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## Breath Alcohol Machines: Evidence Foundation Requirements in Illinois, 22 J. Marshall L. Rev. 1 (1988)

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# ARTICLES

## BREATH ALCOHOL MACHINES: EVIDENCE FOUNDATION REQUIREMENTS IN ILLINOIS

GIL SAPIR,\* MARK GIANGRANDE,\*\* AND ANGELA PETERS\*\*\*

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The points of view expressed in this article are those of the authors, and not necessarily those of the Illinois Department of Public Health, Illinois State Police, law enforcement agencies, and breath machine and equipment manufacturers or their agents.

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#### ABSTRACT

Enforcement and prosecution of driving under-the-influence of alcohol charges by chemical breath analysis relies extensively upon scientific technology. Illinois has promulgated specific laws concerning the operation and maintenance of breath alcohol equipment to assure the test's reliability. These scientific results, when used in a court of law, are considered as relevant, circumstantial evidence to support a charge of drunk driving. The movant of these test results must establish a proper legal foundation for their use as evidence. It is incumbent on all parties associated with chemical breath analysis to understand its underlying scientific principles, and relevant statutory and legal requirements. Specific foundational criteria regarding the machine's certification, operation, maintenance, calibration, analysis, specificity, design and reliability must be established as a basis for the test result's admissibility as evidence. This article discusses Illinois' evidential requirements for admission of breath alcohol machines, chemical breath test results, its associated incidence of error, and sanctions for evidentiary non-compliance.

#### I. INTRODUCTION

Society has become more proficient through the use of technology. Technological sophistication has entered the courtroom through the use of scientific evidence. Increased use of adept technology is readily apparent in the areas of serology, paternity identification, drug analysis, fibers, paint and accelerant identification in arson cases. The frequent use of scientific evidence demands the trial attorney's understanding. This is especially true in driving-under-the-influence ("DUI") cases.

DUI cases may be proved by chemical analysis of ethanol content in the blood of an accused person. Law enforcement agencies are authorized to use a testing instrument commonly referred to as a breath alcohol machine.<sup>1</sup> Attorneys should be familiar with foundational requirements for these machines, and problems with its operation and results. The foundation is created through movant's prima facie case. Prima facie evidence consists of

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1. ILL. ADMIN. CODE tit. 77, § 510.40(c)(d) (1985); *see also* Breath Alcohol Testing Equipment, 38 Fed. Reg. 30,459 (1973); National Highway Traffic Safety Administration Notices: Breath Alcohol Testing Devices, 49 Fed. Reg. 48,854 (1984); Amendment of Conforming Products List of Evidence Breath Testing Devices; Correction, 53 Fed. Reg. 16,610 (1988).

- a. the machine being an approved model,
- b. certified assays of ampoule and calibration solutions,
- c. verification of appropriate machine calibration and maintenance,
- d. licensing and competency of the operator and calibrator, and
- e. adherence to proper machine operation and testing procedures.

This article will be limited to foundation requirements of breath alcohol machines, its associated incidence of error, and sanctions for non-production of evidence. It will not address issues relating to the weight or credibility of evidence (i.e., blood to breath partition ratios, retrograde extrapolation, suitable methodology, multiplicity of tests and specificity, etc).<sup>2</sup>

The reliability of scientific evidence is premised on its applicable theory and technique, with proper application of that scientific process to a specific occasion.<sup>3</sup> If the technique is either inappropriate or improperly applied, the results will be subject to charges of unreliability.<sup>4</sup>

The Illinois legislature has approved the underlying theory of blood alcohol determination and application through use of specific breath alcohol machines.<sup>5</sup> However; the movant<sup>6</sup> must still establish proper application and admissibility requirements.<sup>7</sup>

The breath chemical tests are performed under Illinois Department of Public Health Standards and Procedures for Testing for Al-

2. *Mattingly v. Eisenberg*, 79 Ariz. 135, 285 P.2d 174 (1955). See generally *People v. Malik*, 113 Ill. App. 3d 206, 446 N.E.2d 931 (1983); *State v. Malone*, 65 N.C. App. 282, 310 S.E.2d 385 (1984); *State v. Rollins*, 141 Vt. 105, 444 A.2d 884 (1982); *Tarantino, Confronting the Prosecutions Expert Witness*, 2 DWI J. 1 (Jan. 1987).

3. P. GIANNELLI & E. IMWINKELREID, *SCIENTIFIC EVIDENCE* 1-3 (1986).

4. *Id.*

5. ILL. REV. STAT. ch. 95½, ¶ 11.501.2(a)(1) (1987); ILL. ADMIN. CODE tit. 77, § 510.40 (1985); see appendix A; *People v. Bobczyk*, 343 Ill. App. 504, 99 N.E.2d 567 (1951). Blood Alcohol Concentration ("BAC") is based on grams of alcohol per 100 milliliters of blood and Breath Alcohol ("BrAC") is grams of alcohol per 210 liters of breath. ILL. REV. STAT. ch. 95½, ¶¶ 11.501.1, 11.501.2(5)(b)(2) (1987).

6. Movant is a generic term for the proponent of the breath test result. In criminal cases, it is usually a prosecutor; in statutory summary suspension hearings (ILL. REV. STAT. ch. 95½ para. 2-118.1(b) (1987)) the defense attorney; in civil proceedings, plaintiff's attorney.

7. For example, proper application and admissibility requirements include the condition of the breath machine, adherence to proper procedures for calibration and analysis, qualification of the operator and the person interpreting the results, etc. *Seattle v. Peterson*, 39 Wash. App. 524, 693 P.2d 757 (1985); see *State v. Lewis*, 736 P.2d 70 (Haw. Ct. App. 1987); see also *State v. Lowther*, 740 P.2d 1017, 1020 (Haw. Ct. App. 1987) (use of a prescribed admissible machine "does not automatically equate with sufficiency of the evidence to establish an unadmitted fact . . . the legislature may not declare the weight to be given to evidence or what evidence shall be conclusive proof of an issue of fact . . . [t]hus the test results are not 'unassailable'").

cohol and/or Other Drugs by Breath, Blood & Urine Analysis ("IDPH regulations")<sup>8</sup> (See Appendix A). These regulations are a part of the basic foundational requirements<sup>9</sup> and must be made part of the trial court record.<sup>10</sup> Chemical breath test evidence is like any other relevant, circumstantial evidence.<sup>11</sup> Unless a proper foundation for admission is created, the BrAC test result is inadmissible.<sup>12</sup>

Counsel must be familiar with both regulatory and evidentiary requirements for use of breath alcohol machines.<sup>13</sup> The defendant has a statutory right to challenge the result under chapter 95½, paragraph 501.2 of the Illinois Revised Statutes.<sup>14</sup> Should counsel fail to hold the movant to his foundational burden, the test result will be admitted into evidence. Inferences regarding accuracy and reliability of the BrAC test result cannot be challenged later.<sup>15</sup> The movant

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8. ILL. REV. STAT. ch. 95½, ¶ 11-501.2(a)1 (1987). The Illinois State Police does not currently have any published standardized breath testing policies or uniform enforcement programs. Their entire standardization, quality control and efficiency program is limited to the IDPH regulations and ILL. REV. STAT. ch. 95½, ¶ 11.501.2(a)1 (1987) on their face. Letter from Susan C. Weidel, Chief Legal Counsel of the Illinois State Police to Angela Peters (Feb. 26, 1988). See Appendix B. Since there is no published documentation of the breath testing procedures used by the Illinois State Police beyond the minimal statutory references, no empirical basis exists to determine whether IDPH regulations have been properly followed. Any challenges to procedures used by the Illinois State Police have to be made on an individual case basis. See *infra* note 52 for the issue of individual ownership, servicing, calibration, and quality control of breath alcohol machines.

Breath machines can be owned by local police departments. They are also required to follow IDPH regulations even though the IDPH does not have direct control over their procedures and applications of breath tests. Local police agencies are not likely to have documentation of IDPH compliance and manufacturer recommendations. Since there is no mechanism to enforce these standards, there can be a wider range of discrepancies in test results.

9. ILL. ADMIN. CODE tit. 77, §§ 510.10 - 510.100 (1985); *People v. Emrich*, 113 Ill. 2d 343, 498 N.E.2d 1140 (1986).

10. *People v. Palmer*, 114 Ill. App. 3d 454, 448 N.E.2d 1005 (1983).

11. *Denison v. Anchorage*, 630 P.2d 1001, 1003 (Alaska Ct. App. 1981); *People v. Alvarez*, 70 N.Y.2d 375, 515 N.E.2d 898 (1987); see also *People v. Bryant*, 113 Ill. 2d 497, 499 N.E.2d 413 (1986) (evidence offered is based on relevant circumstances from which the defendant's guilt can be inferred).

12. *State v. Rolison*, 733 P.2d 326 (Haw. Ct. App. 1987); *People v. Schumann*, 120 Ill. App. 3d 518, 458 N.E.2d 182 (1983); *Palmer*, 114 Ill. App. 3d at 454, 448 N.E.2d at 1005; *City of Highland Park v. Block*, 48 Ill. App. 3d 241, 362 N.E.2d 1107 (1977); J. TARANTINO, TRIAL EVIDENCE FOUNDATION, § 582 (1986).

13. Ahern, *Summary Suspension Law, DEFENDING DUI AND TRAFFIC CASES, ILL. INST. FOR C.L.E.* (1987).

14. *People v. Orth*, No. 64931 (Ill. Sept. 29, 1988); *People v. Hamilton*, 118 Ill. 2d 153, 514 N.E.2d 965 (1987); *People v. Schaefer*, 135 Misc. 2d 554, 516 N.Y.S.2d 391 (1987).

15. Defendant has burden of showing that the breath machine malfunctioned; only a light going out and coming back on is not adequate to establish a malfunction. *People v. Sanders*, 155 Ill. App. 3d 759, 508 N.E.2d 497 (1987). Defendant must present evidence that manufacturer's procedures or IDPH rules were not followed, because a mere assertion of contrary conduct is inadequate to meet defendant's burden. *Swain v. State Dept. of Revenue*, 717 P.2d 507 (Colo. Ct. App. 1985); *People v. Duensing*, 138 Ill. App. 3d 587, 486 N.E.2d 938 (1985); *City of Pekin v. Oltman*, 39 Ill.

may use the result as prima facie proof of intoxication. The trier of fact relies on the result to support a conviction. Once the BrAC test result is in evidence, weight and credibility arguments usually fail and the defendant is convicted.<sup>16</sup>

## II. PRIMA FACIE CASE

The movant's prima facie case<sup>17</sup> is based on prima facie evidence.<sup>18</sup> Movant's prima facie case consists of (1) probable cause for the arrest; (2) demonstrating minimal compliance with IDPH regulations;<sup>19</sup> and (3) adducing the accuracy and reliability of the particular tests.<sup>20</sup> Prima facie evidence of statutory compliance regarding the breath alcohol machine is shown through:

- a. a currently approved breath machine model;
- b. proper calibration and maintenance, and operator licensing;
- c. proper observation, procedures and operational checklist;
- d. presentation of original breath ticket (hard copy printout); and finally
- e. the operator's testimony stating the breath alcohol concentration result.

After submitting evidence of statutory compliance, the test result is usually considered sufficient evidence of ethanol intoxication to support movant's prima facie claim of drunkenness. This prima facie evidential showing goes to the admissibility of the test result. The defendant may still argue the weight of the evidence. Generally, the foundation required by the trial judge is for the breath machine operator to answer two questions. First, "Did the operator administer the breath test?"<sup>21</sup> Second, "What was the BrAC test result as docu-

App. 3d 781, 350 N.E.2d 534 (1976); *State v. Pitlik*, 247 N.W.2d 741 (Iowa 1976); *Feil v. Comm. Public Safety*, 383 N.W.2d 420 (Minn. 1986); *Moseley v. State*, 696 S.W.2d 934 (Tex. App. 1985).

16. *Manus v. State*, 695 P.2d 884 (Okla. Crim. App. 1985).

17. A prima facie case is a cause of action which is sufficiently established by proper evidence, to support a finding or verdict in favor of the movant, and in the absence of contradictory or explanatory evidence from the other side. H. CLARK, 1 CALLAGHAN'S ILLINOIS EVIDENCE: CIVIL AND CRIMINAL § 1.07 (1964).

18. Prima facie evidence is evidence which is sufficient if uncontradicted and unexplained, to create a presumption, establish a fact or present an issue. *Id.*

19. *People v. Emrich*, 113 Ill. 2d 343, 498 N.E.2d 1140 (1986); *People v. Palmer*, 114 Ill. App. 3d 454, 448 N.E.2d 1005 (1983); *People v. Leffew*, 33 Ill. App. 3d 700, 338 N.E.2d 480 (1975); see also *Stamp v. State*, 495 So.2d 725 (Ala. Crim. App. 1986); *Reeves v. Montgomery*, 466 So.2d 1041 (Ala. Crim. App. 1985); *State v. Powell*, 618 S.W.2d 47 (Mo. Ct. App. 1981); *State v. Scott*, 206 Neb. 451, 293 N.W.2d 114 (1980).

20. *State v. Geinzer*, 406 N.W.2d 457, 458 (Iowa App. 1987) (improper reading would affect test results).

21. *Crampton v. State*, 71 Md. App. 375, 525 A.2d 1087 (1987) (testimony of breath machine operator who administered test is required for BrAC results to be admissible, unless there is a stipulation or affidavit); *Williams v. Schwendiman*, 740

mented by the breath ticket?"<sup>22</sup> However, statutory requirements obligate the movant to demonstrate considerably more than these two general propositions for introduction of the test results into evidence.

The breath ticket is only the end result of what is sought to be proved. The danger in admitting only that piece of evidence is that it is an expression taken out of context.<sup>23</sup> The "blood alcohol concentration" result using breath ("BrAC"),<sup>24</sup> gives an illusion of precision and accuracy which is in reality a fallacy. This distorted impression may remain with the fact finder at the subconscious level and influence the decision making process.<sup>25</sup> The breath analysis ticket must be read and explained in its entirety before the result can be properly understood. The BrAC ticket is a portion of a larger integrated writing. Its contents and supportive documentation (calibration procedures, calibration and ampoule solution assays, maintenance and recall reports, etc.) directly contribute to the end test result. The BrAC value is a culmination of an inseparable process whose entirety must be authenticated.<sup>26</sup> The Doctrine of Completeness should be applied to breath tickets.<sup>27</sup> The breath ticket must be interpreted in light of the entire test analysis and underlying scientific theory.

Admissibility of breath alcohol machine results is premised on foundational assumptions. The movant relies on acceptance of scientific theory, technique, and proper application to support the legitimacy of the test result. The movant offers these assumptions as substantive evidence to prove the *ultimate* issue in his case. The breath ticket is usually offered as proof that the test-subject had a blood alcohol content of .10% or more at the time of driving.<sup>28</sup> Based

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P.2d 1354 (Utah App. Ct. 1987)

22. For a discussion of the accuracy of breath alcohol machines, see material cited *infra* note 142.

23. "[W]e cannot say that failure to strike the breathalyzer test results was harmless error. That test was quantitative and it had the seal of scientific approval. Compared to other evidence, the test was likely to be thought the most powerful. It was not merely cumulative." *Commonwealth v. Cochran*, 25 Mass. App. Ct. 260, 265, 517 N.E.2d 498, 507 (1988).

24. In Illinois, blood alcohol concentration is defined as the "grams of alcohol per 100 milliliters of blood ("BAC") or grams of alcohol per 210 liters of blood ("BrAC)." ILL. REV. STAT. ch. 95½ para. 11-501.2(a)(5) (1987).

25. Imwinkelreid, *The Standard for Admitting Scientific Evidence: A Critique from the Perspective of Juror Psychology*, 28 VILL. L. REV. 554 (1983); see also Imwinkelreid, *Some Preliminary Thoughts on the Wisdom of Governmental Prohibition or Regulation or Employee Urinalysis Testing*, 11 NOVA L.J. 563, 581 (1983).

26. 7 J.H. WIGMORE, EVIDENCE IN TRIALS AT COMMON LAW §§ 1172 (I), 2108 (c)(2) (1978).

27. See generally MCCORMICK'S HANDBOOK OF THE LAW OF EVIDENCE § 56 (2d ed. 1972) (discussing introduction of partial documents or conversations); ILL. REV. STAT. ch. 110A, ¶ 212(c) (1987) (describing partial use and use of depositions).

28. ILL. REV. STAT. ch. 95½, ¶¶ 11-501.1, 11-501.2(5)(b) (1987); see also *State v.*



solely upon the breath alcohol machine's ticket admittance into evidence, the movant now will claim that: (1) the results are accurate and reliable; (2) a proper chain of custody for the evidential breath ticket and results existed; (3) the operator and calibrator were competent; (4) the methodologies were suitable; and (5) the machine was "calibrated as accurate" at the time of the test. A stipulation to the admission of test results waives foundational defects and concedes the accuracy of the test results.<sup>29</sup>

If opposing counsel does not properly object to the movant's substantive evidence and its accompanying assumptions, the substantive evidence will be admitted.<sup>30</sup> The uncontroverted supportive arguments are then used by the movant and relied on to support a conviction.<sup>31</sup>

### III. THE BREATH ALCOHOL MACHINE IS ON ILLINOIS' APPROVED LIST

It is incumbent on counsel to have a thorough understanding of the IDPH regulations.<sup>32</sup> Specific compliance by all parties is mandated by these regulations.<sup>33</sup> The Illinois legislature, through the Illinois Department of Public Health (IDPH), approved eight breath testing devices<sup>34</sup> which are in two classes.<sup>35</sup> The breath machines

Superior Ct. of County of Cochise, 149 Ariz. 269, 718 P.2d 171 (1986); *People v. Kappas*, 120 Ill. App. 3d 123, 458 N.E.2d 140 (1983); *People v. Malik*, 113 Ill. App. 3d 206, 446 N.E.2d 431 (1983); *People v. Godbout*, 42 Ill. App. 3d 1001, 356 N.E.2d 856 (1976); *People v. Bower*, 131 Ill. App. 2d 548, 268 N.E.2d 196 (1971) (breath alcohol machine used to support DUI complaint with a BrAC of less than .10%).

29. *See People v. Jansen*, 130 Ill. App. 2d 365, 264 N.E.2d 862 (1970). *But see Burr v. Director of Revenue*, 707 S.W.2d 430 (Mo. App. Ct. 1986) (stipulation only as to officer's testimony of the results).

30. *City of Pekin v. Oltman*, 39 Ill. App. 3d 781, 350 N.E.2d 534 (1976).

31. *See McCORMICK'S HANDBOOK OF THE LAW OF EVIDENCE* § 54 (3d ed. 1984).

