

2024-25 EDITION

HUNTERS EXPERIENCE

M A G A Z I N E ★ IHEA USA ★

IN THIS ISSUE:

Hunting With A Wheelgun

The Right Hunting Knife

Turkey Load Science

Lever Action Rifles

Modern Optics





Hello Graduate –

Congratulations and welcome to our community of more than 15 million active hunters in the United States! Your decision to complete hunter education has set you on the path to making a positive impact on wildlife. Hunters are the stewards of the natural world with 100% of license sales funding wildlife resources and conservation programs in your state.

Your education has prepared you to be a responsible member of the conservation industry. By continuing to respect wildlife and make ethical decisions during the hunt, we will all benefit and create memories that we will hold onto for a lifetime. Regulated hunting helps maintain healthy wildlife populations while supplying you, your friends, and your family with sustainable protein. Your state wildlife agency staff use a combination of research, science, and data to offer opportunities to hunt some of the most amazing game in the world. Their efforts combined with your future contributions as a new hunter work together to create a balance for wildlife and natural systems.

Hunting can be an amazing adventure every time you head into the field. The Conservation Industry is dedicated to helping you gain the skills you need to feel confident on the hunt. If you do not feel fully prepared yet for a solo experience, seek out a mentor or Learn-to-Hunt program to help you on your journey. There are many opportunities offered through your state wildlife agency and partner organizations such as the International Hunter Education Association (IHEA-USA). There are also many social member-based groups you can join, and additional online courses available if you prefer. Have fun, stay safe, and we'll see you in the outdoors!

Chuck Sykes
President, Association of Fish & Wildlife Agencies (AFWA)



INTERNATIONAL
HUNTER EDUCATION
ASSOCIATION U.S.A.

Hello Hunter Ed Graduate –

Congratulations on completing your beginner hunter education. Many graduates understand that they are now able to purchase hunting licenses and apply for special permits available in their home state, but there may be much more opportunity available than you realize. Your hunter education certificate is your passport to hunting around the world! Canada, Mexico, Australia, South Africa, and other countries around the globe will accept your hunter education certificate as proof of your safety training.

You are now part of an *international* sporting community of safe, responsible, and ethical conservationists. Your IHEA-USA is here to help you on your journey as you identify which hunting types and game types you prefer. Any new experience can be challenging, and whether you know exactly what you'll do next or if you are still filled with questions, your new community is here to help. The best part is that you have already completed one of the toughest steps in earning your hunter ed certificate! Hold onto your hunter ed number since you will need it when you go to purchase your hunting license.

There are advanced educational opportunities for you both online and in-person through your state agency and many industry nonprofits. If you are over age 18, you can check out www.LearnHunting.org for access to instructors and mentors who can help answer your questions and maybe even take you to the range or on your first hunting experience to help get you started!

Have fun and Safe Hunting!

Alex Baer
IHEA-USA, Executive Director



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Hunters Experience Magazine is published annually by the IHEA-USA for State Hunter Education Instructor use.



