

# **Changing From Stationary to Portable Evidential Breath Testing: A Report on Implementation**

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## **Background**

The Orange County Sheriff-Coroner Forensic Science Services laboratory is responsible for all evidential breath alcohol testing in Orange County, California, USA. Orange County is a metropolitan area covering some 798 square miles. It is home to over 2.8 million people who drive on its over 7000 miles of streets and highways. The laboratory provides services to at least 30 law enforcement agencies representing 33 cities, two major universities, military bases, state parks, probation and parole, and other agencies. These agencies conduct or submit an average 14,500 DUI tests per year.

Since the late 1970's, the laboratory has provided stationary infra-red based breath alcohol testing instruments to the law enforcement agencies of Orange County. These instruments have included the Intoxilyzer 4011a, the Intoxilyzer 5000, and the BAC DataMaster.

In 1998, the laboratory became interested in changing to portable fuel cell based evidential breath test instruments. The laboratory wrote a proposal to the California Office of Traffic Safety soliciting a grant to fund a Portable Evidential Breath Testing (PEBT) program. This met with a favorable response, and a formal grant application was submitted. The approved grant was almost \$400,000 and covered the purchase of equipment, support material, and the program coordinator's salary for one year.

The lab formed a selection committee made up of law enforcement officers and lab personnel to evaluate the various portable breath test instruments available. Two systems were chosen for full evaluation, the Draeger 7410+ EPAS and the Intoximeters AlcoSensor IV-XL@ Point of Arrest system. After evaluation, the Intoximeters instrument was chosen for purchase and implementation.

There were a number of factors that inspired the lab to investigate and implement a PEBT program. First, a PEBT instrument enables roadside testing. This allows the breath test to be administered much closer to the time of arrest. Since many police patrol areas are as much as an hour from the main DUI testing facility, roadside testing allows for a considerable time saving. Roadside testing also helps diffuse the argument that the arrestee's BAC changed significantly in the time period between his arrest and his chemical test.

The PEBT is a faster test than the stationary breath test. The accuracy check and operator's breath sample have been eliminated from the PEBT test protocol as compared to the protocol used with the stationary IR instruments. Also, the 15 minute observation period to eliminate potential mouth alcohol can be conducted during the subject's interview and field sobriety tests. If the law enforcement agencies use the PEBT for breath testing,

they should see an increase in the number of DUI arrests because the officers are spending less time on each arrest.

The PEBT instruments are also easier to use at DUI checkpoints. Previously, a stationary instrument had to be set up at the checkpoint, which required a forensic scientist to install and remove the instrument, and also required a source of power. PEBT's can be used anywhere, require no additional set up for checkpoint use, and require power only for periodic recharging.

Additionally, a PEBT program should generate cost savings to both the user agencies and the crime lab. Some agencies incur considerable overtime costs associated with DUI testing near the end of an officer's shift. The shorter test should reduce overtime. Also, portable testing enables agencies to conduct "cite and release" enforcement. The subject is cited for DUI and released to a sober person. This eliminates the need to transport the arrestee to the jail or police station. This in turn keeps officers in the field, available for calls and able to stop more suspected DUI drivers. This also reduces booking fees and associated jail costs. Proper utilization of the PEBT program should also reduce an agency's costs for the person who draws blood where blood is chosen by the arrestee. Under California's implied consent law, the arrestee has the choice of blood or breath testing, but officers have significant powers of suggestion as to which test the person ultimately chooses.

The crime lab also realizes cost savings from the PEBT program. The stationary breath test instruments require on-site service on a monthly basis. The PEBT instruments do not require on-site service. When maintenance is required, the agency can bring the instrument to the lab for service. Operator training is faster for the PEBT program, and so requires less instructor time. The lab should also receive fewer blood samples for analysis, which reduces analysis costs.

### **Implementation Issues**

The laboratory purchased 79 instruments and had to determine the most effective allocation of those instruments among the agencies it services. Each agency received one unit to replace the stationary IR instrument. Agencies received additional units based on a combination of its previous record of DUI test submission and patrol area. Some agencies have purchased additional instruments to augment the allocation by the crime lab. These instruments are maintained by the lab. Some adjustments have been made to the original allocation where the agency has not sufficiently used the additional equipment it was issued.

