



A Sniper's Thoughts

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The following thoughts are mine and mine alone. They are in no particular order and are not meant to be the "last word" by any means.

Definitions:

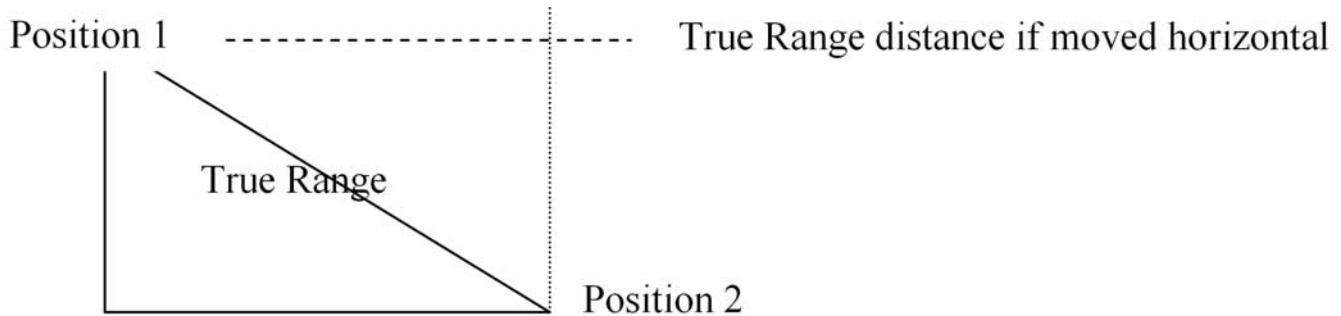
Light SWS = 5.56mm and .308 systems

Medium SWS = .300 Winchester Magnum

Heavy SWS = .50 caliber and up

Hard Target Interdiction (HTI): Employment concept for the heavy systems

SASR = Heavy Sniper Rifle



Slant Range: Slant range correction is due to the angular difference between 2 positions. Slant range is not an effect of the difference in gravity between the two positions.

Humidity: Humidity can play a part in accuracy however, that part is transparent to light and medium Sniper Weapons Systems (.308 - .300 WinMag) shooting within normal limits. Heavy SWS shooters may experience humidity effects if levels are vastly different from zero data and you are shooting at extreme ranges.

Temperature: Out of all of the environmental corrections, a change in ambient air temperature has the greatest effect on accuracy. However, when dealing with the light and medium systems the effect is more attributable to the heating or cooling of the ammunition rather than the heating or cooling of the weapon itself or the air density due to temperature. Temperature changes can be in several forms.

Temperature of the receiver (chamber) which heats or cools the ammunition changing the burn rate which affects the velocity and thus the accuracy.

A heated or cooled barrel itself. As the barrel heats or cools, the steel expands or contracts changing the "whip" characteristics, which changes accuracy.

A change in air density caused by temperature will effect accuracy, but in the light and medium SWS ranges this change is usually insignificant when compared with all of the other factors present. The bottom line here is that in light and medium systems, changes in temperature (within normal limits) will not throw the round off target. A 10-degree temperature increase will increase muzzle velocity 50 fps (up to 600 meters) causing a .5 moa change in impact (lower). This relates to a 3-inch drop at 600 meters.

Altitude / Barometric Pressure: Barometric (BP) is a function of altitude. This means that as you climb in altitude the BP drops. However, BP changes must be extreme to affect noticeable changes in accuracy. A 2-inch drop in mercury will greatly affect accuracy, but if you were experiencing this phenomenon, you had better be somewhere else because you are about to experience extremely high winds, rain, etc. Again, the rule here is if you are experiencing, high changes in BP the accompanying weather will produce unfavorable shooting conditions. If the mission requires you to travel great distances where it may be possible that you will arrive at locations where there are vastly different BP levels, you must either re-zero or know how to compensate.

Winds: Determining wind speed corrections is the second hardest skill to attain (past 400 meters). Gadgets cannot compensate for skill. Judging winds must be learned right the first time. Winds up to 8 – 10 MPH does not effect the accuracy of 7.62mm x 51mm NATO (.308) up to 300 meters if the shooter does his job correctly. Winds must be judged over the

entire range, not just at the shooter's or the target's position. Winds can be significantly different throughout the entire range from the shooters position to the target position.

Mirage: Often over looked and misused. It must be watched closely and used to read wind direction, speed, and changing conditions. Mirage can fool a shooter by making him think that a target is located somewhere it isn't. Snipers must not confuse barrel mirage with ground mirage.

Sniper/Observer Equipment: "High Speed" does not usually mean better. Minimal is the key during employment. You cannot plan for every contingency. Look for equipment that serves more than one job. Equipment must fall into one of the following categories, communication, subsistence, medical, survival, and mission essential. Equipment that operates without batteries is the best. The spotting scope must compliment the riflescope (i.e. riflescope is a 10X, the spotting scope should be variable from 10x up).

