

# International Association for Chemical Testing

## Recommendations for Evidential Breath Alcohol Personnel

The organization *International Association for Chemical Testing* (IACT) was formed in March 1988, in Chicago, Illinois, as a result of a symposium sponsored by the Department of Transportation in 1987, in Boston, Massachusetts. The organization is made up of both scientific and criminal justice professionals, including researchers, criminalists, forensic scientists, regulatory inspectors, manufacturing representatives, and law enforcement personnel among others.

The purpose of IACT is to:

- advance professionalism in alcohol and drug testing related to traffic or workplace safety,
- develop as well as promote training programs for persons and organizations who perform alcohol and drug testing related to traffic or workplace safety,
- facilitate the discussion and exchange of information concerning alcohol and drug testing related to traffic or workplace safety,
- promote cooperation between agencies devoted to alcohol and drug testing related to traffic and workplace safety, and
- to plan, organize, and administer meetings and conferences, reports and other projects to promote and advance these and related purposes through the membership.

### 2. Scope

Historically, IACT and The National Safety Council-Committee on Alcohol and Other Drugs have each published recommendations for breath alcohol testing. In light of advances in instrumentation and the release of the National Academy of Sciences report in 2009 it was determined that the recommendations should be revisited. The IACT Training Committee, a standing committee of IACT, was tasked with authoring training recommendations for personnel involved in evidential Breath Alcohol Programs.

This document contains recommendations that are intended to assist programs in the selection and professional development of personnel. These recommendations are not meant to be all-encompassing, it is recognized that evidential breath alcohol testing programs may have statutory, regulatory, and/or legal requirements which will guide the needs of their specific program.

Defined training programs followed by competency testing prior to assuming duties ensure personnel are appropriately qualified to perform their duties. Continuing education is a necessary component to maintain and advance knowledge and skills that are critical to the success of any scientific program. While funding issues may offer challenges, continuing education opportunities

should be available to staff to ensure the high level of professionalism and scientific knowledge that is expected by the general public and their peers.

3. Evidential Breath Alcohol Operator (however named)
  - 3.1 General Duties: Operate evidential breath alcohol instrument(s) for testing purposes.
    - 3.1.1 Responsibilities include:
      - 3.1.1.1 Testify as a factual witness within limits of expertise
      - 3.1.1.2 Perform evidential breath tests following all assigned procedures and legal requirements
  - 3.2 Education/Experience
    - 3.2.1 Authorized Law Enforcement Personnel
  - 3.3 Training
    - 3.3.1 The initial documented training program should include:
      - 3.3.1.1 Basic Instrument Theory
      - 3.3.1.2 Instrument operating procedures
      - 3.3.1.3 Proper completion of associated paperwork
      - 3.3.1.4 Basic theory of breath testing
      - 3.3.1.5 Practical testing on human subjects
      - 3.3.1.6 Basic effects of alcohol on the human body
      - 3.3.1.7 Applicable laws and administrative rules
      - 3.3.1.8 Court room preparation and factual testimony
    - 3.3.2 Culmination of Training period
      - 3.3.2.1 Individual should satisfactorily demonstrate their ability to perform evidential breath tests while following all assigned protocols.
      - 3.3.2.2 A certificate (however named) should be issued to the individual authorizing them to conduct evidential breath tests.
        - 3.3.2.2.1 The certificate should state the instrument the individual is authorized to use.
        - 3.3.2.2.2 The certificate should state the start and end dates of authorization.
        - 3.3.2.2.3 Authorization should last no more than 2 years from date of issue.
    - 3.3.3 Subsequent Instrumentation after initial training
      - 3.3.3.1 It is recognized that topics such as basic theory of breath testing and effects of alcohol may not be necessary for subsequent instrumentation. The agency may elect to perform an abbreviated training program that ensures adequate training on new theory and applicable case law. Any subsequent training should fulfill the requirements within section 3.3.2 *Culmination of Training period*.