32. ILL. ADMIN. CODE tit. 77, § 510 (1985) (commonly referred to as IDPH Standards & Procedures for Testing Alcohol and/or other Drugs) (effective Jan. 1, 1982, revised July 1, 1985). IDPH Standards and Procedures reprints are available free of charge from the IDPH at 535 West Jefferson St., Division of Implied Consent, Springfield, Ill. 62761.

33. ILL. REV. STAT. ch. 95½, ¶ 11-501.2(a)(1) (1987).

34. *Id.*; IDPH Reg. 1510.40-b; *People v. Crawford*, 23 Ill. App. 3d 398, 318 N.E.2d 743 (1974); *see also Brady v. State* 151 Ga. App. 89, 258 S.E.2d 914 (1979); *State v. Baker*, 146 Ga. App. 608, 247 S.E.2d 160 (1978); *State v. Ghylin*, 222 N.W.2d 864 (N.D. Sup. Ct. 1974). On March 21, 1988, the Alcotest 7110 by National Draeger was approved for use in Illinois.

35. ILL. ADMIN. CODE. tit. 77, §§ 510.4(b),(c),(d), 510.70(a) (1985). The IDPH bench tests two production model units having non-sequential serial numbers. A minimum of 500 complete tests are conducted on each unit. Tests are to be conducted over a minimum of 30 business days, with not more than 50 and less than 25 simulator tests being conducted during any consecutive eight hour period. For approval, the unit must perform 500 consecutive tests without total unit failure using simulator ethanol solutions of .05% to .35% concentrations. Letter from William Brey to Angela Peters (Sept. 4, 1987).

employ either photoelectric colorimetry (reagent chemistry) or infrared technology for sample assaying.<sup>36</sup> Illinois has adopted the federal regulations and standards<sup>37</sup> for use and testing of these machines in DUI cases. Illinois currently has 488 individual breath alcohol machines in service throughout the state.<sup>38</sup>

Generic terminology, i.e. "breathalyzer" should not be used for identification of the specific breath alcohol machine.<sup>39</sup> Each state approved breath machine is unique. The movant must establish the particular machine's make, model, and serial number used, and that the breath machine is on the State's approved list.<sup>40</sup> A police officer's conclusory testimony that a breath alcohol machine is on the approved list is not competent to establish that the machine is in

36. ILL. ADMIN. CODE tit. 77, § 510.40(b) (1985).

37. ILL. ADMIN. CODE tit. 77, §§ 510.40(c),(d) (1985); *see also* Breath Alcohol Testing Equipment 38 Fed. Reg. 30,459 (1973); National Highway Traffic Safety Administration Notices: Breath Alcohol Testing Devices, 49 Fed. Reg. 48,854 (1984); Highway Safety Program, Amendment of Conforming Products List of Evidential Breath Testing Devices, 53 Fed. Reg. 6727 (1988); Amendment of Conforming Products List of Evidential Breath Testing Devices; Correction, 53 Fed. Reg. 16,610 (1988).

38. Total certified breath alcohol analysis machines used by local, county or state agencies in Illinois effective November 1, 1988 are:

Smith & Wesson Breathalyzer Model 1000	176
(70 of the total units are in use, 106 are back-up units)	
Smith & Wesson Breathalyzer Model 2000	68
Intoximeter Model 3000	118
Intoxilyzer Model 4011, 4011A, 4011AS	20
Intoxilyzer Model 5000	59
BAC Verifier	46
Datamaster II	1

Illinois State Police owns 156 of these units consisting of Intoxilyzer Models 4011AS and 5000.

Letter from William Brey to Gil Sapir (Nov. 1, 1988); Letter from Jeremy D. Margolis to Angela Peters (Dec. 24, 1987).

In *State v. Flood*, 503 So. 2d 1180 (Fla. Dist. Ct. App. 1988), the court held that only breath alcohol machines approved by the state can be used in DUI cases. All modifications made after initial state approval must be resubmitted for subsequent retesting and approval, or else the test results are inadmissible. At issue was the Intoximeter 3000 and venting of an acrylic block which effected its Taguchi sensor's performance. The court relied in part on *Commonwealth v. McGinnis*, 511 Pa. 520, 515 A.2d 847 (1986), which dealt with modifications and approval of a Smith & Wesson Breathalyzer 1000.

39. "Breathalyzer" is the registered trademark of Smith and Wesson Electronics Company, Springfield, Massachusetts; "Intoxilyzer" is the registered trademark of CMI, Inc., Minturn, Colorado. Federal Signal Corporation sold CMI on October 3, 1988 to MPD, Inc., of Owensboro, Kentucky.

The court in *People v. Bates*, 165 Ill. App. 3d 80, 518 N.E.2d 628 (1988) called the breath alcohol machine a "breathalyzer" even though the S&W Breathalyzer Model 2000 does not make a noise until a sufficient breath sample is obtained, and does not print evidential tickets stating "deficient sample." The breath machine used in *Bates* was an Intoxilyzer Model 5000. *See infra* notes 54 & 86 for further discussion.

40. "Intoxilyzer 3000" and "Breathalyzer 5000" are non-existent breath alcohol machines, whose fictional names are sometimes mistakenly used.

fact on the state's certified list.<sup>41</sup> Moreover, it is essential that the list of approved machines presented in court is current. The approved list frequently changes due to implementation of new technologies.

#### IV. AMPOULE BATCH CERTIFICATION

If photoelectric colorimetry is used, (Smith and Wesson Breathalyzer Model 1000), then the movant<sup>42</sup> must produce a "certified assay report" of the ampoule's content.<sup>43</sup> A quality control assay by the IDPH serves to minimize tainting of the ampoule's reagents or to having its contents adversely affecting test results through their use. The IDPH regulations require that ampoule solutions fall within specific tolerances for weight, volume and composition. A random representative ampoule from the batch must be submitted for assaying.<sup>44</sup> The ampoule's critical tolerance must be documented and certified before any ampoules of that batch can be used in breath alcohol analysis<sup>45</sup> (See Appendix C). The agency conducting the quality control assay must be approved by the State of Illinois and be in good standing.<sup>46</sup> Otherwise, the ampoule certification is

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41. *Willoughby v. State*, 153 Ga. App. 434, 265 S.E.2d 352 (1980).

42. The glass ampoule contains specific amounts of compounds, in measured solution, that reacts with ethanol and other organic compounds. The solution changes color from yellow to light blue-green, due to the oxidation reduction reaction from organic volatile vapors in the breath sample. The increased light transmittance, through color loss in the solution, is measured and correlated to per cent BrAC. 3 D. NICHOLAS, DRINKING/DRIVING LITIGATION §§ 28:05-06 (1985); see ILL. ADMIN. CODE tit. 77, § 510.50 (1987) for sampling and acceptable composition and tolerances of ampoule constituents.

43. ILL. ADMIN. CODE tit. 77, § 510.50 (1985). See also *People v. Crawford*, 23 Ill. App. 3d 398, 318 N.E.2d 743 (1977); *People v. Todd*, 79 Misc. 2d 630, 360 N.Y.S.2d 754 (1974), *rev'd on other grounds* 38 N.Y.2d 755, 343 N.E.2d 767 (1975); *State v. Ghylin*, 222 N.W.2d 804 (N.D. Sup. Ct. 1974); *Reyna v. State*, 508 S.W.2d 632 (Tex. Cr. App. 1974). The state must produce all documents pertaining to calibration and certification of ampoules. The prosecution's position that certification and documentation of the machine is not within their control is "ludicrous." The state must produce full and open discovery for a fair and expeditious resolution of the case. Otherwise, the scientific evidence relied upon will be suppressed at trial. *State v. Dohme*, 223 N.J. Super. 485, 538 A.2d 1321 (1988); *People v. Briggs*, 519 N.Y.S.2d 294 (N.Y. Crim. Ct. 1987).

44. ILL. ADMIN. CODE tit. 77, § 510.50(a) (1987). Random sampling and certification that the ampoules are properly constituted must be done and offered as a foundational prerequisite for admission of test results. *State v. Dohme*, 223 N.J. Super. 485, 538 A.2d 1321 (1988).

45. ILL. ADMIN. CODE tit. 77, § 510.50; see also *State v. Dohme*, 223 N.J. Super. 485, 538 A.2d 1321 (1988); *State v. Ryan*, 43 Wash. App. 488, 717 P.2d 1390 (1986).

46. Effective April 29, 1985 the IDPH Forensic Toxicology Laboratory on Taylor Street in Chicago, Illinois ceased all forensic services. All forensic services were transferred to the Illinois State Police, except for the certification and assaying of ampoule and calibration simulator solutions. The IDPH laboratory was closed "to preserve the integrity of criminal and civil legal processes in the state, which depend on the accurate and objective presentation of untainted evidence . . . the . . . IDPH Forensic Toxicology Laboratory had . . . consistently and habitually produced inaccurately

inadmissible.<sup>47</sup>

The breath alcohol machine operator should be able to document on-site compliance with IDPH rules.<sup>48</sup> At the time and place of conducting the test, the operator has to establish each ampoule's volumetric measurement, uniform yellow color, lack of decomposition and proper storage facilities.<sup>49</sup> The analysis requires two ampoules with the same batch control number. One test ampoule is used in the actual analysis, with the second as a reference standard. Ampoules with the same batch control number must be used together for quality control and test reliability purposes.

#### V. PROPER CALIBRATION & CERTIFICATION OF BREATH ALCOHOL MACHINE

Breath testing machines must strictly comport with maintenance requirements and certification.<sup>50</sup> The breath machine's performance is dependent on its maintenance and proper operation.<sup>51</sup> The IDPH is responsible for maintaining state owned breath machines and those of their agents, while the Illinois State Police maintain their own breath machines.<sup>52</sup> An IDPH employee or state police trooper calibrates and maintains their respective breath alcohol machines. This employee is commonly referred to as the calibrator or

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rate analysis of evidence." Illinois State Police, Toxicology Final Report 1 (Sept. 13, 1985); *see also* Letter from Bruce W. Vander Kolk, Bureau Chief, Illinois State Police Bureau of Forensic Sciences to Angela Peters (Jan. 29, 1988). Inspection and testing of ampoules is pursuant to ILL. ADMIN. CODE tit. 77, § 510.50 (1987); *see* Eckhoff v. Dir. of Revenue, 745 S.W.2d 815 (Mo. Ct. App. 1988) (discussing ampoule manufacturers' approval and standing).

47. Contact the IDPH for a current list of approved certified laboratories.

48. *People v. Clifton*, 33 Ill. App. 3d 112, 338 N.E.2d 480 (1973).

49. The operator and calibrator should be able to establish proper operational procedures including: gauging of ampoule for proper volume, individual packaging and intact mouth pieces, (*State v. Amant*, 504 So.2d 1094, 1096 (La. Ct. App. 1987)), washing hands to minimize contamination from grease and oils (especially gun oil), wiping of ampoule with a lint free cloth before insertion of ampoule for removing of lint, oil, fingerprints, condensation, evaporated residue, etc. Storage of ampoule is to be in a cool, dry, light proof place. The ampoule's contents are susceptible to decomposition by ultra-violet light.

50. ILL. REV. STAT. ch. 95½, ¶ 11-501.2(a)(1) (1987); ILL. ADMIN. CODE tit. 77, §§ 510.40 - 510.10 (1985). *Commonwealth v. Cochran*, 25 Mass. App. Ct. 260, 517 N.E.2d 498 (1988).

51. Admissibility of breath test evidence is based on "an assumption of scientific reliability . . . [i]mplicit in this assumption is that the device is working properly." *Commonwealth v. Cochran*, 25 Mass. App. Ct. 260, 517 N.E.2d 498 (1988).

52. Each owner is responsible for all aspects of his machine's maintenance and operation, including the manufacturer's advisories and recall notices. The Illinois State Police Breath Analysis Section, for example, has seven inspectors certifying and servicing 156 breath alcohol machines consisting of Intoxilyzer models 4011AS and 5000 in 102 counties of Illinois. Letter from Jeremy D. Margolis to Angela Peters (Dec. 24, 1987).

field inspector.<sup>53</sup> The IDPH or police department maintains records documenting their specific breath machine's history. The history should cover information relating to the machine's failures, down time, repairs, recalls, retro-fitting to current standards and other significant events. This information is usually contained in the maintenance log (See Appendix D) and customer advisories from the manufacturer or sales agent. If this information is not produced, then the breath machine is assumed to be in the same condition as of date of manufacture without ever having been properly maintained.<sup>54</sup> It is the movant's responsibility of proving the breath alcohol machine was adequately checked for accuracy and operating properly.<sup>55</sup>

Documentation of maintenance from date of manufacture to date of trial must be produced to determine user's compliance with manufacturer's recommendations and IDPH administrative regulations.<sup>56</sup> Past manufacture recalls, modifications and advisories have concerned radio frequency interference,<sup>57</sup> humidity sensors,<sup>58</sup> capacitors,<sup>59</sup> and acetaldehyde detector,<sup>60</sup> all of which can significantly affect the test results. A breath alcohol machine in its original or unmodified form is not an approved testing device, and its results are not allowable as evidence.<sup>61</sup>

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53. ILL. ADMIN. CODE tit. 77, § 510.20 (1985).

54. *People v. Schaefer*, 135 Misc. 2d 554, 516 N.Y.S.2d 391 (1987). In *People v. Bates*, 165 Ill. App. 3d 80, 518 N.E.2d 628 (1988) the court in discussing a possible defective breath delivery system (that was questioned but never tested or checked), held "existence of a condition indicates a condition is in question, prior existence of that condition indicates a probability of its continuation at a later time." However, the court noted that "feigning compliance" would be difficult without evidence establishing a defective breath machine or malfunction. *Bates* also raises the question of whether the trial and appellate court can take judicial notice of the breath machine's professed ability to now measure a subject's refusal or compliance to take a breath test, in addition to intoxication, based on the absence of scientific and legislative authority. In *Commonwealth, DOT v. Harper*, 544 A.2d 80 (Pa. Commw. Ct. 1988), the test subject blew until out of breath and the breath alcohol machine (BAC Verifier) did not process the test sample. The court held that a conscientious effort to comply will not be held against the test subject.

55. *Commonwealth v. Cochran*, 25 Mass. App. Ct. 260, 517 N.E.2d 498 (1988).

56. The operating facility or agency where the machine is located is not always indicative of ownership. Documentation should cover intermediate and multiple owners including use of machines on loan. ILL. ADMIN. CODE tit. 77, § 510.60(d) (1985); *People v. Duensing*, 138 Ill. App. 3d 587, 486 N.E.2d 938 (1985).

57. *Heddan v. Dirkswagger and Comm. of Public Safety*, 336 N.W.2d 54 (Minn. 1983); *Baldinger v. Commonwealth*, 509 A.2d 912 (Pa. 1986); Kaster, *RFI Testing on Breath Alcohol Measuring Devices: The NBS-NHTSA Cover-Up*, 8 CHAMPION 8 (May 1984).

58. Smith & Wesson Breathalyzer Model 2000 Maintenance Manual (327A Program).

59. 3 D. NICHOLS, DRINKING/DRIVING LITIGATION § 31:11 (1985); (Appendix D); Kelley, *BAC Verifier: New Defenses for a New Machine*, 1 DWI J. 15 (1986).

60. Federal Signal Corp./CMI Inc., Intoxilyzer Model 5000 Modifications, Product No. 012078 (1986).

61. *State v. Flood*, 523 So. 2d 1180 (Fla. Dist. Ct. App. 1988); *Commonwealth v.*

If a breath test is administered to individuals who have or claim to have Acquired Immune Deficiency Syndrome Virus (AIDS), then the breath test machine should be removed from service and decontaminated according to Illinois State Police procedure (See appendix E). No information is available regarding the effects of this decontamination procedure on the machine and suspected AIDS virus. Published IDPH regulations do not currently address this potential but unverified problem.

Calibration logs and records must be maintained to document malfunctions and routine adjustments to manufacturer's operational specification.<sup>62</sup> Separate logs *ought* to be kept on each machine.<sup>63</sup> No published uniform format of information is required in the calibration log. Whenever the breath alcohol machine is used, it must be recorded in its log book<sup>64</sup> (See Appendix F). When a breath machine malfunctions, the IDPH requires immediate notification and removal of the machine from operation until repaired.<sup>65</sup> Calibration must occur on a regular basis at least once a month, and must not exceed forty-five days.<sup>66</sup> Each time the breath machine is serviced or moved it should be recalibrated.<sup>67</sup> A reading of the log's calibration entry only before and after the sample analysis is not adequate to determine a breath alcohol machine's accuracy and reliability. Generally, a calibration log only gives dates of calibration and use. The log does not list when the machine was inoperable, its repair history, or any associated problems (See Appendix G). The history of the breath machine cannot be viewed in an isolated context of thirty to sixty days, especially when compliance with manufacturer and operational standards is sought.<sup>68</sup>

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McGinnis, 511 Pa. 520, 515 A.2d 847 (1986); Heddan v. Dirkswagger and Comm. of Public Safety, 336 N.W.2d 54 (Minn. 1983); *Results of Noncertified Intoxilyzers (4011A) Suppressed*, 6 DRINKING/DRIVING LAW LETTER (June 12, 1987) (relying on *State v. Anderson*); see also *supra* note 54 discussing *People v. Bates*, 165 Ill. App. 3d 80, 51 N.E.2d 628 (1988).

62. *People v. Schaefer*, 135 Misc. 2d 554, 516 N.Y.S.2d 391 (1987). The IDPH does not require maintenance record logs, but IDPH policy requires separate record of repairs on each breath machine. Letter from William Brey to Angela Peters (Oct. 9, 1987). See Appendix D.

63. ILL. ADMIN. CODE tit. 77, § 510.100(c) (1985). Separate logs would allow a party to easily identify relevant information and reduce possible confusion.

64. *State v. Rafter*, 26 Ohio App. 3d 39, 497 N.E.2d 1131 (1985); see also *People v. Mertz*, 506 N.Y.S.2d 290, 68 N.Y.2d 136, 497 N.E.2d 657 (1986).

65. Letter from William Brey to Angela Peters (Sept. 4, 1987); Letter from William Brey to Angela Peters (Oct. 9, 1987); see also *Stone v. State*, 685 S.W.2d 791 (Tex. Crim. App. 1985), *aff'd*, 703 S.W.2d 652 (1986); ILL. ADMIN. CODE tit. 77, § 510.100(e) (1985).

66. ILL. ADMIN. CODE tit. 77, § 510.100(a) (1985).

67. The design, construction and sophistication of the breath machine's technology from which results are expected can be affected by vibration and casual movement, which may compromise the machine's performance.

