

A Guide to Selecting Evidential Breath Testers and Training for DOT Alcohol Testing

Executive Summary

This white paper was created to help organizations and individuals seeking to purchase Evidential Breath Alcohol Testing equipment and training that complies with U.S. Department of Transportation mandated alcohol testing as specified in 49 CFR Part 40. The recommendations are those of Lifeloc Technologies derived from our experience in Workplace Evidential Breath Testing.

This white paper also calls out specific features and functionality of EBTs that are not covered under DOT regulations but which relate directly to instrument ease of use, mobility and maintenance.

This document is not meant to be a substitute or shortcut for understanding the DOT rules and regulations contained in 49 CFR Part 40.

What is 49 CFR Part 40?

The Department of Transportation requires all covered employers in safety sensitive positions in the federally regulated Transportation and Pipeline businesses to conduct breath alcohol testing. DOT rule 49 CFR Part 40 describes the mandatory procedures for conducting workplace alcohol testing.

Many non-covered employers in industries other than Transportation choose to conduct alcohol testing according to 49 CFR Part 40 because the DOT rules and regulations may already be mandated for other parts of their business. Others choose to follow the DOT alcohol testing rules because they provide legal protections for both the employer and employees. DOT procedures are well documented and accepted in practice.

DOT alcohol testing always requires a preliminary screening test to establish probable cause for a follow-up confirmation test. The terms **“screening”** and **“confirmation”** need clarification. The first test is always labelled as the screening test. If the screening test produces a “Negative for Alcohol” result (i.e. no breath alcohol detected over .02 BAC) then there is no cause or need to continue to the second test.

If the preliminary screening test records a positive BAC (>.02 BAC) it must be followed by a confirmation test. The DOT considers any screening result over 0.02 BAC as sufficient cause to justify a follow-up confirmation test.

Conversely, a BAC test result that is under 0.02 does not support a confirmation test. Non-DOT mandated breath testing programs may choose to establish higher or lower cut-off levels than 0.02 BAC.

Under DOT rules, the screening test result cannot be used for disciplinary or legal action. The confirmation test, also called an evidential test, is the only test from which disciplinary or legal action may be taken.

Screening Versus Evidential Testers

Recognizing that there are two types of alcohol test, the screening test and the confirmation test leads us to the first important consideration in selecting alcohol testing equipment.

The DOT tests and certifies alcohol screening devices and Evidential Breath Testers. Approved screening devices are listed by the DOT on the Conforming Products List of Alcohol Screening Devices while approved confirmatory testing instruments are listed on the Conforming Products List of Evidential Breath Testers. Notice that the DOT refers to the equipment used for the preliminary screening test as “screening devices” and the equipment used to perform the confirmation test as “Evidential Breath Testers.” Terms can easily get confused. Screening devices do not meet the full requirements of Section 49 CFR Part 40 for Evidential Breath Testers.

Alcohol Screener or Evidential Tester?

The DOT has defined an Evidential Breath Tester (EBT) to be a device that meets very specific equipment accuracy and performance standards. The DOT then approves and publishes the manufacturers, makes and models of breath testing instruments that it considers to be of evidential quality.

Many people ask, “Do I require both a screening device and an Evidential Breath Tester?” Typically you don’t require both. In DOT mandated alcohol tests the screening test and the confirmation test can be conducted using one and the same device – a DOT approved Evidential Breath Tester.

DOT approved alcohol screening devices are not approved for evidential breath tests.

You do not need to purchase a DOT alcohol screener and a DOT Evidential Breath Tester.

What is an Evidential Breath Tester?

The DOT sets out the standards for Evidential Breath Testers in 49 CFR Part 40. These standards include:

- 1) The EBT must have a Quality Assurance Plan (QAP) developed by the manufacturer and approved by National Highway Traffic Safety Administration (NHTSA) to ensure proper instrument calibration. The QAP must specify methods used to perform external calibration checks on the EBT; the tolerances within which the EBT is regarded as being in proper calibration; and the intervals at which these checks must be performed. In designating these intervals, the QAP must take into account factors like frequency of use, environmental conditions (e.g., temperature, humidity, altitude) and type of operation (e.g., stationary or mobile). The QAP must also specify the inspection, maintenance, and calibration requirements and intervals for the EBT. The QAP must also include instructions for the use and care of the EBT.
- 2) The specific make and model of the EBT must be approved by NHSTA and placed on the Evidential Conforming Products List (CPL).

The DOT is quick to convey that EBTs are precision instruments and must be properly maintained and calibrated to ensure accuracy. In our experience, the QAP is frequently ignored by potential purchasers of Evidential Breath Testers.

The DOT also specifies that instruments used to conduct

The Quality Assurance Plan (QAP) is a requirement of all Evidential Breath Testers.

