

Ballistics in Forensics - Distinctive Markings on Shell Casings

When CSI's approach a crime scene such as a shooting, one of the evidences they look for are spent shell casings. A shell casing refers to the part of the cartridge that is scattered at the crime scene after the gun powder ignites and the projectile is gone. The shell casing, gun powder, primer, and bullet are collectively known as a cartridge. Shell casings many times are the only piece of evidence that the forensic firearms examiner has available to work with. It is fortunate that the shell casings contain distinctive markings that are the focus of the forensic examiner's investigation.

What does the forensic firearms examiner look for in shell casings?

They look for the following:

The indentation left by the firing pin: A simple visual inspection at the base of the shell casing reveals the location of where the firing pin hit, telling the forensic firearms examiner whether the shell had a primer cup, as seen in *center-fire* cartridges, or had a primer along the perimeter of the base, as seen in *rim-fire* cartridges. Knowing the location of where the firing pin hit can shorten the list of possible firearms used in a crime.

Breechblock patterns: The **breechblock** refers to the back wall of the firing chamber. When gun powder within the casing explodes and violently forces the projectile down the barrel, the casing is pushed back against the breechblock, thus leaving an indentation on the bottom of the casing.

Headstamps: *Headstamps* refer to the information stamped into the metal portion of cartridge casings and shotgun shells at the time they are manufactured. These markings sometimes include the factory's initials or logo, the gauge or caliber, or the type of cartridge.

Extractor and ejector impressions: *Extraction* is the process when mechanisms in semiautomatic and automatic firearms pull the next cartridge from the magazine clip and position it in the firing chamber. *Ejection* refers to the process when these same mechanisms remove the spent shell casing from the firing chamber and jettison it from the firearm. If you watch a lot of *CSI*, the metal parts that fly away from the side of a firearm are the shell casings that you see being jettisoned or *ejected*. Extractors and ejectors differ among firearms, leaving their own unique impressions and indentations on the sides of the shell casings.

Whenever you watch your favorite *CSI* TV show, you will have a better understanding of what Calleigh Duquesne, the forensic firearms examiner, looks for when she analyzes spent shell casings found at a crime scene.

About the Author

Fabiola Castillo markets for the website NinjaCOPS Superstore. This virtual store specializes in crime prevention tools where you can buy cheap stun guns, kubaton keychains, [hidden video spy surveillance cameras](#), nunchaku training videos, [hand Tasers](#), expandable steel batons, and many other personal safety products.

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