IN THE COURT OF COMMON PLEAS OF THE STATE OF DELAWARE

IN AND FOR NEW CASTLE COUNTY

STATE OF DELAWARE,	)	
	)	
	)	
v.	)	C.R. A. No. 0805005114
	)	
BRENDAN VICKERS,	)	
	)	
Defendant.	)	
	)	

Submitted: December 8, 2009
Decided: June 9, 2010

DECISION AFTER TRIAL

Barzilai K. Axelrod, Esquire
Deputy Attorney General
Office of the Attorney General
820 N. French Street
Wilmington, DE 19801
Attorney for the State

Louis Ferrara, Esquire
1716 Wawaset Street
P.O. Box 188
Wilmington, DE 19899
Attorney for the Defendant

On May 4, 2008, Brendan Vickers (hereinafter "Vickers") was charged with Operating a Motor Vehicle While Under the Influence of Alcohol, in violation of 21 *Del. C.* § 4177, and Improper Passing on right, in violation of 21 *Del. C.* § 4117. Prior to trial, Vickers moved to suppress his stop and subsequent arrest pursuant to Court of Common Pleas Criminal Rule 12(b)(3). Following a hearing on the motion, the Court concluded the officer had a reasonable articulable suspicion to stop the vehicle and probable cause to take

defendant into custody for further testing. The Court then granted the State's motion to move all non-hearsay evidence into the record and the matter proceeded to trial on the merits.

Defendant Brendan Vickers (hereinafter "Vickers") now moves to suppress the test results of the Intoxilyzer 5000EN (Serial No. 68-12158) on the basis that the calibration is unreliable. Vickers secondly, moves to suppress the results of the breath test alleging the Intoxilyzer machine used to measure his alcohol content is unreliable because the machine was calibrated at a different location than where the test was performed.

The Court reserved decision on whether movement of the intoxilyzer calibration affects its reliability. The Court issued a briefing schedule and held an evidentiary hearing on December 7, 2009. This is the decision of the Court following the evidentiary hearing, and written submission.

FACTS

On May 4, 2008, Corporal John Day of Delaware State Police was directing traffic as part of a special security and traffic control assignment at the intersection of Kennett Pike and Old Kennett Pike Roads. At approximately 5:25 a.m., Corporal Day observed a black Ford pickup truck proceeding southbound towards him, traveling on the right shoulder of the road. The shoulder is clearly marked, and turns into a right turn lane just before the intersection of Kennett Pike and Old Kennett Pike. Trooper Day testified the

pickup truck passed approximately twenty five stopped cars while traveling on the shoulder.

Corporal Day stopped the truck for driving on the shoulder and identified Vickers as the operator. Corporal Day testified he approached the driver's side door. He observed Vickers eyes were glassy, his face was flushed, he had slurred speech, and he detected an extremely strong odor of alcohol coming from Vicker's breath. Corporal Day testified Vickers attempted to minimize eye contact and speech with him by responding with one-word answers and looking in the other direction. Corporal Day testified he had to request Vickers' driver's license, registration and insurance two times before he provided the documents. Additionally, he stated Vickers had "some difficulty" retrieving the documents, initially staring at the steering wheel and then slowly locating the documents. Corporal Day testified because of his special assignment, he called Trooper Christopher Holzwarth (hereinafter "Trooper Holzwarth") who was working a Driving Under the Influence (hereinafter "DUI") special patrol assignment.

Trooper Holzwarth testified he arrived at the scene approximately 10 minutes after he was contacted by Corporal Day. When he approached the vehicle, he observed Vickers face was flushed, eyes glassy, and there was a strong odor of alcohol emanating from his breath. Holzwarth asked Vickers to exit the vehicle. When asked if he had been drinking, Vickers replied that he

had consumed two beers. Based on this statement and his observations, Trooper Holzwarth testified he suspected Vickers was under the influence of alcohol.

Trooper Holzwarth testified he administered two standard field sobriety tests: the "Walk-and-Turn" and the "Balance Test". While performing the "Walk-and-Turn", on the first 9 steps out, Vickers stepped off the line on step 3; raised arms on step 5; turned right instead of turning left as instructed, and on the return 9 steps, stepped off the line on step 5. During the "Balance Test", Trooper Holzwarth testified Vickers began swaying on counts 11-20 and raised his arms on counts 11-20. He administered a Portable Breath Test (hereinafter "PBT") but the breath sample was invalid because the Vickers did not blow hard enough into the machine. The defendant was not administered the Horizontal Gaze Nystagmus (hereinafter "HGN") test.

Based upon the field test results, and his physical observation and odor of alcohol, Vickers was placed under arrest and transported to Troop 1, where the breath test was administered. The machine used to measure the breath sample was the Intoxilyzer 5000EN[1] manufactured by Colorado Mountain Industries Inc., a subsidiary of MPD, Inc. (hereinafter "CMI").[2]

---

[1] Using Intoxilyzer Analyzer Model 5000EN, Serial Number 68012158

[2] CMI Inc. is the manufacturer of the Intoxilyzer® line of breath alcohol testers and maintains a corporate headquarters in Owensboro, Kentucky.

