

Fact Sheet 9

Shotgun and Ammunition Selection/ Gun Fit

Proper shotgun and ammunition selection are vital for young people to successfully learn to shoot a shotgun. Shooting form faults will develop if shooters have difficulty handling the physical size, weight and recoil of a shotgun. Very young or small shooters are quickly tired by excessive gun mass or poorly fitting guns. They also feel recoil more severely, sometimes to the point of bruising and pain which could result in flinching and the development of form faults. They are likely to see shotgun shooting as an ordeal rather than a challenging and fun activity. Since this is a voluntary activity, they may lose interest and drop out under those conditions.

Interest in shooting, desire to shoot better, prove one's self or similar motivations may drive the shooter to use equipment beyond his or her capabilities. The instructor must assist the shooter with selecting a shotgun and load to promote success. Success enhances the shooter's self-image and increases fun and interest. It also increases desire and willingness to learn.

Proper Gun Fit

Most shotguns are designed to fit the "average" American male, approximately 5'9" tall, of average build and weighing 170 pounds. Most people, particularly young people, do not fit that description. As a result, the dimensions of the shotgun stock are not correct for the young shooter. Stock length is usually excessive for beginning shooters. The larger youth may be able to compensate for that length, but many smaller shooters will need to have a shorter stock to properly handle the shotgun.

Several manufacturers market youth models having stocks with a length of pull in the 12 to 13-inch range. In several cases, those stocks are interchangeable with "adult sized" stocks at a modest cost. An alternative is to have the stocks cut to the proper length by a competent person. When the shotgun is mounted properly, there should be approximately 2 inches of space between the shooter's cheek and the base of the thumb of the dominant hand. Two inches is the width of 2 or 3 fingers. Save the piece that is cut off, so it can be reattached as the youngster grows. In addition to stock fit, the length and mass of the barrel is critical. The balance point of the gun should be between the hands for optimum gun handling. The shorter barrels of youth models work well with the shorter stock to keep the balance point between the hands, increasing handling ease. These guns are also lighter in weight and easier for smaller students to use.

Gun Fitting

Without a proper gun mount, fitting a gun is a waste of time and effort. Once the shooter understands and can accomplish a decent gun mount, we can begin to check for proper gun fit. There are several measurements involved in fitting a gun. Keep in mind that this is not intended to be make you a stock fitter but is only intended to approximate an acceptable fit for a new shooter. One can spend thousands of dollars on a custom fitted gun stock, but the average new shooter is not willing or able to spend that kind of money when first starting out. Keep in mind that the object of fitting is to make the gun shoot where the shooter looks.

Length of Pull (the distance from the center of the trigger to the center of the recoil pad)

Much has been written about the proper length for a shotgun. The old method of holding a gun in the crook of one's arm shows nothing but the relative length of the arm to the length of the stock. It is worthless in determining proper stock length.

In a pre-mounted game like trapshooting or skeet shooting, length is to some extent a matter of comfort. Too short a gun encourages head lifting and results in "whippy" gun movements. Too long a stock puts

the weight of the gun (balance point) further out making it more difficult to support and restricts movement on angle targets. So, what is the proper length? When properly mounted, the gap between the thumb knuckle of the strong hand and the cheek should be at least two to three fingers wide. Longer is better if the shooter can still move comfortably to the angle targets.

So how do you change the length? If the gun is too short, a thicker recoil pad or spacers may be the quick answer. If the gun is too long, a thinner pad may be enough. You can even try removing the pad entirely on a temporary basis. This generally will shorten the gun at least one inch. This is temporary only! At a minimum, put some heavy duct tape over the exposed wood. One of the purposes of the pad is to protect the stock from splintering. In the end, the only solution may be to cut the stock off but proceed slowly.

Drop at the Comb (the difference between the height of the top of the comb and the rib)

The critical measurement is the drop at the comb. To repeat, the critical measurement is the drop at the comb. It is this element of stock fit which determines the vertical position of the eye above the rib. Most female shooters and many youths require very little drop at the comb because the distance from the bottom on their cheekbone to the center of the pupil of the eye is extremely short.

There are several ways to check the alignment of the eye with the rib. The first is to ask the shooter to mount the gun with eyes closed and then on opening the eyes without moving the head tell you what he/she is seeing. Another way is to have the shooter mount the gun in front of a mirror with their eyes closed. Stand behind the shooter looking over their shoulder into the mirror. Have the shooter open both eyes and observe the position of their eye relative to the rib. You should be able to see all or at least most of the pupil of the eye above the rib.

If the comb height is correct, the shooter should see directly down the rib with the center bead (if present) under the front bead. Some folks prefer the classic figure eight approach (front bead directly on top of the center bead). The preferred result is the shooter should see some rib, approximately $\frac{3}{4}$ of an inch between the beads. In any case, the shooter's eye must be above the rib or the tendency will be to lift the head to see the target because the gun is in the way of the shooter's vision. Too low a comb will sometimes cause even strongly one eye dominant shooters to switch dominance because the vision of the strong eye is blocked by the gun.

Keep in mind that the drop may be influenced by the position of the shooter's cheek on the comb. Most combs have more drop at the front of the comb and less at the back. As a result, if the shooter puts their cheek in a different position on the comb, the apparent drop will be different.

If the comb is too low, it may be changed by the addition of a comb raiser, a raising kit or several other products that are commercially available for that purpose. You can also increase the height with layers of moleskin but be careful to go up and not out to the sides. Once you have found the correct height, use a larger piece of moleskin cut into a long oval to cover your handiwork and provide a smooth surface for the cheek. You can also use layers of Molefoam covered by electrical tape once the appropriate height is attained. Again, be careful not to add to the thickness of the comb. Up, not out, is the key.

If the comb is too high, there are only two choices - find another gun or stock or cut down the existing stock. If you choose to cut down the comb of an existing stock, be careful that the front of the comb is not higher than the back. If this happens your shooter will look like he/she did 10 rounds with Mike Tyson as the front of the comb recoils back into the face.

