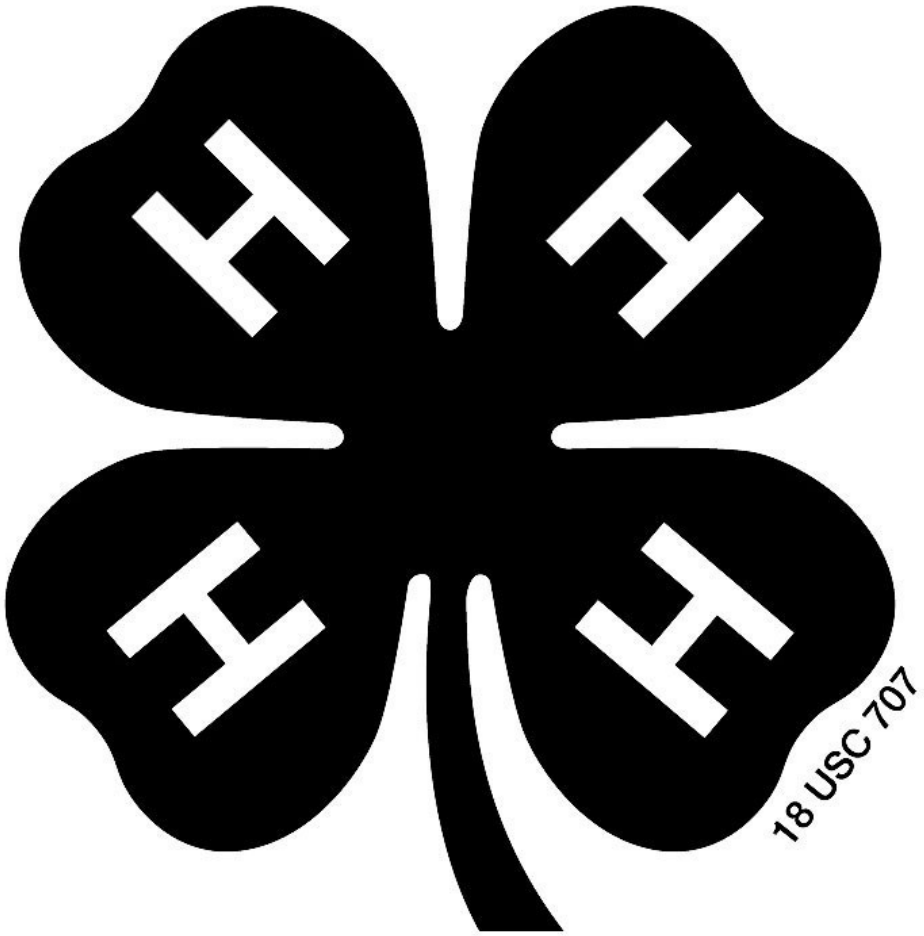
Brookings County 4-H Shooting Sports



Safety Training Manual

Cardinal Rules for Safe Gun Handling

1. Always keep the **M**uzzle pointed in a safe direction. That means point it straight up while carrying it in the range area and down when on the shooting line. It is very important to ALWAYS watch where the muzzle is pointed
2. Keep the **A**ction open except when the range officer has declared the range open and the firearm is loaded for shooting
3. Keep fingers off the **T**rigger until firing. Develop that habit of using your trigger finger as a second trigger guard, covering the side of the trigger guard.

MAT- three letters used to help you remember the 3 rules, remember the part of the gun it stands for but also what each of them means.

Five Important Things to Remember When Firing a Shot

- Proper sight alignment
- Proper sight picture
- Breath Control – Take a deep breath letting half out aiming and firing while holding breath, then releasing the rest after firing
- Trigger squeeze/Control- smooth pull of the trigger without changing sight alignment
- Follow through – Holding the sight picture until the pellet/bb/bullet hits the target

