

DWI BREATH ALCOHOL TESTING



Shauna Richardson | Forensic Scientist | Breath Alcohol Calibration Laboratory

WHO WE ARE

BCA Breath Alcohol Calibration Lab is composed of Forensic Scientists (FS)

- Minimum 4 year degree in appropriate content area:
 - Biology, Chemistry, Physics or Forensic Science

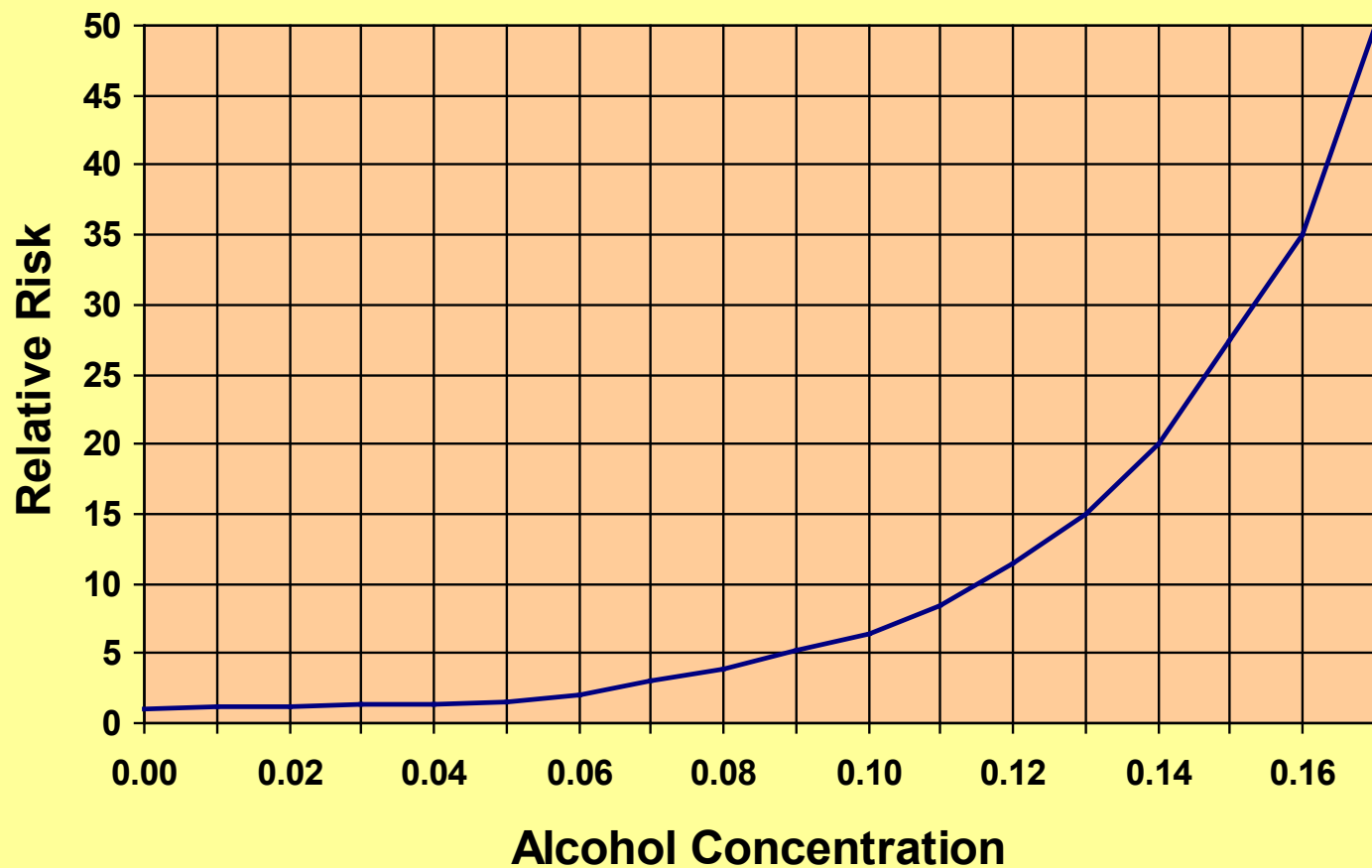
What does a Breath Alcohol Calibration FS do?

