provide an adequate breath sample or deficient sample will be triggered.
9. Air Blank	"AIR BLANK .##" is displayed where .## is the alcohol concentration obtained during the air blank.	No action needed

TEST SEQUENCE	DISPLAY READS	REQUIRED OPERATOR ACTION
10. Breath Test #2	"}}}}}..." Instrument is establishing a zero reference point. "PLEASE BLOW INTO MOUTHPIECE UNTIL TONE STOPS" "PLEASE BLOW/R" (flashing) If the subject stops blowing before providing a sufficient sample, " PLEASE BLOW" flashes on the display and a beep sounds every 5 seconds. "SUBJECT .##" is then displayed where .## is the BrAC obtained.	Request the subject to blow into the mouthpiece until you tell him/her to stop. Request the subject to blow into the mouthpiece until he/she hears the tone stop or until you tell him/her to stop. The subject has 3 minutes to provide an adequate breath sample. If the second breath sample differs from the first by <u>more</u> than 0.02, then an air blank and a third breath sample will automatically be requested by the instrument.
11. Air Blank	"AIR BLANK .##" is displayed where .## is the alcohol concentration obtained during the air blank.	No action needed
12. End of Testing Sequence	QUESTION "TEST COMPLETE" "PRINTING" "INTOXILYZER 5000, ect" (rolling across the screen)	A question about drug testing will appear if this is a DUI. Remove the evidence card <u>after</u> it is released by the instrument. Enter all required data in the logbook.

PRINTED OUTPUT

The Intoxilyzer 5000 breath analysis instrument gives a printed record of the date, name and serial number of the instrument, test procedure, test results, time of test, simulator check, lot number, and subject and operator information.



SAMPLE
INTOXILYZER - ALCOHOL ANALYZER
MODEL 5000 SN 66-003178
06/19/1999
SOLUTION LOT NO. 0000098801

SUB NAME = SMITH, JOHN, Q
SUB DOB = 02/28/65
O.L.N. = ID/1234567890
OPER NAME = BENCHLEY, PETER, E
ARREST AGENCY = 0006

TEST	BRAC	TIME
AIR BLANK	.00	11:06MDT
INTERNAL STD	PASSED	11:06MDT
AIR BLANK	.00	11:07MDT
SIM CHK #0001	.080	11:07MDT
ACCEPTABLE		
AIR BLANK	.00	11:07MDT
SUBJECT TEST	.09	11:08MDT
AIR BLANK	.00	11:09MDT
SUBJECT TEST	.09	11:09MDT
AIR BLANK	.00	11:10MDT

SUBJECT'S NAME

TIME SAMPLE RECEIVED INSTRUMENT LOCATION

ADDITIONAL INFORMATION AND / OR REMARKS

INTOXILYZER® INSTRUMENT PRINTER CARD CMI Inc.

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INSTRUMENT LOG

In the event a printout is not obtained the instrument log may become the legal record of the test results (see the SOP section IIIB 3). Because the log can become the legal record, it is essential that it is kept accurate and up-to-date. As an operator of the Intoxilyzer 5000 you should check the simulator temperature prior to the testing sequence. If the simulator temperature is in the appropriate range check the column labeled "SIM TEMP IN RANGE" (see SOP IIB 4). Completely fill out the log including the time, date, the subject's name, the subject's test results, your name, and the calibration check results.

INSTRUMENT OPERATIONS LOG

INSTRUMENT SERIAL NUMBER: 66-001234

LOT NUMBER: 98801

LOCATION: Boise PD

DATE	TIME	SUBJECT 'S NAME	SUBJECT TEST RESULTS	OPERATOR'S NAME	CALIBRATION CHECK RESULTS	SIM TEMP IN RANGE (✓)	COMMENTS
6/9/99	2201	John Smith	.18/.17	M Knight	.080	✓	Boise PD
6/9/99	2327	Wild Bill	.20/Refused	T Knopp	.080	✓	ISP
6/10/99	0113	Jane Smith	.12/.15/.14	M Knight	.080	✓	Boise PD
6/10/99	1032	Bobby Child	.02 .03	R Kid	.080	✓	Garden City PD / UUV
6/10/99	0500			M Knight	.080/.081	✓	Lot 98801 New Solution Bottle # 0521
6/12/99	2034	John Doe	.08 .09	O. Jones	.080	✓	Meridian PD

The column labeled "comments" is for all other information that you feel may be important, such as NON-DUI tests, the agency using the instrument, or the bottle number when the Breath Testing Specialist changes the solution.