Cast (the alignment of the comb with the rib)

A gun whose stock is bent to the right is said to be cast-off; bent to the left is cast-on. Cast controls the horizontal relationship of the eye and the rib. Frequently, right-eye dominant shooters need some cast off to line up their strong eye with the rib. Left-eye dominant shooters may need cast-on to accomplish the same thing. Most mass-built guns have little or no cast. If the shooter makes a proper gun mount but the eye is not lined up horizontally with the rib of the shotgun, changes to cast must be made. If we think of the eye as the rear sight of the shotgun (essentially, it is) and if the eye is lined up to the left of the center of the rib, the shooter will tend to shoot to the left.

Changing cast is much like changing drop at the comb. In right-eyed dominant shooters, adding moleskin layers to the side of the stock will move the shooters eye further to the left. If you need to move the eye toward the stock there are two solutions. Having the shooter cant the gun slightly toward their face will sometimes solve the problem. Canting is generally not a good idea because shooters have a difficult time doing so consistently and it does affect point of impact. As inconsistent as it may be to do, sometimes it is the only choice available. Removal of some stock material from the side of the stock should be done with great care. Any material removed should be done evenly front to back without creating a “dishing” effect which will then recoil into the face. It is also critical that the comb not develop a knife-like edge to transmit recoil to the face.

Some shotguns come with spacers that can be put between the stock and the receiver to change drop at the comb and cast. Some shooters may be willing to go to the expense of having an adjustable comb and butt installed on their guns which allows for significant changes in length of pull, drop at the comb and cast.

Pitch (the angle between the recoil pad and the rib)

Most mass-produced guns now come with zero pitch. Some shooters, particularly ladies and barrel-chested men, find that even with a good firm gun mount they are getting hit sharply in the face, sometimes to the point of developing a “mouse” on the cheek. This can frequently be solved by introducing some down pitch. A quick solution to the problem is to loosen the recoil pad and insert a wedge of material (a small piece of wood, plastic or the folded-up body of a shell will work) under the heel (top portion) of the pad and re-tighten the screws. Increase the spacer until the thump goes away and then insert a wedge-shaped spacer between the stock and recoil pad or have the stock cut at an angle for a permanent fix.

Finally, many shooters with small hands need some help with the grip. Adding layers of moleskin to the front of the grip moves it forward so the shooter can comfortably reach the trigger with the first joint of the trigger finger. Wrap the grip with tennis racket grip tape to keep the moleskin in place. This also forms a palm swell which helps the shooter position the strong hand. Even shooters who do not need to move the front of the grip forward sometimes find the grip tape helpful. In addition to forming a palm swell, it has a tacky surface.

Not all shooters require all the changes to gun fit described here. Proceed slowly; make changes in small increments.

Action Types and Gauges

Light weight makes the shotgun more responsive and easier to hold but it also increases the felt recoil. One way to address this issue is to use a gas operated semi-automatic shotgun. Although the laws of physics remain (for every action there is an equal and opposite reaction), gas operated actions spread the recoil over a longer time span. That reduces felt recoil by producing more of a push than a sharp blow. Most young people find the recoil of either 20 gauges or 12-gauge semi-autos acceptable.

Avoid the temptation to use smaller gauge guns with smaller shooters. Smaller gauge shotguns handicap the shooter. They have sparser patterns with less density at their edges. As a result, they require the shooter to center the target more precisely to break the targets consistently. For that reason, they are less effective as teaching tools. Avoid the temptation to use 28 gauges or .410 shotguns. These guns belong in the hands of

experts and are extremely frustrating for beginners. To ensure success, put more shot in the air with better pattern density. That increases the odds for the shooter. Stick to 12 gauges for shooters who can handle them and plan to use 20-gauge guns for those who need a smaller one.

Barrel Length and Choke

Barrels 21 to 26 inches long help keep the balance point of the shotgun between the hands, easing the process of swinging to the target. That characteristic is very important to smaller students and it can be gained without serious loss of power.

Shot shells loaded with smokeless powder consume their powder within the first 14 to 18 inches of the barrel. Although slight increases in velocity and energy are attained with longer barrels, the gains are relatively insignificant. The belief that longer barrels shoot “harder” is a holdover from the days of black powder. Longer barrels have advantages in some situations. They provide a longer “sighting radius” and a smoother swing than shorter barrels.

A large pattern is advantageous while the basics of shotgun shooting are being learned. Since the ranges are relatively short, skeet or improved cylinder chokes are preferred for instruction, even when trap fields are being used. Combining those chokes with small shot keeps the pattern both wide and dense, ensuring success for the learner.

Ammunition

Like the considerations on size and mass of the shotgun, selection of ammunition for instruction involves several competing factors. The weight of the shot charge and the weight of the powder charge determine the velocity and the potential recoil. Increasing the powder charge increases both velocity and recoil. Increasing the shot charge decreases the velocity while increasing the felt recoil. Light target loads in either 20 gauges or 12 gauges will give optimum performance. Extra light loads using one ounce of shot in a 12 gauge yield lighter recoil with minimal loss of pattern density. Using fine shot, #8 or #9, puts more shot in the pattern, increasing pattern density without increasing recoil. Mild recoil, modest velocity and good pattern density contribute to success. Using heavier shot charges or increasing velocities beyond normal target levels increases recoil without contributing significantly to shooting effectiveness.

Practicing Your Shotgun Skills

James V. Peter, Jr.*

When shooters have a sound understanding of shotgun shooting fundamentals on straight-away targets, move on to greater challenges. Limit shooting to a maximum of five rounds in succession to prevent shooters from tiring. If necessary, the ball and dummy exercises can be repeated until fundamentals are understood. After several repetitions most shooters will be ready to move on to greater challenges, like learning to hit angled or crossing targets.

Moving from predictable straightaway targets to those that vary in angle or take an angled flight path adds a whole new set of variables. If the shooters have progressed according to plan, they should be ready to hit crossing targets. On a skeet field, the shooters should be

introduced to high 7 first. They should then move progressively toward station 1, establishing themselves at each station before moving on to the next. On trap fields, the shooters can start shooting at angling targets, slowly moving back from the trap house to the 16-yard line.

Several suggestions are listed below for increasing the challenge using ground-mounted portable traps.

1. Slowly increase the angle of the target's flight in relation to the shooter. Consider the position of the trap operator and maintain angles and shooting positions that protect him or her.
2. Alter the position of the target on the throwing arm of the trap to vary the direction taken by the target with each call. Begin with

moderate angles and slowly increase them to about 45 degrees.

