2014 / 2015

Shooting Season

Guidebook

WB

SHOOTING TEAM

Contents

Mission Statement

Established in 2009, the William Blount Shooting Team teaches youth the importance of firearms safety while molding the future sportsmen/women of Tennessee Shooting Sports. This is accomplished by instilling the personal values of self-discipline, self-confidence, leadership, responsibility, sportsmanship, commitment and teamwork. WBST's goal is to not only create great athletes, but to create great citizens as well.

William Blount Shooting Team – Governance and Information

WBST has a five member board of directors which govern all team activities. We are an incorporated entity and have applied for our 501(c) 3 tax status

President of the Board
Jim Hartman – Shotgun Team Head Coach

Vice President
Bill Huskey

Treasurer
Pam Hartman

Secretary
Joyce Gurley

Director
Paul Carrington – Pistol Team Head Coach

Website: www.wbshootingteam.org
Email: wbshootingteam@yahoo.com

Questions about the team or team activities contact Pam Hartman at 865-805-1809

Pistol Team Information

Head Coach: Paul Carrington
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Shotgun Team Information

Head Coach: Jim Hartman
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Sport Shooting Program Information

Tennessee Scholastic Clay Target Program

The Tennessee Scholastic Clay Target Program (TNSCTP) is designed for middle/intermediate (grade 5) through collegiate levels, and allows for the participation in the safe, educational, and enjoyable clay target sports of American Skeet, Sporting Clays, and American Trap. There is no other sport that offers such a "level playing field" for gender participation as shooting sports, and there is no other sport which shows such rapid development of self-discipline and self-confidence as this. All activities incorporate two indispensable elements – SAFETY FUN. We cannot and will not have one without the other.

Athlete Eligibility Requirements

- Each athlete must complete and pass the Tennessee Wildlife Resources Agency Hunter Education Safety program before allowed to practice or compete in TNSCTP. The team will arrange for one training session prior to the start of the season.
- Each athlete's name must be on an official TNSCTP ROSTER and all fees and forms must be completed before the athlete is allowed to practice or compete in TNSCTP events.
- Since this is a scholastic program, athletes must be enrolled in school at time of participation. Collegiate athletes must be enrolled as a full-time student in a post-secondary institution. Athletes who graduate or complete graduation requirements mid-term may complete the target year.
- To determine an athlete's eligibility for the TNSCTP season, the grade level he or she entered in the Fall School Semester is the one that will be used for assignment to a division.
- Athletes may not receive cash awards when participating in TNSCTP events.
- Athletes must maintain a 2.0 grade point average. This will be checked at each reporting period. Athletes will be required to produce a copy of their report card to participate in the upcoming semester.
- Athletes must attend a minimum of six (6) team practice sessions in order to be eligible to shoot in a State or National event representing that team.
- It is the requirement of each athlete to shoot a minimum of 600 practice targets at their "home club of record" before competing in the State Shoot and regional shoots shall count towards the required 600.
- Team Composition
    - Athletes must shoot within the school zone they attend when a team is available, unless they attend a private school.
        - If this does not apply, shooter must shoot for a team within his/her county of residence.
    - All issues not covered by above must be addressed by the TNSCTP Executive Committee for that discipline. This request must be submitted in writing to the athlete's Regional Director.
    - Athlete's attending Home Based Schools must attach a copy of the Tennessee Department of Education letter granting approval under Department of Education Codes to be a home school student.

Equipment Guidelines

Each athlete is required to provide their own equipment. When possible, the team may elect to provide shotgun shells, pay entry fees, and provide team apparel. These actions are solely at the discretion of the Board of Directors and are usually a direct result of fund raising efforts.

Shotgun

Your child is going to need a shotgun that is safe and serviceable within the following guidelines:

- Any action type may be used; however the child will be required to make two shots in rapid succession in both the Skeet and Sporting Clays disciplines.
- Shotguns 12 gauge or smaller, may be used as long as they are in a safe and in serviceable condition.
- Shotguns used for all disciplines, except for Trap, must be able to shoot twice without reloading.
- Pump action shotguns are allowed, however the cycling of the actions typically delays the athletes time to target and therefore they become undesirable.

Shot Shells

- Typical shot shell sizes are #7, 8 & 9 marked for target shooting.
- Must have tax stamp for competitions and comply with the discipline's NGB rule for payload weight and, in some cases, velocity.
- Reloaded shells are acceptable for practice; however, reloads are not allowed in competition.

Eye Protection

- All shooters must wear glasses to protect eyes from stray clay fragments or burn powder. Good glasses will also help the shooter to see clays more easily by cutting down glare from the sun or brightening up a dull day.
- Glasses must meet ANSI Z87.1 safety standard impact protection levels. Safety glasses of this type may be purchased at any sporting goods store, or at a home improvement /hardware store.
- While tinted glasses are preferred by some shooters, and they are acceptable, beginning shooters should start the season with clear glasses.

Ear Protection

- Either sponge plugs which are inserted into the ear, or earphones which cover the whole ear are mandatory for all shooters. Foam earplugs have a noise reduction rating of 29dB (NRR29) and would be our lightest recommendation for noise reduction rating.

Clothing

For competitions athletes should wear the following:

- Team shirt
- Team hat
- Khaki shorts no higher than five (5) inches above the knee or blue jeans
- Closed-toe footwear

Note: Athletes must wear the same components for practice sessions, though team apparel is not required.

Safety Rules

- SAFETY IS EVERONE'S RESPONSIBILITY.
- Anyone on the shooting field MUST wear EYE, EAR, and FOOT PROTECTION during practice and any competitive events.
- Shotguns should always be broken open or have a breech guard in place unless the athlete is on the shooting-stand ready to shoot.
- All athletes must wear closed-toe footwear. Violation of this rule may be grounds for disqualification.
- The muzzle of the gun should never rest on the foot. Violation of this rule may be grounds for disqualification.
- While on a shooting post or station, the muzzle must never cross any part of the shooter's anatomy or any other person's anatomy. Violation of this rule may be grounds for disqualification.

High School Lettering Criteria

- Varsity athlete must remain in good standing as member of the team throughout the full season.
- Athlete must have participated in given program (varsity or junior varsity) for at least two years.
- Athlete is required to participate in 70% of practices.
- Athlete must participate in regional tournaments.
- Athlete must maintain a 2.5 GPA.

Practices

- September 4th through June 12th on Monday and Thursday from 5 PM to 7PM. Monday practices will stop when Daylight savings ends (November thru February) as the field does not have lights.
- Cost is $5 per round of clay targets. Additional targets may be purchased, time permitting.
- Sporting Clay rounds consist of 100 targets at a cost determined by the range. Normal costs are $20 per round per athlete. Sporting Clays are scheduled as the field allows.
- Monday practices are held at the Blount County 9-1-1 Center located behind Newell-Rubbermaid at 1427 William Blount Drive in Maryville (Directions: Turn onto Sharpie Blvd., stay to the left, and follow signs. Once at the gate call center, let the call center attendant know you are with the William Blount Shooting Team and you will be allowed through the gate. Drive past the pavilion. Park in the lot and walk to the field past the obstacle course).
- Thursday practices are held at the Smoky Mountain Sportsman's Club located at 4286 Miser Station Road in Louisville. Please park on gravel and proceed to volunteers to purchase token.
- Each athlete is required to attend a minimum of six (6) practices to remain on team and must shoot at least 600 targets to compete in competitions.

Competitions

Regional Sporting Clays

- Open to any athlete that wants to compete and has completed required practices.
- Sporting Clay teams are comprised of three (3) athletes and teams are composed of like-skill levels.
- Cost for this event has historically been $35 per athlete.
- Each athlete must provide his/her shot shells.
- This event consists of 100 clay targets shot on 13-16 different stations.
- This event is normally held on the first weekend in May.
- Athletes must compete in a Regional competition in order to compete in the same event at the State level (i.e. only a shooter who competes in the regional skeet competition qualifies to compete on the state level as well).
- In the past, this competition has been held at Lucky 7 Range located at 6720 Erie Road in Sweetwater, Tennessee.

Regional Skeet

- Open to any athlete who wants to compete and has completed required practices.
- Skeet Teams are comprised of three (3) athletes and teams are composed of like-skill levels.
- Cost for this event has historically been $25 per athlete.
- Each athlete must provide his/her shot shells.
- This event consists of 100 clay targets shot on eight (8) different stations.
- This event is normally held on the third weekend in May.
- Must compete in Regional competition in order to compete in same event at State level.
- In the past, this competition has been held at Oak Ridge Sportsman's Association (ORSA) located at 2625 Oak Ridge Turnpike in Oak Ridge, Tennessee.

Regional Trap

- Open to any Athlete that wants to compete and has completed required practices.
- Trap Teams are comprised of five (5) athletes and teams are composed of like-skill levels.
- Cost for this event has historically been $30 per athlete.
- Each athlete must provide his/her shot shells.
- This event consists of 100 clay targets shot on five (5) different stations.
- This event is normally held on the last weekend in May.
- Each athlete must compete in Regional competition in order to compete in same event at State level.
- In the past, this competition has been held at Hog Heaven Gun Club located at 560 Highway 113 in White Pine, Tennessee.

State Championship

- Open to athletes that have competed in Regional events.
- Costs for these events have historically been $125 for all three events.
- Each athlete must provide his/her own shot shells.

- These events consist of 100 clay targets each in Sporting Clays, Skeet, and Trap.
- These events are normally held the third week in June.
- Must compete in a State event in order to compete in same event at Nationals.
- These events are held at Nashville Gun Club located at 1100 County Hospital Road in Nashville, Tennessee.

National American Championship

- Open to athletes that competed in State events and registered through National SCTP.
- Costs for these events have historically been $265 for all three events.
- Each athlete must provide his/her own shot shells, unless told otherwise.
- Events consist of 200 clay targets each in Sporting Clays, Skeet, and Trap.
- These events are normally held the third week in July.
- These events are held at the World Shooting and Recreational Complex located at 1 Main Event Lane in Sparta, Illinois.

A Guide to Shotguns

The Seven Steps of Shotgun Operation

The seven steps of operation of any firearm (rifle, shotgun, or pistol) are the same. The purpose of the action (mechanism) of any gun is to perform these seven steps. All actions accomplish the following steps of operation either mechanically or by hand, although not necessarily in this order:

1. FIRING--pulling the trigger releases the hammer or striker and fires the shell in the chamber.
2. UNLOCKING & PRIMARY EXTRACTION--the breech is securely locked closed during firing; after firing, the first operation is to unlock it. Autoloaders do this by means of gas pressure and an operating rod; other actions do this by manual movement of a bolt handle, slide handle, etc. In addition, the case left behind after the shot charge, wad, and powder are gone must be loosened from the chamber walls--this is called primary extraction, and it is accomplished mechanically as the action is unlocked.
3. EXTRACTION--the case is partially or fully removed from the chamber.
4. EJECTION--after extraction the case is removed from the gun; it is either lifted out by hand or thrown
5. COCKING--The hammer or striker spring is compressed as the hammer/striker is drawn back, and then held back by the sear; it is now cocked.
6. FEEDING--a fresh cartridge is chambered, either by hand, or by the forward travel of the breech-block (bolt).
7. LOCKING--The breech-block is locked closed and the gun is ready to fire again.

Specifically how these seven steps of operation are accomplished, and in what order, depends upon the type of action (Details for each action are not included here). If you carefully watch a shotgun mechanism operate, you will see how it performs these seven steps.

The shotgun actions covered here are the auto loading action, the pump action, and the break action (single shot and double barrel). These are the action types that the vast majority of modern shotguns employ. Listed below are the advantages and disadvantages of each type and some of the commonly known shotguns that employ each type of action.

The Autoloader Action

Remington Model 1100. Illustration courtesy of Remington Arms Co.

Long recoil operated, short recoil operated, and gas operated auto loading actions were all devised by John Browning, and the firm that bears his name has made all three types. The most famous long recoil action is the Browning Auto-5. This same design has been produced by Remington (as the famous Model 11), Savage, and others. All of these guns can be easily recognized by the familiar "square back" receiver.

