BREATH TEST PROGRAM POLICY AND PROCEDURE MANUAL

PURPOSE STATEMENT

This notebook should contain the most recent written policies and procedures followed by personnel within the Breath Testing Program. Generally, these policies and procedures exceed the requirements of the Washington Administrative Code (WAC 448-l3) and reflect an attempt to ensure the highest possible confidence in the Breath Testing Program.

These forms have been developed primarily by personnel within the Breath Test Program. In some cases, the State Toxicologist has had input where appropriate. Some forms reflect the language of appropriate court rules. All forms are subject to revision when appropriate to improve the overall program. When a revision of imperative nature results, a Policy/Form Revision Directive shall be issued to Breath Test Section personnel to update the manual. This manual is intended to be published yearly and will include a revision section outlining revisions from the previous year.

All records generated as a result of repairs, maintenance, or Quality Assurance of Datamaster instruments used for evidential purposes shall be maintained according to the protocols described in this manual. Program personnel are to follow all policies and procedures whenever reasonably possible. Deviation may be justified under certain circumstances where the manual does not provide specific guidance. This is designed to provide program guidance and uniformity while still allowing for professional judgement.

Policy/Form Revision Directive

The following outline summarizes revisions made to the Breath Test Section Policy and Procedure Manual effective June 27, 2000.

The following will list the location and a brief description of revisions made.

	Location	Description
1.	Cover page	Approval date revised.
2.	Contents	Revised to reflect changes.
3.	Page 1	Data entry for "Citation Number" and PBT
4.	Pages 2-4	Removed reference to daylight savings time in point 4 on page 4, removed reference to page numbers
5.	Page 6	Added "oscilloscope"
6.	Page 11-12	Removed point 6.c. and added point 10.e.
7.	Page 15	Revised Interpretation Guide to be consistent with what appears on database printout for software version 76016
8.	Pages 16-20	Removed requirement to retain Datamaster installation form (484.BTS), removed point B.2.b., revised point B.2.e., revised the Simulator Solution Replacement Record part B.5., removed reference to specific page numbers
9.	Page 24	Revised question #9 and added question #11
10.	Page 25	Revised the introductory paragraph
11.	Page 26	Removed material related to older hardware and software versions. Added instruction regarding the batch number. Removed reference to ext. stnd. pump.
12.	Page 27-32	Revised introduction, revised point b.1. on page 28, revised point B on page 29, revised O.1. on page 30, added P.2. on page 31, revised II.B. on page 32, added III.C. on page 32
13.	Page 33	Added calibration batch # and all simulator numbers
14.	Pages 34-36	Added point 3 under "Responsibilities", added point 4 on bottom of page 34, revised points 9 and10 on page 35
15.	Page 37	Added column for "Technician"
16.	Pages 38-39	New sections relating to testing simulator thermometers
17.	Page 40	Added introductory paragraph
18.	Page 43	Revised Printer Error, Simulator Out of Range, Added Jammed/Illegible
19.	The following forms were removed:	Parts Inventory Status forms, Data entry for older software, Parts Requisition, Discovery Report Interpretation Guide, WAC Rule Calculations for Two Digit Results,
20.	All Pages	Dates and page numbers changed on all pages even where contents of the page did not change.

WASHINGTON STATE PATROL
BREATH TEST SECTION

BREATH TEST PROGRAM POLICY AND PROCEDURE MANUAL

Contents

6/27/00

Copies of forms that are to be at all Datamaster Locations:
Breath Test Document
DUI Arrest Form Packet
Case Report/Witness/Suspect Statement

6/27/00

WASHINGTON STATE PATROL
BREATH TEST SECTION

DATA ENTRY FOR BREATH TEST SECTION PERSONNEL
Software Version 76016

For <u>uniformity</u>, the following data entry codes should be used by Breath Test Technicians and Solution Changers when running breath tests for new solution, tests, etc. that will appear on the database.

Simulator temp.?	Y
Observation Began	00:00
Citation Number	NEW/SOLUTION, SOLUTION or TEST
Operator	Correct Name
Arresting Agency	WSP1057
Subject's Name	NEW/SOLUTION, TEST, TEST/"TECHNICIAN'S OPTIONS"
Subject's DOB	00/00/00
Subject's Sex	M
Subject's Ethnic Group	U
D.L. State/Number	OO
County of Arrest	00
Crime Arrested For	00
Collision Involved?	N
Drinking Location	0O000000
Batch #	Correct Number
PBT TEST GIVEN? (Y/N):	N

WASHINGTON STATE PATROL
BREATH TEST SECTION

PROCEDURE FOR COMPLETING DATAMASTER
REPAIR/ADJUSTMENT FORM

The following procedure shall apply when completing the Datamaster Repair/Adjustment Form (209.BTS). This policy shall apply to those repairs made to field instruments and not subcomponents thereof, which have been replaced. The purpose is to provide guidelines for when it is to be completed and the information it should contain.

1.   The form is to be completed only by Certified Breath Test Technicians.

2.   The form shall be written clearly and concisely to allow others to interpret the information.

3.   The form needs to be completed only in the following situations:

        A.   Following the instrument's initial Quality Assurance.

        B.   Replacement of any components or parts.

        C.   Repair to any components or parts.

        D.   Adjustment to any potentiometer that is <u>outside</u> of manufacturer's specifications.

        E.   Adjustment of the clock either at the instrument or from the host computer that is more than 10 minutes off. (See 4-C)

        F.   Replacement of simulator.

        G.   Simulator repairs for the following reasons:

                1.   Replacing the thermometer.

                2.   Temperature adjustment that is outside $34^{o}C$ +/- $.2^{o}C$.

                3.   Repairing simulator stirring mechanism.

        H.   Instrument Re-calibration.

I. Other necessary repairs or adjustment to restore an instrument to proper working order.

J. When a repair is performed requiring the form to be completed, a complete breath test will be conducted according to the procedure outlined in the Simulator Solution Changing Procedure and noted on the form.

K. Replacement of any printed circuit boards will require checking of the electrical voltages.

4. The form shall not need to be completed in the following situations:

A. Prior to the instrument's initial Quality Assurance.

B. Powering the instrument off and on to clear a lock-up condition.

C. When changing time to correspond to changes in daylight savings time.

D. When removing a stuck ticket when there is no apparent problem with the printer.

E. When problem is due to operator error.

F. Obtaining copies of ticket for operators when there is no apparent printer problem.

G. When complaint is "system won't zero", "printer error", "calibration error", "radio interference", "CRC error", etc. and the problem is corrected on a subsequent test. A record of these situations is preserved in the database.

