

Long-Range Crossbow Hunting

A person wearing a hat and a backpack is walking through a field of tall grass, carrying a crossbow. The background shows a line of trees under a cloudy sky.

For some, long-range hunting is an added dimension to a well-developed repertoire of field-tradecraft and marksmanship. For others, long-range hunting becomes a necessity to successfully harvest wild-game encountered in an open terrain environment. For me, long-range hunting became a necessity while hunting the vast wilderness of the Appalachian Mountain Range for Black bear. In locations where 'fair-chaise' on public property is not defined by hunting over a feeder, or in a fenced confinement, being able to glass and shoot from mountain-top to mountain-top became a necessity. Success at long ranges could not be accomplished with a lever-action 'brush-gun' nor by using iron-sights. I learned early on, that my equipment, skill-set, and motivation needed to be on par with the challenges that the wilderness presented.



Season after season as my knowledge and experience grew, I discovered which type of rifle equipment yielded the best accuracy - there is nothing quite like a finely tuned bolt action rifle outfitted with a quality optic. But just as I mastered the skill, I relocate to an area where using a rifle to hunt big-game is restricted to 'primitive' technology such as a muzzle-loader, shotgun, or bow. I became forced to make a paradigm shift to another weapon system which is limited in speed, kinetic-

energy, and distance. Seemingly counterintuitive, I re-channeled my newfound long-range tradecraft into another aspect of hunting that I thoroughly enjoy, perhaps even more ... archery. In this article, I'll highlight my transition to long-range archery hunting with the crossbow. I'll discuss, (1) setting a proper mission objective, (2) selecting the proper equipment, (3) fine-tuning skill sets at the target range (4) applying field tradecraft in a real-world environment; illustrated by two successful long-

range harvests of mature whitetail bucks, and finally (5) use self-assessments and constructive criticism as tools to improve. Ultimately, my goal is to demonstrate that conceptual terminology such as "long-range" and "bow" and "big-game" are not incompatible with one another. But when mastered correctly can redefine commonly held definitions of marksmanship and field-craft. And open-up an entirely new hunting experience for those willing to pursue it.

STEP 1: OBJECTIVES: Setting realistic and achievable goals are the first step toward an effective long-range weapons system and successful harvest in the field. You'll need to ask yourself, "What is it exactly that I want to be able to do?"

For example, if your goal is simply to be able to shoot targets at the local range, then you'll need the optimal equipment for that setting. In this setting you may choose equipment without regard for length, weight, or versatility. On the other hand, if your goal is to make a successful harvest in the field you may choose equipment that is lighter, shorter, or less cumbersome. But potentially less accurate at long-distances. If your goal is to be able to do both, you'll need to find the right balance of long-range accuracy and practical application in the field. But a key point to this

decision is knowing the limitations of your local range and the area in which you hunt. For example if you choose equipment that is capable to shoot out to 100 yards or more, but yet your local archery range only offers target practice out to 50 yards, then you'll either need to find another range or limit your objectives and equipment to that distance.

Likewise, you'll need to evaluate the area in which you hunt. For example, if your hunting opportunities limit you to wooded areas that only allow for 30 yard engagements, then it would be wise to find the optimal equipment for that distance. On the other hand if you hunt near open-ranges or fields that allow for longer engagements, then you'll want to select the right equipment to allow for the opportunities to make a successful harvest at longer

distances. The key point being, choosing and utilizing equipment to accomplish your objectives.

STEP 2: SELECTING THE PROPER EQUIPMENT: When dealing with precision, accuracy, and capability there is simply no substitute for quality equipment. However, this choice is often accompanied by a higher price tag. For me, the investment is worth it. The archery season in the state where I hunt lasts for approximately three months; longer than any other season. Based on my experience, archery season also offers more opportunities at mature whitetails in their natural environment. Others may have a different perspective, but I found it hard to justify focusing all my time and resources in a high-end rifle when rifle season only lasts for a couple of days; as compared to a couple of months of archery season.



Manufacturer:
Precision Shooting Equipment (PSE)

Model:
Tactical Assault Crossbow (TAC 15)

Kinetic Energy:
153-145 ft-lbs

Weight: 8.9 lbs
Speed: 402-392 fps
Arrow (bolt): 425 grain

CROSSBOW: The weapon system I selected is the Precision Shooting Equipment (PSE) Tactical Assault Crossbow (TAC 15) crossbow. Built to military-grade specifications on the AR 15 platform, the PSE TAC 15 offers the speed and kinetic energy to project an arrow (bolt) out to 100 (+) yards with consistency and accuracy. The TAC 15 is outfitted with a series of Picatinny (MIL-STD 1913) rails to mount a variety of the needed accessories which makes the crossbow one of the most versatile on the market. For example, I utilize a Harris bi-pod on MIL-STD 1913 quick-release

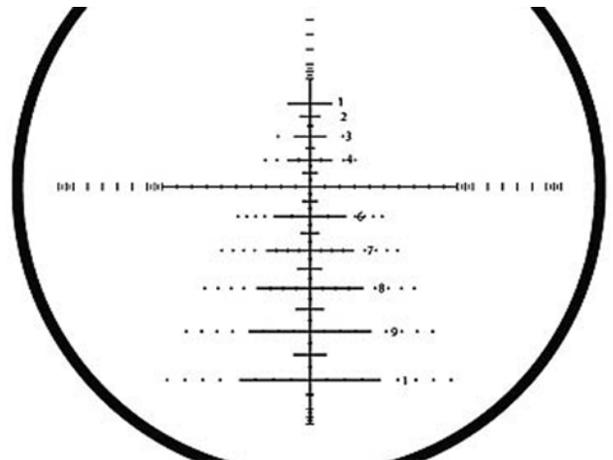
mount to ensure a solid rest from the prone position. Also, I use a MIL-STD 1913 quick-release scope mount and flip-up backup iron sights for the added benefit of rapidly removing the scope for close-quarters engagements or in the event the scope becomes fogged or fails in the field. A forward positioned MIL-STD 1913 rail on the TAC 15 allows me to mount a quick-release Surefire E2D LED high-output Defender flashlight for encountering (or blinding) dangerous game in the dark. Or on the same forward positioned MIL-STD rail, if the flashlight is not mounted, I often