DOT confirmation tests meet additional requirements defined in 49 CFR Part 40.231. Specifically, all EBTs must have the capability to:

- 1) **Provide a printed triplicate result (or three consecutive identical copies) of each breath test.** All EBTs must have the capability of outputting test results to a printing device. Further, it is a DOT requirement that test results be confidential between the subject and tester. For these reasons most EBTs come with a dedicated mobile printer that allows for portability and test result confidentiality.
- 2) **Assign a unique number to each completed test, which the Breath Alcohol Technician (BAT) and employee can read before each test and which is printed on each copy of the result.** This requirement is fulfilled under instrument software control by printing a unique (and usually sequential) test number for each test result.
- 3) **Print on each copy of the result, the manufacturer's name for the device, its serial number, and the time of the test.** All EBTs must have on-board clocks that can time stamp test results. Better EBTs will also keep track of mandatory test countdown periods.
- 4) **Distinguish alcohol from acetone at the 0.02 alcohol concentration level.**
- 5) **Test an Air Blank.** An air blank is a test conducted on air, rather than on breath, to ensure that nothing in the ambient air (such as alcohol from hand sanitizer) might interfere with the subject's test result.
- 6) **Perform an external Calibration Check.** A "Calibration Check" is the process of verifying that the EBT is measuring BAC accurately. It is often confused with instrument calibration but it is quite different. Calibration is the process that all EBT's require from

The six things that every Evidential Breath Tester must do.



All Evidential Breath Testers must

- 1) be on the CPL for Evidential Breath Testers
- 2) have a DOT approved QAP

time to time to reset the device measurement accuracy to that of a known standard (often a .04 gas concentration). Calibration checking is a test to ensure the instrument is performing to within the DOT accuracy requirements. When an instrument fails a calibration check, it may mean that the EBT has drifted outside of the acceptable accuracy specifications mandated by the DOT. If this occurs the EBT cannot be used to perform DOT confirmation tests, until a successful calibration check is performed.

The DOT requires that whenever a subject tests positive for alcohol above .02 BAC (confirmation test) that the positive test be followed as soon as possible with a calibration check. Lifeloc's QAP recommends that instruments always be routinely checked at regular intervals of 30 days or less. Don't leave routine calibration checks until you have a positive subject test. You risk having to cancel the positive test if the instrument fails its subsequent calibration check.

You will hear the terms "verification checking" and "accuracy checking" used for a calibration check. This can cause confusion. We recommend you use the DOT phrase - "calibration check" - to be consistent with the protocol. A calibration check can be done manually or automatically depending on the equipment manufacturer.

Don't leave routine calibration checks until you have a positive subject test. You risk having to cancel the positive test if the instrument fails its subsequent calibration check.

Working with the Conforming Products List

As mentioned previously, there are two conforming products lists maintained by the DOT; one for approved breath alcohol screening devices and one for Evidential Breath Testers. Care must be taken to select your breath tester from the correct list.

1) Conforming Products List of Alcohol Screening Devices

Alcohol Screening Devices are not permissible for conducting confirmation breath alcohol tests. Screening device test results cannot to be used for subsequent disciplinary action.

2) Conforming Products List for Evidential Breath Testers

Instruments in this list may be used for both screening and confirmation alcohol tests. These devices have been tested and approved by the Department of Transportation to meet the required standards specified in 49 CFR Part 40.

Cautionary note: Many breath testers on the Conforming Product List for Evidential Breath Testers do not meet the all the DOT requirements as defined in part 40.231. The CPL lists devices for law enforcement testing and for DOT workplace testing. Often a law enforcement device is not suitable for workplace testing and vice versa. Further, some devices on the CPL are no longer manufactured and some manufacturers no longer exist. Since the CPL is published relatively infrequently, it may not always up to date.

Training is as Important as Your Instrument

To conduct evidential DOT workplace breath alcohol testing, the instrument operator must be qualified as a Breath Alcohol Technician (BAT) on the specific instrument that he or she will be using to perform confirmation tests. It is never permissible to conduct tests on an instrument for which you have not been trained. This holds even if the different EBT is from the same manufacturer. It should also be noted that individuals are certified as BATs, not companies or organizations.

While the DOT does not mandate a specific length of time for Breath Alcohol Technician Training, it is required that the course be complete and comprehensive such that BATs can perform evidential breath tests in a consistent and uniform manner. In our experience successful BAT qualification takes the better part of a full work day. Beware of providers that promise significantly less. Breath Alcohol Technician training requires successful completion of two major subject matter areas.