AN INCORRECT OPERATIONAL PROCEDURE OR CONDITION will cause the instrument to either cancel or complete a mode sequence and print one of the following messages on the evidence card. For an explanation of corrective actions that may be taken by the operator, see the section entitled TROUBLE SHOOTING INSTRUMENT MESSAGES.

1. **"INVALID TEST"** - Either the Start Test button was pushed at the wrong time, the evidence card was partially pulled from the printer, or the subject blew into the mouthpiece at the wrong time.

2. **"* 23"** – The IR source (lamp) is out. Use another instrument or have blood drawn.

3. **"UNABLE TO OBTAIN STABLE REFERENCE"; "INVALID TEST"** - The microprocessor was unable to obtain a stable reference signal from the processor.

4. **"* DEFICIENT SAMPLE - VALUE PRINTED WAS HIGHEST OBTAINED"** - The subject did not provide an adequate breath sample within three minutes. The instrument printed the highest obtainable BrAC value indicated by the asterisk (*) printed before "SUBJECT TEST".

5. **"INHIBITED RFI"; "INVALID TEST"** - High level radio frequency interference is present.

6. **"INTERFERENT DETECTED HAVE BLOOD DRAWN"** - The subject's breath sample contained a substance, such as acetone, that absorbed the same infrared frequencies as alcohol. Although the instrument has the capability to subtract out the presence of acetone, it does not have the capability to accurately subtract for all possible interferents.

7. **"INVALID SAMPLE .XX"; "REPEAT OBSERVATION PERIOD BEFORE RETESTING SUBJECT"** - The instrument detected residual mouth alcohol in the subject's breath sample and printed "INVALID SAMPLE .XX" in place of "SUBJECT TEST .##".

8. **"INTERNAL STANDARDS FAILED"** - One or more of the Internal Standards did not pass because they were not within their operational range.

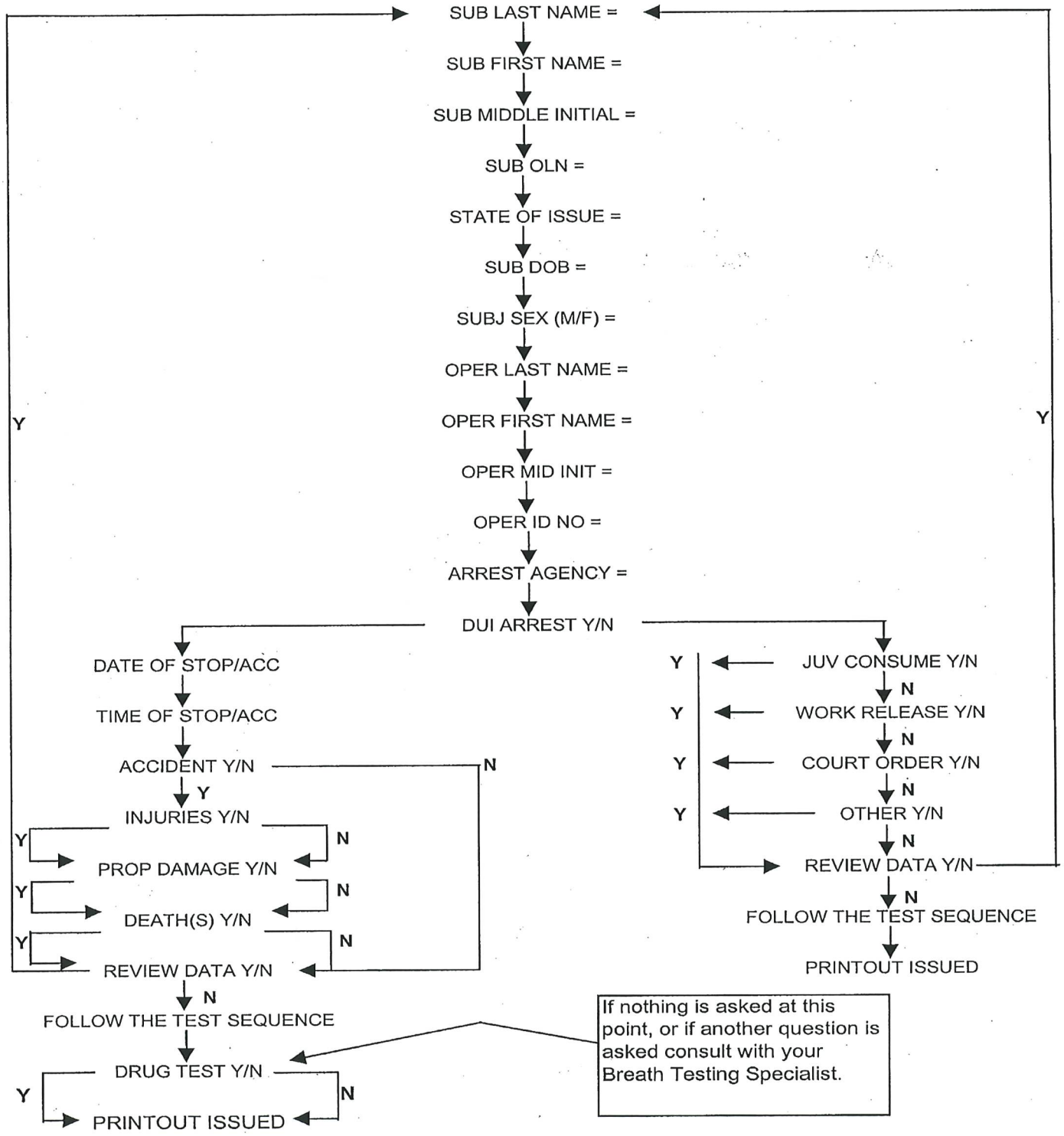
9. **"OUT OF TOLERANCE - SEQUENCE ABORTED "** - The results obtained for the calibration check were outside the high and low limits set for the solution.