A new testing protocol and new instruments required retraining all breath test operators. In 2002, Mr. Reckers trained 402 operators from 14 agencies during 29 classes. During 2003, Reckers and Moore trained an additional 615 operators from 26 agencies in 38 classes. Due to the portable nature of the equipment and shorter class duration, many of the classes were able to be conducted at the host agency, and many were conducted during evening hours to accommodate police officer shifts. This is a significant improvement over the previous training, which was longer and had to be completed during normal working hours at the crime lab.

The laboratory chose to change to dry gas as the medium for accuracy testing and to change the frequency of those checks. Previously, the stationary breath test instruments have used a wet bath simulator for accuracy checks. Accuracy checks were conducted with every subject test, and also with each weekly upload of test records to the central

computer. State regulations require a determination of accuracy every 10 days or 150 tests. The laboratory decided to change to dry gas accuracy tests done at least every 10 days, and preferably weekly. These checks would be done by an officer at the agency. The PEBT is programmed to prevent subject testing unless an accuracy check has been performed in the last 10 days. The change was made to eliminate the need to prepare and change simulator solutions, and to eliminate monthly on site service.

The PEBT system has undergone several hardware and software revisions. For example, it was discovered that the plastic insert that held the system components required a light guide for communication between the AS-IV and the computer. This created alignment problems and caused sporadic communication errors and failures. A new insert was developed which allowed for direct window to window communication between the AS-IV and the computer. Also, it was discovered that the hinge on the system case was weak and a significant number broke under field usage. A new stronger hinge was provided by the case manufacturer and all cases had to be retrofitted with the new hinge. Other communication problems had to be corrected in the software, which has required a chip change in the AS-IV, as well as software updates to the system computer and the host computer. The laboratory has enjoyed an ongoing relationship with the manufacturer to correct and resolve issues as they develop.

The lab serves as custodian of records for all subject records, as well as the records of accuracy checks, maintenance, and operator certification. The laboratory receives as many as 50 formal and informal discovery requests per week. Generating the requested records may take as much as a day of employee time. To reduce this burden, the laboratory has created account based access to the PEBT records over the internet. Attorney's can request a password to access records relevant to their client's case.

Any change in procedure or equipment is sure to be challenged in court. The PEBT system has been challenged on numerous grounds but has always been found sound. Such challenges have included the change from IR to fuel cell technology, the lack of a slope detector in fuel cell instruments, and the change to a pre-arrest observation period. The change in observation period has also resulted in no longer using a time stamp to document the beginning of the observation period, but rather relies on the officer to document it. This has resulted in cases with poor or lacking documentation of the observation period.

There have also been some operational problems related to the officer's use of the instruments. Some officers have failed to conduct the accuracy check within the 10 day period. Also, not all agencies regularly upload records to the crime lab. This prevents the lab from being able to complete records subpoena and hampers monitoring of the accuracy checks. Another problem is that some agencies fail to keep the units charged. Each instrument was issued with both 110 AC and 12 volt DC chargers, however, these are often not kept with the instrument. As a result, when an officer comes to check out a unit, he often finds that it is low on battery power, so he goes out without it. Also, if the main and back-up batteries die, the program and all tests since the last upload will be lost. This requires the lab to reload the software and send the unit to the factory to attempt to restore the lost test records. The lab is currently considering buying flash memory cards for each unit to avoid the memory loss.

The lab has seen a 43% increase in breath tests in the last year, compared to a 9% increase in blood tests. Examination of the submissions by agency has revealed that some agencies have made significant use of the portable system, both increasing their

arrest rates and the number of breath tests conducted. Other agencies exhibit a strong preference for blood tests, and the number of breath tests has not changed significantly with the introduction of the PEBT program. For these agencies, breath tests compose only a small minority of alcohol tests conducted, even when the agency has a high DUI arrest rate.