Friend's Story: One Soldier's Adventures in Marksmanship

Sgt. 1st Class Kristoffer Friend

My first memory of shooting a gun was in a secluded sand pit in Maine while on vacation. My father taught me firearm safety and let me shoot almost every round of ammunition we brought that day into cans, paper, and whatever else we thought would be fun to shoot at that day. I was 8 years old and I was hooked. From that point on, I looked forward to every opportunity I received to shoot rifles, shotguns, or pistols.

Fast forward to my Freshman year in high school, my father introduced me into competitive shooting, thanks to some of his coworkers who competed in an adult Smallbore rifle league. I was fortunate to join a junior Smallbore rifle club that taught me fundamentals of marksmanship at 13 years old, that I would never imagine I would later in life have to teach to service members.

While I enjoyed Smallbore shooting and competed in the Junior Olympics at the Olympic Training Center in Colorado Springs, my passion for competitive shooting was in the discipline of Service Rifle High Power shooting. And a trip to Camp Perry, Ohio, the home of the National Matches, would forever change my life.

In 2001, as a member of the Connecticut Junior High Power Rifle Team I made my first trip out to Camp Perry National Guard Base. I stayed in "renovated" WWII POW huts on base which has been home to competitive shooting since the early 1900s. I was competing in the CMP National Matches for the first time surrounded by kids my age up to senior shooters in their late 80s. This style of competitive shooting, where shooters use rifles that resemble issue service rifles (AR-15/M16, M1A/M14, M1 Garand) at distances of 200, 300, 600, and 1000 yards, was the foundation of what would be a long career in competitive shooting.

Year after year I would travel out to Ohio from Connecticut to compete. The environment of being on a military base surrounded by thousands of competitors, and being exposed to military members from every branch of service, was an experience I wish everyone could experience at least once in their lives. I quickly showed an advancing skill level and was often near the top of the standings of junior competitors. This would result in the military shooters recruiting me to join the military and earn a slot on their team. I was no exception to this even in my first year at Camp Perry. I was too young to be recruited but my father had plenty of conversations on my behalf. Then, once I was 17 years old, I made the decision to enlist in the Army Reserve right before my senior year of high school. I would miss the 2004 National Matches while attending basic training at Fort Sill, OK where I would first realize my experiences with competitive shooting before entering the military would benefit me greatly, even if I would get some unwanted attention from drill sergeants…

While learning Basic Rifle Marksmanship as a platoon in basic training I would make the mistake of correcting drill sergeants when they gave out wrong information. This happened several times. This went over as well as you'd expect, however, I would quickly be designated by cadre as the one to go to if someone was having an issue with their rifle since we did not have unit armorers following us around. And when it came time to qualify, I had a group of drill sergeants breathing down my neck awaiting my score: 36 out of 40… As expected, "What's the matter, Private Friend, you couldn't shoot 40 out of 40?" was the anticipated question. "Well drill sergeant, I had 2 double feeds. What would you like me to do with these four rounds I was

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In This Issue

Above and Right: *SFC Friend has taken first place overall in the President's match twice and has made the President's Hundred numerous times.*

forced to eject?" Despite this, I was the first trainee to qualify and the only to qualify expert that day.

In 2005 I would return to Camp Perry to compete, not as a member of a military team, but still a member of the CT Junior Team. I had not yet earned an invite to be on the USAR team and wanted to continue competing with my friends as a Junior competitor (less than 21 years old). I made the prestigious President's Hundred that year, finishing 88th out of over 1200 competitors. This was the final resume builder to get an invite to be on the USAR Service Rifle Team. I had decided I would like to finish out the 2006 season as a member of the CT Junior team and would accept the position on the team as soon as I was no longer considered a "junior" shooter. My first match with the USAR team was the "Enlisted Men's Team Match" where I would fire a personal high score of 489 (out of a possible 500) while sighting in a brand-new rifle during the match.

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My first year as a full-fledged member of the USAR rifle team was 2007. I showed up to Quantico, VA to compete in Interservice Rifle Championships as green and inexperienced as I ever felt. I was surrounded by shooters I had looked up to since first meeting them in 2001. National Champions, record holders, Distinguished riflemen, I felt like I knew nothing. But in contrast, when I was back home at my Army Reserve unit, my competitive shooting experience made me the subject matter expert, even when being one of the youngest members of my unit. As a Specialist, I single handily improved the rifle qualification rate of my unit so drastically that my Commander recommended me for an Army Commendation Medal. Getting a medical unit to qualify is no joke… But back to Interservice, as a new member of the team, often referred to as a "Tyro" I received points towards my distinguished riflemen's badge, which is considered to be one of the hardest Excellence in Competition matches to compete in the nation. I would contribute solid scores during team matches and show that as a young Sergeant, I could contribute instantly to the success of the USAR Service Rifle Team. From Interservice we would travel to Camp Perry and my beginner's luck season would continue. I would finish as the highest Non-Distinguished Shooter in the National Individual Trophy match, finally receiving my 30 points needed to become Distinguished. That wouldn't be the highlight of my season. In the President's Rifle Match, I would finish in 3rd to enter the first ever Top 20 Shoot-Off to determine the winner of the match. Before that season,

Above: *Service Rifle competition has had a very strong influence on training and equipment throughout all branches of the military. The from the very concept of developing a Shot Process and mass marksmanship training, pair firing as spotter/shooter as used in sniping, and improvements to all issue rifles, from the M1873 Springfield to the M16/M4 today have derived from Service Rifle competition.*

I had never finished higher than 88th. After 10 shots in the shoot-off, I would walk away as the President's Trophy Winner beating 1264 other shooters as a 21-year-old Sergeant in his first season as a military rifle team member. That level of success would not be attributed to any sort of army marksmanship training or advanced sniper school or anything my drill sergeant told me. It was because I had been competing in marksmanship events since the age of 13 and had began shooting at the age of 8. I had been on a junior rifle team where many of my teammates went on to serve in different military branches and become members of other military shooting teams.

Since that first season on the team I have been fortunate enough to win the President's Rifle Trophy a second time, be a member on multiple National Championship Teams, traveled to Africa to compete in the South African Combat Rifle Association matches, and continued to compete on the USAR rifle team. But most importantly, I have had the opportunity to share my knowledge with other Soldiers. I have been on many Mobile Training Team missions to instruct unit marksmanship, conduct matches, and teach Soldiers from Private to Colonel how to shoot. It is not common for service members to have advanced marksmanship skills before entering the military. I have seen firsthand how some Soldiers can have served for decades without advancing their marksmanship skills past the most basic level. The importance of marksmanship to every military member cannot be overlooked. We stress many things such as physical fitness and NCOES and making sure your GAT is green, but if you don't qualify, don't worry. You will have another chance next time. Army Reserve Units do not focus well enough on their marksmanship training. With changes to Army rifle qualification and training that have already occurred, many units will fall further behind the curve. Competition is an amazingly effective way to improve skill level.

Army Reserve Units should be mandated to take advantage of events such as All Army at Fort Benning, All Reserve Championships, National Guard area combat matches, invite the USAR Competitive Marksmanship program to come conduct instruction and run matches, and participating in the Army Reserve Postal Match. Not only do these events help increase the level of knowledge and skill in unit members that will go on to sharing that knowledge with the rest of their fellow Soldiers, but it boosts morale and increases retention. Commanders at all levels should support their Soldiers, regardless of their respective unit's mission, in participating in competitive marksmanship events. ARM

Don't Over Stare Your Sights!

Sgt. 1st Class Kristoffer Friend

Stare at this cross and count to about 10...