8. Adjust the elevation of the thrower arm head to vary the height and trajectory of the targets.
9. Allow the trap operator to release the target within a few seconds of the shooter calling for the target, with the release being at their discretion.
10. Try throwing doubles from the same trap.
11. Rather than mounting the shotgun before calling for the target, have the shooter call for the target from the gun-ready position, mounting it only after the target is thrown.

Clover Clays

James V. Peter, Jr.*

Note: Clover clays have been around for many years. I do not claim to have invented it, but this version is mine.

The objective of clover clays is to teach the shooter to handle targets at varying angles. The shooter is exposed to targets with known flight paths and surprise targets. This game can also be used to introduce doubles from different traps. The shooting situation is set up as illustrated below.

Equipment Needed

- spring operated ground traps – 2
- posts or stakes – 3 (2 orange and 1 white)
- engineers flagging tape or rope – compass
- measuring tape

Set Up

The two traps should be set up about 45 meters (50 yards) apart on a common base line. Station 1 is located at the left-hand trap. Station 3 is at the right-hand trap. Station 2 is located midway between the traps on the baseline. The white stake indicates the crossing point for the

targets thrown from the two traps. It should be located approximately 23 meters (25 yards) in front of station 2. The orange stakes should be set approximately two-thirds of the way from the white stake to the traps. They mark the boundary of the safety zone. Under no circumstance should a shotgun be permitted to point inside the orange stakes.

The traps should be fixed in position with the appropriate will cross over the white stake. Each trap should be operated by an experienced range assistant. The instructor should accompany the shooter to each shooting location, maintaining control of all ammunition and watching the shooters to assure that the guns never swing inside the orange safety zones. A single round will be dispensed for each shot, except on doubles. These will only be dispensed after the shooter is ready and in the shooters' box. Except when the shooter is preparing to fire, the action on the shotgun must be kept open and exposed to view for safety reasons.

Three levels of challenge are outlined here for shooters of different skill levels.

Beginners

Station 1: One target from trap 1

Station 2: One target from trap 1 and one from trap 2

Intermediates

Station 1: One target from each trap

Station 2: One Target from each trap

Station 3: One target from each trap

Advanced

Station 1: Single targets from each trap and a pair of targets thrown simultaneously from both traps

Station 2: Single targets from each trap

Station 3 Single targets from each trap and a pair of targets thrown simultaneously from both traps.

These patterns are merely suggestions. An unlimited variety of possibilities exists.

* County Extension director and agricultural agent for the Dubois County Office of Purdue Cooperative Extension, Jasper, Indiana

zone and any danger areas. The firing line and positions for all persons at each firing point should be reviewed. The safety zone behind the firing line should be reviewed. All spectators should understand their role and the importance of not disturbing the shooters. Remind shooters to ask questions immediately if they do not understand any part of the instruction. Review the fundamental rules of safe firearms handling, including passing firearms between people on the line. Only instructors will handle ammunition, and they will have only one gauge of ammunition in their possession at any one time. Since the actions at each shooting station follow the progress and rhythm of the shooter, each one operates independently. Range commands will be few. "Live ammunition on the range!" indicates that the range is not hot, and no one should move forward of the firing line. "Cease fire!" or "freeze!" means that all shooting should stop immediately. Anyone noting an unsafe condition should give the cease fire command. Finally, all persons on the range should review the basics of trap operation and safety and see a target thrown.

Ball and Dummy

This technique combines dry firing exercises and live firing. All ammunition remains under the instructor's control. After each "shot" the shooter hands the gun to the instructor, who shields the action from the shooter's view and "loads" before passing it back. The

shooter should not know whether a live round or a dummy round has been loaded. The shotgun is always treated as if loaded, and the shooter "fires" on the target with every intention of breaking each one. The instructor watches the point and timing, slipping in the first live round when it seems that the shooter is consistently "hitting" the target with the dummy rounds. Allow the shooter to fire several live rounds interspersed with dummy rounds to check for sound fundamentals. Watch particularly for flinching and a strong follow through.

Follow Target to Ground

Encouraging the shooter to follow the target to the ground after pulling the trigger helps most shooters develop a smooth follow through. If the target is broken, the shooter should follow the largest remaining piece to the ground. The process keeps the shooter watching the target and maintains the unity of the upper body with the shotgun. It also keeps the head on the stock, developing strong shooting form. Occasionally a shooter will begin aiming or riding the targets. If that problem arises, have them exaggerate their follow through.

Mechanics of Dry Firing and Live Firing

Dry firing may be divided into two elements, dry pointing and dry firing. Dry pointing involves shooter pointing at the target with an unloaded gun without pulling the trigger. In dry firing the shooter "fires" a shotgun loaded with a dummy round. This helps shooters become

accustomed to wearing their eye and ear protection, stresses the fundamentals of pointing a shotgun at a moving target and reinforces safe gun handling through practice. It also allows the shooter to practice the gun-ready position and a proper gun mount. Finally, it helps develop a smooth swing and follow through.

The exercise involves the following steps.

1. The instructor checks to be sure that all persons on the range are wearing eye and ear protection.
2. Each instructor brings a student (or a pair or triad) to the firing line. They explain that the actions will be closed on the shotguns, so they should always be treated as though they are loaded and ready to fire.
3. The student assumes a "boxer's stance," and the instructor checks the stance for form and alignment.
4. The instructor "loads" the shotgun and closes the action. Prior to handing the shotgun to the shooter using standard protocols, the instructor states "the gun is loaded and ready to fire." Prior to handing the gun to the shooter, the instructor should also check to see that the safety is off, giving the shooter one less thing to think about.
5. The shooter assumes a "gun-ready position." The instructor places the gun in the correct place on the shooter's shoulder. While passing the shotgun the

They seem to lift their heads as they fire, stopping the gun at the same time.

Positive correction of follow through problems starts with the shooter. Relaxing the grip, stance and sense of pressure to achieve a hit can be helpful. Clothing that may restrict the swing should be exchanged for something that allows more freedom of movement. Position the shooter so his or her stance allows freedom of movement through the target breaking zone. The shooter may follow a piece of the broken target or dry fire and lead targets into the ground. In extreme cases, tell the shooter where the gun should be pointing at the end of the follow through. A slightly muzzle heavy shotgun may help to smooth the swing and follow through.