At trial, the State move to introduce the calibration certification documents for the Intoxilyzer through the testimony of Corporal Day as an "other qualified witness" under Rule 803(6), of the Delaware Uniform Rules of Evidence (hereinafter "D.R.E."). The first calibration certification document proffered is dated April 18, 2008 for model 5000EN maintained at Delaware State Police Troop 1. It is signed by former State Forensic Chemist David Sockrider (hereinafter "Sockrider"), Forensic Analytical Chemist for the Delaware State Police, certifying the machine was operating properly prior to the Defendant's arrest. The second calibration certification document proffered is dated May 30, 2008, signed by Sockrider, certifying the same machine, Model 5000EN, was operating properly after the test was administered. Both documents were prepared by Sockrider at Troop 2 for the Intoxilyzer 5000EN which bears serial number 68012158. Vickers objected to admission of both documents.

Vickers opposed the documents for the following reasons: Trooper Day is not an "otherwise qualified witness" under D.R.E. 803(6) because he had not observed Sockrider perform calibration checks in the field; and (2) the Troop 1 Intoxilyzer log book was not a "duplicate original" of the log book maintained by the State Forensic Chemist. Vickers also objected to the results of the Intoxilyzer certification on May 4, 2008, because the Intoxilyzer machine was moved from Troop 1 to Troop 2 for calibration and then returned to Troop 1.

Vickers argues that such movement renders the results unreliable and therefore inadmissible. Additionally, Vickers argues that various email correspondence between officials of Delaware Crime Lab and the CMI raises the issue of whether CMI personnel testimony is biased and, as such, not reliable.

ANALYSIS

For the Court to consider the Intoxilyzer results to prove a violation of 21 *Del. C. § 4177* requires the State to lay an adequate evidentiary foundation for the test, and the reliability of the machine used to measure the defendant's breath.[3] The calibration records to show that the machine was working properly may be admitted under the business records hearsay exception, pursuant to D.R.E. Rule 803(6). However, to meet the exception requirement under the rule, the party which proffers the evidence must show that it was: (1) prepared in the regular course of business; (2) made at or near the time of the event; (3) trustworthy; and (4) testified to by custodian of the record or other qualified person.[4]

An otherwise qualified witness may testify regarding the records, if such witness can attest that: (1) the declarant had knowledge to make the entries in the document; (2) that the declarant's recording of the statements were

[3] *Clawson v. State*, 867 A.2d 187 (Del. Supr. 2005).
[4] *Talley v. State*, 841 A.2d 308 (Del. Supr. 2003).

contemporaneous with his or her actions; (3) that the declarant made the record in the regular course of business activity; and (4) that such records were regularly kept.[5]

To be a qualified witness, "[a]n Officer must also be able to provide foundational testimony."[6] In *State v. Arnold*, this Court ruled that an officer could not lay a proper foundation for the admission of Intoxilyzer certification sheets, under D.R.E. Rule 803(6).[7] In *Arnold*, the Officer did not know how the test was performed, did not know anything about the contemporaneous recording of the sheets, never saw the chemist sign the sheet, and never witnessed an actual certification procedure, but was only told that the chemist performed a certain test.[8]

In the instant case, there are two certification sheets prepared and signed by state forensic chemist Sockrider dated April 18, 2008 and May 30, 2008 respectively. The State did not offer the chemist to lay the evidentiary foundation for the admission of the Intoxilyzer calibration sheets, but relied upon Corporal Day as an "other qualified witness." The defense objects to Day as an otherwise qualified witness on the grounds that he does not have the knowledge to make accurate statements and has no knowledge that Sockrider

---

[5] *Trawick v. Sate*, 845 A.2d 505 (Del. Supr. 2004); *State v. Boyer*, 2006 WL 266207 (Del. Com. Pl. 2006).
[6] *State v. Arnold*, 2003 WL 23112735 at *2 (Del. Com. Pl. 2003)(citing *Bruce v. State*, 781 A.2d 544 (Del. Supr. 2001)).
[7] *Id.*
[8] *Id.*

completed the calibration sheets contemporaneously.

Corporal Day testified that he is a four-year veteran of the Delaware State Police, and completed a forty-hour Intoxilyzer training course conducted by former State Forensic Chemist Sockrider at the Delaware State Police Academy in 2005, and upon completion of that course, received certification for National Highway Traffic Safety Administration (hereinafter "NHTSA") - DUI Detection and Horizontal Gaze Nystagmus testing.[9] Corporal Day testified he obtained a signature sample from Sockrider, for identification for future reference.[10] The Corporal also testified that he observed former State Forensic Chemist Joy Tengonciang ("Tengonciang") perform the calibration testing as he had observed Sockrider.

