Full-bore- Hoping for an early start

Junior Rifle- Alberta bound

The Buffalo Chips

March 2016

Like always, if you have any questions, scores, tips or advice, comments, or have something that you would like to have published in the For Sale / Wanted section, email me at mprachips@gmail.com

team manitoba

Manitoba

March, it's melting, for real.

That warm weather is probably causing some trigger fingers to itch and some of you just realized you haven't reloaded any ammo yet thinking you had a couple more months of winter. Well I think we might be in for an early outdoor season, at least I can hope.

Rob Deneka's High performance squad has had a busy winter shooting two nights a week plus and I hear Kaitlin Rempel has shot several scores over 406. Well done Katie.

The next air rifle match will be on Saturday, April 9th at our Shooting Performance Center at 711 Leola St. On the Sunday a 22LR match will take place at the Winnipeg Revolver and Pistol Club, contact Paul Lemire if interested.

The M.P.R.A Annual General Meeting, June 7th, 7:00pm at our Shooting Sports Performance Center located at 711 Leola St in Transcona.

If you are wondering where I am getting the quotes from Linda Miller and Keith Cunningham just follow their Facebook page at, Marksmanship Tip of the Day, https://www.facebook.com/MarksmanshipTipOfTheDay/?fref=ts. You might find some interesting info at their website, http://www.milcun.com/.

The subconscious mind. Here is where the actual firing of the shot takes place. You must focus on establishing and holding the correct sight picture, and when it's correct, the rifle will fire. This is best trained by using the rifle. Fire lots of shots both dry and live, and develop the ability to fire shots subconsciously. Dry-fire at home in your basement and live-fire when you get a chance to go to the range. Then further develop this by going on rock hunts.

Linda K. Miller and Keith Cunningham, Secrets of Mental Marksmanship

Reducing Variables in Prone

by Ernest J. Vande Zande - Wednesday, February 10, 2016

More

This article focuses on prone; however, information contained will also help your position scores. So keep in mind that shooting encompasses two primary areas, technical which includes position and the integrated act of firing a shot, and mental, the thinking and focusing of your mind.

The first thing in shooting better prone is for each individual to establish a personal goal. Simply said, make up your mind to achieve. Then work constantly at a high level continuously over a period of time. Focus and effort in training must be as intense as that experienced in competition, in order for a shooter to learn to shoot at the highest level.

As a junior in the Acorns Junior Rifle Club, we were taught that you win competitions by shooting good in standing, and you lose competitions through shooting bad prone scores. As a result, a heavy emphasis was placed on shooting perfect prone scores. I often hear coaches working to help their shooters shoot a scratch 10 or a 10.0. The correct goal is to shoot a center 10. The best shooters are always working to be in the exact center of the 10-ring. In American shooting that gives the shooter a little leeway to be off and still shoot a 10. But when shooting the international target, it is very important to be centered in the 10-ring to achieve the best scores.

Therefore, a shooter needs to teach himself to recognize the perfect sight picture with the bullseye exactly in the center of the front aperture. Many shooters shoot when the bullseye is close, but not centered up. When the shooter truly recognizes the sight picture, which is totally centered up, scores will also improve.

The recognition of the sight picture being perfect will result in that recognition in kneeling and standing as well. In addition, there is a transfer of training when the shooter fully recognizes the centering of the bullseye in the front aperture. An indication that the shooter has learned this technique is when prone scores repeatedly reach 100.

Figure 1: Placing the cheek on the cheek piece must not utilize any muscles in the head, neck or shoulders.

However, I have noticed an issue which prevents shooters from obtaining the highest score levels, which is incorrect head position. The head position must be the same placement, an exact placement on the cheek piece shot after shot. Thus, it is repeatable and repeated shot after shot. Placing the cheek on the cheek piece must not utilize any muscles in the head, neck or shoulders. Nevertheless, the first check concerning head position a coach needs to make is to stand behind the shooter and watch how the shooter puts his head on the stock. The correct method is for the shooter to move his head, after reloading, directly above the cheek piece, which would be at 12 o’clock, and then move directly down onto the cheek piece. If done correctly, a portion of the cheek is pushed up and out looking like bunched up cheek skin, which extends out away from the cheek. *See Figure 1*.

On the other hand, incorrect placement of the head on the cheek piece will result in a flat, non-bunching of the skin on the cheek. When this occurs the shooter will typically come in from the left, 9 o’clock to the line of fire, and push the cheek into the stock yielding a relatively flat cheek on the cheek piece. If the incorrect method is utilized in one position, it is often utilized in other positions. That is why the coach needs to check head position in all positions.

Figure 2: The card exercise may need to be repeated several times.

A technique to determine correct head position has been referred to as the card exercise. First, the shooter is in position and aiming at a target. Then the coach takes a business card and places it in front of the rear sight blocking the shooter from seeing the target. The shooter is then told to close his eyes and lift his head up and then place it down on the cheek piece keeping his eyes closed. When the shooter feels he has the correct head position he makes a sound indicating he has found the correct head position. The shooter must not speak to tell the coach correct head position has been achieved, as that requires moving the jaw, which in turn invalidates the procedure. The shooter still has his eyes closed and now the coach removes the card and tells the shooter to open his eyes, but do not move his head. Then the coach asks if he is high, low, left or right of the bullseye. He is then told to move his head to be able to see through the sights. Repeat this process five times and a pattern is formed. From that the coach and shooter know if the cheek piece needs to be moved, which direction and by how much. After moving the cheek piece repeat the process until the shooter is consistently very close to being centered up or is centered up. If the shooter does not have an adjustable cheek piece, the same can be achieved by taping material to the cheek piece. *See Figure 2*.

