SCOUTING PISTOL & SAFETY MARKSMANSHIP

BOY SCOUTS OF AMERICA®

NRA

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33995

2016 Printing

Americans enjoy a right that citizens of many other countries do not—the right to own firearms. But with this right come responsibilities. It is the gun owner's responsibility to store, operate, and maintain their firearms safely. It is the gun owner's responsibility to ensure that unauthorized or untrained individuals cannot gain access to their firearms. And it is the gun owner's responsibility to learn and obey all applicable laws that pertain to the purchase, possession, and use of a firearm in their locale. Guns are neither safe nor unsafe by themselves. When gun owners learn and practice responsible gun ownership, guns are safe.

A GUN OWNER'S RESPONSIBILITIES

CONTENTS

INTRODUCTION

SAFETY NOTE

The Scouting Pistol Safety and Marksmanship program can be conducted only by NRA-certified pistol instructors who have taken additional BSA training on how to present the program to youth. This is a level 4 shooting sports activity and must follow all guidelines in the *Boy Scouts of America National Shooting Sports Manual*, No. 430-938.

The NRA's first and most fundamental Rule for Safe Gun Handling is ALWAYS keep the gun pointed in a safe direction. This rule must always be observed; it cannot be relaxed even for legitimate education or training purposes. Absolute, unvarying adherence to this important gun safety rule cannot be overemphasized.

Some photographs in this book illustrate specific shooting stances or positions. For instructional purposes it was necessary to position the camera in front of the muzzle of the firearm. At no time was an actual functioning firearm used in these photographs; deactivated, non-firing training guns, or solid plastic gun simulators, were utilized; and in some cases, the camera was activated by a remote trigger.

BSA fundamentals of safety must also be considered each time you are participating in an activity. The following are key notes from the BSA Sweet 16 of Safety.

BSA SWEET 16 OF SAFETY

QUALIFIED SUPERVISION

Every BSA activity must be supervised by an adult who understands and knowingly accepts responsibility for the well-being and safety of the youth in his or her care. The supervisor should be sufficiently trained, experienced, and skilled in the activity to be confident of his/her ability to lead and to teach the necessary skills and to respond effectively in the event of an emergency. For this activity, that means the adults must be currently certified NRA pistol instructors with additional BSA pistol instruction and currently certified NRA range safety officers (RSO).

SAFE AREA OR COURSE

A key part of the supervisor's responsibility is to know the area or course for the activity and to determine that it is well suited and free of hazards. For this activity, that means the program is being conducted at a BSA camp on a pistol range that has range standard operating procedures that have been approved by a CRSO, or at a commercial facility with a pistol range.

EQUIPMENT SELECTION AND MAINTENANCE

Most activities require some specialized equipment. The equipment should be selected to suit the participant and the activity and to include appropriate safety and program features. The supervisor should also check equipment to determine that it is in good condition for the activity and is properly maintained while in use. For this activity, that means pistols or revolvers that are the caliber-specified for the activity should be used. These firearms should be inspected by the RSO before use to ensure they are clean and in good condition.

PERSONAL SAFETY EQUIPMENT

The supervisor must ensure that every participant has and uses the appropriate personal safety equipment. For this activity, that means eye protection and ear protection must be worn on the range at all times during live fire. This rule applies to anyone participating in, supervising, or watching the live-fire activity.

SAFETY PROCEDURES AND POLICIES

Common-sense procedures and standards can greatly reduce risk. These should be known and appreciated by all participants, and the supervisor must ensure compliance. For this activity, that refers to the three Fundamental Rules for Safe Gun Handling.

PLANS AND NOTICES

BSA tour and activity plans, council office registration, government or landowner authorization, and any other similar formalities are the supervisor's responsibility when such are required. Appropriate notification should be directed to parents, enforcement authorities, landowners, and others as needed, before and after the activity. For this activity, all youth participants are required to have written parent permission to fire a handgun.

APPLICABLE LAWS

BSA safety policies generally run parallel or go beyond legal mandates, but the supervisor should confirm and ensure compliance with all applicable federal, state, and local regulations or statutes.

DISCIPLINE

No supervisor is effective if he or she cannot control the activity and the individual participants. Because of the nature of this activity, youth must always pay attention to their instructor and RSO's instructions. Failure to do so will result in the instructor or RSO removing a participant from the program.

LESSON 1

PISTOL SAFETY & PARTS OPERATIONS

CHAPTER 1

BASIC FIREARM SAFETY

Safety is fundamental to all shooting activities. Whether you're practicing at the range, hunting in the field, or cleaning your gun in your workshop, the rules of firearm safety always apply.

Safe gun handling involves the development of knowledge, skills, and attitude—knowledge of the gun safety rules, the skill to apply these rules, and a safety-first attitude that arises from a sense of responsibility and an understanding of potential risks.

Most gun accidents are caused by ignorance and/or carelessness. Ignorance is a lack of knowledge—a person who handles a gun without knowing the gun safety rules or how to operate the gun is exhibiting a dangerous lack of knowledge. Equally dangerous is the person who, although knowing the gun safety rules and how to properly operate a gun, becomes careless in properly applying this knowledge. In both of these cases, accidents can easily happen. When people practice responsible ownership and use of guns, accidents are prevented.

There are many specific principles of safe firearm operation. All are derived from three basic safe gun handling rules.

FUNDAMENTAL RULES FOR SAFE GUN HANDLING

ALWAYS KEEP THE GUN POINTED IN A SAFE DIRECTION.

This is the primary rule of gun safety. A safe direction means the gun is pointed so even if it were to go off, it would not cause injury or damage. The key to this rule is to control where the muzzle or front end of the barrel is pointed at all times. At the range, a "safe direction" is downrange. If this one safety rule were always followed, there would be no injuries or damage from unintentional discharges.

The short length of the typical revolver or semi-automatic pistol, and its ability to be held and fired in one hand, require that the shooter be even more conscious of where the gun is pointing.

ALWAYS KEEP YOUR FINGER OFF THE TRIGGER UNTIL READY TO SHOOT.

Your trigger finger should always be kept straight, alongside the frame and out of the trigger guard, until you have made the decision to shoot. Unintentional discharges can be caused when the trigger of a loaded gun is inadvertently pressed by a finger left in the trigger guard instead of being positioned straight along the side of the gun's frame.

ALWAYS KEEP THE GUN UNLOADED UNTIL READY TO USE.

A firearm that is not being used should always be unloaded. For example, at the range, your firearm should be left unloaded with the action open while you walk downrange to check your target. Similarly, a firearm that is stored in a gun safe or lock box should be unloaded.

As a general rule, whenever you pick up a gun, point it in a safe direction with your finger off the trigger, engage the safety (if the gun is equipped with one), remove the magazine (if the gun is equipped with a removable magazine), open the action, and visually and physically inspect the chamber(s) to determine if the gun is loaded or not. If you do not know how to open the action or inspect the firearm, leave the gun alone and get help from someone who does. Further information on pistol mechanisms will be presented in Chapter 2, "Pistol Parts and How They Work."

ADDITIONAL RULES FOR USING A GUN

In addition to the three Fundamental Rules for Safe Gun Handling, you need to observe a number of additional rules when you use your firearm.

KNOW YOUR TARGET AND WHAT IS BEYOND.

Whether you are at the range, in the woods, or in any other setting, you must know what lies beyond your target. You must be sure there is something that will serve as a backstop to capture bullets that miss or go through the target.

KNOW HOW TO USE THE GUN SAFELY.

Before handling a gun, learn how it operates. Read the owner's manual for your gun. Contact the gun's manufacturer for an owner's manual if you do not have one. Know your gun's basic parts, how to safely open and close the action, and how to remove ammunition from the gun and how to

clean the gun. Always take the time to learn the proper way to operate any new or unfamiliar firearm. Also, remember that a gun's mechanical safety is never foolproof. Guidance in safe gun operation should be obtained from the owner's manual, a qualified firearm instructor, or a gunsmith.

BE SURE YOUR GUN IS SAFE TO OPERATE.

Just like other tools, guns need regular maintenance. Proper cleaning and storage are a part of the gun's general upkeep. If there is any question regarding a gun's ability to function, it should be examined by a knowledgeable gunsmith. Proper maintenance procedures are found in your owner's manual.

USE ONLY THE CORRECT AMMUNITION FOR YOUR GUN.

Each firearm is intended for use with a specific cartridge. Only cartridges designed for a particular gun can be fired safely in that gun. Most guns have the ammunition type stamped on the barrel and/or slide. The owner's manual will also list the cartridge or cartridges appropriate for your gun. Ammunition can be identified by information printed on the cartridge box and usually stamped on the cartridge head. Do not shoot the gun unless you absolutely know you have the proper ammunition.

WEAR EYE AND EAR PROTECTION AS APPROPRIATE.

The sound of a gunshot can damage unprotected ears. Gun discharges can also emit debris and hot gas that could cause eye injury. Therefore, safety glasses and earplugs or muffs must be worn by any shooter, spectators, or shooting partners present during live-fire sessions.

NEVER USE ALCOHOL OR DRUGS BEFORE OR WHILE SHOOTING.

Alcohol and many drugs may impair normal mental and physical bodily functions, sharply diminishing your ability to use a gun safely. These substances must never be used before or while handling or shooting guns.

Note that these effects are produced not just by illegal or prescription drugs. Many over-the-counter medications have considerable side effects which may be multiplied when certain drugs are taken together or with alcohol. Read the label of any medication you take, even common non-prescription medications, or consult your physician or pharmacist for possible side effects. If the label advises against driving or operating equipment while taking the medication, you should also avoid using a firearm while taking it.

STORE GUNS SO THEY ARE INACCESSIBLE TO UNAUTHORIZED PERSONS.

It is your responsibility as a gun owner to take reasonable steps to prevent unauthorized persons (especially children) from handling or otherwise having access to your firearms. You have a number of storage options including lock box, gun safe, or trigger guard. The particular storage method you choose will be based upon your own particular home situation and security needs.

BE AWARE THAT CERTAIN TYPES OF GUNS AND MANY SHOOTING ACTIVITIES REQUIRE ADDITIONAL SAFETY PRECAUTIONS.

There are many different types of firearms, some of which require additional safety rules or procedures for proper operation. These are commonly found in your firearm's owner's manual. Also, most sport shooting activities have developed sets of rules to ensure safety during competition. These rules are generally sport-specific.

SPECIAL RESPONSIBILITIES FOR PARENTS

Parents should be aware that a child could discover a gun when a responsible adult is not present. This situation could occur in the child's own home; the home of a neighbor, friend, or relative; or in a public place (such as a park). To avoid the possibility of an accident in such a situation, the child should be taught to apply the following gun safety rules:

IF YOU SEE A GUN:

1) STOP!

2) DON'T TOUCH.

3) LEAVE THE AREA.

4) TELL AN ADULT.

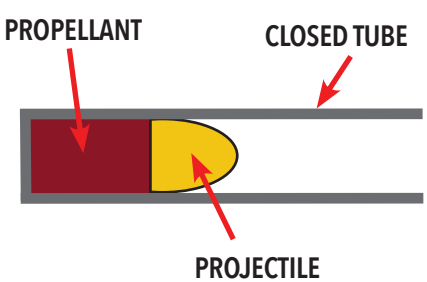
These four rules are part of a special accident-prevention program known as the Eddie Eagle GunSafe® Program. Developed by the NRA for young children (pre-kindergarten through third grade), it uses the friendly character of Eddie Eagle to teach children to follow Eddie's four rules.

CHAPTER 2

PISTOL PARTS AND HOW THEY WORK

All firearms fundamentally take the form of a tube (known as the barrel) that is closed at one end, and into which are put a chemical propellant (gunpowder) and, on top of that, a snug-fitting projectile (bullet). When the gunpowder is ignited, hot, high-pressure gas is created, which forces the projectile out of the open end of the barrel at high speed.

Simplified schematic of basic firearm design: a closed tube (barrel) with propellant (gunpowder) and a projectile (bullet). When the propellant is ignited, it generates high-pressure gas that forces the projectile out the open end (muzzle) at high speed.



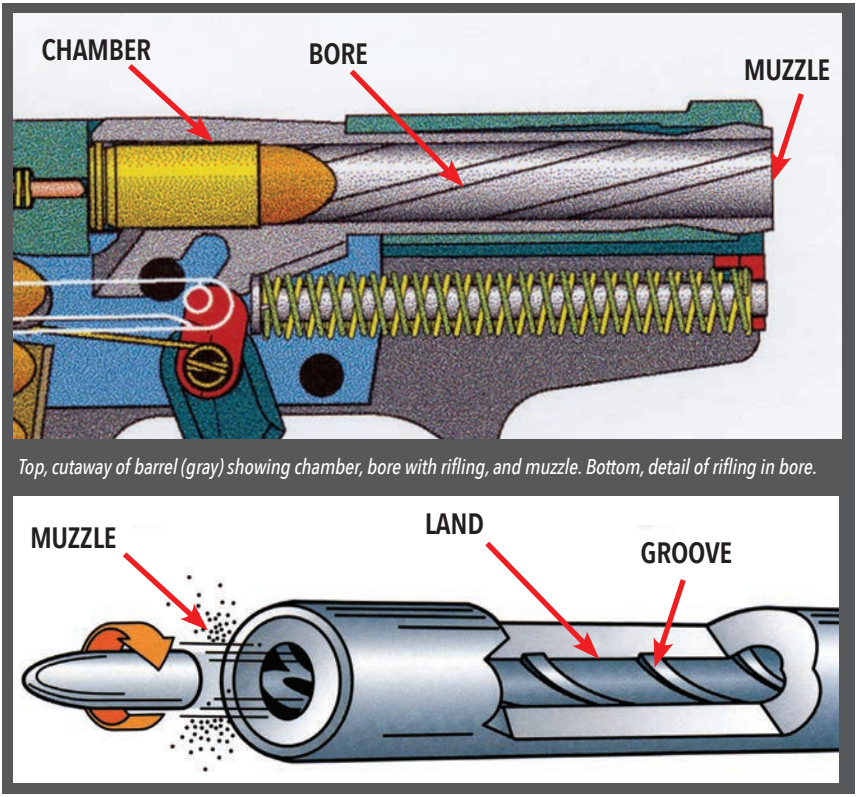
Pistols have many types of actions. Clockwise from top left: single-action semi-automatic, double-action semi-automatic, double-action revolver, and single-action revolver.

All pistols that fire metallic cartridges are *breech-loading firearms*. A breech-loading firearm is one in which the cartridge is loaded into the rear of the barrel, or *breech*. Breech-loading firearms incorporate some method for opening the breech for cartridge loading, and closing or locking the breech to prevent the escape of the hot, high-pressure propellant gas that accelerates the bullet down the bore when the cartridge is fired.

PISTOL COMPONENTS

All pistols have the same major components: the *action*, the *frame*, and the *barrel*. The action determines how the gun operates, and is simply the collection of parts that serve to fire the gun. Action components are involved in loading a cartridge, closing and/or locking the breech, cocking the *hammer* or *striker* (the parts that cause the firing pin to ignite the cartridge), and extracting and/or ejecting the fired case. The frame is the component in which all the action parts are housed, and to which the barrel is connected.

All pistols share a number of similar components, including a *trigger mechanism* that releases a spring-powered hammer or striker to fire the cartridge. (Technically, cartridge ignition occurs as a result of the strike of the firing pin, which may be integral with the hammer or striker, or a separate piece that is pushed forward by the hammer or striker). Virtually all pistol actions have one or more safety mechanisms. In addition, specific action



Top, cutaway of barrel (gray) showing chamber, bore with rifling, and muzzle. Bottom, detail of rifling in bore.

types have a variety of components to close and/or lock the breech: a *slide* in semi-automatic pistols, a *bolt* in bolt-action pistols, and so on. In revolvers, the breech is closed not by a separate component, but by a part of the frame called the *recoil shield*.

Revolver actions also include the *cylinder*, which has *chambers* that hold the cartridges, as well as the mechanism used for cylinder rotation.

FRAME. The central component of most pistols is the frame, which contains the action parts, and to which are attached the stocks or grips and the barrel or barrels. Modern pistol frames are made of steel, aluminum, titanium and, ever more frequently, polymer materials.