H. When the problem is corrected over the phone with an operator or solution Changer.

I. When performing routine purging of the instrument.

J. When replacing simulator tubing.

K. When an instrument is transferred to a permanent training status.

L. When replacing a normally worn or faded printer ribbon.

5. When completed, the original copy shall be sent to and retained by the Washington State Patrol, Breath Test Section, Seattle. Copies of the form are to be kept in the office of the Technician having geographical responsibility for a particular instrument.

WASHINGTON STATE PATROL
BREATH TEST SECTION

REPAIRS AND/OR ADJUSTMENTS ON DATAMASTER

Instrument Location _____   Serial #_____

Complaint(s) Reported:

Technician Evaluation and Action Taken:

Technician_____   Complete Breath Test

| | WORK BEGAN | | LOCATION OF WORK | SERVICE TIME |
	DATE	TIME		
FIELD				
LAB				
FACTORY				

209.BTS

WASHINGTON STATE PATROL
BREATH TEST SECTION
DATAMASTER TECHNICIAN EQUIPMENT INVENTORY

Name_____   _____   _____

        Last   First   M.I.   Pers. #   Work Location

Number of Datamasters you are responsible for _____

Indicate the number (quantity) of the following state-issued items in your possession.

_____ **Plastic tool box**
_____ **Pliers (6")**
_____ **Needle-nose pliers (5-1/2")**
_____ **Needle-nose pliers (4-3/4")**
_____ **Wire stripper (5")**
_____ **Dikes (4")**
_____ **Stubby screwdriver (1/4" tip)**
_____ **Regular screwdriver (8" long, 1/8" tip)**
_____ **Regular screwdriver (8" long, 3/16" tip)**
_____ **Regular screwdriver (8" long, 1/4" tip)**
_____ **Phillips screwdriver**
_____ **Crescent wrench (6")**
_____ **Crescent wrench (4")**
_____ **Nut driver (11/32")**
_____ **Nut driver (1/4")**
_____ **Datamaster key**
_____ **Allen wrench**
_____ **Soldering iron with stand**
_____ **Jeweler's screwdriver or small screwdriver**
_____ **Quick-wedge screwdriver**
_____ **Fiberglass screwdriver**
_____ **Digital Multi-meter (w/two 5-1/2" probes)**
              Serial #_____ State Tag #_____
_____ **IC extractor tool**
_____ **Exacto knife**
_____ **Mini-grabbers**
_____ **Pager #_____**
_____ **Handheld Radio #**
_____ **Oscilloscope Serial#_____ State Tag #_____**

List all other State issued tools and equipment_____

_____

_____

_____   _____
Technician's Signature   **Date**

_____   _____
Signature of Person Checking Tools Back In   **Date**
211.BTS

WASHINGTON STATE PATROL
BREATH TEST SECTION

COMPLETING THE AFFIDAVIT WHEN DATAMASTER
NOT IN PROPER WORKING ORDER

The following shall be the policy of the Breath Test Section regarding the completion of the affidavit (212b.BTS) when the Datamaster is <u>not</u> in proper working order. The completion of this form shall be at the discretion of the Breath Test Technician in cooperation with the local courts. If completed, it shall be in accordance with the following guidelines. This is to comply with the rule of the court CrRLJ 6.13 subsection (C)(2).

1.   The affidavit shall be completed only after a technician performs one of the following repairs:

   a.   Replace CPU Board

   b.   Replace Detector

   c.   Replace Detector Block

   d.   Replace Detector Board

   e.   Disassembly of Sample Chamber

   f.   Recalibration (Except when performed in association with the Quality Assurance Procedure)

2.   Following one of the above listed repairs the technician must perform the Datamaster Quality Assurance Procedure.

3.   The affidavit shall be completed by the technician performing the quality assurance procedure.

4.   The date and time on the affidavit will be when the technician determines that one of the repairs listed in part 1 above is necessary and the instrument is removed from service.

5.   The date and time of successful completion of the Datamaster Quality Assurance Procedure will be recorded on the affidavit indicating when the instrument was again in proper working order.

6.   The paragraph indicating when the instrument was "...examined, tested and certified..." shall be completed <u>only</u> if the technician performing the repair was also the one who completed the most recent Datamaster Quality Assurance Procedure. If not, then this section shall remain blank.

DATAMASTER CERTIFICATION

I,_____ , do certify under penalty of perjury as follows:

I am employed by _____ and am certified by the state toxicologist by virtue of applicable regulations and statutes.

On _____(date) at _____(time) I examined, tested and certified a DataMaster instrument with serial No. _____according to the methods established and approved by the state toxicologist.

I further certify that said instrument was, on that date, in proper working order.

_____
Signature of Technician

Dated:_____

State of Washington
County of _____

Signed and sworn to (or affirmed)
before me on _____ by

_____
(Signature of notary public)

Residing at_____

_____
My appointment expires_____

212a.BTS

DATAMASTER CERTIFICATION

I,_____, do certify under penalty of perjury as follows:

I am employed by _____ and am certified by the state toxicologist by virtue of applicable regulations and statutes.

On _____(date) at _____(time) I examined, tested and certified a DataMaster instrument with serial No. _____ according to the methods established and approved by the state toxicologist.

I further certify that said instrument was, on that date, in proper working order.

_____
Signature of Technician

Dated:_____

State of Washington
County of _____

Signed and sworn to (or affirmed)
before me on _____ by

_____

_____
(Signature of notary public)

Residing at_____

_____
My appointment expires_____

212a.BTS

DATAMASTER CERTIFICATION

I,_____, do certify under penalty of perjury as follows:

I am employed by _____ and am certified by the state toxicologist by virtue of applicable regulations and statutes.

On _____(date) at _____(time) I examined, tested and certified a Data Master instrument with serial No. _____ according to the methods established and approved by the state toxicologist.

I further certify that said instrument was not in proper working order on _____(date) at _____(time).

I further certify that said instrument was repaired or corrected as required on_____(date) at _____(time) and said instrument was again in proper working order.