Overall, high-level training is important. Having a goal, being constant and consistent in your training, centering on the bullseye and continually having the correct head position will improve your scores and your X counts. By utilizing these techniques you will do just that

Cant Errors Explained

Introduction

In precision shooting there are many factors that affect the ability of a shooter to hit a target with accuracy. One of these factors is cant error. Cant error is the result of not holding the rifle bore axis and the scope axis in a vertical plane.

The Problem

To begin to understand cant error, let’s review some basic information, starting with gravity. As we all know, gravity is a very important part of our lives and we continually compensate for it. For example, when we are outside tossing a football around we throw it with only a slight trajectory for a short pass, or for the long bomb we add a lot of “elevation” to the trajectory. We use this same compensation in precision shooting. If we are shooting an airgun with a slow flying projectile, we use a lot of elevation to hit the target. Gravity acts on the vertical component of the projectile and its effect is proportional to the time of flight. From physics we know that when two objects of dissimilar weight are dropped from the same height, at the same time, they will hit the ground at the same time, this of course disregards wind resistance of the objects. If a highpower rifle and a pellet gun are fired at the exact same moment parallel to the ground, the two projectiles will fall to earth at roughly the same rate (remember wind resistance) and will strike the ground at the same time. It’s just that the highpower bullet will have traveled many times the distance that the pellet traveled because of its higher velocity. As a result, the elevation compensation that is required for a low velocity airgun pellet may be many times greater than what is needed for a high velocity rifle, but both need elevation compensation to counteract gravity.

The elevation compensation required to hit a distant target is handled within the sighting device on the rifle. When a scope is mounted on a rifle it is almost always parallel to the bore of the firearm. Figure 1 shows the trajectory of a typical long-range application where the projectile trajectory (solid line) passes through the line of sight (dashed line). In the figure, a slight angle between the scope and the rifle barrel is depicted. In reality, the scope and rifle are mounted parallel to each other as discussed above, and this angle is created within the scope optics which adjust the elevation. The elevation correction within a scope points the line of sight downward, which in turn points the bore axis up when the sight is aligned with the target.

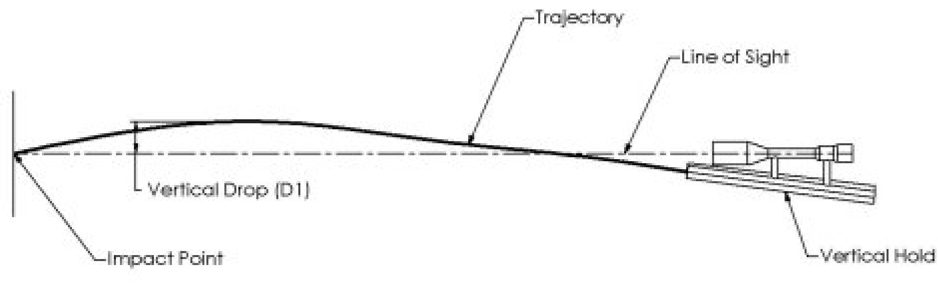


Figure 1

The representation in Figure 1 enables one to visualize the line of sight axis in relationship to the bore axis. Because your eye is the point of reference, when a rifle is unintentionally canted the line of sight becomes your axis of rotation. Cant error is generated when the barrel axis rotates out of the vertical plane (Plane 1 in Figure 2), around the line of sight axis in either a clockwise or a counter-clockwise rotation. The following figures illustrate how cant will affect the impact of the projectile.