- Calibrate and maintain the evidential breath testing instrument (DataMaster DMT) used by law enforcement in MN
- Train law enforcement to properly operate the instrument (10 – 13 classes/year)
- Testify in court regarding the science of breath testing



WHY BREATH TESTING?

RISK OF CRASH INVOLVEMENT



The risk of crash involvement increases significantly with an increase in alcohol concentration.

Breath testing:

- provides a tool available to Law Enforcement for making a safer Minnesota
- is non invasive
- provides immediate results
- is low cost for agencies
- results are equal to fluid testing per MN statute

0.08 g/210 L Breath

0.08 g/100 mL Blood

0.08 g/67 mL Urine



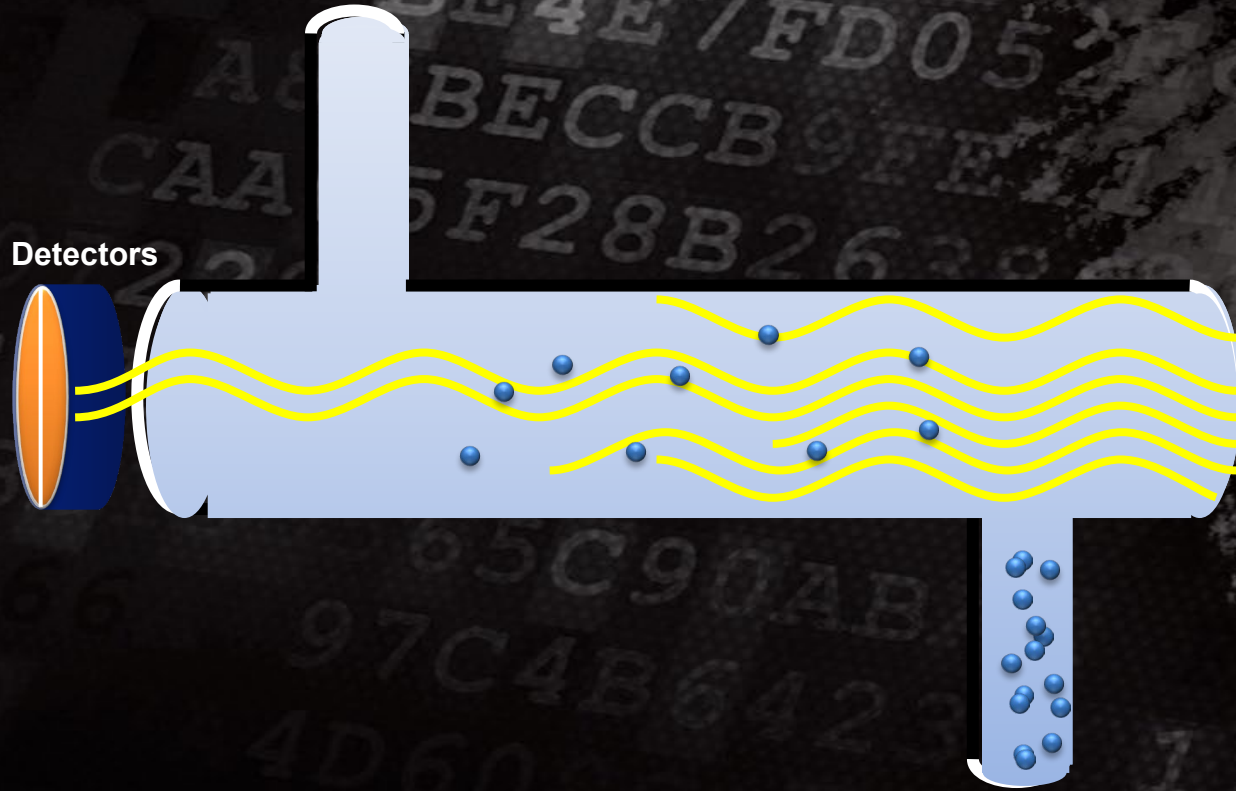
HOW DOES BREATH TESTING WORK

- Infrared spectrometer
 - Alcohol absorbs infrared light
 - The amount of light absorbed is proportional to the ethanol present in the breath



Detectors

Infrared
Light Source



Breath



MN EVIDENTIAL INSTRUMENT

- Minnesota uses the DataMaster Transportable (DMT-G) with Fuel Cell Option as the evidential instrument
- Approximately 230 instruments in the field
- Additional instruments at MN State Patrol District offices for replacement if needed