10. **"CHECK AMBIENT CONDITIONS"; "INVALID TEST"** - The instrument detected a substance in its surroundings that may interfere with the breath test.

11. **"INSTRUMENT RANGE EXCEEDED"; "INVALID TEST"** - The concentration of the sample exceeded the range of the instrument set at 0.600 BrAC. This **usually** occurs from strong mouth alcohol such as breath spray or mouth wash. However, this may also indicate a possible problem with the instrument.

QUESTION SERIES FOR IDAHO TESTING PROGRAM

Upon pressing the green START TEST button the Intoxilyzer-5000 will ask you a series of questions.
Enter the appropriate data then press ENTER/RETURN to save the data and move on to the next question



EXPLANATION OF USER QUESTIONS FOR IDAHO TESTING PROGRAM

QUESTION ON DISPLAY	CARD COPY	DATA BANK	COMMENTS
SUBJ LAST NAME=	X	X	Up to 20 letters for each, no -:.'etc.
SUBJ FIRST NAME=	X	X	
SUBJ MIDDLE INIT=	X	X	Middle initial.
SUBJ OLN=	X	X	Entered as up to 20 numbers and/or letters.
STATE OF ISSUE=	X	X	Two letter postal code.
SUBJ DOB = MMDDYY	X	X	Entered as month, day, and year (e.g. 070552).
SUBJ SEX (M/F) =		X	
OPER LAST NAME =	X	X	Up to 20 letters for each, no _:.'etc.
OPER FIRST NAME=	X	X	
OPER MID INIT =	X	X	Middle initial.
OPER ID NO=		X	Entered as a number w/o dashes.
ARREST AGENCY	X	X	Entered as 4 numbers; accident report code.
DRINK LOCATION		X	Entered as a 7 digit code, premise number.
DUI ARREST Y/N		X	Answer yes if person arrested for DUI.

If answer is Y: (N skips to the top of page 17)

DATE OF STOP/ACC		X	Date of stop or accident (eg. 062493).
TIME OF STOP/ACC		X	2400 hour military time.
ACCIDENT Y/N		X	Answer yes if person was in an accident.

If answer is Y: (N answer skips next questions only)

INJURIES Y/N		X	Was anyone injured?
PROP. DAMAGE Y/N		X	Was there any property damage?
DEATH(S) Y/N		X	Was anyone killed?
REVIEW DATA Y/N			If you want to check answers, use Y.

On DUI tests a question is asked after a complete breath test is conducted and the subject did not refuse any samples.

DECP/DRE Y/N		X	One question or the other activated; answer
DRUG TEST Y/N		X	yes if you are going to ask the subject to give a blood sample and/or a urine sample for drug testing.

