

# NEWSLETTER



## WHAT IS IN THE NAME OF A CARTRIDGE.

The name of a cartridge could be based on a combination of the bullet diameter, caliber, bore, length of the case, historical information, or none of these.

## BORE VS CALIBER WITH HILLS AND VALLEYS:

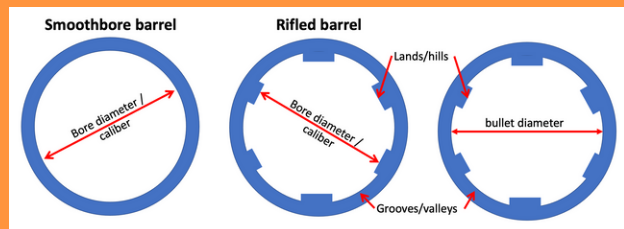
When the first muzzleloaders appeared in the 1400s, their barrels were smooth on the inside and were referred to as smoothbore barrels. It was soon afterwards that some gunsmiths started experimenting with rifled barrels but it only became more practical with the introduction of breach loading firearms in the early 1800. Today, all modern centerfire and rimfire firearms has rifling while most shotguns still have smoothbore barrels. Rifling is an arrangement of spiral grooves on the inside of a barrel. These grooves are called lands and grooves or hills and valleys. The rifling in the barrel makes the projectile spin on its axle, when fired out of the barrel. The spinning of the projectile is required to stabilize the bullet. Think about a quarterback throwing a football – the more spin, the more control and distance can be achieved by the thrower.

In the case of smoothbore rifles, the bore size is the diameter of the inside of the barrel and referred to as caliber. In the case of rifled barrels, the bore will refer to the distance from lands to lands or hills to hills - see attached schematic.

Rifling is build in two formats: 1) twist rate 2) number of grooves. The twist rate refers to the length in inches, required to complete one rotation inside the barrel. The number of grooves refers to the number of grooves (or valleys) on the inside of the barrel.

The caliber is a measurement in hundredth of an inch or in millimetres. An example is, a 30 Caliber would be .30 of an inch and a 7mm caliber will be 7mm bore. Both measurements are from land to lands.

The first metallic cartridges were introduced about 200 years ago, and most cartridges were using some naming convention of either the bore or caliber in metric or imperial size. An example is the 7x57 Mauser from Germany, which is a 7mm (bore) caliber with a 57mm long case. The British decide to use this exact same cartridge in some of their rifles but since they were use imperial measurements, and did not like the Germans, they decided to call it the 275 Rigby. From the first metallic cartridge introduction, there has been more than 1500 different cartridges designed and manufactured, most are obsolete and a few are still in production. Every year we see some new cartridges been introduces to the firearms world, ones with longer bullets, faster twist, higher pressure and each one with a unique name.



## BORE DIAMETER AND BULLET DIAMETER



The 308 Winchester cartridge name refers to a .308 of an inch from groove-to-groove. The same cartridge is also known as a 7.62 NATO, which refers to 7.62 mm lands-to-lands distance. One name refers to the bullet diameter and the other to the bore, .308 of an inch is not the same diameter length as 7.62 mm.

### **SAME BORE BUT DIFFERENT BULLET DIAMETER:**

Both the 7.62x39 Russian (The famous SKS and AK-47 cartridge) and the 7.62x51 NATO cartridges, refer to an exact bore diameter of 7.62mm, but they are shooting different diameter bullets. The 7.62x39 uses a barrel with .006 inch rifling, and the 7.62x51 NATO a .004 rifling barrel. For these reasons, the 7.62x39 shoots a 7.92mm projectile and the 7.62 x 51 NATO shoots a 7.82 mm projectile. This goes to show that both uses same bore but different bullet diameters.

### **WHICH ONE IS BIGGER:**

Let's compare the 303 British and the 308 Winchester. One would think that the 308 Winchester is a bigger projectile than a 303 British but it's not the case. The 308 was measured from groove to groove and the 303 was measured from lands to lands. Since a land is about .004 inch and they are opposite walls inside the barrel, the projectile of the 303 British is .311 inch, making it a bigger projectile than that of the 308 Winchester

### **DATE REFERENCE:**

If we look at the history of the 30-06 Springfield. The USA suffered in South American wars because they were using the old 45-70 and 30-40 Kragg ammo against the superior German 7x57. The US Government decided to develop a new powerful cartridge. The first attempt was a 30-caliber introduced in 1903. This cartridge failed under certain conditions but with some tweaking, they came out with a very good and solid design from Springfield in 1906. That's why the cartridge is called a 30-06 Springfield

### **POWDER WEIGHT REFERENCE:**

Here is an example of two very popular cartridges that were developed in the mid to late 1800, during the time of transitioning from black powder to smokeless powder. The 30-30 WCF and the 45-70 Gov. The 30-30 was originally designed (in 1895) to use smokeless powder and naming convention stands for .30 caliber with 30 grains of smokeless powder. On the other hand, the 45-70 (from 1872), was designed to shoot a .45 caliber projectile driven from 70 grains of black powder. Today, the 45-70 uses smokeless powder as well but the name remained the same.

### **SOME HISTORY**

Since the first metallic contained cartridge was introduced in early 1800s, most of them went obsolete and some that's over 140 years old are still in production. I myself own a few of these cartridges that's been designed in late 1800s.

The oldest designed cartridge that is still in production and available for purchase, is the 22 Short. The 22 Short went in production in 1857. If you wish to learn more about cartridges, please attend my Reloading Class as it will not only teach you reloading but also some history and ballistics of some popular cartridges.

## **TAKE CARE AND SHOOT STRAIGHT**

### **News bits:**

The interest in this little newsletter has grown to almost 100 recipients. When we do reach 100, I will give away some small prizes to celebrate the goal, so please forward me the e-mail of anyone you know who might find these newsletters interesting.

### **Upcoming classes:**

Please have a look at my website – [www.myguns.ca](http://www.myguns.ca) for the next scheduled classes. Remember, every successful referral to a PAL or RPAL class will earn you a Gift voucher from Friends Café!

### **SOME ACRONYMS USED IN NAMING CONVENTION:**

ACP - Automatic Colt Pistol  
LR - Long Rifle  
Mag - Magnum  
RUM - Remington Ultra Magnum  
SAUM - Short Action Ultra Magnum  
SPL - Special  
WM - Winchester Magnum  
WRM - Winchester Rimfire Magnum  
WSM - Winchester Short Magnum  
WSSM - Winchester Super Short Magnum