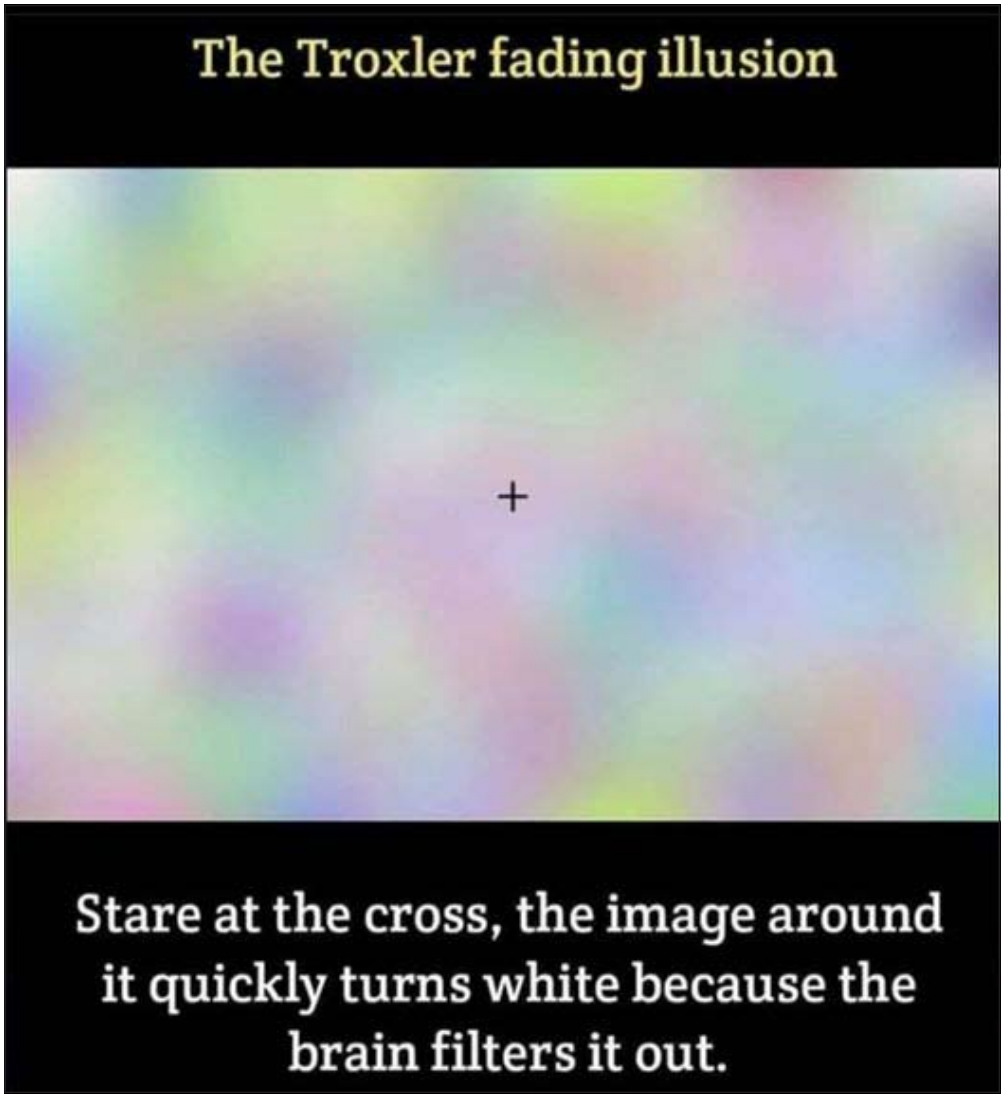
You'll notice that the longer you stare, the more the details of the surrounding cluster fade to away to white.

This is why staring at your sight picture too long can screw you. This phenomena is due to sensory processing in the eye AND the brain.

Lesson learned: Get on the sights and pull the trigger!

Raise your hand if you have ever stared down your sights for a really long time trying to dress everything up to shoot that pinwheel X only to get a corner 9 after you finally take the shot...

Now consider staring hard at the reticle in your super awesome scope for the same amount of time.



This is happening when you stay on the sights too long. Things start to wash out and your perception of aiming point will diminish with every second. It has nothing to do with oxygen deprivation, but a sensory phenomena that involves the eye and brain.

Long story short, don't stare at the sights too long.

ARM

Sight Reliability

How reliable are issue sights? How do optics compare to iron sights?

by Sgt. Stephanie Martz

This article appears courtesy of *American Gunsmith* from their April 2019 issue.

The failure to use something to our advantage is not always arrogance but sometimes ignorance, or simply being unaware of something. I once walked into a unit and saw 120 M68 Close Combat Optics (CCO) just sitting inside of a cage not being used on weapons. When I asked if they had ever been used the Supply NCO stated "No, we don't want to mount them because our Soldiers do not know how to use them." Wrong answer. Not using those CCOs is not what is best for the Soldiers, the unit, or even the Small Arms Techs. Like any repair, let's look at time, money, and equipment for optics versus iron sights on a M4 rifle, specifically the CCO compared to a Back-Up Iron Sight (BUIS) from a maintenance perspective.

The last unit we were at had 160 M4 Carbines that had both a CCO and BUIS installed. Out of those 160 carbines, I wrote up 22 iron sight deficiencies and zero CCO deficiencies.

Time

The usual deficiency on a BUIS is the pin walking out on the sight aperture, causing it to flip up during firing. The usual way to fix this is to stake the pin. There are about four parts that need disassembly to get to the aperture. Once the aperture is out the metal needs to be staked, which also takes time due to the toughness of the metal. Fun fact, that aperture now comes dimpled from the manufacturer meaning that pin was riding out so often they found a way to try and mitigate the problem before it needed to be staked. Between cutting the work order, ordering and waiting on the part, and repairing, it will add up to at least two visits to the unit and 0.5 man-hours each . The front sight post also oftentimes needs to be replaced due to being scratched or bent.

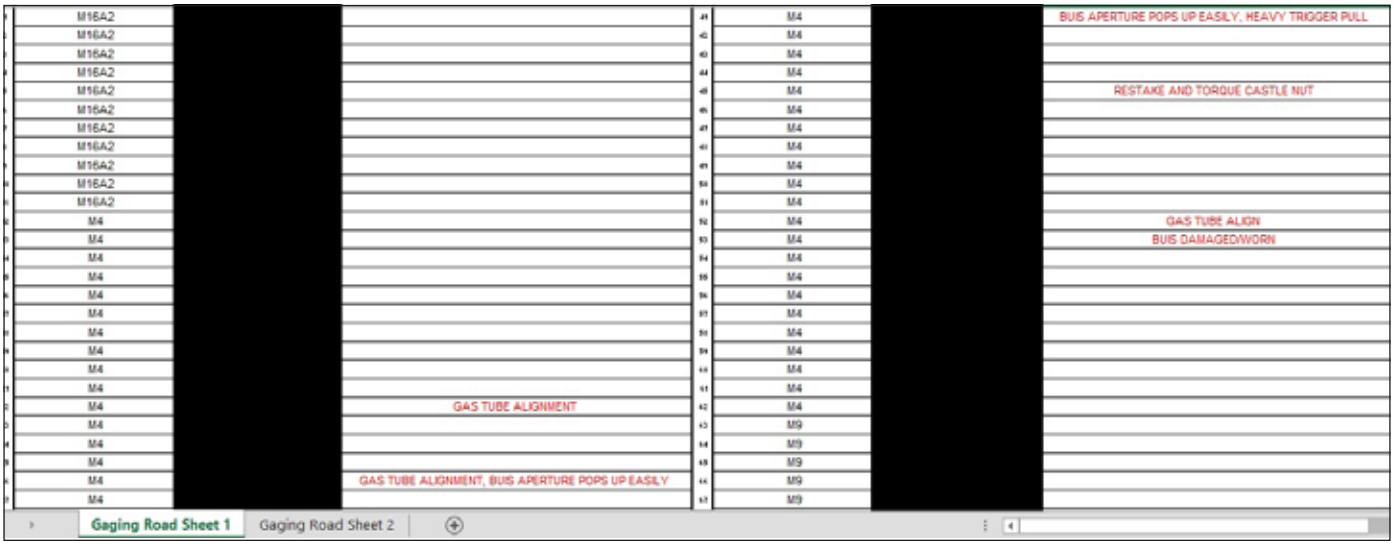
On a CCO the usual things that need to be replaced are the caps or the straps due to being broken or missing. The time that goes into that is cutting the work order, ordering and waiting on the part, and repairing which is 0.1 man-hour each.

Money

With iron sights, the aperture will need to be replaced with a new one that now has a dimpled pin that will not ride out as quickly or as often. When replacing the aperture on a BUIS the 1/16" spring pin may need to be replaced.

One an optic, a cap or strap is often a stocked part and can be obtained quickly and installed quickly.

***Below**: The gaging spreadsheet that we make after finishing gaging and servicing a unit. It states weapon type, serial number, and deficiencies found. The serial numbers have been blacked out. This tracks any problems commonly encountered.*



Equipment

On iron sights, the spring (revise) pin takes a 1/16" punch which can break easily. Whenever removing a BUIS the mounting screw needs to be replaced with blue Loctite as well. A front sight post adjustment tool is needed to replace the front sight on a M4 Carbine.

With optics, no equipment is needed to replace a cap or strap.

Employment

To adjust the BUIS and front sight post on a M4, a front sight tool is needed which can easily break. To mount the assembly, an Allen wrench is needed. If the assembly is mounted incorrectly it can be loose, if mounted too tight the adjustment knobs can seize. The aperture is often loose as well, causing different sight alignment each time.