- 1) Procedural training covers the 49 CFR Part 40 requirements including background information on the alcohol rules, Evidential Breath Tester methodology, devices, Quality Assurances Plans, testing location requirements and the Alcohol Test Form. The course also details procedures for preparing for breath alcohol testing, conducting screening and confirmation tests, handling refusals, cancelled tests and proper record maintenance and disclosure.
- 2) Proficiency training requires the BAT applicant to have a thorough understanding of their EBT operations including messages and commands, air blanks, error conditions and calibration checks. The applicant must perform seven successful “live” mock tests in front of a qualified BAT, using the instrument

It is the Breath Alcohol Technicians who must ensure their training is compliant and up-to date.

make and model for which they are being qualified, to demonstrate proficiency in the use of their EBT.

It is the quality of BAT training and the quality of instrument proficiency training that are most often called into question in legal proceedings. A best practice is always to choose an experienced training provider certified by the instrument manufacturer and a manufacturer who will support you in the event of a legal challenge. For a list of Certified Lifeloc Master Trainers please contact us at training@Lifeloc.com or at 1.800.722.4872.

Training can be conducted in person or via the web. Lifeloc offers both options. Lifeloc Factory Authorized Master Trainers are highly experienced and qualified instructors who must be recertified every year to be eligible to train on our instruments. Each Master Trainer can demonstrate their certification with a properly dated Lifeloc Master Trainer Certificate provided by Lifeloc from within the last year. Beware of trainers who cannot show that their training is current or factory certified. You risk losing the co-operation and support of the manufacturer if your test results are ever challenged.

If training is ever called into question, the DOT is clear that it is the BATs responsibility to ensure their training is compliant and up to date, not the manufacturer, the trainer or the subject. It makes good sense not to cut corners on BAT training.

Lifeloc BAT certification is good for 5 years. Refresher training is required at minimum of 5 year intervals.

Online Access

All successful Lifeloc online BAT course graduates retain password protected access to their course materials through the life of their certification. Since it is the BATs

responsibility to always be current with DOT rules and regulations we also provide automatic email notifications to you in the event of new information that requires your attention.

Selecting a Training Provider

In selecting your training provider, give consideration to the following:

- The timeliness and format of the BAT training that will work best for you (web, classroom or factory).
- Post-training access to instrument and BAT reference materials.
- How will changes or updates to the instrument or DOT regulations be communicated to the BAT?
- Will the manufacturer stand behind users of its equipment and training if legally challenged?
- The number of BATs you anticipate. Large organizations with many BATs often elect to have their own in-house “Provisional Instructor” certified to a higher level to enable them to instruct others in their own place of employment.

EBT Instrument Calibration

Instrument calibration is required as indicated by the manufacturer in the instrument’s QAP. The DOT also requires you to maintain a record of calibration checks and calibrations. Your choices for instrument calibration are to have it performed at the factory or on-site. The most common industry practice is to perform instrument calibration on-site so as to not be without an instrument or require a loaner from the manufacturer.

To streamline the process of instrument calibration, many



EASYCAL™ Automatic Calibration Station



EBT Instrument and Calibration Kits

BATs also receive instrument calibration training which certifies them as a Calibration Technician. Without this certification, neither BATs nor other uncertified personnel may calibrate an EBT. As with BAT training, the Calibration Technician must be certified on the instrument that is to be calibrated.

In Lifeloc terminology this is referred to a C-LOCT certification.

For user convenience, BAT certification and C-LOCT training is usually done back to back for new instrument operators. In this way, the Breath Alcohol Technician is also qualified as a C-LOCT to perform routine instrument maintenance activities. We recommend this approach.

Evidential Breath Tester Considerations

When evaluating instruments and vendors the following list of questions will be helpful.

1) Ease of use:

- Which printer - to - instrument connection is right for you? Wireless, cabled or docked?
- How are test results printed and affixed to the alcohol test form? Via tamper proof self-adhesive labels or paper printouts which require the additional step of tamper proof tape to secure the test result to the alcohol test form.
- How convenient is the instrument and printer for mobile testing? Tethered printers or those requiring docking stations can be less convenient than Bluetooth enabled communications between the EBT and the printer.
- Is the instrument intuitive to use? Are there built in safeguards and automated features. For

example: does the EBT have an automatic countdown timer to observe the DOT required minimum 15 minute waiting period between tests? Does it have reminders for important events like calibrations? Will it permit tests when it should not, such as after failed air blanks?

- How will the instrument handle conditions such as “shy lung” - the inability to give a proper breath sample?

2) Technical support

- Can you reach a knowledgeable technical support, in real time, if you have a problem or questions with your instrument? Is service available in the United States?
- If a BAT gets flustered conducting a test (especially after a positive test) can they get “live help” or easily access their BAT training materials to remind them of proper procedure?
- What is service and repair time?
- Are loaner devices available?