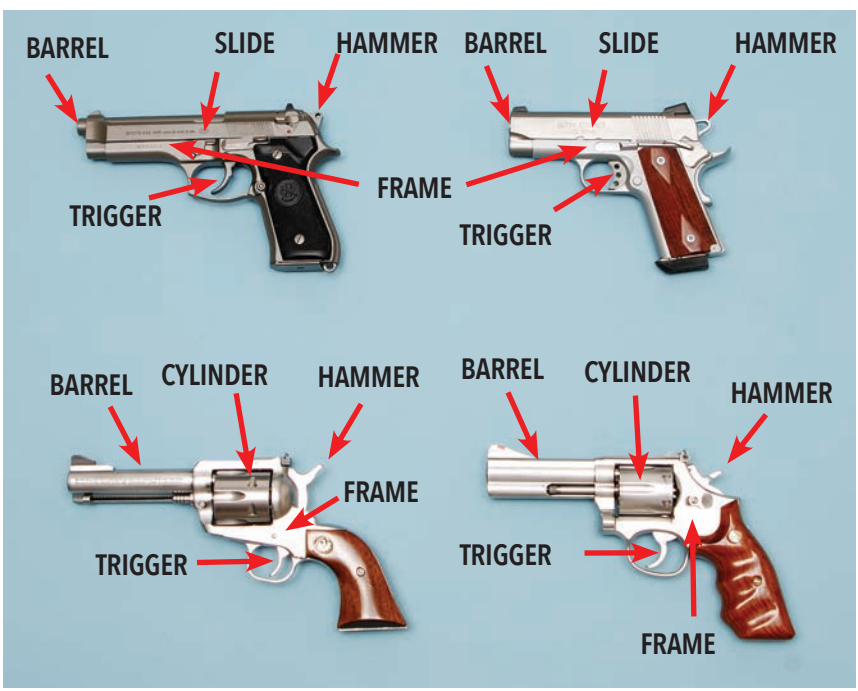
BARREL. The barrel is a tube through which the bullet is propelled. In pistols, this is usually made of steel, and the hole through the tube called the *bore*. Inside the bore is spiral *rifling*, which spins the bullet for stability and accuracy. Rifling is formed by creating shallow *grooves* in the bore surface; the slightly raised areas between the grooves are called *lands*. At the

rear, the bore enlarges to form the *chamber*, which accepts a particular cartridge. The forward end of the barrel is the *muzzle*. The muzzle is where the bullet exits the barrel.

TRIGGER. The *trigger* is a term used to denote the entire mechanism that releases the part of the action (most commonly a hammer or striker) that causes the cartridge to be ignited, and the curved finger-piece that is pulled to fire.

With some firearms, such as single-action revolvers, the trigger directly releases the cocked hammer when it is pulled. In other types of trigger mechanisms, however, the trigger releases the spring-loaded hammer, firing pin, or striker through an intermediary mechanism, such as a sear or trigger bar. Different action types have a variety of trigger mechanisms.

SAFETY MECHANISMS. In general, firearm safeties can be *active* (the safety mechanism must be intentionally activated and deactivated by the shooter) or *passive* (the safety mechanism functions more or less automatically). Most commonly, active safety mechanisms take the form of a lever or sliding button that can be moved manually to a "safe" position to



All pistols have the same major components: frame, barrel, and action parts such as the trigger, hammer, slide (semi-automatic pistols), and cylinder (revolvers).

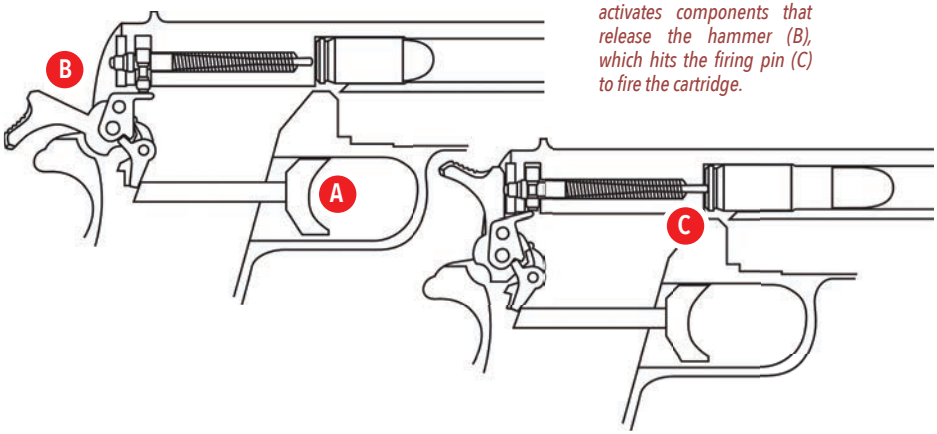
prevent firing, and a "fire" position to allow the gun to be discharged.

Passive safeties can take many forms, such as *grip safeties* that prevent firing unless the gun is properly gripped. Other passive pistol safety mechanisms prevent the hammer from contacting the firing pin, or the firing pin from contacting the cartridge, unless the trigger has been pulled fully rearward.

Alternatively, many semi-automatic pistols have *decocking* mechanisms instead of safeties. Decockers serve to drop the cocked hammer or striker to the "down" position.

Remember, safeties are mechanical devices and can fail. Always follow the Fundamental Rules for Safe Gun Handling.

BREECH CLOSING/LOCKING MECHANISMS. In conventional semi-automatic pistols, the breech is closed and locked by a component called the *slide*, which rides on horizontal rails in the frame, and which has a flat vertical face that is positioned directly to the rear of the chamber, closing the breech. In some designs, the slide is locked to the barrel, resulting in a locked breech. Revolvers have no separate breech closing or locking mechanism. Instead, behind the cylinder is a flat face in the frame, the recoil shield, which supports the head of the cartridge in the chamber that is aligned with the firing pin and the barrel. Other pistol types have their own methods for closing or locking the breech.



Depressing the trigger (A) activates components that release the hammer (B), which hits the firing pin (C) to fire the cartridge.

TYPES OF PISTOL ACTIONS

The great majority of pistols that will be purchased for hunting, plinking, sport shooting, self-defense, or target work will be of conventional revolver or semi-automatic pistol design. Revolver actions can be further subdivided into *single-action* and *double-action* types, while semi-automatic pistols are offered in a variety of different action designs, including single-action, traditional double-action, and *double-action-only*. These action types will be discussed in detail in the following chapters.

FIREARM CYCLE OF OPERATION

Regardless of design, every firearm action must allow a strict sequence of events to take place. This sequence, known as the *cycle of operation*, consists of the following steps:

FIRING: occurs when the trigger is pulled and the hammer or striker is released to fly forward, causing the firing pin to hit the primer or priming compound of the cartridge.

UNLOCKING: the initial step in the opening of the action. In locked-breech guns, this occurs when the bolt or breech block is unlocked from the barrel or receiver. In non-locked-breech guns, such as some semi-automatic pistols (see Chapter 3, "Semi-Automatic Pistol Parts and How They Work"), the action is kept closed simply by the recoil spring, and opens only when chamber pressure overcomes slide inertia and spring pressure.

EXTRACTION: the pulling of the spent cartridge case rearward out of the chamber, usually by a part called an *extractor*.

EJECTION: the forcible throwing of the spent case clear of the action by a component called the *ejector*.

COCKING: the movement of the hammer or firing pin to its rearward position, where it is retained against spring pressure by the trigger mechanism.

FEEDING: the insertion of a cartridge into the chamber.

LOCKING: the closing of the action (and, in locked-breech firearms, the engagement of the locking mechanism) so the breech is sealed. After the locking step, the cycle returns to the firing step.

Not all guns go through every single step in the cycle above. For example, revolver mechanisms technically do not have a feeding step, as cartridges are manually inserted into the cylinder chambers.

CHAPTER 3

SEMI-AUTOMATIC PISTOL PARTS AND HOW THEY WORK

In general, semi-automatic firearms utilize the pressure generated by the ignition of the cartridge to perform the cycle of operation.

Semi-automatic pistols consist of a *frame*, on which is mounted a *slide* that can move freely in the fore-and-aft direction on rails in the frame. In some designs, the barrel is fully contained within the slide, and in others it is rigidly attached to the frame, with the slide positioned to its rear. In both designs, a vertical face (*breech face*) on the slide abuts the chamber end of the barrel. On locked-breech designs (see below), the barrel locks to the slide by way of *lugs* that enter recesses in the slide, by the physical interference of a shoulder on the barrel with the rear edge of the ejection port of the slide, or other methods. The slide also houses the *firing pin* and *extractor*, while a fixed frame-mounted blade *ejector* is the most common means of ejection. An *ejection port* in the slide provides a means for empty shells to

Typical semi-automatic pistol, left side, with major components indicated.

exit the action. Ignition is by either an *external hammer*, an *internal hammer*, or a spring-loaded *striker* or firing pin.

TYPES OF SEMI-AUTOMATIC PISTOL MECHANISMS

There are generally three types of semi-automatic actions: *blowback-operated*, *recoil-operated*, and *gas-operated*.

BLOWBACK-OPERATED ACTIONS

In blowback-operated semi-automatic pistols, the action is not mechanically locked, and the weight of a heavy slide, plus a strong recoil spring, is all that keeps the action closed. Upon firing, chamber pressure created by cartridge ignition pushes the slide rearward, compressing the recoil spring. The inertia of the slide, aided by spring resistance, keeps the action closed long enough for pressure in the chamber and bore to drop to a safe level. Blowback designs are generally restricted to pistols firing low-powered cartridges (typically .22 LR, .25 ACP, .32 ACP, and .380 Auto).

RECOIL-OPERATED ACTIONS

With recoil-operated semi-automatic pistol actions, when the action is closed, the barrel is locked to the slide. Upon firing, the barrel and slide recoil rearward together for a distance before the barrel unlocks and allows the slide to travel further rearward to complete the cycle.

Above, typical semi-automatic pistol with slide retracted. Left, semi-automatic pistol, right side, with ejection port and extractor indicated.

Most self-loading pistols chambered for cartridges of the power of the 9 mm Para or greater use recoil-operated actions. There are a variety of mechanical designs for both locking and unlocking the actions of such pistols.

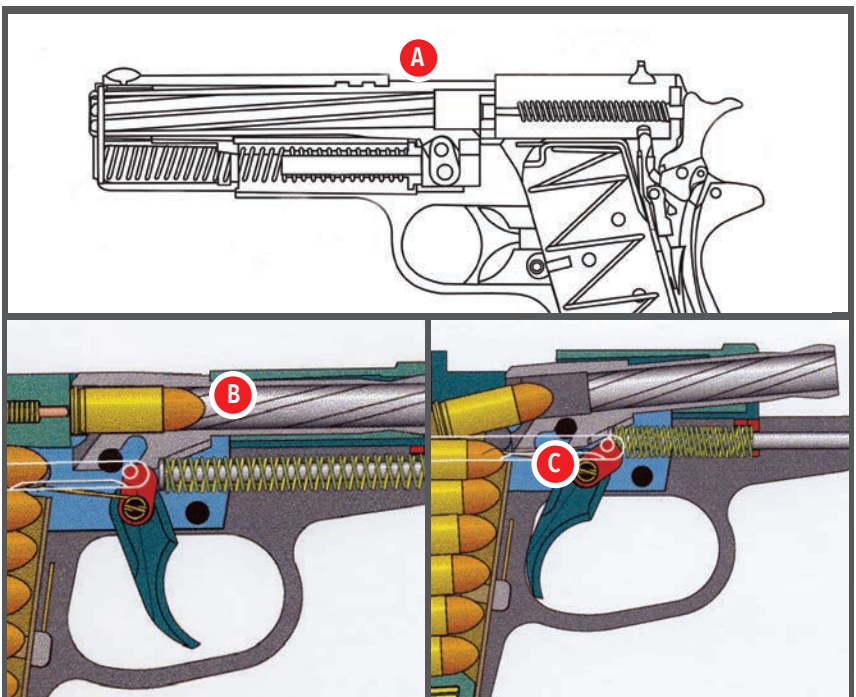
GAS-OPERATED ACTIONS

In gas-operated actions, high-pressure propellant gas is bled from the bore through a small hole in the barrel. This, in turn, exerts pressure on a piston or other component, driving it rearward to unlock the breech and work the action.

SEMI-AUTOMATIC PISTOL MAGAZINES

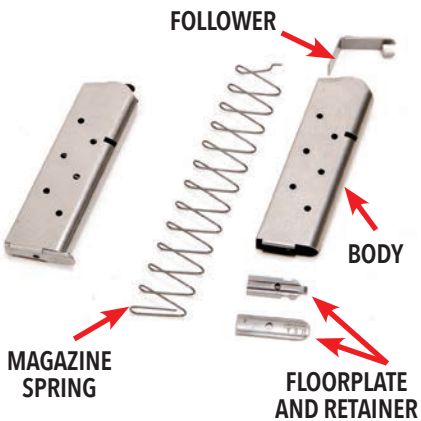
Most semi-automatic firearms utilize detachable *box magazines*, which afford one of the main advantages of such arms: rapid reloading. High-capacity magazines confer the additional benefit of being able to fire a large number of rounds in succession without reloading.

Box magazines typically have a steel, aluminum, or plastic *body* that houses the cartridges and the magazine's



Some recoil-operated semi-automatic pistols lock to the slide by way of lugs on the barrel that fit into grooves in the slide (A). Alternatively, in many modern designs a shoulder on the chamber end of the barrel engages the edge of the ejection port in the slide (B) to lock the two parts together. Angled cam surface on barrel underlug (C) engages cross pin in frame to lower the rear of the barrel out of lockup with the slide as the two parts recoil rearward together.

internal components. At the bottom of the magazine is a *floorplate*, usually of the same material. This is often removable to allow magazine cleaning. Inside the magazine are the *magazine spring* and *follower*, which together push the cartridges in the magazine upward into position for reliable feeding.



This pistol magazine consists of a magazine spring, follower, magazine body, floorplate, and floorplate retainer. Some magazines have a welded floorplate.

SEMI-AUTOMATIC TRIGGER MECHANISMS

Modern semi-automatic pistols can achieve ignition by way of both external and internal hammers, or by a spring-powered striker or firing pin that is held to the rear by the sear or trigger bar. Semi-automatic pistols also incorporate some sort of disconnecting mechanism, which requires that the trigger be released and then re-pressed each time a shot is fired. This prevents the gun from machine-gunning, or firing repeatedly, when the trigger is pulled and held back.

SEMI-AUTOMATIC SAFETY MECHANISMS

Semi-automatic pistol safety systems have a variety of forms. The most familiar are the pivoting thumb levers on the frame or slide. These

are sometimes on the left side only; however, on many recent designs, they are located bilaterally for use by either thumb. Thumb safeties may pivot downward or upward to disengage. Such safeties mounted on the frame typically block the sear, while those mounted on the slide usually prevent the hammer from contacting the firing pin.

A different type of safety system found on some traditional double-action pistols is the *hammer drop safety*, also known as a *decocker*. When this is engaged, the hammer falls harmlessly to its lowered position. With any pistol of this type, firing a shot, or simply working the slide to feed a round into the chamber, leaves the hammer in the cocked position. Since such pistols are not designed to be safely carried with a round in the chamber and the hammer back, the hammer must be lowered before the pistol is holstered, placed in a pistol box, etc. The decocking mechanism safely accomplishes this. Double-action-only (DAO) semi-automatic pistols may have a thumb safety or, alternately, no active safety mechanism at all. All semi-automatic pistols normally exhibit one or more *passive safety systems*, such as an inertia firing pin, a magazine disconnect (which prevents firing the round in the chamber if the magazine is removed), grip safety, or passive firing pin block that prevents forward firing pin travel unless the trigger is depressed.

Semi-automatic pistols feature a variety of different safety mechanisms, including (top to bottom) slide-mounted decockers, frame-mounted safeties, and trigger safeties.

Semi-automatic cycle of operation, shown here with double-action-only pistol with a cartridge in the chamber and the hammer down in the ready position. (A) The barrel and slide are locked together by way of shoulder on chamber end of barrel. Pulling the trigger (B) causes the trigger bar (white outline) to cock the hammer. When the trigger rotates the hammer through its full arc, it falls, hitting the firing pin, firing the gun (C). As the slide recoils to the rear (D), the rear of the barrel drops down and unlocks from the slide, and the empty case is extracted and ejected. The slide quickly returns forward, and the breechface engages the top cartridge in the magazine, feeding it into the chamber. Finally, the slide returns fully forward, the fresh cartridge feeds fully into the chamber, the barrel and slide lock together, and the trigger bar resets (E).

SEMI-AUTOMATIC CYCLE OF OPERATION

All semi-automatic pistols have essentially the same cycle of operation. However, some steps in the cycle may not apply to all action types.

FIRING. Pulling the trigger releases an internal or external hammer that strikes the firing pin and fires the cartridge, or it may release a cocked, spring-powered striker or firing pin in the slide.

UNLOCKING. The pattern of locking is determined by the nature of the semi-automatic mechanism. With recoil-operated actions, mechanical camming surfaces serve to unlock the barrel from the slide after the two components have traveled rearward together a short distance. Gas-operated actions utilize gas pressure tapped from the bore to impel the slide rearward and unlock the action. Blowback-operated systems are by definition unlocked, so no unlocking is necessary. In such systems, the action opens simply when the gas pressure in the chamber and bore overcomes the forward force of the recoil spring and the inertia of the slide or bolt.

EXTRACTION. A claw extractor mounted on the slide face engages the rim of the cartridge case and pulls it from the chamber after the action unlocks.

EJECTION. As the slide moves smartly to the rear carrying a spent cartridge case, an ejector—usually a standing blade mounted in the frame—contacts the case head, throwing the case out of the action through the ejection port.