_____
               Technician

Dated:_____

212c.BTS

6/27/00

WASHINGTON STATE PATROL
BREATH TEST SECTION

ALCO-SENSOR III (PBT) CERTIFICATION PROTOCOL

1.   Obtain certified 0.082 g/210L ($\pm$ 0.002) gas standards.

2.   If using a Tru-Cal device, this will determine the concentration and will be the value that the PBT will be certified and/or calibrated to. If not using a Tru-Cal device, refer to the altitude chart on the side of the tank for the correct reference value.

3.   Verify the PBT temperature is between 20^0 and 36^0 C.

4.   Push **SET** button. Push and hold the **READ** button.

5.   The digits should go to 0.003 or less within 10 seconds. If the digits do not go to 0.003 or less, push **SET**, wait one minute and push and hold the **READ** button again**.**

6.   Attach the mouthpiece in one of the following configurations:

      a.   Attach the clear mouthpiece with the saliva trap to the straight white tube first. Then attach the straight white tube to the instrument receptacle.

      b.   Attach the straight white mouthpiece with one-way valve so that the air will flow in the proper direction.

7.   Attach mouthpiece to the gas standard source and provide the sample. Allow approximately three seconds of gas flow.

8.   Push and hold the **READ** button while the sample is still being provided. Continue to hold the **READ** button until the result stabilizes.

9.   Observe digital reading to determine if acceptably accurate.

      a.   If the results are within $\pm$ 0.010 g/210L from the reference value for the gas standard, the PBT <u>is</u> properly calibrated and acceptably accurate and only one test is necessary. Proceed to step 11.

      b.   If the result is not within the acceptable limits, proceed to step 10.

10.   Calibrating the PBT Instrument

      a.   If the result is outside $\pm$ 0.010 g/210L of the reference value, first zero the instrument to 0.003 or less, then turn the calibration screw clockwise two full turns.

b. Re-introduce the gas standard and while holding the READ button, turn the calibration screw counter-clockwise slowly to value on gas standard. Avoid adjusting to below the reference gas standard value during this procedure.

c. Repeat steps 1 through 10 as often as necessary to obtain results within the acceptable range.

d. If results following calibration are acceptable, only perform one certified test as required in step 9.a.

e. Where instruments are not outside ± 0.010 g/210L, technicians are authorized to make small calibration adjustments without first turning the calibration screw clockwise two full turns. Following all calibration adjustments, a complete test will be performed according to steps 1 through 9.a. outlined above.

11. Record Keeping:

a. Complete the Alco-Sensor III (PBT) Certification Record

b. Record results to three decimal places.

c. Note if it was necessary to calibrate the instrument.

12. The PBT instruments are to be certified at least every 6 months.

WASHINGTON STATE PATROL
BREATH TEST SECTION

ALCO-SENSOR III (PBT) CERTIFICATION RECORD

PBT STATE TAG _____

PBT SERIAL NUMBER _____

Date	Gas Standard Number	Gas Standard Value	Gas Standard Exp. Date	Results	Recalib. (Y/N)	Results	Technician

210.BTS

6/27/00

WASHINGTON STATE PATROL
BREATH TEST SECTION

DATAMASTER CODES

DATABASE   DISPLAY

1.*   **SYSTEM WON'T ZERO** - Unable to zero detector voltage.

2.   **TEMPERATURE LOW** - Sample chamber temperature falls to 45 C or below.

3.   **TEMPERATURE HIGH** - Sample chamber temperature raises to 55 C or above.

5.*   **RADIO INTERFERENCE** - Radio frequencies detected.

6.   **FATAL SYSTEM ERROR (ADDRESS)** - Random Access Memory (RAM), Read Only
                          Memory (ROM), or Peripheral Interface Adapter
                          (PIA) not responding properly.

7.*   **CALIBRATION ERROR** - Internal standard does not read within 10% of the value determined
                          at time of calibration.

8.*   **PRINTER ERROR** - Printer not responding properly.

9.*   **RAM ERROR (ADDRESS)** - RAM checksum does not match that calculated following last write.

10.   **PUMP ERROR** - Flow detector does not detect pump operation.

11.   **BLANK ERROR** - Instrument obtains reading greater than .003 during blank test.

12.   **DETECTOR OVERFLOW** - Detector output exceeds the 1.999V that is readable by the
                          instruments Analog/Digital convertor.

13.   **FILTER ERROR** - Filter solenoid not activating properly.

15.   **SIMULATOR OUT OF RANGE** - Simulator reading outside acceptable limits.

17.   **DATA MEMORY BATTERY LOW** - RAM battery backup failing.

19.   **AMBIENT FAIL** - Ethanol or other substance detected in sample chamber after purge.

20.   **SAMPLES OUTSIDE 10%**

V :   **INVALID SAMPLE**

X :   **INTERFERANT**

*   Old database codes

DATAMASTER
DISCOVERY REPORT INTERPRETATION GUIDE
SOFTWARE VERSION 76016

Column Heading	Meaning
Date	Date of the test
ObsTime	Time that observation began
Operator	Name of the instrument operator
Citation	Citation number
T	A code for test type (1=breath test, 2=supervisor test, 9=error code)
S.Tm	Simulator temperature (Y=temperature okay, if not acceptable no record will be retained in database)
Agency	Code for the arresting agency
DOB	Subject's date of birth
Sex	Subject's sex
Race	Subject's race
License	Driver's license number
Co	County of arrest
Cr	Crime arrested for
Acc	Accident involved (Y=Yes N=No)
DrinkLoc	Last drinking location
Batch	Simulator solution batch number
IS[1]	Value of internal standard
BA1	Number of attempts for first breath test
ET1	Exhalation time in 0.25 second increments
BrAC1[2]	Result of first breath test
B1.Time	Time of first breath test
Sim[3]	Result of simulator standard
S.Time	Time of simulator standard test
BA2	Number of attempts for second breath test
ET2	Exhalation time in 0.25 second increments
BrAC2[2]	Result of second breath test
B2.Time	Time of second breath test
PBT	PBT result
Err	Code for the type of error in an error record

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[1] A leading zero and a decimal point should be added (e.g., 88 = .088)

[2] There will be no leading zeros and no decimal points (e.g., 165 = .165 and 73 = .073)

[3] There will be no leading zeros and no decimal points (e.g., 104 = .104 and 98 = .098)

WASHINGTON STATE PATROL
BREATH TEST SECTION

FILING POLICY FOR THE BREATH TEST SECTION

The following procedures describe the filing of documents within the Breath Test Program. This will be the policy to be followed by individuals within the program that maintain files relative to breath test instruments. The intent is to provide uniformity throughout the program and ensure proper documentation. Records may also be kept in electronic format capable of producing a paper copy where appropriate. Technicians are allowed to exercise discretion where unique issues justify departure from the following policies.