With optics, to adjust the turrets on a CCO any kind of straight blade can be used such as a crushed brass case or a multi-tool. A CCO has a torque limiter knob which needs no equipment to mount and can be returned to zero if mounted on the same spot on the rail but can also be canted if not mounted correctly on the rail. An Allen wrench is needed if the mount comes loose.

From only a maintenance perspective, based on time, money, and equipment, I would much rather have optics mounted on those rifles. A Soldier needs a primary sighting system and if the irons go down - which based on what we have seen over time they are more likely to - that weapon is now not fully mission capable and ready to be employed at a moment's notice. We have also seen issues with iron sights on other weapon systems such as the M249 Light Machine Gun. Many times we will need to replace a whole barrel assembly due to the front sight base being worn down causing the front sight to move side-to-side while firing. Also on a M249 we have seen the rear sight aperture completely sheared off. On a M2A1 .50 Caliber Machine Gun we have seen front side hoods crack, causing the hood to come off and expose the front sight blade. While steel is strong, it wears and breaks over time which again, can cause a weapon to be non-mission capable until the repair parts are ordered, received, and installed. An important thing to note, in the Army if a receiver is cracked or warped, that weapon is now dead-lined and deemed irreparable. If that sighting system is part of the receiver or a barrel and it wears or breaks, that weapon now needs to be turned in and the unit will wait for a replacement. ARM

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Forget Your Feelings

by Sgt. Ian Tashima
CA Military Department Combat Shooting Team

NOWHERE are "feelings" to be found in the Task, Condition, or Standard for grouping and zeroing. Kill your feelings.

Grouping to standard is extremely objective. Grouping is quantified. Grouping is a milestone check on a Soldier's ability to perform. But Leaders are failing to enforce Shot Group standards, Grouping standards, and Zero standards...NCOs and Officers, alike.

A recent experience revealed the process, training, and leadership problems that commonly plague unit IWQ events. The ability to group must be demonstrated before applying sight corrections to zero a weapon. Why? Because data. Sloppy data does not tell us anything, and it certainly doesn't allow for analysis, conclusion and corrective action. In other words, without a good group size, shooters cannot accurately tell where the rifle's barrel is pointing, nor can they locate the actual Mean Point of Impact (MPI). Without knowing where the MPI is, any sight correction (zeroing) is a wasted effort.

Sloppy data provides for sloppy correction… sloppy groupings make for sloppy zeros... sloppy zeroes makes for sloppy shooting, yielding sloppy results.

Soldiers often bemoan "we only go the range once a year… we don't shoot enough, so how are we expected to be great shooters!" Then these same units and Soldiers consistently blow right through the grouping and zeroing stage, conduct no skill practice or validation, just so they can hurry to the Qualification stage.

What's actually happening across the country? Plenty of ranges run by personnel that haven't even read what the standards are. Soldiers being given NINE rounds to group AND zero (instead of 18 rounds, automatically… 30, under the new strategy plus 5 more to confirm and another 10 for downrange feedback at other distances). Soldiers not being given remedial PMI and coaching to improve group size to standard (6 MOA threshold standard, 4 MOA objective). Soldiers not being held accountable for producing a groupings to standard (more than one group to standard). Soldiers not being held accountable for applying proper sight corrections and producing a correct zero to standard. If you are still conducting the Legacy rifle IWQ, your automatic ammunition authorization is 96 rounds for iron sights. If you've got an optic mounted, that number rises to TWICE that: 192 rounds. That is, 18 rounds to group/zero + 40 rounds for Practice Qual + 40 rounds for Record Qual = 96 rounds; these numbers and the range requirement is repeated for each sighting system: irons and optic. Imagine what else you'd learn if you read the manuals...

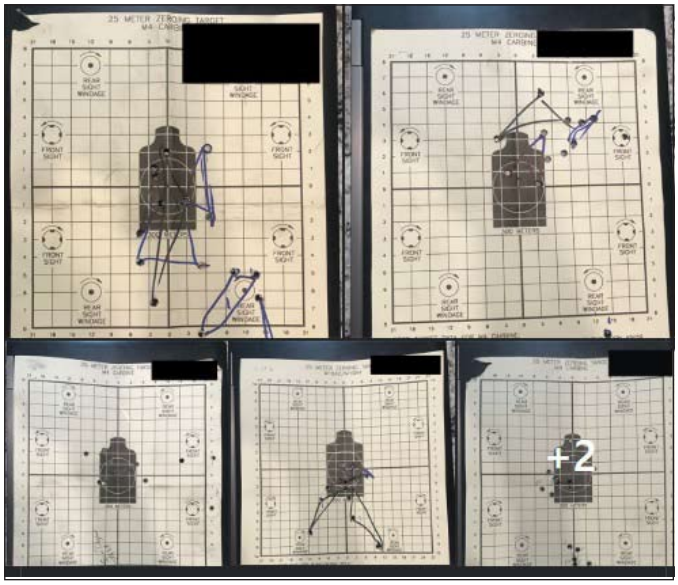
So, if the problem is that Soldiers don't get to shoot enough, why are Soldiers rushing through 9 rounds to group/zero and 40 rounds for Record Qual?! Why in the world are you leaving 47 rounds on the table?! Why are running headlong into a brick wall?!

No. The problem isn't enough ammo. MILLIONS of rounds are turned around – unspent - every year, across every Division in the Army. The problem isn't enough shooting. The problem is: Nobody is enforcing standards.

"*If you feel good with your zero target, go ahead and pull it and stand by to qualify.*" – practically every rifle IWQ.

Objectively measured performance (group size, sights adjusted for zero calibration) is wholly independent and divorced from feelings. Kill "feelings" by throwing it into a dumpster fire. Feelings have no business on a

***Below**: Oh, so many feelings.... It doesn't matter given poor shooting and complete misunderstanding of what is supposed to be done.*



group and zero target. What does "I feel good about my group and zero" look like?

The picture here shows actual targets from an IWQ event. Every one of these shooters were allowed to self-validated a good group and zero. They "felt good" about their zero. None of them met either standard. But… feelings, right? With these self-validated groups and zeros, is there any wonder why we have qualification problems? Garbage in, garbage out.

LEADERS: FM 7-0 clearly states "all unit leaders have a direct responsibility to train their organization. Leaders must be present, visible, engaged, and fulfilling their role at training." (Paragraph A-5, "All Leaders Are Present and Engaged.")

NCOs, are you present on the firing line? Are you engaged with your Soldiers, taking an active interest in their actions and ensuring they are performing? Are you fulfilling your role at training, AS TRAINERS*?

The failure cascade that flows from a bad starting point is hard to recover from, and makes follow-on diagnosis and coaching problematic: You MUST validate a shooter's ability to Group, and then you must validate their Zero.

A bad group size prevents understanding where the actual Mean Point of Impact (MPI) lies. Bad MPI analysis leads to a bad zero. A bad zero leads to bad hits. Bad hits lead to invalid shot placement data and bad inputs for coaching. I could go on, but this is the failure cascade I mentioned earlier.

Shooter error: doesn't know what right looks like, won't crack a book to self-discover.

Leader error: leaders should be on site and present with guidance and mentorship, won't crack a book to understand if subordinates are enforcing proper standards.

Unit error: bad performance statistics.

Training error: drastic divergence from established, validated, best practices...all outlined in black and white in the relevant books; "trainers" and "SMEs" won't crack a book to learn current doctrine, standards, requirements.

This is the state of affairs, this is what we need to fix, this is what must be overcome.

Get the word out, and let's get this train back on the tracks.

*Strictly speaking, the act of grouping and zeroing IS NOT training. It is merely calibration. It is nothing more than PMCS. That being said, as leaders you have an obligation to observe your Soldier's capabilities to understand their skill level and provide Bottom Up feedback to unit leadership. Furthermore, you have an obligation to witness the areas that need to be improved upon during remedial training, should it be needed. PLEASE PLEASE PLEASE read, know and do everything in FM 7-0, there's gold in that book. ARM

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Aim To Retain: A History

by Sgt. 1st Class John M. Buol Jr.

Army Reserve Careers Group has the mission to grow and sustain the strength of the Army Reserve by providing skill-rich operational forces to commanders. ARCG consists of thirteen battalions with over 1,400 Army Reserve Career Counselors, located throughout the United States and its territories, Europe, and in the current Southwest Asian Theater of Operations with Army Central Command.

Twenty-six Active Guard Reserve (AGR) Career Management (CM) Officers and 47 Troop Program Unit (TPU) CM Officers currently provide comprehensive career management to Troop Program Unit (TPU) Officers in order to facilitate career awareness, education requirements, assignment opportunities and career path progression.

