Fundamentals of Marksmanship

We do not start by teaching little league shortstops the backhanded flip to the second baseman or the throw to first base from the seat of their pants, but rather the fundamentals of optimum body mechanics that have been proven and refined by those who preceded them. Players learn the optimum foot position and foot movement to prepare themselves to receive the ball. They learn how to correctly grip the ball as they transfer it from the glove to the throwing hand. They learn arm angle and correct throwing motion, arm speed and follow-through. Attention to detail early in their careers ingrains those fundamentals until they become second nature. As they apply the fundamentals in practice games (training) they learn to recognize their individual abilities and adapt them to the foundation. Those who excel are those who learn to add to the proven foundation, not those who attempt to reinvent it. It could be noted that when accomplished players find themselves in slumps, they inevitably reexamine their application of the fundamentals. As instructors, we must understand this concept. We must ensure that we ourselves, as well as our students, have a good grasp of the fundamentals of shooting. Then, we must recognize and acknowledge the uniqueness of our individual students, and be flexible in our approach without violating safety. We should be prepared to assist them in learning to adapt the fundamentals to real-world situations by providing realistic training. The ultimate goal must be their success in the deadly force confrontation. It is not necessary that they all look like their instructors when they are finished with their course of training.

We will approach this vital topic by beginning with the application of fundamentals in an ideal controlled environment, and will then address their adaptability to the real world of the deadly force encounter.
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Dominant (or Master) eye:

Just as very few people (if any) are truly ambidextrous, everyone has a dominant or master eye. These terms are used to describe the eye that takes control during binocular (both eyes open) vision. The dominant eye is the same as the dominant hand for the majority of people, although a small percentage of right-handed persons will be left-eye dominant, and left-handed will be right-eye dominant. This is frequently referred to as “cross-dominance.” While it does present instructional challenges when shooting handguns, it is even more of an issue when shooting long guns, especially shotguns with a simple front sight bead. There are those who, citing the need to overcome the effects of tunnel vision, maintain that shooters should always keep both eyes open. This further complicates the issue for those who discover that they are in this cross-dominant category. Focusing on the front sight when it is aligned with the weaker eye becomes a daunting, if not an impossible, task. As with most areas of controversy, in which “experts” disagree, we acknowledge that the ideal is frequently at odds with the practical, and will therefore attempt to approach the subject from the perspective of “doing what gets the job done.” Start with the least intrusive solutions first.

1. Shooters should be encouraged to try to squint or shut the dominant eye and attempt to use the non-dominant eye to focus on the front sight.

2. During training, shooters who wish to learn to keep both eyes open, but are having difficulty doing so may place a piece of scotch tape over the dominant eye lens of the safety glasses. This enables the shooter to see shapes and movement out of that eye without it taking over the responsibilities of focusing on the front sight. Students must be weaned off using the tape as a tool since it is obviously impractical for use outside the range environment.

3. Without extreme adjustment of the stance, the shooter can move the handgun over in front of the dominant eye. To prevent fatiguing the neck and eyes, the shooter should be encouraged to keep the head erect and not cocked over to one side.

4. The shooter may choose to develop the skill to shoot with the weapon in the support hand. Although learning to shoot well with either hand is an invaluable skill, this requires many hours of practice and frequently is not practical.

To determine which eye is dominant:

While keeping both eyes open, focus on the tip of your index finger as it is pointed at a small or distant object. Maintaining focus on the finger tip, shut one eye. Open it and then shut the other eye. Make note of which eye is open when the object appears to stay behind the finger. That will be the dominant eye.
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1. STANCE:

It can be successfully argued that any shooting stance will become the first casualty of the deadly force confrontation. Circumstances may dictate that the fight is waged from a seated position in a car, laying on the ground, behind or moving to cover, etc. Yet, even then, the overriding principles established and reinforced in training the body and mind on the range allow the shooter to adapt and compensate for the disadvantages of the situation.

In learning or teaching a shooting stance, one must consider that it is designed to accomplish several important results under ideal circumstances:

- Consistent, accurate placement of shot(s)
- Recoil control for quick follow-up shots, and the ability to keep the semi-automatic pistol from malfunctioning
- A solid platform that provides balance and mobility.