A long recoil action uses the force of recoil to achieve the seven steps of operation. This action requires the barrel and bolt (locked together) to travel rearward for a distance somewhat greater than the full length of the fired cartridge before coming to a stop so that the fired shell may be extracted and ejected. Then the barrel unlocks from the bolt and returns to battery, followed a little later by the bolt, which strips a fresh shell from the magazine and chambers it as it returns to battery. Springs, compressed on the rear-ward movement, power the return to battery of the barrel and bolt. The jolt caused by the heavy barrel/bolt assembly reaching the end of its rearward travel immediately after the recoil caused by the firing of the cartridge gives the long recoil gun a peculiar "double shuffle" kick, which some shooters find disconcerting.

The short recoil shotgun also uses recoil energy for power, but the barrel and bolt are only locked together for a short distance, usually less than 1/2 inch. Then the two are separated and the barrel returned to battery by a spring while the bolt continues rearward to eject the fired case. At the end of its travel, the bolt is forced forward (by another spring) and it strips a fresh round from the magazine and chambers it as it returns to battery.

The gas operated auto loading shotgun uses the power of the expanding gas from the power charge to operate the action.

Probably the best-known gas operated shotgun ever made, and typical of the type, is the Remington Model 1100. This benchmark design has influenced the great majority of subsequent autoloaders. It has proven to be a reliable gun that significantly reduces perceived recoil. Gas operated autoloaders are offered by most manufacturers of repeating shotguns.

Autoloaders are very popular for the various clay target sports and also for hunting. They offer reduced perceived recoil (about 30%, due to the energy absorbed in operating their action) and a quick, almost effortless, second or third shot. This reduced recoil is particularly advantageous for trap and skeet shooters, who may shoot hundreds of rounds a day.

Autoloaders are typically a little more expensive than an equivalent pump gun, but much cheaper to manufacture and sell than a decent double gun. The shooter wishing to increase the versatility of his or her autoloader can purchase a second barrel of different configuration at a reasonable price. Barrels can usually be interchanged in minutes without tools.

Autoloaders generally require more maintenance than other types. Without it they are apt to become less reliable than a manually operated action, particularly in very cold weather. They must be kept clean and should be inspected for proper adjustment and worn parts on a regular basis. Other shotgun types will run practically forever if the shooter merely swabs out the chamber and bore and wipe down the outside of the gun with a silicone cloth. This is not true of autoloaders, and particularly gas operated autoloaders.

The primary disadvantage of the auto loading shotgun, besides increased maintenance, relates to the length of the receiver necessary to contain its action. This long receiver between the barrel and butt stock makes an autoloader about 4" longer than a break action gun with the same length barrel. Autos tend to be muzzle heavy and slow to swing with a barrel longer than 26" in length. This is a disadvantage shared with the pump gun (see below).

Some shooters find the automatic operation of the action between shots distracting, especially when shooting clay target doubles. Some autos tend to be fussy about ammunition; they will often fail to eject light loads, and sometimes fail to feed heavy loads.

The Pump Action

Remington Model 870. Illustration courtesy of Remington Arms Co.

The pump action is cycled by "pumping" the forearm after a shot is fired. The forearm is connected to the breech-bolt by rods called "action bars." These cause the bolt to move with the forearm, performing the seven steps of operation. There are two motions to pumping a shotgun. First the forearm is pulled straight to the rear. This initially unlocks the bolt, then extracts and ejects the fired shell as the bolt moves rearward. When the forearm reaches the end of its rearward stroke, it is pushed in the opposite direction, straight forward. It pulls the bolt with it, until the bolt once again locks in the fully forward position. During its forward motion the bolt picks up a fresh shell from the magazine, pushes it into the chamber, and locks into place. The gun is then ready for another shot.

The best-selling pump gun in history is the Remington Model 870, and the most famous is probably the Winchester Model 12. Winchester introduced the Model 1300 pump gun in 1964 as a replacement for the Model 12, and has produced it ever since. The 1300 was designed to be less expensive to manufacture than the classic Model 12. In recent years Browning has built a very nice pump gun named the BPS. These guns, along with the Mossberg 500 and its descendants, typify the American pump gun. In North America the pump was the most popular type of shotgun for a good part of the 20th century.

Pump guns handle virtually identically to gas operated autoloaders. Because of their long receiver they tend to be muzzle heavy if equipped with a barrel the same length as typically found on a break action gun. A pump gun with a 24" barrel is about the same overall length as a double with 28" barrels, and handles well, but the short barrel increases muzzle blast. A 26" barrel gives a pump about the same overall length as a double with a 30" barrel. Repeaters like pumps and autoloaders usually handle best with 26" barrels, and a 28" barrel is a practical maximum for field use. A pump with a 30" barrel is about the same length as a double with a 34" barrel, which is pretty clumsy for most purposes.

The principal advantages of the pump gun are its relatively economical price, 3+ shot capacity, reliability and fast manually operated action. Although it is not as popular in competition as the over/under or autoloader, many trap and skeet shooters do use pump guns and a quick second shot for doubles can be achieved with practice.

Pumps are particularly useful as field guns. They are not sensitive to ammunition and can be used with light or heavy loads, including reloads. A second barrel (longer or shorter) or multiple choke tubes can be purchased to increase the versatility of the gun at modest cost. A pump gun is usually the cheapest, and often the best, way for the occasional shotgun shooter to get into a repeater that is suitable for fast follow-up shots in the field.

The Break Action

Break action shotguns commonly come in single barrel and double barrel styles. Single barrel guns are usually either inexpensive beginner guns or special purpose trap (competition) guns. Double barrel guns have the barrels placed side-by-side or one superposed over the other (over/under).

Any break action gun is the safest of all shotgun types, since simply opening the action reveals whether it is loaded and renders it inoperable. It also makes it very easy to check for barrel obstructions. A break-action gun should not be closed until it is time to shoot.

Single barrel

Browning BT-99 trap gun. Illustration courtesy of Browning Arms.

The single barrel, break action shotgun is compact, light, handy, well balanced and effective. It is most commonly seen as a beginner's field gun. These are usually rather plain, inexpensive, mass produced guns stocked in hardwood or plastic. They often have an external, rebounding hammer that must be cocked before they can be fired. If equipped with an ejector a single barrel can be reloaded fairly rapidly.

A commonly encountered form of single barrel shotgun is the single barrel trap gun. These are top-flight competition guns, built by many of the famous double gun manufacturers. They are usually impeccably fitted and finished guns, typically featuring long 32 or 34 inch barrels with elevated ventilated ribs, beavertail fore-ends, and straight, Monte Carlo, or adjustable combs.

The Browning BT-99 is perhaps the most famous of the breed, along with the legendary Ithaca Single Barrel Trap Gun.

Side-by-Side double barrel

Model 21 shotgun. Illustration courtesy of Connecticut Shotgun Mfg. Co.

The queen of shotguns is the elegant break action, side-by-side double barrel. No other design is as graceful or as aesthetically pleasing. Double guns are generally built on actions called "boxlock" (where the action parts--the locks--are carried inside of the action body), or "sidelock" (where the lock work is attached to side plates inletted into the wood behind the body of the action). FYI: both types were invented in Britain.

Virtually all double-barreled shotguns today are of the familiar break-open design, fundamentally similar to the break-action single shot guns with which most kids learn how to shoot. To open the action, a top lever (operating what is called a Scott spindle) is pressed to the side and the barrels pivot down around a hinge pin at the front of the action bar, opening the action and exposing the breech end of the barrels for loading or unloading.

Most of the better double guns have automatic ejectors, which eject fired shell cases when the action is opened, but merely extract unfired cases from the chamber for easy hand removal. Automatic ejectors were developed to reduce the time it takes to reload a double gun, for while reloading must be accomplished by hand, unloading can be made automatic.

To speed reloading even further some doubles feature assisted opening. This uses some form of spring action to help kick the barrels open when the top lever is operated. Of course, this spring must be compressed when the gun is closed, requiring more effort to close the gun.

Some double guns also have a single selective trigger (SST), which the user can set to fire either barrel first and which then automatically resets to fire the second barrel. This is a complicated type of trigger. Not all makers of best guns offer a SST and some of those that do probably shouldn't. Many are prone to "doubling" (firing both barrels at once) or "balking" (not firing the second barrel when the trigger is pulled).

There are also single non-selective triggers, which always fire the same barrel first. Since they are much simpler than SST's these usually work fine. Lots of fine European live pigeon (competition) guns come with non-selective single triggers because the open choked barrel is always fired first and a single trigger is perhaps a hair faster than double triggers.

Most double guns intended for hunting still have two separate triggers, one for each barrel. Two triggers are perhaps the easiest way for the hunter to select which barrel to fire first. This design

is the simplest, most reliable and gives the shooter, in effect, two entirely separate actions so that a malfunction in one does not render the other inoperable.

A side-by-side double gun offers an instant choice of two chokes, short overall length (compared to a repeater) for any given barrel length, a trim receiver for easy carrying, a very quick second shot, superior "between the hands" balance and generally the best handling available in a shotgun. It is also the most graceful of all guns. As noted above, any break action gun is the safest of all shotgun types, since simply opening the action reveals whether it is loaded and renders it inoperable. The typical double's sliding tang-mounted safety is quicker and easier to operate than the safety mounted in the trigger guard of most repeaters. A double is also extremely easy to check for barrel obstructions.

Over/Under Double Barrel

Browning Citori. Illustration courtesy of Browning Arms.

In the last 50 years, more titles and trophies in trap and skeet, including Olympic medals, have been won with O/U guns than with any other type. Despite its somewhat ungainly appearance (compared to a side-by-side), the O/U is the bestselling double barreled gun in the world today. The stack barrel can be made to balance and swing just as well as a side-by-side, but its receiver is thicker so it doesn't look or feel quite as trim.

The O/U's advantages include a single sighting plane, short overall length, excellent balance, tang-mounted safety and the same safety advantages as other break action guns. Most O/U's today come with single triggers and offer a very fast second shot, faster than an autoloader since no time is wasted while the action cycles. The first of these advantages is why most shooters today prefer it to the side-by-side. The other advantages are why so many top-level competition shooters prefer the O/U to repeating shotguns, despite its much higher price.

About the only disadvantage to any quality double, whether it's a side-by-side or over/under, is the price. These superior guns are expensive to manufacture.

Understanding Shotgun Chokes

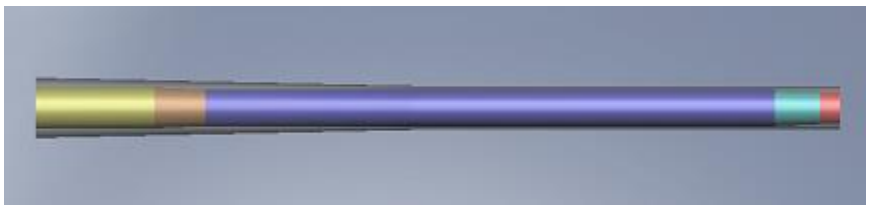
If a shooter is new to shooting and does not understand shotgun chokes, he/she should not be surprised. Seventy five percent of shotgun shooters who have shot for many years do not understand shotgun chokes either. Starting at the beginning: shotgun chokes were designed to control pattern diameters at different yards. What is a pattern? It is just the grouping of the pellets at a given yardage. This grouping is called a pattern and is measured by a circle diameter. This particular circle must have certain efficiency. In other words, it has to have a certain number of pellets in a given area (called distribution) for it to be labeled an efficient pattern. It is that

easy! However, the confusion starts when they are labeled and a shooter tries to figure out what to use and when.

Here is a quick reference chart:

Shotgun Choke	**Yardage**	**Shotgun Choke Restriction** **Diameter difference between bore and shotgun choke**
Cylinder	< 20	0
Skeet	22.5	.005 of an inch
Improved Cylinder	25	.010
Light Modified	30	.015
Modified	32.5	.020
Improved Modified	35	.025
Light Full	37.5	.030
Full	40 or More	.035
Extra Full	40 or More	.040

What is all that supposed to mean? It is confusing to most people. Before we answer this let us examine how a shotgun barrel is constructed. A shotgun is basically a big pipe, the hole in it we call the bore (purple); see figure below. At one end, where the shell goes in, we call this the chamber (yellow), the hole of the chamber is bigger than the bore and the transition area between the chamber and the bore is called the forcing cone (brown). The choke of the barrel, colored red, is located at the other end of the barrel. The transition area between the choke and the bore is called the tapered or the conical part (teal) of the choke; this area provides us with the transition geometry between the shotgun choke and the bore of the shotgun. Now you can visualize what it all looks like, so “within limits” the tighter or smaller you make the choke hole, the tighter the pattern at yardage.