attach a DRIFT Innovation point-of-view (POV) High-Definition camera to capture the shot on film. To offset the weight of the fully outfitted crossbow, during long hikes I use a tactical quick-detach two-point bungee sling, which allows the TAC 15 to hang in the ready position at my side while traversing across the landscape. Finally, the TAC 15 upper assembly on the AR 15 (collapsible stock) lower assembly allows me break the crossbow down quickly to clean and service, or store in smaller spaces.

SCOPE: To allow the TAC 15 reach its full long-range potential and be effective in the field, it is important to outfit it with a capable optic. There are a wide-range of scopes to chose from to meet both long-range and field requirements. However, based on preference and experience I selected Zeiss.



A number of Zeiss models offer crisp optical clarity during low-light conditions, a Rapid-Z 1000 yard ballistic reticle, and tactical target turrets for maximum elevation adjustments to further compensate for ballistic drop at long ranges. I've used two Zeiss scopes of the TAC 15 with success at long-ranges: When I first began using the TAC 15 I mounted the Zeiss Conquest 4-14x40 Target with Rapid-Z 1000. With the zoom power set to 6x magnification on this scope, the Rapid-Z 1000 reticle matches the ballistic drop of the PSE TAC 15 crossbow out to 100 yards. For example, the top "1" mark on the reticle equals ten (10) yards, the "2" mark equals twenty (20) yards, "3" equals thirty (30), etc. all the way up to the "9" mark equaling ninety (90) yards, and the bottom "10" mark equaling one-hundred (100) yards. On the other hand, if the Rapid-Z 1000 reticle is not your preferred method for long-range shooting, manual adjustment of the elevation turret to compensate for ballistic drop is another method to shoot long distances. The TAC 15 scope rail is slanted at least 20 minutes-of-angle (MOA) to allow for maximum elevation adjustment of the scope.



RANGE-FINDER: Another critical tool in shooting long distances is range estimation. After some research and comparison, I selected the Swarovski 8x30 Laser Guide for its optical clarity and ability to yield accurate measurements over 1000 yards; more than enough for the crossbow.



Manufacturer: Swarovski
Mode: Laser Guide
Magnification: 8x zoom (fixed)
Objective: 30 mm
Distance: 1500 yards
Weight: 13.6 oz

ARROWS (BOLT): PSE recommends one type arrow for use with the TAC 15; their 26.25 long 425 grain arrows. The arrows come from the manufacturer with 100 grain field tips pre-installed. In the field, I use broad heads to match the weight and flight pattern of the field tip. Selecting the right broad head is very important for stability of the arrow during flight trajectory at long ranges. This ensures the time spent sighting in the crossbow at the range equally transfers to accuracy in the field. Since there are a number of quality manufacturers to choose from, I decided to go directly to the source; I contacted PSE to inquiry which broad head they recommended for the TAC 15 crossbow. They were hesitant to provide a recommendation of one manufacturer over another, but instead described the optimal design, e.g. 100 grains, three-blade mechanical broad head, and do not use ones which have a rubber band to secure the blades. Since there are a number of manufactures with broad heads that match this description I was still left with a daunting choice. I pressed the PSE customer service representative further, "Exactly which broad heads do most of your staff use?" The response was a resounding "NAP" or "New Archery Products." This helped me narrow down my choice. Upon reviewing the variety of NAP broad head models, I selected the NAP Spitfire MAXX which offers 100 grains, 1-3/4 cutting diameter, stainless steel blades, and claims field tip accuracy. The NAP Spitfire MAXX met the requirements explained by the PSE customer service representative perfectly.



Manufacturer: New Archery Products (NAP)
Model: Spitfire MAXX
Weight: 100 grain
Cutting Diameter: 1-3/4" inch
Blades: Mechanical, stainless-steel
Point: Cut-on-contact, micro-grooved ferrule



Also I've recently outfitted the TAC 15 arrows with another addition, Firelock Lighted Nocks. The lighted nocks not only make it easier to follow-up on a shot in the field, at the target range they also allow the shooter to observe the stability of the flight pattern of the arrow once projected and then make adjustments to the TAC 15 accordingly to ensure a true flight.

STEP 3: PRACTICE: Having the proper equipment to shoot long ranges is important, but knowing how to use it quickly and effectively is even more important. From the TAC 15 crossbow itself, to the arrows, the rangefinder, and the scope; all must work together in unison and at their maximum potential to have an effective long range weapon system. For example, if there is a slight nick in an arrow fletching it could have a catastrophic effect to the accuracy of the arrow at a long distances. Likewise if your rangefinder is yielding inaccurate measurements, the scope adjustments to accommodate the shot will likely result in a missed shot. But perhaps even more important is your physical capabilities; eyesight, steadiness, stamina, patience, discernment

and mental calculation. For example, as recent as couple of years ago my near-sighted vision was such that it only allowed me to see things close-up without the visual aid of glasses or contacts. To further complicate the matter, my contacts would often dry out from fatigue in the field or from allergies, causing blurred or distorted vision. If I wore my glasses as an alternative, they too often became fogged or caused complication in proper field-of-view when looking through a scope. To improve my physical impairment, and to expand professional opportunities, I opted to undergo lasik eye surgery to correct my vision. Now my far-sighted abilities are better than 20/20 at long distances without the use of visual aids, like glasses or contacts. Likewise if you have

poor problem solving skills or fail to understand cause-and-effect, long range shooting may become extremely frustrating to you ... even more so after investing a significant amount of money into your setup. For example if you know from research and experience of others, that certain weapons system (such as the PSE TAC 15) is capable of a fine degree of accuracy out to long distances, but yet you are unable to replicate that accuracy on your own. Instead of blaming your inaccuracy on faulty equipment, or merely giving up, you must have enough mental dexterity to observe your shortcoming, investigate the phenomena, test your hypothesis for failure, obtain new information, and formulate corrective measures.