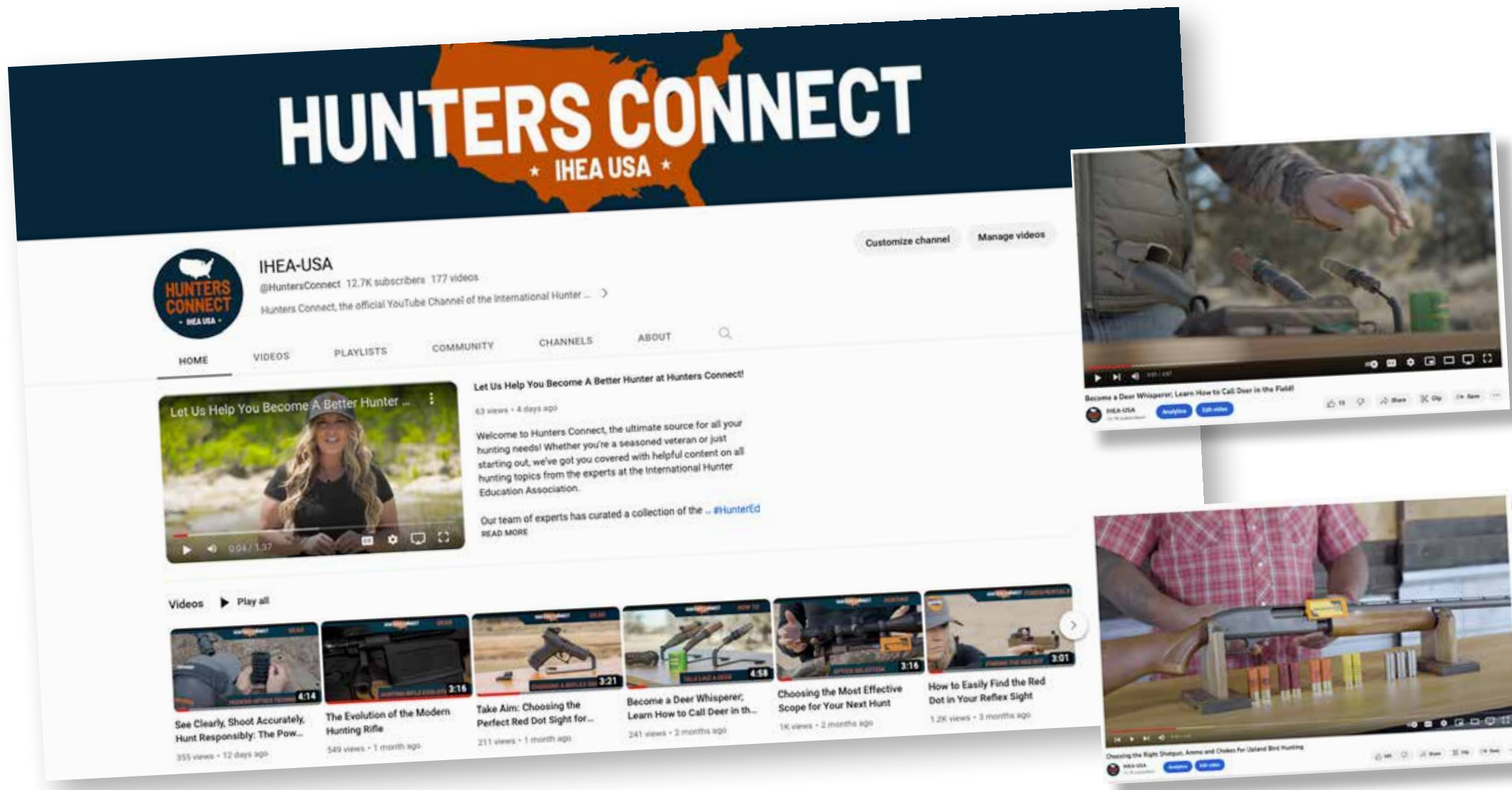
WANT TO LEARN MORE?

THE OFFICIAL
YOUTUBE CHANNEL OF
THE INTERNATIONAL
HUNTER EDUCATION
ASSOCIATION



**HUNTERS
CONNECT**

★ IHEA USA ★



Hunters Connect is the official YouTube Channel of the International Hunter Education Association. With it, you can expand your hunting knowledge beyond the Hunter Education classroom and prepare for your first hunt.

Hunters Connect offers a comprehensive curriculum and expert tips. From scouting to hunting techniques for specific species to advice on firearms and calibers, we have you covered! Additionally, we offer guidance on survival skills, shooting techniques, game processing, obtaining access to private land, map reading, archery techniques and so much more!

At IHEA-USA, our goal is to help you have a safe and successful hunting experience. Take advantage of all the help that we offer through our Hunters Connect YouTube Channel today!

BUYING YOUR FIRST GUN



Firearm ownership is a right enjoyed by many Americans, and with that right comes the responsibility to safely handle and store firearms. The National Shooting Sports Foundation® and Project ChildSafe® remind new gun owners in particular of the many firearm safety materials they make available to help prevent accidents, theft and misuse.

Visit ProjectChildsafe.org for the interactive version

GIVE YOUR PURCHASE CAREFUL CONSIDERATION

Talk to family members about your reasons for purchasing; consult a firearm retailer about choosing the right firearm for your budget and intended use. Learn about gun laws.