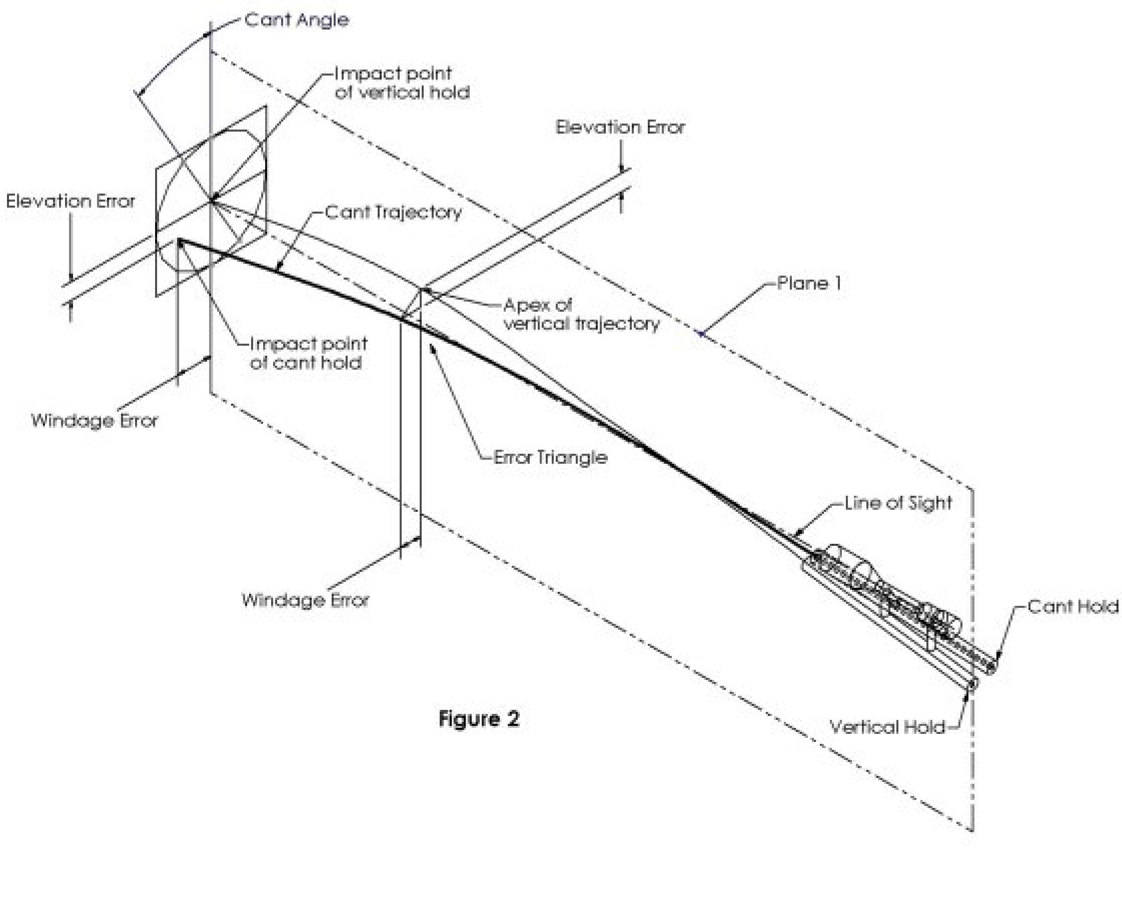


Figure 2

Figure 2, shows an isometric view of Figure 1 with a target at the far end. The relationship between the scope and the barrel does not change when we cant the rifle.

Figure 2 shows the cant hold which is rotated 20° counter-clockwise from the vertical hold. This results in the cant trajectory, which shares the line of sight with the vertical hold but the path of the projectile alters from the vertical hold. The cant error shows up at the impact point. The cant error is due to gravity and barrel rotation. The impact point in this case is low and left of the center of the target.

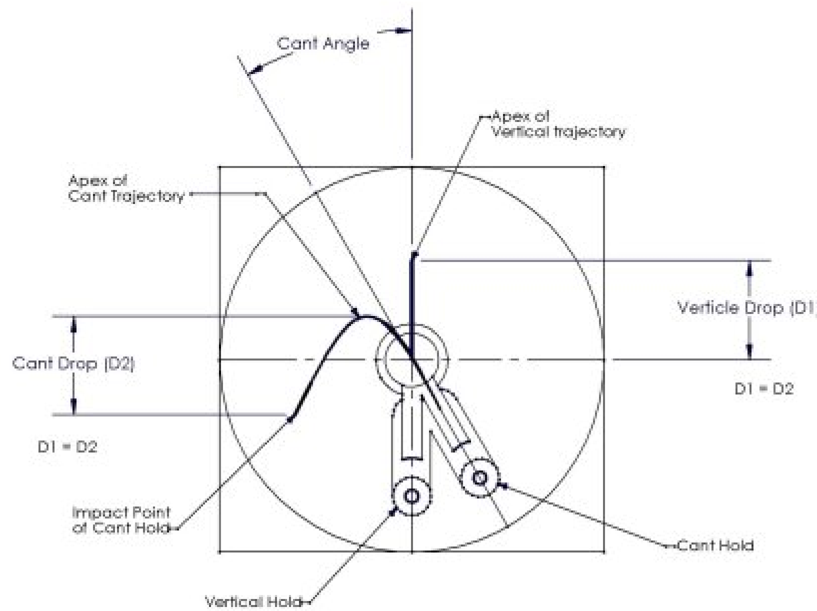


Figure 3

Figure 3, shows an end view of Figure 2. Notice how the trajectory of the vertical hold stays within the vertical plane, so when the projectile drops, it drops into the line of sight and down to the center of the target. The trajectory of the cant hold does not achieve the same height as the trajectory of the vertical hold and the projectile diverges from the line of sight, thereby missing the target. When a rifle is canted, the included angle between the bore and the line of sight, (that compensated for the effects of gravity in the vertical hold), is rotated and acts as a windage error directing the projectile's trajectory laterally off the desired course. This component of cant error becomes more significant at more distant targets due to the increased original included angle between the line of sight axis and the bore axis (more elevation compensation) at the vertical hold. The canted projectile's trajectory does not achieve the full height at the apex of the flight. This accounts for the elevation error at the point of impact. Gravity is still the same, so the drop of the vertical path D1 is equal to the drop in the canted path D2.