Range Commands
BB Gun, Air Pistol & Rifle, 22 Rifle & Pistol

1. **Shooter(s) to the Line-Your preparation period begins now**
    a. State amount of time allowed
    b. Shooters move up to the firing line. Stand Ready.
    c. Firearms are pointed down range. Actions are open.
    d. Explain relay to be fired and number of rounds to be fired.
    e. Shooters make final preparations, assume proper position.
2. **Your preparation period has ended**
    a. See that only the proper kind and amount of ammunition is ready.
    b. Keep firearms pointed down range.
    c. Make sure all know which relay is to be fired.
3. **Is the line ready?**
    a. If the answer is NO, then give more time; Yes, then continue.
    b. All shooters answer "Ready"
4. **The line is ready or the The line is (not) ready**
    a. Informs everyone that all are ready.
5. **Ready on the left-Ready on the right. All ready on the firing line.**
    a. Gives Range officer time to inspect the line.
    b. Gives shooter time to make final preparations.
6. **Commence Firing**
    a. Fire designated rounds.
    b. When finished shooting, lay firearms down.
    c. Actions are open and muzzle is pointed down range.
7. **Cease Fire**
    a. All firing must cease immediately
        i. May mean: Range is unsafe, Problem on the line, That particular discipline or round is over.
8. **Make the line Safe**
    a. Action is open and up.
    b. Safety on.
    c. Firearm laid down
    d. Muzzle pointed down range.
    e. OBI is in
    f. Range Officer should inspect
9. **The line is Safe**
    a. Informs all that the line is clear and range is safe.
    b. No handling of firearms.
    c. Followed with appropriate instructions:
        i. Change targets
        ii. End relay
        iii. Fix necessary problems

Basic Rifle Safety Rules

- Treat every gun as if it were loaded and ready to shoot
- Never carry a gun into your home, camp, or public place loaded or cocked
- Always be sure your gun barrel is clean and not pulled
- Carry your gun so you can control the direction of the muzzle, even if you stumble
- Be sure of your target before you pull the trigger
- Never point a gun at anything you do not want to shoot
- Guns not being used should always be unloaded
- Never climb a tree or fence or jump a ditch with a loaded gun
- Never shoot at a flat, hard surface or the surface of water
- Respect other people's property

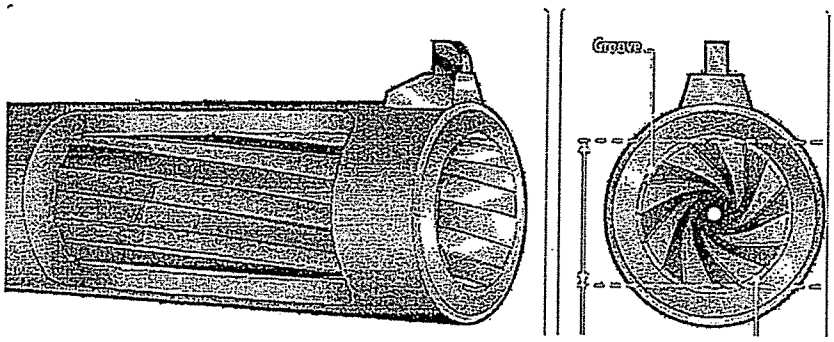
Safety Equipment Required in 4-H Shooting Sports

BB Gun- Eye protection is required
Air Rifle-Eye protection is required
Air Pistol- Eye Protection is required
22 Rifle & Pistol- Eye Protection & Ear protection are required

All disciplines require closed toe shoes that DO NOT come above the ankle

Misc. Information

OBI- Open Bolt Indicator, a brightly colored piece used to indicate the bolt/action is open; it is a quick and easy way to tell if a gun is loaded. It is inserted in the barrel.
Rifling- the grooves on the inside of the barrel that causes the bullet to spin as it leaves the muzzle



Course of Fire

All disciplines load ONE shot at a time

BB Gun- 10 shots with unlimited sighting shots per target, BB gun shoots 4 positions- Prone, Kneeling, Standing/Off Hand, Sitting
Air Rifle- 10 Shots with unlimited shots per target, Air rifle shoots 3 positions- prone, standing/off hand, kneeling
22 Rifle- Follows the exact same course of fire as air rifle, CMP is different though
Air Pistol- 20 shots per target, one target consists of 4 bulls, 5 shots per bull, the positions are different for the different 4-H ages(beg, Jr, Sr)
22 Pistol-10 shots per target, Slow bull, timed, and rapid

Eye Dominance

How many of you came to your left eye? Right eye? You should shoot with the dominant eye, regardless of whether it is on the same side as your dominant hand. Using the dominant eye reduces tension and eye fatigue and helps in seeing the target clearly and quickly. Keeping both eyes open increases depth perception as well. Those whose eye and hand dominance is on opposite sides are cross-dominant. You should shoot from the dominant eye side, even though it feels clumsy and uncomfortable. Your hands and feet are much easier to train than your poor eyes. Even if you are already shooting from the "off-eye" side, you will improve more rapidly by switching to the dominant.

