Bullet Pen Anatomy

The Terminology Of Rifle Cartridges

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Every business has its own special lingo. In some cases (such as medicine and engineering), the terminology derives from the need to be very specific and precise. At other times, it just seems like a means to distinguish the in-crowd. I believe that language is whatever we actually say, and I don't intend to criticize anybody's usage, but the firearms industry does have some unique vocabulary. When you sell a bullet pen to a shooting enthusiast, it helps to speak the accepted language. Toward that end, here is a description of the parts of a metallic rifle cartridge, and their proper names.

To start right off, the term "*bullet pen*" is a misnomer. It's catchy though, and widely accepted — so let's just move on. Modern rifles and handguns share loading technology and terminology, commonly referred to as *metallic cartridges*. Shotgun ammunition, called a *shotshell*, is constructed differently. Shotgun and muzzleloader components are rarely used in pens, and therefore are not addressed here.

So, a round of rifle or handgun ammunition is properly called a *cartridge*. Sometimes, people speak of it as a "shell", but that word generally refers to either a shotgun shell, or an artillery shell. The cartridge is the complete, assembled piece, ready to load and fire. It consists of four parts: *bullet*, *case*, *powder*, and *primer*.

Figure 1- Top: Complete Cartridge, Left to Right: Bullet, Shellcase, Powder, and Primer

The *bullet* is the actual projectile. It is the piece that flies out the barrel of the gun to (hopefully) hit whatever the shooter aimed at. Many people mistakenly refer to the entire cartridge (or even just the case) as the "bullet", but that is incorrect.

The *case* (or *shellcase*) is the metal housing that holds the other components together. It is very often mistakenly called a "casing". In the penturning community, this misnomer is more common than the proper name. In fact, it is so pervasive, that I rarely even try to correct it. If you say "casing" to a serious shooter, however, you may get a strange look. Since cases are most often made of brass, the term *brass* is often used as well.

Powder, a.k.a. *smokeless powder* or *gunpowder*, is the propellant. It burns rapidly and produces the expanding gas that drives the bullet down the barrel of the gun. The *primer* is the component that emits flame when struck, and ignites the powder. They are the most hazardous parts of a metallic cartridge, and generally don't come into play when making a pen. Unless you already know how to handle powder and primers safely, don't handle them at all.

While it is possible to disassemble live ammunition to use the components to make a pen, it's nearly always better to buy new (or fired) cases and new bullets instead.

The bullets appropriate for pen making are typically copper-jacketed. That is, they consist of a copper alloy sheath over a lead (or sometimes steel) core. Solid copper bullets are also available. Plain lead bullets are generally not usable for a pen. Jacketed bullets come in different shapes. *Full metal jacket* (FMJ), also called *ball,* means that the tip of the bullet is completely encased – although the bullet base typically shows exposed lead. *Hollow point* (HP) means the tip of the bullet has a hole in it – and the bullet base is typically fully enclosed. *Soft point* (SP) indicates that the point is made of lead and the jacket begins partway down the bullet. There are also *polymer tipped* bullets (like a hollow-point with a plastic insert). The tip shape can be *round nose* (RN), f*lat nose* (FN), or *spire point* which comes to a sharp tip. The bottom of the bullet can be f*lat base* (FB) or angled which is called a *boat-tail* (BT). For pens, I often use a jacketed hollow-point boat-tail (JHPBT or BTHP) bullet although spire-point FMJ works well too. Sometimes, you'll see a ridged groove formed around the bullet on the flat edge (the curved edge is known as the *ogive*) of a bullet. That groove is called a *cannelure* and it provides a spot to crimp the case mouth against.

Figure 2- Left to Right: Full Metal Jacket Boat Tail with Cannelure, Flat Nose Soft Point Flat Base with Cannelure, Jacketed Spire Point Polymer Tip Boat Tail, Solid Copper Hollow Point Boat Tail

The shellcase, as mentioned previously, can be made of steel, but is usually brass, or nickel-plated brass. It is sometimes straight-walled, or tapered, but most often (at least for rifles) a *bottleneck* shape. The hole that the bullet goes in is called the *mouth*. The part that actually contacts and grips the bullet is the *neck*. The angled section below the neck is known as the *shoulder*. The remaining straight or tapered section of the case wall is the *body*. The solid portion below the body is called the *web*. At the very end there is groove called the *extractor groove*, and the *rim*.

Figure 3 - Shellcase

The end of the shellcase is called the *head* and the marking on the end is called the *headstamp*. *Center fire* cases have a *primer pocket* in the center of the case head. There are one or more *flash holes* in the primer pocket.

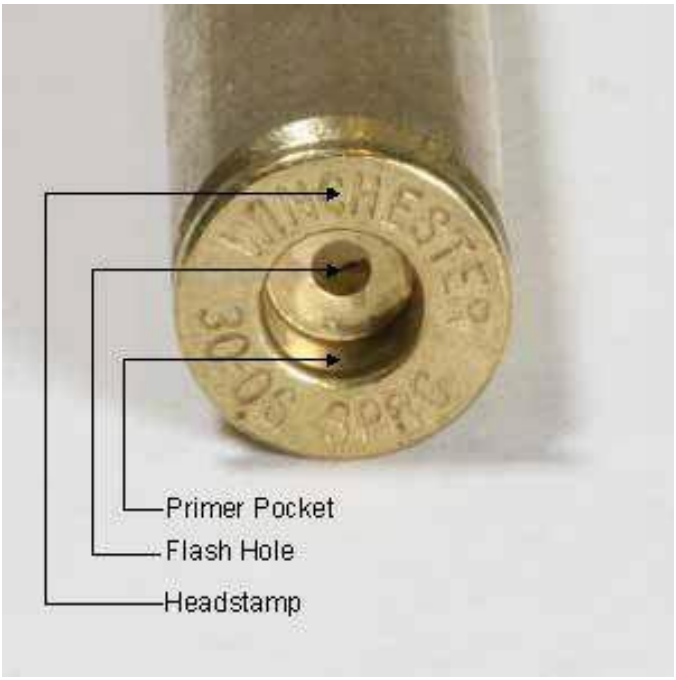

Figure 4 - Case Head

An assembled cartridge of a particular caliber has specific minimum and maximum dimensions, one of which is the *cartridge overall length* (COAL, or OAL). That is the distance from the bottom of the case head to the tip of the bullet. Bullet pens look most realistic when they maintain this dimension, as specified by the Sporting Arms and Ammunition Manufacturers' Institute (SAAMI).

Whew! That's a lot of nomenclature to get through. I realize it seems daunting at first, but once you're familiar with pieces and their correct names, you'll be able to describe your products with confidence to the most serious shooting and hunting enthusiasts.