MN SETS FORTH BREATH TESTING REQUIREMENTS

- Minnesota Statute 169A.51 defines an acceptable test and test sequence
 - Subd. 5. **Breath test using approved breath-testing instrument.**
 - (a) In the case of a breath test administered using an infrared or other approved breath-testing instrument, the test must consist of analyses in the following sequence: **one adequate breath-sample analysis, one control analysis,** and a **second, adequate breath-sample analysis.**

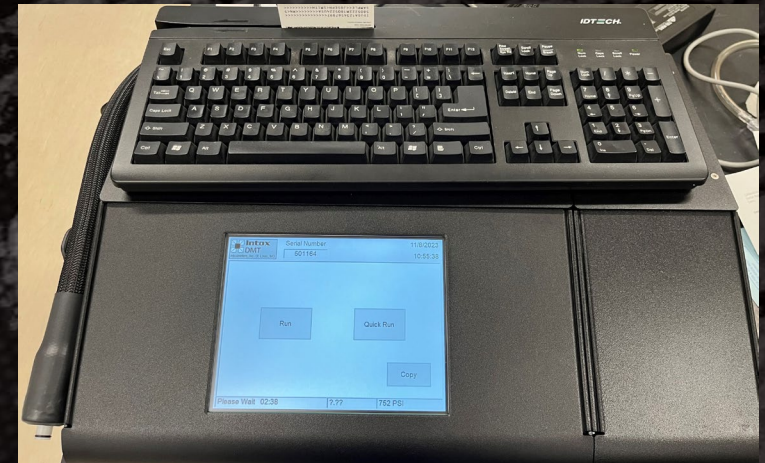


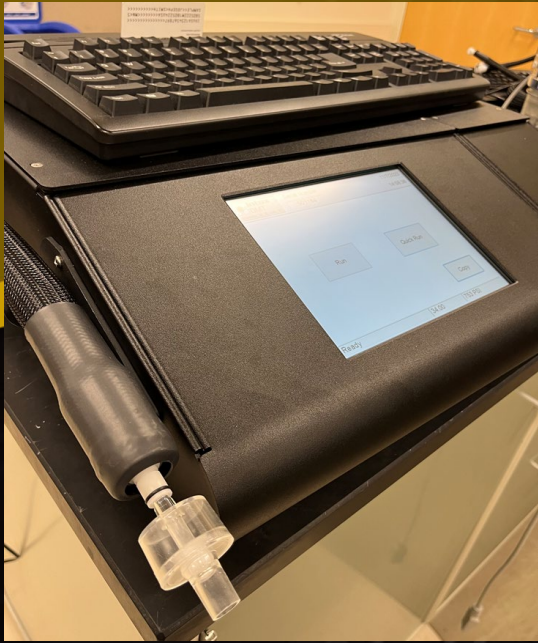
COMING IN 2024: NEW DMT

- New Version of DMT and Software
- New Name – Intox DMT (Data Master Transportable)

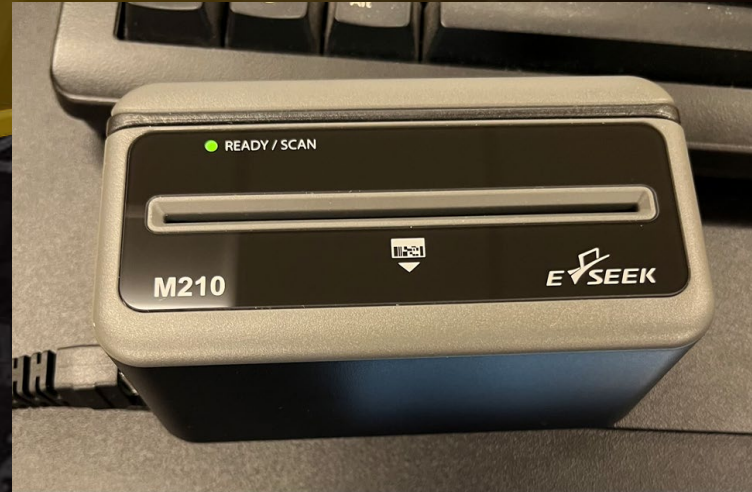
What the User will notice:

