



Caliber Selection For Sniping

By: Michael Haugen

Whenever tactical shooters gather one of the most prominent discussions likely to occur is the one about various sniper rifles. You will routinely hear statements why this rifle is outstanding and that one not so outstanding. This discussion quickly transitions into one of calibers and all the things associated with them.

The fact of the matter is that in today's market the actual rifle is not as much the issue as the caliber. This is reflected by the fact that in most "world class" rifles and systems the consumer can obtain almost any caliber he wishes. So, what is all of the "hub-bub" around calibers? Why is one better than another? Which is the right one for you and your organization? Well in this article I will address some of the current "popular" calibers and why some are better than others in specific situations.

Sniper weapons are grouped by caliber into Light, Medium and Heavy categories each intended to meet certain needs. Before we actually get into the categories themselves we must go over a few items of interest. There isn't one "do-it-all" caliber. There are some that come close but every one has it's own drawbacks. Each caliber can perform drastically different given changes in bullet weights and shapes, powder types and amounts, and even different casings. This is the sole reason that this issue is so hotly debated. You commonly hear things like "given caliber such and such with this bullet and charge it will fly and react just as well as bullet X". I am not going into this argument rather I will talk more about factory ammunition in common offerings. I will mention some exceptions but only briefly. I am not trying to convince anyone of anything here. I am merely trying to educate some and entertain others. I firmly believe in your right as an American to believe what you wish and exercise that right.

There are some calibers which although technically belong in one category perform as if in another. There isn't enough space here to discuss every caliber let alone all of the variations of each. Therefore, I will stick to common calibers with common ammunition/loads. As I briefly mentioned, the family of SWS is designed to allow procurement guys and leaders to differentiate not only between the different weapons/calibers but also mission profiles for each.

The Light Family

The light family is comprised of everything below .30 caliber such as the .223 (5.56mm). Rifles commonly found here are of course the M16A2 and the M4 carbine. This caliber is however currently offered by virtually every manufacturer of quality sniper grade weapons in both bolt and gas systems. The 5.56mm was until a few years ago considered a 300-yard weapon at best, however with the advent of heavy competitor interest and use, huge advancements have occurred with relation to this caliber. It is very common today to see M16 variants being used in all facets of competition to include 1000 yards matches. There are very few shooters that I have met that would attempt to convince anyone that the 5.56mm is as capable a sniper round as 7.62mm, however the 5.56mm definitely does have a place among tactical marksman. Currently this caliber is being used predominately by Law Enforcement Agencies (LEA). However, the military Special Operations community is beginning to recognize its capabilities especially in environments where long-range shots (over 600 meters) are not expected. The lower ammunition and weapon weight allows the team to carry more and provide a quick reaction capability in high threat areas. The down sides of the 5.56mm are reduced range capabilities (due mainly to reduced terminal effects at the longer ranges), lowered barrier penetration capabilities at the longer ranges, and a lowered tolerance to environmental conditions such as wind. The overall potential of this caliber is outstanding especially given the wide variety of ammunition currently available. I personally own 3 rifles chambered in 5.56mm and truly enjoy them all.

The Medium Family

The medium family encompasses all of the .30 caliber cartridges. Now I must note that there is a lot of argument and discussion concerning the magnum calibers specifically the .300 Winchester Magnum and the .338 - .416 or .338 Lapua Magnum. Regardless, a .30 caliber cartridge of one denomination or the other has been the predominate sniper choice since WWI. The .308 (7.62mm x 51mm NATO) which for reasons I will not entertain now is the current caliber of choice for both military and LEA sniping. Despite what many of you may think this caliber has severed snipers well over the years accounting for numerous engagements and astounding feats. Just as is happening now with the 5.56mm the .308 underwent vast improvements in the early years mainly due to competitors and a desire for better ballistics. So much has been written concerning the .308 that I don't really feel a need to pontificate at length about it suffice to say that it is as capable today as it was 20 years ago. I am sure that I do not have to mention to anyone reading this that the .308 is currently offered in every form of weapons system offered. In fact I think I can safely say that the .308 is probably the most cham-

bered caliber for sniping today. I would be highly remiss in my duties if I did not mention the .30-06, which served with great distinction and for so long before the .308. This caliber as with the .308 is still very capable and in some circles considered the most versatile high-powered caliber on the market. The “06” really bridges the gap between the .308 and the .300 Winchester Magnum performing well out to 1000 yards.