Good Shotgun Chokes, Bad Shotgun Chokes

Why some shotguns chokes are so much better than other ones. There is undoubtedly a great deal of science in making the perfect shotgun choke and none of the knowledge keepers are too eager to share it. While the diameter difference between the bore and choke may be one of the shotgun chokes ingredients the science is in the macro details and factors such as material, length of barrel, shotgun choke geometry, and finishes as well ammunition are where the secrets are hidden. Simply put, "God did not create all chokes equal!"

Ok, so how does a shotgun choke actually work? Let us begin first with an easy metaphor, a child out in the back yard playing with a garden hose. He discovers that if he puts his thumb on the end of the hose the water pressure increases and the spray pattern goes farther. That is similar to what happens with a shotgun choke.

Now for the scientific explanation: There are two forces that tell the story; the mechanical properties while the shot column is in the barrel and the dynamic forces of nature that affect the shot column after it exits the barrel. When the shot column meets up with the choke it forces the column to squeeze tighter together; these forces are called radial forces. Once it is out of the barrel, wind resistance and gravity act on it. When the wind comes into contact with the outside pellets of the shot column it induces spinning and they start to flare off. The tighter the choke, the heavier the radial forces and the tighter the pellets are squeezed together so the pattern holds tighter over a longer distance. Conversely, the less restriction in the shotgun choke, the more loosely the pellets are held together and the faster the pattern opens up.

There it is! The shooter now knows more about shotgun chokes than seventy five percent of the shooters in the world.

Sporting Clays

Sporting clays is a refreshing change from the predictability of skeet and the limited variability that the game of trap. Because sporting clays are so variable, there is more to consider at each station than just site, set, lead, and break point.

Things to consider in your shot

Target Type

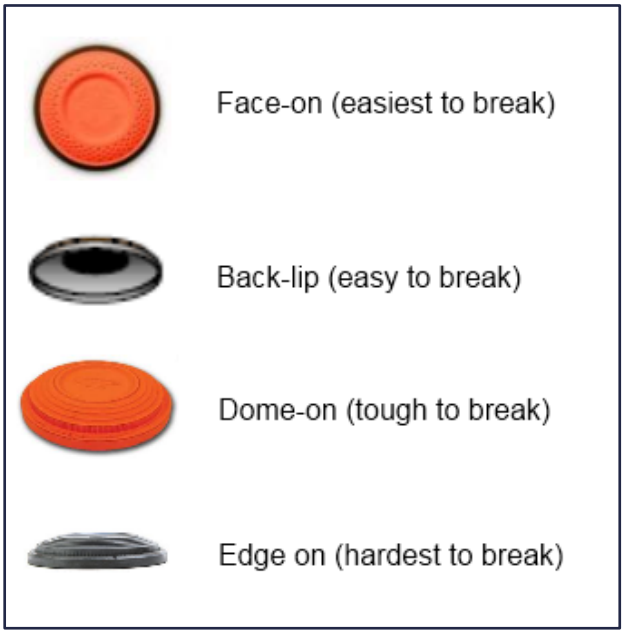
There are three main target types in sporting clays. The pigeon target is the standard skeet or trap clay pigeon shot that is thrown at various angles to the shooter and tends to maintain its thrown presentation through its flight. The rabbit is a flat disc that is rolled across the ground at a fair rate of speed which often hops over bumps giving the shooter a synthetic cottontail to aim at. The springing teal is shot nearly straight up in the air and at the apex tends to fall off to one side or the other giving the shooter many different leads, presentations and distances to consider when taking the shot. The battue is the same diameter as a standard clay pigeon, but is much thinner – this makes it less stable and prone to going "face-on" near and dropping like a rock at the end of its flight

Target Angle and Presentation

Just like trap and skeet there are variations in the angles at which the targets will be thrown. In skeet, the shooter knows what angle he/she will get at each station, in trap he/she will get something within a range of angles, in sporting clays – just about anything is possible. The target may come from behind and fly over your shoulder; it might fly towards the shooter, away from the shooter or cross. It might rise, have a parabolic flight or be dropping from a tower. Every station is different.

Another consideration is that the presentations differ. A Rabbit going across will give the shooter an entire 4.3" flat face to shoot at as it runs across the ground. Any number of angles can change how much of that disc he/she sees and may change how he/she wants to deal with the target. Standard pigeons may be thrown tilted or flat, but will typically maintain that presentation throughout the flight. The battue is unstable giving the shooter presentations that change over the flight of the pigeon. It may start out edge on which will give you a razor-thin target to hit, but then roll on to its side to present him/her with more than 3" of slower clay to hit near the end of its glide. The springing teal changes from edge-on to dome-on or back-lip as it apexes.

The chart below shows the basic presentations from the easiest to break (face-on) to the toughest to shatter (edge-on). Some ask why dome-on is considered harder to break than the back-lip. It comes down to the construction of the pigeon. Hitting it dome-on lets the clay use the strength of the almighty arch built into it to fend off a stray BB.



Target Distance

The chart below represents standard distance calculations and optimal choke tube shot patterns for optimal targeting patterns. Individual Choke Tube Manufacturers will produce similar ballistics charts for their products.

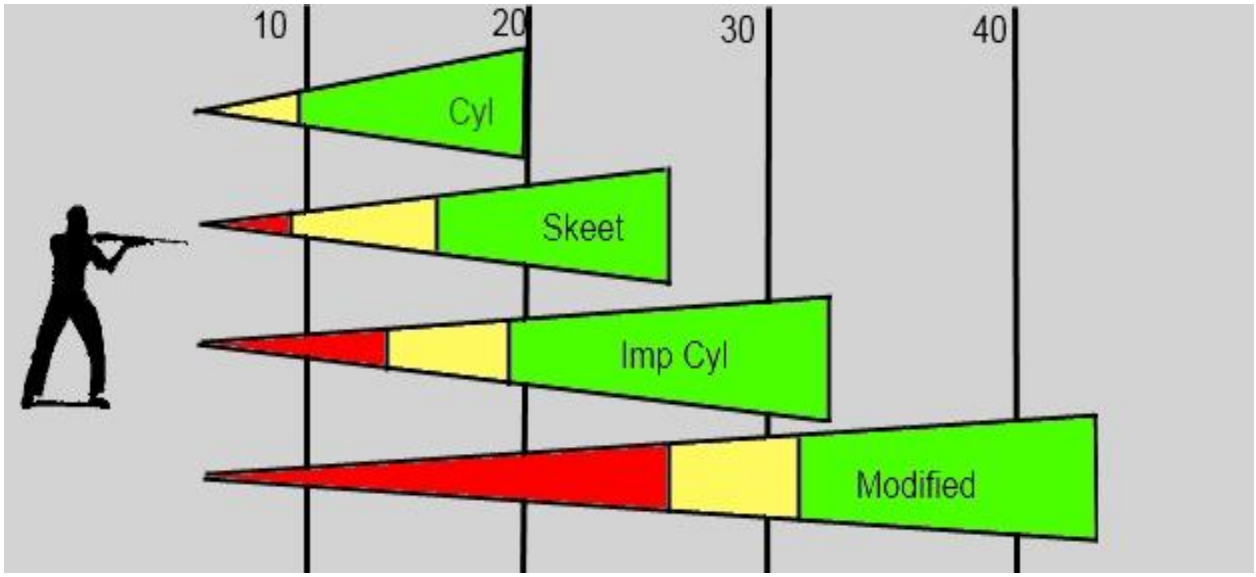


Figure 1 Shot Pattern Distance: Red – Pattern too small / Yellow – Pattern useable / Green – Pattern Optimal

Break Point Choice

The distance at which the shooter will break the clay is a critical decision factor. As the clay is "thrown," he/she will typically have several different points at which he/she can break the target. He/She don't have to break the clay as soon as he/she thinks. Sometimes, the optimal break-point is one that develops long after the clay is thrown, immediately upon being able to set the lead or somewhere in-between. If the target is going away from the shooter, instead of changing to a cylinder choke and catching the pigeon as soon as possible, leave the skeet choke and give an extra half second for the clay to hit that 18-22yd space where the skeet choke is optimal because the gun will be held at a fantastic hold point for the second target in the pair.

If the target is coming toward the shooter, he/she can make a decision on the break-point based on the choke set, or the shooter can decide that it's better to change out the choke to give a better break-point in setting-up for the follow-on member of the double.

Setting Up Your Shotgun

First Things First

If the shooter is just starting out at sporting clays, he/she should not get too muddled with flipping chokes in-and-out. These configurations aren't going to help the score if he/she is still

trying to work out how to see, lead and shoot the target. Stick an improved cylinder in the first barrel and a modified choke in the other. If the shooters have an auto-loader or pump, go improved cylinder if most of the targets are less than thirty-five yards.

As far as shot, start with #8 while just learning the targets and their presentations. Depending on the course, when hitting mid-30's or more out of 50 – then start figuring out if that maybe losing a bird or two too tight or loose choke or not enough BBs. Using a score as a measure in sporting clays is much more relative than in the more consistent trap and skeet games. If the course is set with a lot of 35+ yard fast crossers, springing teals or this rabbits at 35+ yards. The score will be lower – but so will everyone else's. In the end, he/she may just have to get a feel for the targets based on how many targets the shooter should have hit.

If the shooter is starting to feel that some misses are due to pattern tightness or density, the rest of this article might yield a few more birds in the round. And one or two might just be the difference between winning the round or not

Choke Selection

For sporting clays, many shooters will just stick Improved Cylinder and Modified chokes into their guns (or improved cylinder for the auto's/pumps) for sporting clays.

Fact: not all courses are the same. That's one of the most attractive features of sporting clays. Most shooters use the Improved Cylinder / Modified Choke setup going into an unknown course or one that might have changed and adapt as needed.

Shooters should carry a skeet choke on to the course but only change when a situation arises that needs one. The IC + Mod combo leaves a comfortable shot pattern size and density from 20 yards to 40 yards and the shooter can usually plan the shots to handle with the chokes being used. For those other situations, the shooter should evaluate as follows:

- Is the best break-point 15-25 yards away and the target is either dome or edge on? – Go to the skeet choke
- Is the break point past 45 yards? – A modified choke is a necessity with a heavy shot load. Or the shooter should consider a full choke at this point.

Shot Selection

The sporting clay course has a fair variation in shot angles, types, presentations and distances. For a standard 100-shot round the most versatile shot size is #8. For those shooters already scoring in the 80% range shot, variation may allow the picking up of birds normally lost. On a new course the shooter might carry 20-#9's, 80-#8's, and 8-#7.5s. That would give plenty of flexibility without carrying 125+ shells around.

Shot selection is based on three considerations – target type, target presentation and distance.

- If the plan is to break the target within 25 yards, that barrel gets a #9 shell.
- If the planned break-point is 25-35 yards, #8 gets loaded.

- If the target is over 35 yards and is either edge on, dome on or a rabbit – 7.5 goes in the gun to make sure it breaks.

The Strategy That Works For the Individual

Many start out by selecting their choke(s) and using only shot size to vary their guns functional pattern. Others will shoot #8s on every presentation and switch chokes. It is recommended to avoid flipping chokes out all the time, but there are situations where the right choke + the right shot shell will mean the difference between lost or dead clay.

Skeet

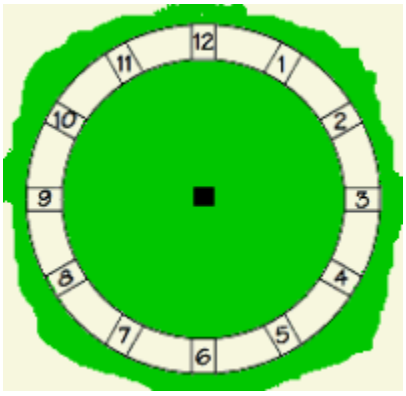
Newcomers to the game of Skeet will find the basics here -- a brief history, field layout/measurements, shooting sequences, how the game's played and some useful references, plus geometric and dimensional trivia which may be of interest to those enamored of numbers or interested in building their own Skeet range.

Skeet's debt to a flock of chickens

Unlike trap, Skeet is a purely American shotgun game, born and bred not only in the U.S.A. but in the very cauldron of American independence -- Massachusetts.

In 1920, several Andover bird hunters, casting about for a more realistic means of honing their wing shooting skills by duplicating all the shot presentations they might encounter in a live bird field, devised a scheme they called ***Shooting Around the Clock***.