- Thicker breath tube
- Windows 10 interface
- External Card Scanner
- Status messages defined on the screen (Replaces the flip chart)
 - What it means
 - What to do
- 15 minute Lockouts for Invalid and 0.02 Agreement Not Met – Deficient Test Status Messages
- Time Check

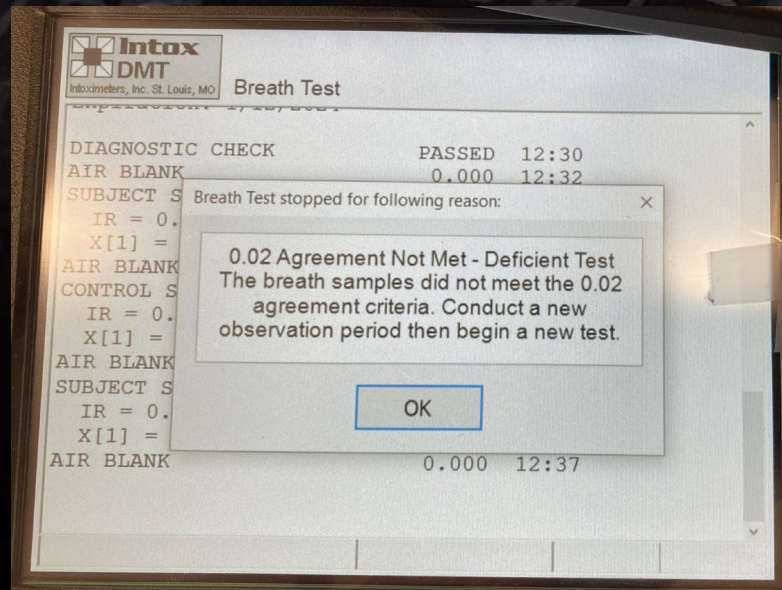




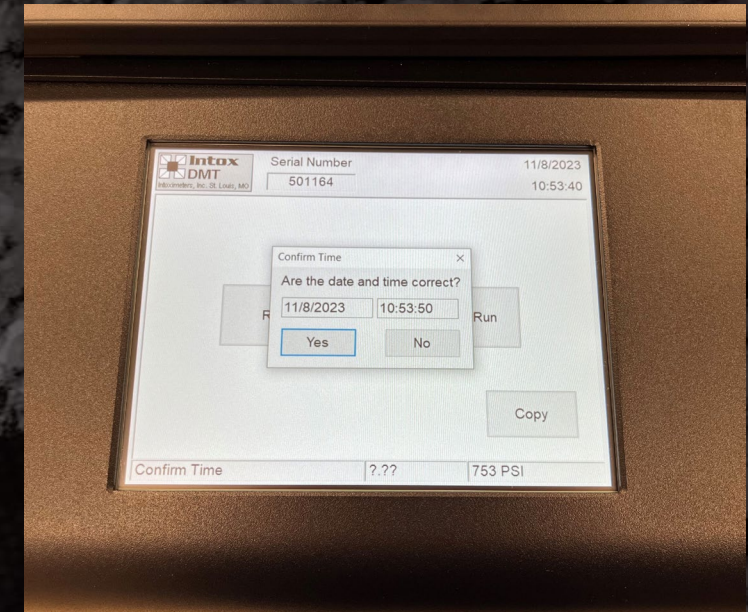
Thicker breath tube, same mouth pieces



External Card Reader;
Keyboard swipe and manual
entry still possible



Status Messages appear on
screen with reason and next
action.



Periodic Time check



COMING IN 2024: NEW DMT

- No fuel cell present (current fuel cell was turned off in 2012)
- Uses the same mouth pieces, connects to the same printers.



GREAT, BUT WHEN?!

- Validation Process
 - Software approval
 - Validation procedure
 - Very extensive testing of the instrument and software
 - Linearity, Accuracy, all types of tests, generation of status messages (trigger at appropriate times)
 - Blood versus breath
 - Instrument functionality, data entry, communication
- MN Rule Process
 - MN Rule 7502.0425; MN Statute 169A.75
 - Commissioner's Order (Commissioner of Public Safety)
 - Certificate of Procedure and Software Approval by BCA Lab Director
- Roll Out – by MSP Districts – Late 2024