Corporal Day further testified he was familiar with the calibration processes of how the certification sheets are maintained at Troop 1. Day testified, while he has not observed State Chemist Sockrider perform the test at Troop 1, he did witness Sockrider perform the calibration test at the Police academy. Day testified he recognized the signature on the calibration documents as that of Sockrider. Furthermore, the entries on the documents are made at or about the time tests are performed on the machine. Day testified he was aware that the machine is calibrated once per month, and that

[9] State's Exhibit No. 1 was received into evidence which is Corporal John Day's successful completion of the NHTSA-DUI Detection and Horizontal Gaze Nystagmus Certification on January 10-12, 2005.
[10] State's Exhibit No. 10 is a calibration certification Sheet dated April 18, 2008 for model 5000EN maintained at Delaware State Police Troop 1.

the machine is taken to Troop 2, with the calibration book, where the calibration is performed. After the calibration tests are completed, the machine and records for the machine are returned to Troop 1.

Based upon Corporal Day's testimony, I am satisfied he is familiar with the process and has the knowledge to make accurate statements regarding the calibration sheets and their preparation in the normal course of business. Therefore, I am further satisfied Corporal Day is an otherwise qualified witness under the Delaware Rules of Evidence Rule 803(6), and the Intoxilyzer records are admitted as State Exhibit No. 10 and Exhibit No. 11, respectively.

Notwithstanding the Court's decision holding that Corporal Day was an otherwise qualified witness, the State called State Forensic Chemist, Julie Willey (hereinafter "Willey") who testified, that she is a State Forensic chemist and Forensic Microscopist employed by the Delaware State Police Crime Lab (hereinafter "Crime Lab"). Willey testified that she has served as the Director of the Crime Lab for 16 years. As Crime Lab Director, she assumed the responsibilities for the blood and breath alcohol analysis for law enforcement agencies in New Castle County, November 2007. During this period, State Forensic Chemist Sockrider was assigned responsibility for agencies in Kent and Sussex Counties, until his retirement in 2007.

Willey testified that prior to Sockrider's retirement in 2007, she worked closely with him, and observed and assisted him in performing calibration

certifications using stock solutions on numerous occasions. Additionally, Willey testified that December 2008, she attended the Robert F. Borkenstein Course on Alcohol and Highway Safety: Testing, Research, and Litigation at Indiana University.[11] Willey testified that in May 2009, she participated in a weeklong Intoxilyzer 5000EN course at CMI's headquarters in Owensboro, Kentucky. Willey testified that this course covered the repair, calibration and maintenance of the Intoxilyzer 5000 series machines. Upon completing the course, Willey testified that she was certified as an individual who could subsequently train and certify other operators of the Intoxilyzer 5000 machines.

Willey testified that since assuming the role of State Forensic Chemist in November 2007, she has been certified to operate the Intoxilyzer machines. Willey testified that calibration is actually a series of verification checks or "cal-checks" performed using a reference sample of ethanol-water simulator solution (hereinafter "Simulator Solution") prepared and analyzed by the Crime Lab or an approved vendor.[12] The Crime Lab analysis establishes the target value and acceptable range of the solutions used for the checks and passes each of these solutions through the device creating a range of acceptable readings. Willey distinguished the calibration of the instrument itself from a cal-check, in

[11] The Indiana University Alcohol Borkenstein Course is a one-week expert-level course with presentations emphasizing on alcohol in relation to traffic safety, covering basic alcohol chemistry and physiology, principles of measurement of alcohol in blood and breath, and presentation of alcohol information in the courtroom.

[12] See discussion on NIST traceability *infra*.

that "cal-checks" are only meant to verify that a machine is "within calibration." Willey explained that calibration of an instrument is performed by the manufacturer CMI and is never conducted by the Crime Lab. Willey testified that in the course of her duties as State Forensic Chemist she has performed in excess of 100 cal-checks within New Castle County as of July 2008, and over 150 cal-checks in various other locations throughout the State between December 2007 and July 2008.

In the instant case, Willey testified that former State Forensic Chemist Sockrider calibrated the subject Intoxilyzer 5000EN test equipment on April 18, 2008 and May 30, 2008.[13] As to State's Exhibit No. 10, Willey testified that on April 18, 2008, two 0.05 Simulator Solution calibration check readings were taken and the results were within the acceptable ranges; two 0.10 Simulator Solution calibration check readings were taken and the results were within the acceptable ranges; two 0.00 checks obtained by State Forensic Chemist Sockrider blowing into the instrument and the results were within ranges. Therefore, she concluded that the machine was operating properly. Additionally, an Acetone Interference System check was performed and that test also found the machine was functioning properly. Willey testified that the instrument was certified to be working properly and accurately by Sockrider on April 18, 2008 at 1328 hours. The last air blank test was at 1231 hours, which

[13] Using Intoxilyzer Analyzer Model 5000EN, Serial Number 68012158

was only 57 minutes before he signed the certification document.