Using the PSE TAC 15 setup, I can hit targets all the way out to 130 yards. I shoot laying down flat, in the prone position, because it offers me the most stability that I can apply in a field environment. I could probably shoot farther, with more practice and different scope, but at this yardage I've reached the maximum adjustment for my scope. This year I've switched from using the Zeiss Conquest 4-14x40 to the Zeiss Victory Diavari 6-24x72. My decision to switch was due to the increased light-gathering capability and increased elevation adjustments of the Zeiss Victory Diavari. Upon looking through the Victory Diavari scope for the first time, I knew upgrading to this scope would not be a simple plug-and-play operation. The 6-24x72 model also uses the Rapid Z 1000 ballistic reticle. But the Rapid Z 1000 ballistic reticle appears a much larger in the Victory Diavari than it does in the Conquest. Meaning the Rapid Z 1000 ballistic sweet spot for the PSE TAC 15 for

the 6-24x72 Victory Diavari is not the same as the 4-14x40 Conquest. As I began planning for my trip to the range to sight in the new scope, I attempted to find the easy way out to find the answer on where the new ballistic sweet spot is; as recommended in the user manual I navigated online to the Zeiss' Rapid Z Ballistic Calculator. But unfortunately found that the data-points of the Zeiss Rapid Z Ballistic Calculator were only setup for rifle ammunition and didn't offer the ability to plug in simple ballistic data-points associated with the kinetic energy and velocity of the PSE TAC 15 crossbow. My backup plan was to submit an official inquiry (email) to Zeiss Sporting Optics technical team to see if their engineers could help me calculate which magnification level is the sweet spot. A week or so later, I received a call from one of the Zeiss Sporting Optics engineers. The engineer was sincere at attempting to figure out what I

was trying to do, and I conveyed my success with the 4-14x40, but at the end of the conversation the engineer disclosed that the Zeiss Ballistic Calculator was only capable to calculate rifle ballistics. A bit surprised that the engineer was unwilling or incapable to do the math based on the data of the PSE TAC 15 that I provided, I attempted to convince the engineer that figuring out the Rapid Z reticle for the ballistics of the crossbow would open up a whole new sales market for Zeiss. The engineer agreed and further disclosed that the company just let him buy a crossbow to test in the field to help unlock the ballistics simply based on my inquiry. But that didn't help me much. As we ended the conversation, our conclusion was that field testing was the only way to arrive at the answer. I knew that I was in for a couple long days at the target range.



Needless to say, after spending three (3) days at the range testing varies 6x though 24x magnification settings from 20 to 100 yards, I found the ballistic sweet spot for the Zeiss Victory Diavari 6-24x72 is on 8x zoom. On 8x zoom the Rapid Z 1000 ballistic reticle works near perfectly for the PSE TAC 15 to shoot out to 100 yards. But that is not the limit. Then using the elevation turret, I'm able to make manual adjustments and shoot out to 130 yards (note: "1" click actually equals four ticks on the elevation turret);

105 yds = (+ 5 clicks)

110 yds = (+ 10 clicks)

115 yds = (+ 16 clicks)

120 yds = (+ 22 clicks)

125 yds = (+ 33 clicks)

130 yds = (+ 44 clicks)



My assessment of the PSE TAC 15 is that it is capable to shoot further, but the range of elevation turret of the Victory Diavari 6-24x72 is maxed out at 130 yds (+ 44 clicks).

VIDEO: PSE TAC 15 LONG-RANGE (130 yards) TARGET PRACTICE - HYPERLINK

A photograph of a soybean field with a red circle highlighting a spot in the distance. The field is lush green, and the background shows a line of trees under a bright sky. In the foreground, there is a camouflage hat and some branches.

STEP 4: FIELD-CRAFT: There are a host of topics to potentially discuss applying effective tradecraft to be successful in the field, i.e. assessing the terrain, recognizing signs, selecting the proper hide/stand, wind-estimation, effective camouflage, use of shadows, limiting movement, animal behavior, reaction time, ceasing opportunities when presented, and extraction with minimal footprint. But this would take a whole article in-and-of-itself to cover adequately. The main point I want to get across in this section, is that you need to apply what you've practiced at the range, in a field environment. And I'll do that by illustrating two successful situations in which I've harvested mature whitetail bucks.

As mentioned previously, I've selected the PSE TAC 15 crossbow for use in archery season to maximize my success potential. One of my favorite spots overlooks a fifty (50) to seventy-five (75) acre soybean field and offers shots exceeding five-hundred (500) yards. In this spot, whitetail deer will routinely come out to feed in the twilight hours just as the light fades into darkness. The brush at the edge of the field offers an adequate hide for concealment in the prone position and provides opportunities at deer matching the maximum range of my crossbow. Wind and scent control is mitigated both by distance and elevation of the terrain. In this position, I can apply the techniques I've practiced at the target range for a successful engagement in the field.