Use of large diameter objective scopes, mounted high off the barrel, exacerbates the cant error problem. This type of scope is mounted high off the barrel to clear the large diameter of the objective lens. To keep the scope elevation knobs centered for maximum adjustment, precision shooters sometimes use elevation compensated scope mounting rings or bases. Although, this solves the adjustment problem, it greatly exaggerates cant error because the distance between the bore axis and the line of sight axis increases and the included angle between the sight axis and the bore is larger, producing more windage error when canting. This still does not explain all the error we see in the test results. To see why, we need another view of the cant error figure.

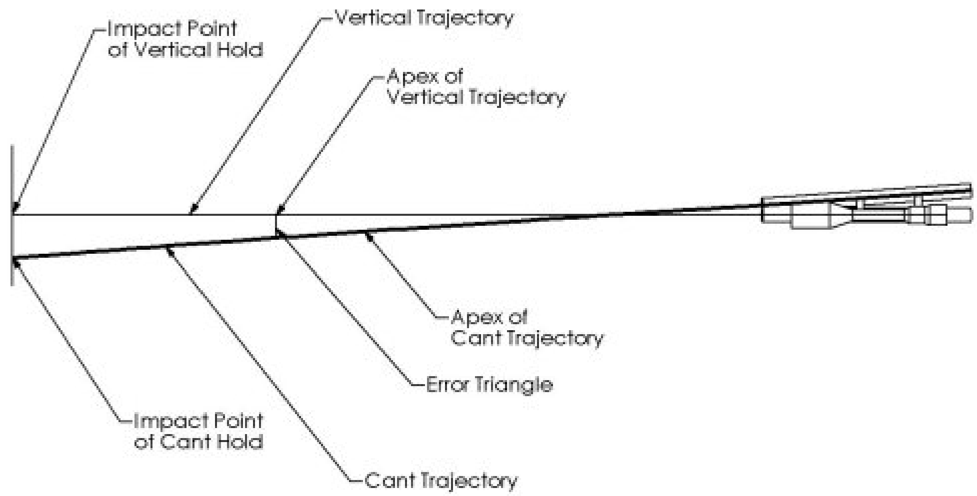


Figure 4

Figure 4 shows a top view of the cant versus vertical hold trajectories with respect to the line of sight axis. The vertical hold trajectory and the line of sight axis are coincident. The cant hold trajectory in this case veers left and continues to diverge further left. Other publications (see references) have indicated that the "error triangle" (depicted in Figure 2), constructed at the apex of the trajectories (shown here as happening at the same point in time for simplicity) describes the entire cant error at the target. The error triangle incorrectly predicts the windage error as the base of the right triangle and the elevation error as the height of the right triangle. In Figure 4 we show that the cant hold trajectory continues to diverge after the apex of the trajectory is reached because the bore of the rifle is actually pointed slightly left and once started on that diverging path, the projectile will continue on that path throughout the length of the flight. Since the velocity and distance of the canted shot is identical to that of the vertical shot, the total drop of each shot is identical. However since the canted shot never reaches the full elevation (lower apex) of the vertical trajectory it will drop below the vertical shot impact point. One can imagine that with extreme long range shots the projectile travels under its induced windage error path for long distances creating large errors. A similar exaggerated windage error effect will be seen for slow projectiles which require larger compensation angles between the line of sight axis and the bore axis. This larger included angle will induce larger windage errors when canted.

Solution

Elevation adjustments are made to compensate for the gravitational pull on the projectile to the earth's surface, which is in a vertical plane. By inadvertently rotating the rifle around the line of sight axis we are inducing a cant error into the shot. Some people believe they can hold the rifle in a vertical position but when you are out in the field there is no true reference for being horizontal to the horizon. Most people tend to use the horizon or the ground to estimate the position. This usually leads to unintentionally canting the rifle and inducing some amount of error, which at long ranges can be very significant. Anti-cant bubbles are difficult at best to try and line up and hold while concentrating on the target. They are distracting to the shooter who needs his full attention on the target. Even very small deviations from a vertical hold can affect the impact point of the projectile, especially at long ranges or with slow projectiles. The Microlevel is an excellent solution to eliminating cant error while not distracting the shooter from his target.

While the best shooting lessons are learned in the field, shooters can make some interesting observations using computer ballistics programs. Such things as bullet drop, wind drift, and energy are all easily calculated using any one of several excellent ballistics programs. This is not to say you can substitute clicking keys for popping caps, but you can deduce the general effects of range, wind, and energy. Alas, as good as these programs are, one thing they do not do very effectively is calculate the effects of canting. Just how does canting a rifle to one side affect bullet trajectory? Have you even given it much consideration?

Canting, just to define our terms, is generally recognized as tilting the rifle to one side relative to its orientation when sighted in. But as I alluded to in a previous article about the mechanical aspects of scope sights, it also can be manifested by a scope whose vertical crosshair is not plumb with the surface of the earth. We will cover that subject later, but let's look at the issue of canting as defined by tilting the rifle itself.