As to State's Exhibit No. 11, Willey testified that the Intoxilyzer calibration certification sheet showed: that two 0.05 simulator solution calibration check readings were taken and the results were within the acceptable ranges; two 0.10 simulator solution calibration check readings were taken and the results were within the acceptable ranges; two 0.00 checks obtained by Sockrider blowing into the instrument that the machine was functioning within acceptable ranges. Additionally, after the Acetone Interference System test was conducted, the machine was found within acceptable ranges. Therefore, as a result of these calibration checks, the machine was certified to be working properly and accurately by Sockrider on May 30, 2008 at 1207 hours (approximately 8 minutes before he signed the certification sheet).

In addition, Willey testified that the Simulator Solutions used to perform the cal-checks on April 18, 2008 and May 30, 2008 were prepared in the Crime Lab on April 15, 2008 by former State Forensic Chemist Sockrider. Willey added that the same Simulator Solutions were used to perform the cal-check on both occasions. Willey testified that these solutions were traceable to the National Institute of Standards and Technology (hereinafter "NIST").[14] Willey testified that Simulator Solutions prepared by the Crime Lab, are compared to previously prepared batches to ensure that they conform to NIST guidelines.

[14] NIST is a federal agency that develops and promotes measurement, standards, and technology.

As an additional precaution, all Simulator Solutions are analyzed using a gas chromatograph (hereinafter "GC") which is calibrated to NIST traceable standards. Willey testified that at present, she and other scientists in her department purchase Simulator Solutions used in the Intoxilyzer test equipment from an outside vendor.[15]

Following the Court's ruling on the admissibility of the Intoxilyzer certification documents holding that Corporal Day was an otherwise qualified witness, and the testimony of the State Chemist Wiley, Vickers moved to exclude the test results on the basis that after the calibration was performed, the machine was moved to a second location, which may affect the calibration, thus rendering the machine unreliable. Vickers also argued that the certification documents were not admissible because the original documents are maintained by the State Chemist and there was no foundation laid to show the original was missing.

Addressing first the defendant's challenge to the admission of the Intoxilyzer calibration certifications on the basis the State did not produce the original records maintained by the Delaware State Chemist at her office. The Delaware Rules of Evidence provide that the original writing is generally

[15] Willey's testimony is that as of October 2008, the Crime Lab has been able to purchase pre-prepared Simulator Solutions as a result of a grant that was previously unavailable. Willey testified that at present, Simulator Solutions are purchased from Guth Laboratories, Inc., an exporter based in Harrisburg, PA. Willey testified that prior to October 2008, and going as far back as June, 2002, Simulator Solutions had been prepared by the State Forensic Chemist in the Crime Lab.

required to prove the content of the writing.[16] D.R.E. 1003 provides, however, that duplicates are admissible to the same extent as the original unless there is a genuine question as to the authenticity of the original, or it would be unfair under the circumstances to admit the duplicate in lieu of the original.[17] The question of authenticity is merely a question of whether the document in question is what the proponent claims.[18] As such, a piece of evidence may be authenticated by a person with sufficient knowledge of the matter in question, without requiring absolute verification that the record is accurate.[19]

Vickers does not challenge the authenticity of the original. Instead, the defendant contends that the three-ring binder used to store independent calibration sheets at Troop 1 constitutes a duplicate unified "book" (hereinafter "Troop 1 Book"). The defendant asserts that there exists a "master log" (hereinafter "Master Log"), located at Delaware State Police Headquarters, which records and tracks the calibration records for individual Intoxilyzer machines and contains additional documentation which is not available at the individual State Police Troops. He maintains that such information is relevant because it would indicate why a particular machine was taken out of service.

---

[16] D.R.E., Rule 1002.
[17] D.R.E., Rule 1003.
[18] D.R.E., Rule 901(a).
[19] *See, e.g., State v. Booker,* 547 A.2d 618 (Del.Super.Ct.1988) (testimony of security officer that security recording reflected what he saw on the security monitor sufficient to authenticate videotape even though there was no independent verification that the transmission accurately reflected the scene being transmitted); *See also, Fountain v. State,* 2004 WL 1965196 (Del.Supr.) (holding that the State is required to eliminate possibilities of misidentification and adulteration, not absolutely, but as a matter of reasonable probability).

The crux of the defendant's argument is that the Troop 1 Book does not include any such documentation and therefore, he is entitled to this information which is the original "Master Log" of the Intoxilyzer used to test Vickers, along with any paperwork that would indicate why that particular machine may have been taken out of service.

During her testimony and *voir dire*, State Forensic Chemist Willey explained a calibration test procedure. When the operator conducts a calibration test, the procedure is a test record card (hereinafter "Intoxilyzer Card")[20] is placed into the instrument upon which the results are printed. An Intoxilyzer Card consists of 4 pieces of paper with an original printout and 3 identical carbon copies (sometimes referred to as "flimsies."). The Intoxilyzer Cards are signed by the operator who performed the cal-check and that data is transferred onto the calibration certification sheet. A calibration certification sheet[21] is generated much like an Intoxilyzer Card, with 3 identical carbon copies produced along with it. These copies, like all Intoxilyzer Cards and accompanying flimsies contain the Intoxilyzer's serial number, the date that the test was conducted, and printed on, the results of the test, and the precise times the results printed.