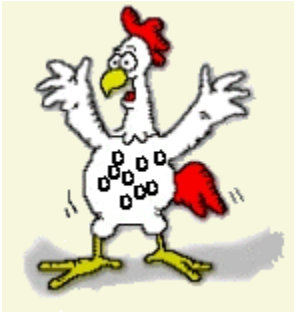
The "clock" was a circle with a 50-yard diameter, a trap placed at 12 o'clock to throw targets toward 6 o'clock and shooting stations at each of the hour numbers.



Each shooter took two shots from each of the 12 stations and used the 25th for a snap shot at the target from the center of the circle.

And the design served their purposes perfectly -- leaving few, if any, possible field shots unpracticed.

The field was set up on the grounds of **C. E. Davies'** Glen Rock Kennels and all went well until a neighbor moved a flock of chickens onto the adjacent property, which were soon being showered with shot from gunners on the opposite side of the wing shooting practice field.



Undeterred, the innovative Davies, his son **Henry** and their friend **William H. Foster** simply got a second trap and set it at 6 o'clock to throw toward the 12 station, thus cutting the range in half so all the shots went in a direction away from the beleaguered cluckers, yet maintained all the left and right shot presentations from the original field.

But as shot gunning matters are wont to go, practice eventually gave way to the trio's competitive natures and the seeds of Skeet were sown.

Foster devised a shooting program containing all the necessary elements of wing shooting practice and a competitive sport, adding among other refinements four sets of doubles and an optional shot.

When the details of the sport were completed and tested and a set of rules drawn up, the idea was introduced to the public in the February, 1926, issues of two outdoors magazines of the day -- *National Sportsman* and *Hunting and Fishing*.

A prize of $100 offered to the person who came up with the best name for the new sport went to **Mrs. Gertrude Hurlbutt** of Dayton, Montana, who suggested ***skeet***, an old Scandinavian form of the word "shoot." So enthusiastic was the public's interest in the fledgling sport (and possibly the hundred bucks, which was meaningful money in 1926) that some 10,000 entries were received in the contest.

Thus, thanks to a flock of chickens, a casual wing shooting practice, informally called Shooting Around the Clock, evolved into today's popular sport, with national competition, rules and an officially sanctioned Skeet field, all governed by a central organization -- the National Skeet Shooting Association (NSSA), headquartered in San Antonio, TX.

Skeet has developed into much more than just an aid to better wing shooting or a substitute for hunting. It is now a competitive sport and matches are conducted in four gun gauges against others of like ability, depending on their classifications.

While many skeet shooters never feel the need to own or use more than one gauge of shotgun, a registered skeet competition typically features the most popular three gauges, 12, 20, 28 and the .410 bore, so named because it represents the bore diameter of the shotgun and not the gauge.

The "gauge" of a shotgun is a somewhat outdated measurement whose origins date back to the days of black powder guns and is determined by the number of pellets, each the size of the guns bore, which would weigh one pound. Any one of 12 round lead balls, for example, would fit in

the barrel of a 12-gauge gun and all 12 would weigh one pound. In 28 gauges, one would get 28 balls from a pound of lead.

TYPICAL SKEET SHOTSHELL CHARACTERISTICS				
Gauge/Bore	**12**	**20**	**28**	**.410**
Ounce Weight	1 1/8 oz.	7/8 oz.	3/4 oz.	1/2 oz.
Grain Weight	492	383	328	219
Shot Size	9	9	9	9
Shot Diameter	.08	.08	.08	.08
Pellet Count	658	512	366	293

Most registered shoots comprise:

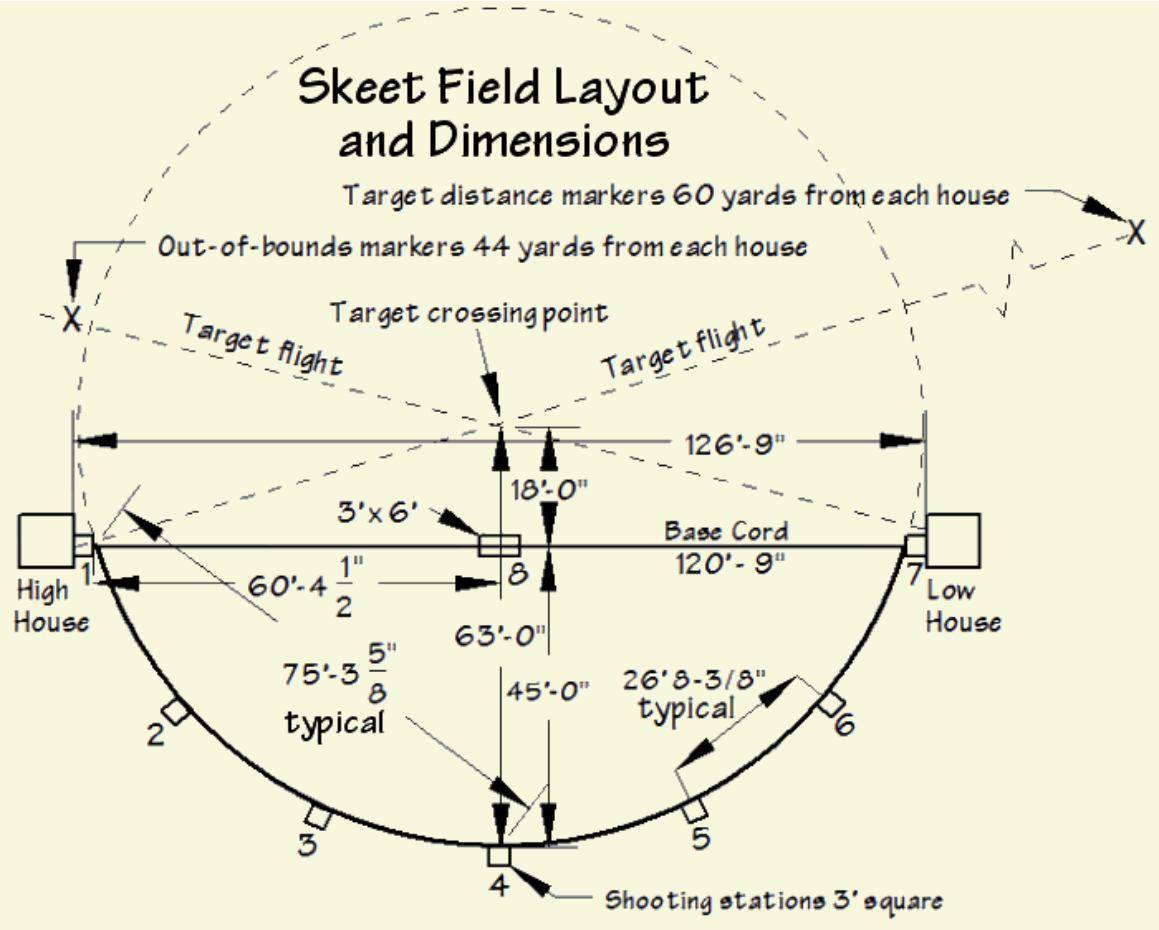
All Bore: 12 gauge or smaller.
20 Gauge: 20 gauge or smaller.
Small Gauge: 28 gauge or smaller.
Sub-Small Gauge: .410 bore only.

According to tests performed by the National Shooting Sports Foundation in 1980 and repeated in 1995, a beginner might be expected to break 11 out of 25 targets on the first try and gradually improve through the high teens and low 20s. A perfect score of 25 is a reasonable goal to shoot for. Someone can choose to shoot skeet for practice, for fun, or in a registered event.

To shoot registered targets, however, the shooter needs to join the NSSA, whose members receive classifications ranging from E to AA and AAA, determined by how well they shot registered targets in the various events. Details of the classification system are far too complicated to go into here.

The shooter should you concern him/herself with it or feel somehow "left out" if there is no interest in registered competition. Skeet is a game to be enjoyed by all -- from top competitor to a shooter who simply wants to dust some clays with his old "huntin' gun."
The shooter needn't feel he/she has to own a $10,000 Perazzi over/under, or even a $2,000 Browning or Beretta, to be accepted on the range. Fellow shooters will -- or at least should -- make the shooter feel comfortable even if he/she arrives at the range with a slightly pitted Mossberg 500 picked up for $150 at the pawn shop out on the highway.

A shooter can learn the game and how to better scores by getting help from experienced shooters at the club, hire an instructor, or buy some good instruction books or videos.



Clock face to Skeet range: Just plane geometry

Dotted lines in the Skeet field diagram above are all that remain to hint at Skeet's early days, but they serve to illustrate the game's total dependence on the original circle for its very form and existence.

For the geometric-minded, the working area of a Skeet field is actually a **sector** of a large circle formed by the target flight paths originating from each side of the circumference and meeting in the circle's center at the target crossing point. The entire circle's circumference is 395.84 feet and its area is 12,468.982 square feet -- or almost three-tenths of an acre. The sector's area is 5,091.501 square feet -- or slightly over one-tenth of an acre.

The portion of that sector likely most familiar to a Skeet shooter is a **segment** of the circle described by the 120'-9" base cord running between the front edges of Stations 1 and 7 and the arc below comprising Shooting Stations 1 through 7. The segment contains 4,010.665 square feet and the stations arc length is 161.635 feet.

Admittedly, those square footage figures won't improve anyone's Skeet game, but knowing them is a big help for someone building a range and planning on instant grass in any or all areas

using pallets of sod, each of which will cover 400 square feet. Sodding only the area inside the station arc out to the target crossing point and across to above both houses would require 16 pallets. To sod the entire rectangle you'd need 19.8 pallets.

The Skeet range has a **High House** on the left and a **Low House** on the right, each housing a trap machine which throws the targets from their windows at 17-degree angles from the base cord across the target crossing point, which is 18 feet straight out from the center of Station 8. Each house sits three feet outside the circle, exactly at the rear of the shooting pads of Stations 1 and 7.

The center of the High House window is 10 feet above Station 1 and directly over the head of the shooter. The center of the Low House window is 3 feet, 6 inches above Station 7 and to the right of the shooter.

Regulation targets travel at about 45 mph in a rainbow trajectory for 60 yards and must cross the center stake at an elevation of 15 feet above the surface of the shooting stations, all of which must be at the same level.

Periodically, the trap machines are checked to make sure they're throwing regulation targets. This is done with a device called the **hoop**, a pole on the top of which is a metal circle 3 feet in diameter, the center of which must stand 15 feet above the target crossing point.

With someone holding the hoop at the target crossing point, another person adjusts the trap machines vertically and horizontally until they throw their targets pretty much through the center of the hoop.

The throwing arm of the trap has a rail against which the target rests and which imparts a spin to it when released, creating a gyroscopic effect which lends stability to the spinning disk.

The targets themselves are made of lime and pitch, which is poured into molds and "warmed up" but not baked, as in a kiln, then the colors are painted on. They're available for different games in a variety of styles, sizes and colors -- standard, mini clays, midi clays, battue, clay rabbits -- but the standard Skeet target is round, dome-shaped, 108mm (4-1/4") in diameter and about one inch high.

Around 1870, clay was first used to create targets, but it was difficult to attain consistent hardness. In 1880, the mixture of lime and pitch was found to create a target that had the ideal combination of sturdiness and brittleness.

Although the targets are no longer made from clay, the name has carried over. And no doubt even the new biodegradable targets, constructed of finely pulverized limestone, sulfur and some other binders, which supposedly self-destruct in about two years with enough rainfall, will

continue to carry the "clays" moniker.

How the game's played

While it's readily apparent that geometry, mathematics and precise measurements are important in the construction of the Skeet range itself, the math doesn't end there.

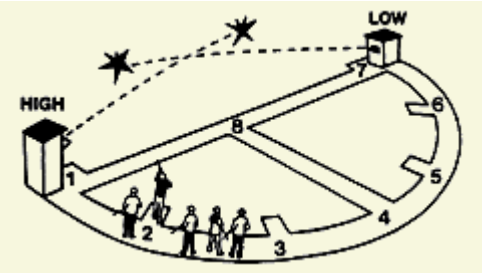
It also plays a significant role for the shooter, whose goal is to break targets -- even though he may be completely oblivious to what a mathematical feat he's performing when he breaks one.

Skeet is a game of angles and mathematical formulas involving time, speed and distance, which translate into the necessity of shooting a certain distance ahead of each target so that shot string and target meet physically somewhere along the target's flight path, resulting in a "dead" bird.