A few people are ambidextrous. A similar number are ambi-eyed, that is, their eyes switch dominance when an obstacle is placed in front of them. Shooters with this situation can use a shield, a spot on their shooting glasses or some similar barrier to assure the same eye dominance may find a barrier device helpful. Be sure you remember which eye is your dominant one so you can use that side in your shooting.

Sight Adjustment

Sight adjustment is the process of moving the sights into an alignment with the bore so the point of aim and point of impact are in the desired relationship. The sights are moved into alignment with the bore and the trajectory curve of the projectile.

Most pistols allow the shooter to adjust the rear sight. The basic rule for adjusting the rear sight is to move the sight in the direction you want the hits to move. If the group is to the right of the point of aim, the rear sight must be moved to the left. The center of a group is used as a reference point for sight adjustment because it is an average for all of the shots fired. The distance and direction from the desired point of impact is measured on both the vertical (elevation) and horizontal (windage) directions. The sights are moved a measured (and recorded) amount in the desired direction, and a new group is fired using the same sight picture. That process is repeated until the group centers on the desired point of impact with that sight picture at that distance.

Shooting for Scores

Standard pistol targets have concentric bands of score values that surround a central scoring circle. The innermost circle is scored as a "10". Each successive ring has a value one less than the one inside it. The outermost scoring band is scored as a "4". Shots that fail to touch any of the scoring bands are scored as "0". Lines dividing the scoring bands are part of the higher value band. Shots that touch the line receive the higher score. Shots that are hard to interpret are evaluated with a scoring gauge. The gauge "plugs" the bullet hole and references its location to another ring. It is essential when those close shots are scored. A different gauge is used for each caliber of pistol used in competition.

Determining Eye Dominance

Ronald A Howard Jr. and James V. Peter, Jr. *

Eye Dominance

Most people have a dominant eye, just as they have a dominant hand or foot. When a person looks at an object with both eyes, the dominant eye aligns directly with the object unless an obstruction interferes with a clear line of sight. Under normal conditions, when a finger is pointed at an object, or two or more objects are aligned visually, the dominant eye determines the alignment. Just as some people are truly ambidextrous, a very small number of people have indeterminate eye dominance. The majority, however, have a dominant eye. In most cases eye dominance and hand dominance are on the same side, but many people are cross-dominant. That is, their handedness and eyedness are on opposite sides.

Humans have binocular vision – they get slightly different images from each eye and blend them in the brain to yield one image and a sense of depth or distance. With both eyes open, you have a wider field of vision with more peripheral vision and better motion detection. In shot, you simply see better when both eyes are used. Experience shows that shooting skills are learned more easily and often better developed when a shooter learns from the dominant eye side. Where eyedness and handedness are on the same side, new shooters easily use the dominant side. Cross-dominant shooters have a greater challenge, but they do better when they learn to shoot with the dominant eye.

Some shooters, particularly those with successful experience in shooting with the non-dominant eye, are reluctant to switch. The switching process usually involves a brief period of reduced success and frustration, followed by improved skill levels beyond their original level. Some experienced shooters have learned to shoot one-eyed, closing the dominant eye or obstructing it with a shield, blinder, spot of tape of a small object on the lens of the shooting glasses. Others have learned to override their dominant eye through practiced concentration or to compensate in some other fashion. Fewer than 1 percent of all shooters must shoot one-eyed because of dominance switching. In most cases, the shooter learns to use both eyes and shoot from the dominant-eye side. Learning one-eyed or with the dominant eye obstructed or closed increases stress and fatigue, and reduces concentration and quickness. Results indicate reduced performance levels, increased frustration for the shooter and slower learning.

Leaning to shoot well is a challenge. You need every advantage to meet that challenge effectively. Learning from the dominant-eye side is a major advantage.

How to Determine Eye Dominance

Four basic methods for determining eye dominance are described. Those that provide a check for "cheating" are more effective in an instructional setting. Regardless of the method selected, the exercise should be repeated several times. Instructors should remain alert for eye-dominance related problems with shooting performance.