[20] *See* State's Exhibit No. 8.
[21] *See* State's Exhibit No. 9.

Willey testified that the first 3 copies (including the first card that is struck by the printer and two identical carbon copies) generated are stored within the three-ring Intoxilyzer log books at the Troop where the machine is located.[22] The 4th identical carbon copy is kept in folders in the State Forensic Chemist's Office. These folders are filed according to the instrument serial number and the calendar year when the test was conducted. Willey testified that a particular set of certification sheets for any particular date is independent and does not in any way relate to a set from another date. Willey also stated that the State Forensic Chemists intend for all these documents to be "originals" and do not attribute a higher significance to any particular copy. As such, there is no Master Log – the documents in the State Chemist's Office are identical to the copies stored in each of the Troops. Willey testified the Crime Lab currently maintains a service form which tracks when and why any particular machine is taken out of service. Willey also stated that during the period between November 2007 and July 2008, former State Forensic Chemist Sockrider did not maintain a record of why a particular machine was taken out of service.

Based upon the testimony, there has been no credible question raised regarding the authenticity of the duplicate under Rule 1003. Thus, there is no

[22] Willey clarified that the manner in which the certification sheets are stored in the State Forensic Chemist's Office is different from the way a particular Troop would store the copies of the calibration certification sheets and accompanying flimsies.

basis to conclude it is unfair under the circumstances to admit the document proffered.[23] Moreover, the testimony of Willey makes clear that all of the records are created at the same time and contain all of the same information. Further, there are no records for the period in question at the State Crime Lab that do not exist at the Troop level. Willey's testimony and the two Intoxilyzer certification sheets[24] established that the certification sheets and accompanying flimsies stored as the Troop 1 Book and the Log Book maintained by the State Forensic Chemist's Office, were created contemporaneously and contain identical information. The printed information on both sheets contain the exact printout information, including the Intoxilyzer serial number, the date that the test was conducted and result printed, and the precise times the results printed.[25] Thus, I find no merit to this argument.

I turn now to the question of whether the calibration certification of the Intoxilyzer machine is rendered invalid where the calibration tests are performed at one site and the machine thereafter moved to an alternate location from where the certifications were conducted.

Willey testified that as of December 2007, the practice of the State Forensic Chemist is to transport all Intoxilyzer machines to Troop 2 for calibration checks, then return them to their respective locations after the tests

---

[23] D.R.E., Rule 103.
[24] *See* State's Exhibit No. 10, 11.
[25] Using Intoxilyzer Analyzer Model 5000EN, Serial Number 68012158.

are completed. Willey testified her opinion is that such remote testing does not affect the calibration of the Intoxilyzer machine. In fact, this procedure was primarily adopted to ensure that the machines are tested in an orderly and efficient manner. Willey testified that as many as 14 machines within New Castle County are brought in on a particular day for calibration testing. Willey testified that she schedules testing dates by notifying the Traffic Lieutenants responsible for the Intoxilyzers and their records, but is unaware of the means that the various Troops use to transport the instruments.

Willey testified that operators in the State of Delaware perform an internal standards check before each individual subject test, to ensure that the machine is within calibration. Finally, Willey testified that it was her expert opinion that if an Intoxilyzer instrument undergoes a calibration check before and after conducting a breath analysis and is found to be within calibration, there is a reasonable degree of scientific certainty that the machine is within calibration at all points in between.

Brian Faulkner, an electrical engineer, was called as the State's expert witness. He testified he earned a B.S. degree in 1997 from the University of Kentucky in Electrical Engineering; is enrolled in the Masters Electrical Engineering program at the University of Idaho, with expected graduation 2010. He has been employed with CMI, the manufacturer of the Intoxilyzer 5000EN, for 8 ½ years. During his employment with CMI, he has been

responsible for software and hardware development and support for the Intoxilyzer line of breath alcohol testing products. He was a senior Electronic Engineer from 2006-2009, responsible for software and hardware development and support for Intoxilyzer line of breath alcohol testing products. Presently, he is the manager of Engineering responsible for planning, directing, supervising and coordinating engineering research, design and development programs and for maintenance of existing products. His duties include working on hardware and software design of the Intoxilyzer 5000EN.

In addition to his education and work experience, Faulkner has been a member of the International Association for Chemical Testing since 2005. Faulkner has also attended the Robert F. Borkenstein Course on Alcohol and Highway Safety: Testing, Research, and Litigation at Indiana University. Based upon Faulkner's education, experience, professional association, and work, I am satisfied he qualifies as an expert witness pursuant to D.R.E., Rule 702.[26]

Faulkner testified the Intoxilyzer 5000 and Intoxilyzer 5000EN models (hereinafter "Intoxilyzer 5000 Series") are accepted in the scientific and engineering community as a reliable method of measuring breath-alcohol content.[27] Faulkner testified that the Intoxilyzer 5000 Series are computerized,

---

[26] See D.R.E. 702.

