

## USIMLT Long Range coaching update #7

July 2013

As I begin writing this I had just returned from a trip to Butner, NC where I took part in the USIMLT national championships. It was basically a dry run for the upcoming world championships in South Africa. We shot on the proper targets, and used the same positions as we will in the world match in September.

For those who were not there we spent the first day practicing with me coaching and everyone else shooting four at a time. It was a day of learning together.

At 300 yards I started by having the shooters begin with their sights centered for windage so I could see if their "no wind zeros" were close to correct. In approximately half the cases they were pretty close. The others, not so much.

I did not really care where the groups were on the target at this first distance as I was more concerned with the size of the groups that were being fired than the score fired. It was important to leave the groups alone and not chase the shots around trying to get to center so I could focus on shooting techniques and watching for patterns to emerge as the groups formed on the targets.

Once we moved back to 500 yards I once again asked the shooters to fire their first shots on their no wind zero's to see if they were where they should be, then I began to give windage changes as I would in a match so we could start learning how to communicate, and to see if the adjustments worked like they should.

I did see some problems and trends that I had me wondering about the causes, so the next day when we started the match, every time I had a chance, I checked out the positions of the shooters and saw things that were not so obvious while attempting to coach four shooters at a time. I saw a few things that explained a lot of what I saw the first day while coaching.

One of the minor problems I noticed right off while coaching was that there are a few shooters that can not call their shots. Calling shots is as simple as telling the coach exactly where the front sight was on the target when the rifle fired. You also need to be able to tell if the sights were moving and in what direction. Only then can you or the coach begin to have some idea if the shots are going where they should be. If you can not give the coach a very accurate picture of where the shot should have hit then there is nothing the coach can do to help you to get centered on the target without firing a bunch of shots and then adjusting from the theoretical center of that group. Calling your shots is one of the basic foundation blocks on which to improve. It is not something to learn later, it is one of the first things to learn to do well. So if you can not call your shots that is the first thing you must learn to do. It is something you must do during every shot you fire whether practice or match shooting. If you can not call the shots you do not have an expectation of where the shot should go, so you can not learn or get better. Which is why I call it one of the foundation blocks to build upon.

Another minor problem I noticed was when I saw a group just suddenly move on the target without reason or warning, as in someone would be shooting a fair group on one part of the target and suddenly the hits moves to another spot on the target. In this case it had warmed up in the afternoon, and the fouling began building up up in the rifling due to improper cleaning. In a couple of cases I asked them to try a different approach to cleaning right on the spot. Many of you were taught to do a very minimal cleaning between shots, and that works most of the time with original British rifles because they were designed to be shot without cleaning, it also works well a lot of the time when the temps are cooler, but it doesn't work worth a crud with modern rifling in my experience in warm weather. So if your group moves to a new spot on the target every once in a while, especially on a warm afternoon, then clean twice as much and see if the group moves back to where it belongs. It's like I have said for years, "if in doubt... clean."

I also noticed that not everyone had accurate no wind zero's. This will of course be mandatory for those who are shooting in either of the team matches or we can simply never work together as a team. It is also important for anyone that wants to be able to make accurate adjustments either way of center as the wind changes from side to side.

No wind Zeros can be set up very closely for the mid range distances by shooting at a target at short range with a vertical line through the target and extending up for some distance. You can then fire groups at that target with the 300, 500, and 600 yard sight settings on your rifle. The shots should land on that vertical line. If they do not, then you can calculate how many MOA the sights are off from the placement of the shots in relation to the line.

At longer distances it is not so easy, as you start running into a drift of the bullet caused by what is called the "yaw of repose". Basically a right hand twist bullet wonders off to the right and a left hand twist causes a bullet to wonder to the left at longer distances. It varies depending on flight time, nose shape and etc, but it will be two to three feet with most our rifles at 1000 yards, so that makes it a bit more difficult to locate your exact no wind zero by using a line on a short range target.

There is also another phenomena that will effect your no wind zero at the longest ranges called "the corralus effect" which has to do with the bullet traveling above the earth while the earth rotates under it. I'm not going to take time to explain that here, but it can make as much as a foot of difference in the windage of a rifle at 1000 yards depending on velocity of bullet, the direction of bullet travel in relation to a compass, and the distance from the equator.

For those reasons we will need to compare our no wind zeros at long range once we are on the range together in South Africa, but if we are the same here we will be the same over there in relation to one another. As I recall, my no wind zeroes used here were correct in 2007 on that range, but it is something to double check before the team match begins.

