

ANTEMORTEM

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Tips and Tricks

There are many times when an individual Evidence Technician may be called upon to measure and sketch a crime, crash for fire scene. Apartments and other interior spaces can be measured fairly easily by one person with one or two tape measures. It can get much more difficult when trying to measure an outdoor scene such as a



crash, shooting or homicide. It becomes difficult to measure larger distances when the end of the tape measure is constantly moving every time you pull on it or the wind blows.

This problem can be easily fixed by putting a weight on the end of the tape. Add four standard bricks to your vehicle. They can be used to anchor an end of a tape while measuring or keep it secure in high winds.



Collecting Contact/Touch DNA

Of all the sciences involved in forensics, DNA has evolved the most over the past several years. In the grand scheme of things, it wasn't that long ago where the lab needed a large sample of blood just to do serology. Now DNA can be processed with as few as 5 to 7 epithelial cells. This contact or touch DNA can be collected from clothes, door knobs, steering wheels, or pretty much any other surface that someone touches.

With the ever increasing sensitivity and capabilities of the lab, the Evidence Technician needs to be extra vigilant when collecting touch DNA samples in the field. The two main areas to consider are contamination and not losing the collected sample.

It is very easy for the ET to contaminate the sample with their own DNA in ways that might not have mattered a few years ago. Just putting on gloves will deposit the ET's DNA on the exterior of the gloves. This DNA could then be transferred to the sample or sample area. This small amount of DNA, which could not be detected in the past, can now be detected. The more profiles in a sample, the harder it is for the lab to process. Never talk while your head is over your sample area. Saliva can travel from your mouth to the sample area. Also, do not process for fingerprints in the same area prior to sampling for touch DNA. Even though standard dusting techniques do not destroy DNA, the powered will dilute the sample making it harder or impossible to extract the DNA.

“Forensic Excellence Through Training”

Organizations

Joining various forensic related organizations is beneficial to any Forensic Investigator. Below is a list of a few that are either local to Illinois or are national organizations.

International Association for Identification (IAI) - www.theiai.org

Illinois Division IAI (ILIAI) - www.id-iai.org

Illinois Association of Property and Evidence Manager (IAPEM) - www.iapem.org

Upcoming Training

03/03/15 - 03/05/15 Death Investigation 1 (SLEA)

04/01/15 - 04/03/15 Bullet Trajectory Reconstruction (SLEA)

04/03/15 Evidence Property Management (SLEA)

04/06/15 Introduction to Bloodstain Pattern Recognition (SLEA)

04/13/15 - 04/17/15 40hr Basic Evidence Technician Program (NEMRT)

04/13/15 - 04/17/15 Traffic Crash Investigation Level 2 (NEMRT)

04/14/15 Arson Investigation: Basic Crime Scene Skills (NEMRT)

04/20/15 - 04/24/15 40hr Basic Evidence Technician (SLEA)

04/22/15 Latent Print Technology Workshop (NEMRT)

05/04/15 - 05/08/15 Death Investigation II (SLEA)

There have been a few articles published in forensic journals that talk about how to collect touch DNA. Some refer to special kits that must be purchased and others refer to the process of doing both a dry and wet swab of the sample area. It is important to contact the Lab your Department uses for DNA and talk to the scientists to find out what methods of collection and packaging they prefer since they are the ones actually processing the sample. For the purpose of this article, I will focus on the equipment most ETs already have access to.

First, identify the areas in your scene that will be most likely to yield DNA. This of course includes areas we have always identified like blood and sweat stains, etc. Now the ET should identify areas where they think the suspect would have touched or came in contact with. This could include door handles, tools, window sills, and even clothes. Suspects could also leave clothing such as hats, gloves, etc. at the scene by accident.

Second, collect the sample. If it is an item of clothing, collect the whole item and submit it directly to the crime lab. They have processes that include vacuuming that will remove the DNA from the surface of the clothes. If it is a surface that the ET thinks the suspect touched, swab it. Remember, do not process this area for fingerprints until you have collected your sample. Use a sterile swab from a new sealed package. If you moisten the end of the swab, use only sterile water. Never more than one drop and do not touch the end of the dispenser to the swab. Next, roll the swab across the sample area. Roll the swab in one complete rotation as you drag it across the sample area. Do not rub it back and forth across the surface several times. DNA that was collected initially on the swab can be re-deposited back onto the surface. This is why you roll it to keep the surface of the swab only coming in contact with the surface for a brief time. Limit the area swabbed to 4-6 inches. Place the swab in a new un-used swab box and air dry prior to sealing. Use a swab box that has risers that keep the swab from touching the inside of the box. If the swab comes in contact with the box, it can re-deposit the collected DNA onto the box leaving nothing for the lab to process. Package the swab box appropriately and start the chain of custody.

A copy of your report should be submitted to the crime lab with your evidence. Document the process you used thoroughly in your report. This will aid them in their work to know what you did, how you collected the samples, etc.

Having a well organized and stocked DNA/Trace kit will save you time and hassle on the

scene. Your DNA kit should always be separate from any other collection kit, especially your fingerprint kit. It is all too common to have a Department's ET kits all in one tackle box. Fingerprint powered will eventually get all over everything. Keep your DNA supplies clean. The kit should include individually packaged (2 packs are fine) swabs. Swab boxes with internal risers or other mechanism to keep the swab from touching the inside of the box, and sterile water. It is better to use disposable individual dose ampules instead of a bottle or eye dropper of water. It is a common mistake to touch the tip of the dropper to the swab. This contaminates the bottle tip. This contamination can then be transferred to the next swab you use. By using disposable sterile water ampules, you eliminate that possibility. If you use AddiPack 3ml unit dose vials, ensure you use only the blue vials. Other colors use various amounts of saline instead of plain sterile water.