- 3.4 Continuing Education
  - 3.4.1 Continuing education should be conducted every 2 years at a minimum. Various training formats may be utilized at the discretion of the agency such as lecture, video training, and/or online training. Topics to be covered include:
    - 3.4.1.1 Review of instrument operation and procedures.
    - 3.4.1.2 Recent case law and new legislation.
  - 3.4.2 Culmination of continuing education
    - 3.4.2.1 Individual should satisfactorily demonstrate their ability to perform an evidential breath test while following all assigned protocols.
    - 3.4.2.2 A certificate (however named) should be issued to the individual authorizing them to conduct evidential breath tests.
      - 3.4.2.2.1 The certificate should state the instrument the individual is authorized to use.
      - 3.4.2.2.2 The certificate should state the start and end dates of authorization.
      - 3.4.2.2.3 Authorization should last no more than 2 years from date of issue.
- 4 Technician (however named)
  - 4.1 General Duties: Performs calibration duties under technical supervision.
    - 4.1.1 Responsibilities include:
      - 4.1.1.1 Perform supervised calibration activities while adhering to policies, procedures, and quality assurance program
      - 4.1.1.2 Maintain knowledge of currently accepted practices, instrumentation, and the science of breath alcohol
      - 4.1.1.3 May testify as factual and/or limited expert witness
      - 4.1.1.4 May train evidential breath alcohol operators on proper instrument use and theory of breath alcohol testing
    - 4.1.2 Responsibilities do not include interpretation of data, reaching conclusions and authorizing the release of calibration certificates
  - 4.2 Education/Experience
    - 4.2.1 Education and experience necessary to perform job duties required by agency
  - 4.3 Training
    - 4.3.1 The training program should include:
      - 4.3.1.1 Documented program with clear guidelines of expected outcomes
      - 4.3.1.2 Completion of the Evidential Breath Alcohol Operator Training Program
      - 4.3.1.3 Standards of Conduct: ethics and scientific objectivity
      - 4.3.1.4 Overview of legal processes: testimony, law, and the Criminal Justice System

- 4.3.1.5 Quality Assurance: Quality Control measures, Safety, Chain of Custody/Evidence Handling, Standard Operating Procedure's, and Good Laboratory Practices (GLP)
  - 4.3.1.6 Instrumentation: history, use, theory, maintenance, limitations and troubleshooting
  - 4.3.1.7 Instructional principles, if teaching is a responsibility
  - 4.3.2 Culmination of the training program
    - 4.3.2.1 Individual should satisfactorily demonstrate their ability to perform calibration activities while following all assigned protocols (competency test)
    - 4.3.2.2 A moot court exercise should be conducted to verify competent testimony within the limits of their expertise
    - 4.3.2.3 After successful completion of the training program the individual should be authorized to perform calibration activities under technical supervision
    - 4.3.2.4 If training is a responsibility, the individual should satisfactorily demonstrate their ability to train operators while following the assigned protocols
  - 4.4 Continuing Education Opportunities
    - 4.4.1 Individual should have access to resources (current and historical) such as: print, electronic media, journals, peers
    - 4.4.2 Membership in professional organization(s)
    - 4.4.3 Professional and Manufacturer sponsored conferences/workshops
  - 4.5 Proficiency Program
    - 4.5.1 Individual should participate annually at a minimum
- 5 Analyst (however named)
- 5.1 General Duties: Interprets data, reaches conclusions and authorizes the release of calibration certificates. Trains law enforcement personnel.
    - 5.1.1 Responsibilities include:
      - 5.1.1.1 Performs calibration activity while adhering to policies, procedures, and quality assurance program
      - 5.1.1.2 Maintain knowledge of currently accepted practices, instrumentation, and the science of breath alcohol
      - 5.1.1.3 Train evidential breath alcohol operators on proper instrument use and theory of breath alcohol testing
      - 5.1.1.4 May testify as an expert witness
  - 5.2 Education/Experience
    - 5.2.1 Minimum educational requirement is a Bachelor of Science degree in a natural science with an adequate education in chemistry.
    - 5.2.2 Adequate education would include courses in general chemistry, organic chemistry, and statistics. Courses such as instrumental analysis, qualitative and quantitative chemistry would be beneficial.
  - 5.3 Training
    - 5.3.1 The training program should include:

- 5.3.1.1 Documented program with clear guidelines of expected outcomes
- 5.3.1.2 Completion of the Evidential Breath Alcohol Operator Training Program
- 5.3.1.3 Standards of Conduct: ethics and scientific objectivity
- 5.3.1.4 Overview of legal processes: testimony, law, and the Criminal Justice System
- 5.3.1.5 Quality Assurance: QC, Safety, Chain of Custody/Evidence Handling, SOP's, and Good Laboratory Practices (GLP)
- 5.3.1.6 Instrumentation: history, use, theory, maintenance, limitations and troubleshooting
- 5.3.1.7 Basic knowledge of methodologies, validation, and statistics
- 5.3.1.8 Instructional principles
- 5.3.2 Culmination of the training program
  - 5.3.2.1 Individual should satisfactorily demonstrate their ability to perform calibration and training activities while following all assigned protocols (competency test)
  - 5.3.2.2 A moot court exercise should be conducted to verify competent testimony within the limits of their expertise
  - 5.3.2.3 After successful completion of the training program the individual should be authorized to perform calibration and training activities
- 5.4 Continuing Education Opportunities
  - 5.4.1 Individual should have access to resources (current and historical) such as: print, electronic media, journals, peers
  - 5.4.2 Membership in professional organization(s)
  - 5.4.3 Professional and Manufacturer sponsored conferences/workshops
  - 5.4.4 Professional development
  - 5.4.5 Scientific Advances and Research
- 5.5 Proficiency Program
  - 5.5.1 Individual should participate annually at a minimum

