

# Commonly Asked Forensic Questions

## General Forensic Unit Questions:

### 1). **How do you begin to create an effective forensic unit?**

Determine primarily what types of crime are occurring in the jurisdiction. Then determine what resources are available to the agency. Determine what the interest level is from all personnel within the agency. Don't re-invent the wheel, check with other agencies of similar size and see what they are doing. Determine how many current personnel are available and interested in pursuing full or part time positions in forensics. Download a copy of the article I wrote "Small Police Department Forensics and DNA" from this web site. The article gives the overall step by step process we went through rebuilding our forensic unit. Realize that creating a new unit or rebuilding an old unit cannot be accomplished overnight. Develop a 3 – 5 year plan and stick with it.

### 2). **How much general forensic training for agency personnel is sufficient?**

Setup four hour training blocks for everyone in the agency to learn the basics of crime scene security, DNA, fingerprints and chain of custody. Issue and ensure everyone carries at least one pair of latex gloves with them on duty. Teach the importance of not moving or handling evidence unless absolutely necessary for safety or weather conditions. Teach the theories of cross contamination of scenes and evidence. Attempt one hour refresher/update classes on basics and new technology or procedures, at least every year. Ensuring agency wide education can be important to long term success by the agency.

### 3). **What is the main purpose of a forensic unit?**

The main purpose of a forensic unit is to document, process, collect, store and submit evidence for analysis. The community relies on the men and women of an agency forensic unit to provide objective and accurate results of what was discovered at scenes. These results are regardless of whether they were criminal, accidental, natural or unknown. The public expects the crime scene investigators and forensic analyst to utilize every available technology to determine the facts and truth. The forensic unit owes it to the victims to provide the best resources and performance in each and every case.

### 4). **Should interns be utilized in forensic units?**

Absolutely, yes. Background investigations must be conducted to ensure the highest quality of personnel are selected. During my 10 years we had some outstanding interns that proved to be invaluable aids to the unit in saving man hours and over time. They accomplished numerous projects that would never have been completed were it not for them. We developed strong working relationships with the over whelming number of our interns. In our agreement we allowed them to accompany senior technicians on a variety of crime scenes. This gave them the exposure to actual field work and thus they worked even harder doing the mundane tasks officers avoided. Out of all the interns we had, only 2 were dismissed for rule violations. We did learn over the long term that most high school interns were just too immature to intern in a forensic unit and eventually restricted the program to college students and civilians. College students in the science fields and criminal justice performed the best overall.

### 5). **Should a forensic unit have standard operating procedures to cover all aspects of the units operation?**

Every agency regardless of size must have a basic standard operating procedure covering the policy and procedures for addressing forensic issues. Don't reinvent the wheel. Contact other local agencies, state and federal agencies and get copies of theirs. Then sit down with several other members of the agency and design your agency's policy. After the agency is smeared in the press, facing investigation or being sued is not the time to consider developing an agency forensic policy manual. The policy should be totally inclusive and cover all aspects of the agency's operation.

**6). How is the effectiveness of a forensic unit measured?**

Results. The results are measurements of what the unit has accomplished over a year, two years, three years, etc. One of the first things I setup after we reorganized our unit was a method to measure our past and present effectiveness. That was accomplished by documentation of all types of forensic identifications, number of crime scenes processed, cases closed by arrest due to forensics, cold cases cleared by DNA Hits, AFIS Hits, NIBIN Hits, assistance to other agencies and effective use of new forensic technology. Within a year we began to notice members of the agency were once again taking pride in their forensic unit. Within three years the courts, media and public were taking notice and taking pride.

**7). What is the sense of purpose of crime scene technicians?**

The best crime scene technicians love puzzles and mysteries. They should have a burning desire to find the truth and prove through physical evidence "what really happened". There should be a desire to document through physical details of what was found at a scene, through photography, measurements, sketches and notes. It takes a special breed of technician to process officer involved cases. On scene over the years I noted quickly those technicians who recognized their obligation to report objectively and accurately what they found at a scene were the most effective.