68. See *State v. Schaefer*, 135 Misc. 2d 554, 516 N.Y.S.2d 391 (1987). In *McKim v. Arkansas*, 25 Ark. App. 176, 753 S.W.2d 295 (1988), the trial court ruled, "We are

Frequently, the movant claims the breath alcohol machine is "calibrated as accurate." This is a misnomer. Accuracy is independent of calibration. The mechanical readjustment of the breath machine (calibration) cannot compensate or change its inherent design limitations (accuracy).<sup>69</sup> The calibrator certifies the readjustment of the breath machine to the manufacturer's operational specifications using an external ethanol simulator standard.

The breath alcohol machine is calibrated with an apparatus which uses an ethanol solution to simulate a breath sample.<sup>70</sup> The purpose of a simulator is to insure that the breath machine is functioning within statutory tolerances and working properly when the test sample is analyzed.<sup>71</sup> IDPH regulations sections 510.40 and 510.100<sup>72</sup> do not address calibration procedures or the type and class of breath alcohol simulator solution equipment to be used.<sup>73</sup> Individual certification as to accuracy and reliability of simulator units employed is not required.<sup>74</sup> Therefore, no one calibrates the simulator units. The movant does not have to preserve the calibration solution, providing the certification regulations are properly followed.<sup>75</sup> The simulator units currently used by the IDPH are subject to inac-

not going through all of this. If we open the door to this, every DWI case in the state would take three (3) days. The machine is certified as its operator was certified. That is as far as you may go . . ." *Id.* at 178, 753 S.W.2d at 297. The appellate court held that it was reversible error to deny relevant evidence of inaccuracy and unreliability through repair, maintenance, suspension of machine's certification, logging of every text, complete disclosure of all records, and reprimands by governmental agencies for abusing established administrative procedures. The breath alcohol machine was a Smith & Wesson Model 900A. *Id.* But see *People v. White*, 167 Ill. App. 3d 439, 521 N.E.2d 563 (1988); *People v. Hester*, 88 Ill. App. 3d 391, 410 N.E.2d 638 (1980). In these cases, the appellate court held that a single page of the logbook, as a business record, containing a monthly calibration preceding the test analysis, is adequate to establish accuracy and calibration foundation requirements based on IDPH regulations.

69. It should also be noted that lack of calibration can render an otherwise accurate machine inaccurate.

70. National Highway Traffic Safety Administration Notices: Breath Alcohol Testing Devices, 49 Fed. Reg. 48,864 (1984); *People v. Scheider*, 129 Misc. 2d 674, 493 N.Y.S.2d 747 (1985). A breath alcohol simulator is intended for testing whether a machine conforms to its model specifications and is not intended to replace conventional calibration units used by local agencies to calibrate evidential breath testers. 49 Fed. Reg. 48,856 (1984). It is to verify accuracy of results using ethanol as a control test. *People v. Shuping*, 312 N.C. 421, 323 S.E.2d 350 (1984); see also 3 D. NICHOLS, DRINKING/DRIVING LITIGATION § 27:14 (1987).

71. 3 D. NICHOLS, DRINKING/DRIVING LITIGATION § 27:14 (1987).

72. ILL. ADMIN. CODE tit. 77, §§ 510.40, 510.100 (1985).

73. The IDPH has no published adoption or application of breath alcohol simulator solution devices regarding their performance and conformity pursuant to federal regulations. See *infra* note 76; NICHOLS, *supra* note 70, at § 27:14. The IDPH only requires compliance with those evidential breath testing devices approved by the federal government through the ILL. ADMIN. CODE tit. 77, §§ 510.40(c)(d) (1985). See *supra* note 1.

74. ILL. ADMIN. CODE tit. 77, §§ 510.40, 510.100 (1985).

75. *State v. Buche*, 87 Or. App. 505, 742 P.2d 1196 (1987).

curacies and production of unreliable results.<sup>76</sup> Yet, no documented certification as to the simulator's accuracy<sup>77</sup> and chemical composition of the certified control reference sample<sup>78</sup> is required.<sup>79</sup> The movent must establish a proper foundation regarding calibration solution, preparation, composition, and storage,<sup>80</sup> even though verification of the calibration process is not required.

The breath alcohol machine is calibrated by use of an external control sample of ethanol<sup>81</sup> (See Appendix H). The result of the

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76. The IDPH uses the Mark II, Mark IIA and Mark IV breath alcohol sample simulator by Smith and Wesson Company and National Draeger. The IDPH has no specific standards for breath alcohol simulators. Their policy is that simulators do not need to be certified or tested for accuracy and reliability. However, without use of the simulator unit, certification of the breath machine would be almost impossible. Letter from William Brey to Angela Peters (Oct. 9, 1987). The Illinois State Police use the "toxitest" breath alcohol simulator by Intoxilyzer of CMI/Federal Signal Corporation. The Illinois State Police also does not have any specific standards or calibration criteria for their simulators. For performance problems associated with breath simulators, see Brosky, *A Note on the Lung Simulator; Does it Really Reflect the Human Lungs?* 3 DWI J. 8 (Nov. 1988); Dubowski, *Breath Alcohol Simulators: Scientific Basis and Actual Performance*, 3 J. ANALYT. TOX. 177 (Sept./Oct. 1979); see also People v. Shuping, 312 N.C. 421, 323 S.E.2d 350 (1984).

77. See *supra* notes 72, 76. See also *State v. Martin*, 391 N.W.2d 611 (N.D. 1986).

78. ILL. ADMIN. CODE tit. 77, §§ 510.20, 510.100(a) (1985). Since IDPH makes their own simulator solution, records and certification of the solution is mandated regarding origin, composition, time and dates. *People v. Scheider*, 129 Misc. 2d 674, 493 N.Y.S. 2d 747 (1985). The IDPH regulations do not address creation, storage, use or methods of quality control for calibration solutions. ILL. ADMIN. CODE tit. 77, §§ 510.20, 510.100(a) (1985).

79. Letter from William Brey to Angela Peters (Oct. 9, 1987).

80. *People v. Scheider*, 129 Misc. 2d 674, 493 N.Y.S.2d 747 (1985).

81. ILL. ADMIN. CODE tit. 77, §§ 510.20, 510.100(a) (1985). The certified reference sample is essential to reliable simulator operation and breath machine calibration. Letter from William Brey to Angela Peters (Oct. 9, 1987). Documented certification of assay for the ethanol control standard, similar to that required of an ampoule's content, is not prescribed by the IDPH regulations. The IDPH laboratory policy is to conduct a quality control sample on each batch of ethanol calibration solution. Quality control testing is by gas chromatography and then with either a Intoximeter 3000 or Omnicron Intoxilyzer Model 4011A. When the gas chromatograph instrument is not available, then only a breath alcohol machine is used to test the ethanol standard. IDPH laboratory quality control data according to specific batch number is available by subpoena. However, no document authenticating and verifying certification of the procedures or results pertaining to ethanol standardization is available. No documentation is available regarding the number of tests conducted with the calibration solution or its storage, thereby effecting its potency. Letter from Gil Sapir to Dr. Dietmar Grohlich (Nov. 6, 1987); see also 3 D. NICHOLS, DRINKING/DRIVING LITIGATION § 27:14 (1987). IDPH records are not kept verifying the simulator solution to the respective machine being calibrated with that solution.

The Illinois State Police make their own ethanol calibration standard solution in the field. Quality control and the standard's integrity is dependant on the inspector's capabilities.

Since July 1, 1988, the Illinois State Police Bureau of Forensic Services Laboratory has been preparing simulator reference solutions instead of state police field inspectors (calibrators). However, there is no documentation (policy directives, general and internal orders, etc.) that formalizes the state police and its laboratory's role for quality control procedures. The state police breath alcohol machine calibration prac-



standardized test is printed out. If the machine functions outside of the manufacturer's specification, it is adjusted so that it will register within the critical tolerances for a similarly constituted control sample. Ironically, while the certified ampoule and assays<sup>82</sup> used in the actual test (photoelectric colorimetry) are required, the control solution assays and samples that are used in calibrating breath machines are not. Thus, if the control samples have no verifiable reliability, the veracity of the test results is suspect.<sup>83</sup>

The actual calibration procedure is limited to only testing the breath machine for presence of ethanol.<sup>84</sup> The breath machine's detection system for radio frequency interference (RFI), interferant compounds, computer transient error, etc.<sup>85</sup> are not checked.<sup>86</sup> These breath alcohol machines purport to detect ethanol to the exclusion of all other compounds. The IDPH regulations define alcohol as ethanol.<sup>87</sup> Yet there are other methyl-group compounds similar to ethanol naturally occurring in a person's breath<sup>88</sup> or that are present as organic solvents<sup>89</sup> which will be confused with ethyl alcohol<sup>90</sup> under

tices and lack of quality control is the subject of a federal lawsuit which may account for this change in practice as of July 1, 1988. See *Ducker v. Margolis*, No. 88C 8608 (N.D. Ill. filed Oct. 7, 1988).

82. ILL. ADMIN. CODE tit. 77, § 510.50 (1985).

83. *State v. Martin*, 391 N.W.2d 611 (N.D. 1986).

84. ILL. ADMIN. CODE tit. 77, §§ 510.100(a), 510.20 (1985).

85. Transient error is commonly called "glitching," and occurs when the computer ceases to function for a short period of time until it spontaneously corrects itself. See 3 D. NICHOLS, DRINKING/DRIVING LITIGATION §§ 29:05, 31:17 (1987).

86. ILL. ADMIN. CODE tit. 77, § 510.100(a) (1985). Several machines (Intoximeter 3000, Intoxilyzer 5000, BAC Verifier and Datamaster II) have internal self-calibrating systems, (e.g. optics, sample delivery systems, electronics and software) which the manufacturers regard as internal reference standards, although several of these systems are subject to design problems. Kelly, *BAC Verifier: New Defense for a New Machine*, 1 DWI J. 15 (Mar./Apr. 1986); 3 D. NICHOLS, DRINKING/DRIVING LITIGATION § 30:06 (1985); see also Haynes, *Of Datamasters, Discovery and DWIs*, 4 WASH. BAR NEWS 19 (1987). No external independent corroboration is conducted by the IDPH during its routine monthly calibration.

For possible malfunction of breath delivery system on an Intoxilyzer Model 5000, see *People v. Bates*, 165 Ill. App. 3d 80, 518 N.E.2d 628 (1988). In *Bates*, the Intoxilyzer Model 5000 (CMI, Inc./Federal Signal product no. 12074 (1986)) was in question, but not tested based on IDPH calibration regulations. The trial court never inquired about this problem, nor was any evidence presented that difficulty in blowing into the Intoxilyzer Model 5000 with a "six inch pressure switch" could be minimized through use of a "two inch pressure switch modification."

87. ILL. ADMIN. CODE tit. 77, § 510.20 (1985).

88. 3 D. NICHOLS, DRINKING/DRIVING LITIGATION § 27.09 (1985); Krotoszynski, Gabriel & O'Neill, *Characterization of Human Expired Air: A Promising Investigative and Diagnostic Technique*, 15 J. CHROMATOGRAPHIC SCIENCE 239 (July 1977); Shenk, *Effect of Organic Solvents on Evidential Breath Testers*, 1 DUI J. 58 (Sept./Oct. 1986); Smith, *Science, the Intoxilyzer, and Breath Alcohol Testing*, 11 CHAMPION 8 (May 1987), 11 CHAMPION 5 (June 1987).

89. Shenk, *Effect of Organic Solvents on Evidential Breath Testers*, 1 DUI J. 58 (Sept./Oct. 1986); see Astrand, Kilbom, Ovrum, *Exposure to White Spirit. I. Concentration in Alveolar Air and Blood During Rest and Exercise*, 1 SCAND. J. WORK. ENVIRON. & HEALTH. 15 (1975) (results of exposure to industrial chemicals (white

the conditions of analysis. Accuracy of test analysis is necessary to eliminate false positive results or boosting effects of compounds similar to those detected by breath alcohol machines.<sup>91</sup> Simply testing for the target compound, ethanol, creates a self-fulfilling prophecy.<sup>92</sup>

To eliminate erroneous results, several of the breath alcohol machines have devices which are supposed to account for the presence of acetone,<sup>93</sup> and water vapor<sup>94</sup> in the test sample. Some of these breath machines also employ detectors<sup>95</sup> which act as a check against initial radio-frequency interference. These detectors are supposed to insure that radio waves from transmitters, walkie-talkies, radios, personal computers or other electronic devices do not interfere with the machine's processes.<sup>96</sup> Any of these components may need to be adjusted during calibration. The degree to which adjustments are made, parts changed, or repaired, renders the value of

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spirits - paint thinner) regarding absorption, storage, and distribution in the human body through breath and urine over time); see also 3 D. NICHOLS, DRINKING/DRIVING LITIGATION § 27:12 (Supp. Oct. 1987); Astrand, *Uptake of Solvents from the Lungs*, 42 BRIT. J. INDUST. MED. 217 (1985); Astrand, *Uptake of Solvents in the Blood and Tissues of Man*, 1 SCAND. J. WORK. ENVIRON. & HEALTH 199 (1975).

90. See sources cited *supra* note 88, and 3 D. NICHOLS, DRINKING/DRIVING LITIGATION § 31.17 (1985).

91. "Accuracy - the correctness of the result reflecting the true situation - is the supreme requirement for an analysis. A qualitative test must correctly indicate either absences of all target analytes or their presence and identity. An incorrect qualitative result can be either a false positive, . . . or false negative. [I]ncorrect quantitative results misrepresent the concentration of a particular analyte in the specimen." Dubowski, *Drug-Use Testing: Scientific Perspectives*, 11 NOVA L.J. 415, 439 (1987).

92. "Establishing the analytical validity, i.e., correctness or accuracy, of a quantitative or semi-quantitative result or other numerical analysis outcome of . . . test . . . requires consideration not only of what is possible to achieve under ideal analysis conditions, but also what was probable to the requisite degree of certainty under the actual conditions of the sample analysis under consideration." *Id.* at 501. For discussion on appropriate terminology and definitions used in conducting scientific analysis and interpreting test results, see Dubowski, *supra* note 91, at 438-47.

93. S&W Model 2000; Intoxilyzer Models 4011AS, 5000; BAC Verifier; Datamaster II; Intoximeter Model 3000. Acetone is a natural common endogenous metabolic compound found in a person's breath. Krotoszynski, *supra* note 88. It appears in optimal conditions at 3.48 microns in the infra-red spectrum, and can be confused with ethanol, which appears at 3.39 microns. This confusion reduces the machine's specificity to identify ethanol in a person's breath to exclusion of all other compounds.

94. Intoxilyzer Model 5000; BAC Verifier, Datamaster II; Intoximeter 3000. Water has a broad band absorption range at 3.7 microns under optimal conditions in the infra-red spectrum. Alcohols readily bind to water which exists naturally in a person's body (and expired lung air), thereby creating a boosting effect. The results for this type of analysis become artificially high if ethanol cannot be distinguished from the presence of water.

95. Breath machines which have RFI detectors: Intoximeter 3000; Intoxilyzer 5000; BAC Verifier; and Datamaster II.

96. The FCC has determined the type of equipment can cause radio frequency interference, and that this equipment must be in compliance with the FCC's guidelines. 47 C.F.R. §§ (A)15.44, (A)15.4, (A)15.25, (A)15.34, (A)15.63, (C), (V) (1986); *Heddan v. Dirkswagger and Comm. of Public Safety*, 336 N.W. 2d 54 (Minn. 1983); Kaster, *supra* note 57, at 8-16.

test results between calibrations suspect.<sup>97</sup> Just because a breath machine is functioning mechanically, it does not mean that it is operating accurately.<sup>98</sup> Information corroborating the breath alcohol machine's history is available and should be reviewed and used to establish operational compliance.<sup>99</sup>

Current IDPH and Illinois State Police departmental policy does not require that basic documentation relating to the calibration process be available in court. Such documentation should minimally include: the calibrator's actual license; the testing procedure; pre- and post-calibration breath test ticket results (See Appendix I); printer test results<sup>100</sup> (See Appendix J); ethanol calibration solution batch number; certified calibration ethanol solution assays; and uniform operational standards of the simulator.<sup>101</sup> These departmental policies are not published, even though the movant relies on them as a basis for obtaining criminal convictions and drivers' license revocations.

As long as these policies and procedures remain largely unpublished, it is impossible to determine whether the IDPH and Illinois State Police are using reliable calibration methods which will prevent fundamental inaccuracies from occurring in the field. Without this information, it is difficult to ascertain whether or not the scientific theory behind the breath machine is being misapplied. Minimal due process requires all administrative internal rules, regulations and standards be published, otherwise, the policies are not applicable to the general public, especially in drivers' license revocations.<sup>102</sup> Therefore, these current IDPH and Illinois State Police departmental policies and procedures conflict with applicable state law.

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97. Test results are presumed to be accurate within 30 days of initial factory calibration. *Commonwealth of Pennsylvania v. Sesler*, 358 Pa. Super. 582, 587, 518 A.2d 292, 295 (1986). If the breath alcohol machine is susceptible to the slightest error, the benefit of the error must enure to the defendant. *People v. Schaefer*, 135 Misc. 2d 554, 516 N.Y.S.2d 391 (1987). A statement of calibration after repairs and adjustment is not an adequate demonstration of past accuracy and operability of the machine. *Id.* at 559, 516 N.Y.S.2d at 394. Information of the breath machine's accuracy before and after calibration needs to be provided to establish the particular machine was operating properly. *Id.* See also *McKim v. Arkansas*, 25 Ark. App. 176, 753 S.W.2d 295 (1988).

98. *State v. Rolison*, 133 P.2d 326, 329 (Haw. Ct. App. 1987).

99. Use appropriate discovery motion, bill of particulars and subpoena power to obtain this information. See also notes 194-201 and accompanying text for a discussion of sanctions for non-compliance.

100. *People v. Cofer*, 135 Ill. App. 3d 783, 481 N.E.2d 351 (1985). See *infra* note 146.

101. Letter from William Brey to Angela Peters (Oct. 9, 1987).

102. *Clingenpeel v. Edgar*, 133 Ill. App. 3d 507, 511, 478 N.E.2d 1172, 1175-76 (1985).

## VI. THE CALIBRATOR AND HIS REQUIREMENTS

The calibrator ("field inspector") is employed by the IDPH or Illinois State Police.<sup>103</sup> The calibrator is only required to possess specific licensing as an operator,<sup>104</sup> and to receive "specialized training."<sup>105</sup> There are no requirements to attend refresher breath alcohol machine maintenance courses or recertification courses.<sup>106</sup> The IDPH only requires calibrators to be a full-time employee of their department.<sup>107</sup> There are no educational requirements in instrumental analysis, chemistry, biomedical engineering or any related science necessary to qualify as a calibrator.