The number one problem I saw while coaching was shots jumping up and down vertically on the target, which is typically caused by position problems. The most common problem is the rifle slipping on the shoulder under recoil which allows the rifle butt to move down and the muzzle up as the bullet is leaving. I touched on that in a previous coaching update, and have told some shooters this very thing repeatedly while diagnosing the targets they sent me last summer, but it appears that in most cases the shooters that were diagnosed with that problem last summer still had it this summer. In fact not one of the shooters I told last year that they had this problem had figured out how to correct it on their own.

At first it was a little frustrating to realize that most of what I wrote last year had little effect, but after a while I realized that most shooters have a lot of trouble visualizing what they are doing when they are in position. Which seems to indicate that a lot more one on one coaching is what is needed so I can explain and point out what I was talking about in the previous updates. I worked with several of the guys one on one at Butner and showed them what I was talking about and suddenly it made sense to them, which makes me believe that we need to have an intensive coaching and training session yearly. If we did that we might be surprised what we can learn from one another.

After I got home from Butner I decided to write a personal email to each of the shooters I coached (if I had their email address) to reinforce what I had shown them while coaching them, or to point out something I saw while watching them shoot the match. In a couple of instances a few minutes worth of coaching one on one was worth more than all the typing I did in the last year, and I was hoping to build upon that with the emails. In some instances I also assigned shooters to work together and told them what to watch for when coaching one another. If nothing else we have a lot of hard work going on right now that I believe will pay off in SA.

I guess what I am saying is that I never expected to fix everyone's problems in time for the trip to SA this year. This coaching effort is an ongoing experiment. We will learn how to shoot and learn how to coach and be coached as we go along. Hopefully we will see dividends from this coaching effort this year, and many more in the years to come as we continue to work together.

For that reason, as long as I am coach of the team, I will gladly spend time with each of you individually at a match or at my place on a weekend. If you would like a little one on one time with me, don't be shy to ask. I'll not force my opinions or assistance on anyone, but I do this sort of thing regularly and I am glad to help in any way I can.

Once I realized that most shooters do not know what their positions actually look like, I decided to go back and show a couple of pictures of mine again and discuss what I saw being done wrong.

The absolute #1 position problem I see is with improper shoulder placement of the rifle. The best shoulder placement is what I use as pictured in the picture below. If you notice in that picture, the heel of the stock is actually above my shoulder just a little bit. It is not absolutely mandatory that it be above the shoulder as in the picture, but if you have a slick butt plate and have it low enough on the shoulder that there is any meat of your shoulder that is above the radius on the heel of the butt plate, then you are in danger of stringing shots vertically.

My butt plate is finely checkered and even then if I let that stock get lower on my shoulder it will toss the shots high on the target every time. Placing that butt exactly the same and getting it high enough on the shoulder is more important than you can imagine till you have worked through the problem.

At Butner while shooting the mid range match, several times I saw a little wind change and stopped my shot to look in the spotting scope to check the mirage. I normally will then go back to my position and begin again at getting the butt in the right spot exactly, but twice I chose not to begin again as it felt like the stock was about right. Both those shots went high for 3's. This is what happens about 80% of the time if I do not force myself to begin the process again to make sure the butt is placed exactly where it should be when I am shooting from a sling. I shot a 42.2 on that target and gave up at least a couple of points out of

carelessness. Those are the kinds of mistakes that cost you matches, and medals.



Now I have to be honest with you. I am adamant about the high position, but I was beaten at that match by two guys that shoot with the rifle a little lower. I was not beaten because of their lower positions though. It was my own silly mistakes that caused it.

Dave Gullo places his rifle lower in the shoulder so the heel of the butt is just under his collar bone from what I saw, but it also appeared as though he was not using a recoil shield under his coat. Using the collar bone to locate the butt (which you can do if you do not use a recoil shield) will work rather well if you have a checkered butt on your rifle as he does to keep it from slipping. He shot well and consistent throughout the match and ended up winning it, but once he got home I asked him to try a slightly higher position and see how it worked for him. It may not make a difference, but I have no doubt that he will give it a good test.

Dick Hoff understands the need to keep the shoulder behind the rifle as I had a discussion with him years ago during his first world match where his shots were stringing vertically, and I suggested he try getting his shoulder down behind the butt instead of using the position that worked for him as a high power shooter. His vertical problems went away and his scores picked up.