This is known as lead, and the lead necessary for breaking each target changes by some amount from Skeet station to station because the shooting distances and angles change.

And that's the challenge of the game, but more on that shortly...

At its most basic, a round of Skeet involves one box of 25 shotgun shells per shooter, which will be fired at eight stations, the usually concrete pads on which each shooter stands to take his turn. Normally, no more than five shooters, called a squad, are involved in a single round of skeet at one time.



The shooters begin a round at Station 1 in front of the High House and progress around the arc to Station 7 in front of the Low House, ending at Station 8 exactly at the middle between the two houses.

Target shooting sequences at each station:

4 Targets at Stations 1 and 2: one high house single, one low house single, and doubles. Note: on doubles high house shot must be taken first.

2 Targets at Stations 3 through 5: one high house single, one low house single.

4 Targets at Stations 6 and 7: one high house single, one low house single, and doubles. Note: on doubles low house shot must be taken first.

2 Targets at Station 8: one high house single and one low house single. If by now the shooter has missed no targets, the 25th shot is taken at the Low House.

Optional shot: This, which would be the 25th shell for a shooter who has missed no shots through Station 8, is taken for a second try at the first target missed at any station.

Shooting ahead of a target

Mathematically, one could stand and point the shotgun like a rifle at a certain spot ahead of the target in its flight path (gun point), then pull the trigger when the target reaches a certain point on its path (pre-intercept point) -- and break the target without ever moving the gun from its static position.

Mathematically, it's just a time, speed and distance equation.

The only problem is, it won't work in the real world, because on a practical basis no shooter could consistently know or time his shot at the exact gun point and pre-intercept point.

So the shooter must swing with the target and lead it by a certain distance to account for the time it takes to pull the trigger, the shell to fire and the shot string to travel into the target's path so the target runs into it.

There are three methods of leading a target, but we'll not dwell on them here beyond a simple description of each, since the purpose of this introduction is only to serve as an overview of Skeet and there's much material available elsewhere on the pros and cons of each.

Types of Lead

Sustained, or maintained, lead: The shooter picks up the target in his peripheral vision as it emerges from the window, immediately begins moving ahead of it, adjusts for the correct lead distance and fires the instant that distance is seen, keeping the gun moving after the shot. This is the lead used by most Skeet shooters today.

Swing-through lead: The shooter allows the target to get ahead of the gun, swings through it and fires the instant he judges he has the correct lead, keeping the gun moving after the shot.

Pull-ahead lead: The shooter swings to the target when he sees it, then quickly pulls ahead to what he considers the correct lead and fires instantly, keeping the gun moving after the shot.

Notice that no matter what method is used, the shooter fires **instantly** when he sees the necessary lead. This is important because these targets are moving *fast* and offer little or no margin for tinkering around with minor adjustments.

The beginning shooter will likely anguish for some time over exactly which lead method is best for him, and only he can decide that, but there should be no indecision nor questioning the need to **keep the gun moving after the shot** -- known as **follow-through**.

Without follow-through, no matter what lead method you use or what distance your lead, you'll almost certainly miss the target. It's called **stopping the gun**, and it probably accounts for more misses on a Skeet range than any other mistake.

And, of course, you **must** be swinging the gun on the same horizontal plane as the target. Shooting over or under the target causes many misses and shooting **over** it accounts for most of those. **If you don't see the target on or just above the front bead of your gun, you're probably about to shoot over it.**

SUGGESTED HIGH AND LOW HOUSE LEADS AT EACH STATION							
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
High: None Low: 10"-12"	**High: 1'- 2-1/2' Low: 2'- 2-1/2'**	**High: 4' - 4-1/2' Low: 4 - 4-1/2'**	**High: 4' - 4-1/2' Low: 4' - 4-1/2'**	**High: 4' - 4-1/2' Low: 4' - 4-1/2'**	**High: 2' - 2-1/2' Low: 1 - 1-1/2'**	**High: 10" - 12" Low: None**	**None: Cover each target and shoot**

The leads in the table were taken from ***Skeet Shooting with D. Lee Braun and the Remington Pros***, an excellent book by a champion Skeet shooter who shot on the Remington Firearms Company's team for many years. Even so, they're not chiseled in stone.

The amount of lead required to break a target is highly variable from shooter to shooter because it depends greatly on how fast the shooter swings the gun. Only with constant and consistent practice will you get the feel of how much lead on each station works best for you. When you break a target, try to remember the sight picture and lead that did it, then try to repeat it the next time on that target.

In general, try to break going-away targets before or near the center stake and let incoming targets go past the stake and come to you. There's no sense in trying to break an incoming target while it's still far away from you, when you can break it easily when it's nearby.

Station 8

If not actually trick shots, the High and Low House targets from Station 8 are definitely tricky and guaranteed to frustrate the beginning shooter. At this station, you're a mere 18 feet from the target crossing point and must break each target before it passes that or it's counted as a miss.

And since you're also only about 20 yards from the window and the target is coming almost straight at you, it will be at and beyond you before you know it if you're not fully alert and prepared.

Give yourself the maximum advantage on this close-in target by standing in the right-rear corner of the pad for the High House and the left-rear corner for the Low House.

Station 8 can be extremely daunting, but there's a way to avoid the angst and ease into this gradually until you get the hang of it. And once you do, you'll wonder until how you ever missed it, because it's actually one of the easiest targets on the field.

How to learn Station 8

Don't start out shooting from Station 8. It's that simple. To learn the High House, for example, walk about halfway between Station 8 and the Low House and shoot it from there. Then as you begin breaking targets gradually move closer to Station 8 until you can break them from there. For the Low House, do the opposite.

For all Station 8 shots, start with the gun pointing about three feet outside the window on the target's flight path and look at the window. When the target appears, swing at and with it smoothly and quickly, cover it up and shoot the instant it's covered -- and keep the gun moving.

And the more open your choke is on this face-hugger, the better chance you'll have of breaking it. It can be broken fairly easily by an accomplished shooter with a modified choke -- or even a full -- but you should avoid any choke of tighter constriction than improved cylinder, at least while you're learning.

To shoulder or not to shoulder

Should you pre-mount the gun before calling for a target -- or should you use the unmounted gun method, pushing the gun five or six inches away from your shoulder and dropping the bottom of the butt just below the elbow?

Virtually all the old timers of decades ago started with an unmounted gun. Virtually all skeet shooters today start with a mounted gun.

Only you can decide which works best for you. Try it both ways and decide for yourself.

Safety and Skeet range etiquette

When you're not on a station getting ready to shoot, ALWAYS keep the receiver of your gun open so there'll be no question in fellow shooters' minds whether it's loaded or not.

Open your O/U or the bolt on your semi-auto or pump shotgun. It's just the safe and sensible thing to do.

NEVER load your gun until you're on a station and it's your turn to shoot.

Call for the target so the puller won't have to strain to hear you. Occasionally, a shooter will have their own pet word to call for a target, but the traditional word is PULL. However you call for the target, do it in a strong, commanding voice.

International (Olympic) Skeet

International is a variation of American Skeet and is the style shot in the Olympics. It has an eight-station format like American Skeet but with faster targets thrown at 72 meters (78.73 yards). The shooter is required to hold the butt of the gun at hip level until the target is seen, which may be delayed for up to 3.5 seconds after the target is called for.

Single and double target sequences are slightly different from American Skeet, with a high single and one pair of doubles from Stations 1 & 2; high and low singles and one pair of doubles from Stations 3, 4 and 5 (on Station 4, the high bird must be attempted first in doubles); a single low and a double from Station 6; one pair of doubles from Station 7; a single high and a single low from Station 8. A round is 25 targets, with no option shot.

The shot charge is restricted to 24 grams (approx. 7/8 oz.), with any safe powder charge. For tournaments, all shells must be of the same type and load.

Trap

Trap shooting, often called "American trap shooting" to distinguish it from other forms of trap shooting, is but one of many sports based on shooting small disks launched into the air. These disks are of various sizes. They are shaped somewhat like a Frisbee and fly in a nice arc through the air. They are made of various combinations of substances so that they break when hit. Well, sometimes they don't break, but they're supposed to break. The matter of "hard" clay pigeons is a constant source of complaint. Clay pigeons are commonly called "birds" and I'll switch to that name to save typing all those extra letters. In addition to trap shooting, people also shoot other games involving these disks, such as skeet, sporting clays, 5 stand and wobble trap. This last is like trap shooting, except the trap machine is set up to vary both the direction of the clay pigeon's flight and the angle of elevation.

#1
Halfway from middle of trap house and left front corner; 1-1½' high.

#2
Middle of trap house; 1-1½' high.

#3
Halfway from middle of trap house and right-front corner; 2-2½' high.

#4
Right-front corner of trap house and 2-2½' high.

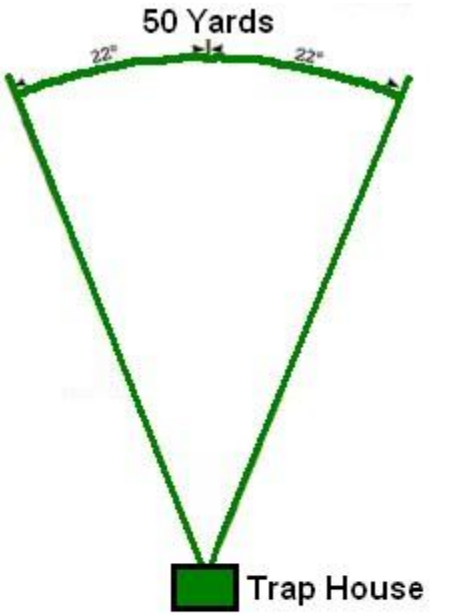
#5
1-1½' off right-front corner house, and 2-2½' high.

Gun points:

The gunpoint on each position is a necessary compromise which prepares you for whatever target angle is presented to you. On each position you favor the left angle target with foot and body position; and take a gunpoint that favors the right angle target. This is because a right handed shooter finds it easier to swing to the left from the gunpoint, without any muscle restrictions. Suggested gun points for each position are indicated for the five positions in the graphics above.

Foot Position:

On each station, your toes should be placed on an imaginary line which would parallel the line of flight of the extreme left angle target from position #5.



Trap Range

Trap is shot at a range. A trap range has at least one, and perhaps many, trap fields.

Each Trap Field has a little structure called the "trap house" that houses the machine that throws the birds into the air. This is called the "trap machine," and sometimes just the "trap." The trap machine throws the birds in a random pattern limited to a 44 degree horizontal arc, with the birds exiting the house at about 47 miles per hour and traveling about 50 yards before hitting the ground.

The trap range uses either a hand release run by the score keeper, or voice calls that respond to the shooters' voices to send an electric signal that causes the trap machine to launch a bird. Each trap field has five shooting stations in an arc, each station being 11 degrees away from its neighbor. The shooting stations are paths radiating out from the trap house with distances from the house marked from 16 to 27 yards. A round of trap is 25 birds, 5 birds being shot from each station in rotation.

Trap shooters commonly shoot three events: singles, handicap and doubles. Singles are single birds shot from the closest distance, 16 yards from the trap house. Since the birds are usually about 15 to 25 yards out by the time the shooter fires, even the 16 yard singles are 31 to 41 yards away. Handicap is like singles, except it is shot from various distances, depending on one's ability, between 19 and 27 yards. These birds are 35 to 52 yards away, depending on one's handicap and reaction time. Since very few shooters with slow reaction times ever earn a 27 yard handicap, that 52 yard figure is an exaggeration. 27 yard shooters actually shoot their birds at 47 yards or less. As you might imagine, a little disk, 40+

yards away and flying at 40+ miles per hour can be a difficult target. All TNSCTP Trap is shot from the 19 yard mark.

Shotguns for Trap

You can use any shotgun gauge, up to 12 gauge. Using anything smaller than a 12 gauge entails a loss of breaking power. Some do choose smaller guns for their lower weight and reduced recoil. You will see 16, 20, and 28 gauge shotguns used in Trap. While legal for use, you will not see a .410 used to shoot trap. It is just too small. You may use up to 1 1/8 ounce of shot in 12 gauge. Typical commercially available target loads are 7/8 ounce for 20 gauge. You may use shot sized 7 1/2 and smaller. Like gauge sizes, a lower shot size number refers to a larger shot size. The maximum velocity allowed is 1250 feet per second for 1 1/8 ounce loads. You may use slightly higher velocities for lighter loads, and the whole thing gets really complicated. Why bother with all that? Just get some 1 1/8 ounce #8 shot target loads.