Coach-pupil Method

Shooters should get into their coach-pupil pairs, standing several arm-lengths apart and facing each other squarely. The "pupil" should place one thumb over the other, then cross the fingers of the top hand over those of the bottom one. This leaves a small, triangular opening. Raise the hands, keeping both eyes open, and center the "coach's" nose in the triangular opening. At this point the coach should note which eye is visible in the opening. Then the "pupil" should bring his or her hands slowly back to the face, keeping the "coach's" nose in the opening. The hands should come to the dominant eye. Coaches must watch closely for wavering between the eyes, an indication of "cheating" or forcing the hands to a predetermined eye. The exercise should be repeated several times to confirm original results with both partners checking their eye dominance.

Option: Shooters could cup their hands together, leaving small openings between the bases of the little fingers and the thumbs. A card or a sheet of notebook paper with a small hole centered in it could also be used.

Distant-object Method

Use any of the methods of making an aiming device outlined above. Center a distant object in the opening. Make sure both eyes stay open and face the object squarely.

Finger-point Method

With a pointing method, a distant object or a partner is used. The finger is pointed naturally at the object with both eyes open and the face square to the object. The eyes are covered or closed alternately. When the dominant eye is closed or covered the finger appears to jump away from the original location.

Tube Methods

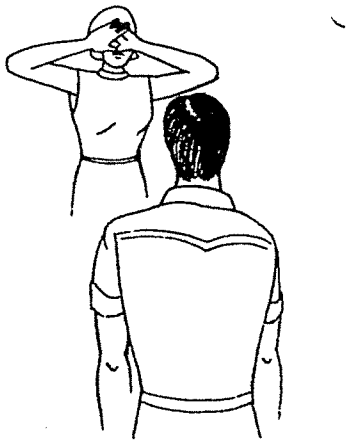
Kaleidoscopes, toilet paper tubes and similar objects can be used with many young people to determine eye dominance. When the person is not aware of being tested for eye dominance, the tube will almost always be brought to the dominant eye. This also occurs with spotting scopes, telescopes and similar tools where one-eyed viewing is needed.

Troubleshooting for Coaches and Instructors

Some shooters will bring the opening back to their own noses because they are looking at the paper or their hands rather than at the target. Those who use the finger-point method will see two fingers if they focus on their hand rather than on the target. If inconclusive results are obtained, try another method. Make note of that shooter, however, and watch for evidence of switching dominance in the act of shooting. Consistently missing to one side of the target usually indicates an eye-dominance related problem.

A Note of Caution

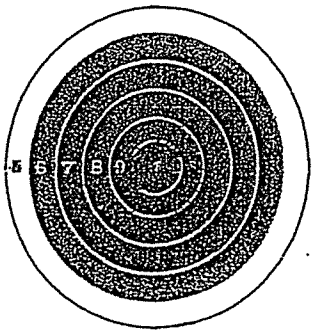
Vision problems can have a serious impact on shooting ability. Often they go undetected by the shooter or those around them. Unless you are an ophthalmologist or optometrist, avoid "diagnosing" vision problems, but be aware of the types of problems a



shooter with vision problems may face. Discuss any potential problems you observe with the shooter and his or her parents. Like teachers who notice reading problems or other vision related difficulties, the shooting instructor may notice things that even the shooter misses.

Finally, be sure that all shooters are wearing adequate eye protection while they are on or near the firing line. Some people recommend the use of shooting glasses even for archers. Eyes are precious and vision is vital to shooting. Let's do our part in protecting them.

Scoring Targets



Each scoring target has a maximum value of 10 points. The tiny dot in the center of the air rifle or smallbore target has the value of 10. Shots that remove the dot are center shots or X's. Each consecutive scoring band is worth one less point than the one inside it, so the target scores 10-9-8-7-6-5-4-3. The ring between the dark bands is part of the higher value scoring area. Any shot touching the ring is given the higher score. Shots that fail to touch any of the scoring area are given a value of zero.

Sometimes a shooter gets confused and fires extra shots at one bull without firing at another one. If the target has only the proper number of record shots, the extra shot is penalized one point and referred to the bull that was not fired upon. If excess shots are taken on the target, the shooter loses the higher value hit on each target with multiple shots, even if that shot is outside the scoring area. If those excess shots were fired by another shooter (cross-firing), they are not counted against the shooter and are recorded as misses for the person who fired them. If the first sighting shot falls outside the sighting area and the shooter indicates that it did so, it is not counted as an excess record shot.