Several stances are widely accepted as effective in achieving these goals, considering the mechanics of the human body. It is understood that slight modifications must be made when the physical idiosyncrasies of the shooter are taken into account. Obviously, the fewer modifications are made, the more the strength of the platform is maintained.

1. The Modern Isosceles Stance

- The feet are a comfortable shoulder width apart with the dominant leg farther back from the intended target. This “interview stance” places the holstered weapon in a position that is less accessible to confronted suspects.
- The knees are slightly bent with the center of gravity shifted forward over the balls of the feet.
- The upper body is angled slightly forward to assist in recoil control. Shooter size and strength as well as caliber/recoil of the weapon will determine the angle although 1 – 2 inches forward of center is usually sufficient.
- The weapon is held in a two-handed grip with both arms fully extended, and shoulders relaxed.
- The handgun is centered on the midline of the body.
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Advantages:
• Simplicity. This stance is easy to learn. There is no need to concern oneself with elbow and shoulder angles.
• The front panel of the soft body armor is squared off to the threat.
• Recoil is absorbed by the weight of the upper torso leaning on the weapon through the rigid structure of the extended arms.
• Toes are pointed forward allowing for better mobility when required.

Disadvantages:
• Fatigue. The weight of the weapon is being held up at the end of the extended arms by the shoulder muscles. As the muscles become fatigued, the shooters tend to lean backwards to compensate, and recoil control is thereby lost.

2. The Weaver Stance
• The feet are a comfortable shoulder width apart with the dominant leg farther back from the intended target. This “interview stance” places the holstered weapon in a less accessible position to confronted suspects.
• The upper body is bladed at an angle to the threat with the shoulders pointing in the same direction as the hips and feet.
• The weapon is held in a two-handed grip in isometric tension. Isometric tension is achieved by the dominant hand pushing the pistol away while the support hand applies equal pressure by pulling back towards the dominant shoulder.
• The dominant arm may be held straight or slightly bent.
• The support arm is bent with the elbow pointed downward. Failure to point the elbow down results in the shooter using arm muscles rather than skeletal structure to support the weapon.
• The dominant wrist is locked to control muzzle flip.
Weaver Stance continued

Advantages:

- Positioning the support arm under the weapon provides both skeletal and muscular support.
- Recoil control is provided by isometric tension. Therefore, this stance does not require the upper torso to lean forward as much as the Isosceles Stance does. However, leaning forward is more natural than standing straight and erect in a fight, especially when movement is added. Note: Some proponents of the Weaver stance find that it can be enhanced by moving the center of gravity forward a bit and bringing the arms closer to the centerline of the body.
- The bent arms absorb some of the shock of the recoil and allow more accurate shooting when moving.

Disadvantages:

- The bladed body exposes the armpit and smaller side panels of the soft body armor to the threat.
- Allowing the support elbow to elevate while applying isometric tension tends to redirect the pressure to one side and adversely affects accuracy.
- Maintaining the same consistent isometric tension between the dominant and support hands and arms is difficult as the situation becomes more stressful.

The best stance is the one which provides the individual shooter with a solid platform that allows for accurate shot placement, recoil control, balance and mobility.
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2. **Grip:**

The proper grip provides the shooter with the maximum control of the handgun, as well as promoting correct trigger finger placement and enabling the shooter to apply straight rearward pressure on the trigger without disturbing the sight alignment of the weapon.