A.   FILES TO BE MAINTAINED

      l.   Evaluation file - This will include the four page Datamaster Evaluation Procedure (WSP-BTS-479). This file will also include documentation on repairs or changes performed on the instrument prior to initial Quality Assurance Procedure. This file will only contain forms for instruments evaluated prior to 9/1/90.

      2.   Quality Assurance file - This file will be kept following the completion of an initial Quality Assurance Procedure. This file will not be added to if an instrument is transferred to a permanent training status. This file will include the following forms:

          a.   All completed quality assurance procedures - Datamaster Quality Assurance Procedure (480.BTS-481.BTS). The associated printout documents shall also be retained but may be stored in a separate location.

          b.   All Repairs and/or Adjustments on Datamaster (209.BTS) forms.

               1)   Exception: If an instrument is assigned permanently to a training function then repair records will no longer be kept. Prior to reinstallation in the field a quality assurance procedure will be performed.

          c.   Instrument Status Report (485.BTS).

          d.   Repair documentation provided by the manufacturer.

      3.   Affidavit file - When affidavits are completed in accordance with CrRLJ 6.13, copies shall be maintained in a file.

4. Database file - Where necessary, a database file on each instrument will be maintained. This will contain database information from which copies can be made for discovery purposes.

B. FORMS AND RECORDS TO BE MAINTAINED

1. Datamaster Evaluation Procedure (WSP-BTS-479).

   a. This will only apply to instruments evaluated prior to 9/1/90.

   b. This form is to be retained in the evaluation file.

2. Datamaster Quality Assurance Procedure (480.BTS, 481-BTS).

   a. Only completed forms are to be kept.

   b. This form will be completed when an instrument is removed from a permanent training status and prior to field installation.

   c. This form will be completed in accordance with the procedure outlined in Datamaster Quality Assurance Procedure.

   d. This form will be kept in the Quality   Assurance file.

   e. The associated printout documents from a completed Quality Assurance Procedure will also be retained.

3. Repairs And/Or Adjustment on Datamaster (209.BTS).

   a. This form will be completed in accordance with Procedure for Completing Datamaster Repair/Adjustment Form.

   b. The form should only specify work performed and not opinions.

   c. Information should be brief and clear.

   d. This form will only be completed on instruments that have an initially completed Datamaster Quality Assurance Procedure.

   e. When different simulators or keyboards are installed with an instrument then this form will be completed and will indicate appropriate serial numbers and State Tag number.

f.   This form will not be kept on instruments that are in a permanent training status.

g.   This form will be kept in the Quality Assurance file.

4.   Instrument Status Report (485.BTS).

a.   This form will be kept from the time of initial installation in a field location.

b.   When the physical location of the instrument changes a notation will be made.

c.   This form will not reflect changes in simulators.

d.   The <u>original</u> of this form will be kept in the Quality Assurance file by the technician having geographical responsibility.

5.   Simulator Solution Replacement Record (483.BTS).

a.   This form will be maintained by the Technicians and Field Support Personnel.

b.   Forms will be kept for each instrument on which solutions are changed.

c.   The information to be recorded is self explanatory.

d.   The breath test document printed at the time of installing a new solution will also be retained.

6.   Affidavits addressed in court rules CrRLJ 6.l3:

Datamaster Certification 212a.BTS

Datamaster Certification 212b.BTS, 212c.BTS

a.   These forms shall be kept by the Technician having responsibility for the particular instrument.

b.   These forms will be distributed to local courts or prosecutors as determined by local policy.

c.   No copies of these forms are to be sent to the Seattle Breath Test Section.

C.   FORMS AND RECORDS DISTRIBUTION

    1.   The original of all records required to be kept within the Quality Assurance File (with the exception of the instrument status report 485.BTS and the printout documents generated from the Quality Assurance Procedure) shall be sent to and retained by the Seattle Breath Test Section.

    2.   Copies of all forms addressed in this procedure (with the exception of the instrument status report 485.BTS) shall be kept in the office of the Technician having geographical responsibility for a particular instrument.

    3.   The affidavits addressed in part B-6 above are not to be sent to the Seattle Breath Test Section.

    4.   The Seattle Breath Test Section will maintain files as required under this policy.

D.   RETENTION TIME OF RECORDS

    1.   All records addressed in this policy are to be retained indefinitely until further advised.

WASHINGTON STATE PATROL
BREATH TEST SECTION

POLICY ON RELEASE OF BREATH TEST SECTION RECORDS

1.   Whenever a request for breath test discovery, with or without a court order, is received by any technician, it will be complied with to the fullest reasonable extent.

2.   Requests must come through and be submitted back through the District Public Records Coordinator. When a Technician receives an urgent request, at their discretion, they may provide the materials back through the Public Records Coordinator.

3.   The release by a breath test technician of evaluation, quality assurance, affidavit and database records associated with the instrument(s) in question is authorized.

4.   The defendants names shall not be released to Defense Attorneys. However, attorneys may observe names as per court ruling.

5.   The Prosecutor may request the defendants names be included. However, the defendant's names are not to be provided if the Prosecutor does not request them.

6.   If the request is seeking routine records (quality assurance, maintenance, and database) on the instrument, only the records contained in the quality assurance/maintenance and database files shall be sent.

7.   Extensive requests for records other than those available to the Technician may be forwarded to the Breath Test Section in Seattle for action.

BREATH TEST SECTION PERSONNEL

Information on personnel currently qualified for the following positions is available from the State Toxicology Laboratory:

OPERATORS

INSTRUCTORS

TECHNICIANS

SOLUTION CHANGERS

This is to ensure that current lists of qualified personnel are available.