Scoring a target can be challenging. Holes may not be cleanly cut, and the exact edge of the bullet hole may be unclear. Scoring gauges or plugs are extremely valuable in that situation. An inward scoring plug indexes in the bullet hole and shows where the edge of the bullet struck. If the edge of the gauge or plug touches the scoring ring, the shot is given that value. Inward scoring gauges are also used to determine center shots. If the flange of the gauge does not touch the 9 ring, the shot is scored as a center shot. An outward scoring gauge makes determining "tens" easier. It uses the 7 ring as a reference. It any of the 7 ring is visible, the shot counts as a 10. If the flange obscures the 7 ring, the shot counts as a 9.

Scoring Your Targets

Each of the scoring bulls on the target you shot is worth 10 points, so your total possible score could be as high as 100 points. Do not worry about the score you made. You should record it in your shooting journal, but our main objective is to learn how to score a target.

Score several targets in a small group. The first time through, score them without using any type of scoring aid. Record the scores on your pad, listing each bull by number and score. Then score them again using the scoring gauges. Work with an adult or teen leader to verify your scores. While the scores are being posted, you may want to try scoring several other targets using the gauges.

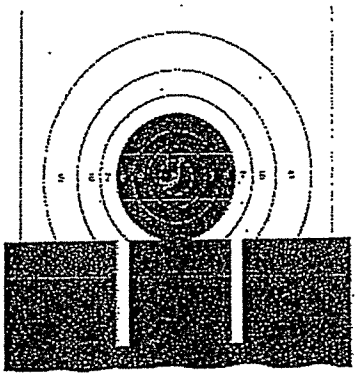


Figure 2-4a, Impossible! The Human Eye Cannot Focus On A Close-UP Object and A Distant Object Simultaneously.

B. POINT OF FOCUS.

Correct sight alignment must be thoroughly understood and practiced. It appears on the surface as a simple thing - this lining up of two objects, front and rear sights. The problem lies in the difficulty in maintaining these two sights in precise alignment while the shooter is maintaining a minimum arc of movement and pressing the trigger to cause the hammer to fall without disturbing sight alignment.

The solution is partly in focusing the eye on the front sight during the delivery of the shot.

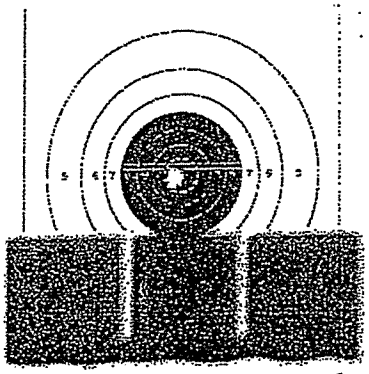


Figure 2-4b. Improper. Control of sight alignment is not precise. Distinct focus on target renders sight indistinct. Error incorporated here is the same as Figs 34a and is not as readily apparent.