SCENARIO # 1: SUCCESSFUL EIGHTY (80) YARD ARCHERY HARVEST.

Archery season runs approximately three (3) months in the State of Maryland. Midway through the season, around mid-October, I was hunting around the edge of a soybean field that had recently been harvested by the local farmer. Despite the recent soybean harvest, deer would continue to graze into the field just before nightfall to look for any remaining soybeans the farmer had overlooked. It was the time of year in which bucks began to pay more attention to the doe's, but yet the full rut had not kicked in.

I had hunted this area for several weeks and began to pattern a mature buck who would visit the soybean field nearly every other day. But given the field was roughly a hundred acres, it became difficult to pattern a location that offered an opportunity within range of my PSE TAC 15 crossbow. A couple of weeks had passed with the cat-and-mouse game and I was ready for a more aggressive approach. I decided to make a high-risk decision and setup my hide/stand on a trail that I observed deer enter the field on a consistent basis. I knew the risk in doing so may result in spooking the deer with my scent before they even made it into the field.

To attempt to mitigate the risk, I took extra precautions to maintain scent control with gear and strategic spot choice. I also entered the area well-before the deer arrived. The aggressive approach worked. But nearly failed when the first arrived.

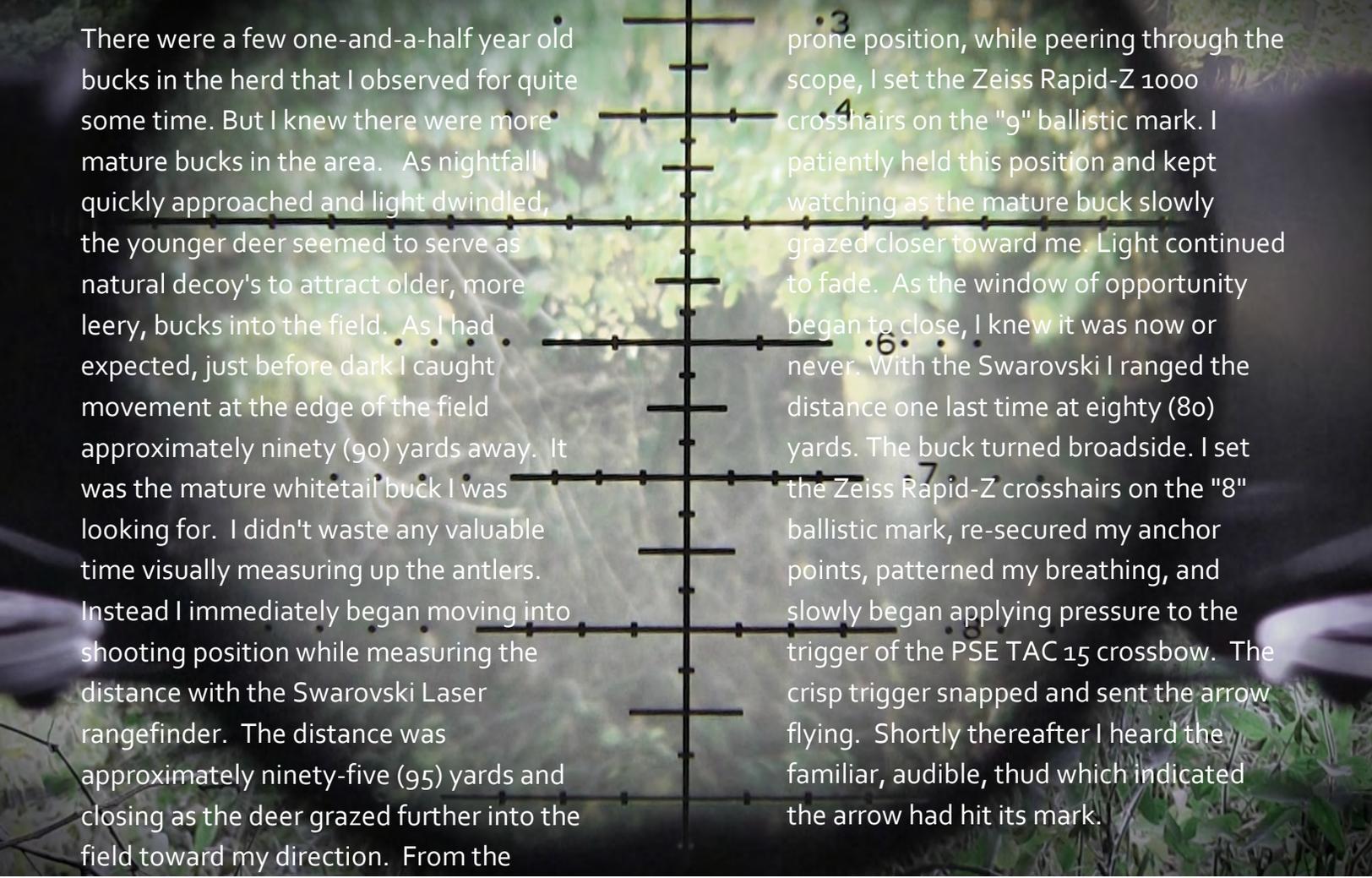
I've observed the social behavior of deer for quite some time. One behavioral trait that I've begun to consistently pattern is, when a group of deer are traveling together, the first couple deer that lead the herd are often the most alert. If the first couple of deer detect no sign of danger and enter an area, the remaining deer enter much less alert and with little-to-no regard for danger. Thereby, the last remaining deer to enter an area essentially trust the instincts of the first couple of deer. And once in a field, each of the deer seem singularly lower their guard and then collectively as a herd rely upon each other's instincts to detect danger. But there is an additional behavioral factor which compounds matters further.