Flinching

All shooters tend to flinch at some time. Minor flinching is

inconsequential to a shotgun shooter. Intense flinching, however, can destroy the shooter's ability to hit targets with a shotgun. Flinching is the result of anticipating either the report of the shotgun or its recoil. Past experience, poor form, excessive shooting and improper gun fit are the major causes of flinching.

Flinching often causes erratic performance on targets. The shooter is usually not conscious of the problem. Flinching may be the cause of otherwise unexplained misses or complaints about noise, recoil or soreness. The easiest way to demonstrate it is to use a ball and dummy technique, watching the shooter carefully when the dummy rounds are being used.

Preventing flinching is much easier than correcting it. Establishing sound fundamentals with properly fitted guns and adequate protective gear prevent most

problems. Correcting flinching problems starts with an analysis of the reasons for flinching. Determine whether the gauge and load being used is appropriate for the size of the shooter. Make sure the gun fits adequately. Check the shooter's ear protection to make sure it is adequate and is being used properly. Add an additional layer of protection, using plugs and muffs if needed. Use dry-firing practice and ball and dummy procedures to work through the shooting sequence without the noise and recoil. Finally, position the body to act as a recoil absorber and demonstrate how to ride with the recoil rather than fight it. Explain that a firm, snug hold and a slight to moderate lean into the shot will convert most of the recoil into a push rather than a blow. Patience is essential when trying to correct recoil sensitivity and flinching. Work with the shooter carefully using positive reinforcement and avoiding excessive pressure.

Detecting and Correcting Shotgun Shooting Errors

James V. Peter, Jr.*

Detecting and correcting errors made by shooters can be a challenge. Some instructors consider this skill to be a science. Others consider it a mystical art. There is truth to both opinions. The ability to recognize symptoms of shooting errors, analyze what the shooter is doing to create the situation and then help him or her to correct the action is an acquired skill. It becomes more effective with time and experience, but a gift of perception is often needed. This fact sheet outlines some common shooting errors, how to recognize them and how to suggest correcting them.

Detecting errors is important but understanding how to correct them without causing the shooter to lose confidence or focus on the fault is more critical. Emphasize the positive actions to develop proper form fundamentals. Demonstrate the correct actions when appropriate. Use your creativity to get the shooter to do the proper thing. Remember that the shooters are young. Have reasonable expectations for the shooters while challenging them to do their best.

Eye Dominance

Eye dominance problems can be obvious or very subtle. One of the most obvious is noticing that the shooter is tilting his or her

head across the comb to align their dominant eye with the barrel. Mysterious misses, those with no clear reason, are among the most frustrating of the eye-dominance problems. This may occur when the shooter concentrates on the barrel (sighting or aiming) rather than focusing on the target. When that occurs, the barrel may become an obstruction to the dominant eye, causing the focus to switch to the other eye. Consistently shooting to one side of straight-away targets, or consistently missing either ahead of or behind crossing targets often indicates a dominance problem. When crossing targets from both sides are being shot, the shooter may hit targets from one side easily while being a long way (1 to 2 meters or 4 to 6 feet) behind targets from the other side. Some shooters will complain that they are seeing the side of the barrel.

The most obvious solution for eye dominance problems is to switch the shotgun to the other shoulder, changing the handedness of the stance to the dominant-eye side. This is the best solution to eye-dominance problems, even if the shooter has considerable experience from the “wrong” side. In most cases,

the shooter will adapt quickly and be “cured.” Some shooters will not switch sides or physically cannot switch sides due to injuries or other problems. They can be helped by interfering with the vision of the dominant eye. The eye does not have to be covered or closed. Adequate interference can be achieved by placing a spot of tape about the size of a notebook reinforcement ring on the lens of the shooting glasses. Place it where it will block the center of the dominant eye when it is in shooting position. A small square or strip of cellophane tape placed vertically over the center of the safety glasses also works well. This technique maintains the advantages in peripheral vision and depth perception that come from binocular vision but forces the non-dominant eye to assume the directing role for the point. One-eyed shooting is necessary in very few cases. Where the shooter switches dominance almost randomly, one-eyed shooting is the easiest way to get them on target. They can either cover or close the non-shooting eye. *This alternative should be used only if all others have been tried without success.*

Coping with an eye dominance problem causes the shooter to use an unfamiliar position that feels awkward. They may become

* County Extension director and agricultural agent for the Dubois County Office of Purdue Cooperative Extension, Jasper, Indiana.

frustrated when scores drop, and their form feels uncomfortable. Patience and positive reinforcement are essential. Give shooters enough time to adapt and to reinforce the fundamentals of good shooting form as they develop this new skill.

Shooter Not Relaxed

Excessive tension causes many types of shooting errors. Experienced instructors may refer to seeing sawdust between the knuckles of excessively tense shooters. Although not true literally, white knuckles and obviously flexed forearm muscles are a strong indication of excessive tension. Deterioration of scores after a miss is another one, usually attributable to peer pressure. Tense shooters may fidget on the firing line, express a lack of confidence or fear of missing, spend an excessive amount of time preparing to shoot or shoot very late and deliberately.

Being too tense causes other problems, so the symptoms of excessive tension may be masked as other difficulties. The shooter may stop his or her swing or look up to see the target break. They may lunge at targets, losing the smooth swing needed for consistent performance. They may spot shoot targets or take excessive leads; or they may ride the target and aim rather than point. They may fiddle with their foot, body or gun position, changing from a sound one to one that is contorted and unstable. *Unless broken by positive action from the instructor, excessive tension will almost always continue to*

worsen, feeding upon itself and destroying the shooter's confidence. Instructor intervention is essential to assist these shooters!

Correcting excess tension can be an exhaustive process, particularly with shooters who hold themselves to a standard of perfection they are not ready to achieve. One of the most important tools is to eliminate peer pressure by isolating the shooter for instruction. One-on-one instruction with a gentle, cooperative coach usually succeeds. Allow the shooter to observe others. Throw a few targets without shooting. Return to the finger point and dry firing sequence in private. Reduce the challenge, for example return to straight-away targets, to rebuild confidence. Be careful and patient. Excessive tension is frequently a symptom of problems with self-confidence, self-image or perceptions of personal worth based on shooting performance. *Damage control is essential in any instructional technique.*

Improper Stance

Targets are hit with the shot but missed with the feet. Stance and foot position are vitally important to good shotgun shooting. Stance problems may be easy to detect, but instructors may overlook them when working on other problems. Poor stance causes problems with getting on targets, establishing proper leads and following through the shot properly. New shooters can drift from a good stance to a poor one gradually and without noticing it. Performance deteriorates, and

they alter other elements of their form to compensate. Stance should be checked frequently by the instructor.