[Find a Retailer](#) [Road to Responsibility](#)
[Paths to Gun Safety](#)

SAFELY HANDLE AND STORE YOUR FIREARMS

Know the basic rules of gun safety. Understand safe storage options available to you. Talk to your children about gun safety.

[Safe Storage Options](#) [Gun Safety Video](#)
[Kids Gun Safety Videos](#)

KEEPING A GUN FOR HOME PROTECTION

A lock box is a good choice to provide ready access to you but prevent access by children and others.

[Gun Safety Video](#) [Safe Storage Video](#)

IMPROVE YOUR SKILLS

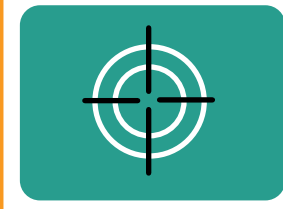
Take a course with a certified instructor. Understand how your gun works. Practice to improve safe handling and marksmanship skills.

[NSSF YouTube Channel](#) [Range Safety & Etiquette Video](#)

ENJOY THE SHOOTING SPORTS

Target shooting is a fun, social activity. Join a shooting league or organization. Hunting might be for you.

[LetsGoShooting.org](#) [LetsGoHunting.org](#)



NSSF.ORG

PROJECTCHILDSAFE.ORG



GUN STORAGE FOR YOUR LIFESTYLE

As a gun owner, you can choose from multiple options for safely storing and protecting your firearms when they're not in use.

Use this guide to determine which mechanism best suits your lifestyle, priorities and environment.

A RANGE OF OPTIONS



CABLE LOCK

Price Range: \$10–\$50

A cable lock can be used on most firearms, allows for quick access in an emergency and offers security from theft. The cable runs through the barrel or action of a firearm to prevent it from being accidentally fired, requiring either a key or combination to unlock it.

- AFFORDABLE
- ACCESSIBLE
- THEFT DETERRENT



GUN CASE

Price Range: \$10–\$150

For those looking to conceal, protect or legally transport a registered firearm, a gun case is an affordable solution available in a variety of materials including plastic, fabric or metal. Be sure to lock it with an external device for added security.

- AFFORDABLE
- PORTABLE
- PROTECTS FROM DAMAGE



LOCK BOX

Price Range: \$25–\$350

With integrated locks, storage boxes provide reliable protection for firearms, and allow gun owners to legally transport them outside of their home.

- PORTABLE
- ACCESSIBLE
- PROTECTS FROM DAMAGE



ELECTRONIC LOCK BOX

Price Range: \$50–\$350

Electronic lock boxes are an effective way to store or legally transport firearms, and they also prevent theft since only the person with the code can access the contents. Some electronic lock boxes are specially designed for quick access to stored firearms.

- PORTABLE
- THEFT DETERRENT
- PROTECTS FROM DAMAGE



FULL SIZE AND BIOMETRIC GUN SAFES

Price Range: \$200–\$2,500

A gun safe protects its contents from the elements and allows owners to safely store multiple firearms in one place. Gun safes of all sizes are now available with biometric options to ensure only certain people have access.

- THEFT DETERRENT
- PROTECTS FROM DAMAGE

VEHICLE STORAGE



CONSOLE STORAGE

Price Range: \$250 - \$300

A solution for those who need a truly secure place to store their firearm in a vehicle. These custom-fitted devices provide concealment to deter prying eyes and would-be thieves. Various access options are available, including biometric.

- THEFT DETERRENT
- ACCESSIBLE
- PROTECTS FROM DAMAGE



CARGO AREA STORAGE

Price Range: \$500 - \$1,500

Effective for transporting firearms to the range or field, cargo area storage models are available for sedans, SUVs and trucks. These devices allow for locked storage, concealment and protection from bumps and jostling.

- THEFT DETERRENT
- ACCESSIBLE
- PROTECTS FROM DAMAGE

SECURE STORAGE ACCESSORIES



WIRELESS GUN SAFE MONITOR

Price Range: \$150 - \$200

An electronic monitor can provide awareness and alert you if anyone is accessing your storage device or handling your firearm without your authorization. Some sound an audible alarm, others can be connected to your smartphone.