Most shooters realize that the key to properly sighting in a rifle is to maximize the trajectory without incurring misses at shorter ranges. In other words, we want to obtain the optimum point blank range. To do this, we manipulate the sight so the rifle barrel is inclined upward when the line of sight to the target is straight. The bullet, much to our displeasure, immediately begins to feel the effects of gravity when it leaves the rifle barrel. However, the upward orientation of the rifle barrel causes the bullet to rise above the line of sight quickly, generally crossing through the line of sight before the bullet has traveled more than 50 yards. Gravity, of course, begins to pull the bullet back to earth. Air resistance, which rapidly reduces bullet velocity, gives gravity even more time to act and causes the bullet to drop precipitously as the range lengthens. We hope the bullet once again crosses the line of sight at our intended zero. If all of this works as intended, it is indeed incredible to observe a bullet, launched with a mid-range trajectory several feet high, hit an intended target several hundred yards away. Of course, in order for this to occur, everything must happen as intended. The maximum trajectory ordinate must occur at the point calculated -- anything less will have a major impact on trajectory.

To illustrate the importance of this point, consider a rifle zeroed for 200 yards that has a 100-yard impact of 1.3 inches. Suppose you held the rifle in a manner that resulted in the bullet being only 0.3 inches high at 100 yards. What will the effect be at 200 yards? Well, the bullet will be low by only 2 inches (think of 1 inch low at 100 yards in terms of 4 clicks on a scope with 0.25 moa adjustments). Now consider the same rifle, this time zeroed for 600 yards. A 100-yard trajectory change of 1 inch (four clicks low) will result in a bullet impact 6 inches low. At 800 yards the effect is 8 inches.

Of course, a rifle zeroed at 800 yards has a much higher zero than one zeroed at 200 yards, but therein lies the key to understanding the effects of canting. As shooting ranges increase, the height of the bullet above the line of sight increases. At super-long ranges, the bullet is traveling several feet above the line of sight. Tilt the gun only slightly, and you move the trajectory path markedly.

To further illustrate my point, grab a ruler so that only 3 inches are showing. Hold the ruler straight up, and then tilt it slightly. You will notice the end of the ruler hardly moves in relation to where you started. Now grab a yardstick and hold it so most its 36 inches are showing. Tilt it the same as you did with the ruler. The amount that the yardstick moves is significant. You might also notice that the displacement was quite a bit in the horizontal direction, but not so much in the vertical.

If you tilted each measuring device 5°, here is exactly how much you displaced the ends:

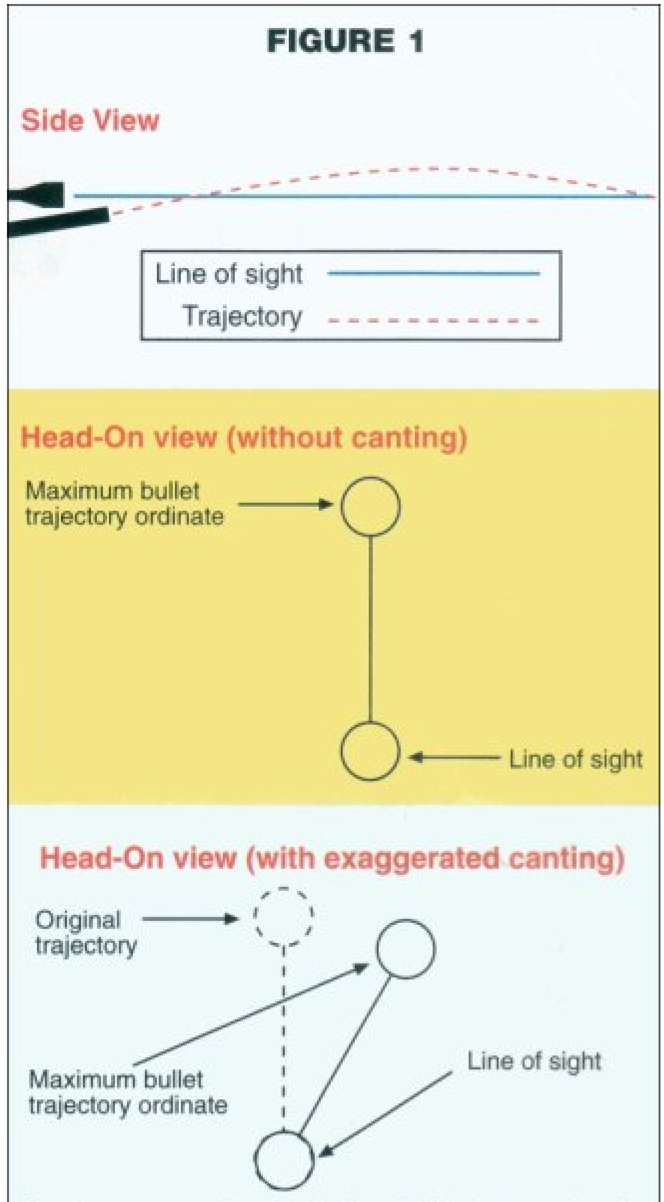
Horizontal Displacement
3-Inch Ruler - .26 inches
36-Inch Yardstick - 3.14 inches

Vertical Displacement
3-Inch Ruler - .011 inches
36-Inch Yardstick - .14 inches

If you picture the 3-inch ruler as the mid-range trajectory of a big game rifle, you can see canting hardly makes a difference. If, however, you like to shoot varmints a long way off, you already know the bullet trajectory must travel way above the line of sight in order to connect at long range. It doesn't take a brain surgeon to see that while the vertical effects are not much, 3 inches is something to deal with, especially considering that 3 inches will result in more than 6 inches of horizontal displacement by the time the bullet gets to the target.