Observing foot position relative to the target-breaking zone is one of the best ways to detect stance problems. One of the most common faults is adjusting the stance to the area where the target will appear rather than where it will be broken. The body comes under increased tension as the target breaking zone is approached. The result is shooting behind, having the stance “fly apart” at the end of the swing or having a short, abrupt follow through or none.

Preventing stance problems is easier than curing them. Verbal reminders of proper stance and physical readjustment of stances early in the learning process helps to fix a proper stance in the shooter's mind. Practicing a preparation routine before every shot is valuable for beginning and experienced shooters alike.

Correcting stance problems is relatively simple if the problem has not become fixed by too much practice. Concentrate on the elements of a good stance. Avoid emphasis on form faults. Adjust foot spacing for comfort. Adjust foot orientation to the area where the target will be broken. Without moving the feet, swivel the body from the hips until the target can be seen easily. Using a spring analogy may help. The spring should be under tension when and where the target is first acquired. It should be relaxed and free when the target is broken.

Other elements of the stance must be considered as well. Shooters vary greatly in the amount of knee flex or body lean. Slight amounts of knee flex and lean into the gun are desirable. Shooting from a crouch is tiring. Rebuild stances carefully, avoiding the notion of one best posture for all shotgunners in all situations. Change only one element of the stance at a time to avoid confusing the shooter.

Some stance faults must be addressed quickly. One of the most common is leaning away from the target. It results in severe recoil. Shooters suffering a pounding from recoil are less likely to enjoy themselves and learning will suffer. They will also develop faults that are more difficult to detect and cure. Fear of recoil, improper gun fit, and excessive gun mass are common causes of this fault. Switching to a lighter or shorter gun helps the situation greatly, even when the problem is fear. Demonstrating the recoil absorbing action of a proper stance also helps.

Improper Head Position

Improper head position often results from improper gun mounting or improper fit. Anticipating recoil and wanting to see the target break are also commonly involved. Shooters who try to swing from the shoulders rather than from the waist will also have problems coordinating the positions of the head and the gun.

Consistently shooting over or under targets, randomly missing high or low or punishing recoil to the face or cheek commonly indicate poor

head position. Shooters may “peek” by lowering the gun as the shot is fired. Most shots go low, even though the target was being tracked properly. Others may “raise their heads” shooting over the target. Both problems are based in improper gun mounting.

The shooter’s head should be erect and relaxed. The shotgun should be brought to the shoulder and face during the mount. Emphasize proper shotgun mounting each time a shooter raises the gun. Practice the mount, swinging from the hips and following through. These exercises will cure most head position problems. In extreme cases use dummy ammunition to let the shooter see what is happening. Stock fit, particularly length of pull, drop at the comb and drop at the heel, may need to be addressed. A shooter adapting to a stock that does not fit may move the head as the gun is mounted, causing head position problems. Following targets or pieces through the entire flight cures or prevents problems.

Aiming

Shotguns must be pointed, not aimed, if the shooter is going to become a good shotgun shot. The desire to make sure of each shot can cause shooters to aim at targets rather than point. Riding the target is a common symptom of aiming rather than pointing. Shooters suffering from this fault often fire very late. In extreme cases they may be unable to fire, particularly on crossing targets. They may show a pre-occupation with the barrel or the beads on the shotgun.

They may fidget on the stock, trying to get their head position set. In some cases, the follow through will be nonexistent or very brief and abrupt.

Focus on the fundamentals of sound shotgun shooting to give positive correction. Emphasize that the shooter should focus attention on the target rather than the barrel. Try to get the shooter to fire more quickly, shooting as quickly as they can touch or pass the target with the muzzle. Ask the shooter to exaggerate the follow through and pay no attention to the target after firing.

No Follow Through

An inadequate follow through is most often revealed by consistently missing behind crossing targets or consistently shooting under rising targets. Watch carefully to see if the shot is being fired with a still shotgun or the swing stops abruptly at the shot.

There are several causes of improper follow through. Aiming or spot shooting (pointing at a spot where the shooter hopes to intercept the target) are common causes. The shooter may simply stop swinging as the shotgun is fired or immediately after firing. Another common cause of poor follow through is “riding the target.” This may come from trying to make sure of a hit or from failing to shoot as soon as the muzzle is pointing at the target. Poor body position may cause the shooter to run out of swinging room, stopping the swing short. Some shooters stop the gun because they are trying to see the target break.

Range Setup and Operation for Shotgun Instruction

James V. Peter, Jr. *

Instructors working with beginning shotgun shooters face two major challenges: 1) Running a firing line with new shooters who are in the process of learning safety while learning to shoot, and 2) Teaching the fundamentals in a positive manner with a high probability of success. Both are discussed here.

The range setup considers effective teaching while assuring the safety of the trap operator, shooter, coach, instructor and others on or near the range. The instructional approach follows a step-by-step process designed to emphasize positive behaviors and actions. Potential problems are identified and corrected before the student begins live firing. Instructors using these techniques experience excellent success rates. Shooters hit their first target about 85 percent of the time. The key to this early success is to proceed carefully, observing each individual shooter. Taking the time to prepare the shooter for success, using proven methods and watching for the proper moment to insert a live round are the keys. When the shooter is ready, load a live round and watch them break the target.

Remember, each shooter is different. Shooting cannot be taught on an assembly line basis. The instructor must treat each young person as an individual with individual needs, preparing

each one for success on their first shot. Once the initial success is achieved, shooters will progress at their own pace. Different target angles should be introduced when they are ready to handle them.

Range Setup for Group Exercises

Shooting safety begins with the setup of the range. A safe shot-fall zone of slightly over 300 meters (330 yards) is needed. Adequate buffer zones along each side of the shooting area should be visible and controlled. If any potential for violation of the shot-fall zone is likely, install physical barriers and adequate warnings to prevent access. All range personnel must be constantly alert to intrusions.