- THEFT DETERRENT
- REMOTE MONITORING



ELECTRONIC HOLSTERS

Price Range: \$200 - \$300

Electronic holsters are a new type of secure storage device that enable fast access along with security to prevent unauthorized access. Holsters can be mounted or used independent of a mounting system and feature a programmable finger or thumbprint scan.

- PORTABLE
- ACCESSIBLE
- THEFT DETERRENT

PLEASE HELP PREVENT ACCIDENTS. STORE FIREARMS RESPONSIBLY.

These are just a few of the storage options available to firearms owners. For the greatest level of security, consider using a combination of safety mechanisms and educate family members about handling firearms properly.

To learn more about firearms safety, visit ProjectChildSafe.org



Project ChildSafe is a program of the National Shooting Sports Foundation®



HOW WILDLIFE IS THRIVING BECAUSE OF GUNS & HUNTING

HOW IT WORKS

- Hunters and target shooters purchase guns and ammunition.
- Manufacturers pay federal excise taxes on guns and ammunition.
- Revenue from these excise taxes is distributed to state wildlife agencies.
- State wildlife agencies use these funds to purchase land for wildlife habitat and to manage wildlife populations.
- In turn, millions of acres of important habitat have been set aside to help ensure future wildlife abundance.

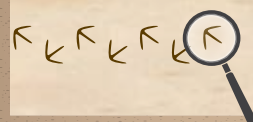
This System Has Provided **MORE THAN \$15 Billion** For Conservation So Far

Where the Money Goes

Buy, develop, maintain and operate wildlife management areas



Research projects focused on wildlife conservation



Hunter safety and education programs



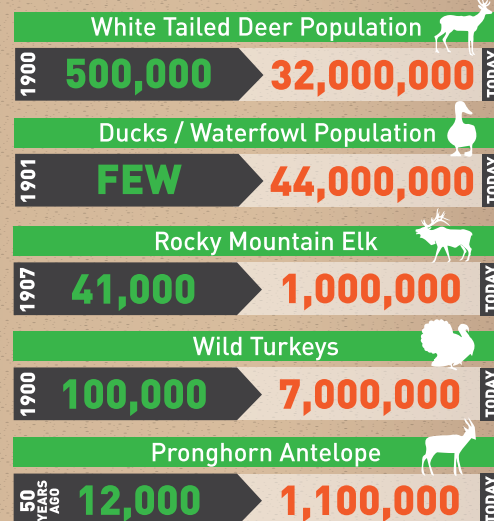
Construction and maintenance of public target shooting ranges

Quick History

- Early 1900s**
As many wildlife species are dwindling in numbers or disappearing, firearms industry steps forward and asks Congress to redirect excise tax on sale of guns and ammo to help fund wildlife conservation.
- 1937**
Congress passes and President Franklin D. Roosevelt signs the Pittman-Robertson Federal Aid in Wildlife Restoration Act into law.
- 1938 to today:**
Revenue from this act has purchased millions of acres of prime habitat that is maintained by state wildlife agencies. These lands, where game and non-game species flourish, are purchased with sportsmen's dollars but used by all Americans.

Since the late 1930s, hunters, target shooters and the firearms industry have been the nation's **LARGEST** contributors to **conservation**, paying for programs that benefit America's wildlife and all who love the outdoors.

THEN & NOW



OTHER WAYS SPORTSMEN CONTRIBUTE

Excise taxes combined with revenue from hunting and fishing license sales fund the majority of state wildlife agency budgets.



\$81 Million CONTRIBUTED ANNUALLY

Duck stamp proceeds are used by the government to buy or lease wetland habitat for ducks, geese and hundreds of non-game birds and animals.