Trap shooting rules.

- Always practice safe gun handling.
- Only load your gun when it's your turn to shoot.
- Only load one shell unless you're shooting doubles. For doubles, you may load two.
- If, while you're on the trap field, the staff needs to tend to the trap house, to reload the machine or otherwise adjust the machine, unload your gun.
- In trap shooting, the gun's safety is ignored. Do not bother with it. Your gun is both loaded and ready to shoot, or unloaded. The only "safety" is an unloaded gun.

There are several interesting rules about gun failures, broken birds and so on. Your fellow shooters and/or the score keeper will help you with them. Just don't get flustered.

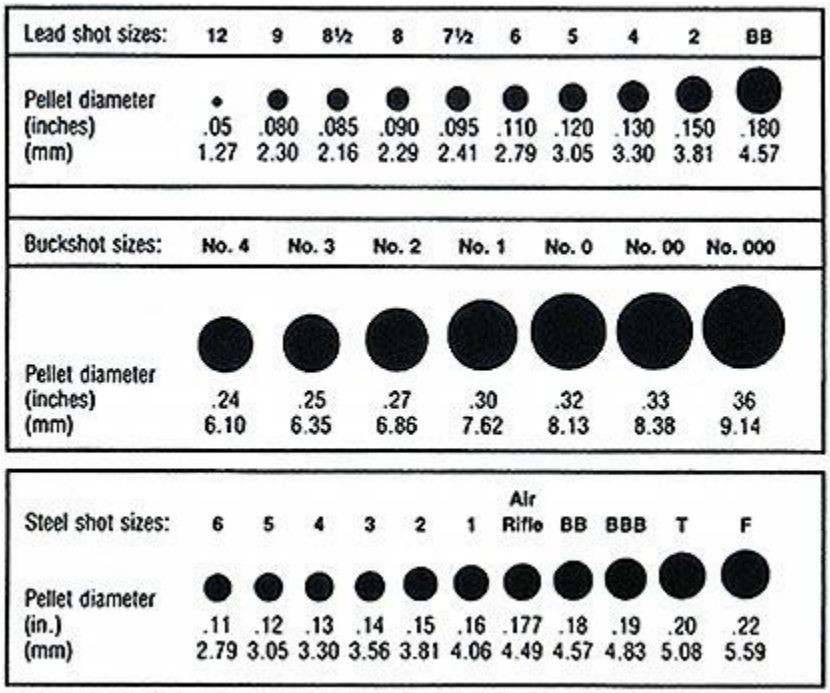
"Lost birds" are birds you didn't break. "Dead birds" are the ones you did break. A dead bird means you definitely broke the bird. Knocking a little dust off it isn't enough. You must at least knock a chip out of the bird. Ordinarily, the score keeper announces the lost birds but not the dead birds. Among trap shooters, dead birds are the norm, and therefore not worthy of mention. On the other hand, lost birds are announced with great gusto.

Shot Size Table

Shot number	diameter (inches)	diameter (mm)	Approx. # of pellets in 1 oz.
000 BUCK	.36	9.14	6.2
00 BUCK	.33	8.38	8
0 BUCK	.32	8.13	9
1 BUCK	.30	7.62	11
2 BUCK	.27	6.86	15
3 BUCK	.25	6.35	19
4 BUCK	.24	6.10	21
BB	.18	4.57	50
2	.148	3.76	90
4	.129	3.28	135
5	.120	3.05	170
6	.109	2.77	225
7.5	.094	2.39	350
8	.089	2.26	410
8.5	.085	2.16	470
9	.079	2.01	585
12	.05	1.3	2300
F	.22	5.59	40
T	.20	5.08	530
BBB	.19	4.83	61
BB	.18	4.57	72
1	.16	2.79	103
2	.15	3.05	125
3	.14	3.30	154
4	.13	3.56	191
5	.12	3.81	244
6	.11	2.79	317
7	.10	2.54	422

**source: Winchester Reloading Guide NRA Firearms Fact Book*

Shot Size Table



Lead shot sizes:	12	9	8½	8	7½	6	5	4	2	BB
Pellet diameter (inches)	.05	.080	.085	.090	.095	.110	.120	.130	.150	.180
(mm)	1.27	2.30	2.16	2.29	2.41	2.79	3.05	3.30	3.81	4.57

Buckshot sizes:	No. 4	No. 3	No. 2	No. 1	No. 0	No. 00	No. 000
Pellet diameter (inches)	.24	.25	.27	.30	.32	.33	36
(mm)	6.10	6.35	6.86	7.62	8.13	8.38	9.14

Steel shot sizes:	6	5	4	3	2	1	Air Rifle	BB	BBB	T	F
Pellet diameter (in.)	.11	.12	.13	.14	.15	.16	.177	.18	.19	.20	.22
(mm)	2.79	3.05	3.30	3.56	3.81	4.06	4.49	4.57	4.83	5.08	5.59

Note: the size of shot. wether lead or steel. is based on American Standard shot sizes.
Thus: a steel No. 4 pellet and a lead No. 4 pellet are both .13 inches (3.3mm) in diameter.

Lead Pellets / Shot Size Table

SIZE #	9	8-1/2	8	7-1/2	6	5	4	3	2	1	BB	BBB	T	#4	00
DIA. IN	.08	.085	.09	.095	.11	.12	.13	.14	.15	.16	.18	.19	.20	.24	.33
DIA. MM	2.03	2.16	2.29	2.41	2.79	3.05	3.30	3.56	3.81	4.06	4.57	4.83	5.08	6.10	8.38

Lead Pellets in Various Loads Table

Lead Pellets	9	8-1/2	8	7-1/2	6	5	4
1 oz.	585	480	409	345	232	172	136
1 1/8 oz.	658	540	460	388	251	194	153
1 1/4 oz.	731	600	511	431	276	215	170
1 3/8 oz.	804	660	562	474	307	237	187
1 3/4 oz.	-	-	-	-	395	304	239

DRAM Equivalents Table

Gauge	Shot Oz.	Velocity fps.	Drams Equivalent
10 - 3-1/2"	2	1210	4-1/4
10 - 3-1/2"	2-1/4	1210	4-1/2
12 - 2-3/4"	1	1180	2-3/4
12 - 2-3/4"	1	1290	3-1/4
12 - 2-3/4"	1-1/8	1145	2-3/4
12 - 2-3/4"	1-1/8	1200	3
12 - 2-3/4"	1-1/8	1255	3-1/4
12 - 2-3/4"	1-1/8	1300	3-1/2
12 - 2-3/4"	1-1/4	1220	3-1/4
12 - 2-3/4"	1-1/4	1330	3-3/4
12 - 2-3/4"	1-1/2	1260	3-3/4
12 - 3"	1-3/8	1295	3-3/4
12 - 3"	1-5/8	1280	4
12 - 3"	1-7/8	1210	4
16 - 2-3/4"	1	1165	2-1/2
16 - 2-3/4"	1-1/8	1185	2-3/4
16 - 2-3/4"	1-1/8	1240	3
16 - 2-3/4"	1-1/8	1295	3-1/4
16 - 2-3/4"	1-1/4	1260	3-1/4
20 - 2-3/4"	7/8	1210	2-1/2
20 - 2-3/4"	1	1165	2-1/2
20 - 2-3/4"	1	1220	2-3/4
20 - 2-3/4"	1-1/8	1175	2-3/4
20 - 3"	1-3/16	1195	3-1/2
20 - 3"	1-1/4	1185	3
28 - 2-3/4"	3/4	1200	2
28 - 2-3/4"	3/4	1295	2-1/4

Common Chokes & Bores Table

Common Choke Restrictions	Shotgun bore diameters
.000 restriction - cylinder	10 gauge = .775 inches
.005 restriction - skeet	12 gauge = .729 inches
.010 restriction - improved cylinder	16 gauge = .662 inches
.015 restriction - light modified	20 gauge = .615 inches
.020 restriction - modified	28 gauge = .550 inches
.025 restriction - improved modified	
.030 restriction - light full	
.035 restriction - full	
.040 restriction - extra full	

Common Shotgun Setup Table

Game	Suggested Shot Size	Suggested Chokes	What Experienced Shotgunners Say...
Ducks	BB, 1, 2, 3 *	Modified--for pass shooting Improved Cylinder--over decoys	Use BB shot for long range and pass shooting. For normal range--No. 1 or No. 2 shot while some hunters use No. 3 shot for closer range shooting over decoys.
Geese	T, BBB, BB, 1 *	Modified	Goose hunters need wallop so they use the big loads with large shot. Many hunters prefer No. 1 shot for a denser pattern at shorter ranges over decoys.
Pheasants	5, 6, 7½	Improved Cylinder--for close cover Modified or Full--for long cornfield shots	For cornfield shooting where long shots are usual - better use No. 5. On a normal rise over dogs and for all around use, No. 6 is the favorite.
Grouse or Partridge	5, 6, 7½, 8	Improved Cylinder or Modified--for brush work Full--for open ranges	On the smaller birds such as ruffed grouse or Hungarian Partridge, use the smaller shot. The big western grouse (sage, sooty, and blue) call for heavier loads and larger shot.
Quail	7½, 8, 9	Cylinder Improved Cylinder Modified	For early season shooting on bobwhites when feathers are light, some hunters use No. 9 shot. Later they switch to No. 7½ or 8. On the running or wild flushing type of quail, such as the Gambel's, large shot is sometimes used.
Doves and Pigeons	6, 7½, 8, 9	Modified Improved Cylinder	Use lighter loads and No. 7½ or No. 8 shot on mourning doves at normal ranges --for longer ranges use the heavy loads and No. 6 or No. 7½. Use the same load on band tailed pigeons and white wings.
Woodcock	7½, 8, 9	Improved Cylinder Modified	The choice of shot size here will depend on ranges at which the game is shot. For fast shooting in the alder thickets, No. 8 shot is a good choice.
Turkey	BB*, 2*, 4, 5, 6, 7½ *check local game laws	Full	Choice of shot size depends on the range. If you're a good caller, No. 6 or No. 7½ shots makes a clean kill. BBs, No. 2s, 4s, 5s, are best for long shots.
Trap	7½, 8	Full or Modified	In most cases, No. 7½ is used for trap. Check the Official Rulebook.
Skeet	8, 9	Skeet Choke Improved Cylinder	In most cases, No. 9 is used for skeet, check the Official Rulebook.
Sporting Clays	7½, 8, 9	Any choke (Depends on practice desired)	For targets at close range use a more open choke, at longer distances tighten the chokes.

*Source: Benelli Ammunition and Choke Suggestions

Typical Shot Spread per Choke Table

Choke	Yards								
	10	15	20	25	30	35	40	45	50
Full	10″	15″	20″	25″	30″	35″	40″	45″	50″
Mod.	15″	20″	25″	30″	35″	40″	45″	50″	
I/C	20″	25″	30″	35″	40″	45″	50″		
Cylinder	25″	30″	35″	40″	45″	50″			

Estimated Cost to Participate

We have attempted to capture the cost from the 2013 season and relay that cost forward to provide new shooters with an estimated cost to participate. These are estimates and depending upon your level of participation, fundraising results and your ability to source items at a less expensive price, you can have significant impact on your cost.