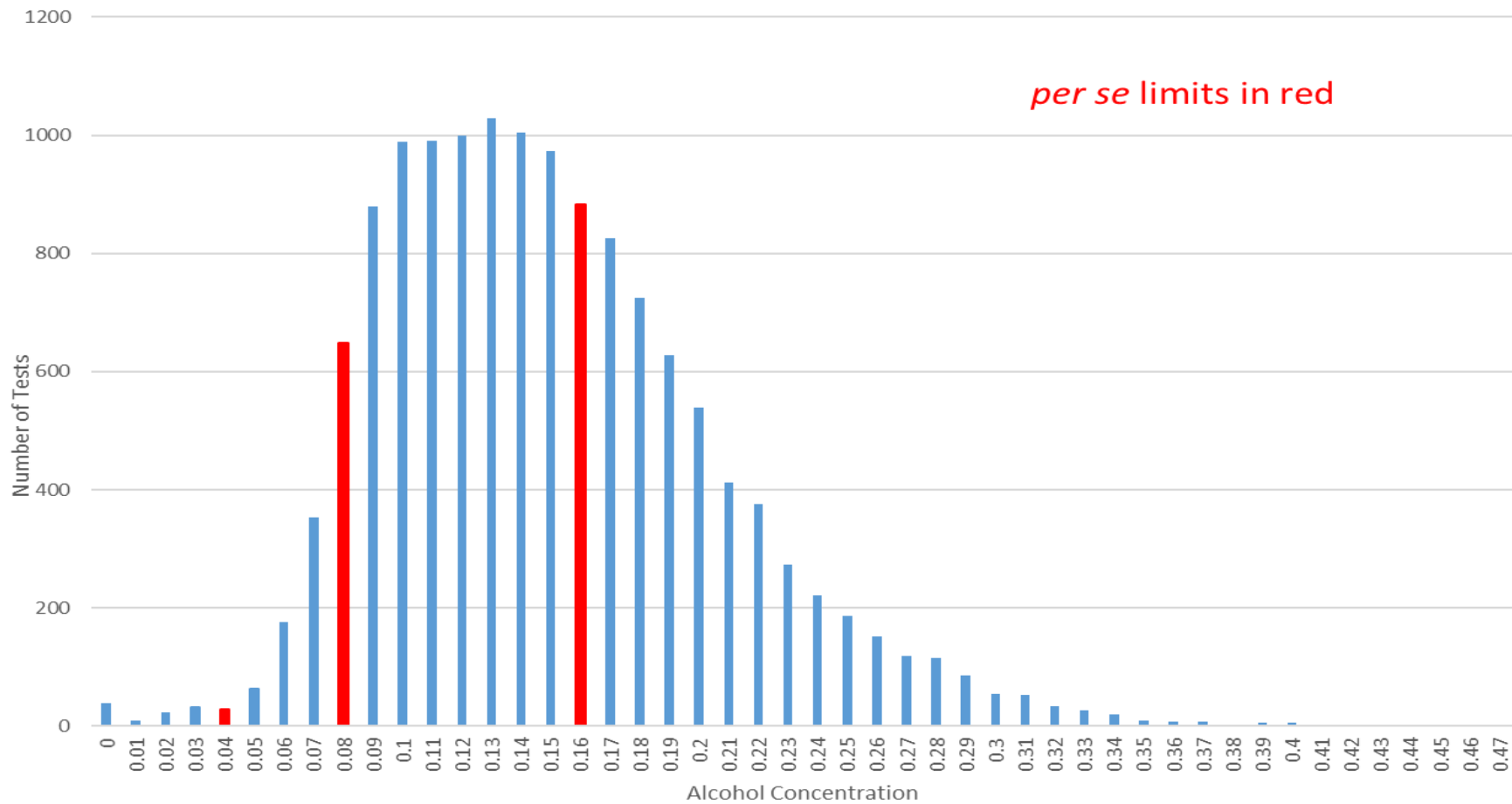
NUMBER OF SUBJECT TESTS BY MONTH 2022

January	1534
February	1418
March	1672
April	1589
May	1777
June	1579
July	1955
August	1641
September	1710
October	1818
November	1584
December	1564
TOTAL:	19841



BREATH ALCOHOL CONCENTRATIONS IN MN

Breath Alcohol Concentrations from 1/1/23 - 11/7/23
Number of evidential tests = 14000; Range: 0 - 0.44 g/210L
Average: 0.1495 g/210L



CONTACT INFORMATION

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