Prior to the formation of ARCG, retention was handled on a more ad hoc basis. When it was finally recognized that the maze of Department of Army regulation concerning retention and career advancement was difficult and important enough to warrant full-time staffing, ARCG was formed the head the effort.

The Army Reserve Marksmanship Program had a similar start. Prior to 1970, the USAR Marksmanship Program consisted of ad hoc teams assembled to participate in Battalion, Brigade, ARCOM, Army Area, and All Army matches were conducted. From these events, an All-USAR Team would be selected to conduct marksmanship instruction and compete in Interservice and National Championships. Afterward, they would disband and the process would repeat each year. Unlike the Army Marksmanship Unit in the active component and the National Guard Marksmanship Training Unit, there was no organizing body, making any instruction or competitive efforts difficult.

Maj. Gen. William Sutton was the Chief, Army Reserve during this time. He was also a Distinguished Rifleman. Having served as a commander during World War II, he had been forced to push support personnel into fighting roles on short notice and believed that all Soldiers, regardless of MOS or assignment, needed to know how to shoot well. MG Sutton led the effort that would eventually formalize the USAR Marksmanship Program as defined in Army Regulation 140-1, Chapter 7. The entire program consists of less than 70 personnel located throughout the United States that perform this as additional duty to whatever USAR unit they're in and duties they have there.

***Above**: MG William Sutton drafted the Army Reserve policies that formalized the Army Reserve Marksmanship Program.*

Publicity and Retention

Why do people join the Army Reserve and what makes them want to stay? The answers are unique to every serving Reservist. Career Counselors are tasked with retaining personnel and can offer powerful incentives to stay, but Soldiers don't typically leave because the benefits aren't good enough (they are!) Soldiers often stay because they find value in the Army-sponsored training and programs they participate in.

Marketing is defined as activities, institutions, and processes for creating and communicating offerings that have value for clients, partners, and society at large. Maintaining a force of 205,000 personnel requires effort and incentives to get and keep Soldiers in uniform. Yes, recruiting and retention is a form of marketing, "selling" the benefits of serving. Traditional advertising is one strategy and sponsoring events is another. The Army

has employed these over the years with a recent example involving sponsorship of NASCAR and NHRA racing events. Ryan Newman, an Army-sponsored NASCAR driver, claims these efforts have lead to 46,000 leads for recruiters. Sponsoring racing is a good advertising strategy, one outlined in The NASCAR Way by Robert Hagstrom, and remains a good fit for Army recruiting.

As with any big organization reaching out to large numbers of people, no single strategy will appeal to everyone. NASCAR sponsorship is popular and known to be a powerful publicity tool, but not with every current or potential Soldier. Shooting teams are another, more obvious strategy. While national-level marksmanship competition doesn't enjoy the draw that racing does, the recruitment and retention return is good in terms of dollars spent.

Consider that the combined Army NASCAR and NHRA racing annual team budget of $16.6 million per year, working out to $360.90 for each lead claimed. No word on how many actual contracts this has actually created. Furthermore, there is no benefit to the Army beyond publicity.

"My involvement in shooting events with the USAR Marksmanship Program led to six signed contracts in my first year as a TPU ARCC," said SFC John Arcularius. "Those same events put in me in contact with hundreds of serving personnel from all branches and even more civilian marksmen every season, including Junior shooters approaching enlistment age." Not only is this positive publicity, it is recruiting and retaining people already identified as being highly skilled.

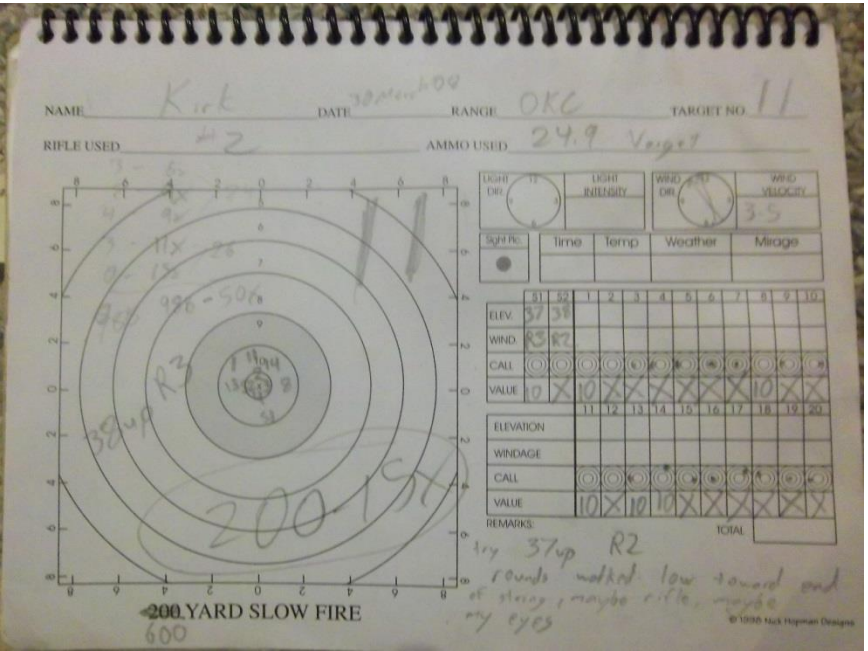
MSG Chris Gervasio is an AGR ARCC and longtime member of the USAR Service Rifle, competing in matches that are conducted from 600 to 1,000 yards. He has used this long range experience to good effect. In addition to his ARCG duties, he assisted TACOM with the M14-based Enhanced Battle Rifle, improving this weapons platform that has seen service in Iraq and Afghanistan, as well as teaching classes and developing recommendations on improving the weapons system for increased lethality to the warfighter.

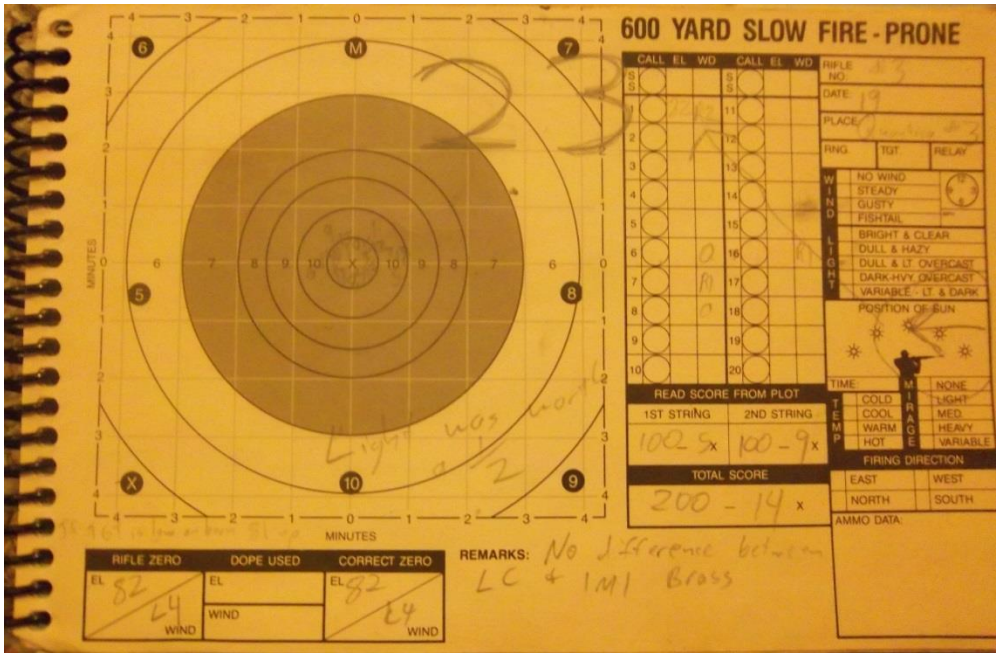
A typical example was his work with the 82nd Airborne Division. When the 504th Parachute Infantry Regiment needed assistance with their new EBRs, Gervasio, a former paratrooper, was an ideal pick. The training he helped provide created skills that would see real-world application within weeks. "We had guys showing up with their rifles in the box from the factory having never seen one before, " he said. "Getting them up and running out to 800 meters is a motivator for me to keep serving. The AARs after their deployment included numerous times these troops used what I taught them combat-effective use."