WASHINGTON STATE PATROL
BREATH TEST SECTION
<u>200 PROOF ETHYL ALCOHOL INVENTORY</u>

LOCATION_____

DATE	Received (Pints)	Distributed / Used (Pints)	Balance (Pints)	Initials

475.BTS

6/27/00

SUGGESTED PREDICATE QUESTIONS
FOR BREATH TEST SECTION TECHNICIANS

l.   Please state your name and occupation.

2.   How long have you been so employed?

3.   Please state your educational background and any specialized training you have received.

4.   What are your principle duties as a Breath Testing Technician.

5.   Are you familiar with an instrument known as the Datamaster.

6.   What is the Datamaster?

7.   Has the Datamaster breath testing instrument been approved by the Washington State Toxicologist?

8.   Are you one of the custodians of the records?

9.   According to your records did Datamaster #_____ successfully complete a Quality Assurance procedure not more than one year prior to the date of the test performed in this particular case?

10.   What is a Quality Assurance Procedure?

11.   Was the external standard simulator solution changed not more than 60 days prior to the date of the test performed in this particular case?

12.   I am showing you what has been marked as state's exhibit #_____. Can you identify this document? (Answer: A breath test document for Datamaster #_____).

13.   After reviewing that document do you have an opinion as to the accuracy and reliability of the test results indicated on that document?

14.   On what do you base that opinion?

15.   What is that opinion?

WRITTEN FORMAT FOR EXPERIMENTAL PROCEDURES

Experimental work should be properly documented in order to be of value to the reader. The following format provides a model when reporting experimental results in the Breath Test Program. This will help ensure consistency and uniformity in the sharing of information. Since different experimental contexts can vary widely the following are provided for guidance only.

I.   Introduction - State the problem or purpose of the study.

II.   Methods - Explain the equipment and steps followed in performing the study. Be careful to detail so the experiment could be repeated by another.

III.   Results - State what the results were. List the data in tabular and graphical form if appropriate.

IV.   Discussion - Draw conclusions about the results and its implication on breath testing. Make applications of results to related areas.

V.   Conclusions - Summarize your work. Emphasize important results and the conclusions to be drawn.

VI.   References - May or may not be present.

DATAMASTER CALIBRATION PROCEDURE

I.   Preliminary Guidelines:

A.   Use a certified ethanol solution from the State Toxicology Laboratory.

B.   When running a given solution during calibration, the simulator should be attached to the pump via the simulator inlet port and to the breath tube via the simulator outlet port.

II.   Procedure:

A.   Set the "ETHANOL CONCENTRATION" in the supervisory options to the vapor concentration of the gas chromatograph reference value of the certified solution. Round the four-digit State Toxicology Laboratory value to three digits.

B.   Use the F1-F2 keys on the keyboard to initiate the calibration procedure.

C.   Follow the displayed instructions.

l.   When the display reads "BLOW WATER VAPOR", introduce water vapor into the breath tube using a heated simulator. Push NOVOL (NV) if necessary to accept the sample.

2.   When the display reads "BLOW ETHANOL", introduce the known ethanol solution vapor into the breath tube until a stable reading is obtained. Push NOVOL (NV) to accept the sample if necessary.

D.   Printout and examine the CAL factors and retain the breath test document.

E.   Record the solution batch number used on the Quality Assurance Procedure report form (481.BTS).

F.   The technician shall be allowed to perform the calibration procedure as often as they determine to be necessary in order to achieve optimum instrument performance. Only the final breath test document needs to be retained.

WASHINGTON STATE PATROL
BREATH TEST SECTION

DATAMASTER QUALITY ASSURANCE PROCEDURE
SOFTWARE VERSION 76016

The quality assurance procedure described below is to be completed on instruments having software versions beginning with 76016 and including one of several possible extensions. This procedure is to be completed in the following circumstances:

1.   Prior to an instrument being installed in the field for evidentiary use.

2.   After replacing any of the following components and prior to being placed back into the field for evidentiary use:

   a.   Central Processing Unit (CPU) Board
   b.   Infrared Detector
   c.   Infrared Detector Block
   d.   Infrared Detector Board
   e.   Software

3.   After disassembly and then reassembly of sample chamber.

4.   If instrument requires recalibration for any reason.

5.   At least once every year.

I.   Procedure: The following is to be performed or personally observed by each individual testing the instrument.

   A.   Electrical Checks

      1.   Sample Chamber Control Board (Version #101226)

         a.   Flow Detector

            -Place black voltmeter lead on TP5
            -Place red voltmeter lead on bottom of R28
            -Adjust R26 to 0.200 (+/- 0.005) VDC
            -Move red lead to TP2
            -Adjust R29 to 1.30 (+/- 0.010) VDC
            -Move red lead back to bottom of R28
            -Adjust R26 to 0.020 (+/- 0.010) VDC
             (This should be double checked when instrument fully warm)

         b.   Sample Threshold

            -Leave black voltmeter lead on TP5
            -Place red voltmeter lead on TP1
            -Adjust R34 to 2.40 (+/- 0.10) VDC

      2.   Sample Conrol Board (Version #41625)

a. Breath Volume Circuit

-Place black voltmeter lead on TP5
-Place red voltmeter lead on TP8
-Adjust R26 to 0.200 (+/- 0.005) VDC
-Move red lead to TP2
-Adjust R29 for 1.30 (+/- 0.05) VDC
-Move red lead back to TP8
-Adjust R26 to 0.020 (+/- 0.010) VDC
 (This should be double checked when instrument fully warm)

b. Sample Threshold

-Leave black voltmeter lead on TP5
-Place red voltmeter lead on TP1
-Adjust R34 to 2.40 (+/- 0.10) VDC

3. Detector Board: (Test Point 4 ground).

a. Infrared Detector Cooler:

1. Test Point 1: Adjust R4 to voltage indicated on tag attached to cable coming from J37 on Detector Board ($\pm$.01) VDC.

2. If the tag listing the cooler voltage is not present, or of the detector is replaced perform the following: Turn the instrument off and let it cool down to room temperature (approximately 30 minutes). Turn the instrument on and place voltmeter across R26 on Detector Board. Adjust R4 for .475 ($\pm$.010) VDC. Recheck voltage at Test Point 1. and notate this voltage as the new Detector Cooler voltage.

b. Detector Bias.