COCKING. At or near the extreme rearward limit of its travel, the reciprocating slide cocks the hammer or striker, which is held rearward against spring tension by the trigger mechanism.

FEEDING. The compressed recoil spring pushes the slide rapidly forward, stripping a cartridge from the magazine and feeding it into the chamber.

LOCKING. With locked-breech semi-automatic designs, locking of the action occurs during the last fraction of an inch of forward motion of the slide. In the vast majority of designs, the rear of the barrel is cammed upward as it moves forward so its locking surfaces engage the slide or frame, locking the action. With blowback-operated designs, no locking occurs; the momentum of the forward-moving bolt or slide is sufficient to fully chamber a cartridge and close the action (at which point the action is said to be *in battery*). Only the force of the compressed recoil spring, combined with the inertia of the bolt or slide, keeps the action closed.

CHAPTER 4

OPERATING DOUBLE- AND SINGLE-ACTION SEMI-AUTOMATIC PISTOLS

Gun handling consists of the processes to safely and efficiently load, fire, and unload the pistol. As with single- and double-action revolvers, there are specific techniques for performing these functions with single- and double-action semi-automatic pistols.

LOADING

Loading means filling an empty gun with cartridges. This process involves, first, loading the empty magazine and then inserting the magazine into the gun and feeding a live cartridge into the chamber.

LOADING THE SEMI-AUTOMATIC PISTOL MAGAZINE

The magazine should be grasped by the fingers of the weak (non-firing) hand, with the top of the magazine facing upward and the front of the magazine oriented toward the firing hand. The firing hand picks up a live cartridge and brings it to the top of

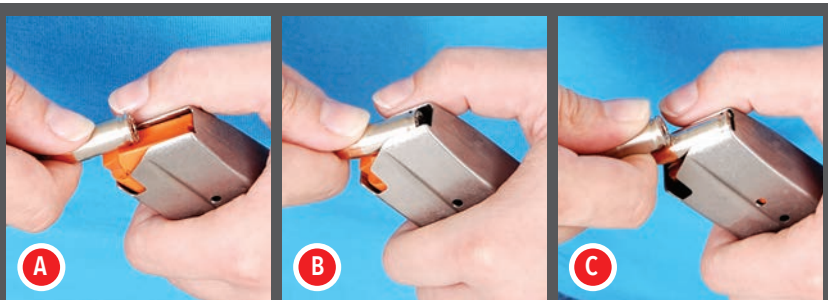
the magazine, with the case head facing the magazine and the bullet pointing away from the magazine. The case rim is used to depress the magazine follower slightly, and the cartridge is then slid under the feed lips of the magazine all the way to the rear. The case rim of the next cartridge to be loaded depresses the top cartridge in the magazine, and itself is slid under the magazine feed lips. This process is repeated for each cartridge until the magazine is loaded. Finally, the shooter should tap the rear of the loaded magazine sharply, to ensure that all cartridges are positioned to the rear of the unit, for proper feeding.

LOADING SEMI-AUTOMATIC PISTOLS

The pistol is grasped with the firing hand, with the trigger finger outside the trigger guard, straight along the frame. With the pistol pointing in a safe direction, the non-firing hand brings the magazine to the magazine well in the butt of the gun, and inserts the magazine fully. The magazine must be inserted in the proper orientation, with the bullets facing forward. Normally, a click is heard when the magazine is fully seated. The shooter may also slap the floorplate or basepad to ensure proper seating.

Next, with the pistol still pointed in a safe direction, and the trigger finger still outside the trigger guard, the non-firing hand grasps the slide and retracts it. There are different ways of grasping the slide; with any method, the hand must stay well clear of the gun's muzzle.

Retracting the slide allows the top cartridge in the magazine to rise to a position where it can be fed into the chamber when the slide goes forward. There are two ways of accomplishing this. One is to retract the slide fully with the support hand, and then let it fly forward. Alternatively, the slide may be fully retracted with the support hand until it is locked open by the *slide lock*. When loading is desired, the slide



To load a pistol magazine, hold it in the non-firing hand, with its top upward and its front facing the strong hand (A). Grasp a live cartridge in the firing hand, and use the case rim to depress the magazine follower (B). Then slide the cartridge under the feed lips all the way to the rear (C). This process is repeated until the magazine is loaded to full capacity.

To load a semi-automatic pistol, the pistol is grasped in the firing hand, and the magazine, held in the support hand with the cartridges facing forward, is brought to the pistol's magazine well (A) where it is inserted (B) and fully seated (C). The slide is then fully retracted (D) and released to fly forward and chamber the top cartridge (E).

lock is depressed, releasing the slide. With either procedure, the forward-moving slide will load the top cartridge from the magazine and chamber it.

It is critical to avoid following the slide or easing it down with the non-firing hand. Semi-automatic pistols are designed to function best when the slide travels rapidly forward under the pressure of the recoil spring. Easing the slide down is very likely to produce feeding malfunctions.

Once a live cartridge has been chambered, the shooter may commence firing. If there is to be a delay in firing, the pistol should be made safe by either engaging the decocker (on a double-action pistol) or the manual safety (on a single-action pistol), normally positioned near the firing-hand thumb. The location of these controls will be found in the owner's manual for the pistol.

While many modern pistols have controls that are equally convenient for right- and left-handed users, some are designed only for right-handed use. Left-handed shooters using such pistols may have to engage the pistol's decocker or safety with the fingers of their non-firing hand, or develop strong-hand techniques for accomplishing this.

It is also worth noting that some semi-automatic pistols, such as double-action-only models, lack either a decocker or a manual safety.

FIRING

Firing the loaded semi-automatic pistol involves essentially the same procedure whether the gun used is a double-action or single-action type. The pistol is grasped in the firing hand (or in both hands, if a two-hand hold is used). With the pistol pointed in a safe direction and the trigger finger outside the trigger guard, alongside the frame, the gun's decocker or manual safety is moved to the "fire" position, usually by the thumb of the firing hand. With some firearms, however, left-handed shooters will have to operate these controls with the fingers of the non-firing hand.

The pistol is then aligned with the target. At this time, the trigger finger may enter the trigger guard and contact the trigger, and the sequence of events that culminate in firing a shot can begin. Upon firing the first shot, the shooter may continue to fire a number of shots or may elect to lower the pistol. Alternatively, the shooter may put the loaded pistol on the shooting bench. If the gun is simply lowered, and another shot is to be immediately fired, there is no need to engage the decocker or safety. On the other hand, a loaded pistol placed on a bench should, at the very least, have the decocker or safety put into the "safe" condition. Also, if the pistol is put on the shooting bench and the shooter intends to walk away from it

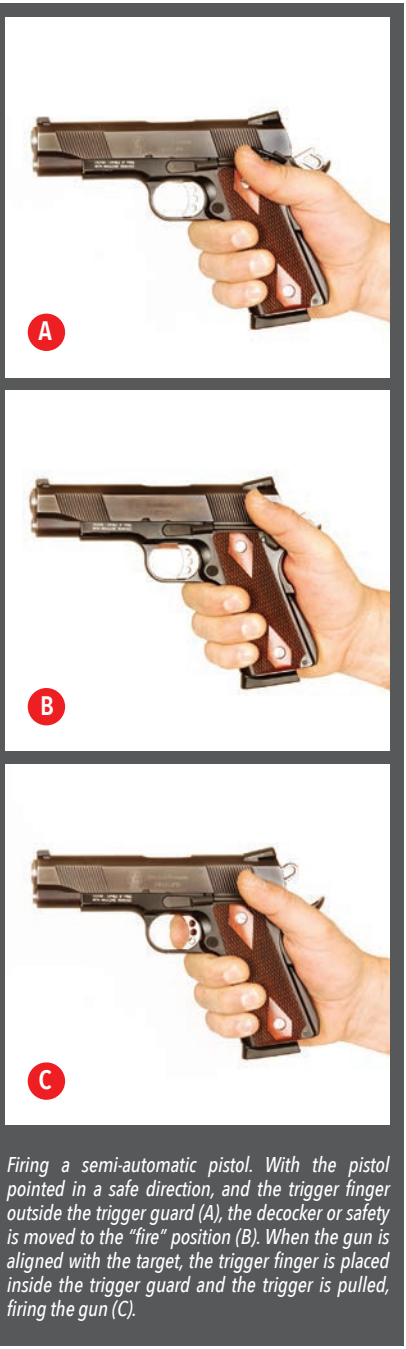
for a moment for any reason, the pistol should be fully unloaded and left on the bench with the slide locked open and the magazine removed.

DECOCKING

Safely lowering the cocked hammer of a semi-automatic pistol with a decocking mechanism usually involves nothing more than activating the decocking lever. With pistols lacking this mechanism, such as single-action semi-automatics, a different procedure must be employed. Refer to the gun's owner's manual.

UNLOADING

To unload a semi-automatic pistol, first ensure that it is pointed in a safe direction. Remove the trigger finger from the trigger and place it outside the trigger guard, alongside the frame. Next, press the magazine release button to drop the magazine from the gun. In most modern pistols, this button is to the rear of the trigger guard, near the firing-hand thumb. As with other pistol controls, some firearms offer ambidextrous magazine releases that are equally convenient for both right- and left-handed users. Left-handed shooters operating right-handed guns will have to depress the magazine release button either with the tip of the trigger finger or with the fingers of the non-firing hand. Note that some semi-automatic pistols



Firing a semi-automatic pistol. With the pistol pointed in a safe direction, and the trigger finger outside the trigger guard (A), the decocker or safety is moved to the "fire" position (B). When the gun is aligned with the target, the trigger finger is placed inside the trigger guard and the trigger is pulled, firing the gun (C).

(mostly older models) do not have a magazine release near the trigger guard, but instead feature a latch at the rear of the magazine well, typically operated by the non-firing hand.

Once the magazine is removed from the pistol, it is still necessary to extract the live cartridge from the chamber. With the pistol kept pointed in a safe direction, and the trigger finger still outside the trigger guard, use the support hand to sharply retract the slide fully to the rear. This will extract the live round from the chamber and eject it. Do not attempt to catch or capture the cartridge flying out of the ejection port. At this time, with the slide locked fully rearward, visually inspect the chamber to ensure it is empty.

If further shooting is anticipated, the pistol may be left on the shooting bench with the slide locked open and the magazine removed. On the other hand, if the firearm is to be put back into its case, the slide should be eased forward and, while the gun is pointed in a safe direction, the hammer dropped either by engaging the decocker or by pulling the trigger on the empty chamber. Some semi-automatic pistols, most notably rimfire pistols, can be damaged by dry-firing them. With any pistol, the owner's manual should be consulted to determine if dry-firing is safe to do.

To unload a semi-automatic pistol, first put the trigger finger along the frame, out of the trigger guard (A), engage the safety or decocker if present (B), remove the magazine (C), and retract the slide forcefully to eject any live cartridge that may be in the chamber (D). The slide is then locked back (E) and the chamber is visually inspected to ensure it is empty.

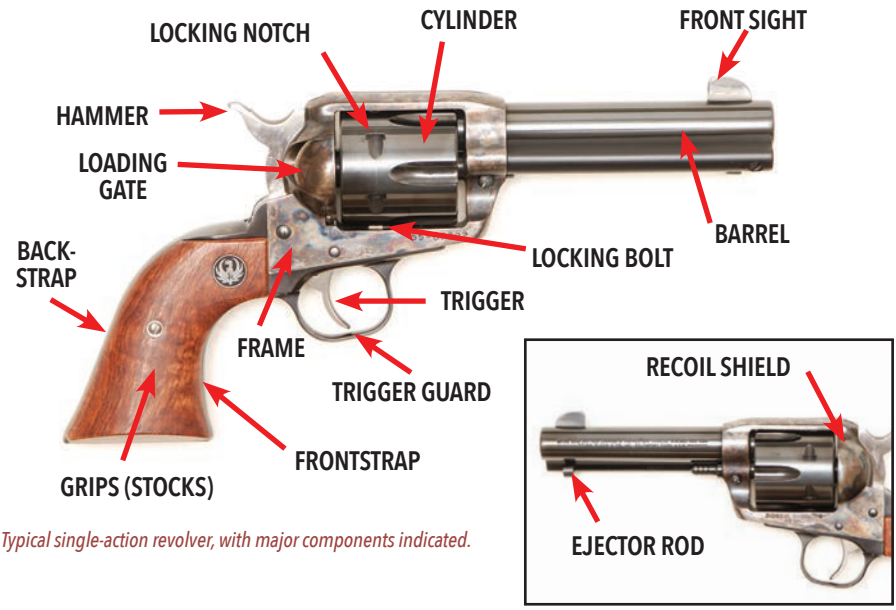
CHAPTER 5

REVOLVER PARTS AND HOW THEY WORK

The primary feature of a revolver action is its rotating *cylinder*. Mounted on the frame just to the rear of the barrel, the cylinder contains several chambers for cartridges, each of which comes into alignment with the bore as the cylinder is rotated. The modern revolver action is an outgrowth of earlier designs, such as the *pepperbox*, which consisted of a drum containing a number of barrels, each with a live chambered round, that was manually rotated to bring each successive barrel into alignment with the hammer. Today, the term "revolver" universally refers to a type of pistol with a rotating cylinder.

TYPES OF REVOLVER MECHANISMS

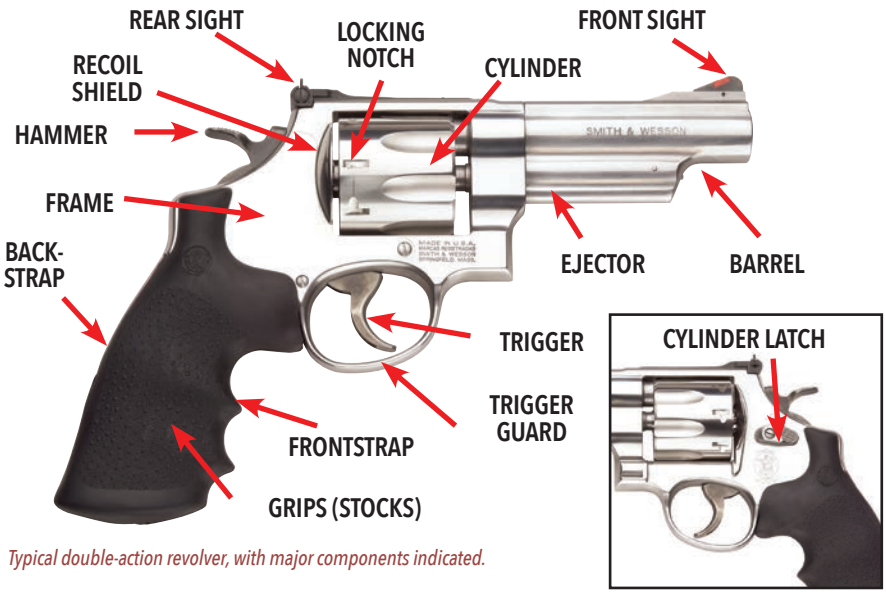
There are generally two types of revolver actions: *single-action* and *double-action*. The single-action revolver is the older of the two designs, and is so called because the pulling of the trigger performs but a



Typical single-action revolver, with major components indicated.

single action: releasing the hammer. To operate a single-action revolver, the *hammer* is first manually cocked. This tensions the *mainspring* and retracts the *bolt* or *cylinder stop* out of engagement with one of the notches in the cylinder, freeing the cylinder to rotate. As the hammer is drawn further rearward, the *hand* (in Colt and Smith & Wesson terminology) or *pawl* (in Ruger nomenclature), which is attached to the hammer, moves vertically in a slot in the *recoil shield* of the frame, engaging an offset ratchet on the rear face of the cylinder and producing cylinder rotation. The ratchet and pawl are carefully designed so, as the hammer is fully cocked and held rearward by the trigger, the cylinder is rotated only that amount required to bring the next chamber into alignment with the bore. At that point, the bolt or cylinder stop snaps into the next notch, locking the cylinder in proper alignment. Pulling the trigger fires the revolver, and the cycle is repeated with the cocking of the hammer.

Double-action revolvers are so named because pulling the trigger both cocks and releases the hammer. Modern double-action revolvers can generally be fired in both the single- and double-action modes. The single-action mechanism of a double-action revolver is essentially identical to that of a single-action revolver, described above. The double-action mechanism is made possible by a separate *double-action sear* on the hammer that is engaged by the trigger such that rearward trigger movement



Typical double-action revolver, with major components indicated.

first rotates the hammer to its cocked position, and then, with additional trigger movement, allows the hammer to fall, firing the revolver.

