



**CENTURY
INTERNATIONAL
ARMS INC.**

5.45 AMMUNITION INFORMATION

We have received many inquiries regarding the performance of various rifles chambered for the 5.45x39mm cartridge. The majority of the questions relate to bullet upset or “key-holing” when the bullets strike a target. While barrel twist rates have a slight effect on performance of the bullet, as we learn more about the 5.45x39mm cartridge, it is generally accepted that the bullet upset phenomenon is an intentional design attribute calculated to avoid over-penetration of a target and maximize energy transfer. This makes sense when you consider:

- The longer the bullet in proportion to its diameter, the more twist to stabilize it.
- A very long nose is good for drag reduction and aerodynamic efficiency, but is harder to stabilize.
- A longer and heavier bullet can be stabilized at the same twist by increasing the velocity.
- A low velocity bullet requires a faster twist to stabilize it.
- A long pointed bullet is harder to stabilize due to potential errors in manufacturing. It needs to be properly balanced, concentric and symmetrical. If the bullet is not perfectly made, problems show up with the center of gravity and other forces.
- The best rate of twist is governed by the bullets length, not its weight.

The bullets used in this ammunition are long for caliber and therefore are also heavy for caliber.

Sources for more information on this ammunition include:

<http://en.wikipedia.org/wiki/5.45mm>