Printout is issued and test is complete.

QUESTION ON DISPLAY	CARD COPY	DATA BANK	COMMENTS
DUI ARREST Y/N if answer is N:			
JUV. CONSUME Y/N		X	Illegal consumption.
WORK RELEASE Y/N		X	
COURT ORDER Y/N		X	Court ordered test.
OTHER Y/N		X	Any other reason not covered above.
REVIEW DATA Y/N			If you want to check answers, check Y.
Complete breath test conducted and printout issued.			End of test.

OTHER INFORMATION

Other information such as the lot number, values obtained for simulator checks, and data for the simulator counter can be found on the printout. This information is also stored in the data bank.

ITEM	CARD COPY	DATA BANK	COMMENTS
LOT NUMBER	X	X	Entered by the breath testing specialist 10 alphanumeric characters.
SIMULATOR COUNTER	X	X	Counts the number of calibration checks that has been performed with a particular solution.
SIMULATOR CHECK	X	X	The results of the calibration check performed during the testing sequence.

DISPLAY MESSAGES AND COMMANDS

The Intoxilyzer 5000 breath analysis instrument visually communicates by displaying the following messages and commands. Commands "flash" to indicate that the instrument expects a response. For operator responses to instrument messages or "UNSTABLE REF", refer to TROUBLE SHOOTING INSTRUMENT MESSAGES Pages 22-25.

MESSAGE OR COMMAND	MEANING
"NOT READY"	The instrument is purging the sample chamber and initializing the computer, processor, and printer.
"PROM CHECK ####"	The instrument is finding a checksum of all program bytes and is comparing it to an internal checksum.
"TEMP CHECK"	The instrument is checking the temperature of the sample chamber.
"RAM CHECK ##"	The instrument is checking each byte in RAM for possible failure.
"PROCESSOR CHECK"	The computer is testing the output of the processor, the stability of the signal, and the speed of the filter wheel.
"PRINTER CHECK"	The instrument is checking the movement of the printer head.
"CAL. CHECK"	The instrument is performing a calibration check by analyzing the vapor produced from the simulator solution.
" INVALID LOT NO"	An invalid lot number was entered during the instrument setup.
"INTERNAL STD"	The instrument is checking to see if the internal standards are within their operational range.
"DIAGNOSTIC OK"	The instrument did not find a malfunction while performing diagnostic checks on its components and operational standards.

MESSAGE OR COMMAND	MEANING
"CLOCK ERROR" "PROM ERROR ####" "TEMP ERROR" "PRINTER ERROR" "RAM ERROR"	The instrument is indicating where a malfunction exists. The number following "RAM ERROR" denotes the actual address location of error.
"PROCESSOR ERROR 1"	No sync pulse was found. A problem exists in the sync pulse chain.
"PROCESSOR ERROR 2"	The sync pulse rate is out of range.
"PROCESSOR ERROR 3"	An unacceptable negative processor drift was found.
"PROCESSOR ERROR 4"	An unacceptable positive processor drift was found.
"PROCESSOR ERROR 5"	The processor's reference value is out of range.
Rolling across the display - "INTOXILYZER MODEL 5000 --- PUSH BUTTON TO START TEST"; "PUSH BUTTON (flashing)"; "TIME ##HR ##MIN"	The instrument is ready for operation; you may begin a test by pushing the Start Test button.
"INSERT CARD (flashing)"	The instrument is requesting that an evidence card be inserted.
"AIR BLANK"	The instrument is purging the sample chamber and internal and external breath tubes.
"TIME ##HR ##MIN"	Local time.
"DATE MM/DD/YY"	Current date.
"}}}}..."	The instrument is establishing a zero reference point.