- 6 Supervisor (however named)
  - 6.1 General Duties: Supervision of Breath Alcohol Program (however named) including testing, calibration, and/or training activities
    - 6.1.1 Responsibilities include:
      - 6.1.1.1 Ensures technical staff adhere to policies and procedures
      - 6.1.1.2 Ensures compliance with quality assurance program
      - 6.1.1.3 Oversight of legal obligations to include expert witness testimony
      - 6.1.1.4 Oversight of training program (internal and external)
      - 6.1.1.5 Maintain knowledge of currently accepted practices, instrumentation, and the science of breath alcohol
      - 6.1.1.6 May perform calibration activities and issue reports (certificates)

- 6.2 Education/Experience
    - 6.2.1 Minimum educational requirement is a Bachelor of Science degree in a natural science with an adequate education in chemistry.
    - 6.2.2 Adequate education would include courses in general chemistry, organic chemistry, instrumental analysis, qualitative and quantitative chemistry, pharmacology/toxicology and statistics.
    - 6.2.3 Previous experience in the field of chemical testing
  - 6.3 Training
    - 6.3.1 The training program should include:
      - 6.3.1.1 Documented program with clear guidelines of expected outcomes.
      - 6.3.1.2 Basic supervisory training: critical thinking, GLP, Safety, Oral and Written communication
      - 6.3.1.3 The following areas, if the individual has not previously received training:
        - 6.3.1.3.1 Individual should complete the Evidential Breath Alcohol Operator Training Program.
        - 6.3.1.3.2 Knowledge of methodologies, validation, and statistics
        - 6.3.1.3.3 Advanced Instrumentation: history, use, theory, maintenance, limitations and troubleshooting
        - 6.3.1.3.4 Standards of conduct to include ethics and scientific objectivity
        - 6.3.1.3.5 Overview of legal processes to include testimony, law, the criminal justice system
        - 6.3.1.3.6 Quality Assurance to include QC, safety, chain of custody/evidence handling, maintaining documentation, case file review
        - 6.3.1.3.7 Instructional principles
  - 6.4 Proficiency Program
    - 6.4.1 Individual should participate annually at a minimum
  - 6.5 Personal Certification
    - 6.5.1 Individual should seek personal certification when they meet all eligibility requirements
- 7 Manager (however named)
- 7.1 General Duties: Provides technical/administrative oversight of Breath Alcohol Program (however named)
    - 7.1.1 Responsibilities:
      - 7.1.1.1 Approve Protocols and Standards
      - 7.1.1.2 Institute validation procedures for new instrumentation and methodologies
      - 7.1.1.3 Ensures compliance with Quality Assurance Program
      - 7.1.1.4 Approve training protocol for internal and external personnel

- 7.1.1.4.1 Internal: Breath Alcohol Program personnel including Supervisor
- 7.1.1.4.2 External: Other lab personnel, attorneys, Judges, and/or general public
- 7.1.1.5 Maintain knowledge of currently accepted practices, instrumentation, and the science of breath alcohol.
- 7.1.1.6 Expert Witness
- 7.1.1.7 May supervise Breath Alcohol Supervisor
- 7.2 Education/Experience
  - 7.2.1 Bachelor of Science or advanced degree in natural science with adequate education in chemistry
  - 7.2.2 Adequate education would include courses in general chemistry, organic chemistry, instrumental analysis, qualitative and quantitative chemistry, pharmacology/toxicology and statistics.
  - 7.2.3 Previous experience in the field of chemical testing
  - 7.2.4 Previous supervisory experience
- 7.3 Training
  - 7.3.1 The training program should include:
    - 7.3.1.1 Management training: critical thinking, GLP, Safety, oral and written communication, Financial Management, and Program Management
    - 7.3.1.2 The following areas if the individual has not previously received training:
      - 7.3.1.2.1 Completion of the Evidential Breath Alcohol Operator Training Program
      - 7.3.1.2.2 Advanced knowledge of methodologies, validation, and statistics
      - 7.3.1.2.3 Advanced Instrumentation: history, use, theory, maintenance, limitations and troubleshooting
      - 7.3.1.2.4 Standards of conduct to include ethics and scientific objectivity
      - 7.3.1.2.5 Overview of legal processes to include testimony, law, the criminal justice system
      - 7.3.1.2.6 Quality Assurance to include QC, safety, chain of custody/evidence handling, maintaining documentation, case file review