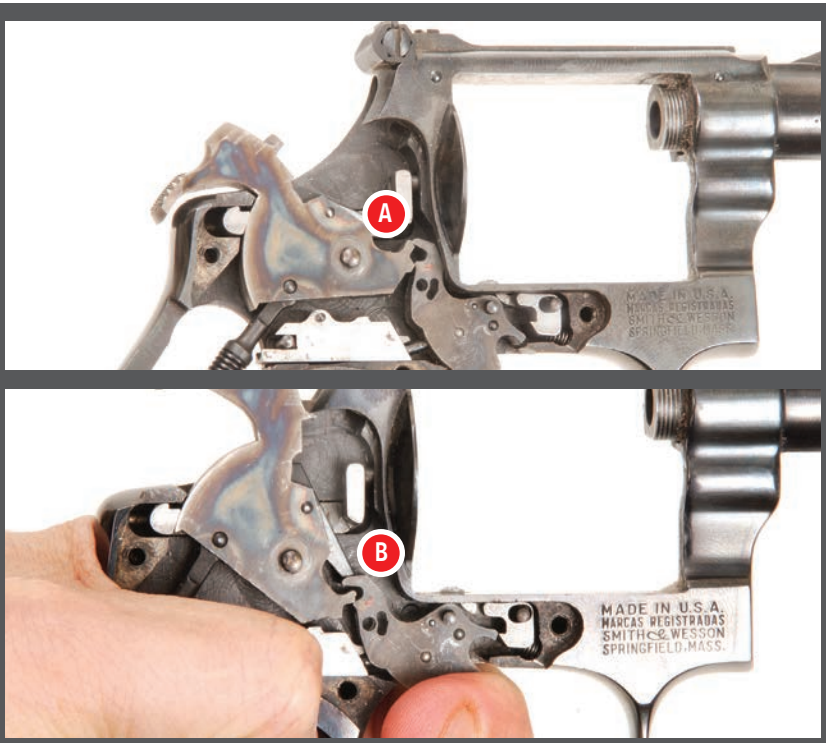
Although most double-action revolvers can be fired in the single-action mode, some models intended for personal protection are designed to allow double-action firing only, as this is generally considered more practical in defensive situations. Some of these revolvers lack hammer spurs, or enclose a spurless hammer completely within the frame of the gun.

All revolvers must be manually loaded by inserting cartridges into the chambers of the cylinder, but variations exist on the way this is accomplished. With some of the oldest single-action revolver designs (as well as a very few modern small revolvers), loading requires removal of the cylinder, which is then filled with cartridges and reinstalled in the revolver. Most single-action revolvers, however, allow loading by way of a spring-loaded gate in the right side of the frame that, when opened, gives access to a single chamber of the cylinder. Loading is accomplished by inserting a fresh cartridge into each exposed chamber, one at a time. To unload the gun, an *ejector rod* is used to push empty cases out of the open loading gate. Some of these revolvers require that the hammer be set at the half-cock position before the cylinder can be rotated.

Faster loading and unloading was permitted by two later designs. *Top-break* revolvers, which originated in the latter part of the 1800s, feature a

two-piece frame that is hinged forward of the cylinder, and a latch at the rear of the top strap (the portion of the frame directly above the cylinder). When the latch is disengaged, the barrel and the upper portion of the frame rotate forward, opening the action, exposing the chambers and (with most designs), extracting spent cases or live rounds from all chambers simultaneously. Loading is accomplished as with other revolvers, by inserting fresh cartridges into each chamber, one at a time.

The top-break revolver is an antiquated design that today has been superseded by the stronger *swing-out cylinder* design, which represents the pinnacle of revolver evolution to date. Instead of a hinged two-piece frame, such guns have a one-piece solid frame with a laterally swinging *crane* (Colt and Ruger) or *yoke* (Smith & Wesson and Taurus), on which the cylinder and ejector rod are mounted. When the action is closed, the crane fits flush against the



In the single-action mode (left), the hammer is held back directly by the trigger (A). When the trigger is pulled, the hammer falls to fire the cartridge. This is the same for both single-action and double-action revolvers fired in the single-action mode. In the double-action mode (right), the hammer is rotated rearward by the engagement of the tail of the trigger with the double-action sear on the hammer (B). When the trigger and hammer rotate through their full arc, the double-action sear slips off the trigger tail, firing the pistol.

Revolvers are characterized by a rotating cylinder with several chambers. Each time the hammer is cocked (single-action revolver) or the trigger is pulled (double-action revolver), the hand or pawl rises in its window in the recoil shield (A) and engages one of the ratchets on the extractor star (B) of the cylinder, rotating it to the next chamber.

frame, and the cylinder is centered in the frame. The action is locked closed by various latch mechanisms, some of which engage the ejector rod at the front, the center pin at the rear (or both simultaneously), while there are other systems that lock the crane directly to the frame. A *cylinder release latch*, usually on the left side of the frame but sometimes on the crane, releases the crane so the cylinder can be swung outward from the frame. In this open position, the ejector rod can be pushed to extract empty cases or live cartridges (or, if struck smartly enough, to eject cases or cartridges completely free of the cylinder).

Traditionally, for both proper functioning and extraction, revolver cartridges have been rimmed. However, some rimless semi-automatic cartridges can be fired in revolvers by the use of special devices known as *moon clips*, thin metal tabs with circular cutouts that snap around the extractor groove of a rimless cartridge. Moon clips provide purchase for the extractor star, and come in two-cartridge, three-cartridge (half-moon) and five- or six-cartridge (full-moon) varieties. All allow more rapid revolver reloading.

Revolvers are unique among conventional firearms in having a chamber that is separate from the barrel. This design also results in another unique feature: the *barrel-cylinder gap*. This gap, which is normally around 0.004 to 0.008 inch, allows clearance between the face of the cylinder and the barrel for smooth cylinder rotation. Some gas also escapes from this gap—not enough to substantially lower velocities, but sufficient to be seen and heard, and to mark objects (or injure fingers) positioned close to this gap.

REVOLVER SAFETY MECHANISMS

In general, both single-action and double-action revolvers lack safeties of the type found on many other arms. Traditionally, it has been felt that the long, heavy pull of double-action revolvers, or the two-stage method of operation of single-action revolvers, made unintentional discharges extremely unlikely. Today, virtually all modern revolvers are produced with internal safety devices that require no deliberate shooter activation, and

Most single-action revolvers are loaded through a gate in the frame (left). The cylinder of a modern double-action revolver (right) swings out to allow access to all chambers.

which are automatically disengaged when the trigger is properly pulled. However, many models include action-locking mechanisms for storage.

Revolvers typically employ various types of passive safety mechanisms. As a general rule, these mechanisms work by preventing the hammer from contacting the firing pin unless the trigger is pulled fully rearward. (In revolvers in which the firing pin is part of the hammer, the safety mechanism prevents the hammer from falling fully forward unless the trigger is pulled.) These passive mechanisms help prevent an inadvertent discharge of a cocked revolver.

REVOLVER CYCLE OF OPERATION

FIRING. With either single-action or double-action designs, a revolver is fired simply by pulling the trigger. While a single-action pull is usually short and relatively light, double-action pulls are long and fairly heavy.

UNLOCKING. With all revolver designs, as the hammer begins to move rearward, the bolt or cylinder stop retracts from its notch to allow cylinder rotation, bringing the next chamber into alignment with the bore.

EXTRACTION AND EJECTION. With single-action designs that are loaded and unloaded through a loading gate, spent shells are extracted and/or ejected one at a time by manipulation of the ejector rod. With swing-out cylinder revolvers, the action must first be opened, normally by means of a latch on the left side of the frame or on the crane that is manipulated to allow the crane and cylinder to swing out. Once the cylinder is exposed, the shooter presses the ejector rod, which extracts (or, if worked with sufficient force, ejects) shells from the cylinder.

FEEDING. With the empty chambers of the cylinder exposed (as with swing-out designs), or with the loading gate open (as with most single-action designs), cartridges are manually inserted into the chambers. After all chambers are full, the action is closed by swinging the cylinder shut or by closing the loading gate, depending upon the revolver design.

COCKING. Cocking is accomplished by manually retracting the hammer (in single-action designs) or by simply pulling the trigger (in double-action designs). Regardless of design, hammer cocking also brings each successive chamber of the cylinder into alignment with the bore.

LOCKING. With all revolver designs, the cylinder is locked into alignment with the bore by a bolt or cylinder stop, which enters a notch in the circumference of the cylinder.

CHAPTER 6

OPERATING DOUBLE- AND SINGLE-ACTION REVOLVERS

Safely and efficiently loading, firing, and unloading the pistol are all part of safe gun handling. There are specific techniques for performing these functions with single- and double-action revolvers.

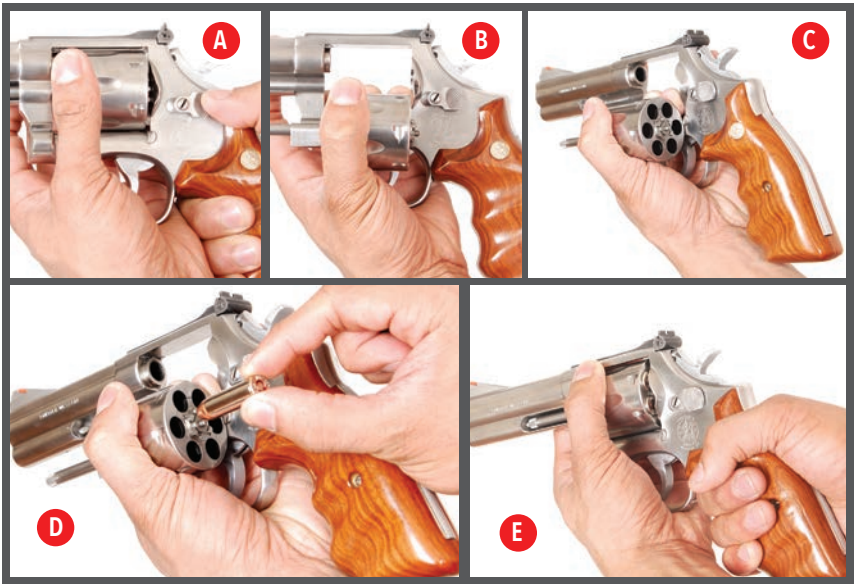
LOADING

Loading double-action and single-action revolvers involves two separate and very different procedures.

LOADING DOUBLE-ACTION REVOLVERS

Almost all double-action revolvers feature a *swing-out cylinder* operated by a latch that, in most models, is on the left side of the frame (see Chapter 5, "Revolver Parts and How They Work"). With the revolver held in the right hand (for both right- and left-handed shooters), pointed in a safe direction with the trigger finger outside the trigger guard and alongside the frame, the cylinder latch is engaged with the right-hand thumb. Note that a few revolver models locate the cylinder latch on the crane; engaging the latch must be done with the left hand.

With the cylinder latch disengaged, the left hand is placed around the frame and the left-hand fingertips push the cylinder out of the frame, to



When beginning to load a double-action revolver, it should be held in the right hand and the cylinder latch operated by the right thumb (A). Once the cylinder latch is disengaged, the left hand is placed around the frame and the left-hand fingers push the cylinder to the left (B). This exposes all the chambers (C). The gun's muzzle is pointed slightly downward and live cartridges are inserted into the chambers, one by one (D). When the cylinder is full, it is swung back into the frame until it locks closed (E).

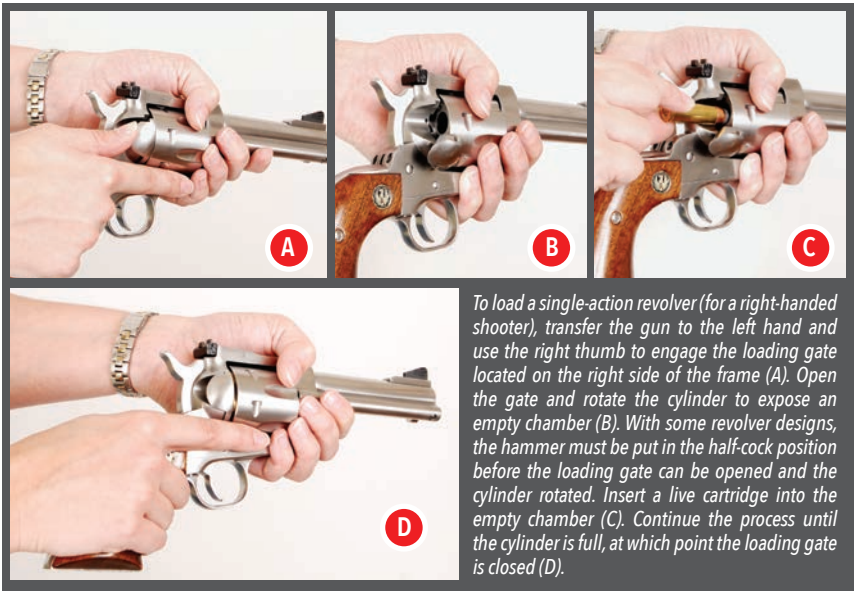
the left. The cylinder should never be swung out violently, as is sometimes seen in motion pictures; this causes damage to the revolver.

Once the cylinder is fully open, the revolver's muzzle is pointed slightly downward. With the revolver held in the left hand, live cartridges are inserted, one by one, into the chambers of the cylinder with the right hand. When the cylinder is full, the left-hand thumb pushes it fully back into the frame. A click will be heard when the cylinder is locked in place by the cylinder latch.

At this point, the revolver is ready to fire. A firing grip may be obtained with the right hand (for right-handed shooters) or the left hand (for left-handed shooters).

LOADING SINGLE-ACTION REVOLVERS

Instead of a cylinder that swings out, single-action revolvers usually have a right-side *loading gate* that is swung open to allow access to one chamber at a time.



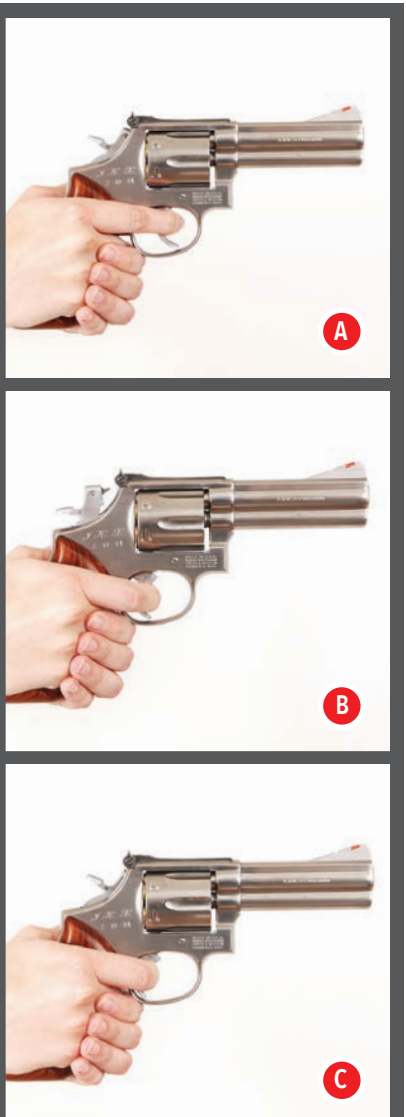
To load a single-action revolver (for a right-handed shooter), transfer the gun to the left hand and use the right thumb to engage the loading gate located on the right side of the frame (A). Open the gate and rotate the cylinder to expose an empty chamber (B). With some revolver designs, the hammer must be put in the half-cock position before the loading gate can be opened and the cylinder rotated. Insert a live cartridge into the empty chamber (C). Continue the process until the cylinder is full, at which point the loading gate is closed (D).

The revolver is initially held in the dominant hand, the hammer put in the half-cock position (on some models), and the loading gate opened with the right-hand thumb. The gun is then transferred to the nondominant hand and is turned slightly clockwise for right-handed shooters or counterclockwise for left-handed shooters, with the muzzle pointed downward (but still in a safe direction). Next, the cylinder is rotated to expose an empty chamber. A fresh cartridge is inserted into the chamber with the right hand, and then the chamber is rotated to expose the next empty chamber. This process is repeated until all the chambers are full, at which point the loading gate is closed.

For left-handed shooters, the revolver is held in the left hand, the hammer is placed in the half-cock position if necessary, and the loading gate opened with the right-hand thumb. With the gun rotated slightly counterclockwise and held with the muzzle down (but still pointed in a safe direction), the cylinder is rotated with the right hand until an empty chamber is fully exposed, and a fresh cartridge inserted into it. The cylinder is rotated to expose the next empty chamber, and the loading process is repeated until all the chambers are full, at which point the loading gate is closed.

FIRING

Firing the revolver involves slightly different processes depending upon whether a double- or single-action gun is used.



Firing a double-action revolver in the double-action mode involves first placing the trigger finger on the trigger (A). The trigger is then pulled, rotating the cylinder to the next chamber and cocking the hammer (B), and then releasing the hammer to fire a cartridge (C).

FIRING DOUBLE-ACTION REVOLVERS

Almost all modern double-action revolvers can be fired in either of two modes: the double-action mode or the single-action mode.

In the double-action mode, the revolver is fired simply by pulling the trigger through its long double-action arc when it is pointed at the target. This action advances the cylinder, and both cocks the hammer and releases it when fully cocked, firing the cartridge. Pulling the trigger again advances the cylinder to the next chamber and cocks and releases the hammer, firing another cartridge. This procedure is repeated until the desired number of shots is fired, or all the cartridges are spent.