MESSAGE OR COMMAND	MEANING
"UNSTABLE REF"	The microprocessor was unable to obtain a stable reference signal from the processor. The instrument halts the test.
"PLEASE BLOW INTO MOUTHPIECE UNTIL TONE STOPS"; "PLEASE BLOW/R (flashing)"	The instrument is requesting the subject to blow into the mouthpiece until the tone stops. The tone does not actually stop until the subject (with alcohol on the breath) stops blowing. Starting when this command appears on the display, the subject has three minutes to deliver an adequate breath sample. If the subject does not provide a sample in this time the instrument will automatically printout a refusal. Another method for obtaining a refusal is to press the green START TEST button while the message "PLEASE BLOW/R" is displayed.
"PLEASE BLOW (flashing)"	The subject stopped blowing before providing a sufficient sample. "PLEASE BLOW" flashes and a beep sounds every five seconds until the subject begins blowing, or until three minutes have lapsed from the time the instrument initially requested the subject to blow into the mouthpiece.
"SUBJECT TEST .##"	The instrument is displaying the subject's breath alcohol concentration in grams per 210 liters of breath.
"AIR BLANK .##"	The instrument is displaying the amount of alcohol remaining in the sample chamber while the sample chamber is being purged. Accordingly, during the purge operation, the number following "AIR BLANK" gradually decreases to .00.
"CAL. CHECK .###"	The instrument is displaying the simulated vapor concentration obtained for the calibration check.

MESSAGE OR COMMAND	MEANING
"INT STD PASS"	The internal standards were within the operational range of the instrument.
"TEST COMPLETE"	The test and all printing are complete.
"INVALID TEST"	Either the Start Test button was pushed at the wrong time or the evidence card was pulled from the printer. The instrument cancels the test.
"INVALID SAMPLE"	The subject's breath sample contains residual mouth alcohol.
"INHIBITED - RFI"	High level radio frequency interference is present. The instrument cancels the test.
"DEFICIENT SAMPLE"	The subject did not supply an adequate breath sample within three minutes.
"INTERFERENT"	The subject's breath sample contains a substance, such as acetone, that absorbs infrared energy at the same frequencies that alcohol absorbs. When this occurs the instrument completes the mode sequence, and prints "INTERFENT DETECTED HAVE BLOOD DRAWN" on the evidence card.

TROUBLE SHOOTING INSTRUMENT MESSAGES

DIAGNOSTIC INSTRUMENT MESSAGES

Given below are the instrument messages that may appear on the display during the diagnostic checks and the actions you should take in response to a given instrument message:

DISPLAYED MESSAGE	CORRECTIVE OPERATOR ACTIONS
"PROM ERROR ###"	Call a Breath Testing Specialist for any of these instrument messages.
"TEMP ERROR"	
"PRINTER ERROR"	
"RAM ERROR ###"	
"PROCESSOR ERROR 3, 4, or 5"	
"INVALID LOT NO"	
"*23" The IR lamp is out.	

After completing the diagnostic checks without finding a malfunction, the instrument displays "DIAGNOSTIC OK". Next, the instrument reactivates the Start Test button and indicates that it is ready for operation by displaying the following message:

"INTOXILYZER MODEL 5000---PUSH BUTTON TO START TEST"; "PUSH BUTTON (flashing)"; "TIME ##HR ##MIN".

TIME AND DATE MESSAGES:

PROBLEMS	CORRECTIVE OPERATOR ACTIONS
Date or time incorrect.	Call a Breath Testing Specialist to reprogram date or time.
Time or date or both are erratic and "CLOCK ERROR" appears periodically on the display with a low-high warning tone.	Call a Breath Testing Specialist.

TROUBLESHOOTING INSTRUMENT MESSAGES

OTHER INSTRUMENT MESSAGES

Following are other instrument messages that may appear on the display. The instrument messages are accompanied by a low-high tone sounding intermittently for five seconds.

DISPLAYED MESSAGE	CORRECTIVE OPERATOR ACTION
"INTERNAL FAILED"	Find another method of obtaining a sample and inform your Breath Testing Specialist.
"*23" (light out)	Find another method of obtaining a sample and inform your Breath Testing Specialist.
"OUT OF TOLERANCE"	
"UNSTABLE REF"	When the display reads "INTOXILYZER MODEL 5000---PUSH BUTTON TO etc., " begin another test by pushing the Start Test button. If "UNSTABLE REF" appears again on the display, call a Breath Testing Specialist.
"INVALID TEST"	Either the Start Test button was pushed at the wrong time or the evidence card was pulled from the printer. The instrument cancels the test, prints "INVALID TEST" (if the card was not pulled from the printer), and prepares itself to start another test. When the display reads "INTOXILYZER MODEL 5000---PUSH BUTTON TO etc.", you may begin another test by pushing the Start Test button. Make sure the Start Test button is pushed only at the proper time and the evidence card remains in the card slot until the instrument releases it.
"INVALID TEST - SAMPLE INTRODUCED AT IMPROPER TIME"	The subject blew into the mouthpiece at the wrong time. Most likely the breath sample was introduced during the "AIR BLANK". Restart the test and have the subject blow when the "PLEASE BLOW/R" message is displayed.