**8). What types of vehicles can be utilized by crime scene investigators?**

In my experience any vehicle can be adapted for use by crime scene investigators. The more experienced crime scene investigators will normally require a larger vehicle as they will want to carry considerably more crime scene kits and equipment. Many small and medium sized agencies are forced to maintain one or two vehicles equipped with forensic equipment 24-7 hours, 365 days due to the lack of resources. Most agencies now, either medium or large have at least one agency designated forensic crime scene processing vehicle. These vehicles are often generally used for serious or major crime scenes. Some agencies have obtained new crime scene, disaster vehicles since 2001 and the addition of Home Land Security. Many agencies lacking in resources are still forced to acquire used acceptable vehicles and develop a home made version. What's important is they recognized the need for such a specialty vehicle and do the best they can with what they have.

**9). How is a forensic unit budget developed?**

This can be somewhat tricky topic area because it quite often depends on the type of agency, style of the chief executive, manner in which a jurisdiction budget development is setup. The important element for the manager or supervisor to keep in mind is work within the system that's in place. The below listed 9 areas are the primary areas which incur almost all of the cost involved in operating a forensic unit and perhaps a mini-

lab. If inexperienced in this area it is strongly recommended you seek assistance approved by management.

**Area's of Responsibility:** Crime scene processing, evidence storage, evidence analysis, etc

**Personnel:** Salary, benefits, medical benefits, sick leave

**Training:** Courses, certifications, conferences

**Equipment:** Forensic, Office

**Supplies:** Forensic, Office

**Uniforms:** Purchase, replacement, types

**Vehicles:** Purchase, maintenance, equipment

**Overtime:** Amount per year, emergencies

**Comp time:** Amount per year, per officer, value of sell back

**10). Should civilians be utilized in small forensic units?**

Absolutely. The critical factor in using civilians whether paid or volunteer is background investigations. They will be exposed to very sensitive information and must be of the highest caliber personnel available. With one exception, We had excellent civilians during my 10 years as supervisor of our forensic unit. It is important to do credit and fingerprint checks. Additionally, contact former employers, associates, co-workers, friends and family. Knowing what their goals and objectives are will prove valuable. As with interns, we we found it was beneficial to involve them in going out in the field and actually experiencing what really occurs on scenes. Civilians should always be monitored closely especially those exposed to sensitive information and major crime scenes. Many agencies over the past 15 years have increased their use of civilians to release sworn officers to more law enforcement functions with positive results. The trend has been slower to catch on in the south.

**11). What is the effectiveness of computerizing the forensic unit?**

It is almost impossible not to at least have a basic evidence computerized program today. There are literally hundreds of programs on the market. Barcoding has finally been accepted as the fastest way to check evidence. Computerizing can save hundreds of man hours and thousands of dollars for agencies and can speed up inventories. There are a multitude of computer forensic programs many providing instant information on suspects, vehicles, weapons, fingerprints, DNA, Drugs, etc, etc. Data can be automatically compiled to determine scene processing forensic hits, tech work volume, yearly comparisons, equipment maintenance, supplies....the list goes on. Not computerizing a forensic unit this day in age is just foolish.

**12). How do you handle small forensic units lack of resources?**

Many small agencies have used the excuse of lack of resources as justification for making no attempt to properly document, collect, store and submit physical evidence for analysis. Minimum funds can be utilized to obtain sufficient equipment to document, package, create basic secure evidence rooms separating drugs, guns and money and submitting items to laboratory's for examination. They must have a desire to improve, to seek help, and perhaps, do some of the work or track down state or federal grants. More often agency's seem to feel overwhelmed by what is needed to reach minimum standards. I learned how to make do and create an effective and efficient unit even when faced with minimum resources. Often the lack of space hinders small agencies to the point they just give up. Agencies must sometimes think outside the box.

**General Questions on Crime Scene Processing:**

**13). Should a forensic unit establish crime scene processing protocols of a step by step protocols?**

Every agency must decide and develop what style of crime scene processing protocol the agency is going to utilize. There cannot be a hodge-podge of systems used by multiple personnel within the same agency. The lack of a single system creates dysfunction, confusion and lack of cohesion. Normally, state

law enforcement training centers will have established protocols which are routinely taught to students in that particular state or jurisdiction. Nationwide, the protocols can vary in language significantly. Agencies might consider the protocol utilized by Ross M. Gardner in his book *Practical Crime Scene Processing and Investigation*. However, I have found the basic steps are the same, the name for each is different, even though the steps are the same. We utilized the protocol taught by the Virginia Forensic Science Academy.