Upcoming Conferences

04/15/15 - 04/17/15: IAPEM 9th Annual Training Conference

The Illinois Association of Property and Evidence Managers will be hosting their 9th Annual Training Conference at the Wyndham Glenview Suites located at 1400 Milwaukee Ave in Glenview Illinois on 04/15/15 - 04/17/15. Refer to the website below for further information.

Web: www.iapem.org

04/20/15 - 04/22/15: IDIAI 53rd Annual Educational Conference

The Illinois Division of the IAI will be hosting their 53 Annual Training Conference at the Northern Illinois University Conference Center on 04/20/15 - 04/22/15. Refer to the website below for further information.

Web: www.id-iai.org

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Supervisors: Peer Review

In some departments, the practice of peer reviewing reports is common place. In other departments, its a dirty word. The resistance to implementing a peer review process usually comes from the individual Evidence Technicians. Many people do not like it when one of their peers comments on their work or makes suggestions on how to improve on their reports. This apprehension can usually be overcome by educating everyone in the unit to the benefits of this process.

There are several important benefits to implementing a peer review program. A second or more pair of eyes looking at a report can help detect typos, grammar and other errors. It also ensures all the pertinent details are covered. In a large case, such as a homicide, there may be several ETs authoring reports. One ET might assume someone else had covered a specific top in their report when it wasn't. This might also introduce some confusion for the States Attorneys when they are reviewing reports to prepare for trial. Extra time has to be spend trying to figure out the issue.



Unfortunately, many ET supervisors do not have the training or experience to accurately review some types of reports. This is usually the case when it comes to most types of reconstruction or specialty reports such as crash, shooting and blood stain pattern reports. Other ETs (peers) may be the only ones qualified to check for inaccuracies and mistakes. Does your supervisor know the different between a blood swipe and wipe? Do they know how to check the math in a speed estimate for a fatal traffic crash? In these types of reports, peer review can be a beneficial addition to just a supervisor review. The goal is to ensure mistakes do not make it to trial.

AegisBlue Forensics: Forensic Training Portal

AegisBlue Forensics is a training portal I have recently setup for my students and colleagues. It contains free downloadable forensic resources and references, past issues of Antemortem, MSDS and other forensic related resources and information. It also contains a secured forum do discuss all things forensic such as upcoming training, advanced processing techniques and a place to post and answer questions. Access to the secured forums is only granted to verified law enforcement, Coroner/ME personnel, and civilian ETs employed by a law enforcement agency. The web site is located at www.aegisblueforensics.com.

Quiz

Question: It is important for an ET to understand how to take photographs with their camera on the manual setting. This allows the ET to make the decisions on how a photograph is taken instead of relying on the camera to make the decision for you. There are three major settings. What are they and what does each control?



(Hint: one is ISO)

The answer will be discussed in next quarter's newsletter.

Answers

Last quarter, I asked everyone how many photographs should be taken to properly document a shoe impression in dirt. Any veteran ET should realize the answer to this question can vary, but at a minimum the ET should take 13 photographs. ORI (w & w/o scale), three angles around impression at three elevations with flash off the camera.



ET Engineering: Clip Boards

There are numerous forensic supply companies that are more than happy to sell you anything under the sun for a premium price. Even with all these options, sometimes you cannot find the particular tool you are looking for or sometimes you come up with an idea for a tool that would make your life easier, but it isn't mass produce by anyone. With a few basic tools and some planning, an ET can fabricate many of these items from scratch for a minimal cost.

One example is a design for a custom sheet of graph paper. When sketching a scene, it isn't recommend to write the measurements to each of the item's location in the sketch area itself. It clutters the sketch up very quickly making it difficult to read. A separate piece of paper is used to write down the list of items and their locations (measurements). I found it difficult sometimes to keep switching between the graph paper and measurement list. I also liked having a larger graph area to sketch in. My solution was to create my own graph paper with a sketch area, title block and items list on a ledger (11"x17") size paper. The graph area is create in a non-photocopy blue color. By reducing the contrast on a copier the graph grid will disappear when making photocopies. This graph paper can be viewed and downloaded at http://aegisblueforensics.com/resources_tools.html. If I am sketching a shooting reconstruction involving a vehicle, I can copy the side and top views of the same make and model of the vehicle in the graph area prior to processing the vehicle. These pictures can be easily downloaded from the Intranet. This keeps me from having to sketch a car from scratch.



The problem that arises is that clipboards large enough to fit a 11"x17" piece of paper are hard to come by and the ones that are available are very expensive. The solution is to make your own. Any size clipboard can be easily fabricated for a couple of dollars. Ask around your unit and see if anyone else wants to make their own clipboard. All the supplies can be ordered at the same time usually saving more money and keeps from wasting any resources. The main component is the body of the clipboard. This can be made from many different materials such as plexiglass, metal or wood. The easiest to work with is wood. 1/4" hardboard can be purchased from most big box hardware stores. It is rigid enough to stay straight and holdup to use, but it is also lightweight. Usually they are available in partial sheets so you do not have to buy a full 4'x8' board. Use a table saw or other saw to cut it to the dimensions you want. Large alligator/binder clips can be used around the edges of the board to secure your paper. Another options is to order standard clipboard clips from the Internet. They can usually be purchased for around one to two dollars a piece. The clips can then be attached to the board by using a few pop rivets.

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