Sniper Team Composition: Two man minimum (hence the term TEAM). A two-man cell can be combined with another to form a four man operational unit, which can rotate duties. Sniper partners must be compatible and compliment the other. The senior sniper is the SPOTTER because he is the brains of the team and is experienced enough to make the hard calls.

Sniper Team Employment: Snipers are a battlefield multiplier. Intelligence gathering is the first priority, not shooting. All levels of command must be educated as to the true capabilities of the sniper team/s. Sniper rules of engagement (ROE) must be well defined and support the team. Military snipers must have a quick reaction force (QRF) available to them in the event that they are compromised and under pressure. The chain of command must trust sniper intelligence. Snipers must never over sell their capabilities.

Additional Sniper Team Skills: The priority for training should be (1) Land navigation (2) Survival (3) marksmanship (4) observation skills. Additional training in first aid, call for fire and alternate infiltration skills should be sought out and mastered before a sniper is operational. Snipers should not forsake normal rifle and pistol marksmanship training.

Gas versus Bolt Guns: Here is the argument of the century. A gas system can be as accurate as a bolt system. Gas systems by design will demonstrate more functional problems than bolt systems. Gas systems are inherently faster in producing the second shot follow up than a bolt system. Most world class bolt systems are inherently more accurate, less prone to failure and are simpler than gas systems. Gas systems usually give little indication of impending failure, whereas bolt systems generally lose accuracy gradually. A compromised sniper team does NOT stand a significantly better chance with a gas system over a bolt system when faced with a trained enemy. Rather a sniper team's security lays more in their advanced field skills, long range precision rifle fire, dedicated combat fire support and combat search and recovery.

Accuracy: Supremely accurate rifles do not make good sniper rifles. Two (2) minutes of angle out to 800 meters is adequate for snipers in general. This is a compromise between the rifle, optics, ammunition and shooter. Corrections of more than 2 moa are beyond the capability of the majority of snipers. A rule of thumb is that anything more than 2 moa corrections are a waste of time. Police snipers or snipers in situations where the range is minimal (less than 100 yards) will often be called upon to provide "pin point" accuracy under stress. A 2 moa gun will do the job if the shooter does his. Snipers should always take torso shots whenever possible even at close ranges. Guns that claim consistent 2 moa capability at 1000 yards are NOT a reality for snipers. Generally, the more accurate a rifle is, the less dependable it is.

Sniper Rifles: Must be of a proven design. Must function 100% of the time. Cold bore shot must be predictable always. The more "high speed" it is the less dependable it will be. Almost all of the current "over the counter" bolt action heavy barrel rifles on the market today will adequately perform as a sniper weapons system if correctly prepared. Cost does not equate with quality. State of the art does not equate to a better system. The rifle must stand up to training and remain mission capable. Too many possibilities for adjustments usually result in confusion and wasted time. Camouflage must be functional and effective, not pretty.

Ammunition: Must be obtainable and consistent. The chosen ammunition must not come with employment limitations for employment. Ammunition used for missions must be the same as used in training. Snipers must maintain data on all ammunition that could be possibly used. Variations of ammunition should be tested extensively before being dismissed.

Heavy SWS (SASR): The SASR is not designed to be used against personnel, however it can be if the situation demands it. A SASR should be capable of 2 to 4 moa of accuracy. Maximum effective range of a SASR is determined by current environmental conditions. It must have a muzzle break to reduce felt recoil and to deflect the shock wave away from the sniper

team. Although possible, the SASR is extremely difficult to stalk with due to size and weight. In a combat environment, the SASR or HTI team must have dedicated Combat Search And Recovery (CSAR). The Barrett .50 caliber reticle is not useable because it is designed around one set of environmental conditions and does not allow for changing conditions. Team positioning is extremely important because of the shock wave effects.

SWS Calibers: .308 or 7.62mm x 51mm NATO is adequate and desirable for military sniping. This is due to the availability and variety of ammunition (tracer, armor piercing, ball, match, etc). The effectiveness of a caliber is attributable to muzzle velocity and environmental factors, 5.56mm is good out to 400 meters, 7.62mm NATO out to 800 meters, .300 Winchester Magnum out to 1100 meters. 5.56mm is useful in urban environments when used in conjunction with SS109 with the steel penetrator.

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SWS Maintenance: The actual technique does not count as much as the quality of cleaning. Proper equipment must be used, even if the parent organization does not supply it. There are two types of cleaning, mechanical and chemical neither should be relied upon solely. Proper break in of the system is the key to its life, if done right the weapon will provide quality results throughout its life.