## 8 Resources

“180-Day Study Report: Status and Needs of United States Crime Laboratories”, ASCLD, 2004

(<http://www.ncjrs.gov/pdffiles1/nij/grants/213422.pdf>)

“2007 Supplemental Requirements for the Accreditation of Breath Alcohol Calibration Laboratories”, ASCLD-LAB-International, 2007, 4.1 Management requirements and 5 Personnel. (<http://www.ascl-d-lab.org>)

“A History of the Committee on Alcohol and Other Drugs(CAOD)”, National Safety Council – Committee on Alcohol and Other Drugs, appendices D – G.  
[http://www.nsc.org/get\\_involved/divisions/Documents/Handbook%20NSChistoryofCAOD.pdf](http://www.nsc.org/get_involved/divisions/Documents/Handbook%20NSChistoryofCAOD.pdf)

“Acceptable Practices for Evidential Breath Alcohol Testing”, National Safety Council – Committee on Alcohol and Other Drugs.  
[http://www.nsc.org/get\\_involved/divisions/Documents/ACCEPTABLE%20PRACTICES%20FOR%20EVIDENTIAL%20BREATH%20ALCOHOL%20TESTING.pdf](http://www.nsc.org/get_involved/divisions/Documents/ACCEPTABLE%20PRACTICES%20FOR%20EVIDENTIAL%20BREATH%20ALCOHOL%20TESTING.pdf)

“Accreditation Standards”, Forensic Science Education Programs Accreditation Commission, AAFS, 2010  
<http://aafs.org/sites/default/files/pdf/FEPACStandards072410.pdf>

American Board of Forensic Toxicology (<http://www.abft.org>)  
Diplomate:([http://www.abft.org/index.php?option=com\\_content&view=article&id=46&Itemid=2](http://www.abft.org/index.php?option=com_content&view=article&id=46&Itemid=2))  
Specialist:([http://www.abft.org/index.php?option=com\\_content&view=article&id=47&Itemid=2](http://www.abft.org/index.php?option=com_content&view=article&id=47&Itemid=2))  
Laboratory Accreditation:  
[http://www.abft.org/files/ABFT%20Lab%20Accreditation%20Brochure%20\(2010\).pdf](http://www.abft.org/files/ABFT%20Lab%20Accreditation%20Brochure%20(2010).pdf)

Forensic Toxicologist Certification Board  
<http://www.ftcb.org>

“Forensic Toxicology Laboratory Guidelines”, Society of Forensic Toxicology & American Academy of Forensic Sciences, 2006, 4 Personnel.  
[http://www.soft-tox.org/files/Guidelines\\_2006\\_Final.pdf](http://www.soft-tox.org/files/Guidelines_2006_Final.pdf)

ISO/IEC 17025:2005 “General Requirements for the Competence of Testing and Calibration Laboratories”, 4 Management Requirements and 5.2 Personnel.  
<http://www.iso.org/iso/home.html>

“NIJ Special Report: Education and Training in Forensic Science”, National Institute of Justice, 2004.  
<http://www.ncjrs.gov/pdffiles1/nij/203099.pdf>

“Staff Skill Requirements and Equipment Recommendations for Forensic Science Laboratories”, United Nations Office on Drugs and Crime, 2011  
[http://www.unodc.org/documents/scientific/Ebook\\_STNAR\\_02Rev1\\_E.pdf](http://www.unodc.org/documents/scientific/Ebook_STNAR_02Rev1_E.pdf)

“Strengthening Forensic Science in the United States: A Path Forward”, Committee on Identifying the Needs of the Forensic Sciences Community, National Research Council, 2009  
<http://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf>

“Training Recommendations”, IACT, 2005  
([http://www.iactonline.org/iact\\_docs/trainingrecmdtns\\_adopted\\_4\\_11\\_05.pdf](http://www.iactonline.org/iact_docs/trainingrecmdtns_adopted_4_11_05.pdf))