A **safety zone** behind the firing line should be established. It must be clearly marked to control spectators and shooters not on the firing line. A physical barrier is more effective and less likely to be violated than a line on the ground. Brightly colored engineer's flagging tape or rope supported by light stakes or lath work effectively. Spectators must be told clearly that they must not interfere with the operation of the range or distract the shooters. If distractions or interference are encountered, all teaching should stop until the situation is corrected. A silent stare from

the entire group can be an effective means of letting an offender know they are out of line. Distraction from spectators should not be discounted. It carries a potential danger for all persons on the firing line.

The **firing line** must be clearly marked and managed to maintain safety, facilitate group control and maintain positions of group members during instruction. Like the safety line, the firing line must be clearly marked. Lime, rope or engineering tape are effective markers for the firing line. The trap operator must remain behind the shooters, so the traps should be set up slightly behind the firing line. Since the operating arm of the trap is on the right side of the trap, the shooter should be positioned on the firing line about 2 meters (5 to 7 feet) to the left of the trap. A marked shooter's box or a 1-meter (3 foot) carpet square helps keep the shooter in the proper position. The instructor must be positioned to the right and slightly behind the shooter where he or she can protect the trap operator if necessary. This position is convenient with right-handed shooters, but less convenient for left handers. If the shooter is on the right side of the trap the shooter risks being struck by pieces of broken targets. Once the coach-pupil process is started, the coach will

stand in the instructor's position.

When the shooters are learning without firearms, the *instructor* must stand where all participants can see and hear the instructions clearly. The best locations are in the center of the front of the class or at one end of the firing line. With firearms, the instructor should be at one end of the firing line with an assistant at the other end. The chief instructor or range officer may prefer to stand behind the center of the group with assistants covering both ends of the line. Until the shooters have demonstrated understanding and practice of shooting safety, an assistant instructor should be located at every shooting position.

Trap Operation for Group Instruction

Study the directions for setting up and using the trap carefully. Test the trap several times before the class and mark the proper location on the trap arm to throw straightaway targets. Be sure the trap is firmly anchored, so a safe, repeatable target flight path can be followed. Instruct the group in trap operation, demonstrating the proper way to cook, load and fire the trap. Caution them about the power of the throwing arm spring.

The operator must remain behind the shooters and clear of any muzzles. Students should be no closer than 2.5 meters (8 feet) on either side of the trap during the group exercises. Only one shooter should be stationed at each trap during the individual instruction phase.

Instructional procedures for Group Instruction

Basic shotgun shooting instruction involves five steps before shooters actually take a shotgun to the line. These steps can be completed with all shooters on the line at one time in a group setting. Complete this sequence:

1. Introduce the clay target – At the outset of the instruction hold up a clay target to allow all shooters to identify it, note its shape and coloration and see how it is made.
2. Watching the flight of several targets – Have all shooters line up along the firing line, taking care to keep all persons clear of the active trap. Explain that the target is requested by calling “pull.” Call for five targets, and have the shooters watch their flight. Ask them to describe the flight of the targets. Demonstrate and discuss the flight path, noting the target direction and speed and its path from the trap to the ground.
3. Recheck eye dominance – Make sure of each shooter's eye dominance before having them follow a target with an index finger. Eye dominance and handedness start playing a role, starting with following a target with a finger point.
4. Following targets with a finger point – Have all shooters take a boxer's stance on the firing line with the non-dominant foot

forward. Have them extend their non-dominant or forward hand at about a 45-degree angle with the index finger extended. Explain that they are to keep both eyes open, point at the target with their finger and follow the target to the ground. Throughout the flight the shooter should keep their concentration on the target, not on the finger. Call for a target and have the students follow its flight repeating the process with at least three to five more targets.

This exercise teaches the concept of pointing rather than aiming and helps the shooters concentrate on the target rather than the finger. It also helps to develop the hand-eye coordination needed to hit a moving target. If the shooter is having problems with target alignment, this is the time to adjust the stance to the proper position.

5. Point at a target and BANG! – Repeat the exercise above, but have the shooters say “Bang” sharply when their finger first touches the target. Throw three targets before pausing to discuss the results. Each shooter should start from the ready position with the finger pointed at a 45-degree angle. Call for a target. Each shooter should swing smoothly and quickly to the target and call “bang” as the target is touched, following through to the ground.

The instructor should watch for two potential problems at this

point. If all the shooters seem to say “BANG” in unison, stress that each shooter should indicate when they have “touched” the target. It is very unlikely that all shooters will touch the target with their fingers at the same time. Repeat the exercise with an additional five or more targets. Watch for shooters that are a little later than most shooters in getting on the target. These shooters are likely to be aiming or riding the target rather than “shooting” as soon as they get on it. That problem tends to resurface. Take the time to correct the problem now by having the shooter “shoot” as soon as they touch the target.

A third problem of relatively minor importance is a timid “bang.” Stress that shotgun shooting requires an aggressive approach. Despite feeling foolish, the shooter should speak loudly when “shooting” targets with their index finger. The relatively timid shooters may need more support and reinforcement later.

Procedures for Individual Instruction

A coach-pupil technique is recommended for this stage of the instruction. It is extremely effective when it can be used without risk to the shooters. Two young people form each coach-pupil unit. One shooter acts as the pupil while the others serve as the coach. The coach loads the shotgun, assists the shooter with positioning and form and observes the field for safety. While assisting the other shooter, the coach is reinforcing the main points and processes of the lesson. After one shooter

completes an instruction sequence, roles are reversed, and the instruction is repeated.

Some instructors prefer to use a three-shooter group for shotgun instruction, putting one on the trap as well. If the young people are mature enough and strong enough to handle the trap duties, they derive some of the same benefits gained by the coach and pupil. The triad can be rotated on the same basis. Using the method provides additional focus on safety, involves more shooters in the learning process at any given time, improves shooter performance and increases learning effectiveness.

Some instructors feel uncomfortable using the technique until the shooters have had considerable experience on the firing line. Only you can decide whether your group is ready to use the coach-pupil method. Consider your experience and confidence, the number of students in the class and their level of maturity. An assistant instructor or advanced teen leader should be at each shooting station during the early stages of instruction, even if the coach-pupil method is used. Some instructors use the method throughout the individual instruction process. Others wait until after they have completed the dry firing or ball and dummy exercises to use coach-pupil methods.