This is the author’s setup for measuring cant angles. By twisting the rifle on a Harris’s S- series bipod until the plumb bob moves 5 degrees and then leveling a second Scope level, 5 degree cants can be duplicated in the field.

Theoretically, canting a rifle produces the same effect as the ruler and yardstick experiment: it moves the bullet horizontally and vertically. Figure 1 illustrates this. Notice the bullet is displaced in the horizontal direction toward the side of the cant. This may seem difficult to comprehend, because when you cant the rifle you always place the crosshairs on the target. This displaces the rifle barrel to the opposite side of the cant, but remember you sighted in the rifle in such a manner as to elevate the rifle barrel in relation to the line of sight. The bullet left the barrel traveling upward, so as to hit high enough to obtain the desired mid-range trajectory. Tilting the gun to the right causes the barrel to be inclined to the right. The end result: the bullet impacts to the right. But how low?



Canting to one side results in a bullet impact that is lower and displaced horizontally.

I contacted many ballisticians and other experts on this subject. One even wrote an article that went into great detail to dismiss the effects of canting in the vertical direction. I will keep their names out of the article (I am sure some things I write will come back to haunt me someday), but suffice to say, I am convinced their opinions are not based on actual field shooting.

If you look at the math (trigonometry), the effects of canting are not difficult to calculate. Let's assume the highest point of trajectory for a long-range shot is 48 inches. If you tilted your rifle 5°, then the horizontal bullet displacement would be 4.2 inches [cosine (90-5)*48]. The vertical change would be almost negligible. Even if you perform the math on the total bullet drop, it still is rather negligible.

After calculating these figures, I decided to do a little shooting to see for myself. First, I had to have a method to measure canting angles. This proved easy. I called the ScopLevel Company and got a few samples of their anti-canting spirit levels. I installed one (#1) on my rifle when I thought the crosshairs looked level. I installed the second one (#2) on the same scope, but did not tighten the screws firmly. Next, I took a thin 90 ° metal bracket and attached one side to the bottom of a .260 Remington rifle. On the other side of the bracket I fastened a protractor that had a plumb bob going through the center. I positioned the protractor so that the plumb bob hung at exactly 90° when the ScopLevel #1 spirit read level. I then rotated the rifle until the plumb bob crossed the 85 ° mark. Following this, I rotated ScopLevel #2 until its spirit read level, and then I tightened the screws. I now had a setup I could use to shoot under measured canting conditions.

I recently received the little .260 Remington, and while I could not seem to get factory loads to shoot under 1+ inches, I had no problem finding a hand load using Sierra 120-grain bullets that shot under one inch. I did not measure the velocity, but I am sure it was nothing to write home about. No matter ... I wanted to see what effect canting would have, and a rifle with a high trajectory at 400 yards would definitely show any ill effects.

I went out to my local shooting range and zeroed the rifle at 400 yards when ScopLevel #1 read level. I shot several groups to be sure of the zero. Next, I rotated the rifle until ScopLevel #2 read level. This produced a cant of 5 °. I shot several groups at 400 yards with the canted rifle, and measured the effects each time.

The results? Surprising, to say the least. When canted, the bullets struck about 4 inches to one side. I expected some horizontal movement. But I did not expect the vertical movement to be as large as it was - the vertical impact averaged 3.75 inches low!

The .260 Remington is a cute little cartridge, but it is certainly no barnburner. I took out one of my 7mm Remington Magnums. This is one of the guns I shoot religiously every week at long range. I usually go to the range, place a target, and then try to guess how the environmental conditions will affect my bullet (I use a laser rangefinder, so the range is not a problem). On that particular day when I shot without any canting, my bullets hit 2 inches to the left and 3.5 inches high at 700 yards. I was more than pleased. I then shot with the rifle canted 5°. The results were astounding.

The bullets hit 6 inches to the right of the uncanted shots, but 8 inches low. The next week I broke out my .220 Swift, which at 700 yards has a trajectory similar to the 7mm. Its bullets hit 7 inches low when canted 5°. Both groups were under 1.5? moa. Future shooting confirmed my initial results.

All three rifles hit much lower than trigonometry calculations would have predicted. I cannot figure out why. The horizontal displacement was just about what I expected (my shooting was done in early morning under calm conditions), but the vertical displacement is difficult to explain. Certainly my shooting results are not statistically valid, but they convinced me that canting creates errors in both the horizontal and vertical directions.

Of course, cants greater than 5° will cause even more error, but based on my experiments, it is unlikely a shooter would find himself canting that much unknowingly. Five degrees is, in my opinion, the limit of what is imperceptible. I will add there is one condition in which you can tilt a rifle more than 5° and not know it. Whenever you are very close to the ground, you have a tendency to assume the ground is level, especially when using a high powered scope. Canting at angles greater than 5° certainly is possible under this condition, because you tend to align the horizontal crosshair with the surface of the ground. Just yesterday, shooting at long range, I nearly forgot to check for canting, and sure enough, I was canting at least 5°.

All things considered, the effects of canting are admittedly minor. Temperature can change the bullet impact quite a bit at ultra-long ranges, and the slightest puff of wind will move the bullet enough to make a horizontal canting miscue a round-off error. But why put up with any canting? There are several devices you can buy rather inexpensively to eliminate any canting. I use ScopLevels because they are fast, lightweight, and can be tucked away neatly when not used.