The *ideal* grip has several important reference points:

**Dominant Hand – One Handed Grip**

- The web of the hand between the index finger and the thumb should be positioned high in the tang/backstrap of the pistol.
- All fingers, except for the index (trigger) finger wrap around the stocks (pistol grip) of the weapon, giving the shooter control of the handgun.
  The strength of the grip, supplied by mainly the middle and ring fingers, should be firm enough to be maintained while firing, yet not so firm as to interfere with the independent movement of the trigger finger.
- When held in this grip, the weapon’s front sight, rear sight, wrist and elbow should all be in alignment. Variations in individual hand size may require the weapon’s position to be slightly compromised, in order to allow the trigger finger to reach the trigger. When any deviation to the ideal grip is made it places the weapon out of alignment with the body’s natural ability to point and the shooter must align the weapon with the sights in order to guarantee hits. When the confrontation takes place inside of two yards where it is not possible to use the sights without jeopardizing possession of the handgun, this places the shooter at a distinct disadvantage. When options are available, practicality as well as court law dictates that weapons be provided with handguns which provide the best hand-fit possible. When options are not available, keep in mind that the less adjustments are made to the ideal grip, the better the natural point of aim and recoil control will be for the shooter.
- The dominant hand thumb must be held where it does not interfere with the movement of the slide or slide stop lever, while allowing easy access to decocking levers (on applicable weapons). On handguns without safeties, shooters may choose to curl their thumb down or point it straight forward. On weapons with thumb safeties, the thumb should remain positioned on top of it.
- The wrist should be locked to minimize muzzle flip and allow the energy of recoil to be absorbed by the entire arm (and ultimately the body) instead of by the joint of the wrist.
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Support Hand - Two Handed Grip
When the weapon is fired one-handed, the energy of recoil moves the weapon along the path of least resistance - upwards and in the direction of the open palm. Adding the support hand to the firing grip causes the handgun to be completely surrounded, which more evenly distributes and absorbs the energy of recoil.

Key reference points:
- The heel of the support hand fills the space left on the grip of the pistol
- The fingers of the support hand wrap over the back of, and are aligned with, the fingers of the dominant hand (knuckles over knuckles.)
- Fingers of the support hand are touching each other (with no space in between them), with the index finger touching the underside of the trigger guard.
- The support hand thumb must be on the same side of the weapon as the strong side thumb to avoid interfering with the rearward motion of the slide.
- Thumb position may vary due to hand size, size of the weapon, and shooter preference, although care must be taken to ensure that the thumb does not interfere with the operation of the slide, slide stop lever, decocking lever, or thumb safety. Allowing the thumb to rest under the slide stop lever causes it to push up on the lever during recoil resulting in the slide unintentionally locking to the rear. Allowing the thumb to rest on top of the lever causes it to hold the lever down resulting in the slide not being able to lock to the rear when the magazine is out of ammunition.
- In a two handed grip, the strength of the grip exerted from the dominant hand should be about 40% of the total grip strength. The remaining 60% of the grip strength should be provided by the support hand. Excessive gripping of the dominant hand is to be avoided. The more strength that is applied to the dominant hand grip, the more it interferes with the smooth, independent movement of the trigger finger.
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- Placing the index finger of the support hand on the front edge of the trigger guard should be avoided, as it takes away from the strength of the two handed grip and causes lateral pressure resulting in the shots striking to the left for right handed and to the right for left handed shooters.
3. **SIGHT ALIGNMENT:**

Sight alignment is the relationship between the front and rear sight *as viewed by the shooter*. With standard open sight configuration (Front sight post and rear sight notch), correct sight alignment occurs when the top of the front sight is level with the top of the rear sight and the sides of the front sight are equidistant from the sides of the rear sight notch.

![Correct Sight Alignment](image)

Sighting systems of most combat pistols are designed to cause the bullet strike the target (point of impact) corresponding to the top of the front sight at 25 yards when the sights are in correct alignment (point of aim). When the front and rear sights are not properly aligned, the strike of the bullet will deviate in the direction that the front sight strays from the ideal alignment. For example, the bullet will strike higher than intended when the top of the front sight is elevated above the top of the rear sight notch, and will strike to the left if the front sight blade is closer to the left side of the rear sight notch. Since this is a matter of the mathematics of geometry (angles), the further the distance between the weapon and the intended target, the greater the error in shot placement that will result from any misalignment between the front and rear sights.

![Point of Impact will be high](image) ![Point of Impact will be left](image)
5. **SIGHT PICTURE:**

Correct Sight Picture

Sight picture is the relationship of the sights (front and rear) to the target/threat, as viewed by the shooter. A rudimentary understanding of human physiology, human psychology and geometry assist in achieving *correct* sight picture, which is necessary for precision shooting.