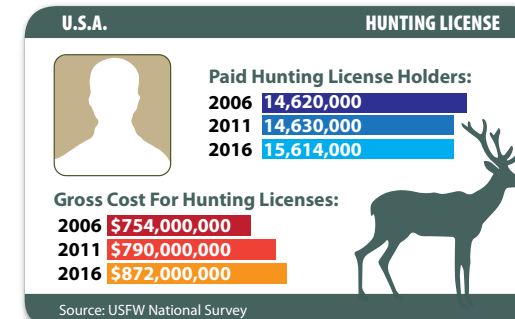
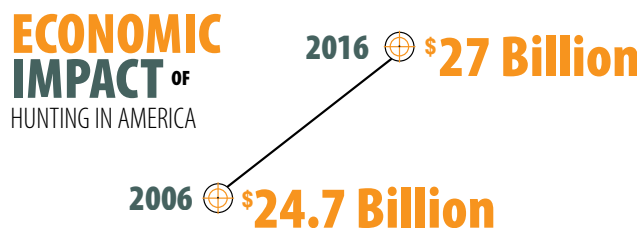
SOME HEROES OF THE MOST SUCCESSFUL CONSERVATION MODEL IN THE WORLD ARE:



HUNTING IN AMERICA

Big Bucks, Big Impact on the Economy

HUNTING SUPPORTS MORE THAN **525,000 AMERICAN JOBS**



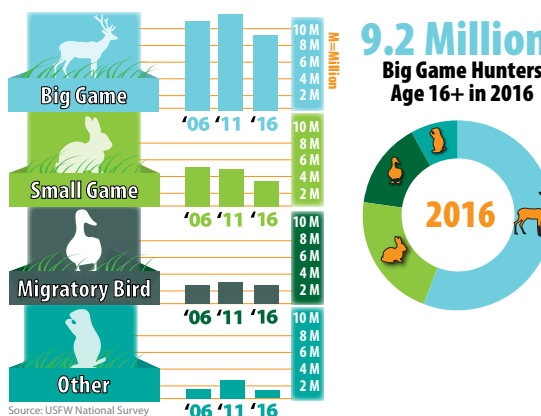
Revenue generated from hunting license sales helps fund state department fish and wildlife agencies and helps maintain healthy wildlife populations and habitat.

The **\$27 billion** economic impact for hunting in 2016 would rank it as the 104th largest company on the Fortune 500 list

Source: NSSF & Southwick Associates Hunting in America Report

HUNTERS

Age 16+ by type



HUNTING IS A GREAT WAY TO GET OUTDOORS

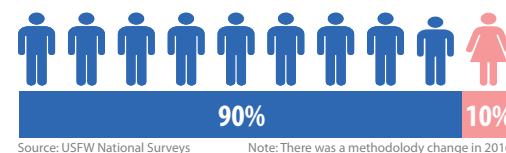
Total days afield of hunters age 16+



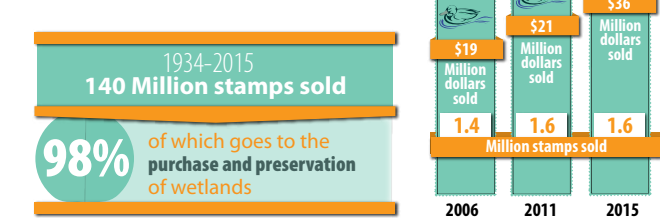
MORE PEOPLE HUNT Each year than play



GENDER of Hunters 2016



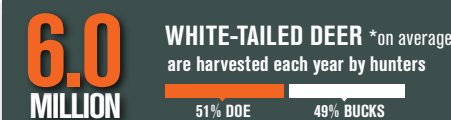
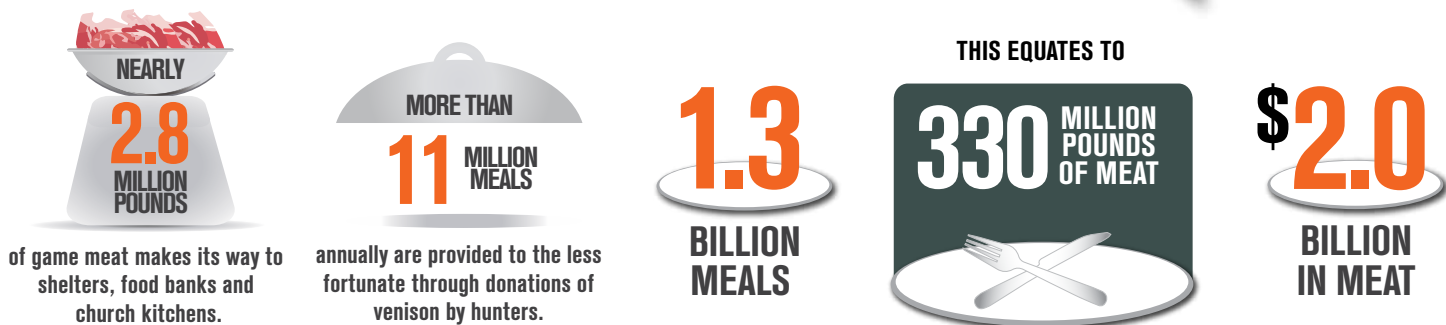
DUCK STAMP SALES