1. Top of R45 or TP13 depending on board version: 120.0 ($\pm$0.5) VDC: Adjust R1

4. Sample Chamber Control Board:

a. IR Source Intensity

1. Activate MTR on keyboard so the Detector voltage is displayed. Adjust R16 on the Sample Control Board for a displayed detector voltage of 0.000 ($\pm$.100) VDC.

5. CPU Board: (Test point 0, or lower left corner pad is ground)

a. Analog-to-Digital Converter Reference

1. Test Point 2 or U29 pin 2: 2.00($\pm$.01) VDC: Adjust R37

6. Radio Frequency Interference (RFI) threshold: (Top of R8 ground)

        a.   Antenna must be installed.

        b.   Activate MTR on keyboard

        c.   Left side of L2. If reading is 4-6 VDC, adjust R18 clockwise (CW) to read 0-1 VDC. If reading is at 0-1 VDC, adjust R18 counter clockwise (CCW) to read 4-6 VDC. When R18 turning point is reached, turn R18   to 1 turn clockwise. When the voltage is between 4-6 VDC the MTR should display "RADIO INTERFERENCE".

B.   Calibrate the instrument according to Datamaster Calibration Procedure.   Record the batch number of the solution used on the Quality Assurance form 481.BTS.

C.   Perform steps D - M below for each of the four solution levels (0.04, 0.08, 0.10, 0.15).

D.   Fill simulator jar with certified ethanol solution prepared and tested at the State Toxicology Laboratory. Attach jar to simulator and turn on simulator.

E.   Set alcohol display to "ON"

F.   Set the supervisory test option for ten tests.

G.   Set keyboard and data collection to "OFF".

H.   Simulator check to "OFF".

I.   Sample Check to "OFF".

J.   Verify that simulator solution temperature is $34 \pm .2$C. Initial front side of Breath Test Document.

K.   Insert the document and push "SUP".

L.   When the ten tests are completed verify the simulator solution temperature is $34 \pm .2$ C, initial and retain breath test document.

M.   Calculate the mean and standard deviation of the ten measurements using the three-digit value printed for each test. The mean and standard deviation should both be rounded to and reported to four decimal places.

        1.   Determine if results meet test for precision (coefficient of variation) using the formula:

                       Standard Deviation X 100 ≤ 3.00%. mean

        2.   Determine if results meet test for accuracy using the formula:

                       Mean - Reference Value X 100 = within $\pm$ 5.00% inclusive. Reference Value

a. The Reference Value is to be determined by dividing the four digit mean value received from the State Toxicology Laboratory by 1.23.

b. The Reference Value is to be rounded to four digits.

3. The Accuracy % and CV% should both be rounded and reported to two decimal places.

N. Complete Breath Test

Set Alcohol Display to "OFF." Set supervisory test to One. Set keyboard, Simulator Check, and Sample Check to "ON."   Conduct a complete breath test on the instrument using a live subject with an alcohol free breath sample. Use the same 0.080 g/210L solution used in steps C through J above. Retain the Breath Test Document.

O. Interferant Detector Test

1. Add approximately 0.5 ml of acetone to the same 0.08 g/210 L. solution used in Steps C through J above. The acetone is to be added after the ten supervisory tests have been completed.

2. Verify the simulator solution temperature as $3\tilde{4} \pm .\tilde{2}C$, and conduct one supervisory test.

3. Verify that the instrument displays "INTERFERENCE DETECTED".

4. Push copy key and retain printout copy.

P. Filter Error

1. Using a simulator in the SUP mode, prevent the Acetone filter from going into place.The instrument should stop the test and display "FILTER ERROR" on the display.

2. Push copy key and retain printout copy.

Q. Mouth Alcohol Test

1. Set instrument up to perform a breath test. (with keyboard off)

2. A human subject is to exhale into instrument during the "PLEASE BLOW" phase shortly after rinsing the mouth and expelling a liquid containing 4 - 40 % by volume of ethyl alcohol.

3. Verify that instrument displays "INVALID SAMPLE".

4. Push copy key and retain printout copy.

R. Radio Frequency Interference (RFI) Detector Test.

1. Set the instrument up to display "PLEASE BLOW".

2. Transmit a hand held (portable) police radio in the proximity of the instrument.

3. Verify that instrument displays "RADIO INTERFERENCE".

4. Push copy key and retain printout copy.

S. Perform a Diagnostic Test and retain the breath test document.

T. Quality Assurance form 481.BTS shall be completed and signed when steps A-S have been successfully performed as described. The original completed form will be sent to the Seattle office and a copy retained locally.

U. The entire Quality Assurance Procedure shall be repeated if one of the following conditions exist during the Quality Assurance procedure:

1. Readjustment of voltages that are outside of tolerances are necessary prior to completing the Quality Assurance Procedure.

2. Any replacement of parts or components are necessary prior to completing the Quality Assurance Procedure

II. Equipment and Supplies

A. Certified simulator solutions prepared and tested at the Washington State Toxicology Laboratory.

B. Guth Model 34C or Guth Model 2100 simulator(s).

C. Breath test documents.

D. DataMaster instrument.

E. Acetone.

F. Liquid containing ethyl alcohol.

G. Hand held/portable police radio.

H. Quality Assurance form 481.BTS.

I. Repair form 209.BTS.

III. When re-installing the instrument in the field, complete the following:

A. Employ the RESET OPTIONS and CLEAR MEMORY functions with the F1/F2 keys

B. Ensure the simulator standard is set to 0.080 +/- 0.008.

C. Ensure the INTERFERENCE level is set to 0.010

Statement of State Toxicologist

In my role as the State Toxicologist and by my authority outlined in RCW 46.61.506, I recognize the above quality assurance procedure to be proper for periodic confirmation of the accuracy, precision and proper working order of Datamaster instruments. Further, I direct Datamaster Technicians to follow these procedures.