It seems when multiple deer are vying for the same source of food, competition ensues. In this social setting, deer seem to lower their guard even further and make consuming food their main

priority. On a couple of successful hunts, I've used this to my advantage.

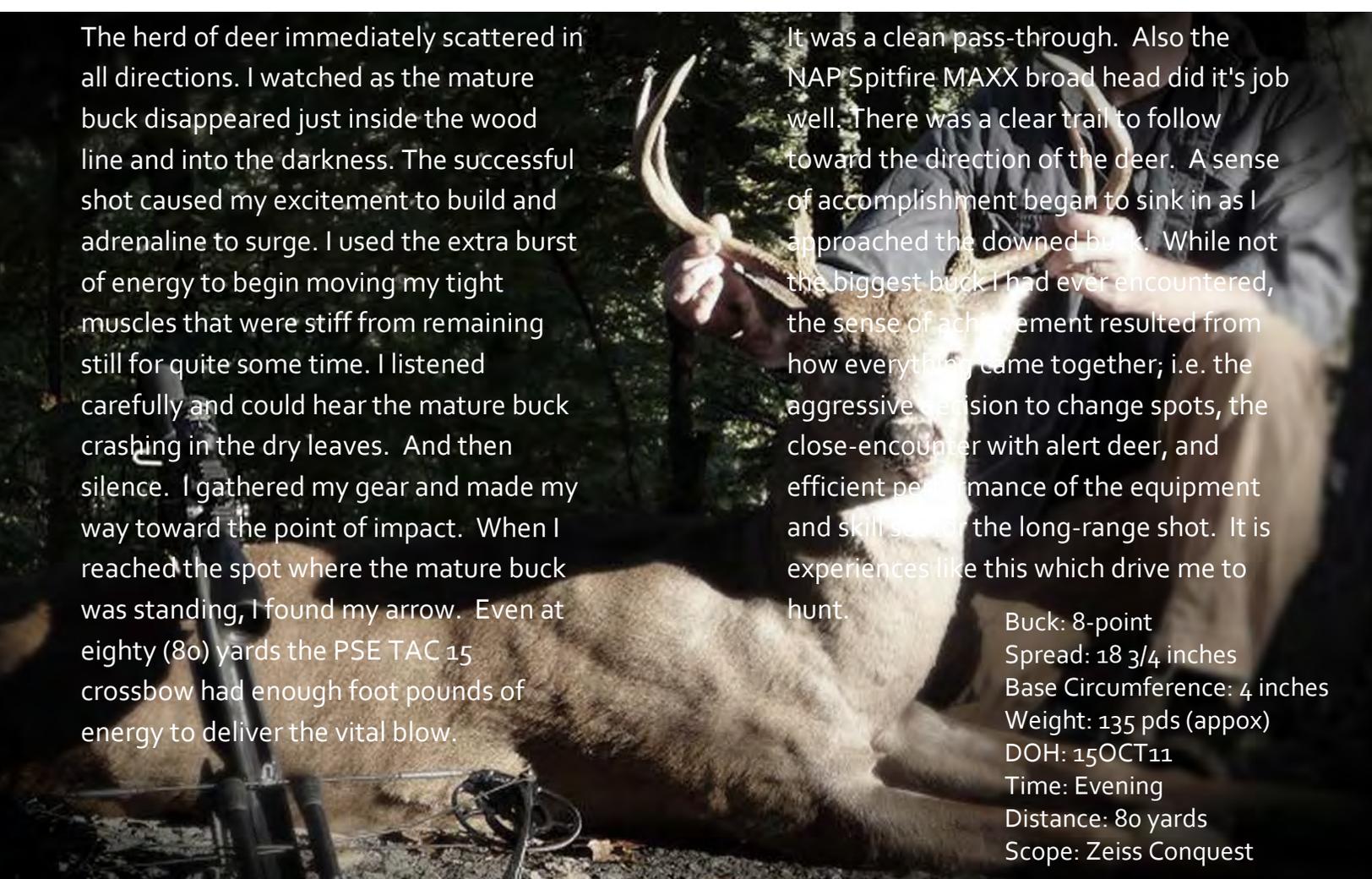
This hunt was one of those situations. On this particular evening, I found myself staring toe-to-toe with a small buck and a dominant doe. They both seemed to serve as tip of the spear for a much larger herd that approached the field. Both of these two deer sensed that I was there; i.e. potentially seeing a slight modification in the brush they were familiar with seeing day-after-day or picking up a small hint of human scent that they were not familiar with. Both deer were less than ten (10) yards away from me. They moved their heads from side-to-side to and stomped their feet to try to get me to flinch.

I didn't move a muscle or breathe for what seemed like a half-hour. Both deer circled me as the rest of the herd watched curiously from a safe distance. The two most alert deer eventually passed by, seemingly satisfied that they had inspected me enough and determined that I was either not a significant threat or they were more hungry to worry about me any longer. They eagerly grazed out into the field. The rest of the herd quickly followed.