Dry Firing

As in other shooting sports, shotgun shooters can benefit from dry firing. The shooter goes through the shooting process using snap caps or

dummy rounds. That allows the shooter to concentrate on the fundamentals without the complications of recoil, noise and peer pressure. Form faults or other problems can be identified and corrected before the target, recoil and noise mask them. Dry firing allows the instructor to develop readiness to succeed before the first live round is fired.

This is the time to establish a protocol for passing a shotgun between people on the firing line. Since the coach or instructor will be loading the shotgun in the beginning, the shooter does not know whether it is loaded or not. The uncertainty is an important part of the instructional method. Shooters must maintain control over the shotgun always, and both the coach or instructor and the shooter must take responsibility for a safe transfer. The coach or instructor keeps a firm grip on the shotgun with the muzzle pointed safely down range until the shooter signals that he or she has it under control by saying “thank you.” The coach or instructor should say “you’re welcome” prior to releasing their grip on the gun. That brief exchange of courtesies does much for establishing mutual interaction and responsibilities, as well as preventing guns from being dropped accidentally.

Safety Review

Before proceeding to a live firing exercise, pause and review all range safety operations with the shooter. Discuss the range layout briefly, including the shot-fall

instructor should shield the trigger by placing their fingers in the correct position over the trigger guard. The instructor then has the shooter put their head on the stock and look down the barrel. What does the shooter see?

6. The instructor then places the muzzle of the shotgun in the correct position for the shooter's hold point.
7. The shooter's eyes should be shifted to the area where the target is expected to appear.
8. When the shooter is ready to call for the target, the shooting finger is placed inside the trigger guard.
9. The shooter calls for the target by saying "pull."
10. As the target appears, the shooter swings to the target, pointing the muzzle at a rising clay target.
11. As the muzzle touches the target (or passes it if the target has any crossing angle) the shooter pulls the trigger using a crisp pressing action. Early on the shooter may jerk the trigger but with practice he or she should overcome that tendency. Watch for a tendency to ride the target, raise the face off the stock or halt the follow through. If any of these things occur, correct them before going to live firing.
12. The shooter should follow through, tracking the target all the way to the ground.

13. After the follow through is completed, the shooter hands the shotgun to the instructors using the standard protocols and the exercise is repeated several times.

Live Firing

After the shooter is proficient with dry firing, let the procedure evolve into a ball and dummy exercise. This exercise is a continuation of the dry-firing exercise interspersed with live firing. The shooter should fire no more than five rounds during this exercise. Continue to reinforce safe gun handling and proper shooting form. Each shooter should fire the first shot when they are ready. The learned and practiced fundamentals should be continued. Finally, at the discretion of the instructor, the shooter learns to load the shotgun personally.

The shooting procedure outlined above is followed with the exceptions noted below.

1. After the shooter is on the target with fundamentally sound form three or four times under dry firing conditions, the instructor loads a live round.
2. After the first shot, hit or miss, the instructor must be supportive of the shooter.
3. Repeat the ball and dummy exercise as needed. If additional rounds remain after the shooter has demonstrated an ability to hit targets consistently, allow the shooter to load and fire.

Take the time needed to ensure success on the first shot, working with one shooter at a time. Be particularly careful when passing the shotgun to the shooter. If the shooter has problems on the first attempt, continue the dry-firing exercise, but do not dry fire more than five or six times in a row. More than this tends to frustrate the shooter, increase fatigue and reduce concentration. If fatigue is evident, either allow the shooter to leave the line and rest briefly (bring them back to the line quickly so their confidence is not hurt) or allow the shooter to fire one round, even if it is likely to miss. This gets them through the anxiety of the first shot. Knowing when to load the first live round and how to handle a shooter who is developing slowly will come with experience.

Keep the shooting fun and enjoyable. Keep things moving, be positive and enthusiastic. Remember that beginners tire easily and that they are easily confused by over-instruction. Be sure that shooters off the line are positively involved and supervised. Do not instruct the other shooters at the expense of the individual on the line. Keep the fundamentals in mind, maintain a safe and secure range and keep the shooting fun.

Shotgun Shooting from the Gun-Ready and High-Gun Positions

James V. Peter, Jr. *

Beginning instructors will find this brief review of shotgun shooting fundamentals useful. Take time to review the fundamentals as you prepare for teaching. Remember, shooters are made, not born. Shooting skills must be developed by establishing the fundamentals before moving to more advanced shooting skills.

This teaching method has the shooter call for the target with a high gun-the gun mounted at the shoulder. This reduces the number of variables the beginning shooter must address and promotes faster learning. Although many shotgun games permit the gun to be mounted before calling for a target, teaching the gun-ready position is also important in this process.

Have beginning shooters start from the gun-ready position. Have them mount the gun on command or at will before calling for the target. This will teach the ready position used in international skeet, sporting clays or hunting without the added variable of inconsistent gun mounting during early stages of learning. As the shooters' experience and skill increase, the low gun or gun-ready position may be added to the process. Have them practice the process of mounting the gun, swinging to the target, shooting and following through

with a coordinated and smooth motion.

Eye Dominance

Shooting is learned more easily if the dominant eye performs its natural function. First, the dominant eye must be determined (*see Fact Sheet 3: Determining Eye Dominance*). When the dominant eye and the dominant hand are on the same side of the body, instructors have very little difficulty convincing shooters to shoot from that side. When the shooter is cross dominant (eyedness and handedness differ), the eyedness should take precedence even if the shooter has been shooting from the "wrong" side.

Shotgun Shooting Fundamentals

Shotgun shooting involves placing a cloud of shot where a target will be when the shot reaches that location. The pattern or shot cloud is relatively large, so precise aiming is unnecessary. Aiming is a serious form fault in shotgun shooting. Timing and pointing are the keys to consistent shotgunning. The process involves several fundamental steps: stance, gun-ready position, mount, swing to the target, trigger pull and follow through. Each component is vital to becoming an accomplished shotgun

shooter. The following instructions are given in relation to the dominant eye, thus "dominant side" means the dominant-eye side, and "off" or "non-dominant" side refers to the non-dominant eye side. Using these "ambidextrous" instructions increases the instructor's effectiveness.