**14). How can a forensic unit become effective in time usage in crime scene processing?**

Crime scene processing time can be one of the most abused factors in forensics. Simple burglaries do not require 2 – 4 hours to process. This can create hard feelings and animosity especially in small and medium size agency's where officers perform multiple functions not just forensics. The other officers are forced to pick up the additional calls for service which creates more problems. Time usage and efficiency is critical with limits on manpower. Agency's must determine how they are going to utilize their forensic personnel. A balance must be struck between aggressive processing to limiting excessive processing. The most effective forensic personnel are those whom I have observed spending their time judiciously.

**15). What protocol should be used in the recovery of bullets from hospital operating rooms?**

Contact the charge nurse and Hospital Administrator and advise them you need to obtain custody of the bullet/s as evidence. Request permission to be present in the operating room to accept the item/s as they are seized by the doctor. IF, they will not agree to your presence in the operating room, then advise them you will be just outside the operating room door to accept the items immediately after seizure. In this case the doctor/s and nurse/s must understand you will establish a clear chain of custody and encourage them to keep handling of the items to an absolute minimum. The chain of custody must state who found the item/s, specifically what area of the body, time and date, who packaged and anyone who handled the item/s. A good idea is to meet with the Hospital Administrator and Chief of Surgery to establish an agreed upon protocol in advance.

**16). How is bloody evidence properly dried, what is a drying locker, should it be vented with filters and should there be standard operating procedures?**

Any unused closet could be converted into a drying cabinet in an emergency situation. I built our first drying cabinet due to a lack of resources and it worked fine until we could afford to purchase a new one. However, the preferred method I would recommend to all agencies small, medium or large is to purchase a drying cabinet from one of the numerous forensic equipment supply companies. Competitive bidding does help to bring down the price. The new models have improved filters that do not require venting to the outside and meet OSHA standards. It is important to remember to place drip pans and absorbent material in the in the bottom to prevent nasty leaks and over flows. The new models also have adjustable shelving which can be very helpful in cases with multiple items. The agency should have written standard operating procedures. Do not reinvent the wheel. Check with other agencies and obtain copies of theirs, then sit down and draw up your agency procedures

**17). Can lip prints be effective forensic evidence?**

Lip print evidence can be highly effective evidence but, is often over looked and many officers assume they have little or no forensic value. Often they can be easily discovered and lifted, often using the same techniques involved in recovering latent fingerprints. The most common location is on drinking containers, especially glass. Lip prints are individual to each person and can be positively identified just as with latent fingerprints. Quite often lip prints can be found on window glass in cases involving prowling, peeping, sexual perversion, sexual assault and burglary. Lip prints often are overlooked and don't survive because they are on objects outside and exposed to the weather. The techniques for recovering known lip samples from victims, suspects or witnesses are actually pretty simple. It involves several small pieces of plexiglas, fingerprint powder and lifting tape.

**18). What colors of evidence sealing tape should a forensic unit use?**

There are four basic choices available. Standard packaging tape, multiple brands, styles, sizes and colors – not recommended. Recommended Tamper Resistant – sold generally in Red, Yellow and Blue from Forensic Supply Companies. First, determine what color your laboratory uses and pick another color. This tape is almost impossible to tamper without showing signs. Train agency personnel and prosecutors NOT to break the original seal unless absolutely necessary. Train personnel to enter the package through another point and document time, date, person and reason for entry.

**19). What type of metal detector should be used in a forensic unit?**

In my experience the Garrett's 250 CSI is sufficient for most forensic crime scene purposes. However, some may have much more experience than I with using metal detectors on crime scenes and therefore would highly recommend other more elaborate metal detectors. I found our Garrett's 250 model fulfilled our needs in recovering evidence, so we stuck with it.

**General Questions on Temporary Lockers, Evidence Room and Evidence Vaults:**

**20). What is the purpose of an evidence room?**

An evidence room whether a closet or a warehouse is a secure, organized and controlled area for the storage of all items suspected of having been involved some type of incident, criminal, accidental or natural. Some of the main objectives are to preserve the item/s in its' original condition, prevent cross-contamination, maintain the item/s for analysis or comparison and presentation to the courts or return to owner/s. As simple as the concept is, there are still agency's allowing evidence to be stored in desk, closets, trunks of cars, taken home and used for personal business. Sadly, this normally only changes when the agency is embarrassed in the media

**21). Should evidence rooms be climate controlled?**

Absolutely. For many years our evidence room was in the basement of the Police Department in a non-climate controlled room, very hot/humid and very cold. When air conditioners/heaters which could be mounted on the walls in such storage areas became available it finally allowed for climate control rooms and was welcomed. DNA evidence is fragile and constant fluctuations in air temperatures and humidity can have negative affects on all types of evidence. The temperature fluctuations create almost hostile working conditions for those personnel required to work in those areas.