**Vision:**

The human eye, like a camera lens, can only focus on one plane of distance at a time. When discussing basic marksmanship and precision accuracy in reference to weapons with standard iron sights, it is important to note that if the eye is allowed to focus on the target/threat downrange, the front sight will likely move (without being noticed) out of its *ideal* alignment, thus causing inaccuracy. Therefore, the eye must be trained to *focus clearly on the front sight*. This will leave the rear sight slightly out of focus and the target/threat even more out of focus. However, while the target/threat does become less distinct, it does not disappear. In fact, this blurry object now becomes the students’ nemesis in that they must deal with the following illusion -

The farther the shooter is from the target, the smaller the target appears, and the larger the front sight seems by comparison. Therefore, it may look to the shooter as if the weapon is moving radically in relation to the intended point of impact. This is referred to as the “arc of movement” or “wobble area.” *It is impossible for a human being to hold the weapon perfectly still.* The shooter’s amount of movement can be influenced by many factors, including physical conditioning, fatigue, caffeine in the system, shooting position, stress, exertion-affected heart rate and breathing, etc. Students must learn to accept the inevitable movement and understand that, because of geometry, as long as they maintain the correct relationship between the front and rear sights, their shots will be accurate. When shooters fight against this movement, two things frequently occur. The first is to grip the weapon tighter in a futile attempt to make it hold steadier. This only increases the movement of the weapon and inhibits the trigger finger from moving independently of the remaining fingers of the grip. Secondly, they try to time the
“break” of the shot with the moment at which the sight appears to be in the center of the target. This will result in jerking the trigger and firing inaccurately.

The human body has an instinctive ability to point to the center of an object. This ability enables a shooter to remain focused on the front sight in relationship to the rear sight without giving conscious attention to keeping the weapon centered on the target. Until shooters accept and reinforce this concept, they will have difficulty applying and maintaining the sharp focus on the front sight that is necessary for precision shooting. Their inclination will be to continually shift their focus between the front sight and the target. This will cause eye fatigue, and will result in poor shot placement. Untimed precision live fire shooting drills (both close-up and at longer distances) reinforce the validity of this concept.

Posture:
When it comes to posture, the human body has a natural desire to eliminate stress and muscle tension. In regards to marksmanship, the stance that accomplishes this desire is referred to as the body’s **Natural Point of Aim** (NPOA.) Just as a coil spring has a neutral position that it returns to after being compressed or expanded, the human body has a preferred “default” position to minimize physical stress. This position will be different for each individual body configuration. When it is understood and utilized, rather than fought against, it greatly enhances precision shooting. After firing and recoil, the weapon will return to the Natural Point of Aim. Therefore, in order to increase consistent accuracy and speed of multiple follow-up shots, shooters should develop a stance that incorporates their own Natural Point of Aim. The following steps can be used to determine a shooter’s Natural Point of Aim, and can be applied to handgun or long gun in any shooting position:

- After the weapon has been prepared for dry practice, assume a good stance and aim the weapon at the center of the target.
- Close both eyes and breathe deeply three times.
- Open the eyes and note where the weapon is now pointing. Look for deviations to the left or right, not for differences in elevation.
- Keeping the body rigid and pivoting on the stationary forward foot, realign the sights on the center of the target by moving the dominant-side foot to the left or right (if in a standing, unsupported stance). Apply the same principles to each shooting position (Sec. 6) using the forward-most anchor point as the pivot for the rest of the body to move around. (This would be the forward elbow in the prone position, or the forward foot in one of the kneeling positions.) In any case, it is important to return the weapon to its original point of aim using skeletal structure rather than muscles.
- Close eyes and repeat the exercise as many times as needed, until the weapon returns to the center of the target consistently. Make adjustments in small increments.
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Once established, the **Natural Point of Aim** should be applied to live-fire exercises. Shooters should periodically verify their Natural Point of Aim throughout their shooting careers to account for variations and changes in body configuration over time. These companion concepts are vital to good marksmanship, especially in situations requiring precision shots at any distance to the target.

