Serial Number Restoration

Serial numbers are stamped on a metal body or frame with hard steel dies. Serial numbers can be restored because the metal crystals in the stamped zone are placed under permanent strain that extends a short distance beneath the original numbers.

When the appropriate acid solution is applied, the numbers appear.

A solution of HCl (120 ml), CuCl₂ (90g), and H₂O (100ml) work well for steel surfaces.
The Hollywood image of an investigator picking up a weapon by its barrel with a pencil or stick in order to protect fingerprints must be avoided. This practice only disturbs powder deposits, rust or dirt lodged in the barrel and may alter the striation markings on test fired bullets.

Hold gun by checkered part of the grip or by the edge of the trigger guard.
If a weapon is recovered from an underwater location, no effort must be made to dry or clean it. Instead, the firearm should be transported to the lab receptacle containing enough of the same water necessary to keep it submerged. This procedure prevents rust from developing during transport.

**Ammunition**

Protect the class and individual markings on bullets and cartridge cases. So, extreme caution is needed when removing a lodged bullet from a wall or other object.

It's best to remove bullets from their target by carefully breaking away the surrounding support material while avoiding direct contact with the projectile.
**Tool Marks**

A tool mark is any impression, cut, gouge or abrasion caused by a tool coming into contact with another object.

**Comparing Tool Marks**

Indented impressions left on the frame of a door or window are a result of the prying action of a screwdriver or crowbar. A careful examination of these impressions can reveal important class characteristics - size and shape of the tool.

Major problem with tool mark comparison is the difficulty in duplicating the striations.
Collecting Tool Mark Evidence

Whenever practical, the entire object or the part of the object bearing a tool mark should be submitted to the crime lab for examination. When removal of the tool mark is impractical, the only thing to do is photograph the marked area to scale and make a cast of the mark.

The investigator must never attempt to fit the suspect tool into the tool mark. This may alter the mark and raise questions about the integrity of the evidence.

The suspect tool and mark must be packaged in different containers and every precaution taken in order not to have the tool or the mark touch anything else. Failure to properly protect the tool or mark from damage could result in the destruction of its individual characteristics.

![Image of tool mark and paint chips]
Other Impressions

Other impressions are left at the crime scene. This may be shoe, tire, or fabric impressions.

Preserving Impressions
The main thing to do when you see an impression at a crime scene is to be able to preserve it.
First thing- You must photographed the impression. (to scale) several shots should be taken and at different angles. This helps shows ridge details that may otherwise be obscured.
Lifting Impressions

If an impression is encountered on a surface that cannot be submitted to the lab, the investigator has to preserve the impression in a similar way to lifting a fingerprint.

Carefully place the lifting material over the entire impression. Use a fingerprint roller to eliminate any air pockets before lifting the impression off the surface. (electrostatic lifting)
Casting Impressions

SICAR- Shoesprint Image Captured and Retrieval