There were a few one-and-a-half year old bucks in the herd that I observed for quite some time. But I knew there were more mature bucks in the area. As nightfall quickly approached and light dwindled, the younger deer seemed to serve as natural decoy's to attract older, more leery, bucks into the field. As I had expected, just before dark I caught movement at the edge of the field approximately ninety (90) yards away. It was the mature whitetail buck I was looking for. I didn't waste any valuable time visually measuring up the antlers. Instead I immediately began moving into shooting position while measuring the distance with the Swarovski Laser rangefinder. The distance was approximately ninety-five (95) yards and closing as the deer grazed further into the field toward my direction. From the

prone position, while peering through the scope, I set the Zeiss Rapid-Z 1000 crosshairs on the "9" ballistic mark. I patiently held this position and kept watching as the mature buck slowly grazed closer toward me. Light continued to fade. As the window of opportunity began to close, I knew it was now or never. With the Swarovski I ranged the distance one last time at eighty (80) yards. The buck turned broadside. I set the Zeiss Rapid-Z crosshairs on the "8" ballistic mark, re-secured my anchor points, patterned my breathing, and slowly began applying pressure to the trigger of the PSE TAC 15 crossbow. The crisp trigger snapped and sent the arrow flying. Shortly thereafter I heard the familiar, audible, thud which indicated the arrow had hit its mark.



The herd of deer immediately scattered in all directions. I watched as the mature buck disappeared just inside the wood line and into the darkness. The successful shot caused my excitement to build and adrenaline to surge. I used the extra burst of energy to begin moving my tight muscles that were stiff from remaining still for quite some time. I listened carefully and could hear the mature buck crashing in the dry leaves. And then silence. I gathered my gear and made my way toward the point of impact. When I reached the spot where the mature buck was standing, I found my arrow. Even at eighty (80) yards the PSE TAC 15 crossbow had enough foot pounds of energy to deliver the vital blow.

It was a clean pass-through. Also the NAP Spitfire MAXX broad head did it's job well. There was a clear trail to follow toward the direction of the deer. A sense of accomplishment began to sink in as I approached the downed buck. While not the biggest buck I had ever encountered, the sense of achievement resulted from how everything came together; i.e. the aggressive decision to change spots, the close-encounter with alert deer, and efficient performance of the equipment and skill for the long-range shot. It is experiences like this which drive me to hunt.

Buck: 8-point
Spread: 18 3/4 inches
Base Circumference: 4 inches
Weight: 135 pds (approx)
DOH: 15OCT11
Time: Evening
Distance: 80 yards
Scope: Zeiss Conquest

SCENARIO # 2: SUCCESSFUL NINETY-EIGHT (98)

YARD ARCHERY HARVEST

Early in archery season I was hunting on the ground in a thick hide of cover overlooking a soybean field. As twilight approached I knew it was just a matter of time before deer would emerge from the woods and begin feeding into the field. While I scanned the field, out of the corner of my eye I caught some movement and quickly realized a couple of deer had quickly entered into the field approximately sixty (60) yards away from me. Immediately I observed that each of the deer had antlers. And to my surprise, they weren't alone. Suddenly my body and senses moved from a state of rest, into alert mode, as I began to get ready to apply all the techniques that I had trained for. Altogether a bachelor-pack of seven or eight bucks entered into the field, one after another. They began nipping the heads off the fresh-green soybean plants as if they had not eaten for quite some time.

As they quickly grazed further into the field, I rapidly scanned each of them with my Swarovski Rangefinder to determine body-size and maturity. I observed at least four (4) mature bucks, but focused on the largest one.

Once I realized that I wanted to take a shot, to my surprise the herd of deer had doubled their distance between me and them. I ranged them to be approximately one-hundred and twenty (120) yards away; uncomfortably too far away my current skill-set with the PSE TAC 15 crossbow.

As light began to fade and I quickly realized the deer weren't getting any closer. Instead of becoming resolved that I would simply have to wait for another day and another opportunity, I realized I needed to do something to make the most of my present situation. I decided to belly-crawl into the soybean field to close the distance. The sixteen (16) to twenty-four (24) inch soybean plants offered perfect concealment to cover my movement. Once I reach a slight drop-off in the terrain which offered a better view of the field, with the Swarovski Laser Rangefinder I triple-checked the distance between me and the mature buck I had focused on. The distance measured ninety-eight (98) yards.

Given the time I spent at the target range earlier in the year, I knew my skill-set was adequate for this distance. With light fading, it was now or never.

With the Zeiss Conquest on six (6) power zoom magnification, I settled on the "10" mark on the Rapid Z 1000 ballistic reticle, which equated to one-hundred (100) yards for the PSE TAC 15 crossbow.

Laying flat in the prone position, just as I had practiced, I rested the front of the crossbow securely on the Harris bipod and held the rear of the crossbow firmly and anchored both elbows firmly on the ground. I settled my breathing and peered through the scope at the mature buck. There was little-to-no movement. I confidently squeezed the trigger. Quickly after the arrow took flight I heard an audible and solid "thud" which confirmed a good hit. I lifted my head from the scope and watched as the herd of deer ran across the soybean field and disappeared just over the horizon.

Once I realized I had shot the biggest buck I've ever encountered in the wild, buck fever began to set in. Adrenaline surged through my veins and my heart began to beat rapidly. I did my best to contain myself but remember looking down at the PSE TAC 15 in awe at what this finely-tuned piece of equipment had just helped me accomplish.

My mind raced with excitement as I struggled to decide if I should crawl back to get my gear or go to the point of impact to begin tracking the mature buck. Knowing I was hunting on public property and there was a chance that I would encounter other hunters, I decided to begin tracking the buck. Once I reached the point of impact, I began looking for my arrow or signs of a solid hit. In the fresh soybean field it was difficult to see the ground. I struggled to find a positive sign of a hit. I noticed a flashlight from another hunter enter the field and begin quickly traversing across the field. The hunter was doing his best to avoid my activity in the field. But once I realized he was inadvertently heading toward the area in which the buck ran, I started walking toward him and flagged him down with my flashlight.

Once I reached him I told him I had shot a mature buck and was looking for signs. The other hunter offered to help. I briefed him on the long-distance shot, the impact, and where mature buck ran after the shot. At first he raised an eyebrow at my far-fetched story in disbelief, but still continued to offer his assistance.