In situations with shorter time frames and/or short distance to the target, other tools are needed to be added to the shooters repertoire in order to be successful. If these tools are not provided, as speed becomes more of an issue, the shooter’s tendency will be to abandon the sights entirely and hope for luck. The balance of speed and acceptable combat accuracy must be constantly addressed and reinforced. The basic fundamentals must be adapted to the practical world of short distances and time frames, in which statistics indicate that most deadly force confrontations in law enforcement occur. Yet, training which focuses only on the most probable scenarios, ignoring the need to ingrain the skills needed to take longer range precise shots does a disservice to our students. The concept of **flash sight picture** is that at short distances, geometry dictates that a small misalignment between the front and rear sights will not radically affect the impact of the bullet. The shooter can briefly verify the front sight’s placement on the intended impact area of the target trusting their correct grip of the weapon to provide less than perfect, but nonetheless acceptable, alignment of the rear sight. A situation involving a “short distance” may be defined as one in which the weapon can be raised to eye level and not be in arm’s reach of the opponent (perhaps approximately 3 yards) to approximately 7 yards. This maximum distance can obviously be affected by the skill level of the shooter as well as the circumstances of the confrontation.

5. **TRIGGER CONTROL:**

Improper trigger manipulation is the most common cause of marksmanship errors. In a nutshell, good marksmanship can be defined as pressing the trigger in a manner that does not misalign the sights. The rest of the fundamentals are designed to assist and support this concept. Perfect alignment of the sights is ruined if it is followed by violently jerking the trigger.

**Trigger finger placement:**
Correct finger placement on the trigger allows the trigger to be pressed straight back with no sideways application of force. Variables such as the shooter’s hand size and strength relative to the size of the frame of the weapon, and the length and weight of the trigger pull, make it impossible to precisely define proper finger placement. Ideally, most shooters will be successful by starting with the pad of the index finger (between the tip and the first joint) in contact with the trigger. This joint is frequently referred to as the “power crease.” Heavier double action triggers will be easier to control the closer the trigger is to the “power crease.” Single action weapons with triggers which are lightweight and have short length of travel are more easily controlled.
Trigger Control Continued

by moving the contact point closer to the end of the pad. Correct trigger manipulation is a finesse move. Adjustments from the “ideal” to account for individual characteristics, such as hand size, should be made in small increments until the desired straight back press is achieved. Shooting a firearm well requires that the shooter embrace those instinctive mental and physical practices that contribute to good marksmanship, and recognize and overcome those instincts that stand in the way. Those who do not understand that it is necessary to train to develop new motor skills will always struggle with accuracy problems. Nowhere is this more important than in the area of trigger control. Because the human being’s hand is accustomed to gripping items (such as steering wheels, baseball bats, doorknobs, glasses, etc) using all fingers, the ability to isolate the trigger finger from the rest of the grip requires a concerted, persevering effort. It must be noted that the harder the weapon is gripped by the other fingers of the dominant hand, the more difficult it is to make the trigger finger move freely and smoothly. At the same time, the movement of the trigger finger causes the remaining fingers of the hand to expand and contract. This “milking” of the grip makes keeping the sights aligned a more difficult task. While keeping the sights properly aligned, the shooter should exert steady and increasing pressure on the trigger without attempting to anticipate the exact millisecond that the pistol will fire. The amount of pressure should not be more than that which is necessary to fire the weapon. The term “break” refers to the instant the firing mechanism is activated or released and the shot is fired as a result of the trigger being pressed. The exact instant of firing is referred to as a “surprise break,” because the shooter’s focus is placed on the smoothness and consistency of the motion of the trigger finger rather than the breaking of the shot or ignition of the round. In other words, the exact moment the shot breaks, comes as a surprise to the shooter. The term “compressed surprise break” is used to describe firing in a shorter time frame without sacrificing the application of consistent and precise trigger control. If shooters attempt to anticipate the exact instant the pistol will fire, they will tend to add extra pressure to the trigger squeeze, brace the pistol, and/or push it forward with the body just prior to discharge. This is commonly referred to as “pre-ignition push,” and will generally result in the shot(s) impacting lower than intended. Learning trigger reset will contribute to quality trigger control. This subject will be further addressed in the section on follow through. The new shooter needs to understand that every time the weapon is fired it should be as if the weapon was empty. For this reason, dry practice repetitions should be a part of initial training. The student assumes a stance, aiming the weapon at the target. Keeping the sights properly aligned, with sharp focus on the front sight, they press the trigger until the shot breaks. When this can be done consistently, without the sights being disturbed by the trigger press it is time to add live ammunition to the exercise in the form of ball and dummy drills (Sec. 2 – Pg. 28). Insert several dummy rounds in random order into a magazine of live ammunition. As the student fires through the magazine they make note of what happens to the front sight (sight alignment) when the dummy round is encountered and the weapon does not fire. The objective is to have the sights remain steady when that occurs.
6. FOLLOW THROUGH:

Anyone who has ever played sports of any kind recognizes the importance of follow through. We know what would happen to a golf ball, tennis ball, or baseball if the club, racquet or bat came to a complete stop at the point of contact. The same concept must be carried over to shooting. Follow through with shooting is the continued application of all fundamentals until the bullet has left the barrel of the weapon. It includes the shooter’s recovery after the shot is fired, returning the weapon, the sights, the eye, and the trigger finger to the same exact position for successive shots. It is important that shooters learn to resist their natural human tendency to think that they are done and relax when the shot breaks. A common problem is for shooters to allow the detonation of the round to serve as a signal for their fingers to fly off the trigger and their eyes to look for the placement of the shot on the target. Any movement of the pistol or the shooter while the bullet is traveling down the length of the barrel will affect the impact of the round. To overcome this, shooters must be taught that every time the pistol is fired, they must reset the trigger by controlling the finger forward and refocusing on the front sight as if they were going to fire another shot, whether or not that is their intention. The release point at which the trigger resets varies depending upon weapon manufacturer and style. This gives the mind tasks to perform after the firing of the weapon and the quality of the shot no longer suffers due to the fact that humans are immediate gratification animals. The release point at which the trigger resets varies depending upon weapon manufacturer and style. Some are have an obvious distinctive click which can be heard and felt. Others are much more subtle. Dry practice repetitions will reveal the individual weapon idiosyncrasies to the shooter.

7. BREATHING:

As a marksmanship fundamental, proper breath control is intended to enable shooters to hold their breath long enough to fire without disturbing their ability to maintain proper sight alignment. Ideally, the shot should be taken during the natural respiratory pause which follows a normal (not forced) exhale of breath from the lungs. The natural exhale is more repeatable than attempts to let half or one third of the air out of the lungs and doesn’t create the muscle tension that shooting with the lungs fully inflated does. Each of these techniques, which are occasionally taught by some, make it difficult to ensure that the lungs return to the same capacity level as previous or following breaths. This inconsistency generally results in stringing the shots vertically from the intended point of aim. Breathing resumes after the shot and follow through are complete. The breath should not be held for any longer than necessary to fire the shot(s.) After the optimum time of 6 to 8 seconds, stress and reduction in oxygen level starts and eventually results in inability to focus sharply, muscle tremors, and the mental pressure to fire the shot regardless of how far the sights are off just to “get it over with.” That being said, it is doubtful that the subtleties of breath control are applicable to the dynamics of most actual handgun encounters in law enforcement. Short distances, quick time frames, stress, and
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Breathing Continued:

movement will very likely preclude any thought of “whether or when should I breathe.” However, breath control is very applicable in precision shooting, especially at longer distances. Such precision shooting (either with the handgun, or more relevantly, the long gun) is addressed further in the Patrol Rifle Manual. Breath control also becomes an issue with the handgun during training. Instructors must be aware that especially inexperienced shooters often have a tendency to unknowingly hold their breath, causing undue stress to their bodies and minds. In order to prevent this from impeding the students’ progress in learning, instructors must teach them to apply proper breathing techniques during their training.