At Butner, Dick shot exceptionally well at the 300 and 500 distances, but I had made the statement early on that he would suffer by the time he got to 600. Frankly, after his excellent score at 500 I thought I might have to eat my words, but at 600 he shot just a fair score and let Gullo slip past him for the win.

What Dick was doing that I was sure would cause a problem as the distances got longer is that he was shooting his low position that he used in high power, but he drops his shoulder down to get it squarely behind the butt of the rifle. That throws his right shoulder well below the left shoulder, and by the time he gets out to 600 that shoulder is nearly touching the ground, which makes it more and more difficult to keep the

shoulder placed properly behind the stock. At longer distances he is using a wrist rest which forces his forward hand up and gets him into a more natural position, so the 600 is his weakest distance as I see it. At least for now. We discussed it, and he is working on the problem and will be simply unbeatable at the mid range if he gets it worked out.

Another example in the opposite direction is Ed Decker. I have used Ed as an example several times over the last year as we learn things together, and we have had a lot of fun together. I got to watching Ed shoot as I was keeping score for him and realized that he was using a pretty low position that was a little odd. He had his left arm stretched out forward for a low position, which pulled his left shoulder down low, but then he pulled his right arm up tight to his side which pushed his right shoulder nearly five inches higher than the left. He was then placing the rifle several inches down from his shoulder on the right side of his chest and not laying square with the target. Which resulted in a lot of vertical stringing with high shots.

I discussed it with him and for his last shot at 900 yards he decided to try making a change and get the rifle up on his shoulder proper like. The shot hit the dirt in front of the target, which is exactly what it should have done with it not slipping off his shoulder so much on that shot.

This reminds me of when Mon Yee checkered the butt plate of his rifle. Mon is kind of barrel chested and short armed so he has position challenges anyway, then when you add in the original rifle he shoots with even more drop than the rifles that are built for prone shooting like the rest of us, and you end up in a situation where you can have a lot of shoulder slip going on. When he checkered his butt plate it changed his elevation settings by about 12 moa because of the shoulder slip that it helped eliminate.

You have to understand that if your position is not right the butt will indeed move down and the muzzle up as the bullet travels down the bore, and the muzzle is simply aimed at a different spot each time the bullet leaves.

Kenn Heismann conducted an experiment with his rifle to see if it was slipping. He glued a piece of coarse sand paper to the butt of his rifle to see if his groups or sight settings changed. It did not, so that showed that he had the rifle shouldered well enough. Keep in mind that gluing sand paper on for the match is not legal, but it was a worthwhile experiment to double check his position, and one that everyone might think about performing with their rifles to double check your own position.

I proved to one shooter that his rifle could not possibly stay on his shoulder the way he was shooting it, by getting him into position as if he were going to fire the shot and then with two fingers on top of his stock I pushed the rifle completely off his shoulder with ease. He then changed the way he was holding it and his groups went from 6 moa vertical to under one. He recently sent me a target that was by far the best he has ever done with a sling.

There will be no further coaching updates before we leave to go to SA in September. All the information you need is generally covered in the updates I have written so far anyway. if you saved them I would highly recommend that you read them again. Especially the one on the winning attitude, and the one about position shooting and how to get in the position correctly. (this is more important if you have just recently changed your position)

I will be going to the mid range match at Cincinnati in a few days to have one last look at some of

the guys, then I will be doing no more shooting other than practice at the local range till the trip to SA. I just ordered my lead so I can begin making bullets, and etc. so I have plenty to do to keep me busy till then.

As far as those of you who are training regularly it is time to be working on the match. Each target needs to be shot like the match even if it is just practice. You need to set everything up as you would for the match, shoot your three sighters and convert or go for score as you will in the match and etc. It's time to quit shooting the .22 or whatever your practice regimen has been and shoot the match from now on. We have less than two months till we pack up to go to SA and that is just enough time to get the match ingrained into your habits.

If you can't go to the range, then take an hour and visualize going through all the motions of shooting a target, from setting up your gear, shooting your sighter shots, cleaning between shots and etc, and it will be just about as if you really did it.

If you go to the range for a quick practice session, make it a 13 shot practice. In the match we will set up our gear and shoot 13 shots then tear down and do it again later. Do that in practice. If you typically go out and shoot a dozen shots to get warmed up, then you will feel the need to do so at the match, and that won't work. You have to go to the range at the match, set up your gear and shoot a good score first thing in the morning or after a lunch break with no warm up shots, so it is time to start practicing like that. If you are going to put in a full day of practice, then just do it as if it were a target, then take a break and do it over again.