## VII. DOCUMENTING THE CALIBRATION

The breath alcohol machine's calibration can be established through the business records and public documents exception to the hearsay rule.<sup>108</sup> The breath machine operator is not able to competently testify regarding the machine's complete history and actual calibration.<sup>109</sup> His duties are limited to administering breath tests. Therefore, the keeper of records is a necessary party to authenticate the validity or absence of these records. These records are available from the IDPH or their agents. They are kept in the normal course of business by the Department. As a result, they are admissible through the business record exception and public document exceptions<sup>110</sup> of the rules of evidence.

103. ILL. ADMIN. CODE tit. 77, § 510.70 (1985) (requirements for licensing of operator).

104. ILL. ADMIN. CODE tit. 77, §§ 510.20, 510.70 (1985) (defining inspector as licensed breath analysis machine operator and requirements for license).

105. ILL. ADMIN. CODE tit. 77, § 510.20 (1985); *see also* Breath Alcohol Analysis Technician II, (BAAT II), Spec. Code: 3150, Position Code: 05170, April 1, 1985. Ill. Dept. of Central Management Services Class Specification (available from the Division of Personnel, State of Illinois). "Desirable requirements" for an inspector are: high school diploma, two years experience in the electronics field or related experience, completion of the basic 40 hour operator's course, manufacturer's maintenance course and a three month field training program. Among the inspector's responsibilities, he *must* assist the State's Attorney in prosecution of DUI cases, and provide expert testimony in court regarding the breath machine's precision, accuracy and administration of testing.

106. Letter from William Brey to Angela Peters (Oct. 9, 1987).

107. ILL. ADMIN. CODE tit. 77, §§ 510.20, 510.70 (1985).

108. ILL. REV. STAT. ch. 38, ¶ 115-5(a) (1987). *See* *People v. Hester*, 88 Ill. App. 3d 391, 394, 410 N.E.2d 638 (1980) (page from machine logbook); *People v. Black*, 84 Ill. App. 3d 1050, 1052-53, 406 N.E.2d 23, 24-25 (1980) (decals from machine).

109. *See* *City of Highland Park v. Block*, 48 Ill. App. 3d 241, 362 N.E.2d 1107 (1977) (operator not qualified to testify about the machine).

110. ILL. REV. STAT. ch. 38, ¶ 115-5 (1987). *See, e.g.,* *People v. White*, 167 Ill. App. 3d 439, 521 N.E.2d 563 (1988) (logbook); *Hester*, 88 Ill. App. 3d at 384, 410 N.E. 2d at 641 (public document exception); *State v. Jensen*, 351 N.W.2d 29, 32 (Minn. App. 1984); *State v. Ward*, 15 Ohio St. 3d 355, 474 N.E.2d 300 (1984) (copies of police logs); *State v. Conway*, 70 Or. App. 721, 620 P.2d 1188 (1984). *See also* McCORMICK'S

Certification of the breath alcohol machine is routinely offered through the calibration log book as a public document exception.<sup>111</sup> Other methods of proving certification are through production of the actual breath machine in court,<sup>112</sup> the breath machine's inspection certificate (decal),<sup>113</sup> or calibrator's affidavit (See Appendix K). The operator's testimony is not adequate to establish proper calibration.<sup>114</sup>

### VIII. VALID OPERATOR'S LICENSE

The breath alcohol machine operator<sup>115</sup> must have possessed a valid license<sup>116</sup> when the breath test was administered.<sup>117</sup> The license represents proof of his authority and competence to operate that breath machine.<sup>118</sup> The valid license itself, not the witness's oral claim he possessed one, is required.<sup>119</sup> The "Best Evidence or

HANDBOOK OF THE LAW OF EVIDENCE § 224 (public documents), §§ 306-312 (business records) (2d ed. 1972).

111. *Hester*, 88 Ill. App. 3d at 394, 410 N.E.2d at 641.

112. *Black*, 84 Ill. App. 3d at 1052-53, 406 N.E.2d at 24-25.

113. *Id.*

114. *People v. Brown*, 128 Misc. 2d 149, 488 N.Y.S.2d 559 (1985). It is not uncommon for a movant to request the court to take judicial notice of previous cases during the same calibration period in which the same breath machine's calibration was established. The defendant should object to this attempt to establish calibration without a proper foundation. The defendant is entitled to challenge the sufficiency of the evidence before it is admissible. Information of this nature is not readily available, nor is it of common knowledge. The defendant does not know the quality of the evidence in the previous cases upon which the movant is relying. The movant may be attempting to circumvent foundational requirements with marginal evidence that was accepted in the previous case. Without holding the movant to its foundation burden, the defendant waives his right to question the evidence. The defendant may also object to the movant's request to have the calibration judicially noticed because it is not necessarily the best evidence available.

115. "Operator shall mean any individual licensed by the Department to operate a breath analysis instrument." ILL. ADMIN. CODE tit. 77, § 510.20 (1985). An operator is merely that and nothing more; he is not an expert witness capable of rendering conclusions, evaluations or opinions. The "calibrator" or "field inspector," or an expert witness may be offered by the movant to explain the breath alcohol machine's function and operational theory. *See supra* note 105 and accompanying text.

116. ILL. REV. STAT. ch. 95½, ¶ 11-502 (1987); ILL. ADMIN. CODE tit. 77, §§ 510.20, 510.70 (1985). The code clearly states "license" and any interpretation to the contrary is in violation of intent and enforcement of the term and regulation. The operator has a license, *not* a permit. Letter from William Brey to Angela Peters (Feb. 8, 1988); *see also* *State v. Caviness*, 7 N.C. App. 541, 173 S.E.2d 12 (1970) (new trial ordered for failure of the State to meet either requirement of N.C. GEN. STAT. § 20-139.1(b) which parallels the requirements of ILL. REV. STAT. ch. 95½, ¶ 11-501.2 (1987)).

117. ILL. ADMIN. CODE tit. 77, § 510.70 (1985); *see also supra* note 114 and accompanying text.

118. Non-published IDPH interpretation of ILL. ADMIN. CODE tit. 77, § 510.70(3) means operation of all approved machines used in Illinois. Letter from William Brey to Angela Peters (Oct. 5, 1987).

119. *State v. Batiste*, 327 So. 2d 420 (La. 1976) (operator failed to physically prove the official certification needed for a technician's qualifications at the time of

Original Writing Rule" states that the highest degree of proof must be produced, if possible.<sup>120</sup> The breath machine operator must, therefore, produce the best evidence available that he was certified when the test was administered. If the actual license is not physically available, then the officer should provide certified documentation from the IDPH verifying his licensing for the period in question.<sup>121</sup> This requirement is especially important when the test results are questioned after the operator's license has changed status (renewal, expiration, transferring of police departments or revocation).<sup>122</sup>

### IX. OPERATOR COMPETENCY

The breath machine operator must know and follow the standards and procedures for administering a breath test. If the operator does not know the regulations, or fails to comply with them, then he is not competent to testify.<sup>123</sup> Possession of a valid operator's license does not presumptively indicate that the test was properly adminis-

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testing); *McWhiney v. Dept. of Public Safety*, 514 So. 2d 1202 (La. Ct. App. 1987) (burden of proof fell on movant to prove calibrator's qualifications); *State v. Warf*, 16 N.C. App. 431, 192 S.E.2d 37 (1972) (test inadmissible if operator did not possess valid permit at the time of testing, "such failure resulted in clear and manifest error prejudicial to defendant"); *State v. Caviness*, 7 N.C. App. 541, 173 S.E.2d 12 (1970) (movant must introduce a certificate at hearing to establish technician's qualifications at time of analysis or test result is inadmissible).

120. *Hardware Mut. Casualty Co. v. Baldus*, 316 Ill. App. 283, 44 N.E.2d 947 (1942).

121. Certified documentation of operator licensing is available by subpoena from the main IDPH office in Springfield, Illinois. Letter from William Brey to Angela Peters (Oct. 5, 1987); see also ILL. REV. STAT. ch. 38, § 115-5(c)(2) (1987); see *People v. Morman*, 92 Ill. 2d 268, 442 N.E.2d 250 (1982), *aff'g*, 97 Ill. App. 3d 556, 442 N.E.2d 1065 (1981); *People v. Boyce*, 95 Ill. App. 3d 740, 420 N.E.2d 687 (1981).

122. ILL. ADMIN. CODE tit. 77, §§ 510.70, 510.80 (1985). Re-licensing includes viewing a video tape presentation that reviews the law, breath alcohol machine operation and pharmacology of alcohol. In addition, an inspector (who is a calibrator) tests the operator on the local police department's machine by running two proficiency tests using a similar unit. Then a license re-certifying the operator for an additional twelve months is issued. At completion of the second year, the operator is required to attend a class which includes breath machine operation, pharmacology of alcohol, a review of IDPH regulations, statutory law, recent DUI court decisions, and he must again demonstrate proficiency by conducting two tests on a breath alcohol machine. The video instruction lasts approximately one hour and forty-five minutes, thereby saving time, so that the operator will not have to sit through a three to four hour class. See ILL. ADMIN. CODE tit. 77, § 510.70(e) (1985). A written test is given by the IDPH inspectors upon completion of the re-licensing class. *IDPH Breath Operator's Relicensing 1986* (Mar. 28, 1986) (video tape program for breath test operators).

123. *People v. Crawford*, 23 Ill. App. 3d 398, 318 N.E.2d 743 (1974) (operator not competent to testify if he does not know the regulations); *People v. Clifton*, 11 Ill. App. 3d 112, 296 N.E.2d 370 (1973) (testimony required about standards in administering test); *People v. Krueger*, 99 Ill. App. 2d 431, 241 N.E.2d 707 (1968); *City of Shawnee v. Gruss*, 2 Kan. App. 2d 131, 576 P.2d 239 (1978); see also Sapir & Kling, *Cross Examination of Breath Alcohol Machine Operators*, 13 S. ILL. U. L.J. 83 (1988).

tered.<sup>124</sup> The operator cannot discuss the breath machine's function, reliability, use nor explain the test result's significance<sup>125</sup> or calibration.<sup>126</sup> He is an operator, not an expert witness capable of rendering opinions, conclusions, evaluations or explanations.<sup>127</sup>

The officer must strictly adhere to the twenty minute observation period of the test subject.<sup>128</sup> This continuous and uninterrupted observation<sup>129</sup> is intended to minimize sample contamination.<sup>130</sup> Common sources of contamination include: chewing tobacco,<sup>131</sup> smoking, vomit, mouth and breath fresheners, dentures,<sup>132</sup> gum,<sup>133</sup> wet belches, regurgitation, and residual alcohol in the throat, nasal cavity and mouth.<sup>134</sup>

Observation of the test subject starts at least twenty minutes before the test is actually administered.<sup>135</sup> Normal police practice does not include checking the accuracy of the machine's clock with an independent time source when administering the test. If the twenty minute observation period is not properly adhered to, then it

124. *People v. Perez*, 13 A.D.2d 779, 516 N.Y.S.2d 70 (1987).

125. *State v. Gibson*, 515 So. 2d 556 (La. App. Civ. 1987); *Washington v. Dist. of Columbia*, 538 A.2d 1151 (D.C. App. 1988); *see also supra* notes 105, 115 and accompanying text.

126. *People v. Brown*, 128 Misc. 2d 149, 488 N.Y.S.2d 559 (1985); *see also supra* notes 105, 114 and accompanying text.

127. *Washington v. Dist. of Columbia*, 538 A.2d 1151 (D.C. App. 1988); Sapir & Kling, *supra* note 123, at 88.

128. ILL. ADMIN. CODE tit. 77, § 510.60 (1985).

129. Aggregated observations by two officers are permitted in order to satisfy the rule's purpose. *People v. Torres*, 160 Ill. App. 3d 643, 513 N.E.2d 1142 (1987). The officer's use of peripheral vision to observe the subject is acceptable under the regulatory twenty minute observation period. *People v. Ramos*, 155 Ill. App. 3d 374, 508 N.E.2d 484 (1987).

130. Spector, *Alcohol Breath Tests: Gross Errors in Current Methods of Measuring Alveolar Gas Concentration*, 172 SCIENCE 57 (Apr. 1971).

131. *People v. Haney*, 155 Ill. App. 3d 44, 507 N.E.2d 230 (1987); *Pasek v. Comm. Public Safety*, 383 N.W.2d 1 (Minn. Ct. App. 1986).

132. *State v. Allen*, 74 Or. App. 275, 702 P.2d 1118 (1985), *appeal denied*, 300 Or. 111, 707 P.2d 583 (1985); *see also Smith v. State*, 180 Ga. App. 620, 349 S.E.2d 754 (1986).

A standard question on the Alcoholic Influence Report Form (field sobriety test form and visual report) is "Are you wearing false teeth?" See Form 25M877, Stock No. 321-99, National Safety Council, 444 N. Michigan Ave., Chicago, Ill. 60611. This form is used by most law enforcement agencies. The report should be completed by the police officer during DUI arrest procedures and before administering an alcohol breath test. Dentures may account for speech problems. However, the implication is that dentures should be removed twenty minutes before any breath test is given. The denture material absorbs and retains alcohol. Hargreaves, *The Effect of Ethanol on Some Of The Properties Of Dental Polymethylmethacrylate*, 2 J. BIOENGINEERING 567 (1978). Dentures will trap food particles and liquid between its interior surface and the roof of the mouth and gums because of gaping and denture liners. If the person's dentures cannot be removed and the mouth rinsed well with water, then a blood test should be conducted for determination of blood alcohol concentration.

133. *Hager v. Comm. Public Safety*, 382 N.W.2d 907 (Minn. Ct. App. 1986).

134. Spector, *supra* note 130, at 57.

135. ILL. ADMIN. CODE tit. 77, § 510.60(a) (1985).

must be repeated in its entirety, before the subject can give a breath sample.<sup>136</sup> Strict compliance with this observation period is mandated.<sup>137</sup> Frequently, police complete the entire report, except for time frames. They then subtract twenty minutes from the time stated on the breath ticket in order to substantiate that the test was conducted after waiting twenty minutes.

The test subject is required to submit to only one test sample for analysis.<sup>138</sup> A second breath test is improper to enhance the accuracy of the first test.<sup>139</sup> The operator cannot request the subject to submit multiple samples to individual breath alcohol machines at the same or different locations until a valid desirable result is obtained.<sup>140</sup>

The IDPH regulations standards do not define what "one (1) breath analysis" is.<sup>141</sup> Subjective interpretation of a valid test is left to the operator's discretion. Numerous extenuating and mechanical situations must be considered before citing the test subject for refusing to cooperate in obtaining a valid breath sample.<sup>142</sup> The IDPH

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136. *Haney* affirms the proposition that a continuous twenty minute observation period is mandatory. *People v. Haney*, 155 Ill. App. 3d 44, 507 N.E.2d 230 (1987); see also *In re Ramos*, 155 Ill. App. 3d 374, 508 N.E.2d 484 (1987).

137. *People v. Crawford*, 23 Ill. App. 3d 398, 318 N.E.2d 743 (1974); see also *Haney*, 155 Ill. App. 3d at 44, 507 N.E.2d at 2; *City of Shawnee v. Gross*, 2 Kan. App. 2d 131, 576 P.2d 239 (1978).

138. ILL. ADMIN. CODE tit. 77, § 510.6-b (1985). A second test is improper if requested to enhance the accuracy of the first test. *Craze v. Commonwealth*, 533 A.2d 519 (Pa. Commw. Ct. 1987).

139. *Craze*, 533 A.2d at 519; see also *People v. Klyczek*, 162 Ill. App. 3d 557, 516 N.E.2d 783 (1987); *DOT, Bureau of Director Licensing v. Penich*, 535 A.2d 296 (Pa. Commw. Ct. 1988).

140. The police officer or operator cannot require a second test when its sole purpose is to substantiate the first test's accuracy. A requested second analysis of either blood or urine is reasonable, if the first test was inconclusive due to faulty equipment or uncooperativeness of the test subject. The police officer must offer sufficient evidence to establish reasonableness of such a request. *Commonwealth, Dept. of Transportation v. McFarren*, 514 Pa. 411, 525 A.2d 1185 (1987); see also *DOT, Bureau of Driver Licensing v. Fellmeth*, 108 Pa. Commw. 172, 528 A.2d 1090 (1987) (addressing a malfunctioning printer that superimposed test results over the sample reading as still being a valid test, not requiring a second test analysis). However, in *Craze*, the court held that if a subject has not been tested at all prior to his refusal due to a malfunctioning breath machine, refusal to take a breath test in another station on another breath machine is an unwarranted refusal. 533 A.2d at 519.

141. ILL. ADMIN. CODE tit. 77, § 510.60(b) (1985). The IDPH interpretation is that the subject provide an "adequate breath sample" and a "printed test record" has been completed by the machine. Letter from William Brey to Angela Peters (Oct. 5, 1987).

142. ILL. REV. STAT. ch. 95½, ¶ 11-501.1(d) (1987); see *People v. Cofer*, 135 Ill. App. 3d 283, 481 N.E.2d 351 (1985). There is a growing trend in the judicial community to question whether breath alcohol machines should be regarded as "fail-safe." See *Eroded Confidence in Perfect Machine*, 6 DRINKING/DRIVING LAW LETTER (Sept. 18, 1987); *Pennsylvania Pulls Plug on Breathalyzer Model 1000*, 4 DRINKING/DRIVING LAW LETTER, (May 17, 1985); see also *Commonwealth, DOT v. Harper*, 544 A.2d 80 (Pa. Commw. Ct. 1988); *State v. Rolison*, 133 P.2d 326 (Haw. Ct. App. 1987); *Machine Malfunctions or An Uncooperative Motorist*, 6 DRINKING/DRIVING LAW LETTER



regulations do not offer guidance in the event the breath machine fails to function properly. However, once a breath test has been given, the test subject can only request a second sample analysis using blood or urine.<sup>143</sup> The officer cannot obstruct or delay completion of the second test.<sup>144</sup>

Each breath alcohol machine manufacturer has a different sample delivery system. The machine cannot always properly receive or analyze the breath sample due to its design. It is not uncommon for the breath alcohol machine to have a defective or troublesome sample intake system.<sup>145</sup> Regardless of the subject's effort, the breath machine will not always accept the tendered sample.

Even though a breath alcohol machine accepts the sample, it still may not be properly analyzed. If the sample is rejected by the breath machine for any reason, (e.g. interference, contamination, or operational malfunction), and should an interference or malfunction code be displayed, then one test has been administered.<sup>146</sup> Once the breath machine attempts to process the sample, a test has been administered in compliance with the IDPH regulations.<sup>147</sup> The operator, however, often attempts to repeat the test until a valid "desired" result is obtained.