Most double-action revolvers can also be fired in the single-action mode. In this mode, with the gun pointed in a safe direction, the hammer is first cocked (either with the thumb of the firing hand in a one-hand shooting grip, or by the thumb of the support or non-firing hand, if a two-hand grip is employed). Cocking the hammer advances the cylinder to the next chamber. The revolver is then fired by simply pulling the trigger. To fire another shot, the hammer is again manually cocked, which advances the cylinder to the next chamber. This process of cocking and firing may be

repeated until the desired number of shots is fired, or until all the cartridges in the cylinder are spent.

The shooter will notice a distinct difference in trigger pull quality and weight in these two modes. In the double-action mode, the trigger pull is long and relatively heavy—usually around 8 to 15 pounds. In the single-action mode, in contrast, the trigger releases after a very short pull, usually at a light weight of only 2 or 3 pounds.

It is also worth noting that some double-action revolvers are designed to work only in the double-action mode. This is accomplished by such design features as shrouds or frames that enclose the hammer, hammers that lack a spur, or the elimination of the internal contact surfaces on the trigger or hammer that produce the single-action pull.

In both the double-action and single-action modes, the shooter must avoid grasping the revolver in such a way that puts the non-firing hand near the barrel/cylinder gap. Hot, high-pressure gas escaping through this gap could injure a finger carelessly placed close to it.

To fire a double-action revolver in the single-action mode, the hammer is cocked with the support-hand thumb (A) or firing-hand thumb. The gun is then aimed with the hammer in the fully cocked position (B). Firing is accomplished simply by pulling the trigger, which causes the hammer to fall and the firing pin to hit the cartridge primer, firing the revolver.

Firing a single-action revolver begins with cocking the hammer with the support-hand thumb (A) or the firing-hand thumb. The gun is then aimed with the hammer in the fully cocked position (B). Firing the pistol is accomplished by pulling the trigger. (C).

FIRING SINGLE-ACTION REVOLVERS

The process for firing single-action revolvers is identical to that for firing double-action revolvers in the single-action mode. With the revolver pointed in a safe direction, the hammer is first cocked (either with the thumb of the firing hand in a one-hand shooting grip, or by the thumb of the support or non-firing hand, if a two-hand grip is employed). Cocking the hammer advances the cylinder to the next chamber. The revolver is then fired by pulling the trigger. To fire another shot, the hammer must again be manually cocked, which once more advances the cylinder to the next chamber. This process of cocking and firing may be repeated until the desired number of shots is discharged, or the cartridges are all fired.

As with the double-action revolver, the single-action revolver shooter must keep the non-firing hand away from the barrel/cylinder gap to avoid injury from the hot, high-pressure gas that escapes through it.

To decock a revolver, first put the trigger finger outside the trigger guard (A). Place the support-hand thumb between the hammer and frame, engage the hammer spur with the firing-hand thumb, and pull the trigger (B). Take the finger off the trigger and ease the hammer forward until it touches the support-hand thumb (C). Remove the support-hand thumb and ease the hammer the rest of the way down (D).

DECOCKING

For a variety of reasons, it may become necessary for a shooter firing a single-action revolver, or a double-action revolver in single-action mode, to lower the hammer on a chamber containing a live cartridge.

To properly lower the cocked hammer of a revolver, first take the trigger finger off the trigger and put it outside the trigger guard, along the frame. Place the support-hand thumb in between the cocked hammer and the frame, and engage the hammer spur with the firing-hand thumb. Pull the trigger, being careful to control the released hammer with the firing-hand thumb. The placement of the support-hand thumb between the hammer and frame prevents the hammer from setting off the cartridge, if it slips.

When the hammer contacts the support-hand thumb, release the trigger and place the trigger finger outside the trigger guard, alongside the frame. Then, with the firing hand thumb still controlling the hammer, remove the support-hand thumb from between the hammer and frame, and ease the hammer the rest of the way down. The revolver may be unloaded or left loaded for future use.

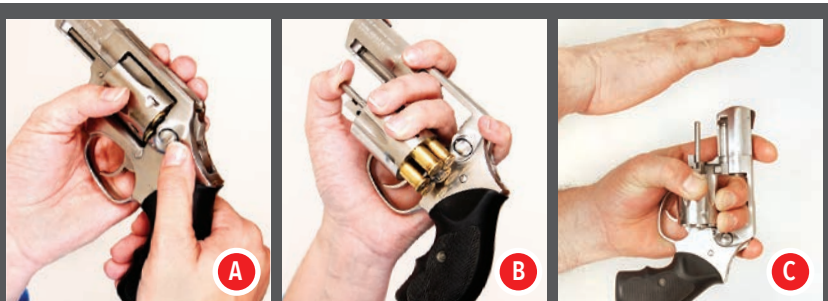
UNLOADING

The mechanisms of double-action and single-action revolvers require unloading procedures that are very different.

UNLOADING DOUBLE-ACTION REVOLVERS

With the revolver held in the right hand, the trigger finger outside the trigger guard, and the muzzle pointing in a safe direction, the right thumb disengages the cylinder latch (except on those models, discussed earlier, in which the latch is on the crane, which requires the use of the left hand). The fingers of the left hand encircle the frame and push the cylinder out of the frame, to the left. With the cylinder fully open, the shooter may choose two methods of removing spent cases and live cartridges from the chambers. With the revolver's muzzle pointing slightly downward, the shooter may push rearward on the ejector rod, raising both the brass cases and live cartridges out of the cylinder. This allows them to be removed, one by one, from the chambers using the right hand (while the left hand supports the revolver).

Alternatively, the shooter may hold the gun in the left hand, with the cylinder open and the left-hand fingers through the opening in the frame that is normally occupied by the cylinder. The muzzle is then pointed straight up, and the left-hand thumb forcefully pushes the ejector rod downward. If hard extraction is encountered, the ejector rod may be hit sharply with the palm of the right hand. Either technique will have the effect of forcefully extracting all the brass and live cartridges from the chambers and dropping them simultaneously out of the cylinder. This technique is used when the shooter wishes to reload the revolver quickly.



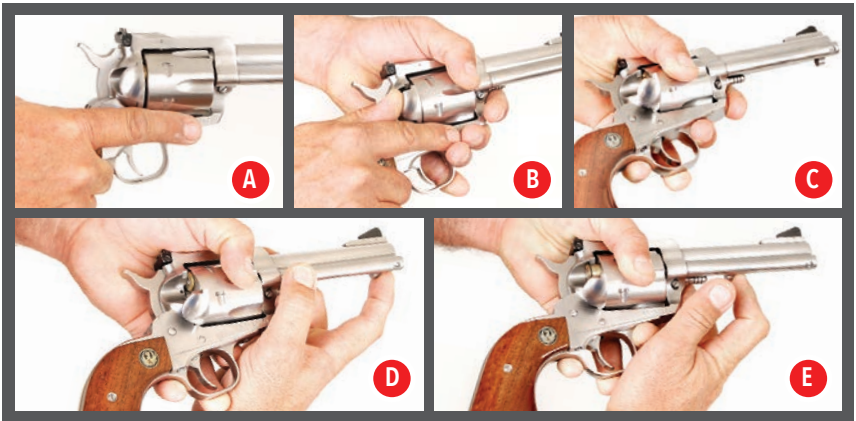
To unload a double-action revolver, grasp the gun in the right hand and disengage the cylinder latch (A). The cylinder is pushed out to the left, in the same manner as when starting the loading procedure. The ejector rod is then pushed fully rearward (B) with the left-hand thumb to extract the spent cartridge cases or live cartridges, which may then be removed manually. Alternatively, the revolver may be pointed upward, and the ejector rod pressed smartly with the right hand (C) to drop the empty cartridge cases and live cartridges out of the chambers.

UNLOADING SINGLE-ACTION REVOLVERS

As with the loading process, the single-action revolver can be unloaded with the revolver held in either hand.

With the revolver held in the right hand, the trigger finger outside of the trigger guard and straight alongside the frame, and the muzzle pointed in a safe direction, the hammer is put in the half-cock position (with some models), and the loading gate opened with the right thumb. The cylinder is rotated until a cartridge case head is fully visible, and then the ejector, located under the barrel, is pulled to the rear, pushing the live round or empty brass out of the chamber. The ejector is allowed to return forward, the cylinder is rotated to the next chamber, and the process is repeated until all chambers are empty.

For left-handed shooters, the unloading process starts with the revolver in the left hand. With the trigger finger outside of the trigger guard and straight alongside the frame, and the muzzle pointed in a safe direction, the hammer is put in the half-cock position (if necessary), and the loading gate opened with the right hand. The cylinder is rotated until a cartridge case head is fully visible, and then the ejector, located under the barrel, is pulled to the rear, pushing the live cartridge or empty brass out of the chamber. The ejector is allowed to return forward, the cylinder is rotated to the next chamber, and the process is repeated until all chambers are empty.



To unload a single-action revolver, the gun is grasped in the firing hand, with the finger outside the trigger guard and the hammer down (A). The loading gate is opened (B), and the cylinder is rotated to align an empty case or live cartridge with the open loading gate (C). Note that some revolver designs require that the hammer be in the half-cock mode for the loading gate to be opened and the cylinder rotated. With an empty case or live cartridge aligned with the loading gate, the index finger of the firing hand engages the ejector rod (D) and pulls the rod rearward to push the case or cartridge out of the chamber (E), where it is manually removed. The cylinder is rotated to the next chamber, and the process repeated until the revolver cylinder is empty.

LESSON II

AMMUNITION & FUNDAMENTALS OF PISTOL SHOOTING

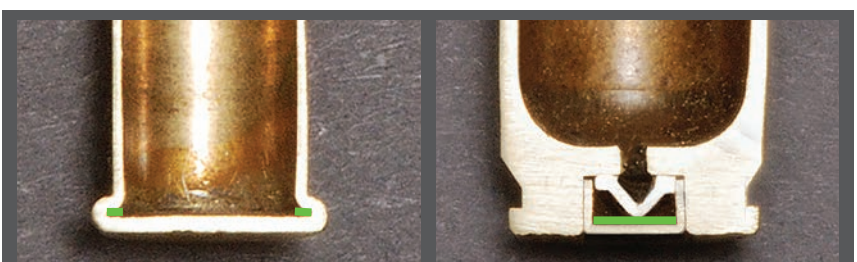
CHAPTER 7

AMMUNITION FUNDAMENTALS

While much attention is paid to pistol design and performance, shooters sometimes forget that it is the cartridge that largely determines the performance of any firearm system. Just as a computer is no more than a device for running software, a pistol is only a tool for getting the most out of a particular cartridge.

CARTRIDGE TYPES

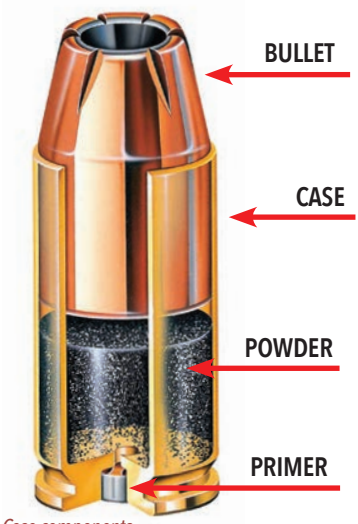
There are two types of metallic cartridges used in modern firearms: *rimfire* cartridges and *centerfire* cartridges. These two cartridge types differ in the location of the pressure-sensitive priming mixture that ignites the gunpowder when the firing pin strikes the case head. In a rimfire cartridge, the priming mixture is contained in a fold in the cartridge rim. In a centerfire cartridge, the priming mixture is contained in a separate component called a *primer*, located in the center of the case head. These differences are explained below.



Cutaways showing rimfire (left) and centerfire cartridge cases. Priming compound is shown in green.

CARTRIDGE COMPONENTS

There are four parts to any modern cartridge: *case, powder, primer* (or *priming compound*), and *bullet*. Modern cartridge cases are generally made of brass (occasionally of steel); some are nickel-plated. The case consists of a *body*, which terminates at one end in a *neck* and *mouth*, and, at the other, in a thick *head*. A centerfire



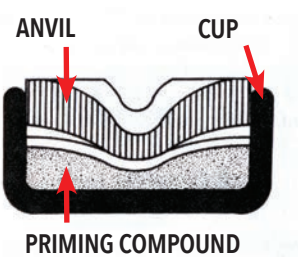
Case components.

cartridge case head contains a primer pocket that holds the primer, and a flash hole that conveys the primer spark through the web of the case to the powder charge. The head also contains a *headstamp* of the cartridge name. A rimfire case head has no primer, but instead has priming compound in a fold in the case rim.

PRIMER

The primer creates the spark that ignites the powder charge. It is essentially a small metal cup containing a layer of pressure-sensitive priming compound, over which is placed an *anvil* whose pointed tip bears against this compound. When the trigger is pulled, the firing pin sharply hits and indents the primer cup, pushing it against the anvil. This, in turn ignites it and creates a spark that goes through a flash hole to the powder. Such primers are located in the center of the case head; cartridges so configured are thus called centerfire cartridges.

Some cartridges lack a central primer, but instead have a thin layer of priming compound that coats the bottom of the inside of the case, including the portion of the case that is folded to create a rim. With such cartridges, the firing pin hits the exposed case rim, indenting the thin metal and compressing the priming compound to create a spark. Today's rimfire cartridges are limited to relatively low-power .17- and .22-caliber rounds.



Cutaway of primer components, showing cup, priming compound, and anvil.

POWDER

Smokeless powder is made primarily of nitrocellulose (so-called *single-base powders*) or a combination of nitrocellulose and nitroglycerin (*double-base powders*). When the powder is ignited by the primer, it is rapidly converted to a large volume of hot, expanding gas that greatly increases the pressure inside the case and pushes the bullet down the barrel at high speed.

BULLET

Pistol bullets have a variety of shapes and types of construction. The bullet is the projectile that exits the barrel.

Bullet performance in both the air and at the target depends upon bullet construction and shape.

CARTRIDGE NOMENCLATURE

Cartridge nomenclature can be confusing, as there has never been a standardized procedure for naming cartridges. Basically, pistol cartridge names have two parts. The first part of the name is a number, either in millimeters or in decimal inch measurements (known as caliber), that represents either the bullet or bore diameter (often only approximately). Sometimes there are two numbers; European cartridges in particular are designated by both the bullet diameter in millimeters and the case length in millimeters (e.g., 9 x 19 mm).

The second part of the designation is far more variable, and may represent any of several things: the name of the company responsible for the cartridge's development (.40 Smith & Wesson); the individual (.454 Casull) who originated or designed the cartridge; a popular or descriptive name (.38 Special); or, with military-designed cartridges, the firearm in which it was used (.455 Webley). A few cartridges have both decimal and metric designations, such as the .32 ACP and 7.65 mm Auto. Finally, some cartridges may be known by more than one name (9 mm Para, 9 mm Parabellum, 9 mm Luger, 9 x 19 mm).

For the pistol owner to select the proper ammunition for his or her firearm, all that is required is to match the designation on the barrel and/or

Pistol cartridges have a variety of bullet shapes and types of construction. From left, lead wadcutter, lead round-nose, lead semi-wadcutter, jacketed soft-nose, semi-jacketed hollow-point, full metal jacket, jacketed truncated cone, jacketed hollow-point.

The proper ammunition for a given pistol is determined by matching the markings on the barrel (A) with the cartridge designation on the headstamp (B) and the cartridge box (C).

slide with that on the cartridge box and the cartridge headstamp. If the barrel or slide of the firearm lacks a cartridge designation, or if there is a suspicion that the pistol has been modified to fire a cartridge other than what is indicated by the markings, the gun should be taken to a competent gunsmith for an evaluation.

AMMUNITION SAFETY

The primary factor in ammunition safety involves using the proper ammunition for the firearm. As mentioned above, the pistol shooter must ensure that the designation on the cartridge box, headstamp, and gun barrel or slide all match.

Cartridges designated +P and +P+ are loaded to higher pressures than standard cartridges, and must only be used in guns certified for them. Check the markings on the gun and the pistol's owner's manual, or contact the manufacturer to verify that your gun can safely fire +P or +P+ cartridges.

It should also be noted that some pistols are chambered for low-pressure cartridges that are identical in dimensions to higher-pressure rounds (such as the .38 Auto and .38 Super Auto +P). Such higher-pressure cartridges should never be fired in a gun designed for lower-pressure ammunition.

AMMUNITION IN FIRES

Extensive tests have shown that ammunition in a fire does not explode or propel the bullet to dangerous velocities. In general, cartridges exposed to fire will burst, propelling the bullet only a few feet. The primer may be expelled at relatively high speed, as well as small shards of brass from the ruptured case, but these objects generally represent a danger only to the eyes, and only at very close range.

SAFE AMMUNITION STORAGE

Ammunition should be stored in a cool and dry place; it can withstand the normal variations in temperature and humidity found in the typical home environment. Prolonged exposure to high temperatures is to be avoided. Also to be avoided is contamination by water, solvents, lubricants, and so forth. Store ammunition in a location off the floor and protected from exposure to water, as from a leaky roof or damp basement.