Another product on the market called the SeeLevel mounts sideways on the scope. It is a little easier to see when mounted, and for portability the ScopLevel tube with the bubble in it unscrews from the mounting ring. In any event, both work, and like many things, sometimes a choice boils down to personal preference. I am not endorsing any product per se, but what else can you buy for 30 bucks that will eliminate error at long ranges?

In the beginning of the story I alluded that canting can take two forms: the shooter and the scope. We have covered the shooter sufficiently, but what of the scope? What impact can scope mounting have on canting? The answer: plenty, and for the same reasons as shooter-induced canting. We all know how scope adjustments work. When we click a scope vertically, it causes the erector tube to deflect downward. When we place the crosshairs on the target, we are actually raising the rifle barrel, because of the deflection of the erector tube. If we click the scope 10 clicks, we move the bullet impact 2.5 inches at 100 yards (assuming the scope has ¼ inch adjustments).

Suppose we sight in our favorite varmint rifle to be dead on at 200 yards. That is a pretty good zero to cover the close targets. With target adjustment knobs, we can click up as required when shooting at longer ranges. For example, let's say we see a sod poodle way out yonder at 500 yards. We know the range because we used a laser rangefinder. Let's further assume there is no wind (humor me, OK), so we click our scope up 36 clicks to raise the bullet trajectory as needed to hit the target.

We carefully caress the trigger, all the while expecting red mist. But instead, we see brown dust. How come? Well, suppose the vertical crosshair of our scope was canted just 5°. Moving the impact up 36 clicks creates a horizontal error of 1.5 inches at 200 yards, or 3.75 inches at 500 yards. (Note: 36 clicks at 200 yards is 18 inches, and 1.5 inches is half the horizontal displacement of our 36-inch yardstick example.) And, just like shooter-induced canting, the effects get worse with increasing range. The same effect occurs when making windage adjustments, only the effects are reversed: the elevation moves more than the horizontal.

How can you get rid of scope mounting cant error? Well, you can pay a gunsmith lots of money, or you can just mount the scope so the vertical crosshair is level. You can buy tools to help you do this, but there is a very simple way to do it for free.

Mount your rifle in a vise. Lacking a vise, plop it in some sandbags on a benchrest. Now hang a plumb bob on a 1/18- 1/8 inch rope about 100 yards away. Adjust the vise and rifle combination so the vertical crosshair is aligned with the string.

Does the crosshair line up with the rope? If it wanders off to one side, then the vertical crosshair of your scope is not plumb with the earth. Simply loosen the mounting screw and rotate until the vertical crosshair tracks on the string. Now, install a ScopLevel or SeeLevel in such a manner that the spirit level is level when the crosshairs cover the rope. Or, if your scope isn't that far off (and it doesn't really matter at moderate ranges), just rotate the scope leveling device until it reads level when the vertical crosshair lines up with the rope. That's all there is to it.

Canting may not seem like much, and trying to precisely control things when actual shooting conditions are so unpredictable may seem like folly. But long-range precision, like any trouble-shooting problem, is all about identifying deviations and then eliminating them. Canting is so easy and inexpensive to fix, I simply cannot imagine a long-range aficionado putting up with it.

We were instructing a number of agency trainers in some basic marksmanship with tactical rifles. Twice each day (first thing in the morning and first thing after lunch) we shot a zeroing confirmation group. We have found that most tactical scopes won't hold a zero, and the scopes on this course were no exception, with about half needing some kind of an adjustment each time, and some needing an alarming amount of adjustment to bring them back on zero. It was interesting to see the reaction of these trainers when they realized this, and they began to talk about the number of failures they got during the qualification course of fire. They were wondering if they could change this if they just did a zeroing exercise prior to the test. Then they wondered about the number of officers who were now out on the street with rifles that weren't zeroed. We suggested that they keep records on every scope in their agency every time it passed through the qualifications tests so they would know which ones always needed some kind of zeroing adjustment. Scopes with a history of this needed to be returned to the manufacturer or exchanged. If there were very many with this problem, then a different model of scope needed to be put into service.

Linda K. Miller and Keith Cunningham, Secrets of Mental Marksmanship

Gary Anderson's Ten Lessons for Competitive Shooters

In the archives of On The Mark magazine, DCM Emeritus Gary Anderson, an Olympic Gold medal-winning shooter in his younger years, offers sage advice for competitive shooters.

In his article *Ten Lessons I Wished I Had Learned as a Young Shooter*, Anderson provides ten important guidelines for everyone involved in competitive shooting. Here are the Ten Lessons, but you should read the full article. Anderson provides detailed explanations of each topic with examples from his shooting career.

LESSON 1 – NATURAL ABILITY WILL NOT MAKE YOU A SHOOTING CHAMPION.
(You also need hard work, training effort and perseverance.)

LESSON 2 – ANGER IS THE ENEMY OF GOOD SHOOTING.
(The key to recovering from a bad shot is to stay cool, no matter what happens.)

LESSON 3 – BAD SHOTS CAN TEACH YOU MORE THAN GOOD SHOTS.
(Today, error analysis is one of the most powerful tools for improving scores.)