#### X. TESTS PERFORMED ACCORDING TO MANUFACTURER'S OPERATIONAL PROCEDURES

Breath tests shall be performed according to the manufacturer's recommended testing procedure.<sup>148</sup> No published uniformity exists as to standardized operational procedures or checklists which document proper operational procedures.<sup>149</sup> The IDPH only requires that

(Oct. 2, 1987); *see supra* notes 39, 54, 86.

143. *State v. Stannard*, 109 Wash. 2d 29, 742 P.2d 1244 (1987).

144. *Id.*; *People v. Craun*, 159 Mich. App. 564, 406 N.W.2d 884 (1987).

145. *People v. Bates*, 165 Ill. App. 3d 80, 518 N.E.2d 628 (1988); *see also* Commonwealth, *DOT v. Harper*, 544 A.2d 80 (1988). *See supra* notes 39, 54, 86.

146. *People v. Cofer*, 135 Ill. App. 3d 283, 481 N.E.2d 351 (1985); *State v. Geinzer*, 406 N.W.2d 457 (Iowa Ct. App. 1987). A test is one that yields a BrAC reading. *People v. Naseef*, 127 Ill. App. 3d 70, 468 N.E.2d 466 (1984).

147. If a printer malfunctions, the operator can request a second breath test. Interfering behavior or objecting to perform a second test at the operator's request is considered a refusal under ILL. REV. STAT. ch. 95½, ¶ 11-501.1(c) (1987). *See Cofer*, 135 Ill. App. 3d at 286, 481 N.E.2d at 353 (court limited its ruling to discussion of the mechanical printer); *see also* Commonwealth, *Dep't of Transportation v. McFarren*, 514 Pa. 411, 525 A.2d 1185 (1987); *DOT, Bureau of Driver Licensing v. Fellmeth*, 108 Pa. Commw. 172, 528 A.2d 1090 (1987).

148. ILL. ADMIN. CODE tit. 77, § 510.60(d) (1985).

149. The breath test record is not prima facie evidence of the BrAC result, unless supported by a certified copy of the operational checklist. *Salter v. Hjelle*, 414 N.W.2d 801 (N.D. 1987); *see also* *State v. Sweeney*, 88 Or. App. 358, 745 P.2d 439 (1988); *State v. Olsen*, 88 Or. App. 271, 744 P.2d 1327 (1987) (operator's failure to follow one step ("a scrivener's error") on the checklist did not affect the test result or

an operational procedure approved by the manufacturer be at the instrument location.<sup>150</sup> No mention is made of its contents or where and how these procedures are to be displayed and followed. In order for the breath alcohol machine to operate properly, it must be in compliance with all IDPH and manufacturer's recalls and advisories.<sup>151</sup>

The operational check list rebuts allegations of human fallibility and makes a prima facie showing of proper operational procedures. Regardless of the breath alcohol machine's sophistication, the results are only as good as the sample being analyzed and application of appropriate analytical procedures. The operator controls the test's integrity. If either the breath machine is used improperly or the sample is tainted, the results are suspect.<sup>152</sup> Police departments must follow those operational procedures as approved by the IDPH.<sup>153</sup> The IDPH has approved unpublished operational procedures (See Appendix L) but no complete checklist currently exists which establishes operator compliance, as required by statute in other jurisdictions.

Introduction of the checklist alone is insufficient to establish the test result's prima facie validity.<sup>154</sup> Proper foundation in most cases requires that the checklist must be used in conjunction with the officer's testimony, the breath machine's certification and the ac-

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make it untrustworthy). However, in *Salter*, the court held the breath test record and the officer's written report is not a substitute for the checklist and does not address fair administration, let alone establish it. 414 N.W.2d at 805. North Dakota and Oregon require checklists for foundation requirements. N.D. CENT. CODE §§ 39-20-07(6)(c) (1987); OR. REV. STAT. § 813.160 (1)(b) (1985).

150. ILL. ADMIN. CODE tit. 77, § 510.100(d) (1985).

151. A checklist does not establish user compliance with IDPH regulations and manufacturers' customer advisories. Retro-fit kits and design modifications were made public on various machines for radio frequency. *Heddon v. Dirkswagger and Comm. of Public Safety*, 336 N.W.2d 54 (Minn. 1983); *R. ERWIN, DEFENSE OF DRUNK DRIVING CASES* § 24A.07 (3d ed. 1984) (same); *Kasler, supra* note 57 (same); 3 D. NICHOLS, *DRINKING/DRIVING LITIGATION* app. c. 1-4 (1985); *see also* J. TARANTINO, *DEFENDING DRINKING DRIVERS* § 226 (2d ed. 1987) (humidity sensors); *Smith & Wesson Model 2000 Maintenance Manual* (327A Program) (humidity sensors); 3 D. NICHOLS, *DRINKING/DRIVING LITIGATION* § 29:07 (1985) (humidity sensors); *see also* Kelley, *supra* note 59 (capacitors and internal calibration mechanisms); 3 D. NICHOLS, *DRINKING/DRIVING LITIGATION* app. D (1985) (capacitors); *CMI/Federal Signal Corp., Intoxilyzer Model 5000 Modifications*, Product No. 012078 (1986) (acetaldehyde detectors).

152. *People v. Schaefer*, 135 Misc. 2d 554, 516 N.Y.S. 2d 392 (1987).

153. ILL. ADMIN. CODE tit. 77, § 510.60(d) (1985). Operational procedures as promulgated by the IDPH are based upon the manufacturer's recommendations, but operators do not have to strictly follow them. Local police departments must follow the IDPH operational procedures. Police departments have no authority to create their own procedures. Letter from William Brey to Angela Peters (Oct. 20, 1987).

154. In *State v. Bruce*, 518 So. 2d 1097 (La. Ct. App. 1987), the court held that the operational checklist only indicates what steps were taken, and does not demonstrate accuracy of chemical analysis. The prosecution must still introduce evidence of the operational accuracy or have the breath test results suppressed.

tual breath ticket.<sup>155</sup> Routine completion of the checklist while preparing the case paper work is a common practice. All too often, the operational checklist does not contain substantive information for establishing compliance. The checklist should contain: (1) a detailed procedure for administering the entire breath test; (2) date of test; (3) location of test; (4) the testing agency; (5) the time and signature of operator and witness; and (6) the breath machine's serial number, make and model. The operational checklist only indicates that minimum operational procedures were followed. The fact that a breath test may be procedurally correct does *not* mean that a breath sample will be properly and adequately identified.<sup>156</sup>

It is the attorney's responsibility to subpoena this material and question the breath alcohol machine's operability. The manufacturer does not usually publish a breath machine's shortcomings and problems. The movant must offer certification of compliance concerning the breath machine's proper operation and maintenance, not mere calibration.

## XI. PRESENTATION OF ORIGINAL HARDCOPY BREATH TICKET

The original hardcopy of the breath results must be offered by the movant during its case-in-chief. Duplicates or photocopies are not adequate.<sup>157</sup> The ticket must contain all foundation elements on its face. The same information should be in the field sobriety or visual test report, including make, model and serial number of the breath machine used. *Only* after *all* of these elements are properly addressed may the movant inquire about the BrAC test result value.

## XII. BREATH TICKET PROBLEM AREAS

Understanding of the complete breath ticket is essential to obtain an initial evidentiary insight to the machine's function and re-

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155. *Id.*; *Aultman v. Motor Vehicle Div.*, 706 P.2d 5 (Colo. Ct. App. 1985); *State v. Rolison*, 131 P.2d 326 (Haw. Ct. App. 1987); *Salter v. Hjelle*, 414 N.W.2d 801 (N.D. 1987). The Hawaii court also required evidence of calibration compliance per Hawaii Administrative Rules, § 11-111-2(b)(3). The police department should compose a detailed operational checklist from the machine's instruction manual.

156. E. Imwinkelried, *The Standard for Admitting Scientific Evidence: A Critique from the Perspective of Juror Psychology*, 28 VILL. L. REV. 554 (1983).

157. ILL. REV. STAT. ch. 38, ¶ 115-5(c)(2) (1987); *People v. Morman*, 97 Ill. App. 3d 556, 442 N.E.2d 1065 (1981), *aff'd*, 93 Ill. 2d 268, 442 N.E.2d 250 (1982); *People v. Boyce*, 95 Ill. App. 3d 740, 420 N.E.2d 687 (1981). *But see* *People v. Holowko*, 124 Ill. App. 3d 426, 464 N.E.2d 813 (1984), *rev'd*, 109 Ill. 2d 187, 486 N.E.2d 877 (1985). Breath alcohol machines are basically used in criminal investigations and their records are made in anticipation of trial. However, the supreme court in *Holowko* did hold that certain computer generated records were not subject to the prohibition of the statute, because of their reliability. The issue in regard to breath alcohol machines was not addressed by the court.

sults. Some ticket printouts can be altered through interchangeability or handwriting on their face. Anything other than a completely intact BrAC ticket is suspect. A suspicious breath ticket may be indicative of a defective test.

Breath results must be displayed by the breath alcohol machines in two ways: (1) numbers on a display screen; and (2) in hardcopy form on a breath ticket. The hardcopy printout is of primary importance. It alone documents the result in writing. Each breath machine model uses its own type of ticket (See Appendix M). Some of the older models have interchangeable tickets.<sup>158</sup> Presently, tickets are tamper resistant.<sup>159</sup>

In order to reduce tampering with test results and operator manipulation of the machine,<sup>160</sup> it must automatically display the test result.<sup>161</sup> The later breath machine models use heat impact printers with non-interchangeable tickets and cards which further reduce adulteration.<sup>162</sup> These later models automatically print the make, model, serial number, date and time on the ticket. This facilitates chain of custody and time frame analysis, thereby reducing the likelihood of falsified test results.

The printout must contain specific information regarding the test. It must establish a standard room air blank through purging of the machine's sample chamber,<sup>163</sup> the printer alphanumeric display code of operability,<sup>164</sup> and the test result in percent of BrAC.<sup>165</sup> Malfunction and interference codes should appear on the ticket, assuming the printer functions properly.

A malfunctioning printer does not properly transcribe all information when the breath machine refuses to accept or process the breath sample. The malfunction should be noted automatically on the ticket through a coded signal.<sup>166</sup> Error codes can be interpreted through subpoena of the machine's operator instruction manual.

All breath tickets from attempted and completed tests must be

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158. Intoxilyzer Models 4011, 4011A, Smith & Wesson Breathalyzer Models 1000 and 2000.

159. Breath alcohol machines advertising this feature are: Intoxilyzer Model 5000; Intoximeter Model 3000; BAC Verifier; and Datamaster II.

160. *State v. Eaton*, 701 P.2d 496 (Utah 1985); *Police Sergeant Convicted for Falsifying Breathalyzer Results*, 6 DRINKING/DRIVING LAW LETTER (Aug. 7, 1987).

161. ILL. ADMIN. CODE tit. 77, § 510.40(a) (1985).

162. Intoxilyzer Models 4011AS, 5000; BAC Verifier; and Datamaster II.

163. ILL. ADMIN. CODE tit. 77, § 510.60(c) (1985).

164. ".88" appears on the S&W 1000 printout to show that the numitron lights and digital display is working.

165. See ILL. REV. STAT. ch. 95½, ¶¶ 11-501(a)(1), 11-501.2(a)(5) (1987).

166. Each breath machine has its own error code system. The following are selected samples of what may appear: X, S&W 1000 for reinitiate; E60, S&W 2000 for room air contamination; Err8, BAC Verifier Printer problem; Invalid Sample.XXX, Intoxilyzer 5000 for residual mouth alcohol. See also *supra* notes 39, 54 and 86.

provided.<sup>167</sup> This is important when considering that the S&W 1000 and Intoxilyzer 4011A tickets' information, except BrAC result, is handwritten by the operator. Repetitive testing can be documented through preservation and collection of all tickets. Failure to keep and produce all test results clearly violates due process and equal protection of the law.<sup>168</sup>

### XIII. PRELIMINARY BREATH TESTING DEVICES

The Illinois legislature approved the use of preliminary breath testing devices<sup>169</sup> effective January 1, 1988.<sup>170</sup> Preliminary breath testing devices ("PBT") can only be used by police officers as a pre-arrest test to assist in determining probable cause for a DUI arrest. The differences between PBTs and approved breath alcohol machines in terms of reliability and accuracy is substantial.<sup>171</sup> Therefore, PBTs cannot be used to determine intoxication in Illinois.<sup>172</sup>

The IDPH has approved five portable hand held PBT models for use in Illinois<sup>173</sup> (See Appendix N). Submission of breath samples by the subject is strictly voluntary, as is the pre-arrest field sobriety test (walk and turn, finger to nose, one leg stand, coin pick-up, etc.), which can be refused at any time without penalty.<sup>174</sup> The statute does not address whether the police officers must advise the person as to the voluntariness in PBT testing. If a person consents

167. ILL. REV. STAT. ch. 95½, ¶ 11-501.2(a)(4) (1987); *see also* California v. Trombetta, 467 U.S. 479 (1984); *People v. Schmidt*, 56 Ill. 2d 572, 309 N.E.2d 557 (1974).

168. *Trombetta*, 467 U.S. at 485 (citing *United States v. Aguis*, 427 U.S. 97, 112 (1976); *Brady v. Maryland*, 373 U.S. 83, 87 (1963)).

169. 50 Fed. Reg. 48, 854 (1984); 38 Fed. Reg. 30,459 (1973).

170. ILL. REV. STAT. ch. 95½, ¶ 11-501.4 (1987).

171. Letter from William Brey to Angela Peters (Jan. 6, 1988).

172. *Id.*

173. The IDPH approved PBT models for use in Illinois are: Alco-Check, Models I and II (pass/fail model) by Sound Off, Inc.; Alco-Sensor (pass/fail and digital read models) by Intoximeters, Inc.; S-D2 Alcohol Analyzer (digital read model) by National Patent Analytical Systems, Inc.; Alert Model J-4 (digital read model) by Alcohol Counter Measures Systems. These units indicate alleged ethyl alcohol levels on a pass/fail basis through a colored light sequence (green .00-.049, amber .05-.099, red .10 or higher) or numeric indication of two digits (.00) on a visible screen; Alco-Tector (pass/fail) by Guth Laboratories, Inc. Each model was submitted to a minimum of 300 breath alcohol sample simulator tests by the IDPH for a deviation reading within .01 w/v. Letter from William Brey to Angela Peters (Jan. 6, 1988) and letter from William Brey to Gil Sapir (June 2, 1988) (discussing PBT update); *see also* Appendix L. For a discussion on breath alcohol simulators, *see supra* note 76. All PBTs were approved for use in Illinois effective January 1, 1988, except for the Alco-Tector which was approved on February 1, 1988.

174. A person involved in a traffic accident only has to provide his name, address, and vehicle registration number. "If the participant chooses to remain silent when questioned by an officer on Fifth Amendment grounds, it is his constitutional right to do so . . ." *People v. Stremming*, 167 Ill. App. 3d 578, 581, 526 N.E.2d 631 (1988); *see also* Letter from William Brey to Angela Peters (Jan. 6, 1988).

to the PBT test, then they must blow into the PBT as many times as it takes to obtain a stable reading.<sup>175</sup> This is distinguished from breath alcohol machines in which a single test sample is mandated. No preservation of the PBT test results is required, although the results may be used in subsequent administrative and court proceedings. However, once a determination of probable cause has been made for intoxication, the person may still be required to undergo testing for intoxication by blood, urine or breath analysis.

No specialized training or certification is required by Illinois for PBTs. Each law enforcement agency is responsible for their officer's training on PBTs and its maintenance in accordance with the manufacturer's specifications.<sup>176</sup> The IDPH and law enforcement agencies regulations and policies concerning PBTs are not published, even though the test results may be used in legal proceedings. Non-publication of uniform PBT policies and procedures conflict with applicable state law.<sup>177</sup>

#### XIV. *Frye* AND *Jackson*

For evidence to contribute to the truth determining process, it must be reliable. Scientific evidence must meet the threshold standards enunciated in *Frye v. United States*.<sup>178</sup> In *Frye*, the Court's opinion considered the admissibility of using polygraph evidence for the first time, based on legal relevancy for the admission of scientific evidence. The general standard for acceptance is based upon: (1) identifying the relevant field upon which the principle is based; and (2) acceptance of the technique in the relevant scientific community.<sup>179</sup> Reliability of a scientific technique is based upon the technique's underlying principle, application of that principle and proper application of that technique in the analysis in question.<sup>180</sup> Inherent in the technique's reliability is its appropriate methodologies and quality control. If the technique is used with improper methods, then it is not scientifically acceptable.<sup>181</sup> Scientific evidence is admissible if it either comports with *Frye* or is legislatively

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175. Letter from William Brey to Angela Peters (Jan. 6, 1988).

176. *Id.* The IDPH offers to law enforcement agencies a forty minute VHS video tape covering the PBT statute, PBT operation and PBTs approved for use in Illinois. *Id.*

177. *Clingenpeel v. Edgar*, 133 Ill. App. 3d 507, 478 N.E.2d 1172 (1985).

178. *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923); Starrs, *A Still Life Watercolor: Frye v. United States*, 27 J. FORENSIC SCI. 684 (1982).

179. Giannelli, *The Admissibility of Novel Scientific Evidence: Frye v. United States, A Half Century Later*, 80 COLUM. L. REV. 1197 (1980); see also GIANNELLI & IMWINKELRIED, *SCIENTIFIC EVIDENCE* § 5 (1986).

180. Giannelli, *supra* note 179, at 1201.

181. *United States v. Downing*, 753 F.2d 1224 (3d Cir. 1985); Walden, *United States v. Downing: Novel Scientific Evidence and the Rejection of Frye*, 1986 UTAH L. REV. 839 (1986).

approved and codified by statute. Illinois has approved by legislative fiat the scientific theory of breath alcohol testing,<sup>182</sup> specific breath alcohol machines<sup>183</sup> and minimal quality control standards<sup>184</sup> for generating BrAC evidence in DUI cases.

Illinois' minimal DUI procedures, methods and quality control in DUI cases may only be questioned relative to its weight and credibility.<sup>185</sup> However, if movant of the BrAC test fails to adhere to the minimal procedures and standards, then a violation of *Frye* and statutory compliance occurs. Therefore, the test results should be barred as evidence due to an improper scientific foundation.

