

Assault Weapons

The laboratory may be able to assist in determining if a particular semi-automatic firearm is considered to be an Assault Weapon (CPC 12276 et.seq.) according to the guidelines disseminated by the California Attorney General. In cooperation with the Orange County District Attorney's Office, a consistent manner of making the determination has been established. Assault Weapon determinations require that the firearm, including magazines, be submitted to the laboratory. No final assessments or reports will be made based on telephone descriptions.

Special Situations

There may be situations where other examinations may be necessary. The following lists some additional examinations that may be performed by the Firearms Unit.

- Inspection for modification or conversion to fully automatic firearm operation
- Examination of sound suppressors, or silencers
- Identification or classification of firearm magazines
- Evaluation of "sawed off" or shortened barrels, rifles or shotguns
- Examination of air guns, pellet or BB

- Examination of improvised firearms or home-made guns
- Measurement of projectile velocities by chronograph

Contact the Firearms Supervisor or analytical staff to discuss the feasibility of special examinations.

Toolmark Examinations

Toolmark examinations usually involve a microscopic comparison of marks left at a crime scene by a suspected tool. Marks may be produced from a variety of tools including cutting, prying or gripping tools. Marks on large objects that cannot be collected or transported should be cast, using an approved casting material such as Mikrosil™ or Forensic Sil™, during scene processing. Toolmark examinations may include physical matching of broken fragments of any related toolmark items.

How you, the investigator, can help the Firearms Unit find your answers

Request for Evidence Examination

The Request for Evidence Examination should be filled out legibly and as completely as possible; clearly state each examination you would like performed. If a specific deadline for completion is present, indicate the date. Rush requests should include the reason for the rush; e.g. court.

The Evidence

List all items of evidence that need to be examined along with your department's property item number. Descriptions of the evidence should be as complete and accurate as possible so it is clear which items are to be examined. Magazines and associated live ammunition should generally be listed with all firearms.

Comparing Multiple Agency DR's

Be sure to include the name of the agency from which each item of evidence originated, the agency's case or DR number, full item descriptions and the name of other investigators or points-of-contact.

ORANGE COUNTY SHERIFF'S DEPARTMENT Forensic Science Services Division

MISSION

To serve the criminal justice needs of Orange County by applying sound scientific principles to the collection, evaluation and interpretation of physical evidence.

ORANGE COUNTY SHERIFF-CORONER DEPARTMENT FORENSIC SCIENCE SERVICES



FIREARMS UNIT

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Program Overview

The Firearms Unit is currently comprised of a supervisor and three examiners. The unit is responsible for the examination of most firearm related evidence. Exceptions are gunshot residue (GSR) examination, which should be directed to the Trace Section of the lab, and bullet trajectory work, which is processed by the Crime Scene Investigation Unit. Toolmark examination and special situations outlined in this brochure can be handled by the Firearms Unit. Questions beyond the scope of this pamphlet should be addressed to the Firearms Unit Supervisor.

Specific Firearm Examinations

General Firearm Examination

A general firearm examination makes note of the type of firearm and the condition of the firearm as received. A cleaning patch is pulled through the barrel and the residues are retained. In some cases an examination of the exterior mechanism or surfaces of the firearm are performed, significant trace evidence or damage is documented.

If the investigator requires latent fingerprint processing or DNA collection, it should be clearly stated on the Request for Evidence Examination submitted to the laboratory.

Firearm Function Examination

Submitted firearms are examined to determine whether or not they function properly. Trigger pull is measured and the firearm is impact tested when appropriate. Safeties are checked for operation. The firearm is test fired. Any departures from the normal firing/cycling process are noted. Test fired bullets and/or cartridge cases are recovered for potential subsequent examinations.



No-Gun Identification

This is an internal laboratory term for determining the type and caliber of firearm(s) which may have been used to shoot bullets recovered from crime scenes or from shooting victims and where no firearm was recovered. The bullet is weighed and measured to determine nominal caliber. The number of lands and grooves of rifling and direction of twist is determined. Land and groove widths are measured. The FBI's General Rifling Characteristics database is referenced and a list of potential firearms is generated. Fired cartridge cases often aid in this examination and should additionally be submitted.

Microscopic Comparison Cartridge Case and/or Bullet

This microscopic examination enables the examiner to find unique marks left by a particular firearm on the cartridge case or bullet. A careful microscopic inspection of cartridge cases or bullets from a scene may be used to identify or eliminate a suspected firearm as having been used in a crime. When no firearm is recovered, the examiner may be able to determine the number of guns fired at the crime scene or if a firearm has been used at multiple scenes (see NIBIN section).

Distance Determination

In circumstances where a shot was fired in relatively close proximity to the gunshot victim or to a surface, gunpowder or soot patterns may be found. By comparing these patterns to standard patterns generated in the laboratory, it may be possible to give an estimation or range of distances as to how far away the muzzle of the firearm was from the victim. Distance determinations may also be performed by examination of shotgun pellet patterns. Accurate distance determination will generally require submission of the firearm in question and ammunition that is the same or similar to that used in the crime.

Serial Number Restoration

In many cases, it is possible to restore and determine a stamped serial number that has been obliterated from a metallic object. Methods typically involve magnetic or chemical etching techniques.



NIBIN

The National Integrated Ballistics Information Network is supported and managed by the Bureau of Alcohol, Tobacco, Firearms and Explosives. NIBIN is a computer database consisting of firearm related digital images. These images include certain microscopic marks produced on a cartridge case by the firearm in which it was fired. The database includes cartridge cases from crime scenes as well as test fired cartridge cases from seized firearms. Since the system is most effective for firearms having the potential to leave cartridge cases at a scene, cartridge cases from revolvers are not entered into the system. When a cartridge case is entered into the system, the computer searches the database for images that most closely match the cartridge case just entered. The examiner then visually compares the displayed images and looks for an association. A “potential association” is indicated when an examiner finds images of two cartridge cases that may be identified to a common firearm. If a potential association is found, the actual evidence must be obtained so that a traditional microscopic comparison can be performed to confirm that association or “hit”. Effective April 2008, this laboratory ceased to enter bullets into the NIBIN system and these types of bullet cases are no longer accepted.