[27] The Intoxilyzer 5000EN is listed as an accepted mobile Evidential Breath Measurement Device on the National Highway Traffic Safety Association Conforming Product List published in the Federal Registry. *See* State's Exhibit No. 5 (Conforming Products List of Evidential Breath Alcohol measurement Devices, 72 Fed. Reg. 71480 (Mon. December 17, 2007)); *See also* State's Exhibit No. 4 (Highway Safety

automated instruments used for quantitative measurement analysis of alcohol in the human breath. Faulkner testified that he has specialized knowledge of the Intoxilyzer, having participated in the development of electronics, hardware and software for the instrument as an employee of CMI. Faulkner also pointed out that during the course of his career as an electronics engineer at CMI, he received training and guidance from various individuals intimately involved with the design and development of the Intoxilyzer since its inception.

Faulkner explained that the Intoxilyzer 5000 Series are engineered or "calibrated" to measure alcohol in the air. Faulkner testified that calibration is defined as setting or adjusting an instrument's sensitivity to properly report alcohol concentrations in the air. Incorporated into the instrument is a sampling system that requires a subject to deliver a minimum volume of sample air. The instrument then utilizes non-dispersive infrared technology to analyze the sample.[28]

Faulkner testified that the samples can also be utilized to perform calibrations and accuracy checks on the instrument. Faulkner testified that verifying whether a particular instrument is within calibration or "calibration check" involves checking an instrument for accuracy against a known standard.

Programs; Model Specifications for Devices to Measure Breath Alcohol, 58 Fed. Reg. 48705 (Fri. September 17, 1993)).

[28] Human breath or a simulator sample is introduced into the sample chamber and exposed to infrared light. The sample chamber also houses an infrared detector which then measures the amount of infrared light that is absorbed by the sample.

He explained that such accuracy checks are much the same as running a sample on a subject, but in this case the operator knows what result the instrument should produce. The results of an accuracy check must fall within an acceptable range for the instrument to be considered "in calibration." An accuracy check result outside the acceptable tolerance may throw into doubt the validity of test results.

Faulkner testified that one method of conducting such calibration checks was by introducing a sample into the instrument using a simulator - a device for producing a known concentration of alcohol in the air. The simulator heats the alcohol (ethanol) and water solution to a constant temperature. At the constant temperature the concentration of alcohol in the vapor over the solution is predictable. This "simulates" alcohol-containing breath samples. Faulkner testified that this method or standard of simulation is known as a "wet bath" standard (hereinafter "Wet Bath"). Faulkner testified that a calibration check may also be performed using a mixture of pressurized gas, usually ethanol in nitrogen known as a "dry gas" standard certified to produce a sample containing a predictable alcohol concentration. Faulkner testified that in his opinion, the primary and best method whereby the calibration can be verified is to use a "Wet Bath" standard.

Faulkner testified that following calibration of an instrument at CMI, an accuracy check to ensure that the adjustments are correct is conducted.

Faulkner testified that the Intoxilyzer 5000 Series is designed to conduct a series of self-diagnostic checks, including the status of the electronics and microprocessor, temperature, and printer. If any of these checks are not within the proper parameters, an error message is displayed and a breath test sequence cannot proceed until the error is corrected.[29] Faulkner testified that one portion of these diagnostics checks is commonly known as an "internal standards" check. The internal standards check is a means whereby the instrument performs an "internal" check to verify the instrument is "within calibration."

Faulkner testified that at the time of an instruments initial calibration at CMI, the internal standards or parameters of the instrument are stored internally following a "Wet Bath" simulation.[30] Both the Intoxilyzer 5000 and 5000EN are initially calibrated at the factory. Such calibration is permanent and the instrument never needs to be re-calibrated. Testing at police agencies is merely to verify the calibration and is not a calibration itself. The three internal standards are: 0.10 (Internal Standard One), 0.20 (Internal Standard Two) and 0.30 (Internal Standard Three). These parameters reflect the digital-

[29] The Intoxilyzer continuously monitors its functions throughout the testing; if they are not within defined parameters, an error message results and the procedure is terminated.

[30] Faulkner explained that herein lay the only substantive difference between the Intoxilyzer 5000 and Intoxilyzer 5000EN models. Faulkner testified that during the course of a Wet Bath simulation, stock solutions are introduced in a sequential manner and the whole range of measurements received are matched to a quadratic equation. Adjustments are then made to fit that curve based on the instruments response to those five solutions. Faulkner explained that the Intoxilyzer 5000 requires a series of manual calculations to accomplish this whereas the Intoxilyzer 5000EN utilized a microprocessor which automated this process. Faulkner added that aside from the use of a microprocessor, the machines were identical.

analog conversion values for each of the channels of the instrument and the corresponding output for each of the detectors. The instrument is within calibration if the reading is within +/- 5% of the channels readings. For example, the acceptable range of downward deviation when the target test value was 0.30 would include results no lower than 0.285. As such, if an internal standards check had yielded results of less than 0.285, the machine would automatically display an error message.

