Part VII.

Ballistics Comparisons

BALLISTICS COMPARISONS

As with fingerprints, every firearm has unique characteristics. As discussed in earlier sections, firearms manufactured after 1968 must have unique serial numbers. These are used to trace firearms used in crimes. If the serial numbers are obliterated there is technology available to raise the serial numbers again. Ballistics comparisons can make the determination whether the recovered firearms were used in previous crime.

The barrel of a firearm leaves its distinct markings on any projectile *(bullet)* travelling through it. The firearm's breech mechanism will also leave distinct markings on the ammunition cartridge case. These markings are produced by the breech face itself, the firing pin, extractor, and ejector. Firearms examiners are able to examine bullets and cartridge casings found at crime scenes and compare them to determine if they were expelled from the same firearm.

Equally important, they can also compare bullets and shells found at one crime scene with those found at another. Doing so, however, can be a tedious, time consuming process for firearms examiners.

With the advent of the *National Integrated Ballistics Information Network* (NIBIN), field technicians can now acquire, digitize, and automatically sort the unique characteristics of the firearms barrels and breech mechanisms and the projectiles and cartridge casings. These unique features are a sort of fingerprint for each firearm and are referred to as "signatures." Using the system can eliminate all but the most likely matches and save examiners thousands of hours by narrowing the field of ballistics to be examined.

Every gun buy-back firearm was test-fired to produce projectile exemplars which are being entered into the NIBIN system. The matches identified can lead to further investigation and perhaps the association and solving of crimes whose association was previously unknown.

At the time of this publication, the projectile comparisons were continuing and no matches had been identified.