_____
Barry K. Logan, Ph.D.
State Toxicologist

_____
Date

WASHINGTON STATE PATROL BREATH TEST SECTION
DATAMASTER QUALITY ASSURANCE PROCEDURE
<u>SOFTWARE VERSION 76016</u>

Instrument serial #_____   **Date**_____

A.   Electrical Checks
      within tolerance:

C. Simulator Ethanol Tests (Guth Model 34C)

		Conc.	0.04	0.08	0.10	0.15
1.a) _____		St. Ref. Value	_____	_____	_____	_____
1.b) _____		Soln. Batch #	_____	_____	_____	_____
2.a) _____		Simulator #	_____	_____	_____	_____
2.b) _____			_____	_____	_____	_____
3.) _____			_____	_____	_____	_____
4.) _____			_____	_____	_____	_____
5.) _____			_____	_____	_____	_____

B.   _____   Calibration: Batch #_____   _____   _____   _____   _____

**   Simulator #** _____   _____   _____   _____   _____

J.   _____   Sim. Temp:34   (+/-.2)C   _____   _____   _____   _____

M.1 _____   Accurate (+/- 5.00%)   Mean _____   _____   _____   _____

M.2 _____   Precise (+/- 3.00%)   SD _____   _____   _____   _____

N.   _____   Complete Breath Test Accuracy% _____   _____   _____   _____

O.   _____   Interferant Test   CV% _____   _____   _____   _____

P.   _____   Filter Error   **R.   _____   RFI Test**

Q.   _____   Mouth Alcohol Test   **S.   _____   Diagnostic Test**

A check mark indicates successful completion of the test,or compliance with Datamaster Quality Assurance Protocol. I swear under penalty of perjury that in regards to the above listed instrument, I have complied with the DataMaster Quality Assurance Procedure (dated:06/27/2000)approved by the Washington State Toxicologist.
481.BTS

WASHINGTON STATE PATROL
BREATH TEST SECTION

SIMULATOR SOLUTION CHANGING PROCEDURE

The following procedure shall apply to the Datamaster when changing simulator solutions or installing new instruments. The simulator solution is known as the External Standard.

RESPONSIBILITIES:

1.   Only trained personnel shall change simulator solutions.

2.   Trained personnel shall be responsible for monitoring and changing simulator solutions as necessary.

3.   Solution measurements can be monitored through the host computer or by completing a supervisor test.

SOLUTION SUPPLY:

1.   Simulator solutions for field use are to be prepared only at the State Toxicology Laboratory.

2.   Solutions are available from the State Toxicology Laboratory.

3.   Responsible personnel should maintain an adequate supply.

4.   Only solutions contained within a sealed container including evidence tape and batch number are to be used.

WHEN TO CHANGE SOLUTIONS:

1.   Solutions shall be changed at least every 60 days regardless of number of tests or measurement value.

2.   The simulator solution shall have an expiration date of one calendar year following the date of its preparation.

3.   When the Datamaster instrument is removed from the facility for Quality Assurance or for repair and then re-installed.

SIMULATOR SOLUTION CHANGE PROTOCOL

1.   Turn off and disconnect simulator.

2.   Discard old solution.

3.   Dry the simulator tubing by removing excess moisture, replace tubing if necessary.

4.   Check the instrument simulator ports for obvious excess moisture and dry if necessary.

5.   The outlet tubing from the simulator should be kept as short as possible.

6.   Ensure simulator elements and jar are clean and dry, pour contents of plastic bottle into jar, remove previous label from simulator jar, tighten jar to simulator, remove label from plastic bottle and attach to simulator jar.

7.   Re-attach simulator, turn on, and secure in stand.

8.   Ensure that the correct temperature is achieved and maintained:

        $3\tilde{4}C \pm .\tilde{2}C$ (10 to 15 minutes).

        Adjust potentiometer if necessary (CW-Cooler, CCW-Warmer).

        Ensure that the power and heater lamps are working properly.

9.   Run one complete breath test entering your name for operator, "NEW/SOLUTION" for subject's name, and the solution batch number. When instrument displays "PLEASE BLOW" attempt to suck back on breath tube and ensure there is a good seal. If you are able to suck back the one way valve between breath block and three-way valve may need replacement. Provide your two alcohol free breath samples. Ensure that a correct result of 0.072 to 0.088 inclusive External Standard Result is obtained. Record the three digit result appearing on the breath test document.

10.   Keep the evidence document of the completed test. Complete the form entitled "Simulator Solution Replacement Record" (483.BTS). The expiration date is the date appearing on the solution bottle.

SIMULATOR SOLUTION CHANGE PROCEDURE CONT.

ADDITIONAL:

1.   Ensure that the instrument has adequate supplies: mouthpieces, evidence documents, alcohol influence report and implied consent form, data entry forms, code book.

2.   Ensure breath tube is warm.

3.   Check date and time and adjust if necessary.

4.   Check RFI antenna, phone connections and keyboard connections.

5.   Replace "Drinking Location Codes" in code book with updates from the Liquor Control Board.

Statement of State Toxicologist

In my role as the State Toxicologist and by my authority outlined in RCW 46.61.506, I recognize the above simulator solution changing procedure to be proper for changing the simulator solution on DataMaster instruments. Further, I direct DataMaster solution changers to follow these procedures.

_____

Barry K. Logan, Ph.D
State Toxicologist

_____

Date

WASHINGTON STATE PATROL
BREATH TEST SECTION
DATAMASTER SIMULATOR SOLUTION REPLACEMENT RECORD

SERIAL #_____

LOCATION_____

DATE	Simulator Serial #	Batch Number	Exp. Date	Temp. Correct	Results (.072 - .088)	Technician

483.BTS

SIMULATOR THERMOMETER CERTIFICATION
POLICY AND PROTOCOL

I.   Policy

   A.   All Guth Model 34C or Guth Model 2100 simulators used during the performance of field evidentiary tests or used for Quality Assurance Procedures are to use a thermometer that has been certified for accuracy at least once per calendar year.

   B.   Thermometers found to be acceptably accurate according to the following protocol are deemed to have been correct during the previous year and capable of providing accurate temperature measurements for another calendar year.

   C.   Thermometers shall be certified according to the following protocol within one year of the effective date of this policy which is June 27, 2000

II.   Protocol

   A.   Have the thermometer to be tested placed in a fully warm and equilibrated Guth Model 34C or Guth Model 2100 simulator

   B.   Install the standard reference thermometer in the same simulator in the location designed for this purpose.

   C.   Ensure that the temperatures of both the tested thermometer and the standard reference thermometer have stabilized.

   D.   Ensure the tested thermometer reads a temperature within $\pm 0.1^0C$ of the standard reference thermometer.

   E.   If the thermometer results are acceptable record "Yes" on the thermometer check record form (482.BTS).

   F.   If the thermometer results are not acceptable record "No" on the thermometer check form (482.BTS). Depending on the type of thermometer, one of the following steps may be followed:

      1. Mercury thermometer: check for separation of mercury and attempt to correct
      2. Digital thermometer: re-calibrate the thermometer
      3. After performing one of these steps, complete again the test protocol outlined above.