Stance

Stance refers to the position and posture of the body relative to the target. Proper stance forms the foundation for proper shotgun shooting. An experienced shooting instructor once said that you hit with the shot, but you miss with your feet. The first component of a good stance is foot position.

The point of reference for taking a stance is the location where the target is likely to be broken. The body should face the intended target-breaking area squarely with the feet comfortably set about shoulder width apart. The off foot should be slightly forward of the dominant foot, perhaps 10 to 20 centimeters (about 4 to 8 inches). Most shooters feel comfortable with the weight evenly distributed or slightly (about 60:40) toward the front foot. The knees should be flexed slightly, allowing the hips to rotate freely. This freedom of movement is critical in games that involve crossing

targets, since the swing comes from the hips rather than the upper body. If properly aligned, a line through the heel of the back foot and the toes of the front one should point to the target-breaking area.

Most instructors refer to this as a “boxer’s stance.” The term is descriptive of the upper body, too. The off hand, the one that holds the forearm of the shotgun, is extended partially with shoulder rotated upward to raise the elbow. The dominant hand, the one on the grip and trigger, is held closer to the chest with the elbow raised.

Gun-ready Position

The gun-ready position is the posture assumed by the upper body prior to mounting the gun. The shotgun is held at an angle across the front of the chest with the muzzle on the anticipated flight line of the target. The heel of the stock is held just above the belt or waistline, under the dominant elbow. The butt plate or recoil pad should be near the forward point of the hip, with the stock close to the body (barely touching) to within a few centimeters (an inch or so.) The dominant elbow should be about 5 to 10 centimeters (2 to 4 inches) away from the stock. This position makes mounting the gun easier by locating the butt forward of the arm pit and free from interference by the clothing or the body.

The offhand (the one on the forearm) should be somewhat flexed, with the shotgun balanced between the hands. If the stock dimensions are correct, the hand should be near the middle of the forearm. Some

shooters prefer keeping the hand closer to the rear of the forearm for support and control. The grip should be firm enough to control the shotgun, but not excessively tight. Many shooters like to point the index finger toward the muzzle to reinforce pointing rather than aiming the shotgun.

The ideal position for the muzzle is on the anticipated flight line, not obstructing the shooter’s field of vision. Being slightly low is preferable to being above the flight line. The shooter must see the target quickly and clearly to hit it.

Both eyes should be open and watching where the target is going to appear. Concentration should be focused totally on the target, not on the background or the barrel of the shotgun.

Mounting the Shotgun

The act of bringing the shotgun into shooting position is called the mount. The shotgun is brought to the face and shoulder in a smooth motion. Vertical movement of the muzzle should be kept to a minimum, with the muzzle acting as a pivot point and tracking the target as the gun is mounted. Raising the stock to the dominant cheek with the head held comfortably erect prevents many of the shooting form faults that plague many shotgun shooters. With practice you can bring the stock to the same position on the face and shoulder each time it is mounted. Consistent placement from shot to shot leads to better shooting and more consistent hits. The comb of the stock should be firmly against the

cheek during the entire shooting process.

With the dominant elbow raised to shoulder height, the shoulder forms a pocket that receives the butt of the stock. Although shooting styles differ somewhat, the heel of the stock should not project appreciably above the top of the shoulder. By keeping most of the butt or recoil pad on the shoulder helps to distribute the recoil, as well as position the shotgun for consistent shooting results.

As the gun is mounted, the upper body shifts, leaning forward to place about 60 to 75 percent of the weight on the forward foot. The forward knee is bent slightly, and the shooter’s head is positioned almost directly over the front foot. Although this process seems complicated and long, with practice it becomes a swift and fluid motion that blends with the swing to the target and follow through. In the beginning, the shooter mounts the gun before calling for the target.

Swing to the Target

Experienced shooters will start the swing to the target as the shotgun is being mounted, but that process is too complicated for beginning shooters. Beginning shooters should start with a mounted and still gun. Before calling for a target, the shooter shifts his or her visual field to the area where the target is going to appear. The target is requested by calling “pull.” Once the target is seen, the shooter focuses on it and moves the upper body and shotgun to cover it. In the early stages of

learning, straight-away targets will be used. The shooter merely points at the target and shoots. Once other types of targets, particularly crossing ones are encountered, the shooter must accelerate the movement of the shotgun to catch and pass the target. That acceleration comes from the legs and hips, which pivot the upper body as a unit. Lead, the forward allowance needed to hit the target, is perceived differently by every shooter. Using a swing-through method is often more effective for field shots and those who are learning to use a shotgun. The shooter starts with the gun behind the target, accelerates through it, fires and continues to accelerate into the follow through. Sustained lead shooters find a forward allowance that works for them, then visually try to tow the target along its flight path with the muzzle, keeping them the proper distance apart.

Trigger Pull

Timing is much more critical than precise location for shotgun

shooters. The shooter needs to fire when the barrel is pointing at the intersection point between the flight path of the shot and that of the target. Using the swing-through approach, the shooter fires when the shotgun touches, covers or passes the target. The trigger is pressed with a quick, crisp pull, but it is not snatched or jerked. The smooth flow of motion from the mount to the follow through should not be interrupted by the trigger pull. Firing the shot becomes a conditioned hand-eye reflex with practice, where the eye recognizes the proper relationship between muzzle and target and trips the trigger finger into action.

Follow Through

Follow through is the continuation of the smooth swing to and through the target. It is the most critical element to consistently good shotgun shooting. Follow through should flow smoothly through the recoil until the target is broken.

Many shooters follow a broken piece of the target to accentuate

their follow through. As target speeds increase, follow through becomes increasingly critical. Like the swing to the target, the follow through involves a properly mounted gun and movement generated from the hips and legs. This movement keeps the gun aligned with where the target will be when the shot charge reaches it.

Combining these elements in a few split seconds takes practice. Coaches must know the components of a good shotgun shot in order to help the learners improve. Keep the challenges simple at the outset. Keep target height and direction as uniform and straight-away as possible. Hold target speed down to modest levels. Keep the shooting sequence as easy as possible by starting with the gun mounted and ready to fire. Watch the shooters to make sure the elements of sound shooting are developing, and work on no more than one correction at a time. Good luck and good teaching.