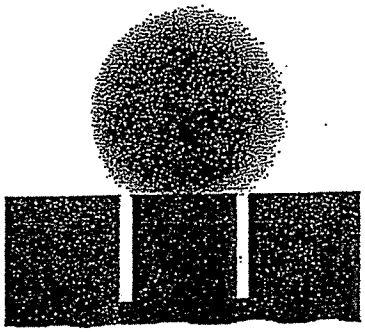
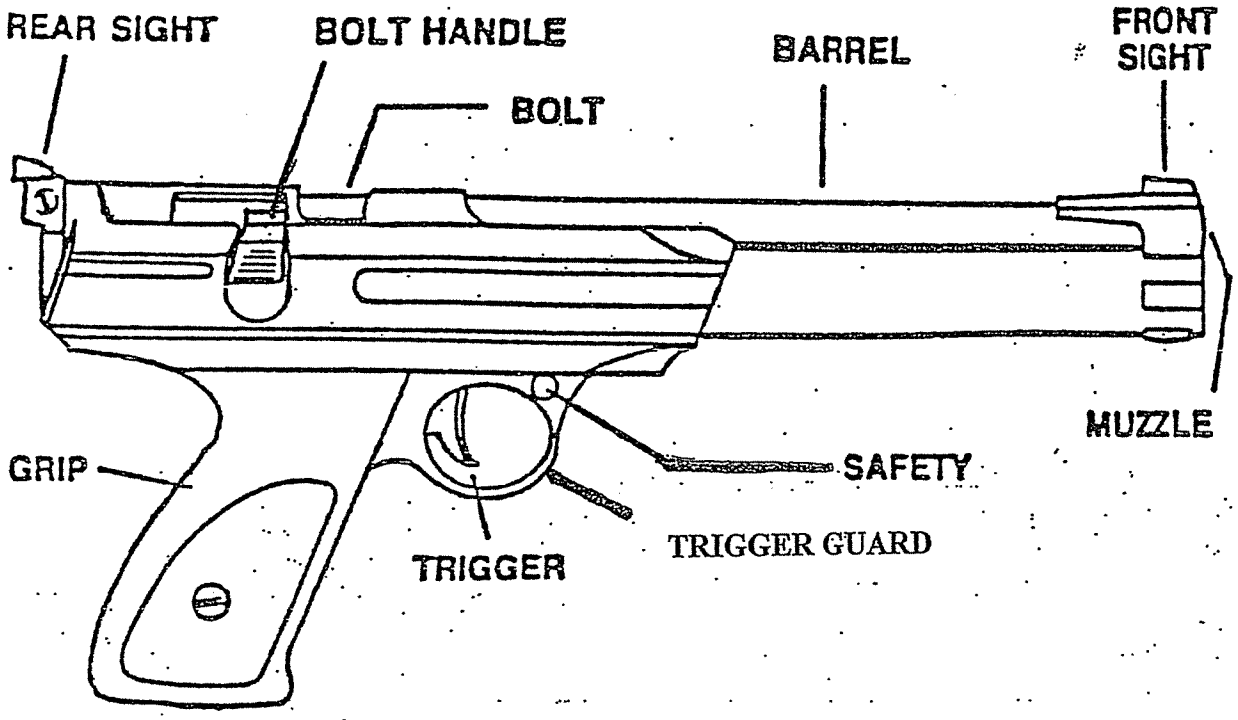


Figure 2-4c. Proper. Control alignment is precise. Focus limited to front sight only, renders the sights distinct and target indistinct and sight relationship can be controlled constantly.

1. It is imperative to maintain 'front slight point of focus" throughout the sighting and aiming of the pistol. The shooter must concentrate on maintaining the correct relationship between front and rear sight, and the point of focus must be on the front sight during the short period required to deliver the shot. If the focus is displaced forward, and the target is momentarily in clear focus, the ability of shooter to achieve correct sight alignment is jeopardized for that moment. Frequently, this is the moment that the pistol fires. A controlled, accurate shot is impossible under these conditions.

2. When the eye is focused on the target the relatively small movement of the arm appears magnified. However, when the eye is correctly focuses on the front sight this movement appears to have been reduced.