Using shooting teams as a recruiting and retention tool has already been employed by the active component, such as when the Army Marksmanship Unit was reorganized under US Army Accessions Command (USAAC). Putting your best talent in front of others is a solid way to communicate activities and institutions of value. What's more, unlike sponsored race teams, shooting team activity is an additional duty for actual Soldiers currently serving in the Army Reserve. This puts real Soldiers talented in marksmanship in front of others and able to communicate the values of the Army Reserve while providing skill benefits to them. When these Soldiers are ARCCs, they can literally Aim To Retain. ARM

***Below**: SFC Arcularius, a long-time shooting team member (USAR and USMC) and ARCC, briefs members of the 3rd Special Forces Group at Fort Bragg. 3rd SFG(A) requested members of the USAR Marksmanship Program to conduct shooting events for them.*

How to Reload Like a Legend
by
The Legend





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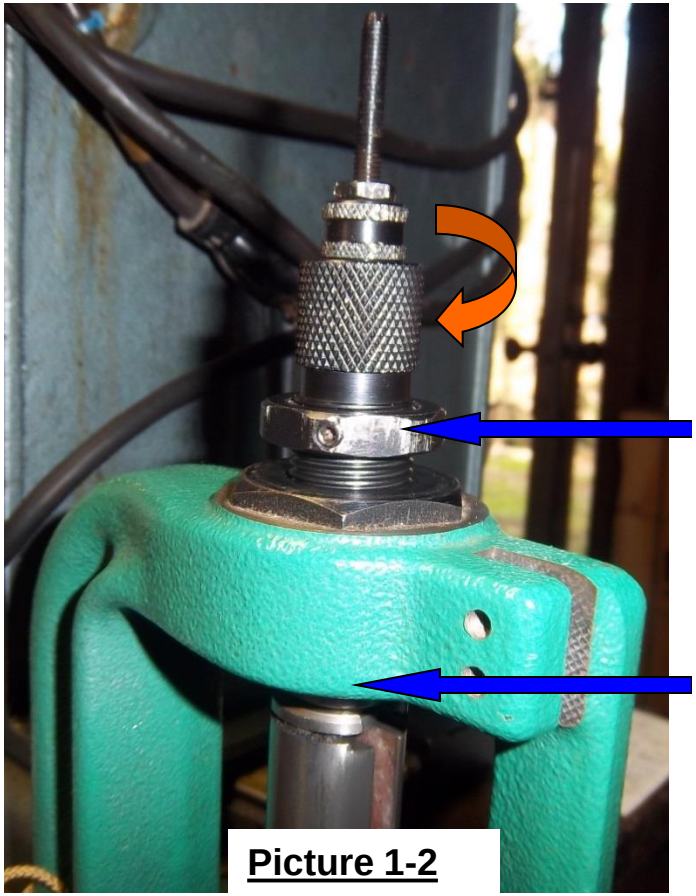
Brass Prep
Resizing: Die Setup

Step 1: Using a fired piece of brass out of your rifle, check head space using the RCBS Precision Headspace mic part # 88304. I have noticed that a competition chamber you will find your brass to be 1 (one) OVER or on Zero. (**Picture 1-1** showing 2.5 under)

Picture 1-1

Step 2: Lower the press handle all the way to the bottom position, then with the locking nut loose screw in the sizing die into the press until the die bottoms out on the case holder leaving the locking nut loose (**Picture 1-2**). I use the RCBS Comp full length die set part # 37201.



Picture 1-2

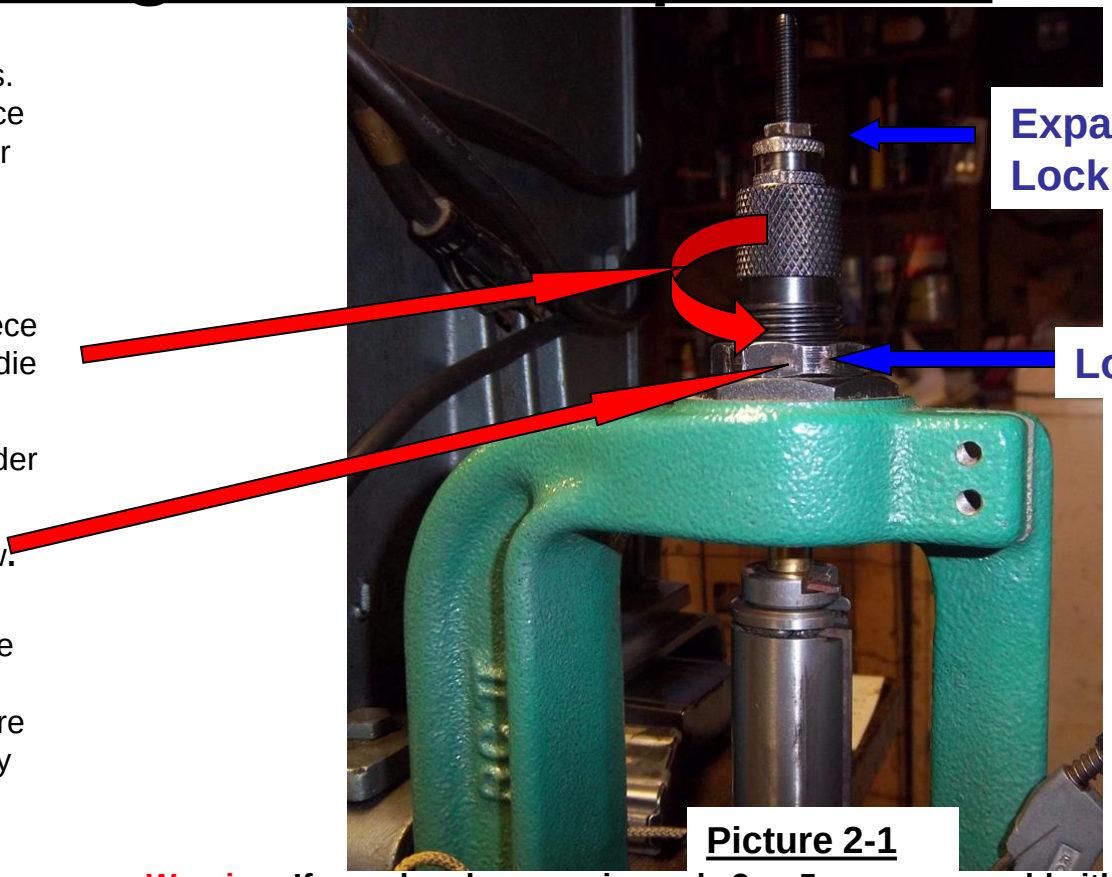
Brass Prep
Resizing: Die Setup Cont.

Step 3: Using a fired piece of LUBED brass out of your rifle, fully size the brass. Then check brass by using the headspace mic. You are shooting for 2.5 to 3.0 under Zero if a unsized piece of fired brass measured out to 1 over or Zero. (Read Warning)

- If brass sized to 4 under throw that piece of brass away and back off the sizing die a very small amount.
- Continue process until the 2.5 to 3 under size is achieved.
- Then tighten locking nut and set screw.

Step 4: Using a new piece of brass or the same one that you achieved the measurement of 2.5 under (step 3, Picture 1-1), run the brass into the die all the way and then slowly lift the press handle until you feel a slight amount of resistance.

That resistance is the expander ball (EB) inside the neck of the case. With the EB centered in the case neck, loosen the EB locking nut and then retighten it. This lines up the EB inside the case, which is lined up in the sizing die **(Picture 2-1).**



Picture 2-1

Warning: If your headspace mic reads 3 or 5 over you could either have a very loose chamber or your mic is no good. At most the brass needs to be sized a total of 4 thousands from its fired form. That means a 5 over fired case should only be sized to 1 over. The problem with this is if you have another rifle with a tighter chamber then that 1 over sized brass may not feed in your tighter chamber. So you may want to over work the brass and get it to 2 under so it will feed in any rifle.

Brass Prep
Resizing: Lube

Step 1: The Legend uses wax. The amount I use slightly covers the tip of my finger. I then evenly apply it to the pad and then evenly spread it. (**Picture 3-1 & 3-2**).

Picture 3-1

Picture 3-2

Picture 3-3

Step 2: I then use a plastic brush to apply a small amount of wax to the inside of the case neck. To apply lube to the brush I simply roll it in the lubed area of the pad. It is not necessary to over lube the inside of the case neck **(Picture 3-3).**

NOTE: The amount of lube effect the amount the brass is sized. You must re-apply lube to the pad after about 80 pieces of brass. If you start running them short on lube they will start sizing small and you risk getting one stuck in the die. At the same time, too much lube will cause an over sizing of the brass.

Brass Prep
Resizing: Lube Cont.

Picture 3-4

Picture 3-5

Picture 3-5

Step 3: Roll the cases back and forth. I find that 10-12 is as much as the pad can handle **(Picture 3-4).**

Step 4: Apply lube off of pad onto finger and apply lube to case neck and shoulder **(Picture 3-5).**

Step 5: After sizing the case, place the sized cases in a cloth and generously wipe them off **(Picture 3-6).** I Doing 10-12 cases at a time is easiest.