I returned to the point of impact and he began looking for signs where the buck ran. He saw the signs before I did; a good trace of blood on the broad green leaves of the soybean plants. Together we followed the trail of blood. I think he was nearly as excited as I was, when we both came up on the downed buck and realized how big it actually was. He was the first to point out that my

arrow had nearly passed through the entire length of the deer, from tail-to-tip. The arrow was protruding nearly 3/4 of the way out of the front chest. I hit exactly where I had aimed and caught most of the essential vitals. Given the one-hundred (100) yard shot, the PSE TAC 15 clearly had enough foot pounds of energy to deliver the vital blow. The other hunter was so

excited at the buck and my long-range shot that he called his other buddy who was returning from the stand to deliver the news. Both of them, stuck around to assist with field dressing the deer, helped be drag it out, and then even offered their truck to transport the mature buck back to my house (since I was driving a small two-door hatchback).



Buck: 6-point
4 non-typical points measuring
over an inch at base
Spread: 20 1/4 inches
Base Circumference: 6 inches
Weight: 175 pds (approx)
DOH: 15SEP11
Time: Evening
Distance: 98 yards
Crossbow: PSE TAC 15
Scope: Zeiss Conquest 4-14x40 Target Rapid-Z 1000
Rangefinder: Swarovski 8x30 Laser Guide

In the weeks and months to come, unbeknown to me, word began to spread on online forums of my long-range shot with the PSE TAC 15 crossbow on the mature whitetail buck. It wasn't until a year later when I encountered another bow hunter in the field and explained the success I had the previous year, that I found out that my story was known to more people

that I realized. When I told the hunter, he immediately responded ... "That was you? You've become somewhat of a legend!" He then directed me to a couple of forums online where my story was being discussed. I navigated to the online forums and to my surprise the two hunters (complete strangers) who had helped me take care of my buck a year earlier, had

vowed for my story when others were questioning the credibility. There was even a low-quality smart-phone picture of my buck laying in the soybean field. I decided to post more information to show how plausible it is to be successful at making long-range harvests with the PSE TAC 15 crossbow.

STEP 5: SELF-ASSESSMENT AND IMPROVEMENT:

Ancient wisdom suggests, "The unexamined life is not worth living." In other words, no one is perfect; self-assessment of one's strengths, capabilities, weaknesses and desire to get better at what you seek to accomplish is a key aspect of success. By all means I do not claim to have a direct pipeline to truth or be the most accurate marksman. In fact, I am quite understanding and sympathetic to those who critique my tradecraft. Criticism is a common tool I use for self-improvement.

CRITIQUE 1: LONG-RANGE HUNTING IS UNETHICAL: I've experienced both naysayers and cynics of my tradecraft. I don't wish to engage an ethical debate of long-range shooting; but will say that I've studied the long-range shooting tradecraft for some time now, which has now transpired over to this weapon system for archery hunting. But I understand it's not for everyone without the proper training, equipment, field-time and skill-set. Hunting at any range can be unethical, whether it's twenty (20) or one-hundred (100) yards. There are a number of factors involved, i.e. physical

capabilities, equipment, skill-level, practice, shot choice, timing. It is every hunters responsibility to ensure the decisions made in the field is done efficiently and ethically. This is probably one of the reasons I've decided to switch in the first place from a vertical compound bow to the PSE TAC 15 crossbow. Growing-up, hunting with a vertical compound bow, I've wounded deer while hunting at 20-30 yards and that just doesn't sit right with me. I've found the compound bow, while considered an advancement by some, still has its limitations to a very unique skill-set and short distances. Based on my own self-assessment, I could not master the compound-bow to enjoy archery hunting enough to make the needed shots in the field. I needed a platform that I was more comfortable with, and capable to match the opportunities presented to me while hunting.

The PSE TAC 15 crossbow helped me accomplish this objective. Its consistent accuracy and knock-down power, matched with my particular skill-set allows me to make more calculated and ethical decisions in the field. And knock-

on-wood, I've never wounded a deer utilizing this method.

CRITIQUE 2: ACCURACY AND KNOCK-DOWN POWER LIMITATIONS: Critics have suggested that it is unethical to shoot anything with a bow (crossbow included), beyond fifty (50) yards. The argument is that beyond 50 yards the kinetic energy and accuracy diminishes too much, making any shot beyond this distance an unethical choice. But archery technology has come a long way since hunters first found a strong stick, bent it, tied a string to it and began catapulting arrows from the first recurve bow. The PSE TAC 15 is a fine example of the most advanced and efficient archery technology on the market today. As demonstrated above, the speed, knock-down power, and accuracy are sufficient to make a successful harvest out to one-hundred (100) yards, and probably further. As mentioned earlier, I've practiced all the way out to one-hundred and thirty (130) yards with the PSE TAC 15. But I'm not yet comfortable enough to take a shot in the field at 130 yards. My accuracy diminishes substantially as I move further out from 100 to 130 yards.



This picture is an example of my accuracy with the PSE TAC 15 at 130 yards. The black rings on the target are roughly ten (10) inches in circumference. For me this group pattern is not enough to be considered "accurate."

But for the another hunter who was practicing before me on the same target from fifty (50) yards with his vertical compound bow, he would definitely consider this grouping pattern "accurate" considering he couldn't hit the entire paper target at 50 yards.

But at one-hundred (100) yards, I'm able to consistently produce tighter patterns inside and just around the white bull's-eye.

But I believe when the PSE TAC 15 is tuned and setup correctly, and with the proper practice, there is potential to hit targets "accurately" even at 130 yards and beyond.