Ammunition should also be stored in a manner to keep it from unauthorized persons, such as children and visitors to the home. Each gun owner has to determine what level of security is best suited for his or her environment. In some cases, the pistol owner may choose to keep ammunition in a lockable container. Most gun shops will be able to make recommendations regarding the type of lockable container suitable for this purpose.

DISPOSAL OF UNSERVICEABLE AMMUNITION

Ammunition that has been in a fire, has been immersed in water, or has been exposed to solvents, oils, or other liquids should not be fired. Instead, such ammunition should be considered unserviceable and must be disposed of. Never dispose of such ammunition by burying it, dumping it in a waterway, or selling it at a yard sale. Proper disposal methods include delivery to a hazardous materials disposal center or return of the unserviceable ammunition to the original manufacturer.

More information on ammunition safety can be found in free brochures from the Sporting Arms and Ammunition Manufacturers' Institute (SAAMI), 11 Mile Hill Road, Newtown, CT06470-2359. The organization's website is at www.saami.org.

CARTRIDGE MALFUNCTIONS

There are three types of cartridge malfunctions: *misfire*, *hangfire*, and *squib load*:

MISFIRE. A failure of a cartridge to ignite when the primer or case rim has been struck by the firing pin. This situation may be caused by a defect in the cartridge or by a defect in the pistol that causes a weak firing pin strike.

HANGFIRE. A perceptible delay in the ignition of a cartridge after the primer or case has been struck by the firing pin. This delay may last several seconds. When a cartridge fails to fire immediately, it will not be known at first if the problem is a misfire or a hangfire. Therefore:

- Keep the pistol pointed in a safe direction, as a hangfire condition might exist and cause the pistol to fire after a significant delay.
- Don't attempt to open the action of the pistol to remove the cartridge for at least 30 seconds.

SQUIB LOAD. The cartridge develops less than normal pressure or velocity after ignition of a cartridge. Squib loads can cause a bullet to fail to exit the muzzle and become lodged in the bore. If anything unusual is noticed upon firing a shot, such as a reduction in noise, muzzle flash, or recoil, a squib load should be suspected. Therefore:

- Stop firing immediately.
- Keep the muzzle pointed in a safe direction for at least 30 seconds before unloading the pistol. Check to ensure that all chambers are empty.
- With the action open, carefully run a cleaning rod through the barrel to be sure that it is not obstructed. If a bullet is lodged in the barrel, the firing of another shot could cause injury or damage to the gun.

CHAPTER 8

FUNDAMENTALS OF PISTOL SHOOTING

Successful pistol shooting is based upon the fundamental principles of marksmanship. These fundamentals are *aiming, breath control, hold control, trigger control* and *follow-through*. Although these fundamentals may be applied in different ways, depending upon whether the pistol is used for plinking, hunting, formal target shooting, or self-defense, they must always be observed for the most consistent results.

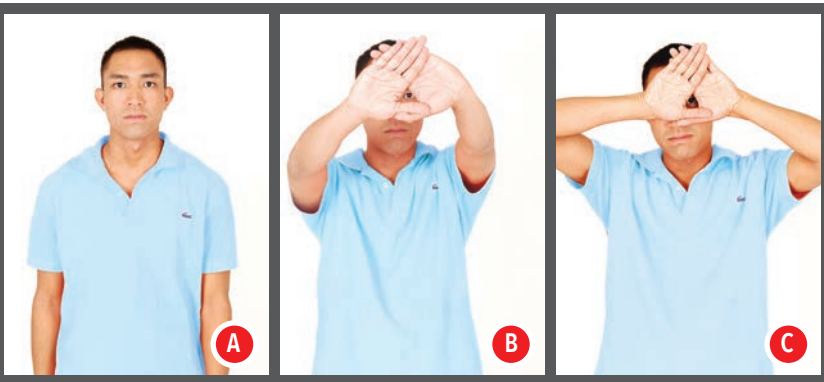
Prior to mastering these fundamentals, the pistol shooter must address two other critical aspects of technique: *hand and eye dominance*, and *grip*.

HAND AND EYE DOMINANCE

Shooting any firearm involves coordination between the eyes and hands. For the majority of people, best shooting is accomplished by firing the gun with the dominant hand and aiming with the dominant eye.

Most people have a *dominant hand*, making them definitely right- or left-handed. Relatively few people are truly *ambidextrous*, or able to perform skills involving manual dexterity equally well with either hand. In most cases, the dominant hand is easily determined, as it is the hand that is used for most one-handed tasks. The dominant hand and arm are often stronger and demonstrate better coordination.

Just as one hand tends to be dominant over the other, the brain also has a preference for one eye over the other, which is known as eye dominance. Most often the dominant eye is on the same side as the dominant hand, but there are many individuals in whom this is not the case. Many people are not even aware that they have a dominant eye, as in almost all normal activities, both eyes act in concert, and there are



Establishing eye dominance. First, focus on a distant object with both eyes open (A). Extend the arms forward with the hands brought together to form a hole between the thumbs, and look at the object through this hole (B). Bring the hands close to the face, still observing the object (C). When the hands are just a few inches from the face, the hole between the hands will be directly in front of the dominant eye.

few if any normal activities in which one eye only is used. Eye dominance is important in shooting, as aiming is often done using only one eye.

Determining eye dominance is easily accomplished through the following exercise. With both eyes open, focus on a small object at some distance (at least 10 to 12 feet away). Then extend both hands forward at arm's length, bring the hands together to form a small hole between the webs of the thumbs, and look at the distant object through this hole. Slowly bring the hands to the face, keeping the object in view through the hole between the hands. When the hands are only a few inches from the face, they will be in front of one eye or the other. That eye is the dominant eye. Alternatively, this exercise may be done using a shooting partner, coach, or firearm instructor to observe which eye is dominant.

GRIP

There are many shooting positions that may be used for firing a pistol, some of which are specific to certain shooting disciplines. Even before any shooting positions can be introduced, the new pistol shooter must know how to assume a proper one- or two-handed grip.

THE TWO-HANDED GRIP

For most pistol shooting activities, a two-handed grip will be used. The vast majority of pistol shooters find that such a grip provides more control of the firearm, steadier aiming, better recoil absorption, and stronger gun retention.

To assume the grip, first grasp the pistol behind the muzzle in the support (non-firing) hand. Make a "Y" of the thumb and fingers of the

The steps in assuming a proper two-handed grip on a handgun. Letters refer to steps described in text.

firing hand (A), and place the gun's backstrap firmly in the web of the firing-hand thumb (B). When this is done, wrap the firing-hand fingers around the pistol's grip (C).

Next, bring the support hand around the front of the grip (D) so its fingers overlie and overlap the firing-hand fingers (E). The knuckles of the second joint of the support-hand fingers should be roughly aligned with the same knuckles of the firing hand.

Gripping the gun with tension from both the support and firing hands creates a steadier hold on the pistol.

With a semi-automatic pistol, the support-hand thumb should lie directly forward of and below the shooting-hand thumb (F). With a revolver, the support-hand thumb lies directly overtop the firing-hand thumb (G).

Grip consistency is essential for accurate shooting. Use dry-fire practice to check and reinforce the correct trigger finger placement. Note that the proper grip for one firearm may not be appropriate for another firearm; your grip may vary depending upon the shape of a gun's grip frame. Also, your grip may vary slightly from position to position.

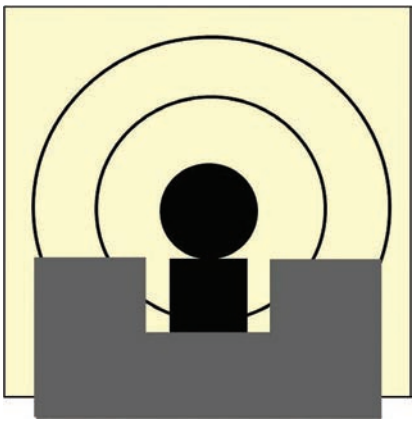
THE ONE-HANDED GRIP

The one-handed grip was at one time the most common way to hold a pistol. Today it is used primarily in certain forms of target competition, such as NRA and International bull's-eye shooting. One-handed shooting may also be practiced by those who own a pistol for self-defense.

AIMING

Aiming is the process of aligning a firearm with a target so a bullet fired from that firearm will strike the target where desired. In other words, the point of aim will coincide with the point of impact. Aiming is accomplished using the gun's sights. Most pistols feature *iron sights* (non-optical sights) consisting of a flat-topped front post and a square-cornered rear notch.

Aiming consists of two stages: *sight alignment* and *sight picture*. Sight alignment refers to the proper positioning of the shooting eye, the rear sight, and the front sight in relation to each other. With the notch-and-post system on most pistols, proper sight alignment for precise shooting occurs when the front post is centered laterally in the rear notch, with the same amount of space on either side of the post, and the tops of both the post and the notch are aligned.



Aiming involves both the proper relationship between the front and rear sights (sight alignment) and the proper relationship of the aligned sights with the target (sight picture).

Sight picture refers to the relationship between the gun's properly aligned sights and the target. Visual focus with iron pistol sights should be on the front sight. This will make both the rear sight and the target somewhat blurry, but in almost all situations they will be sufficiently clear for the shooter to establish good sight alignment and proper sight picture.

BREATH CONTROL

Breath control is the method used to minimize gun movement due to breathing. With each breath, your ribcage expands and your shoulders rise slightly. This movement is transmitted to your arms, causing your pistol to shift position in relation to the target.

Breath control is achieved by simply taking a few normal breaths, expelling about half the air out of the lungs, and then holding the breath for the few seconds required to fire the shot. Typically, maximum steadiness is achieved within about three to eight seconds after breathing has stopped; the shot should thus be fired within that time period. After the shot is fired, the shooter relaxes, resumes breathing, and starts the process over again.

HOLD CONTROL

Maximum accuracy is achieved when the firearm is held motionless during the process of aiming and firing. Hold control is the method by which both the body and the gun are held as still as possible during the period of time when the shot is fired.

Hold control is achieved primarily through a proper grip and a well-balanced, stable shooting position that is naturally aligned with the target, as well as extensive practice.

TRIGGER CONTROL

Trigger control is one of the most important shooting fundamentals. The term refers to the technique of pulling the trigger without causing any movement of the aligned sights.

Proper trigger control is achieved by applying gradually increasing pressure to the trigger until the shot is fired. This pressure is applied in a rearward direction, not to the side or up or

Proper trigger finger placement on a revolver.

Proper trigger finger placement on a semi-automatic pistol.

The proper gap between the trigger finger and the frame of a revolver (top) and a semi-automatic pistol.

down. The goal of this technique is to produce a "surprise break," in which the shooter cannot predict the exact moment at which the gun will fire.

The smoother the trigger is pulled, the less the gun's sights will be disturbed during the firing process, even when the time period is compressed. Good trigger control also involves the proper placement of the trigger finger on the trigger. A properly placed trigger finger allows the force of the pull to be directed straight to the rear, minimizing a tendency to jerk the gun to the right or left. Proper placement also allows the gun to be fired by moving only the trigger finger.

For single-action shooting, the trigger should be pulled using the middle of the last pad of the trigger finger. For double-action shooting, the trigger should be placed approximately on the joint between the last and middle pads of the trigger finger. The ideal trigger finger placement can be achieved through dry-fire practice at a sheet of white paper. Adjust your finger position until there is no movement in sight alignment when the trigger is pulled and the hammer or striker falls. Note that the proper contact point on the trigger finger may change from gun to gun and firing position to firing position.

If possible, there should also be a small gap between the trigger finger and the pistol frame to prevent the finger from contacting or dragging on the frame

and thus disturbing sight alignment as the trigger is pulled.

FOLLOW-THROUGH

The concept of follow-through is common to many sports, such as golf, tennis, baseball, bowling, and archery. In shooting, follow-through is the effort made by the shooter to integrate, maintain, and continue all shooting fundamentals before, during, and immediately after firing the shot.

Proper follow-through minimizes gun movement as the shot is fired. Proper follow-through does more than just ensure adherence to the shooting fundamentals through the firing of the shot. Follow-through also sets up any successive shots, whenever a shooter may be called upon to fire multiple times accurately and rapidly.

During follow-through, the trigger finger pressure is relaxed, allowing the trigger to reset. However, the trigger finger still maintains contact with the trigger face.

All of the fundamentals of pistol shooting are integrated in the firing of a shot, no matter what the target. The shooter aims (maintaining both sight alignment and the proper sight picture) while momentarily stopping respiration (breath control) and movement (hold control). Only the trigger finger, properly placed, is moved to fire the shot (trigger control). Before, during, and after the shot is fired, the shooter observes all the proper shooting fundamentals (follow-through). The two most important fundamentals are aiming and trigger control.

Proper follow-through, along with good recoil control, combine to allow this shooter to fire several accurate shots in rapid succession.

CHAPTER 9

FUNDAMENTALS OF PISTOL SHOOTING POSITIONS

As presented in the previous chapter, the fundamentals of pistol marksmanship are observed regardless of the type of pistol shooting being performed. Effective shooting takes more than just adherence to these fundamentals. An effective *shooting position* is the platform from which the fundamentals are applied.

ELEMENTS OF A SHOOTING POSITION

Although there are many effective shooting positions for different situations, all share a number of common characteristics: *consistency, balance, support, natural aiming area,* and *comfort*.

CONSISTENCY

Consistency is critical because variations in position produce variations in impact point and/or group size. You must strive to assume each position in the same exact way every time.

BALANCE

Balance is also an essential component of a proper firing position. Balance is usually best achieved in a stance with the feet spaced at shoulder width,

A balanced shooting position.

even weight distribution, and a slightly forward lean with the majority of the weight on the balls of the feet.

The benchrest position, in which sandbags are used to support the wrists, offers the greatest shooting support.

SUPPORT

A good position also offers support to minimize gun movement while aiming. Support can be provided by the skeleton, muscle tension, or an external object, such as sandbags on a bench. A two-handed grip, for example, efficiently uses muscle tension to provide more support than a one-handed grip. Generally, standing positions offer less support than kneeling and prone positions. The benchrest position provides

In the NAA (natural aiming area) exercise, the shooter first assumes a position with the gun aimed at a target (A). Then the eyes are closed, and the gun is moved in a small circle (B) until it comes to rest in the position that feels most naturally stable and comfortable. The eyes are then opened (C) and the shooter observes where the pistol's sights are in relation to the target. If the "wobble area" of the sights is not centered on the target, the shooter's foot position or some other aspect of the stance should be modified to achieve the proper sight picture while taking advantage of the body's natural alignment.

the most support of any shooting position. Even the more limited support offered by one-handed positions can be maximized by ensuring that the stance is balanced, the grip is firm, and the shooter is properly aligned with the target.

NATURAL AIMING AREA (NAA)

All effective firing positions incorporate the shooter's natural aiming area (NAA). NAA refers to the natural alignment of the shooter and the gun in any position. To determine your NAA, first assume your position, with your eyes open and your gun aimed at a target. Next, close your eyes. With your eyes still closed, make a circle with the pistol, and then settle into the position that feels most stable and comfortable. Then, open your eyes and observe where your gun's sights are pointed in relation to the target. Ideally, the sight picture will be aligned with the target. If the sight picture is aligned to the right or left or slightly high or low, you will have to modify your foot position or some other aspect of your stance to achieve the proper natural alignment.

Of course, the sight picture does not stay perfectly still, as it is impossible to hold a pistol without some movement. When proper NAA is achieved, the "wobble area" of the sights will be centered on the target.

You should make every effort to adopt this same alignment each time

the stance is assumed in order to take advantage of your NAA. Also, periodically repeat the NAA exercise, as changes in shooting experience, posture, age, and so forth can affect the body's natural alignment.

COMFORT

Finally, a proper position should be comfortable. A stance that is not comfortable—one that is forced, awkward, strained, or painful—is unlikely to be consistent or stable, and thus will not contribute to effective shooting. When practicing shooting positions, you should be conscious of how natural and comfortable each position is.

LEARNING A SHOOTING POSITION

The pistol shooter may have the need to learn only one or two, or many, shooting positions. Whether the position is simple or complex, the process for mastering it is the same and involves a specific process.