Air Pistol Operations & Sight Picture

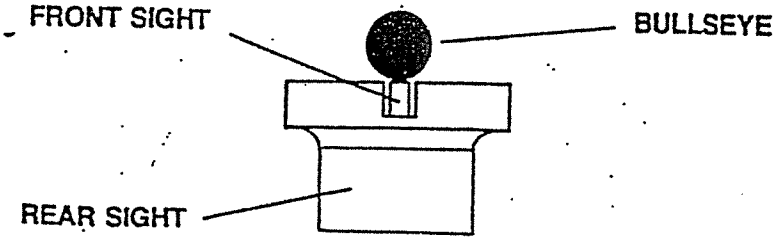


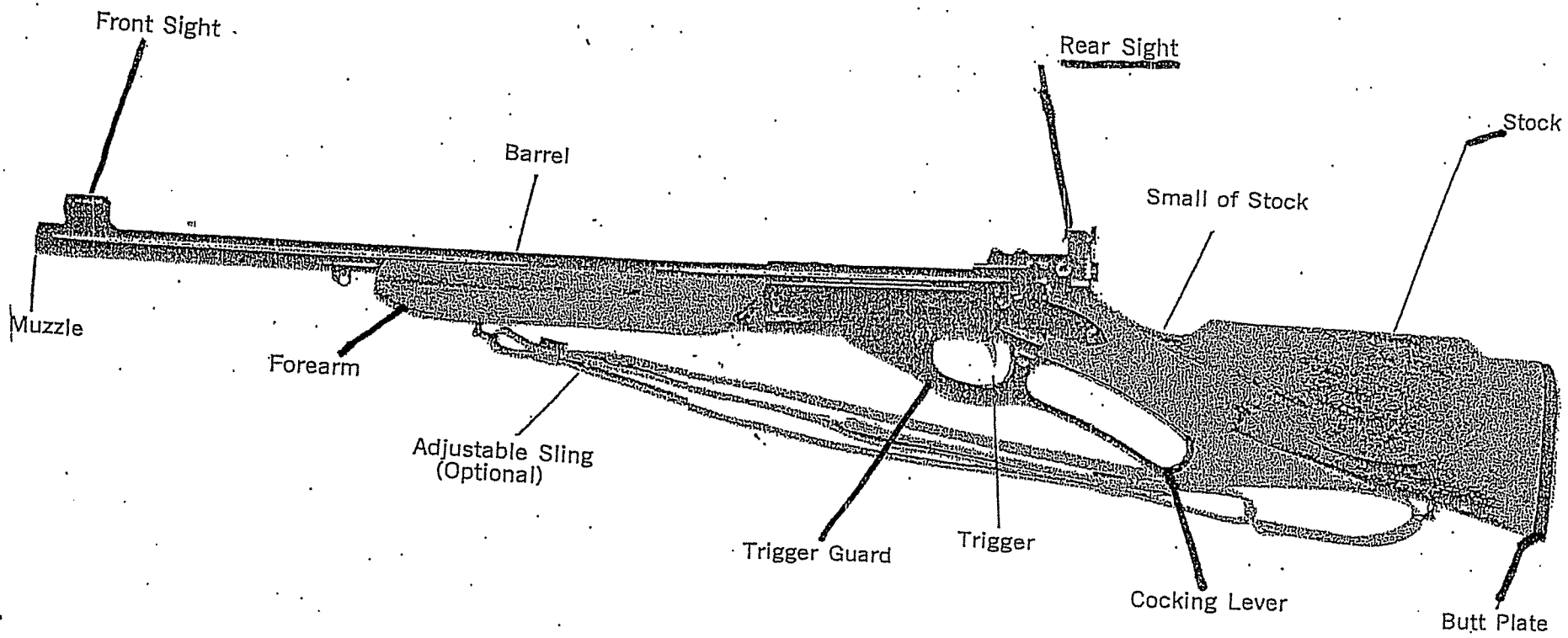
HOW TO OPERATE: Pistol

Step 1. Open Bolt
Step 2. Put "On Safe"
Step 3. Pump (1 time)
Step 4. Load
Step 5. Close Bolt
Step 6. Aim
Step 7. Take "Off Safe"
Step 8. Fire