Faulkner testified that the Intoxilyzer instruments are shipped throughout the United States and to locations worldwide on common carriers. These instruments, weighing about thirty pounds are generally wrapped in protective wrapping prior to being shipped. However, CMI takes no other special safety precautions to ensure the instrument is not damaged. Faulkner explained that CMI does not undertake any additional safety precautions because the Intoxilyzer Series are rugged instruments and designed to withstand abuse. He testified that he has observed numerous examples where an instrument was heavily damaged or even dropped and remained within calibration.

To ensure the instrument survives its journey to a client intact and within calibration, Faulkner explained that upon arrival, the machine activates the self-diagnosis feature when the instrument first turns on. The instrument is placed in standby mode and a check of the analytical stability, and internal

standards are automatically conducted. If for any reason the instrument is unable to satisfactorily complete its diagnosis, it will alert the operator via a visual tone and printout. Furthermore, if such a diagnosis fails, the machine would default into a disabled mode preventing the end user from conducting a breath analysis. Faulkner explained that the instrument cannot self-repair or spontaneously fix itself. A certified technician skilled and trained with knowledge of the machine is required to make such repairs.

Faulkner testified that the internal standards served as an indicator of change or "drift" of the analytical system (calibration) of the instrument. The Intoxilyzer 5000 Series are subject to small amounts of variability. Faulkner explained that the deterioration of an instruments infrared light source or the infrared detector is the most likely source of drift in an instrument; however, the life expectancy of a life source is 10,000 hours. Faulkner testified that the life expectancy of the infrared detector is 7 years.[31] Faulkner agreed that drift is a matter of significance because an internal standards reading lower than the target value would throw into doubt the validity of test results.[32] Faulkner testified that in his expert opinion, if the internal standards of an instrument are within an acceptable range, there is a reasonable degree of scientific certainty

[31] In *voir dire*, Faulkner testified that the Intoxilyzer 5000 and 5000EN series of instruments allowed for the machines to be configured such that they would be placed in a "standby" or "sleep mode" when not in use, wherein the infrared light source is turned off.

[32] Faulkner testified that in his experience, drift is almost always a downward deviation. Faulkner added that an upward drift would be extremely rare as the instruments output generally deteriorates rather than improves over time.

that the machine is within calibration.[33] Faulkner also testified that it is his expert opinion that if an Intoxilyzer instrument undergoes a calibration check before and after conducting a breath analysis and is found to be within calibration, there is a reasonable degree of scientific certainty that the machine is within calibration at all points in between.

Finally, Faulkner testified that the Intoxilyzer Series are designed to be operated in temperatures ranging from 68° F to 86° F (20° C to 30° C), stored in temperatures ranging from 32° F to 140° F (0°C to 60° C) and humidity ranges of 10% to 90% (non-condensing). Faulkner testified that if stored outside of these ranges it is possible that an instrument could drift "out of calibration." Faulkner testified that CMI has conducted temperature and humidity studies in the past; however, he added that none of the studies conducted involved the Intoxilyzer Series currently utilized by the State of Delaware. Faulkner concluded that testing the machine at one location and thereafter moving to a second location does not affect the calibration reliability, nor the accuracy of the machine testing.

Vickers argues relying upon *State v. Johnson* (unpublished, Cr.A. No. 83-05-0223T (Ct. of Com. Pl. Ellis, J., Dec. 12, 1983) that it is settled law in Delaware that the calibration of the Intoxilyzer machine at a different location

[33] Alternatively, Faulkner added that it is plausible that a machine whose internal standards are outside the acceptable range to still remain within calibration. As such, it is possible that although the Internal Standards read outside of +/- 5% a machine remained properly calibrated.

from where the test is conducted, raises a serious issue regarding the trustworthiness of the results. The Court in *Johnson* concluded, "the subsequent transportation in what's bound to be changed and varying temperatures and possible rough treatment during transportation raises questions . . . as to the accuracy of the intoxilyzer test results."

The State opposes this position alleging that it is not supported by scientific data nor expert testimony. In support of its position that movement of the machine has no affect upon its calibration, the State relies upon expert testimony of the machine manufacturer.