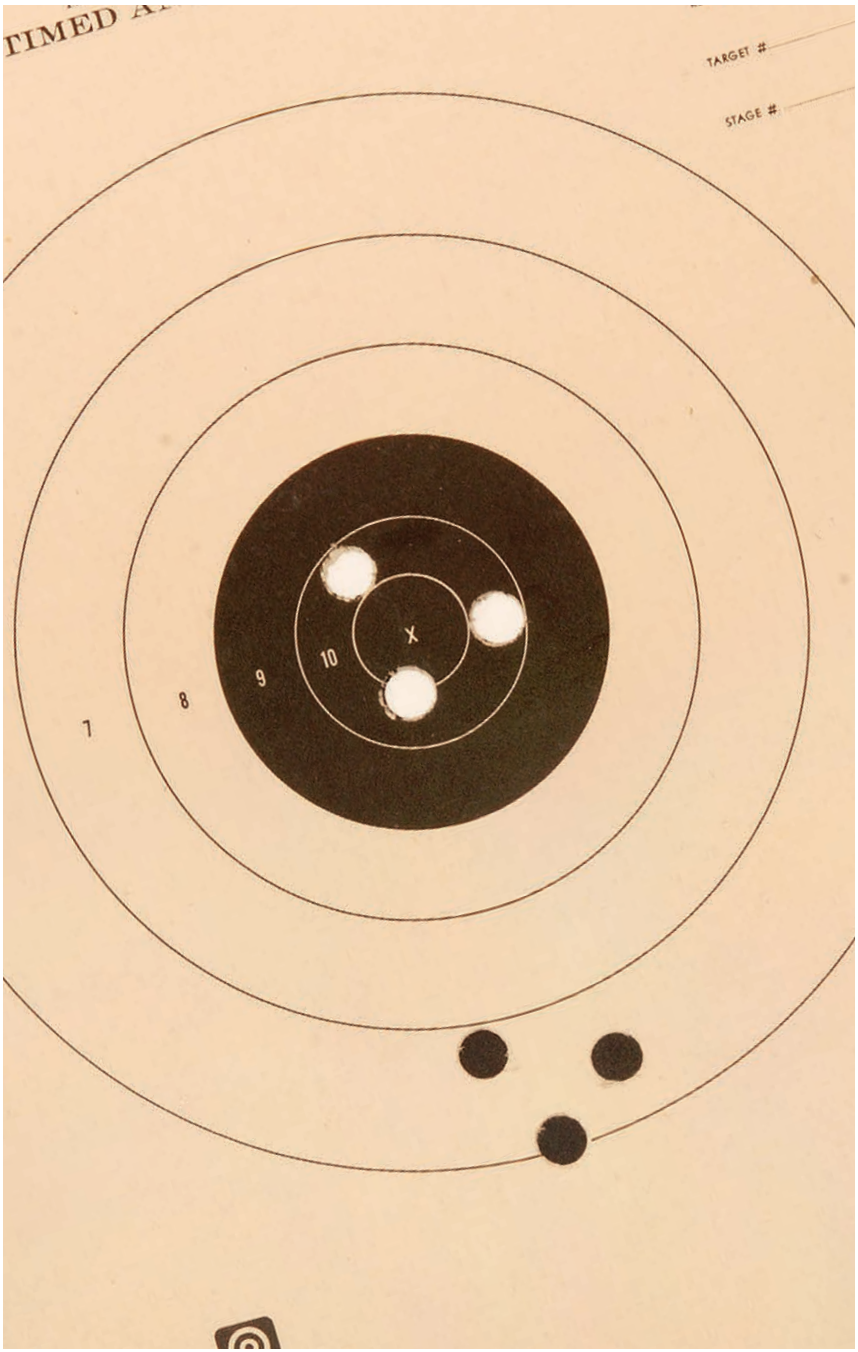
The first step in learning a shooting position is to study the position. This means knowing what is involved in the position, how it is assumed, and the purpose of the position.

The second step is to *practice the position without a pistol*. Just about every shooting position places special demands upon the shooter in terms of balance, coordination, hand and foot placement, and more. Practicing these aspects of the position without a pistol simplifies the position, breaking the learning process into a number of steps that build upon each other.

Next, *practice the position with an unloaded pistol*. Any shooting position can effectively be practiced using an empty gun in the dry-fire mode, with care taken to observe all dry-firing safety rules.

During dry-fire practice, *align the position with the target*. Each shooter will have a different alignment with the target for each shooting position. Perform the natural aiming area exercise described earlier in this chapter with every shooting position learned.

Once the position has been acquired using an empty gun, *test the position* with live ammunition. Live-fire testing will reveal if there are aspects of the position, or the shooting fundamentals, that need to be corrected.


TIMED
TARGET #
STAGE #
X
10
9
8
7

LESSON III

PISTOL SHOOTING SKILLS

CHAPTER 10

THE BENCHREST POSITION

The most fundamental position that any new pistol shooter should learn is the benchrest position. The position derives its name from the fact that the shooter fires from a seated position, using a rest on a shooting bench for pistol support.

PREPARING TO USE THE BENCHREST POSITION

Before assuming the benchrest position, a number of items must be assembled. First and foremost is a *shooting bench* approximately 30 to 36 inches high, with sufficient space for the shooter's elbows, sandbag rests, ammunition, and spotting scope, if used. Sturdiness and stability are a must; card tables, planks across sawhorses, etc., do not afford the steady rest necessary for accurate shooting. Best are benches designed expressly for shooters; some may have a cutout for the shooter's upper body.

The next requirement is a *chair or stool* for use with the shooting bench. This should be high enough that about half of the shooter's torso is above the bench. Proper height in relation to the shooter's legs is also important. The seat should allow the shooter's feet to be flat on the ground, with an angle at the knee joint of approximately 80 to 90 degrees. The exact angle will vary somewhat, depending upon the leg length of the shooter.

Also needed is a *rest* for supporting the pistol. There are many types of these,

from simple sandbags to elaborate devices providing support for both the pistol and the shooting hand, and offering various types of adjustments. Even homemade rests, such as old telephone books or a rolled-up jacket, can be used with some success, although such expedients often do not offer the consistent performance of products made specifically for supporting firearms.

For extended benchrest sessions with heavy-recoiling centerfire pistols, an elbow pad is often recommended.

Another accessory that can make the benchrest range session more productive is a *spotting scope*, an optical device that allows the shooter to see bullet holes at 25 to 50 yards and more.

ASSUMING THE BENCHREST POSITION

Before assuming the benchrest position, ensure that the bench and shooting stool are on level ground and do not rock or wobble. Sit at the bench with the chair or stool positioned to allow a comfortable, upright position with your feet flat on the ground and your body weight equally distributed. Your upper body should be near the bench top, but not touching it.

Once a comfortable and stable seated position is achieved, use the unloaded pistol to try different rest positions to find the one offering the greatest stability, balance, and comfort. Rest height is of considerable importance. The proper height allows your arms and elbows to contact the rest and bench top comfortably and naturally, and allows your head to be in a natural upright position.

There are many ways in which a rest may be used with a pistol. For example, a sandbag may support the wrists and palms, but not the pistol itself. Alternatively, the rest may support some or most of the gun's weight, either on the frame or barrel (if the latter is long enough). With either method, the barrel must

Proper benchrest technique: head erect, back straight, feet solidly on the ground, arms extended, pistol in a proper two-handed grip at eye level, and wrists supported by the sandbag rest.

Some of the accessories useful for benchrest shooting: rest, sandbags, spotting scope, targets, posters, stapler, and eye and hearing protection.

protrude significantly—at least 2 inches—beyond the rest. Also, for best accuracy, the bottom of the gun butt should not contact the bench top or any other hard surface. Finally, it must be remembered that the barrel/cylinder gap of revolvers allows the escape of hot, high-pressure gases, which can discolor any object near this gap.

Once you have obtained a comfortable, stable, and balanced position, with the pistol properly supported, dry-fire the pistol to verify the position. A proper position allows the pistol to be held and dry-fired with no movement of the sights.

While the pistol may be fired with one hand, best accuracy, control, and hold stability are achieved with a two-handed grip, as presented in Chapter 9, "Fundamentals of Pistol Shooting Positions." This is particularly true for heavy-recoiling pistols.

After successfully dry-firing, you may proceed to live ammunition. Recoil may require minor modifications of the position. In general, the most accurate benchrest shooting is done with relaxed hands and arms, rather than a "death grip."

USING THE BENCHREST POSITION TO IMPROVE PISTOL SHOOTING

Many novice pistol owners, when shooting offhand or from various other pistol positions, spend most of their concentration and energy in trying to hold the pistol steady on target and, as a result, often fail to observe all the shooting fundamentals. The benchrest position, because it eliminates the need to hold the pistol steady, allows the shooter to focus on the fundamentals, and is thus a good tool for refining shooting technique.

Shooting from the benchrest position is not just for beginners, however. Most top competitive shooters regularly spend time shooting groups from the benchrest position. The benchrest position is ideal for evaluating the effects of different loads, gun modifications, and other factors on accuracy. For the same reason, it is the position most often used to perform accuracy comparisons between different guns.

Proper seat height is critical to the benchrest position. Seat position in (A) is too low; after adjustment (B), seat is at proper height (C).

CHAPTER 11

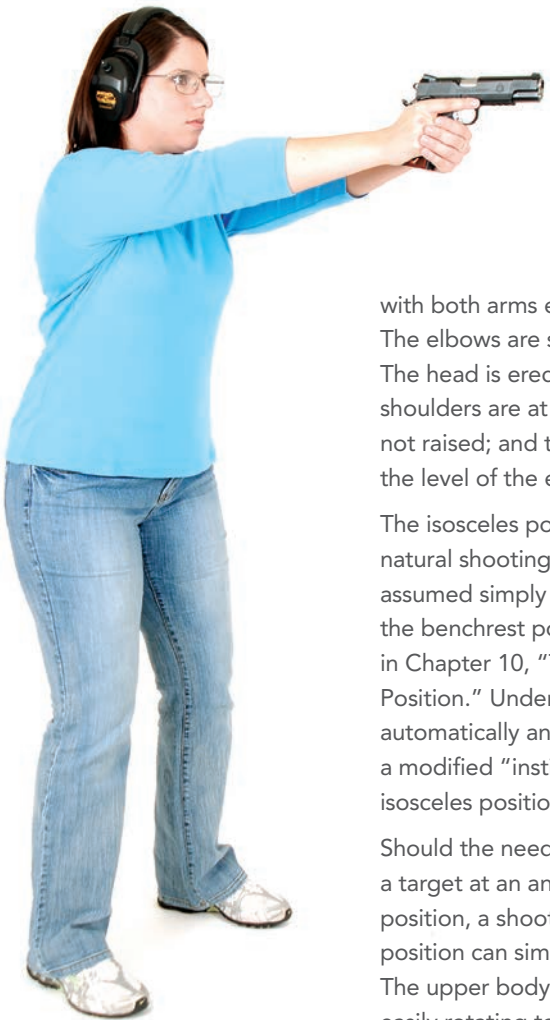
STANDING PISTOL SHOOTING POSITIONS

Except for certain types of pistol competition in which a one-handed position is mandated, most shooters will use two hands to shoot a pistol. A two-hand hold is steadier, allowing greater accuracy, and also permits a faster recovery from recoil, which can be important in hunting, practical pistol competition, or self-defense.

One basic two-handed shooting position is presented in this manual: the *isosceles position*.

THE ISOSCELES POSITION

The isosceles position is so named because in this position the extended arms, when seen from above, resemble an isosceles triangle. In the isosceles position, the feet are placed at about shoulder width, and the feet and shoulders are square with the target. The knees are slightly bent and the weight is slightly forward, on the balls of the feet. The pistol is grasped in a normal two-handed grip, and is held



The isosceles position. The weight is equally distributed on both feet, which are on a line perpendicular to the target. The body is straight or leaning slightly forward, the head is erect, and the pistol is held at eye level in a two-handed hold, with both arms extended fully forward.

with both arms extended fully forward. The elbows are straight but not locked. The head is erect, not hunched; the shoulders are at their normal height, not raised; and the firearm is lifted to the level of the eyes for aiming.

The isosceles position is a very natural shooting position, and may be assumed simply by standing up from the benchrest position, described in Chapter 10, "The Benchrest Position." Under stress, many shooters automatically and reflexively adopt a modified "instinctive" form of the isosceles position.

Should the need arise to address a target at an angle to the original position, a shooter using the isosceles position can simply pivot at the waist. The upper body acts like a turret, easily rotating to the right or left.

The primary advantage of the isosceles position for novice pistol shooters is that it is natural and easy to assume. As mentioned earlier, for most shooters, simply standing up from the benchrest position puts them in a close approximation of the isosceles position.

LESSON IV

CLEANING, STORAGE, & TRAINING OPPORTUNITIES

CHAPTER 12

CLEANING AND MAINTAINING YOUR PISTOL

NO AMMUNITION IN THE GUN CLEANING AREA

A gun that is regularly fired accumulates dirt, powder residue, and other foreign matter, all of which can make it more prone to stoppage, wear, and corrosion. Even a firearm that is left untouched on a shelf or in a drawer can accumulate sufficient dust and dirt to affect functioning. A gun that is properly maintained at regular intervals—including regular cleaning, inspection, and lubrication, as well as a periodic gunsmith checkup—will function more reliably, shoot more accurately, and last longer than one whose care is neglected.

Every gun owner should have a gun cleaning kit consisting of:

- Cloth patches
- A cleaning rod and cleaning rod attachments, including a bore brush and tips to hold patches
- A small brush (for cleaning gun crevices)
- Gun solvent (bore cleaner)
- Gun oil
- A soft cloth

Kits containing all or most of these items are commercially available at any gun shop and many hardware,

sporting goods, and large discount stores. Make sure that any such kit, or any individual cleaning rod, jag (a tip designed specifically to hold a cleaning patch), or bore brush is the proper size for your pistol's caliber. Also, select patches of the proper size.

Additionally, you need safety glasses to protect your eyes from cleaning solvents and spring-loaded parts that may be inadvertently released from your gun. Also recommended are thin rubber gloves to protect your skin from exposure to solvents, lubricants, firing residues, and lead particles. Be sure your gun-cleaning area has good ventilation, and do not eat, drink, or smoke while performing firearm cleaning or maintenance.

The first step in cleaning your firearm is to ensure that it is unloaded. ***No ammunition should be in the cleaning area.***

Next, disassemble your firearm according to the instructions in the owner's manual for the gun. If you do not have an owner's manual, you can usually obtain one from your gun's manufacturer. Also, a professional gunsmith may be able to show you how to disassemble your gun.

Attach the bore brush to the cleaning rod and moisten it with gun cleaning solvent. If possible, use a dropper or spray to put solvent onto the brush; avoid dipping the brush in the solvent, as this contaminates the clean solvent with dirt and grit that may be

The components of a basic gun cleaning kit, including (A) a bore brush and jags for holding cleaning patches, (B) a cleaning rod, (C) a small brush, (D) cotton cleaning patches, (E) gun oil, (F) gun cleaning solvent, (G) a soft cloth, and (H) eye protection. Also shown are thin rubber gloves (I), which may help protect the skin from dirt, oil, and solvent.

on the brush. Push the brush all the way through the bore, then pull it back through. Do not try to reverse direction with the brush still in the bore. Run the brush through the bore about 10 to 15 times, adding solvent to it as necessary.

Attach the jag to the cleaning rod and push a patch moistened with solvent through the bore. This patch will come out quite dirty with the material that was loosened by the solvent and the bore brush. Run several dry patches through the bore. These should come out progressively cleaner, until virtually no fouling is visible. If the patches keep coming out somewhat dirty, repeat the cleaning process as outlined above. Visually check the *bore* for any remaining fouling, lead, or powder residue.

In cleaning a revolver, the cylinders are cleaned with the bore brush and patches using much the same technique used in cleaning the bore.

Once the bore is clean, residue must be removed from other gun surfaces. Use a solvent-soaked patch, cotton swab, or toothbrush, as appropriate, to loosen and remove powder residue and other matter from working surfaces. On a semi-automatic pistol, such surfaces include the interior of the slide, the slide and frame rails, and the exterior barrel surface. On a revolver, such surfaces include the crane, frame, and any action parts that are accessed by the removal of the stocks. Finally, reassemble the pistol and wipe it with a soft, lightly oiled cloth.

Maintenance of semi-automatic pistol magazines is critical for proper pistol functioning. Most magazines are designed to be disassembled; instructions should be in your owner's manual. Once the magazine is disassembled, remove dirt and powder residue from inside the magazine body using a brush and patches.

In most cases, the owner's manual will present only basic disassembly instructions for general cleaning and maintenance; further gun disassembly by the owner is usually discouraged. However, dirt and powder residue collects in interior action areas that can be accessed only by complete disassembly. A partial cleaning of these inaccessible areas may be achieved by flushing the action with gun cleaner or a solvent that leaves no residue, such as brake cleaner. The solvent is sprayed into the action in such a way as to allow the excess to drain freely (such as with the stocks removed), dissolving and flushing away loosened dirt and residue.

INSPECTING YOUR FIREARM

The ideal time for giving your firearm a thorough visual inspection is when it is disassembled after cleaning. Defects are easiest to spot on parts that are free of dirt, residue, and oil. Look for

cracks; burred, pitted, or indented areas; broken components; and so forth. Also be aware of screws or pins that have worked loose, sights that have drifted from recoil forces, or parts that seem to have shifted from their normal positions.

Additionally, every time you pick up your firearm, whether to practice at the range, dry-fire in your basement, or clean it in your workroom, you should give it a cursory inspection (after, of course, making sure it is unloaded). Look for the buildup of firing residues, grip screws or other parts that have become loose, excessive oil leaking out of the joints between parts, and any other condition that may affect the functioning of the gun. Getting in the habit of making this kind of inspection will help you determine when cleaning or lubrication is necessary, or if there are any conditions that may make your gun unsafe or unreliable.