As I mentioned the magnum calibers has been the point of discussion at all levels for some times. It was such a concern that the US Army M24 was developed using the Remington long action to allow for possible rechambering in .300 Winchester Magnum in the future. The ballistic advantage that the .300 has over the .308 doesn't even really occur until 600 meters and beyond. So, for this reason we in the Army have relegated the .300 to specific mission profiles and for the most part employ the .308 exclusively. With the rising popularity of the .338 - .416 or .338 Lapua Magnum more and more snipers are considering the procurement and use of this high-powered cartridge. There are several companies offering the .338 Lapua Magnum as a sniper caliber citing outstanding ballistic penetration and extreme long-range capability. The last thing I would like to say about the magnum calibers is that “more is not necessarily better”. With the heavier calibers come heavier weapons, ammunition and accessories. Also in terms of LEA, liability issues become more prevalent meaning that engaging a criminal with one of these calibers could result in less than favorable experiences in court. Even with this I would add that there is definitely a niche for the magnums in the tactical environment.

The Heavy Family

Of course the first thing that comes to mind when discussing the heavy sniper calibers is the awesome .50 caliber Special Application Sniper Rifle (SASR). This round has received probably the lion's share of press recently and is even currently under consideration by the U.S. Congress for inclusion as a “Destructive Device”. Well first of all there is a lot of misconceptions concerning this caliber especially revolving around its effective range. Some people will state with a straight face that the .50 caliber when fired from a sniper rifle is capable of consistent hits on man-sized targets out to and including 2500 meters. Now before I get loads of hate mail let me say that “yes the .50 has obtained hits at extreme ranges” and “yes the round itself will fly in excess of 2500 meters”, however there are so many factors that come into play when shooting at that distance that routine hits are at best infrequent. Another aspect of the .50 that is not widely known is the lack of accurate ammunition. The shooters of the .50 caliber Shooters Association handload and work very hard to obtain the accuracy they desire. Issue and factory ammunition is not by definition made for accuracy. Keep in mind that military .50 caliber ammunition is designed to be fired through machineguns, not sniper rifles. Either way, the big .50 has excellent barrier penetration capabilities and is very efficient when used against lightly armored vehicles and positions (the actual intent of the weapon) at medium and long ranges (400 – 800 meters). Even more so than with the .30 caliber magnum weapons the .50 caliber SASR presents several extremely negative aspects. Some that leap to mind is the vastly increased weight of both the weapon and ammunition. Additionally, upon firing, the .50 caliber provides a shockwave (when using weapons with muzzle brakes that direct the blast rearward) that if experienced repeatedly will result in physical illness in the form of dizziness and nausea. As with the all of the other sniper calibers, the .50 definitely has a place in the tactical sniper environment however, not where most would think.

What is the best choice for me?

This seems to be the question of the day. Arriving at an answer can be quite a challenge given the vast number of calibers, weapons and endless advice from writers (yours truly included), friends, and other shooters. So, let's try and give some guidance or at least some guidelines that may help you make a choice.

RANGE

You must determine the maximum range you expect to employ the weapon system Keep in mind that the .30 calibers are virtually the same out to about 600 meters. At the closer ranges, it makes sense to use a lower recoiling weapon that can be trained with. What I am referring to is that the heavier calibers result in more recoil (harder to train with), reduced barrel life (more expensive) and heavier weapon weight (harder to employ). If you are a LEA officer working primarily in an urban area where shots are usually less than 100 meters, than something from the light family may fit the bill. However, if you are military sniper working in a desert area where ranges can easily exceed 900 meters, than the .300 WM or .338 Lapua Magnum may be a better choice. If your max range is somewhere in the middle than the .30 calibers may be the best choice. Keep in mind that ammunition choice plays a huge role in how a caliber performs. So, you could employ a light caliber with several types (weights) of ammunition to meet several mission profiles.

BALLISTIC PENETRATION

You must look at what you are most likely to have to penetrate during your duties. Again if you are a LEA officer who works a rough part of town that sees barricaded suspects routinely and your department has a history of allowing shots through windows or doors you may wish to choose a .30 caliber. Now before the .223 aficionados' scream, I must add that certain .223 projectiles have very good penetration qualities. Of course on the other side of the coin, if you are expected to interdict lightly armored targets than a heavy .30 or even something from the heavy family may be in order. A point I must make here is that the .30 calibers will penetrate much more than most people think, and the .50 caliber will penetrate much less than most believe. What you have to do is conduct your own tests on items that are common in your area or that you think you may have to penetrate. A note on glass here; there is a lot of misinformation out there concerning glass penetration. I can tell you from experience that you **MUST** conduct tests on the type of glass you expect to encounter with the glass framed in order to get true results. Do not rely on commercially available printed glass shooting results.

ENVIRONMENTALS

This relates to the physical environment that you will have to employ in. Any experienced shooter knows that most environmentals can be overcome with proper ammunition selection and training. However, some calibers are affected less than others are. Generally the heavier the caliber the less it is affected by wind, altitude and humidity (to a degree). This subject is of course highly effected and interlaced with numerous other factors such as training, ammunition, etc. However, I think that it is safe to say that if you are limited to one type of ammunition, cannot train extensively and live and work in an area where the environmental conditions are volatile (large changes) you may be wise to adopt a caliber from the medium family.