**22). What type of evidence room refrigerator can be used for forensic and DNA storage?**

Basically, any refrigerator can be used to store evidence. Ideally, it should be inside the evidence room or be able to be locked. The secretary's lunch should not be sitting beside the latest rape victim's kit. The refrigerator where ever placed should have a power out alarm. Large agencies generally use commercial grade refrigerators and freezers. Small and medium size agency's can buy their refrigerators with freezers locally. The debate about air dried DNA storage vs. freezer DNA storage continues. However, most small and medium size agencies cannot afford commercial freezers and thus must continue with air dried storage. We did routinely freeze clothing from badly decomposed cases due to the odor.

**23). What type of shelving should be used in a general evidence room?**

The type of shelving is not as important as ensuring the evidence on those shelves is placed in an organized and sorted manner. Obviously, moveable shelving utilizes space much more efficiently, the

problem is most small and medium size agency's cannot afford the cost. An important aspect is to limit aisle width to no more than 36 inches, shelving no deeper than 30 inches and shelves floor to ceiling. I found the most effective method was numbering by alphabetical letters, A – A5 and so forth. Individual shelves could also be further sub-divided into areas A-5-1, A-5-2, A-5-3, etc. Organizing and sorting the shelves in a evidence room is essential to effect use of shelf space.

**24). Should forensic units participate in the NIBIN program with recovered weapons, shell casings and expended bullets?**

Every agency in the US should participate in the NIBIN (National Integrated Ballistic Information Network) Program. The program is administered by ATF (Alcohol, Tobacco & Firearms) and supported by state laboratories and most large agency laboratories. Our medium size agency became so impressed with results in early 1999 that by the end of 2000 we led the state of Virginia in NIBIN hits. The results can be incredible when agencies take the necessary steps to aggressively collect and submit the evidence to the state laboratory for submission against the national databank. One thing that helped our agency was instituting a system wherein patrol officers responding to shots fired calls only had to complete a simple police report, collect and submit any shell casings they found laying around upon arrival at the scenes. Additionally, we submitted all recovered expended bullets and recovered handguns and rifles to the state laboratory for testing and inclusion in the NIBIN data bank, except .22 calibers.

**25). What is the advantage of Temporary Evidence Storage Lockers in an agency?**

Temporary Evidence Lockers Storage Lockers can be an immense help to officers and forensic unit personnel. They provide a method of storing evidence in a secure location especially when evidence room personnel are not on duty such as nights, weekends, holidays or simply just not available due to other work requirements. Once locked inside a locker the items can only be retrieved by a limited number of forensic personnel, normally two. Most accreditation standards require the lockers are secured in a room accessible only by agency personnel and not the general public, cleaning crew or other city/county workers. Many agencies place the lockers in report writing rooms for one stop ease by patrol personnel. These have proved very popular and time saving for everyone involved. There are numerous different types of lockers available for agencies to choose from. Some of the most effective are pass through lockers. The lockers are inserted into a wall of the forensic office. Again, they can only be opened in the forensic office by select personnel.

**26). What type of shelving should be used in an evidence vault for long guns and hand guns?**

If necessary, long gun racks can be home made of wood as we did and utilized my first five years as supervisor. Handguns should always be stored in flat gun boxes for easy storage and access on flat shelves. For many years we used the standard metal shelves secured to the wall and joined together by bolts and screws. The handguns were sorted by year then by property tag number from low to high. guns from Federal cases should be separated and stored together on different shelves. Although the metal long gun racks are nice we found the home made wooden/painted racks equally effective for those agencies struggling with limited resources and no available state or federal grants.

**27). Why store drugs and money separately in lockable cabinets?**

Drugs and money are the two most often stolen items from evidence rooms nationwide. Hundreds of officers, property clerks, technicians, etc., have ruined their lives and caused incredible embarrassment to agency's. Many top management and executives have lost their jobs over subordinates actions. Drugs and money must be stored separately from general evidence. These items are normally stored in vaults with guns. The drugs and money must be in lockers and access must be strictly controlled. These items must also be inventoried several times a year. The personnel with access to an agency's drugs and money

should be monitored closely.