The legislative approval of breath alcohol testing has neglected the possibility that admitting breath alcohol tests in its current form would overwhelm, confuse or mislead the jury.<sup>186</sup> The breath alcohol machine has been given an aura of mythical infallibility<sup>187</sup> whose shortcomings are unlikely to be made known to the jury. It is arguable that those areas of methodology, not legislatively approved, are in violation of *Frye*. The prejudicial effect of this evidence is readily apparent through a lack of general scientific acceptance by the scientific community.<sup>188</sup> Current DUI laws do not address proper quality control, certifying of calibration equipment, replicate testing, reproducibility of results, or uniform test procedures. All of these elements are essential to credible and reliable scientific information.

The breath alcohol machine's scientific basis cannot be questioned due to legislative acceptance. However, since Illinois does not have adequate scientific methodology to support the BrAC theory, the current foundational test requirements are suspect under *Frye*.

When the United States Supreme Court decided the case of *Jackson v. Virginia*,<sup>189</sup> it held that the burden for the prosecution in a criminal case was proof beyond a reasonable doubt for each element of the crime in its case-in-chief.<sup>190</sup> Although this case arose in the context of a federal habeas corpus petition, commentators have speculated for a variety of reasons that the case should be applied broadly.

Edward J. Imwinkelried<sup>191</sup> applied this case to drug identifica-

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182. See *supra* note 5.

183. See *supra* notes 5, 34.

184. See *supra* note 49.

185. Giannelli, *supra* note 179.

186. United States v. Downing, 753 F.2d 1224 (3d Cir. 1985); Walden, *supra* note 181, at 839; Strong, *Questions Affecting the Admissibility of Scientific Evidence*, 1970 U. ILL. L. F. 2-4 (1970).

187. Walden, *supra* note 181, at 846.

188. Giannelli, *supra* note 179, at 1210-11 n.91.

189. *Jackson v. Virginia*, 443 U.S. 307 (1979).

190. *Id.* at 317-20.

191. Imwinkelried, *Jackson v. Virginia: Reopening the Pandora's Box of the Le-*

tion tests. One of his observations was that under the *Jackson* standard, the prosecution's case should be insufficient if the identification of the drug (one of the elements of the crime) was made by non-specific tests. A non-specific test may obtain a false positive and unreliable result. If the test results were not conclusive to the exclusion of all other possible compounds (including legal substances), a reasonable doubt should occur in the mind of the trier of fact. Accordingly, the prosecution has not met its burden to prove each element of the crime beyond a reasonable doubt. The prosecution, however, can remedy the test's evidentiary insufficiency by supplying other evidence which would supplement the test results. Under these circumstances, the drug test results, without more, should be legally insufficient to establish the prosecution's case-in-chief.

The *Jackson* analysis may similarly be applied to breath alcohol cases. Movant's standard of proof for foundational requirements of breath alcohol evidence in a criminal case is beyond a reasonable doubt. The breath ticket's conclusory result is insufficient to establish the movant's case. Prior to *Jackson*, a movant had to only establish a "mere permissive inference" as to the accuracy and reliability of its evidence.<sup>192</sup> Currently under *Jackson*, the movant should prove beyond a reasonable doubt each element regarding the sufficiency of intoxication by scientific analysis to avoid a directed verdict.

Arguably, there is a reasonable doubt as to the breath test's accuracy and reliability. The BrAC test result is a non-specific quantity of ethanol based on current testing methodology, test standards and calibration procedures. The BrAC test result is not reliable for use as primary evidence.<sup>193</sup> The BrAC test result by itself is some evidence, but because of the uncertainty of the test, it is not proof of per se intoxication beyond a reasonable doubt. Therefore, the BrAC test results on its face are inadequate to prove all elements and standards of the crime charged. Unless the movant has something else that supplements the conclusory BrAC test result, the evidence is legally insufficient.

## XV. SANCTIONS FOR NON-COMPLIANCE

The inability or refusal of the movant to properly establish an evidentiary foundation of the breath alcohol test should bar its use as evidence,<sup>194</sup> unless it is waived.<sup>195</sup> The movant has an affirmative

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*gal Sufficiency of Drug Identification Evidence*, 73 Ky. L.J. 1 (1984-85).

192. *Id.* at n.188.

193. See cases cited *supra* note 11.

194. TARANTINO, *supra* note 12. In Illinois, no codification of prescribed sanctions exist in misdemeanor cases for failure to comply with discovery. Ahern, *Summary Suspension, DEFENDING DUI AND TRAFFIC CASES, ILL. INST. FOR C.L.E.* (1987).

195. Failure to provide discovery of the evidence technician's laboratory report



duty to fairly and impartially present evidence on behalf of the client.<sup>196</sup> The movant must completely establish the breath machine's proper foundation. Neither movant nor a subpoenaed party can decide what information is discoverable<sup>197</sup> or when it is discoverable.<sup>198</sup> The trial court, under Illinois Supreme Court Rule 415 (g)(i)<sup>199</sup> and Rule 277(h)<sup>200</sup> may order compliance with defendant's proper request (discovery motion, bill of particulars and subpoena)<sup>201</sup> or enter appropriate sanctions for noncompliance, including barring the test's admissibility.

### CONCLUSION

Laws of evidence should not be forsaken in order to obtain convictions of people charged with driving under-the-influence of alcohol. Regardless of the breath alcohol machine's statutory approval and sophistication, the movant must still meet its evidentiary burden. An essential element of movant's prima facie case is an appro-

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was waived by defense counsel when defense counsel informed the trial court they were ready to proceed despite non-disclosure of the report. *People v. Nims*, 156 Ill. App. 3d 115, 505 N.E.2d 670 (1986). Stipulation to admission of BrAC test results waives foundation defects and admits accuracy of test results. See cases cited *supra* note 28. Failure to object to improper foundation and evidentiary compliance before the BrAC test results are admitted into evidence will probably constitute a waiver of admissibility. *People v. Frantz*, 150 Ill. App. 3d 296, 501 N.E.2d 966 (1986); *People v. Duensing*, 139 Ill. App. 3d 587, 486 N.E.2d 938 (1985).

196. ILL. REV. STAT. ch. 14, ¶ 5 (1987); see also *People v. Valdery*, 65 Ill. App. 3d 375, 881 N.E.2d 1217 (1978); *People v. Curry*, 1 Ill. App. 3d 87, 272 N.E.2d 669 (1971).

197. *People v. Harris*, 91 Ill. App. 3d 1, 413 N.E.2d 1369 (1980); *People v. Briggs*, 136 Misc. 2d 687, 519 N.Y.S.2d 294 (N.Y. Town Ct. 1987).

198. Documentation which the movant fails to disclose through discovery may be suppressed if the movant attempts to use it at trial. *People v. Rogers*, 123 Ill. App. 3d 780, 463 N.E.2d 211 (1984).

The movant has reciprocal sanctions available for defendant's non-compliance with appropriate discovery orders. The defendant and his attorney are subject to sanctions for non-compliance, including barring of exculpatory evidence. The sixth amendment's compulsory process clause does not bar a court from excluding evidence as a discovery sanction, even if that sanction is used against a criminal defendant. No distinction exists between tactical error and deliberate misconduct. It is not unfair or unconstitutional to hold the defendant responsible for his attorney's misconduct. *Taylor v. Illinois*, 108 S.Ct. 646 (1988). Therefore, when a defendant is prevented from using potentially exculpatory evidence due to discovery violations, a DUI conviction is practically a forgone conclusion.

199. ILL. REV. STAT. ch. 110A, ¶ 415 (g)(i) (1987).

200. ILL. REV. STAT. ch. 110A, ¶ 277(h) (1987).

201. *United States v. Nixon*, 418 U.S. 683, (1974) (subpoenas); *People v. Duniagan*, 96 Ill. App. 3d 799, 421 N.E.2d 1319 (1981) (subpoenas); *People ex rel. Carey v. Fisher*, 64 Ill. App. 3d 239, 380 N.E.2d 1150 (1978), *aff'd in part, rev'd in part*, 77 Ill. 2d 259, 396 N.E.2d 17 (1979) (subpoenas); *People v. Tammen*, 40 Ill. 2d 76, 237 N.E.2d 517 (1968) (bill of particulars); ILL. REV. STAT. ch. 38, ¶ 114-2(a) (1987) (bill of particulars).

priate evidential foundation. The breath test results are only as reliable as the machine, the operator and procedures followed. A faulty breath alcohol machine, careless technician, or unscientific procedures can, and often do, lead to unreliable results. Chemical breath test evidence is like any other relevant, circumstantial evidence. Movant's failure to create a proper foundation will bar the test result as evidence. Alternatively, defendant's failure to hold movant to his foundational burden will facilitate admission of the results as evidence. If attorneys do not properly prepare their entire case, or if they routinely stipulate to chemical breath test results, the breath alcohol machine will be transformed into a police officer's "dream machine," whereby the officer pushes a button, administers a breath test and the results become evidence. Attorneys must be prepared to educate the judge and jury on breath alcohol machines, including its foundational evidentiary requirements. Failure to do so will allow this type of scientific evidence to usurp the function and purpose of legal safeguards.

## **Breath Alcohol Machine Foundation Checklist**

All information is to be presented in the following order:

### ***I. Prima Facie Case***

Probable cause for arrest

Compliance with IDPH regulations establishing accuracy and reliability of tests to this case.

- a. approved machine and model
- b. proper calibration
- c. proper maintenance
- d. operator licensing (at time of analysis)
- e. observation period
- f. proper test procedures
- g. operational checklist
- h. original breath ticket (hard copy)
- i. operator's sworn in court testimony

### ***II. Approved Breath Alcohol Machine***

IDPH Regulations

Make, model and serial number

Present current list of approved machines in court

Same as model approved and tested by IDPH (not modified)

### ***III. Ampoule Batch Certification***

Certified assay report

On site compliance of ampoule storage and use

### ***IV. Calibration & Certification of Machine***

Keeper of Records must testify

All information is from date of manufacture and ownership to date of trial.

Original or certified copies of all documents

Maintenance log, advisories and recalls

Calibration logs

IDPH regulations

Compliance with maintenance and operational standards

Simulator certification and quality control

Calibration certification

(logs, certificate, affidavit, actual machine)

Calibration test printouts of machine tested (pre and post calibration tickets)

Collect and review all information corroborating machines history and operational compliance

V. *Calibrator / Field Inspector*

Qualifications

Licensing

Compliance with IDPH regulations

VI. *Operator*

In court sworn testimony

Licensed at time of analysis

In court production of actual license or certified copy of license at time test was administered (Best Evidence Rule)

Knowledge of IDPH regulations

Compliance with operational procedures

VII. *Breath Ticket*

Original hardcopy

Unadulterated

References make, model, serial number, date and time of test, BrAC, test subject, operator

Problem areas

a. error codes

b. incomplete

c. printer problems

d. air blank check

e. internal blank check

VIII. *Sanctions for Non-compliance*

Illinois Supreme Court Rule 277(h)

Illinois Supreme Court Rule 415 (g)(i)

Case law

Compliance ordered

Barring test result's admissability

## Appendix A

### IDPH Standards and Procedures for Testing of Breath, Blood and Urine for Alcohol and/or Other Drugs (77 ILL. ADMIN. CODE, ch. I, pt. 510)

JANUARY 1, 1985

77 ILLINOIS ADMINISTRATIVE CODE

CHAPTER I, § 510

TITLE 77: PUBLIC HEALTH  
CHAPTER I: DEPARTMENT OF PUBLIC HEALTH  
SUBCHAPTER f: EMERGENCY SERVICES AND HIGHWAY SAFETY

## PART 510

## TESTING OF BREATH, BLOOD AND URINE FOR ALCOHOL AND/OR OTHER DRUGS

Section	
510.10	Authority
510.20	Definitions
510.30	Construction of Rules
510.40	Instruments for Analyzing the Alcohol Content of Blood By Breath
510.50	Assaying of Ampoule Solutions
510.60	Standards for the Operation of Approval Breath Analysis Instruments
510.70	Licensing of Operator
510.80	Requirements for Renewal of License
510.90	Revocation and Denial of License
510.100	Examining and Certifying Instruments
510.110	Standards and Procedures for Withdrawal of Blood and/or Urine Samples for Chemical Analysis of Alcohol or other Drug Content
510.120	Approval of Laboratories and Laboratory Technicians

**AUTHORITY:** Implementing and authorized by Section 11-501.2 of the Illinois Rules of the Road (Ill. Rev. Stat. 1981, ch. 95 ½, par. 11-501.2).

**SOURCE:** Filed September 18, 1972; old rules repealed at 6 Ill. Reg. 365, effective January 1, 1982; new rules adopted at 5 Ill. Reg. 14152, effective January 1, 1982; amended at 7 Ill. Reg. 1917, effective January 28, 1983; codified at 8 Ill. Reg. 14271.

**Section 510.10 Authority**

This Part is promulgated by the Department of Public Health, State of Illinois, in consultation with the Department of Law Enforcement under authority prescribed in Section 11-501.2, Illinois Vehicle Code, (Ill. Rev. Stat. 1981, ch. 95 ½, par. 11-501.2.)

**Section 510.20 Definitions**

"Agency" shall mean County, Municipal, State or Federal law enforcement agency, involved in the use of a breath analysis instrument.

"Alcohol" shall mean ethanol, commonly referred to as ethyl alcohol or alcoholic beverage.

"Certified Controlled Reference Sample" shall mean a suitable reference of known ethyl alcohol concentration.

"Department" shall mean the Illinois Department of Public Health.

"Director" shall mean the Director of the Illinois Department of Public Health.

"Inert Stopper" shall mean a stopper that would not either add to or subtract from the concentration of alcohol and/or other drugs as measured by acceptable chemical procedures.

"Inspector" shall mean a licensed breath analysis instrument operator, who through specialized training is authorized by the Department to examine, certify, and maintain breath analysis instruments and administer practical examinations to the operators.

"Instruments" shall mean any item or combination of items of equipment approved by the Department used to make a measurement of blood alcohol concentrations by breath analysis; simple and complex devices are included in this meaning.

"License" shall mean evidence issued by the Department to an individual as proof of his authority and competence to operate a breath analysis instrument.

"Log Book" shall mean a written record by the law enforcement agency for tests performed according to standards and procedures on each instrument.

"Operator" shall mean any individual licensed by the Department to operate a breath analysis instrument.

"Phlebotomist" shall mean a person who uses venesection to collect blood from another individual generally for diagnostic purposes.

"W/V" shall mean weight of alcohol in the volume of blood, breath, or certified controlled reference sample.

**Section 510.30 Construction of Rules**

Words in this Part importing the masculine gender may be applied to females.

**Section 510.40 Instruments for Analyzing the Alcohol Content of Blood By Breath**

- a) Any breath testing instrument to be approved must automatically display the test results visually to the arrested person and provide for an automatic printed test record. Each printed recording shall also contain an automatically printed record of the reading of the testing device made immediately prior to the recording of the tested person.
- b) Instruments to be approved must utilize one of the following methods of breath analysis for blood alcohol concentration.
  - 1) Infra-red absorption - The Intoxilyzer models 4011, 4011A, 4011AS, 4011ASA, the Breathalyzer model 2000 and the Intoximeter model 3000 are instruments using the infra-red absorption method and have been approved by the Department.
  - 2) Photoelectric Colorimetry - The Breathalyzer Model 1000 is an instrument using the photoelectric colorimetry method and has been approved by the Department.
- c) Breath testing instruments to be approved in Illinois must be listed in the Qualified Products Lists of Evidential Breath Measuring Devices prepared by the National Highway Traffic Safety Administration of the U. S. Department of Transportation.
- d) Instruments which meet the provisions of Section 501.40(a),(b) and (c) will be tested by the Department in accordance with the Standards for Devices to Measure Breath Alcohol which were promulgated by the National Highway Traffic Safety Administration, U. S. Department of Transportation.
- e) Any manufacturer who sells breath analysis instruments in Illinois shall report to the Department all such sales listing the name of the agency, the make, and serial number of the instrument.

(Source: Amended at 7 Ill. Reg. 1917, effective January 28, 1983)

**Section 510.50 Assaying of Ampoule Solutions**

- a) All companies engaged in the manufacture, sale, and distribution of ampoule solution used in breath analysis instruments within Illinois shall submit to the Department a representative sample of ampoule solution for each control number to be assayed. A certified assay report that the ampoules are within the acceptable tolerances for Breathalyzer solutions must be obtained from the Department prior to distribution of any ampoules with that control number.
- b) The acceptable tolerances for Breathalyzer solutions are as follows:
  - 1) the tolerance for potassium dichromate is  $0.250 \pm 5\%$  mg/ml
  - 2) the tolerance for the volume of solution is  $3.0 + 0.1$  ml.
  - 3) the tolerance for the specific gravity is  $1.53 \pm 0.01$  @ 24°C.
  - 4) silver must be present in the solution
  - 5) sulfate must be present in the solution

**Section 510.60 Standards for the Operation of Approved Breath Analysis Instruments**

Procedures for breath alcohol analysis shall include the following requirements in conjunction with the testing of each subject:

- a) Continuous observation of the subject for at least twenty (20) minutes prior to collection of the breath specimen, during which period the subject must not have ingested alcohol, food, drink, regurgitated, vomited or smoked.
- b) A breath test shall consist of only one (1) breath analysis.
- c) Before a breath analysis, a room-air analysis must be conducted, the results of which must be less than 0.01% reading.

- d) Each test shall be performed according to an operational procedure approved by the Department which shall be based upon the manufacturer's recommended testing procedure.

**Section 510.70 Licensing of Operator**

- a) To be eligible for license examination to qualify as an operator of a breath analysis instrument, the individual must be employed by a law enforcement agency or the Department, and shall have a minimum of thirty-four (34) hours of instruction which includes the following:
  - 1) Presentation, discussion, and demonstration of the psychological, physiological and pharmacological effects of alcohol in the human body.
  - 2) Theory of instruments used in the analytical process which measures alcohol concentration.
  - 3) Practical application in the use of the instrument.
  - 4) A curriculum approved by the Department.
- b) An individual to be licensed under this part shall pass the standardized written examination provided by the Department and satisfactorily complete the uniform practical proficiency examination administered by an inspector assigned by the Department.
- c) Termination of License.
  - 1) A license shall be valid for a period of twelve (12) months from the date of issuance. If the license is not renewed as provided for in Section 510.80 of this Part it shall terminate twelve (12) months from the date of issuance.
  - 2) A license shall automatically terminate when the licensee/operator is no longer employed by a law enforcement agency or the Department.
- d) Licensing classes will be held in locations approved by the Department based upon appropriate lighting, space, heating and air conditioning conditions.
- e) An operator currently licensed under another jurisdiction may apply for licensure in Illinois providing that he has successfully completed training which equals or exceeds the requirements specified in Section 510.70. Upon approval of the application by the Department, the applicant must successfully complete an approved 4-hour review course as stipulated under Section 510.80(b)(4).
- f) If the licensee/operator changes employment he shall immediately notify the Department. If the licensee/operator resigns from an agency and is employed by another approved agency prior to the date his license terminates, the Department shall reissue the license to that operator for the remainder of the period of his previous license.