DISPLAYED MESSAGE	CORRECTIVE OPERATOR ACTION
"INVALID TEST - INSTRUMENT RANGE EXCEEDED"	The concentration of the sample exceeded the range of the instrument set at 0.600 BrAC. This **usually** occurs from strong mouth alcohol such as breath spray or mouth wash. However, this message may also indicate that there is a problem with the instrument. You may opt to perform another subject test, or find another method of obtaining a sample (see page 27).
"INVALID TEST - CHECK AMBIENT CONDITIONS"	The instrument detected a substance in its surroundings that may interfere with the breath test. Try to perform an another breath test. If you obtain this message again find another method to obtain a sample and inform your Breath Testing Specialist.
"INVALID SAMPLE"	The instrument detected residual mouth alcohol in the subject's breath sample. The instrument completes the mode sequence, prints "INVALID SAMPLE.XX" in place of "SUBJECT TEST .##", and returns to the beginning of the mode sequence. Print card also shows "REPEAT OBSERVATION PERIOD BEFORE RETESTING SUBJECT". Observe the subject for at least 15 minutes before beginning another breath analysis.
"INHIBITED - RFI"	High level radio frequency interference is present. The instrument halts the test, prints "INHIBITED RFI"; "INVALID TEST" and prepares itself to start another test. Locate the RFI source and either remove the source from the instrument's operational environment or move the instrument to a new environment free from RFI.

DISPLAYED MESSAGE	CORRECTIVE OPERATOR ACTION
"DEFICIENT SAMPLE"	The subject did not provide an adequate breath sample within three minutes. The instrument displays "SUBJECT TEST .##" (the highest value obtainable from the given breath samples) and completes the mode sequence. On the evidence card, the instrument indicates the highest obtainable value by printing an asterisk (*) before "SUBJECT TEST .##". The asterisk (*) is a cross reference to the message printed at the bottom of the evidence card: "*DEFICIENT SAMPLE - VALUE PRINTED WAS HIGHEST OBTAINED".
"INTERFERENT"	The subject's breath sample contains a non-alcohol substance that absorbs infrared energy. The instrument compensates for the amount of infrared energy absorbed by some substances and completes the test. Print card shows "INTERFERENT DETECTED HAVE BLOOD DRAWN".
"NO RESPONSE FROM SIMULATOR"	The 68 series has a cable connection between the Guth digital simulator and the instrument. This message means the instrument is not getting needed information from the simulator. If no error codes are displayed on the simulator, the BTS may be able to work around this problem.

TONES

In addition to communicating through displayed messages and commands, the Intoxilyzer 5000 breath analysis instrument also communicates by sounding three distinct tones:

1. A beep sounds after the completion of each mode (operation).

2. A continuous tone sounds while a subject blows into the mouthpiece.

3. A low-high tone sounds intermittently for five seconds in the event of a malfunction, incorrect operational procedure, unfulfilled test requirement, or when START is pressed for a refusal.

Starting when the instrument displays the command "PLEASE BLOW INTO MOUTHPIECE UNTIL TONE STOPS"; "PLEASE BLOW/R (flashing)", the subject has three minutes to deliver an adequate breath sample. If the subject stops blowing before delivering an adequate breath sample and before the lapsing of three minutes, "PLEASE BLOW" flashes on the display and a beep sounds every five seconds. The beeping stops when the subject again begins to blow or the three minutes have lapsed.

Evidence Card Jammed in Printer

If an evidence card jams in the printer, push the Start Test button. The instrument will invalidate the test and try to return the evidence card. If the instrument does not return the evidence card, gently pull the card from the printer. In the event that a section of the card tears off and remains jammed in the printer, turn the instrument "off" and consult a Breath Testing Specialist.

General Malfunctions

In the event of a general malfunction (e.g., the display gives erratic information), take the following action(s):

1. Push the Start Test button.

2. If pushing "Start Test" fails to correct the malfunction, call a Breath Testing Specialist.

Preventative Maintenance

1. To assure adequate clearance and ventilation, locate the instrument at least one inch away from a back wall and on a hard surface (i.e., not on a surface covered with a rug-like material).