Cut out Primer Crimp

I use a de-burring tool in an adaptor that fits into any drill motor chuck. I apply a good amount of pressure onto the cutter and hold down the trigger of the drill motor for about 1 second and then while the drill motor is spinning down I am still applying pressure until the cutter stops **(Picture 4-1).**

Picture 4-1

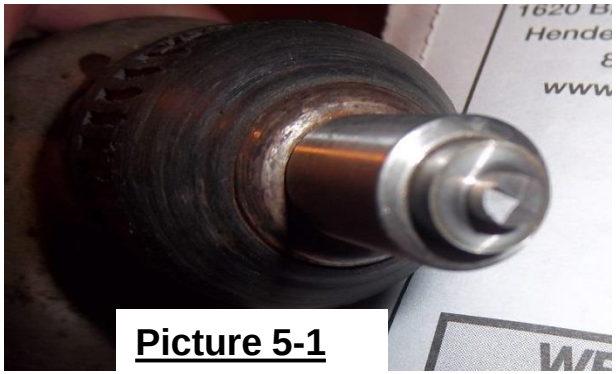
You may need to rotate the brass around in order to cut the crimp out better **(Picture 4-2)**

Picture 4-2

Uniform Primer Pockets

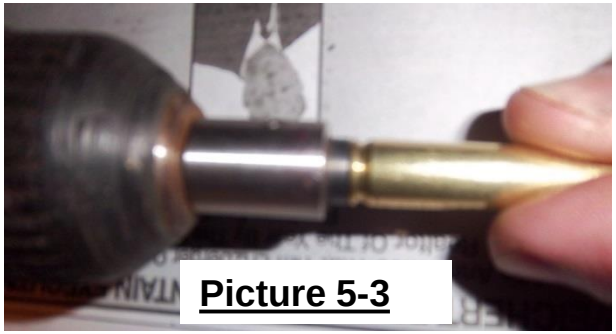
I use a cutter that fits in to any drill motor chuck **(Picture 5-1).**

The base of the case will fit flush on the cutter and simply cut the primer pocket out by holding the trigger on the drill down for 1 second and letting the motor spin to a stop **(Picture 5-2 & 5-3)**



Picture 5-1

Picture 5-2

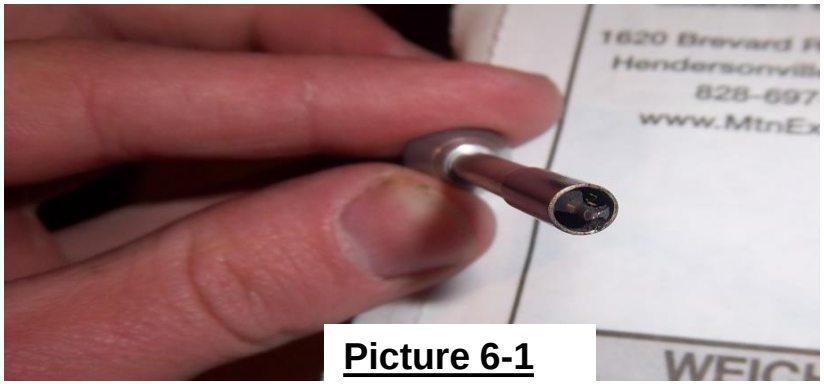


Picture 5-3

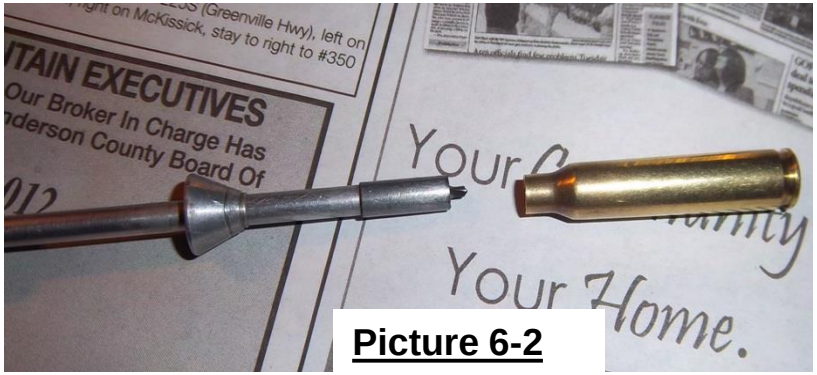
Uniform Flash Hole

I use a hand held cutter **(Picture 6-1).**

It simply goes into the case and you cut the flash hole out by hand **(Picture 6-2 & 6-3).**



Picture 6-1



Picture 6-2

Picture 6-3

Trim Case

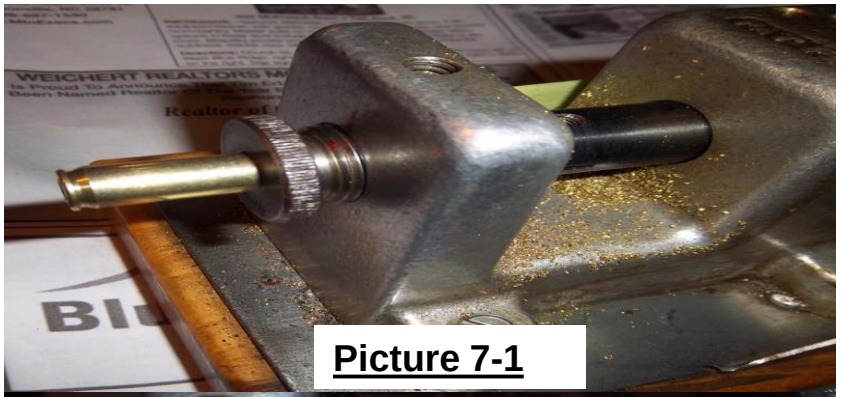
The case holder is what controls the amount trimmed **(Picture 7-1).**

The cutting bit is a “V” shape so it “knife edges” the mouth of the case. It takes some time to set the cutter up so it evenly cuts the inside and the outside of the case mouth **(Picture 7-2)**

Be safe. Wear a PT belt and cover the cutting bit up so brass will not fly in your face **(Picture 7-3)**

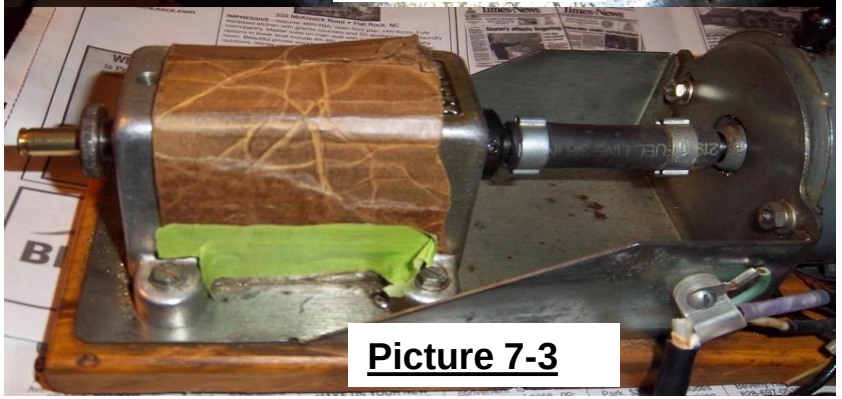
NOTE: Every few hundred rounds use a cleaning patch with some WD-40 to clean out the case holder. Bits of brass can build up and cause the brass to not be trimmed.

Trim .223 brass to 1.750 to 1.760



Picture 7-1

Picture 7-2



Picture 7-3

De-Burr

I use the same tool that is used for cutting out the primer crimp used in **(Picture 4-1)**

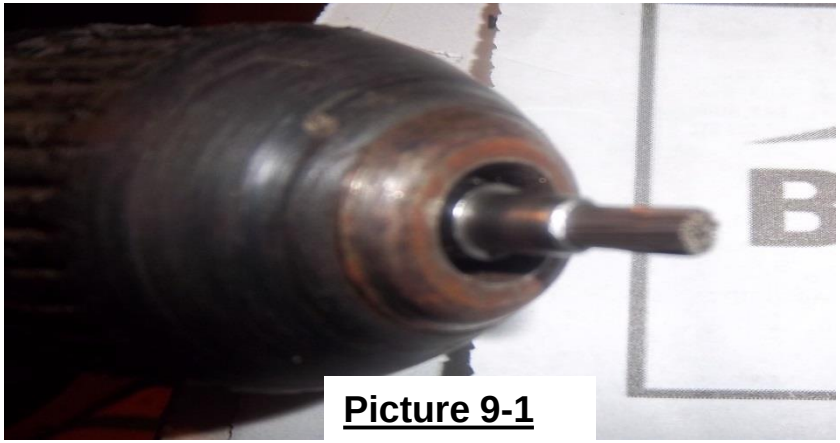
Each Piece of brass is de-burred from the inside and outside **(Picture 8-1 & 8-2).** Use *very light* pressure when doing this. You are knocking off the burrs not trying to make a razor sharp case mouth.