3) Calibration

- How easy is the equipment to calibrate and calibration check?
- Will the instrument automatically calculate altitude correction factors at the time of calibration or must this be done manually?

4) Warranty

- What is the instrument warranty term? Is the fuel cell, the most expensive component in the device, warranted? Are accessories such as the printer and case included? Pay particular attention to what is not included.

5) User hygiene

- Is the instrument designed to direct subject breath flow away from the operator for good hygiene and operator comfort?
- Can mouthpieces be affixed without risk of cross contamination? Can they be ejected while avoiding contact with saliva from the subject?

6) Legal challenges

- Will the manufacturer be available to answer your questions or provide assistance if you have a disputed test result?
- Will the manufacturer stand behind you and the instrument if a result goes to court or you undergo a DOT audit?
- Has the instrument been successfully defended in court previously? If not, are you comfortable that the manufacturer will support you and that the instrument will prevail a court challenge?

Lifeloc Evidential Breath Testers

Lifeloc offers a choice of DOT approved Evidential Breath Testers supported by a network of certified Master Trainers across the country. Equipment ease of use, intuitive operation and user hygiene are given top priority in our instrument design. Our instruments come with the industry's best warranty and technical support.

Lifeloc Evidential Breath Testing instruments listed on the CPL which fully meet the requirements for DOT screening and confirmation tests are:

- [EV30](#)
- [Phoenix 6.0 Bluetooth](#)

The Lifeloc EV30

The [EV30](#) is Lifeloc's entry level Evidential Breath Tester designed for users who anticipate a low volume of tests and because of this are very budget conscious.



The EV30 Kit is an economical priced evidential breath testing solution including EBT, thermal printer, and mouthpieces.

The Lifeloc Phoenix 6.0BT

The [Phoenix 6.0 Bluetooth](#) is Lifeloc's top of the line professional EBT designed for maximum operator productivity and ease of use in any testing environment. Wireless connectivity, automated calibration features, full text user prompts for failsafe operation, and a rugged portable label printer are a few of its more appreciated features.



Shown here is the Phoenix 6.0 Bluetooth Evidential Breath Tester with our top of the line Phoenix 6.0BT wireless portable printer. The Phoenix 6.0BT includes automatic altitude calibration compensation, onboard EASYMODE DOT compliance testing software.

Key take-aways

- 1) Read and understand DOT 49 CFR Part 40. The document is comprehensive and exists to protect the BAT, the employer and employee. If you have questions give us a call at 1-800-722-4872.
- 2) Evidential Breath Testers can be used for both DOT alcohol screening tests and for confirmation tests while alcohol screening devices may only be used for screening tests. A single Evidential Breath Tester will satisfy the DOT requirements for both alcohol screening and confirmatory tests.
- 3) A Quality Assurance Plan (QAP) is required by the DOT of every Evidential Breath Tester and the QAP should be reviewed when comparing instruments and vendors. The QAP exists to ensure your investment is properly maintained and will serve you for many years to come.
- 4) The DOT maintains an approved list of Evidential Breath Testers. The onus is on the purchaser to verify 1) that the instrument manufacturer and model is on the Conforming Products List of Evidential Breath Testers and 2) meets the evidential requirements.
- 5) Instrument training is as important as the instrument. It is the Breath Alcohol Technician's (BAT) responsibility to ensure they know, understand and comply with the DOT rules for the specific instrument on which they are conducting evidential testing.
- 6) Usually Calibration Technician training is combined with BAT training.
- 7) Consult the instrument manufacturer to ensure you have convenient access to the type of training that is best for you (on site or web-based) and that your Trainer is currently certified on the EBT and in good standing with the device manufacturer.

Additional resources

- 1) [“Common Mistakes & Misconceptions in Evidential Breath Testing.”](#) by Amy Evans and Barry Knott, Lifeloc Technologies, DATIA focus, Fall 2013, pages 9-12.
- 2) [“Curbing Workplace Alcohol Abuse.”](#) Occupational Health and Safety, by Barry Knott, Lifeloc Technologies, Volume 81, Number 10, October 2012, pages 107-110.
- 3) [“E-Learning in the Drug and Alcohol Testing Industry.”](#) by Amy Evans, Lifeloc Technologies, DATIA Focus, Winter 2011, pages 36-37.
- 4) [“The Facts about Workplace Evidential Breath Tester Calibration.”](#) by Barry Knott, Lifeloc Technologies, DATIA focus, Spring 2013, pages 17-21.
- 5) [“49 CFR Part 40.”](#) Procedures for Transportation Workplace Drug and Alcohol Testing Programs, Updated May 4, 2012, pages 1-101.



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