Mil Dots: If you are trained in their use and have a need a need for them, mil dots are great for range estimation, hold offs and correction for winds and moving targets. Mil dots are NOT useful past 1000 meters, they are too coarse for accurate range estimation. In order for mil dots to be used effectively, they should be read to the nearest 1/10th i.e. 1.7 mils.

Optics: For sniping out to 800 yards 10X is adequate. Optics must be clear, rugged, tracks well and support the intended use. A 30mm tube is good but in most cases, a quality scope with a 1" tube will accomplish the mission. Optics must capable of hand or finger adjustment (no finer than ? moa for sniping). Optics must repeat from adjustment to adjustment. Cost is not always indicative of quality. Optics MUST track (1 unit of adjustment must move the strike of the round the appropriate distance on target). Glass must be clear and undistorted. Reticle must be clear and distinguishable. Regardless of the reticle, it must be user friendly.

Optic Mounts and Rings: Never put \$1000 optics in \$15 mounts. Both the mounts and the rings must be good quality and a proven design, no "see through" design for sniping. Two rings are enough for all but the heaviest recoiling weapons. For professional snipers, mounts should be steel however, for hobbyists aluminum will suffice if of good quality. Mount must be "user friendly" in nature. With mounts, quality costs. Be aware of "quick" detachable style mounts. Always use like metals in the rings and mounts (steel will destroy aluminum quickly).

Ghille Suits: If properly used ghille suits can be extremely effective. Conventional ghille suits as seen on TV and in the movies are NOT practicable for combat employment. Hollywood ghille suits are heavy, hot, and unwieldy. Truth be known, most snipers are better served using a good patterned uniform and natural camouflage. Sniper students are usually not required to construct a ghille suit. However, most do because the stalks are usually over open terrain and a ghille suit will provide an advantage. Proper route selection is much more important than a high-speed ghille suit. Training stalks are designed to be difficult so that the student learns that it is possible to get within 200 meters of a trained observer who is looking through binoculars.

Range Estimation: This is the number 1 essential and hardest skill for a sniper to attain. This skill must be reinforced constantly to remain accurate. Range estimation skills separate the amateurs from the professionals. Laser range finders

although extremely accurate and useful should not be relied upon solely. Electronic devices should NEVER be considered a replacement for range estimation by eye and mechanical means. All available means should be used when possible in conjunction with one another.

Training: Sniper training must be realistic in nature and start at the beginning, marksmanship. Training must balance marksmanship with field skills. No portion of a sniper-training program should be a “gimme”. Each skill taught must build on the last and prepare for the next. All skills must be reinforced throughout the entire course. Students must be challenged without being harassed with inane tasks and drills. Field training exercises must be challenging and objectives obtainable. Stalks should be done as a team. Stalks should end after the withdrawal phase, not after the shooting phase. Live fire exercises should be a part of at least 50% of all stalks. Stalks should never be conducted in the same area twice (never use the same lanes twice). Benefit of the doubt ALWAYS goes to the student. A sniper course must allow for student mistakes. The course must have a cut line and/or “must pass” gates that allow students who are capable to continue and those who are not to be eliminated without prejudice. Course problems must never impact on the students or the quality of training. All problems must be transparent to the students.

Sniper Instructors: Just because someone is a graduate of a sniper course doesn't mean he is capable of instructing. All instructors must be qualified to instruct their respective classes. Instructors do not have to be world champions, only competent, knowledgeable and experienced. An instructor train up is required before any formal course. All lessons should be given to the other instructors prior to the students receiving the instruction. All lessons must include a Primary and an Assistant instructor. The course must follow an established Program Of Instruction (POI), never adhoc. Instructor problems must be transparent to the students. Personality conflicts should never be aired in front of the students. The course faculty sets up the range and classroom, not the students. Instructor to student ratio should never exceed 1:4. The course must have one person in charge who has the final decision in all matters. Individual instructors are responsible for their periods of instruction. Instructors must be strong and decisive.

Observation of Ground: Observation is a learned skill, not a natural skill. A sniper must be able to locate and determine changes in terrain both from the movement aspect as well as from the intelligence aspect. Perfect practice makes perfection. Practice must incorporate the use common objects and not try to fool the students. Observation exercises should be in conjunction with other tasks such as stalks.

Sniper Student Selection: All prospective students must be screened prior to training by a knowledgeable source, preferable a qualified sniper. Most stereo type liabilities can be overcome if a student has other skills worth exploiting. Psychiatric screening must be done by a doctor who understands the demand placed onto a sniper and who understands sniper training. Sniper students should have a need for the training rather than just diploma hunting. Personnel selection is a continual process throughout training. A student should not graduate if his motives are questionable even if he is making the grade.

Competitors versus Snipers: Neither is the other. Neither will usually excel at the other's providence. They are two different disciplines with related skills. Involvement in either will compliment the other.