**Section 510.80 Requirements for Renewal of License**

- a) Each operator must be re-examined prior to relicensure by the Department. This will be done on the following basis: In each twelve (12) month period, the operator regardless of the number of analyses he conducts, must successfully administer two (2) analyses using a certified controlled reference sample in the presence of an inspector.
- b) Within a two-year (2) period each operator must complete the following:
  - 1) Review of theory and practice with the instrument.
  - 2) Review of standards and procedures.
  - 3) Discussion of current and related problems in the field.
  - 4) Successfully pass both the standardized written examination provided by the Department and the uniform practical proficiency examination administered by an inspector assigned by the Department.
- c) The Department will designate sites and dates for retraining classes and notify the head of the agency by letter which operators shall attend. Designation of sites and scheduling of classes will be arranged to minimize travel.
- d) Retraining classes will be held in locations approved by the Department based upon appropriate lighting, space, heating and air conditioning conditions.

**Section 510.90 Revocation and Denial of License**

- a) The following are grounds for the revocation of a license issued to the operator of a breath analysis instrument:
  - 1) Misuse of the instrument by the operator in such a way that the operator is in violation of State statutes or these rules.

- 2) Upon receipt of a complaint to the Department, a licensed operator may be subject to review by an inspector in the operation of the instrument using a certified controlled reference sample, and, at which time, his failure or refusal to perform analysis properly may be grounds for license revocation upon such recommendation of the inspector.
- 3) Dismissal of the operator from his employing agency.
- b) A renewal of a license under Section 510.80 or reissuance of a license pursuant to Section 510.70(f) may be denied for the following reasons:
  - 1) Any grounds for revocation set forth in Section 510.90(a).
  - 2) Failure to comply with Section 510.80(a) and (b).
- c)
  - 1) In any action to revoke or deny a license the Department shall give the operator a notice of an opportunity for an administrative hearing as provided for in the Illinois Administrative Procedure Act (Ill. Rev. Stat., ch. 127, pars. 1001 et seq.) and the Department's Rules of Practice and Procedure in Administrative Hearings (77 Ill. Adm Code 100).
  - 2) *If the Department finds that the public interest, safety or welfare imperatively requires emergency action, the Department shall incorporate a finding to that effect in an order summarily suspending a license pending proceedings for revocation or denial of license. The administrative proceeding shall be promptly instituted and determined.*
  - 3) If the Department orders the summary suspension of a license under subsection (b) of this Part, a copy of the Order shall be accompanied by a notice of an opportunity for an administrative hearing.
- d) The administrative hearing provided for in Section 510.90(c) shall be conducted by a Hearing Officer who is a person designated in writing by the Director to conduct the hearing.
- e) The Illinois Administrative Procedure Act (Ill. Rev. Stat., ch. 127, par. 1001 et seq.) and the Department's Rules of Practice and Procedure in Administrative Proceedings (77 Ill. Adm. Code 100) shall govern the administrative hearings provided for in Section 510.90(c).

#### Section 510.100 Examining and Certifying Instruments

- a) An instrument must be accurate within  $\pm 0.01\%$  W/V to be certified. To determine accuracy of instruments, an inspector shall perform two (2) analyses on a certified controlled reference sample at least once a month at intervals not to exceed 45 days. The inspector shall record test results of his certification in the instrument log book. The original certification test results will be retained by the inspector.
- b) Breath analysis instruments used shall be examined and certified by an inspector:
  - 1) Prior to being placed in operation.
  - 2) After being repaired or recalibrated.
- c) All agencies are to have their breath analysis instrument and log book available for examination by an inspector.
- d) An operational procedure approved pursuant to Section 500.60(d), shall be at each instrument location.
- e) An inspector must be notified when an agency has a malfunctioning instrument which needs repair.

#### Section 510.110 Standards and Procedures for Withdrawal of Blood and/or Urine Samples for Chemical Analysis of Alcohol or other Drug Content

- a) Blood Collection. When a person is arrested and the arresting officer requests a blood test to determine the amount of alcohol or other drugs present, the blood sample shall be collected according to the following procedure(s)
  - 1) Blood sample shall be collected in the presence of the arresting officer or other representative of the arresting officer's agency who can authenticate the sample.
  - 2) The blood sample shall be collected per venipuncture by a physician licensed to practice medicine by a registered nurse or by a trained phlebotomist acting under the direction of a licensed physician.
  - 3) Disinfectant. A disinfectant containing no alcohol or other volatile organic substance shall be used to clean the skin where a specimen is to be collected.
  - 4) Equipment for Collection of Blood Samples.



## Appendix B

### Illinois State Police Standards for Operation of Breath Alcohol Machines



Jeremy D. Margolis  
Director

#### ILLINOIS STATE POLICE Office of the Director

February 26, 1988

Ms. Angela Peters  
Buffalo Grove Law Offices, Ltd.  
Attorneys and Counselors at Law  
1 Ranch Mart Office Plaza  
Buffalo Grove, Illinois 60089

Dear Ms. Peters:

In your recent letter to Sergeant Campbell you requested information regarding standards for the operation of breathalyzers. The only standards are those provided by the Illinois Department of Public Health which pertain to instruments used to collect evidence in relation to a charge of Driving Under the Influence.

Instruments used to measure breath for alcohol content may be used for other reasons, but do not fall into the category of evidentiary instruments. Private industry may have a need or desire to use Breath Test Instruments. Any number of private, corporate or personal uses could be identified for breath testing. However, they do not fall into the requirements outlined in Chapter 95½, Section 11-501.2(a)1 (copy attached).

I hope this has answered your question satisfactorily.

Very truly yours,

  
Susan C. Weidel  
Chief Legal Counsel

SCW/kbf

## Appendix C

### Ampoule Certification and Assay Report



STATE OF ILLINOIS

DEPARTMENT OF PUBLIC HEALTH  
Bernard J. Turnock, M.D., M.P.H.  
Director

STATE OF ILLINOIS )  
                          ) SS  
COUNTY OF SANGAMON )

C E R T I F I C A T I O N

I, William Brey, Chief, Division of Implied Consent, Department of Public Health, State of Illinois, being custodian of the records of the Department of Public Health, relating to the administration of the Breath Testing Program, do hereby certify that the attached Assay Report is a true and correct copy of the Assay Report for Ampoules bearing control number 41201.

April 10, 1986

Date

William Brey  
William Brey, Chief  
Division of Implied Consent  
Department of Public Health  
State of Illinois

Subscribed and sworn to before me this 10th day of

April, 1986.

Dorothy M. Constant  
Notary Public



ILLINOIS DEPARTMENT OF PUBLIC HEALTH

Thomas B. Kirkpatrick, Jr., Director

535 West Jefferson Street • Springfield, Illinois 62761 • Telephone: 217-782-4977



DIVISION OF LABORATORIES • 2121 West Taylor Street • Chicago, Illinois 60612


Reply to: CHICAGO

ASSAY REPORT

<u>Breathalyzer Ampoules</u>	Control #41201
<u>Submitted by</u>	Guth Laboratories
<u>Assay for Potassium Dichromate</u>	0.250 mg/ml
Tolerance	0.25 mg/ml $\pm$ 5%
<u>Volume of Solution</u>	3.02 ml
Tolerance	3.0 ml $\pm$ 0.1
<u>Specific Gravity</u>	1.53
Tolerance	1.53 $\pm$ 0.01
<u>Assay for Silver</u>	Present
<u>Assay for Sulfate</u>	Present

The above report certifies that Breathalyzer ampoules of Control # 41201 (~~quality~~ do not qualify) within the acceptable tolerances for Breathalyzer solutions, as specified by the Department of Public Health, State of Illinois.

  
 Pascual R. Manio, D.M.D.  
 Chemist III

  
 John J. Spikes, Ph.D.  
 Chief, Toxicology Section

Date Reported: March 20, 1985

## Appendix D

### Breath Analyzing Instrument Maintenance Record

#### 1. IDPH Maintenance Log

BREATH ANALYZING INSTRUMENT MAINTENANCE RECORD

LOCATION GENEVA P.D. INSTRUMENT SERIAL NUMBER 0520127  
 INSPECTOR JOHN DORSKO S&W 1000

Date of Breakdown	Type of Malfunction	Description of Repairs Made	Date of Repair
12-20-73	CLEANED BREATH CHAMBER		12-20-73
11-19-74	CLEANED BREATH CHAMBER.		11-19-74
6-11-75	PRINTER NOT ADVANCING TICKET.	REPAIRED PRINTER	6-19-75
2-2-76	ADJUSTED BOTH THERMOSTATS & CLEANED BREATH CHAMBER.		2-2-76
10-30-81	DOUBLE PRINTING	REPLACED PRINTER	10-30-81
8-23-82	—	REPLACED SERVO BOARD	8-23-82
7-26-84	WON'T GO OUT OF PURGE.	REPLACED COMM. BOARD.	7-26-84
1-4-85	Blank & Blow light don't illuminate, High blanks, didn't print P	REPLACED COMM. BOARD	1-4-85

### 2. Illinois State Police Maintenance Record Log

**ILLINOIS STATE POLICE  
BREATH ANALYSIS UNIT  
MALFUNCTION REPORT**

Instrument Serial No. 3070 Location LEE 052

District No. 01 Date Reported 02/11/87 Date Repaired or Replaced 02/11/87

Malfunction Reported BREATH HOSE LEAKS.

Malfunction Found SAME

PROBABLE CAUSE OF PROBLEM:  Normal Breakdown  Operator Error  Unknown  Other

Remarks: REPLACED BREATH HOSE.

Parts Used or Circuit Boards Replaced: \_\_\_\_\_

Denise Cichon  
Inspector's Signature

Additional Remarks: \_\_\_\_\_

SPB-13 (11/78)

**ILLINOIS STATE POLICE  
BREATH ANALYSIS UNIT  
MALFUNCTION REPORT**

Instrument Serial No. 3070 (SPARE) Location 2116 (C.P.D. GALE)

District No. 3 Date Reported N/A Date Repaired or Replaced 12-09-85

Malfunction Reported N/A

Malfunction Found N/A

PROBABLE CAUSE OF PROBLEM:  Normal Breakdown  Operator Error  Unknown  Other

Remarks: MOVED RUBBER BASE SUPPORTS (FEET) BACK SO INSTRUMENT FITS ON CABINET.

Parts Used or Circuit Boards Replaced: \_\_\_\_\_

[Signature]  
Inspector's Signature

Additional Remarks: \_\_\_\_\_

SPB-13 (11/78)

# Appendix E

## AIDS Decontamination Procedures

<b>OFFICE MEMORANDUM</b>		<b>DEPARTMENT OF STATE POLICE</b>	
<b>To: (Name, Division, and Offices)</b>		<b>From: (Name, Division, and Offices)</b>	
ALL FIELD INSPECTORS		SERGEANT ROBERT R. CAMPBELL DIRECTOR BREATH ANALYSIS SECTION RRC:et	
<b>Subject:</b>		<b>Date:</b>	
A.I.D.S. DECONTAMINATION		August 3, 1987	

In recent months the Breath Analysis Section has experienced a new and potentially controversial problem, the contamination or alleged contamination of breath testing instruments by the Acquired Immune Deficiency Syndrome Virus (A.I.D.S.) resulting from individuals being administered breath tests who have A.I.D.S. or who claim to have A.I.D.S.

The Illinois Department of Public Health Epidemiologist, Dr. Stevko, has advised that there is no cause for concern when a breath test is conducted utilizing proper procedures and when blood is not introduced into the instrument. There has been no evidence that saliva will transmit the A.I.D.S. virus and proper use of the disposable mouthpiece further insures against any contention of contamination.

The following procedures will be used in the event of contamination or alleged contamination.

1. The instrument will be removed from service.
2. During the decontamination process rubber gloves, eye protection and clothing protection will be worn to prevent bleaching of the uniform or burns to the skin from the use of bleach.

### DECONTAMINATION PROCEDURES INTOXILYZER MODEL 5000

1. Prepare 1000 ml. of solution consisting of 990 ml. water/10 ml. chlorine bleach. Place 500 ml. of the water/bleach solution in a simulator to be used for internal decontamination with the remaining 500 ml. to be used for breath hose and external decontamination.
2. Remove the breath hose (external) and using 500 ml. water/bleach solution pass the solution through the breath hose. The breath hose/mouthpiece fitting must be exposed to this solution also.
3. Rinse and dry the breath hose and reattach it to the instrument. The rinse should consist of water only. Do not plug in the breath tube heat tape if the breath hose is not completely dry.
4. Using the heated simulator solution (water/chlorine bleach) conduct six (6) A.C.A. tests causing the water/bleach vapor to pass through the instrument.
5. Properly dispose of all water/bleach solution and using water only, repeat the six (6) A.C.A. tests.
6. Using no simulator repeat the six (6) A.C.A. tests.

**MEMORANDUM**

To: (Name, Division, and Office)	From: (Name, Division, and Office)
Subject: A.I.D.S. DECONTAMINATION - PAGE TWO	Date: August 3, 1987

Note: The procedure will result in six (6) exposures to water/bleach, six (6) exposures to water and forty-two (42) exposures to air.

7. Replace the instrument in its assigned location and perform the standard post-repair calibration check.
8. Complete a malfunction report, forward the report and all test record cards to the Section office.

**DECONTAMINATION PROCEDURES FOR  
INTOXILYZER MODELS 4011, 4011A AND 4011AS**

1. Prepare 1000 ml. of solution consisting of 990 ml. water/10 ml. chlorine bleach. Place 500 ml. of the water/bleach solution in a simulator to be used for internal decontamination with the remaining 500 ml. to be used for breath hose and external decontamination.
2. Remove the breath hose and immerse the hose in 500 ml. of water/bleach solution.
3. Rinse and dry the breath hose and reattach it to the instrument. The rinse should consist of water only.
4. Using the heated simulator solution (water/chlorine bleach) conduct six (6) A.C.A. tests causing the water/bleach vapor to pass through the instrument.
5. Properly dispose of all water/bleach solution and using water only, repeat the six (6) A.C.A. tests.
6. Using no simulator repeat the six (6) A.C.A. tests.
7. Replace the instrument in its assigned location and perform the standard post-repair calibration check.
8. Complete a malfunction report, forward the report and all test record cards to the Section office.

Section personnel involved in decontamination should use extreme caution to avoid any injury that would result in cuts, scrapes, or punctures of the skin. Should such an injury occur the person shall immediately clean the affected area with soap and water and notify his/her supervisor.

cc: Trooper Davis







## Appendix G

### Certification / Calibration Log Characteristics

Permanently bound book  
Name of law enforcement agency  
Owner's name  
Make and model of machine(s)  
Serial number of each machine  
Location of machine(s) in use  
Ampoule batch number  
Ampoule batch certification date  
Operator's name and license number  
Type of Test (breath, blood or urine)  
Full name of test subject  
Period of observation (start and stop)  
Time of test  
Time of test record  
Test results  
Test refusal (time)  
Dates of calibration  
Calibration information (calibrator's name, license number, calibration tests performed, results of calibration, simulator certification batch number, pre and post calibration test results)  
Court Date  
Citation number  
Date and time of requested repair/maintenance  
Date of repair/maintenance  
Repair/maintenance work  
Test record number  
Reference analysis  
Indicia of certification (sticker, decal, affidavit of certification)  
Remarks, *e.g.*, practice test, recertification test, calibration, maintenance, void test etc.

**Appendix H****Label from Certified Solution Prepared by IDPH Lab****LABEL FROM CERTIFIED SOLUTION PREPARED BY IDPH LAB****ILLINOIS DEPARTMENT OF PUBLIC HEALTH****ALCOHOL REFERENCE SOLUTION****0.10****To be used with a Simulator  
and Breath Analysis Instrument**Prepared and Certified by the DIVISION OF LABORATORIES, 2121  
West Taylor, Chicago, Illinois 60612LOT # **87-134**Date **JUN 15 1987****When this solution is used with a simulator and breath analysis instrument,  
the instrument should read 0.1% ± 0.01%.**

# Appendix I

## Calibration Breath Tickets

### 1. Smith & Wesson Breathalyzer 1000 Calibration Breath Test Ticket (Sample)

ILLINOIS DEPARTMENT OF PUBLIC HEALTH BREATH ANALYZER INSTRUMENT CHECK			
NAME OF AGENCY <i>Jonestown P.O.</i>			
ADDRESS <i>3404 Lake St</i>			
SERIAL NO. <i>0520109</i>	PREVIOUS INSPECTION DATE <i>MO 9 DA 5 YR 85</i>		
NO. TESTS SINCE LAST INSPECTION <i>30</i>	TOTAL NO. TESTS ON INSTRUMENT <i>1494</i>		
TYPE OF INSTRUMENT <input checked="" type="checkbox"/> PHOTO-ELECTRIC <input type="checkbox"/> INFRA-RED-ABSORPTION	MODEL <input checked="" type="checkbox"/> BREATHALYZER <input type="checkbox"/> INTOXILYZER		
<input checked="" type="checkbox"/> MODE LIGHTS <input checked="" type="checkbox"/> PHOTOMETER <input checked="" type="checkbox"/> DIGITAL DISPLAY	<input checked="" type="checkbox"/> PRINTER <input checked="" type="checkbox"/> COVER INTERLOCK <input checked="" type="checkbox"/> DIGITAL DISPLAY CONSISTANT-PRINTER		
CYLINDER VOLUME OUTPUT <i>Acceptable</i> ML.	SOLUTION CONTROL NO. <i>84-117</i>		
DATE OF INSPECTION MO <i>10</i> DA <i>29</i> YR <i>85</i>	AMPOULE CONTROL NO. <i>9</i>		
<table border="1"> <tr> <td>                 X = RE-INITIATE                  S = SAMPLE                  T = AIR BLANK                  P = PURGE             </td> <td>                 I HEREBY CERTIFY THAT THE BREATH TESTING INSTRUMENT BEARING THE ABOVE SERIAL NUMBER IS ACCURATE AND PRECISE TO WITHIN LIMITS AS PRESCRIBED BY THE RULES AND REGULATIONS PROMULGATED BY THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH.             </td> </tr> </table>		X = RE-INITIATE S = SAMPLE T = AIR BLANK P = PURGE	I HEREBY CERTIFY THAT THE BREATH TESTING INSTRUMENT BEARING THE ABOVE SERIAL NUMBER IS ACCURATE AND PRECISE TO WITHIN LIMITS AS PRESCRIBED BY THE RULES AND REGULATIONS PROMULGATED BY THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH.
X = RE-INITIATE S = SAMPLE T = AIR BLANK P = PURGE	I HEREBY CERTIFY THAT THE BREATH TESTING INSTRUMENT BEARING THE ABOVE SERIAL NUMBER IS ACCURATE AND PRECISE TO WITHIN LIMITS AS PRESCRIBED BY THE RULES AND REGULATIONS PROMULGATED BY THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH.		
INSPECTOR'S SIGNATURE <i>[Signature]</i>			

INSPECTOR COPY

2. Smith & Wesson Breathalyzer 2000 Calibration  
Breath Ticket (Sample)

BREATHALYZER TEST  
SERIAL NO: 20652  
OPERATOR NAME:  
JOHN DORKO  
SUBJECT NAME:  
.10 SIMULATOR  
LICENSE NUMBER:  
498-44-2566  
BLANK READ: 0.00 %BAC  
SIMULATOR: 0.10 %BAC  
TIME: 18:18  
DATE: FRI DEC 06  
\*\*\*\*\*  
BLANK READ: 0.00 %BAC  
SIMULATOR: 0.10 %BAC  
TIME: 18:20  
DATE: FRI DEC 06  
ROLLING MEADOWS  
P.D.