2. Keep the instrument away from extremes of temperature. The instrument's operational temperature range is 68°F to 86°F (20°C to 30°C); storage temperature range is -20°F to 140°F (-29°C to 60°C).

3. Keep the instrument clean and away from dust; any good glass cleaner, such as 409, can be used to clean the instrument's outer surface.

   a. **Spray the cleaner on a cloth and wipe. Never spray directly onto the instrument.**

4. Do not place heavy objects on top of the instrument.

5. Never place anything containing a liquid on the instrument, this includes coffee and soda pop.

OTHER METHODS OF OBTAINING A SAMPLE

If a valid breath sample cannot be obtained from the breath testing instrument you are using, you may elect to obtain a sample using one of the following methods:

1. **A Breath Sample**: Another instrument approved for evidentiary testing in the State of Idaho may be used to obtain a sample. This does not have to be the same type of instrument that was originally used to obtain a sample. Backup instruments and neighboring agencies instruments are all good sources for obtaining a valid breath test.

2. **Blood Samples for Alcohol Determination:** Use a kit that provides 10 milligrams of sodium fluoride per cubic centimeter of blood and an anti-coagulant as required by IDAPA 11.03. The Becton Dickinson #4994, the Terumo T-100 AK (Venoject), and the Peavey 5786 all meet this requirement. However, the Becton Dickinson 4990 does **not** meet the requirement for concentration of sodium fluoride. Most agencies use the Tri-Tech kits supplied by our Pocatello laboratory (208-232-9477).

   NOTE: Other kits may be used if they provide the required amount of sodium fluoride and utilize a non-alcoholic swab.

   The blood should be drawn only by authorized medical personnel as defined in section 18-8003 of the Idaho Code.

3. **Urine Samples for Alcohol Determination**: must be collected in urine collection kits supplied by ISPFS, or other suitable kits providing a tight seal and adequate volume.

   1. **Urine alcohol results may be of questionable value**.

   2. Any urine sample should be collected in urine kits supplied by ISPFS and sealed tightly prior to delivery to the laboratory.

   3. Proper procedure for a valid urine alcohol analysis requires the subject to "void" (empty bladder) and wait the necessary time (approx. 20 minutes) to deliver the actual evidentiary sample.

      a. Note: when collecting urine for the analysis of inhalants or other drugs, it is not necessary to perform a "void" and any initial urine sample that is collected may be used for this purpose.

   4. For best results, urine samples collected for alcohol determination should be frozen or refrigerated and delivered to the appropriate ISPFS laboratory as soon as possible.

GENERAL INFORMATION: QUESTIONS AND ANSWERS

Q. What if I have problems with running the Intoxilyzer 5000?

a. Do not try to solve them yourself. Contact your agency's Breath Testing Specialist he/she is trained to resolve many problems you may encounter with the Intoxilyzer 5000.

Q. Who can run the Intoxilyzer 5000?

a. Any individual certified as an operator by the Idaho Department of Law Enforcement, Idaho State Police Forensic Services, may operator the Intoxilyzer 5000. Certification will be periodically renewed and governed by policy as outlined in the SOP.

Q. How are calibration check and maintenance records to be kept?

a. All records associated with breath testing are to be kept and maintained at the agency. They are to be kept in accordance with the procedures followed by the agency for such records. However the breath testing specialist is responsible to see that this is accomplished.

Q. How long must our agency keep printouts, log sheets, certification records, and maintenance records?

a. To comply with IDAPA rules and regulations they must be maintained for a period of three years.

Q. Why must the results be entered on the log sheet?

a. The log, in lieu of the printout, is the official legal record of all test results. If the printer fails to operate, or if the printout is later lost, or unreadable, the test is still legally acceptable provided the results are recorded correctly on the log sheet.

Q. Can the Intoxilyzer 5000 detect acetone and other interferents?

a. Yes. The instrument will check for acetone and other interferents during the subject test. If an interfering substance is detected the instrument will display "INTERFERENT", complete the test, and print the results. The instrument will also print "INTERFERENT DETECTED HAVE BLOOD DRAWN."

Q. What if the subject provides one breath sample, but refuses to blow a second time?

a. The second sample is required to meet the guidelines for the administration of a legal test on the Intoxilyzer 5000. If the subject refuses to blow the second time, press the green START TEST button when "PLEASE BLOW/R" shows on the display. If the lack of a second sample is the fault of the subject then the first sample is valid for use in court (SOP section III).