Shotgun Team Cost to Practice			
DESCRIPTION	**NUMBER**	**COST**	**SUBTOTAL**
Yearly minimum cost for shooter excluding shotgun			
TNSCTP membership	1	$ 30.00	$ 30.00
Normal practices - range charge	56	$ 5.00	$ 280.00
Sporting Clays practice - range charge	2	$ 20.00	$ 40.00
Cleaning supplies	1	$ 20.00	$ 20.00
Ammo needed for practices (average cost per box)	64	$ 5.65	$ 361.60
Minimum cost total			***$ 731.60***
One Time purchases for shooters			
Average cost of new shotgun	1	$ 1,000.00	$ 1,000.00
Shooting vest	1	$ 25.00	$ 25.00
Range bag	1	$ 50.00	$ 50.00
Gun case	1	$ 20.00	$ 20.00
Choke tubes (extra not included with gun)	2	$ 50.00	$ 100.00
One time purchases total			***$ 1,195.00***
Optional Items			
Youth Trap Shoot at Hog Heaven - Range Fee	1	$ 30.00	$ 30.00
ATA & AIM 1 yr. membership	1	$ 25.00	$ 25.00
NSSA 1 yr. membership	1	$ 20.00	$ 20.00
NSCA 1 yr. membership w/ magazine	1	$ 20.00	$ 20.00
USA Shooting 1 yr. membership	1	$ 20.00	$ 20.00
NWTF membership	1	$ 10.00	$ 10.00
Optional items total			***$ 125.00***
Total Items if you purchase a shotgun and participate in most activities			***$ 2,051.60***
Total Items if you own a shotgun and participate in most activities			***$ 1,051.60***
What most first year shooters spend			***$ 966.60***

Shotgun Team Cost to Compete			
DESCRIPTION	**NUMBER**	**COST**	**TOTAL**
Regional Competitions			
Ammunition needed to compete in all three events (average cost per box)	15	$ 5.65	$ 84.75
Skeet entry fee (based on last year)	1	$ 25.00	$ 25.00
Sporting Clays entry fee (based on last year)	1	$ 35.00	$ 35.00
Trap entry fee (based on last year)	1	$ 30.00	$ 30.00
Uniform shirt	2	$ 25.00	$ 50.00
Uniform hat	1	$ 13.00	$ 13.00
Regionals total			***$ 237.75***
State Championships			
Ammo needed to compete in all three events (average cost per box)	15	$ 5.65	$ 84.75
Skeet entry fee (based on last year)	1	$ 35.00	$ 35.00
Sporting Clays entry fee (based on last year)	1	$ 55.00	$ 55.00
State lodging and food (daily average)	6	$ 200.00	$ 1,200.00
Trap entry fee (based on last year)	1	$ 35.00	$ 35.00

State total			***$ 1,409.75***
National Championships			
Ammo needed to compete in all three events (average cost per box)	30	$ 5.65	$ 169.50
National SCTP membership	1	$ 20.00	$ 20.00
National lodging and food (daily average)	6	$ 175.00	$ 1,050.00
Skeet fee (based on last year)	1	$ 78.00	$ 78.00
Sporting Clays fee (based on last year)	1	$ 112.00	$ 112.00
Trap fee (based on last year)	1	$ 75.00	$ 75.00
National totals			***$ 1,504.50***
Total cost to compete in all activities			***$ 3,152.00***
Total cost to compete in all regional activities			***$ 1,647.50***
What most first year shooters spend			***$ 237.75***

Pistol Team Cost to Practice

DESCRIPTION	NUMBER	COST	SUBTOTAL
SPP membership	1	$ 20.00	$ 20.00
Practices (travel to and from Maryville average cost)	20	$ 10.00	$ 200.00
Cleaning supplies	1	$ 20.00	$ 20.00
Minimum cost total			***$ 240.00***
One Time purchases for shooters			
Range bag with pistol sleeve	1	$ 50.00	$ 50.00
One time purchases total			***$ 50.00***
National totals			***$ 375.00***
Cost for a .22cal firearm			
Average cost of new 22 firearm	1	$ 300.00	$ 300.00
Average cost of extra magazines	3	$ 18.00	$ 54.00
22 ammo needed for practices & competitions (boxes of 50)	120	$ 2.86	$ 343.20
22 firearm total			***$ 697.20***
Cost for a 9mm firearm			
Average cost of new 9mm firearm	1	$ 430.00	$ 430.00
Average cost of extra magazines	3	$ 25.00	$ 75.00
9mm ammo needed for practices & competitions (boxes of 50)	120	$ 11.30	$ 1,356.00
9mm firearm total			***$ 1,861.00***
Cost to Practice with your own firearm .22cal			***$ 687.20***
Cost to Practice with your own firearm .9mm			***$ 1,596.00***
Cost to Practice with purchase of a firearm .22cal			***$ 987.20***
Cost to Practice with purchase of a firearm .9mm			***$ 2,151.00***

Cost to Compete			
DESCRIPTION	**NUMBER**	**COST**	**SUBTOTAL**
Competitions			
Virtual Match fee (based on last year)	4	$ 1.00	$ 4.00
Local Match entry fee (based on last year)	4	$ 10.00	$ 40.00
Uniform shirt	2	$ 25.00	$ 50.00
Uniform hat	1	$ 13.00	$ 13.00
National Championships			
National entry fee membership	1	$ 25.00	$ 25.00
National lodging and food (daily average)	2	$ 175.00	$ 350.00
Cost to Compete			***$ 482.00***

Glossary:

- **Accidently discharge:** Any firing of a gun which is not deliberate.
- **Action:** The moving parts that allow you to load, fire, and unload your shotgun.
- **American Skeet:** Targets are launched in singles and doubles from two trap "houses" situated about 120 feet apart, at opposite ends of a semicircular arc in a somewhat "sideways" path that intersect in front of the athlete. Seven shooting stations are arranged on this arc, with the final station being directly between them.
- **American Trap:** Targets are launched from a single "house" or machine that is a minimum of 16 yards from athlete and going away from the athlete**.**
- **Barrel:** The part of a gun that the shot travels when fired.
- **Barrel Selector:** Determines which barrel of a double barrel gun you will fire first.
- **Bead:** Generally a small round object which is situated on the very end of the barrel on top of the rib. It is used as almost a subconscious 'sight' for the shooter.
- **Bore:** The interior diameter of a gun barrel, which will vary according to the gun's size and intended use.
- **Break Point:** The area where you intend to break/shoot the target.
- **Break Open:** In a hinge type gun, where the barrels are dropped open and clear of the action, exposing the chambers to view.
- **Breech:** The end part of the barrel nearest the shooter with the chamber into which the shell is loaded.
- **Breech Guard:** A device that allows it to be known that the chamber is visibly empty.
- **Broken:** The state of the gun when not in use, the chambers are visibly empty and the barrels are not closed up to the stock (over and under). Guns should always be in this condition unless one is on the shooting-stand ready to shoot.
- **Butt:** The rear of the gun's stock.
- **Butt Plate:** The plate, usually of some rubber, or plastic compound that cushions the shooter's shoulder from recoil.
- **Categories:** In order to level the playing field even more, novice athletes compete in a separate competitive grouping or category.
    - Rookie
    - Intermediate Entry: 1st year of participation in the intermediate division.
    - Intermediate Advanced: After 1 year of participation in the intermediate division.

- Junior Varsity
- Varsity
- College
  - Division I Schools with more than 15 athletes.
  - Division II Schools with 3-14 athletes.
  - Division III New schools to the championships (3 years or less before advancing to division II) and schools with 1 or 2 athletes.

- **Chamber:** The part of the action, at the breech end of the barrel, into which the shot shell is placed.
- **Chokes:** A narrowing or constriction at the muzzle end of the barrel to control the dispersion of the shot by either widening or narrowing the pattern of shot as it leaves the gun. Intended to increase the effective range of the gun.
  - **Full:** tightest constriction of .030 and dense pattern; delivering approximately 70% of shot shell's total pellets in a 30" circle at 40 yards; optimum 42" shot pattern appears at 40 to 45 yards; has one (1) notch on choke; producing the greatest effective range
  - **Improved Modified:** less constriction of .025; delivering approximately 65% of shot shell's total pellets in a 30" circle at 40 yards; has two (2) notches on choke
  - **Modified:** even less constriction of .020 and medium-width pattern; delivering approximately 60% of shot shell's total pellets in a 30" circle at 40 yards; optimum 42" shot pattern appears at 35 yards; has three (3) notches on choke;
  - **Light Modified:** even less constriction of .015 and medium-width pattern.
  - **Improved Cylinder:** even less constriction of .010 and wide open spread; delivering approximately 50% of shot shell's total pellets in a 30" circle at 40 yards; optimum 42" shot pattern appears at 25 yards; effective short distances of 20 to 35 yards; has four (4) notches on choke.
  - **Skeet:** Specialty choke with constriction of .005; delivering approximately 50% of shot shell's total pellets in a 30" circle at 25 yards; optimum 42" shot pattern appears at 21 yards the exact distance between the shooter and the target crossing stake on all stations except 8.
  - **Cylinder:** no constriction; delivering approximately 40% of shot shell's total pellets in a 30" circle at 40 yards; optimum 42" shot pattern appears at 20 yards; has five (5) notches on choke.
- **Class:** The grouping into which competitors are placed according to ability, so as to allow for more even competition.
- **Clay Target or Bird:** The round disk shaped target used for shooting.
  - **Standard:** Most commonly used target with an overall diameter of 108 mm.
  - **Midi:** Same saucer shape as the standard but with a diameter of only 90 mm and faster speed.
  - **Mini:** This target is only 60 mm in diameter.
  - **Battue:** A very thin target measuring about 108 to 110 mm in diameter, it flies very fast and falls off very suddenly simulating a duck landing.
  - **Chandelle:** A target that usually rolls across the sky in a constant curve with varying distances and even the type/size of clay.
  - **Rabbit:** A thicker, but standard 108 to 110 mm diameter flat target in the shape of a wheel designed to run along the ground. Often unpredictable with a bounce when you least expect it.
  - **Quartering:** Will be either coming towards you at an angle, or going away at an angle. Only by looking where it came from and where it lands can you really work out the exact path it is taking. Usually need less "lead" than you think.
  - **Driven:** Simulates game on a shoot being driven towards you. Can be tricky because they disappear behind your barrel just when you need to be able to see them. Need a swing through technique for this reason.
  - **Incoming:** Take many forms, and can come from all angles, but basically head towards you, often hanging in the air before dropping to the ground.

    - **Going away:** Targets that are going away get small very quickly so you need to be on your toes when you call pull.
- **Comb:** The side of the stock that fits against your cheek.
- **Competition:** A competition is generally either out of 100 or 200 targets.
- **Crossing Stake:** The flight path of all skeet targets always passes over the target crossing stake.
- **Dead:** When a target is hit (i.e. more than a visible piece is seen to come off the clay in flight) it is announced as "dead". The word "kill" is also used.
- **Disciplines:** Sporting Clays, Skeet, and Trap – with International variations.
- **Distance Marker:** This marker, or field state, is used in skeet to gauge how far the target will fly.
- **Divisions (Pistol):** There are three (3) and age is used to populate the Divisions.
    - Junior (Ages 12 to 16) centerfire or rimfire
    - Senior (Ages 17 to 20) centerfire or rimfire
    - College (no age limit) centerfire or rimfire
- **Divisions (Shotgun):** There are five (5) divisions and GRADE LEVEL in school, NOT AGE, is the criterion used to populate the Divisions.
    - Rookie (Grades 5 and Under – Minimum Age 9)
    - Intermediate (Grades 6 – 8)
    - Senior (Grades 9 – 12)
    - Collegiate (Full Time Collegiate Undergraduate)
    - Alternate (All TNSCTP Eligible Shooters Not on Full Squads)
- **Double:** When a shooter must shoot at two targets. They can be sent out simultaneously, or on report.
- **Ejector:** The mechanism on shotguns by which spent shot cases are automatically ejected from the gun when it is opened after firing.
- **Etiquette:** Shooters respect for fellow shooters.
- **FPS:** Feet-per-second. The distance in feet that the pellets will be traveling.
- **Field:** A group of stations from which targets are attempted.
- **Flight Line:** The path the target follows.
- **Follow-through:** Staying in the same position after pulling the trigger, or continuing the swing when firing at a moving target.
- **Forearm:** The part of the stock that lies under the barrel.
- **Gauge:** The term used to describe the interior diameter of the bore. The smaller the gauge numbers the larger the bore size.
- **Grip:** The narrow portion of the stock held with the trigger hand.
- **Guns:** Clay Target shooting is performed with a shotgun. The type of shotgun used is often a matter of taste as well as the governing body of the sport in the competitive cases. All types of shotguns are suitable; however the ability to fire multiple shots in quick succession is important.
    - **Over & Under (OAU or O/U):** A shotgun that has two barrels aligned vertically where one barrel sits on top of the other, joined together by "side ribs."
        - **Trap:** Generally heavier and longer barreled (normally 30 or 32 inches) with tight choking and designed to shoot slightly about the point of aim.
        - **Skeet:** Usually lighter and faster handling with barrel length from 26 to 28 inches and with fairly open chokes.
        - **Sporting Models:** Most often come with an interchangeable choke facility and barrel lengths of 28 and 32 inches.
    - **Semi-auto:** This is a single barreled gun that chambers a new shell from a magazine automatically after each shot, but which requires the shooter to press the trigger for each shot. This design combines reduced recoil and relatively low weight with quick follow up shots.