Picture 8-1

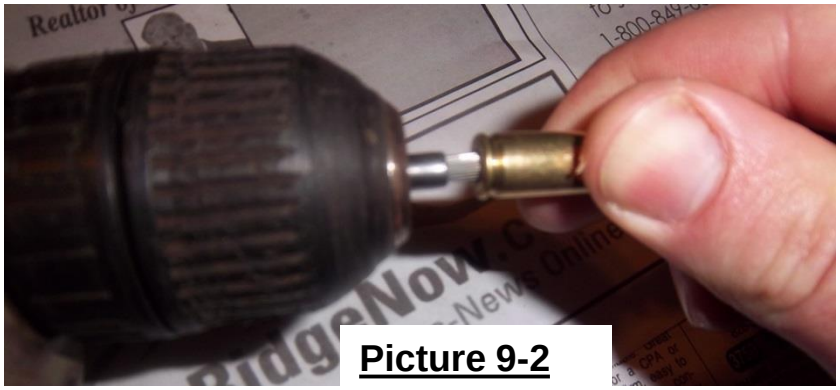
Picture 8-2

Clean Primer Pocket

I do not clean the primer pockets the first time I uniform the primer pockets. I DO clean the primer pockets each time I reload the case again **(Picture 9-1**). I use a brush that attaches to a drill motor. I use light pressure and hold the trigger down for 1 second or less and let the motor spin down to a stop. Hold the brass straight in line with the brush so you do not dig out the primer pocket and enlarge it **(Picture 9-2).** You will notice that a very small amount of brass dust will come out, but the majority should only be carbon**.**



Picture 9-1



Picture 9-2

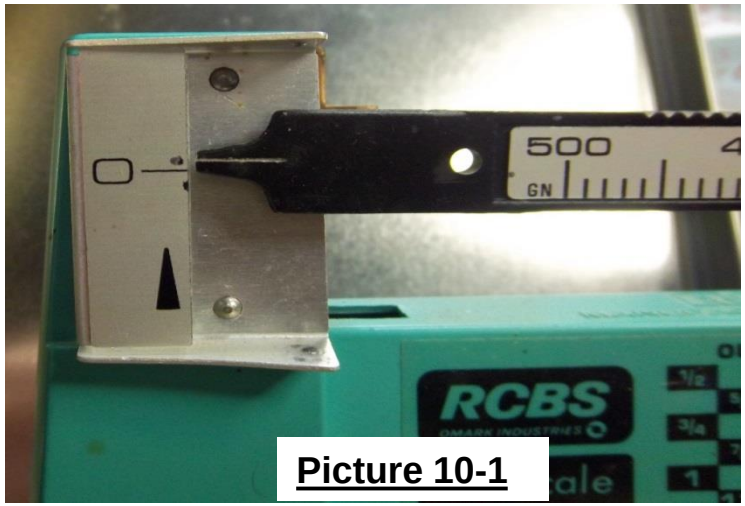
Tumble Brass

Self explanatory.

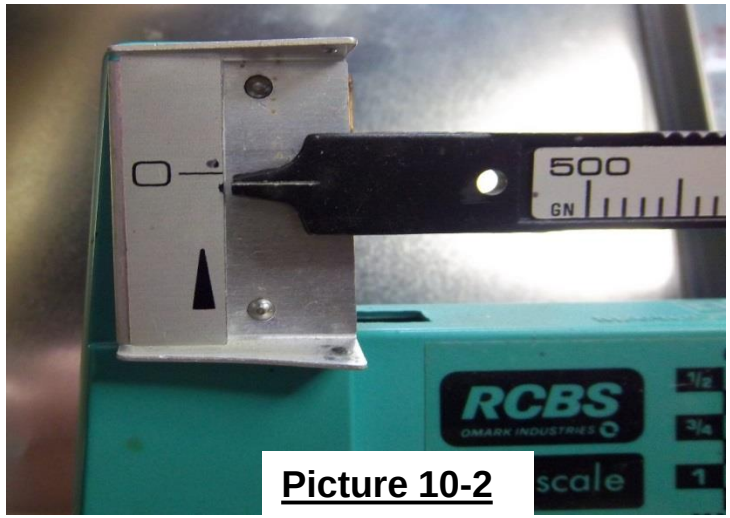
Clean brass well so that you can mark the brass to keep up with the lot.

Weigh Brass

Each lot of brass has a different average weight. Finding this weight you simply weigh one, balance the scale and begin weighing several cases and ensure that the majority of the cases fall closer to center of the scale. Adjust the scale as needed to ensure that the average weight is leveled on the scale. Also each lot of brass will have a higher standard deviation of weight. Some brass will be so close that they are + or – 0.3 grains **(Picture 10-1 & 10-2)** and others it might be + or – 0.5 grans. The photos shows what + or – 0.3 grans looks like. At the end you will have 3 different lots: heavy, medium, light. The medium lot should be the vast majority of the lot.



Picture 10-1

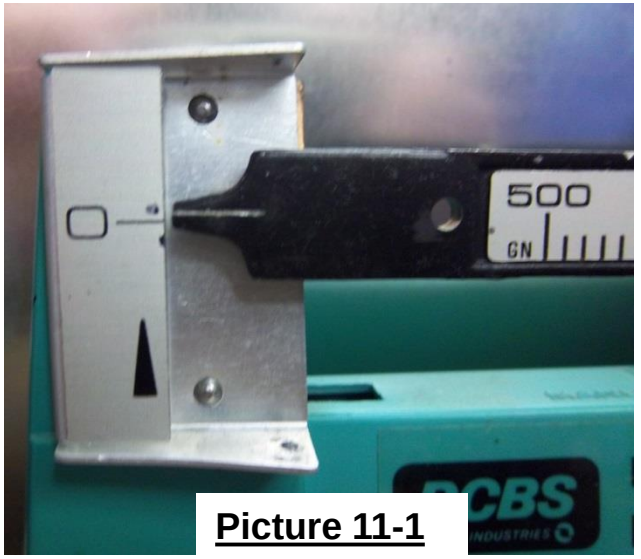


Picture 10-2

Bullet Prep
Weigh Bullets

Just like the brass each lot of bullets will have a different average weight. Once the scale is zeroed and 80 grains is put on the scale you may notice that the bullets average weight might be a little light, 79.9 grains. This will be the average weight, so level out the scale. The standard deviation of match grade bullets will me much lower than brass. So + or – 0.1 grains is what you are going for **(Picture 11-1).**

At the end you will have 3 different lots: heavy, medium, light. The medium lot should be the vast majority of the lot. I have never seen a difference in bullet impact due to a 79.9 grain vs a 80.1 grain bullet. **There are rare times where you will find an extremely heavy or light bullet in the lot. That is what you are trying to identify.**



Picture 11-1

Prime Brass
Hand Priming Tool

I only use a hand priming tool **(Picture 12-1).** This is because you have much more ‘feel’ over what you are doing. You will notice a primer practically fall in and other times you will find a few are very hard to go in. Both these extremely loose and extremely tight primer pockets go into a sighters only or practice only lot. I **do not** use them in a match situation. I have never had a loose primer pocket blow the primer out but I do not take chances. Shoot Like a Legend.

Picture 12-1

Also, I only put 30 to 40 primers in the hopper at a time and always wear a PT belt and safety glasses. This is to ensure if for the rare case that a primer is ignited off and the other primers are ignited that it will only be 30 primers and not 300 or how ever many the hopper holds.

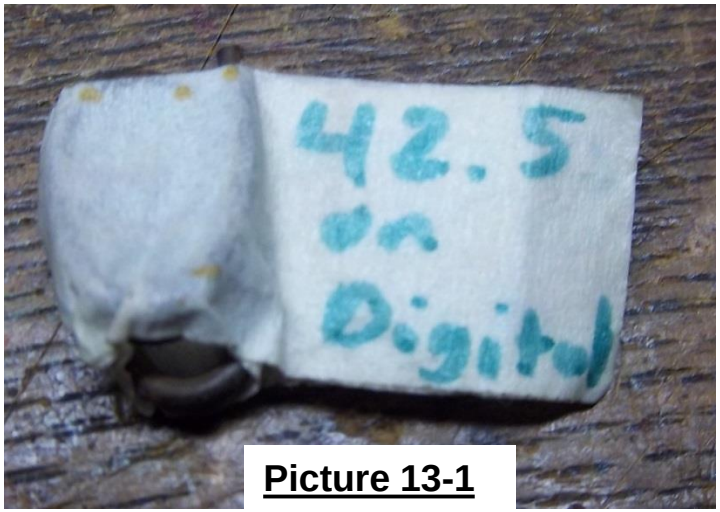
Last, if you have all your primers going in very hard or not at all, that means you get to re-cut all the crimp out of the primer pockets again. Good job not following directions. Go ahead and do push-ups.