LESSON 4 – NEVER GO WITHOUT A SHOT PLAN.
(A shot plan is a detailed breakdown of each of the steps involved in firing a shot.)

LESSON 5 – PRACTICE IN BAD CONDITIONS AS WELL AS GOOD CONDITIONS.
(Most competitions are fired in windy conditions or where there are plenty of distractions.)

LESSON 6 – CHAMPIONS ARE POSITIVE, OPTIMISTIC PEOPLE.
(Negative shooters expect bad results; positive shooters expect to train hard to *change* bad results.)

LESSON 7 – IT'S NOT ABOUT WHETHER YOU WIN OR LOSE.
(It's about how hard you *try* to win.)

LESSON 8 – YOUR DOG WON'T BITE YOU AFTER SHOOTING A BAD SCORE.
(Hopefully your coach, parents and friends won't bite you either.)

LESSON 9 – YOUR PRESS CLIPPINGS CAN HURT YOU OR HELP YOU.
(Winning can go to our heads. We start thinking we are so good we don't have to work hard any more.)

LESSON 10 — YOU NEVER SHOT YOUR BEST SCORE.
(Great champions are always looking for ways to improve.)

Manitoba Provincial Rifle Association Presents:

MANITOBA AIRGUN PROVINCIAL CHAMPIONSHIPS

MPRA Shooting Sport Performance Centre
711 Leola Street
Winnipeg, MB R2C 2R3

Authorized SFC High Performance Air Pistol/Rifle Cut Score Match

The Manitoba Provincial Rifle Association invites you to join us at our new Shooting Sport Performance Centre for a 2-day Air Rifle/Pistol Event. All courses of fire on **SIUS Ascor Scoring Systems**.

Judges: Steven Spinney ~ ISSF Judge Level A - Rifle, ETS
(complies with HP cut score match regulations for both Air Pistol and Air Rifle competitions)

Day 1 (June 4, 2016)

Air Rifle and Air Pistol
Ladies: 40 shot match
Men: 60 shot match

Finals as per ISSF Rules

Day 2 (June 5, 2016)

Air Rifle and Air Pistol
Ladies: 60 shot match
Men: 40 shot match

Combined Men and Ladies Final (top eight based on 100 shot combined total from Day 1 & Day 2)

Provincial Championship & Match Winner:
0.5 to 4.0 points added to two day combined match score (dependent on placement in finals) to determine Match Winner and Provincial Champion. Please note only Manitoba Residents can be awarded Provincial Championship. Finals from Day 1 do not have a bearing on the Provincial Championships and are being shot to comply with cut score eligibility requirements.

Equipment Check and Pre event training: 4-7 pm Friday, June 3, 2016
***Equipment check is optional, random testing will be done.

Match Rules:
SFC and ISSF rules will apply.
It is the responsibility of the athlete and coaches to be familiar with the current ISSF rules.
All athletes will be classified as per the SFC classification system and must be in good standing with the SFC
Classification will be checked with the SFC prior to the competition.
ALL equipment must meet ISSF specifications.

Registration: Relays filled on a first come, first served basis. Payment due with registration (registration accepted on site if positions available).

Accommodations: Closest hotels to the Shooting Sport Performance Centre
(please note they do not offer shuttle service from the airport)

Canad Inns Transcona - 826 Regent Ave W, Winnipeg, MB R2C 3A8, Phone:(204) 224-1681
Club Regent Casino - 1415 Regent Ave W, Winnipeg, MB R2C 3B2, Phone:(204) 667-5560

Please make cheques payable to: Manitoba Provincial Rifle Association

Mail entries to: Manitoba Provincial Championships
226 Dawnville Drive
Winnipeg, MB R3W 1L2
Email: manitobarifle@gmail.com

Lisa Deneka
Match Director
Ph: (204) 781-8479

Please note: The Organizing Committee reserves the right to modify the rules and procedures dependant on the conditions

Manitoba Provincial Rifle Association Presents:

MANITOBA AIRGUN PROVINCIAL CHAMPIONSHIPS

Please Print!

COMPETITOR NAME: ____

ADDRESS ___________________________ **CITY** ______________________

PROV _______________ **POSTAL CODE** ___________________

PHONE: _____________________ **EMAIL:** ____________________________

DATE OF BIRTH: _______________ **(IJ & SJ only) SFC #** ____________________

Male: ☐ **Female:** ☐ **Pistol:** ☐ **Rifle:** ☐

SFC Classification: MA ☐ **EX** ☐ **SS** ☐ **MM** ☐ **IJ** ☐ **SJ** ☐

International Junior - under 21 as of December 31, 2016. Sub Junior ~ under 17 as of December 31, 2016.

RELAYS (POSITIONS FILLED ON A FIRST COME FIRST SERVED BASIS)**:**

Saturday, June 4, 2016 (HP cut score match)

RELAY 1: 09:00: ☐ RELAY 2 11:00: ☐

Sunday, June 5, 2016

RELAY 1: 09:00: ☐ RELAY 2 11:00: ☐

FEES:

Men / Women / Jr. Men / Jr. Women $75.00

****Please note: No refunds will be given after May 15, 2016. Refunds prior to May 15, 2016 will be charged a $25 administration fee.**