WASHINGTON STATE PATROL

BREATH TEST SECTION

SIMULATOR THERMOMETER CERTIFICATION RECORD

THERMOMETER SERIAL # _____

DATE	Reference Thermometer Serial #	Temp. Correct	Re-calibrated	Simulator Serial #	Technican

482.BTS

WASHINGTON STATE PATROL
BREATH TEST SECTION

DATAMASTER INSTALLATION FORM

Since the context of every instrument installation may vary widely, the following is a guide only for technicians to help ensure a thorough and complete installation.

Installation date ____/____/____   **Time**_____

Location_____

DEDICATED LINE PHONE NUMBER (_____) - (_____) - (_____)

Agency phone number near Datamaster (_____) - (_____) - (_____)

Contact at agency_____

Date of Last Quality Assurance_____

Items needed for installation:

		Serial #	State Tag #

1) _____ Datamaster………….._____   _____
2) _____ Simulator……………_____   _____
3) _____ Power cord
4) _____ Breath Tube
5) _____ RFI Antenna
6) _____ Screwdriver
7) _____ Telephone/modem connecting cord
8) _____ Tubing for simulator
9) _____ Quick-connect for simulator
10) _____ Simulator stand if necessary
11) _____ Solution w/batch number
12) _____ Evidence ticket packets
13) _____ DUI Arrest Form Packet
14) _____ Case Report/Witness/Suspect Statement
15) _____ Mouthpieces
16) _____ Informational Signs
17) _____ Codebook
18) _____ Current Datamaster Information Book
19) _____ Ensure state tag numbers for Datamaster and simulator are affixed.
20) _____ Check modem communication at office or at field location.

At installation:

21) _____ Use function keys and set/advance keys to set options and set time to WSP radio time.
22) _____ Run breath test with "new/solution" as subject.

Installed by_____

484.BTS

WASHINGTON STATE PATROL
BREATH TEST SECTION
DATAMASTER STATUS REPORT

DATAMASTER SERIAL NUMBER_____

Service Status	Location	Date	Time	Comments

485.BTS

WASHINGTON STATE PATROL
BREATH TEST SECTION

WAC RULE CALCULATIONS FOR DUPLICATE BREATH ALCOHOL RESULTS

For Three Digit Results

Pursuant to WAC 448-13-060, a valid breath test is presumed if the result of each measurement is within plus or minus ten percent (10%) of the average of the two measurements.

CALCULATION

1.   Determine the <u>average</u> of the two values. Add the two results together and divide the sum by two. This will give you the average of the two values.(use 4 decimal places)

2.   Determine the <u>lowest</u> acceptable value by multiplying the average value obtained above by 0.9, truncate to 3 places.

3.   Determine the <u>highest</u> acceptable value by multiplying the average value obtained in #1 above by 1.1, truncate to 3 places.

SUMMARY

$$\text{Average Value} = \frac{\text{First Result} + \text{Second Result}}{2}$$

<u>Average Value</u>   X 0.9 = Low Limit   (truncate to 3 decimal places)

<u>Average Value</u>   X 1.1 = High Limit   (truncate to 3 decimal places)

The range from the low to the high limit must include both sample results if the test is to be presumed valid as defined in the Washington Administrative Code.

EXAMPLE

First breath sample result: .155

Second breath sample result: .181

$$\text{Average Value} = \frac{.155 + .181}{2} = \frac{.336}{2} = .1680$$

Low Limit =   .1680 X 0.9 = .1512 = Truncate to .151

High Limit =   .1680 X 1.1 = .1848 = Truncate to .184

Since both breath sample results are in the range from .l51 to .184, the test is presumed valid as defined by the WAC.

DATAMASTER   HELPS FOR DISPLAYED MESSAGES[*]

INVALID SAMPLE	Check Mouth, wait 15 minutes, try one or more tests and then call **WSP** if fails. **TAG** instrument "Out of Service"
AMBIENT FAIL	Check for odors, check to see if mouth piece is removed, try one or more tests and then call **WSP** if fails. **TAG**
SYSTEM WON'T ZERO	Unable to zero detector voltage. Try one or more tests and then call **WSP** if fails. **TAG**
DETECTOR OVERFLOW	Try one or more tests and then call **WSP** if fails. **TAG**
RADIO INTERFERENCE	Radio transmission detected, remove source, rerun test.
CALIBRATION ERROR	Try one or more tests and then call **WSP** if fails. **TAG**
INTERFERENCE DETECTED	Try one more test, if interference is noted on the second test, request blood sample under implied consent.
SAMPLES OUTSIDE 10%	Try one or more tests. Coach the subject to provide similar samples to the instrument.
SIMULATOR OUT OF RANGE	Simulator reading outside of .072-.088 inclusive limits. Call **WSP** and **TAG** the instrument out of service. Go to another instrument to perform the test**.**
PRINTER ERROR	Call **WSP**, **TAG** the instrument out of service. Go to another instrument.
JAMMED/ILLEGIBLE DOCUMENT[**]	Printer not performing properly. Call **WSP**, **TAG** the instrument out of service. **Do not** press RUN.
BLANK ERROR	Try one or more tests and then call **WSP** if fails. **TAG**
FILTER ERROR	Try one or more tests and then call **WSP** if fails. **TAG**
TEMPERATURE LOW	Out of service, call **WSP** and **TAG**
TEMPERATURE HIGH	Out of service, call **WSP** and **TAG**
FATAL SYSTEM ERROR	Out of service, call **WSP** and **TAG**
RAM ERROR	Out of service, call **WSP** and **TAG**
PUMP ERROR	Out of service, call **WSP** and **TAG**
DATA MEMORY BATTERY LOW	Out of service, call **WSP** and **TAG**
EXTERNAL STANDARD TEMPERATURE	The simulator temperature must be within 0.2 (two lines above or below) of 34 degrees C.
OUT OF SERVICE	Call **WSP** at _____ and advise specific problem, serial number and **TAG** out of service.

[*] These are guidelines only, not mandatory, qualified operators may use discretion
[**] Will not be a displayed message