



Technical Bulletin:

Ballistic Equivalents: Practice vs. Service Ballistics

Ballistic Equivalency

Law Enforcement ammunition can be broken into two types: Training and Service. Training ammunition is used to obtain a lower cost per shot, allowing increased training for a given budget amount. Service ammunition is specialized for street carry, and may incorporate special features such as hollow point bullets, jacket-core bonding and nickel plated shellcases which are not important in training. Even though two types of ammunition will be used, it is critical that both function the same and shoot to the same point of impact.

What is a Ballistic Equivalent?

Ammunition wherein the service and training cartridges shoot to the same point of impact, have the same velocity, recoil, accuracy, and weapon operating characteristics is a ballistic equivalent.

Why is this important?

Training must be realistic to be fully effective. Officers who train with ammunition that does not duplicate "Duty Loads" may encounter greater or lesser recoil, point of impact shift, weapon operations difficulty, and other differences from the service load.

How do I know if my ammunition has a ballistic equivalent for training?

There are four factors to consider in establishing that two cartridges are ballistic equivalents to one another:

Velocity	The velocity of the projectile will establish two factors: time of flight (point of impact) and kinetic energy (recoil). Velocity also affects how the slide moves rearward, extracting and ejecting the spent shellcase, and feeding the next round.
Bullet Weight	The bullet weight has a large contribution to recoil, and affects the ballistic coefficient, which governs flight characteristics (Drop).
Bullet Shape	Having the bullet exterior shape similar to the service round ensures that the cartridge will feed in the same manner as its counterpart.
Caliber Designation	Using ammunition of different designations (5.56mm vs. 223 REM) may affect bullet flight, recoil, and function characteristics.

Example:

Q: What is the Ballistic Equivalent for my 223 REM 55gr Bonded Ammunition?

A: Select 223 REM 55gr FMJ loaded at the closest velocity available. Some manufacturers may use the same propellant in both loads, which may be another advantage.

Q: What is the Ballistic Equivalent for my 9mm Luger 124r Bonded Ammunition?

A: Select 9mm Luger 124gr Full Metal Jacket loaded at the closest velocity available. Using lower cost 9mm Luger 115gr FMJ will save cost, but shoot differently.