This past year I've attempted to perform some routine maintenance on my PSE TAC 15 that I've assessed may be affecting the performance and accuracy of my crossbow. I've re-stringed the crossbow and changed out the front whisker-biscuit rest. After spending a great deal of time and the range and in the field, these two originally-issued items were worn down enough that my accuracy was diminishing. But when I replaced the crossbow string, I'm not sure that I have the

string and front rest lined up right. The arrow (bolt) may be flying crooked due to a slight misalignment of the cable-release on the string and the front whisker-biscuit rest. I've thought about replacing the whisker-biscuit with a drop away rest to improve accuracy. Also, if I want to shoot further, I'll need a different scope. Currently I'm maxed-out with the ballistic reticle and target-turret elevation settings on the Zeiss Diavari to shoot further than 130 yards. But in the end, I may have found the maximum efficiency of my crossbow and skill-set anyway. Or it may merely be, an arrow in flight, can only produce a certain degree of stability before accuracy is degraded ... and 130 yards may be it.

CRITIQUE 3: DEER CAN DODGE AN ARROW AT LONG DISTANCES: Critics have suggested, that when shooting at a deer at long distances, they will hear or see the arrow approaching them and have time to flinch and dodge the arrow. This may be a valuable critique. This past year I've put this theory to the test. I took a video camera to the target range to

observe the sound and sight signature at various distances. Initial testing found that the sound signature at one-hundred (100) yards and beyond, i.e. 130 yards as demonstrated in the video associated with this article, the sound signature is so minimal that the deer would seemingly not have enough time to react as the arrow approaches impact. Check out the

video. The sound of bow is barely audible. Not enough to startle a deer at 130 yards. The sound of the arrow as it approaches impact is more alarming. But it still doesn't give the deer enough time to react. Average human reaction time is between 0.15 and 0.30 seconds. Take another look at the video, observing sound.

VIDEO: PSE TAC 15 LONG-RANGE (130 yards) TARGET PRACTICE - [HYPERLINK](#)

As demonstrated in a real-time experience, neither deer (buck 1 or 2 case samples, above) reacted until after impact. Whether shooting close range or long range, the moment you choose to shoot is critical. You gain a couple tenths of a second if the deer is in a relaxed as opposed to heightened state of awareness or alertness. Therefore the error margin is lowered if the deer is in a relaxed state.

But I do have one self-criticism that I'm still working on. As mentioned previously, this year I've added illuminated arrow-nocks to my setup. While seeing an illuminated arrow in flight, will help me (as the shooter) determine the point of impact in the field, it may also give the animal an advantage. The speed of light is much faster than the speed of sound. And it may be, that an animal may be able to see

the illuminated arrow nock and react much quicker. This theory has not been tested. If the illuminated nocks are found to bring a disadvantage in a real-world situation, I'll re-assess if using them is worth the risk.

CRITIQUE 4: EQUIPMENT, SCOPE (SFP vs FFP) CRITICS: The Zeiss Conquest and Victory Diavari scopes that I've used on the PSE TAC 15 crossbow have a reticle in the Second Focal Plane (SFP), essentially meaning that as you change the zoom magnification (i.e. from 6x through 24x power) the point-of-impact will change - even though the size of the reticle remains the same. This limits any weapons system to one magnification setting. Critics might claim that using a scope with a First Focal Plane (FFP) would solve the problem of the changing point-of-impact through the various zoom magnification

settings; since the reticle changes with various zoom magnifications. While true, most ballistic reticles on FFP scopes are setup for rifle ammunition (i.e. 223, 308, etc.) and will not match up to the ballistic drop of a PSE TAC 15 crossbow, especially with ballistic lines useful out to 100 yards for the TAC 15. This doesn't necessarily mean that there isn't a FFP scope on the market with a ballistic reticle that matches the PSE TAC 15 crossbow, I just don't have the unlimited resources to purchase multiple FFP scopes, and test them on the range, to see if they meet the requirement. That is the benefit of a SFP model of the Zeiss Conquest or Victory Diavari with the Rapid Z 1000 reticle; it can be fine tuned for a wide-variety of ballistics - you just have to find the ballistic sweet spot for your setup and stick with that zoom magnification.

At 160 yards they were just out of range of for my current skill-set and exceeded the capability of my equipment. But who knows, maybe next year an encounter such as this, will be within reach and serve as success story of what can be accomplished with the right equipment and the right training. Perhaps a worthy goal to honor those that have come before us ... who've helped develop our equipment, pass on knowledge, and inspire our abilities to what we've come to enjoy today. So when the forces of nature all come together and offer a unique opportunity, you stand poised, fully capable and ready to meet the challenges that the wilderness presents.

STEP 6: IMPROVEMENT: Each year that hunting season approaches I strive to grow both as a hunter (field tradecraft) and as a marksman (distance, accuracy). Upon conclusion of each hunting season I conduct a self-assessment to determine what went right and what went wrong; hide/stand location, animal behavior, shot placement, equipment efficiency, physical strengths and weaknesses. I then use the lessons-learned to develop and refine methodology to become more successful. Each year, brings new challenges which ultimately turn into new goals or objectives. For example, on the first day of the 2013 archery season (early September) I encountered the following mature bucks; One was an eight (8) point with G2's longer than ten (10) inches. The other was a ten (10) point with significant mass. They entered the soybean field in the evening to feed, approximately one-hundred and sixty (160) yards from where I was located.



Stay tuned ... for my next article which discusses an encounter with the biggest whitetail buck that I've encountered in the wild; how buck fever caused me to neglect my training and make nearly every mistake possible ... and ultimately may have cost me a harvest of a lifetime. I'll have the step-by-step video breakdown.