Loading the “X” Scale Set-up

I use a PACT digital precision scale. After calibrating and zeroing the scale I then use my weight standard to check for accuracy. I have made a standard for a .308 load which with the tape and all weights exactly 42.5 grains **(Picture 13-1).**

I also trickle every single round because Varget powder (I pity the fool who doesn’t use Varget) does not meter well. I have noticed that if the scale reads 24.9 and I am loaded to 25.0 that 4 to 5 pieces of Varget is 0.1 grains.

If the scale is flicking back and forth from 24.9 to 25.0 then back to 24.9, I add 2 pieces of Varget.

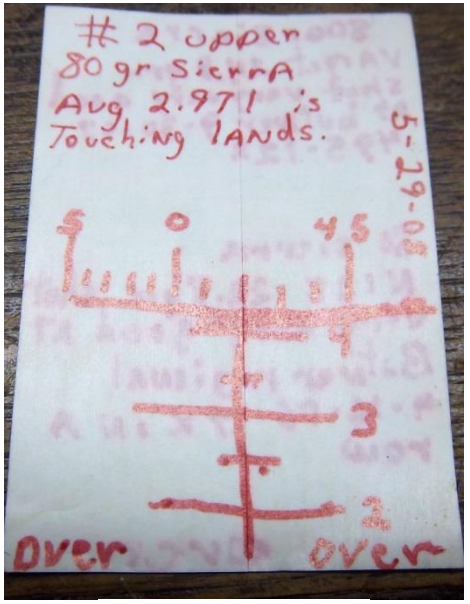


Picture 13-1

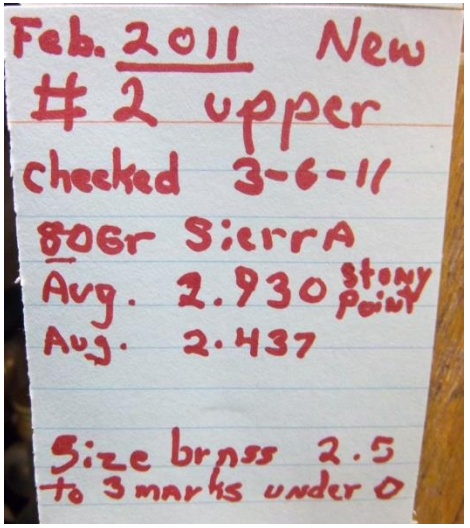
Loading the “X” Overall Length

I make loading a round as dummy proof as possible. I literally draw a picture of what is on the reloading die. Information that needs to be recorded is: the rifle/upper number, the weight and type of bullet, average length and date.

I also keep another note on my reloading table of the last time I check the length with a stony point gauge. This is important because each lot of bullets will give a different ojive reading. One lot you may find that your overall length is 2.975 and with a different lot of bullets it maybe as much as 2.985. That’s 10 thousandths. (Note: The Legend does not like to load for more than a 10 thousandths jump) The reason that is important is because if you have been running the bullets 20 thousands off the lands and then you change lots and that lot is 10 thousands different than the last you are running danger close to being out of the groove. That with a little barrel wear over a few months of shooting now you could be jumping the bullets 35 thousandths and you will see your 600 yds scores drop as well as ‘X’ count. I have found that Sierra 80gr bullets don’t like to “jump” far to hit the grooves. Every barrel is different. This is why you **TEST**



Picture 14-1



Picture 14-2

Loading the “X” Overall Length Cont.

The previous slide I mentioned an overall length measurement of 2.975 inches. This is how I come up with that measurement.

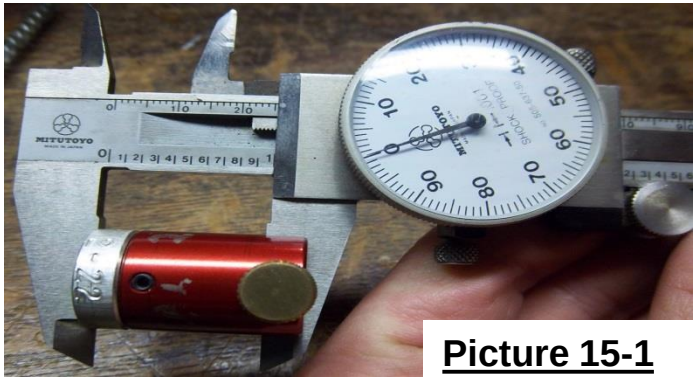
First zero your calipers.

Second zero the calipers with the ojive comparator **(Picture 15-1).**

Third measure the round. You will notice that in **Picture 15-2** that the overall length is 2.965. This is a arbitrary measurement that only you need to record for that upper.

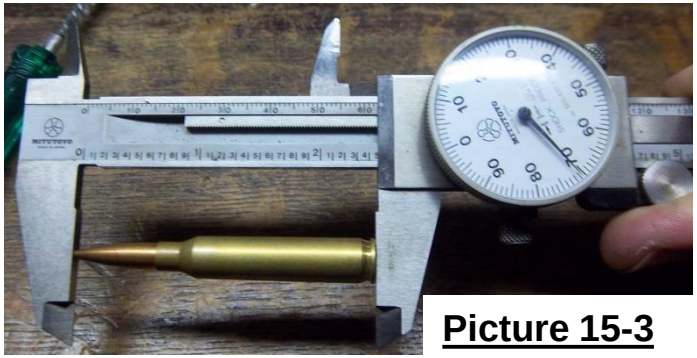
In **Picture 15-3** you will see the exact same round measures 2.470 inches without the ojive comparator.

With a set of digital calipers you should zero the calipers, then put on the ojive comparator. It should measure close to 1.000 inch. Then re-zero the calipers so it will read 0.000 with the comparator attached like in **Picture 15-1.**



Picture 15-1

Picture 15-2



Picture 15-3

Proper Storage of Reloading Supplies and Ammo.

I store everything in plastic bags. The reason is to keep out moisture. I even store my fired brass that may sit for years before I do all the work to it in plastic bags and in some type of container. I store a case of primers in a plastic bag and in a sealed ammo can. My bullets remain unopened an in the factory wrapper until I weigh them. At that point I bag them up, with the weights labeled and in a sealed ammo can. By this point you get the point. Everything is stored in a plastic bag in a sealed container.

How to Shoot an “X”

Proper Sight Alignment

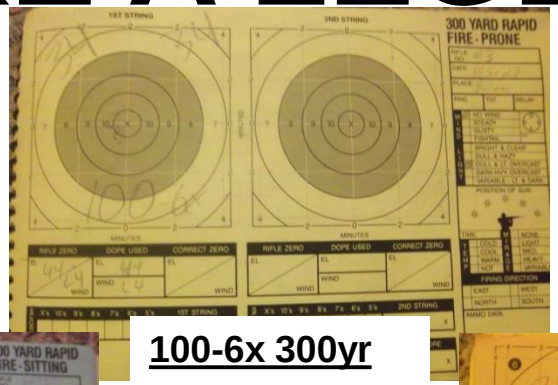
Proper Sight Picture, LOOK at the tip of the Front Sight Post.

Squeeze the Trigger

And Always,

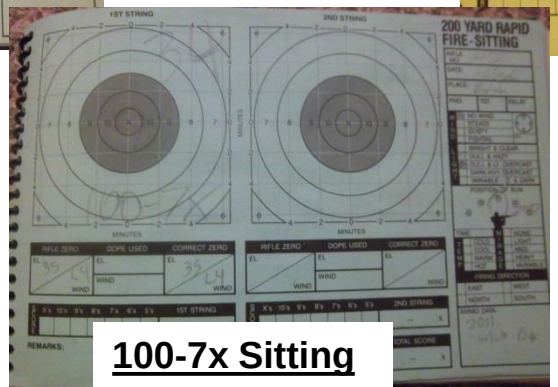
SHOOT LIKE A LEGEND!

97-5x Standing



100-6x 300yr

497-30x



100-7x Sitting

200-12x 600yr