The Delaware Supreme Court has deemed the Intoxilyzer 5000 to be a scientifically reliable means of testing an individual's blood alcohol content so long as the State Chemist certifies that it was operating accurately before and after testing the breath of the defendant on trial.[34] As such, under Delaware law, in order to admit the results of an Intoxilyzer test into evidence, the State must first introduce the certifications of the State Chemist verifying that the Intoxilyzer was operating accurately before and after testing the breath of the defendant.[35] In *Anderson v. State*, the Delaware Supreme Court held that calibrations of an Intoxilyzer must occur within a reasonable temporal

[34] *Anderson v. State*, 1995 WL 717245 at *3 (Del. Super. 1995) *citing Best v. State*, 328 A.2d 141 (Del. Supr. 1974).
[35] *See McConnell v. State*, 1994 WL 43751 (Del. Supr. 1994).

proximity of the defendant's test.[36] In so ruling, the Court rejected a bright-line rule that an Intoxilyzer must be calibrated every 30 days in order to be admissible.[37] Additionally, the Intoxilyzer 5000EN is listed as an acceptable mobile evidential breath measurement device on the NHTSA conforming product list, published in the Federal Registry.[38] As part of its assessment, NHTSA submits the instrument to a battery of tests designed to determine whether it may be classified as mobile equipment.[39] This assessment reflects that the Intoxilyzer 5000EN is capable of mobile operation.[40]

In the instant case, the calibration checks produced acceptable results both before and after the defendant underwent the test.[41] Furthermore, as stated by Faulkner, the built-in fail safe mechanism of the Intoxilyzer Series prevents it from generating a result outside of the acceptable parameters. Therefore, I conclude based upon the scientific testimony in these proceedings, moving an Intoxilyzer machine following calibration does not adversely affect the accuracy of the test, nor the admissibility of the test results. The defendant's reliance on *State v. Johnson* decided by this Court more than twenty-five years ago is misplaced. The technology has advanced greatly and scientific

---

[36] *Anderson,* 1995 WL 717245 at *3.
[37] *Id.*
[38] *See* State's Exhibit No. 5 (Conforming Products List of Evidential Breath Alcohol measurement Devices, 72 Fed. Reg. 71480 (Mon. December 17, 2007)).
[39] *See* State's Exhibit No. 4 (Highway Safety Programs; Model Specifications for Devices to Measure Breath Alcohol, 58 Fed. Reg. 48705 (Fri. September 17, 1993)).
[40] *Id.*
[41] *See* State's Exhibit No. 10, 11. Using Intoxilyzer Analyzer Model 5000EN, Serial Number 68012158.

data clearly indicates that moving the machine does not affect its ability to accurately measure the alcohol content of a subject's breath.

Vicker's argues Faulkner's testimony as an expert was tainted because, in addition to his inherent bias as an employee of CMI, he lacked objectivity, as evidenced by the June 12, 2009 communications between Crime Lab Director Willey and William Schofield (hereinafter "Schofield"), the former Manager of Engineering at CMI. In response to a December 2, 2009 discovery request, the State provided the defendant with copies of emails between Willey and Schofield dated June 12, 2009. The State also provided a copy of a letter dated June 12, 2009, from Schofield to Willey. The defendant's objection centers on Willey's email dated June 12, 2009 at 9:02 AM requesting "documentation from CMI - on letterhead and under seal – that [sic] the device can be moved and that the movement does not affect the instrument's operability as demonstrated by the internal stds., etc." Vicker's contends that this communication along with the email response from Schofield dated June 12, 2009 at 12:03 PM which reads "[h]ere is my first stab at it. Let me know what you think" indicates that Willey was directing Schofield to write a letter which supported her contention, rather than allowing him to offer an independent assessment.

While the defense may have a point, Faulkner testified that as a member of Schofield's staff he was part of the team that contributed to the creation of the June 12, 2009 letter, but was not privy to the email communications

between Schofield and Willey. Faulkner testified that his knowledge of the letter was limited to its contents - having helped draft and express the conclusions therein. Faulkner also added that the conclusions expressed in the letter were in no way influenced by Willey and that the contents of the letter accurately reflected the capabilities of the Intoxilyzer machine.

Based upon Faulkner's testimony, I fail to see a basis for finding bias. Bias of a witness is subject to exploration at trial and is "always relevant in determining the weight of the testimony."[42] While the trial judge may exercise discretion to limit the extent of such evidence on the bias of bias, he cannot foreclose a legitimate inquiry into a witness' credibility.[43] Defense counsel was given sufficient opportunity to explore Faulkner's alleged bias or lack of objectivity at trial, and indeed did so during extensive cross-examination and re-cross. Based upon the record, I find no basis to conclude Faulkner's testimony did not reflect adequate analysis of the machine.

Based upon the testimony, I conclude that moving the Intoxilyzer machine following certification does not affect its reliability and the logs were properly admitted. The defendant's breath analysis was measured to have an 0.134 alcohol content. Therefore, based on the evidence in the record, I am convinced beyond a reasonable doubt that defendant is Guilty of Operating a

[42] *Weber v. State,* 457 A.2d 674, 680 (Del.1983) (citing *Davis v. Alaska,* 415 U.S. 308 (1974)).
[43] *Id.* at 680.

Motor Vehicle While Under the Influence of Alcoholic in violation of 21 *Del. C.* § 4177, and Improper Passing on Right in violation of 21 *Del. C.* § 4117.

The Clerk will schedule the matter for sentencing.

SO ORDERED this 9th day of June 2010

Alex J. Smalls
Chief Judge

Vickers-OP June 2010