Open Sight Picture

USE THE CORRECT SIGHT PICTURE
EACH TIME YOU FIRE THE GUN



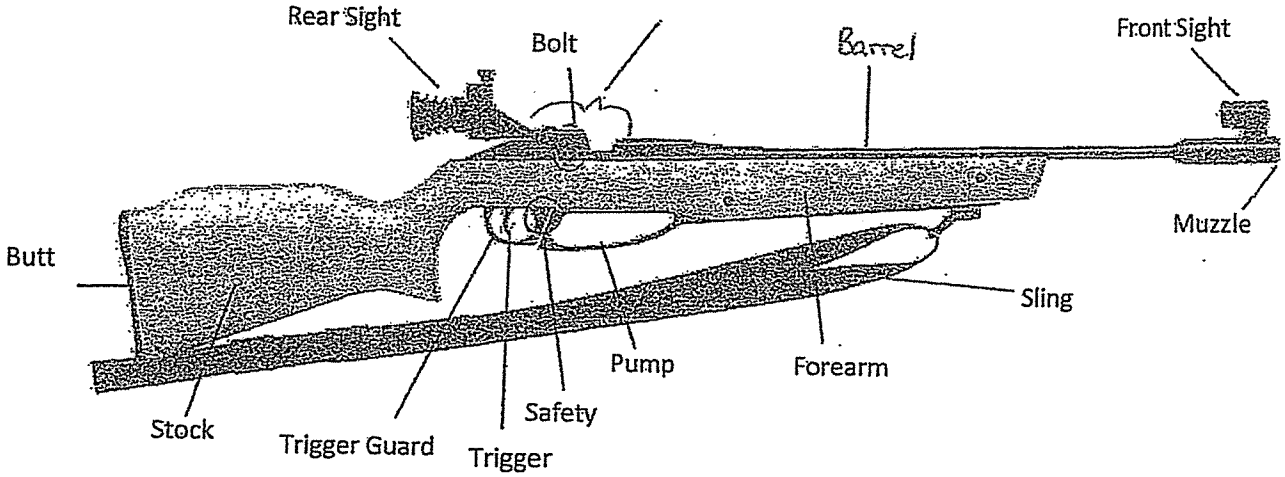


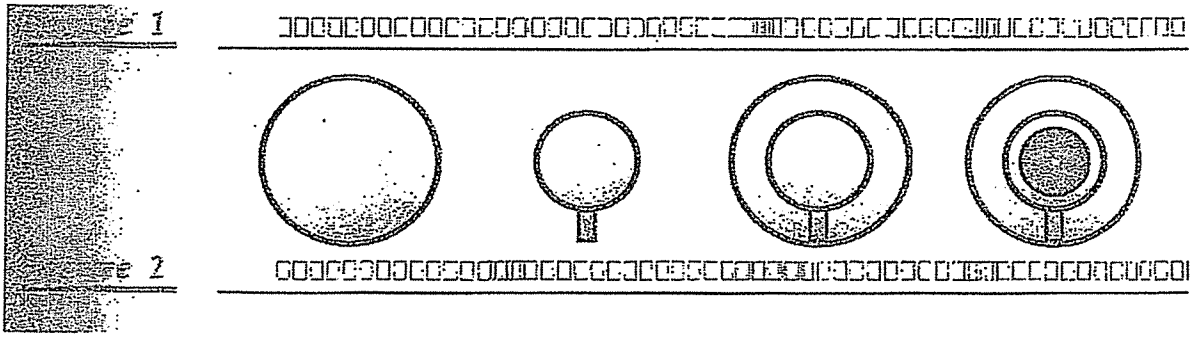
Daisy MODEL 499
B·B TRAINING RIFLE

Daisy®
SINCE 1888

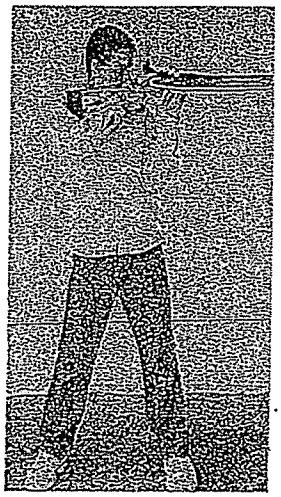
Air Rifle Parts

1. **Open Bolt**
2. **Safety "ON"**
3. **Pump**
4. **Load pellet**
5. **Close Bolt**
6. **Aim**
7. **Take OFF safe**
8. **Fire**





Standing Basics – Feet
A Starting Point



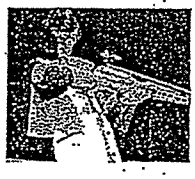
Good starting point is:

- Feet shoulder-width apart
- Back foot slightly behind front foot
- Toes flared out slightly
- Weight evenly distributed on right & left foot
- Weight evenly distributed heel to toe

CMP
Civilian Marksmanship Program

Standing Tips

- To adjust NPA:
  - *Rotate position around a point between the feet; or move both feet the same amount forward*
- Deliberately place buttplate in same spot in shoulder each shot
- Pull rifle straight back into shoulder with right hand, then relax right shoulder & arm
- Keep hips from rotating while swinging rifle to target



CMP
Civilian Marksmanship Program

Getting Into Proper Kneeling Position

A kneeling position routine

1. Face the target
2. Chop a groove in the middle of kneeling roll
3. Place kneeling roll in front of right foot, parallel with firing line
4. Step forward with left foot
5. Drop down onto kneeling roll
6. Turn position a bit to the right
7. Make slight adjustments to tune balance

CMP Civilian Marksmanship Program

Kneeling Basics – Left Leg & Foot

Left shin straight up, straight left & right

Left foot turned to the right, angled the same as the right leg

Even pressure across bottom of foot

CMP Civilian Marksmanship Program

Kneeling Tips

- To adjust NPA: (Natural Point of Aim)
  - *Rotate position around a point between the left foot and middle of right leg*
- To get left elbow in place:
  - *Place elbow at top of knee, then slide it forward or back to tighten up the loose skin of the elbow*
- Angle of left forearm can changed by adjusting the amount of stuffing in the kneeling roll
  - *If arm angled too high: to lower arm, lower kneeling roll*
  - *If arm angled to low: to raise arm, raise kneeling roll*

CMP
Civilian Marksmanship Program