**28). What is an evidence vault, its' specifications and operating standards?**

An evidence vault is a designated separate storage area within the evidence room for the storage of drugs, guns and money. Access to the vault must be the most restricted area within an agency. The size of any vault is dependent upon an agency's volume of evidence. Every agency should have a entry control log system and a standard operating policy which should include at least three inventories during the year.

In the middle 1980's our agency learned the hard way why drugs, guns and money are stored separately from general evidence. We also learned tough lessons about not restricting access to evidence rooms and not conducting routine inventories. One of our part-time crime scene tech's was having monetary problems and even though members in management knew, took no additional precautions. The officer eventually resigned but was never tried for stealing money, drugs and a handgun. It took our agency many years to gain back the trust of the community and courts.

**29). What type of evidence room or vault entry control log should be setup?**

There must be an entry control log for every controlled area in the forensic unit. Such as the evidence room, evidence vault, archive room, archive vault and evidence processing area. The standards for what is contained in the control log varies from agency to agency. It will depend on size, volume of evidence and necessity for entry into these areas. These log books should be non-detachable sheets and whatever the policy is... adhered to by everyone at all times. The logs must designate visitors and who was the escort. At a minimum, the log should contain name, date, time of entry, reason for entry and time of exit. At no time should badge numbers be used, badge numbers can change.

**30). What are the minimum space requirements for an evidence room and evidence vault?**

There are no minimum space requirements for evidence rooms or evidence vaults. It all depends on the individual needs of each agency and their volume of incoming evidence annually. I have assisted 6.5 member agencies create effective evidence rooms and vaults from closets to 90 member agencies create effective evidence rooms and vaults for drugs, guns and money.

**General Evidence Packaging Questions :**

**31). Should a forensic unit establish proper packaging procedures for the agency?**

Every agency should have written standard operating procedures for how items of evidence will be packaged. Procedures once agreed upon for the agency must be utilized by all agency personnel and strictly enforced. Packaging can be critical and have long term affects on stored evidence, both positive and negative. The packaging of drugs, guns, money, DNA, biological, explosives, etc, etc., procedures should be established by trained forensic crime scene technicians. Two hour training classes on basic agency packaging requirements should be conducted for all members of the agency and documented for later necessity. Don't re-invent the wheel. Check with other agencies and state laboratories and obtain samples of their policies. The policies of the state laboratory should be strictly adhered too.

**32). Can DNA and latent prints be obtained from expended shell casings?**

Rarely, if ever. Why? When the firing pin strikes the cartridge there is a mini explosion unleashing extreme heat and gases which normally destroy any DNA or latent fingerprints that may be on the shell casing. I have recovered DNA and partial latent fingerprints from unfired cartridges in cylinders and magazines. Although, the chances are less likely in revolvers than magazines because of their relative location to the firing chamber. The weapons magazine itself also provides an excellent surface for possible DNA

and latent fingerprints.

**33). How should handguns be packaged for latent prints, DNA recovery and/or general storage?**

All handguns should be stored in handgun boxes...period. The boxes are sold by forensic supply company's normally in bundles of 25. The conveniences far out weigh the cost. They provide ease of storage and protect weapons for processing for DNA or latent fingerprints. There are handgun boxes now available that have tops which can be opened to allow for viewing the weapon without creating chances for cross contamination. This is possible because of a piece of plastic covering the opening. These viewing boxes are more expensive. The boxes are helpful because of the number of times officers, management, prosecutors, defense attorneys and the courts want to view but not handle the weapons, especially in high profile cases.

**34). How should rifles and shotguns be packaged and should laboratory examination even be considered?**

Rifles and shotguns simply stored for safe keeping need basic identifying information and no packaging. However, weapons which might be sent to a laboratory for any type of examination need packaging. There Are several styles of boxes, some with viewing windows available. Additionally, long weapons can be packaged in brown paper or white paper, (not plastic). Most forensic supply companies sell either long rolls of double sided brown paper or single sided paper. The double sided paper is easier, can be cut to needed length, weapon inserted and taped at both ends. The single sided paper is a heavier quality and can be used for a multitude of other packaging needs. It is user preference, both are effective, but labs will require the weapons are unloaded and packaged. All laboratories require weapons be unloaded prior to submission and marked as such on the packaging.