**BREATHALYZER® 2000**  
Test Record  
X30-0027-00

**3. Intoximeter Model 3000 Calibration Breath Test  
Ticket (Sample)**

TEST RECORD

INTOX 3000 SN:4124  
CALUMET PARK PD  
TUE OCT 13, 1987

ACCURACY CHECK

<OPERATOR NAME>  
JIM MUSSATTO #0003  
<SIMULATOR VALUE>  
.10

TEST	VALUE	TIME
BLK	.00	09:10
EXTSTD	.09	09:11
BLK	.00	09:12
SIM	.09	09:12
SIM	.09	09:14

## 4. Intoximeter 3000 Breath Test Ticket (Sample)


TEST RECORD

INTOX 3000 SN:4124  
CALUMET PARK PD  
TUE OCT 13, 1987

<OPERATOR NAME>  
JOHN PUBLIC  
<SUBJECT NAME>  
JOHN DOE  
<DRIVERS LICENSE#>  
T456378930  
<DATE OF BIRTH>  
12OCT50  
<ARRESTING OFFICER>  
JOHN PUBLIC  
<ARRESTING DEPT. >  
CAL PARK

TEST	VALUE	TIME
BLK	.00	09:24
STD	.10	09:24
BLK	.00	09:25
SUBJ	.09	09:25

5a. BAC Verifier Calibration Breath Test Ticket  
(Sample)



**VERAX**  
SYSTEMS, INC.

THIS SIDE UP • THIS EDGE IN FIRST

---

PALOS HEIGHTS  
POLICE DEPARTMENT  
PALOS HEIGHTS, IL.

BAC VERIFIER  
INSTRUMENT 501005

CERTIFICATION CHECK

JANUARY 08, 1986  
TIME 08:31

BLANK TEST  
0.000 %

INTERNAL STANDARD  
VERIFIED

SIMULATOR TEST  
ALCOHOL  
0.145 %

BLANK TEST  
0.000 %

SIMULATOR TEST  
ALCOHOL  
0.146 %

BLANK TEST  
0.000 %

INSPECTOR'S NAME  
*James M. [Signature]*

INSPECTOR'S I.D.  
332-24-9728

0003  
NDFI PRESENT  
*Certified Accurate*


---

BAC VERIFIER

5b. BAC Verifier Diagnostic Test Printout

BAC VERIFIER

Diagnostic Test Printout

- 1. ORGANIZATION NAME \_\_\_\_\_
- 2. DATE & TIME \_\_\_\_\_
- 3. MICROPROCESSOR STATUS \_\_\_\_\_
- 4. SOFTWARE STATUS \_\_\_\_\_
- 5. TEMPERATURE STATUS 
- 6. PURGING PUMP OPERATION \_\_\_\_\_
- 7. SAMPLE PRESERVATION PUMP \_\_\_\_\_
- 8. VERIFY ZERO CAPABILITY \_\_\_\_\_
- 9. ALCOHOL & ACETONE FILTERS \_\_\_\_\_
- 10. ACETONE CALIBRATION FACTOR \_\_\_\_\_
- 11. QUARTZ PLATE MOVEMENT \_\_\_\_\_
- 12. QUARTZ STANDARD CALIBRATION \_\_\_\_\_
- 13. PRINTER FUNCTIONS \_\_\_\_\_

```

ORGANIZATION NAME
  123 STREET
  ANYTOWN, STATE

OTHER HEADING DATA

  BAC VERIFIER

INSTRUMENT 402047

DIAGNOSTIC CHECK

MARCH 28, 1984
TIME 09:18

COMPUTER: OK
PROGRAM: OK

HEATERS
SAMPLE CHAMBER
SET: 50c
ACTUAL: 50c

COLLECTION CYL.
SET: 50c
ACTUAL: 49c

PUMP
HIGH SPEED: OK
LOW SPEED: OK

DETECTOR: OK

FILTERS: OK

ACETONE SWITCH
OK

QUARTZ STANDARD
OK

CALIBRATION: OK

PRINTER TEST
0123456789ABCDEF6H
IJKLMNOPQRSTUVWXYZ

END OF TEST

```

(15)



## Appendix J

### Smith & Wesson Breathalyzer 2000 Printer Test Results (Sample)

PRINTER TEST

THE QUICK BROWN FOX  
JUMPED OVER THE LAZY  
DOGS BACK. 0123456789

THE QUICK BROWN FOX  
JUMPED OVER THE LAZY  
DOGS BACK. 0123456789

THE QUICK BROWN FOX  
JUMPED OVER THE LAZY  
DOGS BACK. 0123456789

THE QUICK BROWN FOX  
JUMPED OVER THE LAZY  
DOGS BACK. 0123456789

THE QUICK BROWN FOX  
JUMPED OVER THE LAZY  
DOGS BACK. 0123456789

THE QUICK BROWN FOX  
JUMPED OVER THE LAZY  
DOGS BACK. 0123456789

THE QUICK BROWN FOX  
JUMPED OVER THE LAZY  
DOGS BACK. 0123456789

THE QUICK BROWN FOX  
JUMPED OVER THE LAZY  
DOGS BACK. 0123456789

THE QUICK BROWN FOX  
JUMPED OVER THE LAZY  
DOGS BACK. 0123456789

ROLLING MEADOWS

P. D.

12-6-85

**BREATHALYZER® 2000**

Test Record  
X30-0027-00

# Appendix K

## Calibrator's Affidavit of Inspection



STATE OF ILLINOIS

DEPARTMENT OF PUBLIC HEALTH  
Bernard J. Turnock, M.D., M.P.H  
Director

STATE OF ILLINOIS        )  
                                  ) SS  
COUNTY OF Cook        )

C E R T I F I C A T I O N

TO WHOM IT MAY CONCERN:

I, Timothy Miller, employed as a Breath Analysis Equipment Technician by the Division of Implied Consent, Department of Public Health, State of Illinois, do hereby certify that the attached certification record is a true and correct copy of the certification record for the Breath Analysis Instrument, bearing serial number 0520109 for the certification I performed on the date of October 29, 1985, and found said instrument to be functioning properly and accurate within  $\pm 0.01\%$  W/V.

June 4, 1986  
Date

Timothy Miller  
Breath Analysis Equipment Technician  
Illinois Department of Public Health  
Division of Implied Consent  
State of Illinois

Subscribed and sworn to before me this 4th day of

June, 1986.

Kathleen Kurma  
Notary Public

# Appendix L

## IDPH Breath Alcohol Machine Operation Procedure



STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC HEALTH  
 Bernard J. Turnock, M.D., M.P.H  
 Director

STATE OF ILLINOIS )  
 ) SS  
 COUNTY OF SANGAMON )

### CERTIFICATION

I, William Brey, Chief, Division of Implied Consent, Illinois Department of Public Health, State of Illinois, being custodian of the records of the Department of Public Health relating to the administration of the Implied Consent Program, do hereby certify that the attached is a true and correct copy of the Operational Procedures for the Intoxilyzer Models 4011, 4011A and 4011AS.

January 8, 1986  
 Date

William Brey  
 William Brey, Chief  
 Division of Implied Consent  
 Department of Public Health  
 State of Illinois

Subscribed and sworn to before me this 8<sup>th</sup> day of  
January, 1986.

Patricia Brennan  
 Notary Public



## STATE OF ILLINOIS

DEPARTMENT OF PUBLIC HEALTH  
Bernard J. Turnock, M.D., M.P.H.  
Director

## APPROVED OPERATIONAL PROCEDURE

## FOR THE

## INTOXILYZER MODEL 4011A

Wait at least 20 minutes after last drink  
or regurgitation before conducting test.

1. Make certain power switch is in ON position.
2. When ready light comes on connect breath tube to pump tube and turn mode selector switch to AIR BLANK.
3. After air blank cycle is completed, insert test record card.
4. Turn mode selector switch to ZERO SET. Depress zero adjust knob and rotate until display reads a figure no greater than .003. Turn mode selector switch to AIR BLANK.
5. After air blank cycle is completed, turn mode selector switch to BREATH MODE and disconnect breath tube from pump tube. Install mouthpiece on breath tube. Instruct subject on how to blow and take breath sample and record time.

EFFECTIVE January 1, 1982

Angelo Garella, Chief  
Division of Implied Consent  
Department of Public Health  
State of Illinois

RE-ISSUED January 1, 1986  
William Brey, Chief  
Division of Implied Consent  
Department of Public Health  
State of Illinois



## STATE OF ILLINOIS

---

DEPARTMENT OF PUBLIC HEALTH  
Bernard J. Turnock, M.D., M.P.H.  
Director

OPERATIONAL PROCEDUREINTOXILYZER MODEL 5000

WAIT AT LEAST 20 MINUTES AFTER THE LAST DRINK  
OR REGURGITATION BEFORE CONDUCTING TEST.

1. Make certain power switch is in the ON position (RED BUTTON).
2. When "PUSH BUTTON" is flashing, depress button to start test (GREEN BUTTON).
3. Insert Test Record Card (FLASHING)..
4. Unit will AIR BLANK-READ OUT.
5. Insert new mouthpiece into breath tube and instruct subject how to blow (READS AND PRINTS RESULTS).

# Appendix M

## Breath Machine Test Result Tickets

### 1. Smith & Wesson Breathalyzer 1000 Breath Test Ticket

**CARY POLICE DEPT.**

BREATHALYZER MODEL 1000  
SERIAL 0520157

MACHINE LOCATION: CARY P.D.

I.S.P.  CITY P.D.  SHERIFF'S DEPT.

SAT 09-07-85 3:18 P.M.  
DAY DATE TIME

William E. Kische  
OPERATOR'S NAME

HECKMAN, LYNDA M.  
SUBJECT BEING TESTED

Chapt B Nelson #161  
WITNESS

WITNESS

TEST RECORD	% ALCOHOL IN BLOOD	AMPOULE CONTROL NO.
		<u>807</u>
		<input type="checkbox"/> A.M. <input type="checkbox"/> P.M.
		<u>3:39</u>
		<input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.

ILLINOIS CREATION AND COMPLAINT: 25625

SECRETARY OF STATE NOTICE NO.

P PURGE  
S ANALYSIS  
T AIR BLANK  
X RE-INITIATE

I: OFFICER

Village of Cary v. Heckman, Gen. No. 85-T-24759-61 (McHenry County, Ill.). Not guilty verdict.

**2. Smith & Wesson Breathalyzer 2000 Breath Ticket  
(Sample)**

BREATHALYZER TEST  
SERIAL NO: 20656  
OPERATOR NAME:  
-----  
SUBJECT NAME:  
-----  
LICENSE NUMBER:  
-----  
BLANK READ: 0.00 %BAC  
SUBJECT: 0.00 %BAC  
TIME: 11:04  
DATE: MON AUG 20

**BREATHALYZER® 2000**  
Test Record  
X30-0027-00

3. Intoxilyzer 4011A Breath Test Ticket (Sample)

**PRINT ALL ITEMS**

**INTOXILYZER TEST RECORD** LAB# 9-91

SUBJECT'S NAME LAST FIRST MIDDLE MO DAY YR DATE OF BIRTH TECH SUPV AREA

4011AS-A92

INTOXILYZER MODEL NO SERIAL NO INSTRUMENT LOCATION

OPERATOR'S NAME LAST FIRST MI CERI NO AGENCY

MO DAY YR DATE OF TEST

BLANK REFERENCE SAMPLE

BLANK SUBJECT

BLANK

TIME OBSERVATION BEGUN TIME OF TEST

TEST RUN FOR

NAME

AGENCY

WITNESS

REFERENCE ANALYSIS

0. % PREDICTED

% ALCOHOL CONC

0.

0.

0.

0.

0.

**FILE COPY**



4. Intoxilyzer 4011AS Breath Test Ticket (Sample)

**ISP TEST RECORD**

Arrested by (Department) \_\_\_\_\_

Illinois Citation and Complaint # \_\_\_\_\_

Date and Time of Test \_\_\_\_\_

Operator's Name \_\_\_\_\_ Dept. I.D. # \_\_\_\_\_

Serial # \_\_\_\_\_

Instrument Location \_\_\_\_\_

Witness \_\_\_\_\_ Dept. I.D. # \_\_\_\_\_

Arresting Officer \_\_\_\_\_ Dept. I.D. # \_\_\_\_\_

Subject being tested \_\_\_\_\_

Please PRINT all information

DLE 5-127 (12-81)

5. Intoxilyzer 5000 Breath Test Ticket (Sample)

THIS SIDE UP. THIS EDGE IN. FORM NUMBER 015010

FEDERAL SIGNAL CORP. / CMI INC  
INTOXILYZER - ALCOHOL ANALYZER  
IL MODEL 5000 SM 64-001183  
06/26/87

TEST	BAC VALUE	TIME
AIR BLANK	.00	15:14
SUBJECT TEST	.00	15:14
AIR BLANK	.00	15:14

SUBJECT'S NAME

TIME FIRST OBSERVED

INTOXILYZER® LOCATION

OPERATOR

ADDITIONAL INFORMATION AND/OR REMARKS

### 6. BAC Verifier—Breath Test Ticket (Sample)

BAC VERIFIER	
PRINTED OUTPUT SAMPLE	
HEADING INFORMATION	_____
INSTRUMENT & SERIAL NO.	_____
DATE & TIME	_____
ENVIRONMENTAL CHECK	_____
QUARTZ INTERNAL CALIBRATION	_____
BAC LEVEL MEASURED	_____
ACETONE OR EQUIVALENT FACTOR	_____
PRESERVED SAMPLE IN VIAL (Optional Capability)	_____
VARIABLE INPUT DATA	_____ _____ _____ _____ _____
RFI STATUS	_____

ORGANIZATION NAME  
123 STREET  
ANYTOWN, STATE

OTHER HEADING DATA  
BAC VERIFIER

INSTRUMENT 402047

BREATH ANALYSIS  
MARCH 28, 1984  
TIME 09:11

BLANK TEST  
0.000 %

INTERNAL STANDARD  
OK

SUBJECT SAMPLE  
ALCOHOL  
0.139 %

ACETONE EQUIVALENT  
0.037 %

SAMPLE COLLECTED  
OFFICER

BADGE

SUBJECT ID

NO RFI PRESENT

END

(11)

7. Alcotest Model 7110 Breath Test Ticket (Sample)

```

*****
LOCATION:

      CHIEFS SHOW
-----
ALCOTEST 7110 E3
SERIAL-NO.:      392
SAMPLE-NO.:      028
DATE:    10/05/88  10:48
-----
SUBJECT:

-----
OPERATOR:

-----
** ZEROTEST CORRECT **
** SELFTEST CORRECT **
*****
* SIMULATOR 10:43 *
*          *
* .077 PERCENT BAC *
*          *
* SIMULATOR 10:50 *
*          *
* .083 PERCENT BAC *
*          *
* SUBJECT 10:51 *
*          *
* .000 PERCENT BAC *
*          *
*****
OPERATOR'S SIGNATURE

-----
SUBJECT'S SIGNATURE
-----

```

## Appendix N

### Approved Preliminary Breath Screening Units



ILLINOIS DEPARTMENT OF  
PUBLIC HEALTH

*A Healthier Today For A Better Tomorrow*

Bernard J. Turnock, M.D., Director

#### PRELIMINARY BREATH SCREENING UNIT APPROVAL

(DECEMBER 1, 1987)

Revised January 1, 1988

In accordance with the provisions of Public Act 85-485 amending the Illinois Vehicle Code, Chapter 95 $\frac{1}{2}$ , Article V, Section 11-501.4, Illinois Revised Statutes, the Department of Public Health, State of Illinois, has examined Preliminary Breath Screening Test Units submitted by manufacturers and has determined that the units listed below meet the standard of accuracy of plus or minus 0.01% W/V established by the Department for approval of Preliminary Breath Screening Test Units. The Department, by approval of the devices, does not endorse any particular unit for sale.

- A. Units listed as **Pass/Fail** will indicate alcohol levels as follows:  
     Green Indicator Light - A level of .00 to .05  
     Amber Indicator Light - A level of .051 to .099  
     Red Indicator Light - A level of .10 or higher
- B. Units listed as **Digital Read** will indicate alcohol levels by numeric indication of two digits (.00) on a visible screen.
- C. Units listed as **Digital Pass/Fail** will indicate levels of alcohol impairment by a numeric or letter message on the unit screen for .05 to .10 levels.

#### UNITS APPROVED:

1. ALCO-CHEK, Models I and II and Model 3000  
    All Pass/Fail and Digital Read Models  
    Manufactured by Sound Off, Inc., Box 206, Hudsonville, MI 49426
2. ALCO-SENSOR  
    All Pass/Fail, Digital Read and Digital Pass/Fail Models  
    Manufactured by Intoximeters, Inc., 1901 Locust St., St. Louis, MO 63103
3. S-L2 and S-D2 ALCOHOL ANALYZER  
    All Pass/Fail and Digital Read Models  
    Manufactured by National Patent Analytical Systems, Inc.,  
    Expressway Plaza Two, Roslyn Heights, NY 11577
4. ALERT Model J-4  
    All Digital Pass/Fail and Digital Read Models  
    Manufactured by Alcohol Countermeasures Systems,  
    924 Military Street, Port Huron, MI 48060
5. GUTH ALCO-TECTOR  
    Pass/Fail Model only  
    Distributed by Guth Laboratories, Inc.,  
    590 N. 67th Street, Harrisburg, PA 17111