TRAINING

This is the most important of all considerations. You need a caliber (and weapon) that you can train with extensively. This is where the light family really excels due to decreased ammunition costs, comfort of shooting, increased barrel life and excellent accuracy potential. The heavier calibers especially the magnums can be very costly to train with on a routine basis not to mention the physical abuse you will receive during the training. Trained professional shooters should fire at least two days every month at a minimum. Ideally the shooters should fire one week a month to remain current and to progress their skills. Training must be realistic and "push the envelope" to allow shooters to enhance their skills and understand the limitations of themselves and their equipment.

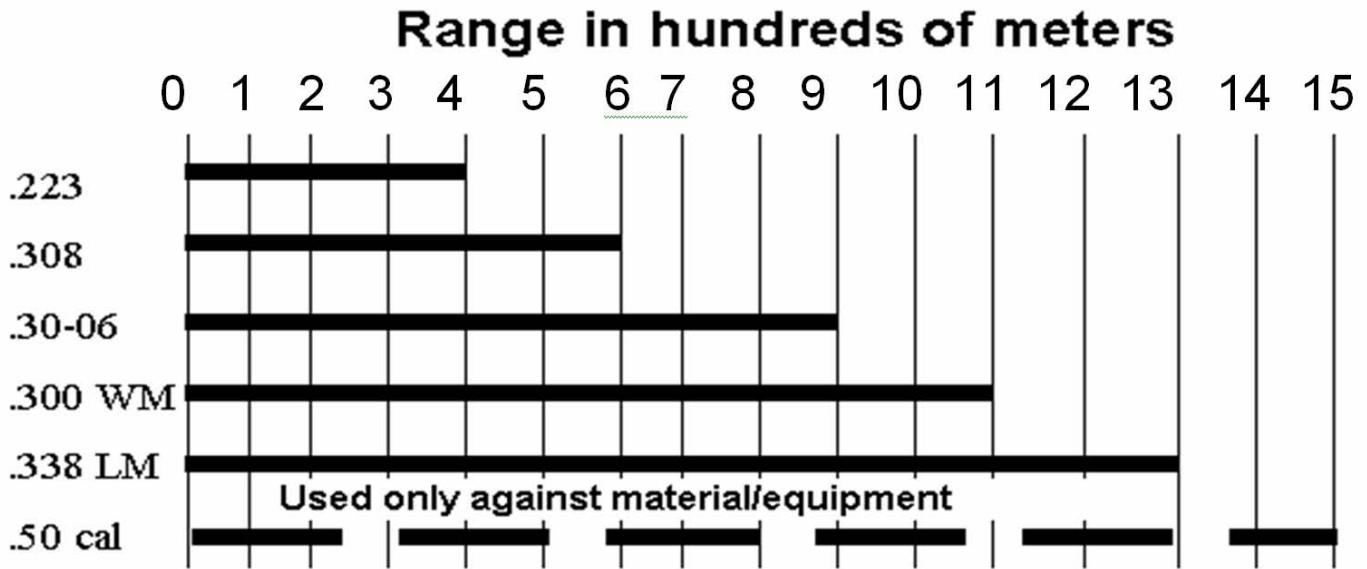
A Note on Ammunition and Accuracy

As you all know, for every caliber there are numerous choices of ammunition. For precision work you will of course need accurate ammunition. The key here is to do your research and choose a brand, load, etc. of ammunition that has a history of accuracy with your type of weapon. It is very easy to chase accuracy through different brands and types of ammunition. Pick one, test it completely and then make a decision.

Accuracy can be an elusive animal. It can and will be the subject of frustrating (bordering on maddening) and elated moments during your shooting sessions. What you have to do is determine your accuracy needs that correspond to your perceived mission profile/s. It is extremely easy to chase better accuracy far beyond your needs. Military snipers for instance, need to be able to hold approximately 2-MOA with his given weapon and ammunition. This insures that he can engage targets out to and including 600 meters with a high hit probability. This is not to say that the shooter should not strive for better accuracy (within his limits), more to say that at any given moment he must be able to hold the 2-MOA standard in any environment.

I am sure that more than one reader of this article is thinking about why I haven't addressed specific weapons systems. Well as I stated in the beginning, you can virtually purchase any system in any caliber you desire, so the weapons system itself becomes almost irrelevant. The problem lies in the fact that the type of weapon you choose is affected by mainly operational concerns such as threat, operational area (urban or rural) and anticipated mission profiles. I would offer that you should choose the caliber first, then choose a weapons system that has a history of shooting that caliber well and meets your operational needs. For the hobbyist, it all comes down to your personal preference and financial capability.

At a minimum I hope that this article has been the cause for some thought. At a maximum I hope that out there somewhere this article has caused someone to make an educated analysis on the weapon system that they are going to procure rather than purchasing one based on mere opinion and media hype.



*Caliber comparison as it relates to range
Against man sized targets w/90+ hit probability*