LUBRICATING YOUR FIREARM

Cleaning powder residues and other foreign material from the gun usually

Lubrication points for a revolver include the cylinder latch (A), the junction of the trigger and the frame (B), the crane (C), the ejector rod (D), and alongside the hammer where it meets the frame (E). With the hammer back, a few drops of oil may also be dripped into the action to lubricate internal action parts. Internal parts may also be accessed for lubrication by removing the stocks.

Lubrication points for a semi-automatic pistol include the slide and frame rails (A), the hammer (B) and trigger (C) where they enter the frame, the muzzle end of the barrel (D) and guide rod (E), and the top of the chamber end of the barrel (F).

removes necessary lubrication from working surfaces. Thus, it is essential to re-lubricate the firearm after it has been cleaned.

The owner's manual for your gun will likely contain detailed instructions on the proper method of lubrication. In general, lubricate revolvers in the areas of the crane, ejector rod, and cylinder latch, and around the sides of the hammer and trigger. With the stocks removed, you may also squirt oil into action areas to smooth the trigger pull.

Semi-automatic pistols should be lubricated on the slide and frame rails, at the muzzle (where the barrel engages the slide), and in the barrel locking area. Also apply a small amount of oil to the sides of the trigger and hammer where they enter the frame, and drip a little lubricant into action areas. If you desire, you may put a very light film of oil on the exterior surface of the magazines to prevent rust.

It is critical not to allow oil to be transferred to the cartridges carried within the magazine. Oil on cartridge cases can penetrate to the primer, making its ignition unreliable, and may

have other harmful effects on gun functioning as well.

Use only those lubricants designed expressly for use in firearms. Over time, improper lubricants may become gummy, impairing proper gun functioning, or may be too thin or runny to provide lasting protection. Also, firearms used in extremely hot, cold, wet, or dusty climates often have very special lubrication needs, as do firearms that will be stored for extended periods. Consult with a gun shop or gunsmith to determine the proper lubricants to be used with your firearm.

It is also important to avoid over-lubricating your pistol, or leaving oil in certain areas. For example, while a thin film of oil should coat the bore of a firearm that is to be stored, all oil should be removed from the bore before the gun is fired. Excess lubricant can also penetrate wood stocks and cause them to deteriorate. Too much oil left on the exterior of a pistol that is carried in a leather holster can soak into the leather, softening it. This can be of particular concern with leather holsters that are molded to snugly fit a particular pistol model. As explained above, oil left inside the magazine of a semi-automatic pistol or the chambers of a revolver cylinder can contaminate cartridge primers and lead to misfires.

FUNCTION CHECKING YOUR FIREARM

After cleaning, inspecting, and lubricating the firearm, the final stage is reassembly and function checking. The inspection process referred to previously should continue during reassembly. Be aware of parts that do not go together as they should, a sudden increase in the play or looseness of pins and other components, and so forth.

When the firearm is reassembled, make sure it is unloaded and then dry-fire it a few times to see if there are any changes in the feel of the trigger or the functioning of the controls. With a revolver, swing the cylinder out and test the action of the ejector rod. Rack the slide of a semi-automatic and ensure that its various safety controls are functioning. Don't just look with your eyes; listen with your ears. Sometimes the sound of the gun as it is cycled or dry-fired can reveal a functional problem.

Similarly, when firing live ammunition at the range, be aware of any changes in the gun's function or feel. Gradual changes in gun function such as sluggish cycling, frequent stoppages, or larger groups can result from a buildup of dirt, powder residue, congealed lubricant, and so forth. Thorough cleaning and lubrication often restores proper functioning

in such cases. However, a sudden tendency of the gun to misfire, jam, or change the size or location of its groups may be a sign of a broken part or other serious mechanical problem that usually requires gunsmith attention.

OTHER MAINTENANCE

Firearm maintenance involves more than just cleaning, inspection, lubrication, and function testing. Both semi-automatic pistols and revolvers are powered by springs that can fatigue over time. The springs that power revolver hammers generally last for many years. However, revolvers having a tendency to produce light hits on the primer may be suffering from weak springs.

Recoil springs on semi-automatic pistols should be regularly replaced, usually every several thousand rounds. Your owner's manual should have specific recommendations regarding recoil spring replacement, as well as directions for installing new springs. Magazine springs, too, sometimes require replacement, as some will lose stiffness over time (particularly when left compressed) and produce feeding problems. A competent gunsmith can diagnose and remedy problems stemming from fatigued springs.

GUNSMITH CHECKUP

In addition to the normal maintenance you can perform, it is important to periodically have a gunsmith completely disassemble, clean, inspect, and lubricate your firearm. This is also an opportunity for an experienced eye to look for wear, breakage, or other conditions that may affect your gun's ability to function properly.

The frequency of this kind of gunsmith examination depends upon your shooting habits. In general, if you practice regularly with your firearm, an annual checkup is recommended.

Performing regular maintenance, such as the replacement of fatigued recoil springs (above), is a part of responsible firearm ownership.

CHAPTER 13

PISTOL SHOOTING ACTIVITIES AND SKILL DEVELOPMENT

In general, there are four main uses to which a firearm may be put: *recreational shooting, hunting, target competition*, and *self-defense*.

RECREATIONAL SHOOTING

Although many thousands of shooters own pistols for hunting, for formal target shooting, or for self-defense, by far the greatest number of shots fired from pistols each year involve casual recreational shooting, often called plinking. Plinking is quite simply the name given to any form of informal target shooting, done with any type of pistol at any type of safe target. The only limitations placed on this activity are those imposed by safety, legal restrictions, and the shooter's imagination.

OPPORTUNITIES FOR SKILL DEVELOPMENT

The Scouting Pistol Safety and Marksmanship program should not be regarded as the endpoint of the training experience, but rather as the first step in the development of pistol shooting skills and abilities. There are many ways

in which the knowledge, skills, and attitude acquired in the program can be enhanced, from individual practice to formal training and official competition. The selection of the appropriate activity is based on your needs, resources, and time schedule.

DRY-FIRE PRACTICE

Dry-fire practice is an inexpensive, safe, and time-efficient way to enhance shooting fundamentals and practice the various shooting positions. Dry-firing involves practicing every phase of the firing process using an unloaded firearm.

All dry-fire practice must be performed under the following safety rules:

- The firearm must be completely unloaded.
- All dry-firing is done in a dedicated dry-fire area having a safe backstop at which the gun is pointed.
- No live ammunition is allowed in the dedicated dry-fire area.
- Reloading drills are performed only with dummy ammunition.

Of course, even though the firearm is unloaded, it is important to still observe the first Rule for Safe Gun Handling: ALWAYS keep the gun pointed in a safe direction.

Dry-firing can be used to practice a variety of skills, including reloading a revolver or semi-automatic pistol; clearing stoppages (using dummy ammunition); practicing various shooting positions (kneeling, squatting, prone, etc.); and, of course, mastering the shooting fundamentals as well as grip, position, and natural aiming area. The ways that dry-firing can be used to enhance shooting skills are limited only by the imagination.

Laser technology affords a variation on traditional dry-fire techniques, in the form of target systems allowing an unmodified firearm to "fire" a beam of laser light at a target sensor. Such systems use a cartridge-shaped laser light inserted into the gun's chamber and activated by the firing pin strike.

LIVE-FIRE PRACTICE

Although dry-fire practice, as well as the review of books, videos, and other materials, can add considerably to your knowledge and ability, there is no substitute for live-fire practice in improving pistol shooting skills. Initially, the novice shooter should concentrate upon drills that promote mastery of the shooting fundamentals. Later, as skill improves, more challenging drills may be practiced.

A shooting partner during live-fire exercises not only provides an additional incentive to practice; such a partner can help you better assess your progress. During a live-fire practice session, a partner can observe and give feedback on stance, grip, and shooting fundamentals. On occasion a video record of the practice session

The Winchester/NRA Pistol Marksmanship Qualification Program offers recognition for increasing levels of shooting skill.

may be useful in perfecting form or diagnosing shooting problems, particularly when played back in slow motion. The video camera must always be placed at or behind the firing line, never in front of the muzzle.

WINCHESTER/NRA PISTOL MARKSMANSHIP QUALIFICATION PROGRAM

Any pistol shooter can develop skills and gain recognition for his or her level of proficiency in the Winchester/NRA Pistol Marksmanship Qualification Program, a self-paced recreational shooting activity that provides shooters of all skill levels with both fun and a sense of accomplishment. The program consists of seven different skill ratings that are earned by attaining the required scores on a series of increasingly challenging courses of fire.

ADDITIONAL TRAINING

The NRA Basic Pistol Course provides a thorough grounding in the fundamentals of safe and effective pistol shooting. Practice and application of these techniques will greatly enhance pistol shooting skill and enjoyment.

In recognition of the fact that self-defense is a concern of many pistol owners, the NRA's Education and Training Division offers the NRA

Personal Protection in the Home and NRA Personal Protection Outside the Home courses. These courses cover the essential shooting skills required for effective home defense and concealed carry and, in terms of the number of shots fired and the diversity of skills taught, are comparable to courses offered at elite shooting schools. In addition to varied shooting and gun handling techniques, these courses also present ways that an armed citizen can avoid, deter, escape, or evade a violent confrontation.

Some shooters may wish to avail themselves of non-NRA training available at numerous facilities throughout the country. The instruction provided at such facilities varies in terms of length, quality, type, and cost.

Shooters contemplating enrolling at such a facility should consider:

- Reputation of facility
- Geographic location
- Cost of course
- Credentials of instructors
- Student-teacher ratio
- Safety record of institution
- Types of courses offered
- Availability of nearby lodging (for multi-day courses)

Pistol enthusiasts who are primarily interested in improving their skills in a competitive discipline may avail themselves of the NRA's Coach Program. This program provides advanced individualized coaching to pistol owners at all levels who are competing in NRA Bullseye, NRA Action Pistol, and NRA Air Pistol matches.

Youth who want to continue building their pistol skills may also consider joining or starting a BSA competitive shooting team. For more information on available programs, go to http://www.scouting.org/OutdoorProgram/ShootingSports.


BOY SCOUTS OF AMERICA

APPENDIXES

APPENDIX A

A BRIEF HISTORY OF THE NRA

Dismayed by the lack of marksmanship shown by their troops, Union veterans Col. William C. Church and Gen. George Wingate formed the National Rifle Association in 1871. The goal of the association was to promote and encourage rifle shooting on a scientific basis.

In 1903, the NRA's secretary, Albert S. Jones, urged the establishment of rifle clubs at all major colleges, universities, and military academies. By 1906, the NRA's youth program was in full swing with more than 200 boys competing in matches in Sea Girt, New Jersey, that summer. Youth programs are still a cornerstone of the NRA today, with more than 1 million youth participating in NRA shooting sports events and affiliated programs with groups such as 4-H, the Boy Scouts of America, the American Legion, Royal Rangers, and the National High School Rodeo Association.

In 1949, the NRA, in conjunction with the state of New York, established the first hunter education program. Hunter education courses are now taught by state fish and game departments across the country and Canada and have helped make hunting one of the safest sports in existence. The NRA continues its leadership role in hunting today with the Youth Hunter Education Challenge (YHEC), a program that allows youngsters to build on the skills they learned in basic hunter education courses. YHECs are now held in 43 states and three Canadian provinces, involving an estimated 40,000 young hunters.

The NRA continues to be the leader in firearms education with more than 125,000 certified instructors training over 1 million gun owners a year. Courses are available in basic rifle, pistol, shotgun, muzzleloading firearms, personal protection, even ammunition reloading. Additionally, nearly 7,200 certified coaches are specially trained to work with young competitive shooters. Since the establishment of the lifesaving Eddie Eagle GunSafe® Program in 1988, more than 28 million pre-kindergarten to sixth grade children have learned that if they see a firearm in an unsupervised situation, they should "STOP. DON'T TOUCH. RUN AWAY. TELL A GROWNUP." Over its lifetime, Refuse To Be A Victim® seminars have reached more than 100,000 men and women.

To learn more about the history of the NRA go to https://home.nra.org/about-the-nra/.

APPENDIX B

GLOSSARY

ACP: An abbreviation for Automatic Colt Pistol. Used in conjunction with caliber designations. Example: a .45 ACP cartridge.

ACTION: A series of moving parts that allow a firearm to be loaded, fired, and unloaded.

BACKSTRAP: The rear, vertical portion of the pistol frame that lies between the grip panels.

BORE: The inside of the barrel of a firearm.

CALIBER: The diameter of a projectile or the distance between the lands in the bore of a firearm.

CARTRIDGE: A complete single unit of ammunition including the projectile, case, primer, and powder charge.

CENTERFIRE: A type of cartridge which has the primer centrally located in the base of the case.

CHAMBER: The part of a firearm in which a cartridge is contained at the instant of firing.

CYLINDER: The part of a revolver that holds ammunition in individual chambers that are rotated into firing position by the action of the trigger or hammer.

DOUBLE-ACTION: A type of pistol action in which squeezing the trigger will both cock and release the hammer or internal firing mechanism.

DRY-FIRING: The shooting of an unloaded gun.

EJECTOR: The part of a pistol that ejects an empty cartridge case or a cartridge from the gun.

GROOVES: The shallow, spiral cuts in a bore that together with the lands make up the rifling in the bore of a barrel.

HAMMER: The part of a pistol that pivots on an axis at the rear of the frame and, when activated by the trigger, causes the firing pin to strike a cartridge.

HANGFIRE: A perceptible delay in the ignition of a cartridge after the primer has been struck by the firing pin.

MISFIRE: A failure of a cartridge to fire after the primer has been struck by the firing pin.

MUZZLE: The front end of the barrel from which a projectile exits.

PARABELLUM: Taken from Latin, this term translates as "prepare for war." During World War I, the Deutsche Waffen und Munitionsfabrik used this term for its Luger pistol and a machine gun. Parabellum is used today as a synonym for Luger to identify 7.65 mm and 9 mm Luger ammunition.

PATRIDGE SIGHT: A type of sight designed by E.E. Patridge in the late 1800s, generally used on handguns. It has a rear sight with a square notch, and a front sight consisting of a thick blade that is flat on top.

PISTOL: A gun that has a short barrel and can be held, aimed, and fired with one hand.

+P (PLUS P): Cartridges that are loaded to higher pressures than standard ammunition.

+P+ (PLUS P PLUS): Cartridges that are loaded to higher pressures than +P ammunition.

PLINKING: Informal shooting at a variety of targets.

REVOLVER: A pistol that has a rotating cylinder containing a number of firing chambers. The action of the trigger or hammer will line up a chamber with the barrel and firing pin.

RIFLING: Spiral lands and grooves in the barrel bore that provide a stabilizing spin to a bullet so it will be more accurate in flight.

RIMFIRE: A cartridge that has the chemical compound of the primer inside the rim of the case.

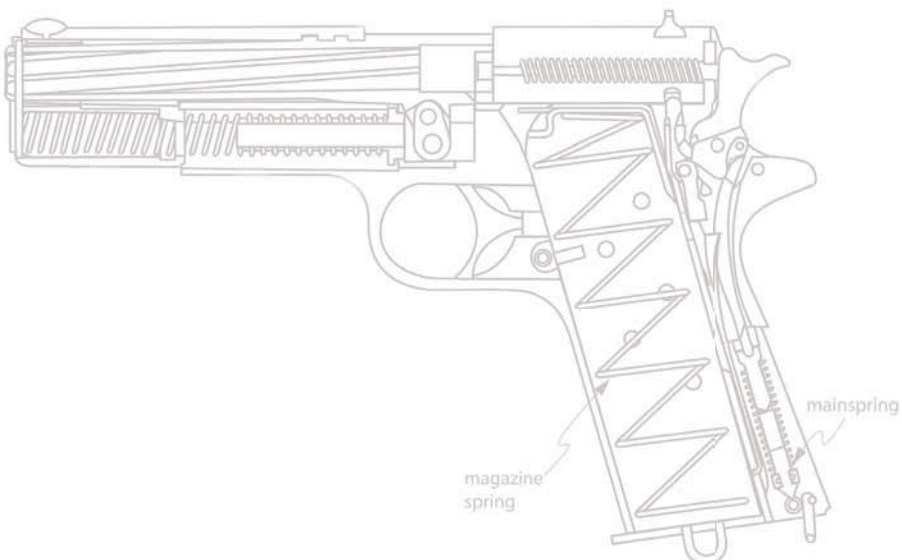
ROUND: Another term for a cartridge.

SEMI-AUTOMATIC: A pistol that fires a single cartridge each time the trigger is pulled, and which automatically extracts and ejects the empty case and inserts a new cartridge into the chamber.

SINGLE-ACTION: A type of pistol action in which pulling the trigger will release the hammer.

SIGHTS: Mechanical, optical, or electronic devices used to aim a pistol.

SQUIB LOAD: A cartridge that develops less than normal pressure or velocity after ignition of the cartridge.



NOTES

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SKU 622175
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33995 2016 Printing