Force yourself to use your natural point of aim properly for every shot. Visualize each shot for a second before you make it, read the wind, and make the shot. Fire the shots subconsciously, and don't jump on the trigger. Just relax and let it happen. Once you have the routines developed, if you use them it will work. If you fail to use them you will lose points for it.

Mostly you need to remember that the person that makes the least mistakes is the one to win a match, it is not the one who shoots the most bulls. Although the most bulls sometimes comes to him who makes the least mistakes. It's just so important to get in position properly every time, use your natural point of aim every time, and squeeze the shot off smoothly every time! (it is less important to be perfectly centered on the target than it is to get off a good smooth shot!) If you do all of the above you will go a long way toward delivering your best performance at the match.

One thing I want to point out is that each target fired at the world championships is a match unto itself. In this country we tend to look upon the aggregate winner as the actual winner of a match, but that is not the way it is in these World championships. This world championships is made up of five individual championships at five different distances, the aggregates are not even considered events according to the MLAIC although awards will be given to the high scoring individuals.

Basically if you win the 300 meter distance you are considered the 300 meter world champion, and so on for the remainder of the targets. If you have a bad target, just think nothing of it as there are four other championships to shoot in during the match. I'm not telling you this so you can screw off on a target, but hopefully so if you do have a disappointing target you will not allow that score to effect your performance on the next distance.

We are now less than two months from the big match. We will have very few more chances to see

one another before we leave for South Africa. We started this coaching effort well over a year ago, and as I suspected at the time, it was not not enough time to accomplish all I would like to have done, but I think we will see in SA that it was worth doing. My initial goals were; To help create team shooters that could be called upon to shoot the team matches and be capable of bringing home medals, and to close up the gap between the scores of the top American shooters and everyone else. I would like to think we have taken steps towards accomplishing those goals, but we will not know for sure till after the match.

I have asked you in some cases to do some unorthodox things to learn how to shoot with a sling. Most of you have not done them and have not taken me serious in many cases. I understand that many of you have been shooting as long or longer than I have and don't figure you need much help. That is your prerogative to do as you please. Participation has not been mandatory, and never will be. I would like to share one target with you though before I close.

This target was shot by a fella that had no real practical experience with a sling before this coaching effort began, but he is the kind of person that trusts me when I tell him to do something and how to do it, and he did what I asked at every stage through the last year. He probably shot up about 2500 rounds with a 12 pound .22 rifle. He started shooting with no sling and only a T shirt then graduated to a shooting coat with no sling. I did not have him shooting a sling or his muzzle loader all winter. This spring when the weather got good enough he started practicing with his muzzle loader and sling occasionally, but mostly spent his time testing bullets and double checking the accuracy of his rifle, and of course time with the .22 and no sling.

Lately he has been practicing more and more with the muzzle loader and less with the .22 till I finally told him it was time to leave the .22 alone and concentrate on shooting the match every time he goes to the range with his muzzle loader.

Over the last year he has sent me something like 50 targets to look at that he had fired with his .22 and the muzzle loader. Basically every target fired I got to see and discuss with him. He has sent me nearly three times as many targets as everyone else combined.

So how is he doing?

Well take a look at one of his recent 100 yard targets fired with sling. It is ten shots only as I told him to do. Not a bunch of warm up shots, just fouled the gun and went to work in a 15 mph twitchy headwind.



He had one shot go directly low that he could not explain.

He pulled one shot when he anticipated the shot and it went low and right. Basically lost focus and did not allow the shot to be fired subconsciously.

He had one shot that went out the left because he saw a wind change and dialed it in, and the wind changed back before he got the shot off.

The other seven shots are in one hole that is well under a moa wide and about ½ moa tall.

He's not perfect yet. He still makes mistakes, but this is a great example of what you can learn to do in a year's time if you are willing to put in the effort.

Frankly I challenge anyone else on the team to match it.

Well enough for now. We have about six weeks to work yet, and then final packing and we will meet in SA. I wish everyone the best at the match. It has been my honor to be assigned as coach for team USA for this world championship. It has been my pleasure to assist the team in any way I could, to write all these coaching updates, and work with the team members individually as they chose. I especially want to thank those who have allowed me to use their names in these updates in association with things we have learned. Hopefully it was not too embarrassing to have your names mentioned here.

For all those going to SA, I will see you there if not at Cincinnati this weekend.

Just remember;

Practice the match!

Lee Shaver