    - **Side-by-Side (SS or SXS):** A shotgun where the barrels (two of them) sit side by side is not ideal for competitive Clay Target Shooting as the two barrels don't provide the same instinctive feedback as the single visible barrel of a semi-auto or O/U.
    - **Pump-action:** This is a single barreled gun that reloads from a tubular magazine when the shooter slides a grip towards and then away from themselves. It is inherently slower thus follow up shots are more difficult.
    - **Single-shot:** Virtually all single shot shotguns are break action; they operate similarly to the O/U and SS except they have only one barrel and can hold only one shot. They are not recommended for Clay Target shooting.
- **Gun Fit:** Very important for all shooters to have their gun "fitted" to them, so it shoots where you look. It ensures that the sight picture the shooter sees is perfectly straight and that the gun does not 'kick' when used**.**
- **Gun Mount:** One of the key factors in successful shooting. Lift the gun straight up using a short concise motion from the same starting position each time. Always mount to the same place every time. This can be practiced with an unloaded gun in front of a mirror.
- **Head Coach:** The primary point of contact and the individual responsible for communication between TNSCTP Administrative Office and everyone involved with the team, who is 21 years of age or older.
- **High House:** The tower on the left side of the skeet field with its window opening toward the top of the column throws its targets from a trap 10 feet above the ground and it rises to a height of 15 feet by the time it travels to the center of the skeet field.
- **Hinge Action:** A type of action in which a hinge mechanism separates the barrel from the standing breech block, providing access to the chamber.
- **Hold point:** The Specific point on the target flight line where the shooter stops movement and prepares to call for the target.
- **House:** The tower or bunker that holds the trap machine that launches the clay.
- **Hunter Education:** The basic course provides firearms safety training and introduces athletes to their responsibility in the fields of hunter ethics and wildlife management. IT IS REQUIRED to participate in TNSCTP.
- **Lead:** Or sometimes referred to as "forward allowance"- the amount of space which you shoot in front/ below/on top of clay in order to break it. The distance you point your gun in front of the target. Remember that you shoot where the clay is going and not where it is.
    - **Maintained:** You decide how much "lead" you think the target requires. As the target flies through the air the second you see it, track it with the barrel of your gun the correct distance in front and pull the trigger.
    - **Swing through:** More seat of the pants, gut instinct shooting style. Watch the target fly across the muzzle of the gun. Start moving the shotgun until the muzzle touches and then passes through the target. Establish the correct lead, shoot, and follow-through.
- **Lost:** If, when a target has been fired at and missed, it is referred to as "lost" or "zero"
- **Low House:** The tower on the right side of a skeet field with its window opening toward the bottom of the column. The target leaves the trap house just 3 ½ feet from the ground and also rises to a height of 15 feet by the time it reaches the center of the skeet field.
- **Malfunction:** The name given to any kind of inability to discharge a shot. Shooters are allowed a combined total of three (3) malfunctions per event attributed to either gun or ammunition in Sporting Clays, subsequent malfunctions shall be scored as LOST. Only two malfunctions are allowed in Skeet and Trap.

    - **Ammunition:** The shooter must remain in place, the gun pointing safely down range and must not open the gun or tamper with the trigger, safety or barrel selector, until the coach or RSO has determined the cause.
        - Failure to fire, providing firing pin indentation is clearly noticeable.
        - Primer fires, but through failure of the shell or lack of components, and consequently leaves part of or all of the charge of shot or wad in the gun.
        - Brass pulling off hull between shots on pairs.
        - Separation of brass from casing when gun is fired.
    - **Gun:**
        - Situations where the gun will not fire either barrel.
        - The gun had a true simultaneous discharge.
        - The second barrel discharges without shooter action.
        - A semi-auto fails to eject the shot shell from the first shot and a second shot is required.
    - **Shooter:** Targets shall be scored as LOST if the shooter is unable to fire because of the following examples.
        - Shooter has left the safety on.
        - Shooter has forgotten to load, loaded previously fired shells or failed to properly cock the gun.
        - Shooter has forgotten to disengage the locking device from the magazine of a semi-auto shotgun.
        - Shooter has not sufficiently released the trigger of a single trigger gun having fired the first shot.
        - Shooter not seeing the target.
- **Muzzle:** The end of the barrel from which the shot exits.
- **National Governing Bodies:**
    - Sporting Clays: NSCA - National Sporting Clays Association
    - American Skeet: NSSA - National Skeet Shooting Association
    - American Trap: ATA – Amateur Trapshooting Association
    - Olympic Games: USAS – USA Shooting
- **NGB:** National Governing Body
- **NGB #:** Membership ID # assigned to the participant by the NGB
- **No-Target:** Often referred to as No-Bird – is when a target comes out of the trap broken; is the wrong trajectory or when the shooter commits an offence.
- **NSSF:** National Shooting Sports Foundation
- **NWTF:** National Wildlife Turkey Federation
- **Option:** The first time a shooter misses in skeet, he or she immediately repeats the shot where the miss occurred and is called an “option”. If no targets are missed during the round, the last or 25th target is shot at the last station, low house 8.
- **On Report:** In Sporting Clay Shooting, the term used when the shooter first shoots at one target and then on the firing of the first shot, the next target is released.
- **Pattern:** The concentration or spread of the shot pellets measured in a circle at a given range, usually 30 to 40 yards.
- **Pull:** The command the shooter issues when he is ready for the clay to be released. Some shooters call “ready” in Sporting Shooting, others just grunt! Some Americans call “hup”!
- **Rafale:** In Sporting Clay Shooting, the term used for two targets sent from an automatic trap one immediately after the other.
- **Range:** The place where shooting takes place.
- **Recoil:** The rearward movement of a gun when fired.

- **Regional Championships:** Athletes must compete in a Regional Championship for each discipline for which they intend to compete in the State Championship. Athletes may compete in any region but are only eligible for awards in the Region in which their team resides.
- **Registered Target:** Targets shot at an event sanctioned by the NGB for the discipline
- **Rib:** The flat top of the barrels. It is non-reflective so that any possible glare does not obstruct the sight of the shooter.
- **Round:** Generally 25 targets are shot per round.
- **Safety:** A mechanical device that, in the "on" position prevents the gun from firing. In many field guns the safety is automatically engaged when the gun is opened; in other guns, particularly competition grades, the safety must be manually opened.
- **SCTP:** Scholastic Clay Target Program.
- **Scoring:** All scoring in Clay Target Shooting is 1 point per target hit. All scores are listed out of 25 and then out of the total targets for the competition. A competition is generally either out of 100 or 200 targets, therefore listed within that result will be either four scores out of 25, or eight scores out of 25.
- **Shoot-Offs:** Method of deciding ties in which the shooters fire another round/station.
- **Shooting Vest:** Normally a sleeveless jacket with pockets to hold cartridges and a leather patch on the shoulder from which the shooter will shoot. The leather patch absorbs some recoil and allows the gun to slip into the shoulder easily.
- **Shot Shells:** The ammunition fired by the shotguns, consisting of five components; the case, primer, powder charge, wad, and shot used to break the clay. Vary in their weight and shot size.
    - **Dram Equivalent and Velocity:** Accepted method of correlating relative velocities of shot shells loaded with smokeless powder to shot shells loaded with black powder. Varies by shot length and shot load. The higher the Dram or the faster the load, the more energy the pellet will have (all other things being equal) and the greater the recoil.
    - **Gauge:** The number of pure lead balls at standard bore diameter required to make one pound. The bigger the gauge number, the smaller the hole because it takes more balls to weigh one pound. Must use shells of the same gauge as the shotgun.
        - **12 gauge:** Most versatile and common size
        - **20 gauge:** Most popular with shooters who are uncomfortable with the weight and recoil of a 12 gauge shotgun.
        - **28 gauge:** Next to smallest size. It recoils like a .410 and hits like a 20 gauge.
        - **.410:** The smallest of the commonly encountered shotgun sizes and is actually a bore diameter designation. Lighter weight and generates less recoil.
    - **Shot Length:** Will depend on what your shotgun can shoot and your barrel should be marked for the length of the chamber. It is based on the length of the spent hull. In general the longer the shell the more powerful it is.
        - **2 ¾ inch:** Regular shells, most commonly used.
        - **3 inch:** Magnum shells.
        - **3 ½ inch:** Super-magnum shells.
    - **Shot Load/Weight:** The amount of pellets in a given load. The bigger the number, the more pellets contained within the shell (as long as the shot size is the same).
        - **7/8 ounces:** Maximum load that can be used in any discipline for 20 gauge shotguns. In #9 shot size there is a pellet count of 512.
        - **1 ounce:** Most common load used with varying pellet counts based on the Shot size; #9 has 585, #8 ½ has 480, #8 has 409, and #7 ½ has 345.
        - **1 1/8 ounce:** Maximum load that can be used in any event for 12 gauge shotguns with varying pellet counts based on the Shot size: #9 has 658, #8 ½ has 540, #8 has 460 and #7 ½ has 388.

- **Shot Size:** The actual size of each pellet. The bigger the pellet the more energy it will have.
  - **7 1/2:** Diameter of .094 inches with approximately 350 pellets in a 1 ounce load. Usually used for Trap and Sporting Clays where longer shots are required.
  - **8:** Diameter of .089 inches with approximately 409 pellets in a 1 ounce load. Usually used for Trap and Sporting Clays because range is short and a high density pattern is desired.
  - **8 1/2:** Diameter of .085 inches with approximately 480 pellets in a 1 ounce load. Usually used in Sporting Clays.
  - **9**: Diameter of .079 inches with approximately 585 pellets in a 1 ounce load. Usually used for Skeet because range is short and a high density pattern is desired.
- **Side Ribs:** Metal pieces which hold barrels together.
- **Single:** When a shooter shoots at one (1) clay only.
- **Show pair:** The first person on a station shall be allowed to view a good presentation of targets from within the stand while shooting Sporting Clays.
- **SPP:** Scholastic Pistol Program
- **Sporting Clays:** A challenging clay target game with different stations and many launch points to simulate field shooting. Any choke and shot size can be used.
- **Squad:** Refers to the group of shooters who shoot a round of clays or a competition. Consists of five (5) Athletes for Trap and three (3) Athletes for Skeet and Sporting Clays.
- **SSSF:** Scholastic Shooting Sports Foundation
- **Stance:** Position your feet so that a line extending from your rear heel to your leading foot points to where you will break the target. Keeping your stance relatively narrow. This encourages a smooth swing and a good follow through.
- **Stages:** The area that SPP athletes will fire his/her shots.
- **Stand:** The position from where the shooter will fire his/her shots.
- **Station:** A shooting position from which one or more targets are attempted.
- **Straight 25:** When a shooter scores 25 out of 25 it is referred to as a "Straight 25". Straight 50's, 75's and 100's are also recorded and members can purchase badges to sew onto their shooting jackets which reflect their achievement.
- **State Championships:** Held for each discipline for athletes across the state. Athletes must compete in the State Championships to compete in the National Championships.
- **Stock:** The "handle" of the shotgun, the part held to the shoulder, comprising of the butt, comb, grip and forearm.
- **Swing:** Used to refer to the movement of the gun when the shooter shoots. It is important to have a smooth swing (as in golf.)
- **Target Sequence:** In skeet when you walk to a station, any station, you always shoot a high house single first, a low house single second, and the doubles if they are required. When shooting doubles, you always shoot the target going away from you (outbound) first and the target coming toward you (inbound) second. So, when shooting doubles on Stations 1 & 2, you shoot the high house target first and the low house target second. Then on Stations 6 and 7, you shoot the low house target first, and the high house target second.
- **Team:** ALL Athletes, Head Coaches, Assistance Coaches, and Adult Volunteers registered under the same Head Coach at a "Home" Gun Club or Shooting Facility in one or more disciplines
- **Team Practice:** Any officially called non-competition shooting event called by the coach.
- **TNSCTP:** Tennessee Scholastic Clay Target Program

- **Trap:** The spring-loaded, flywheel or rotational devices especially designed to launch the different targets in singles or pairs into the air in varying speeds and trajectories.
- **Trigger:** The finger-pulled lever; single, double and release that drives the firing pin forward and fires the shotgun.
- **TWF:** Tennessee Wildlife Federation
- **TWRA:** Tennessee Wildlife Resources Agency
- **Waivers:** Can be given because of injury, school related activities, and other shooting events. They must be requested in writing from the Regional Director and State Manager.

Works Cited:

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