LEARN MORE LETSGOHUNTING.ORG ABOUT HUNTING

HUNTERS FEED THOSE IN NEED

WHEN YOU'RE GATHERING WITH FAMILY AND FRIENDS
HERE'S A STORY TO TELL
ONE THAT WOULD NOT BE POSSIBLE WITHOUT
THE THOUGHTFULNESS AND GENEROSITY OF HUNTERS.



BENEFITS OF GAME MEAT

LOCAL, FREE-RANGE, ORGANIC, SUSTAINABLE
NO HORMONES, LOW CALORIE, HIGH PROTEIN

TOP 5 STATES FOR VENISON DONATIONS

VIRGINIA	405,000 LBS	1
IOWA	312,000 LBS	2
MISSOURI	237,000 LBS	3
TEXAS	214,000 LBS	4
OHIO	180,000 LBS	5

VENISON DONATIONS BY REGION

MIDWEST	NORTHEAST	WEST	SOUTH
46% of total donations	8% of total donations	*1% of total donations	45% of total donations
1,300,000 lbs	200,000 lbs	28,000 lbs	1,250,000 lbs
5,200,000 meals	800,000 meals	110,000 meals	5,000,000 meals
IA - IL - IN - KS - MI - MO - MN - ND - NE - OH - SD - WI	CT - MA - ME - NH - NJ - NY - PA - RI - VT	AK - AZ - CA - CO - HI - ID - MT - NM - NV - OR - UT - WA - WY	AL - AR - DE - FL - GA - KY - LA - MD - MS - NC - OK - SC - TN - TX - VA - WV

In addition to white-tailed deer, hunters donate many other types of game meat during hunting seasons.

These include: bear, feral pig, rabbit, elk, moose, antelope, pheasant, turkey and waterfowl.

IMPORTANT GAME - MEAT DONATION ORGANIZATIONS



LEARN MORE ABOUT HUNTING

LETSGOHUNTING.ORG

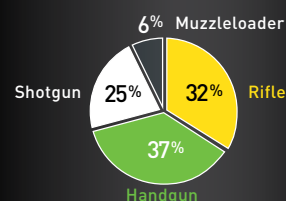


TARGET SHOOTING IN AMERICA

Millions of Shooters, Billions of Dollars



TOTAL SPENDING BY TYPE OF FIREARM



TARGET SHOOTING SUPPORTS

MORE THAN **329,000** JOBS

REMEMBER to bring a newbie THIS YEAR

LEARN MORE ABOUT TARGET SHOOTING

LETSGOSHOOTING.ORG

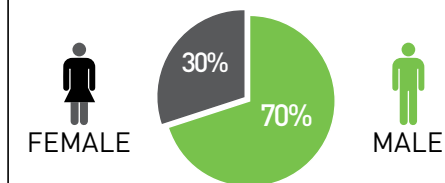


NEARLY **\$5.1** BILLION IN ANNUAL STATE, LOCAL & FEDERAL TAXES CONTRIBUTED BY TARGET SHOOTING

MORE PEOPLE TARGET SHOOT THAN:



TARGET SHOOTING IN AMERICA HAS A TOTAL ECONOMIC IMPACT OF MORE THAN **\$27.8** BILLION



TARGET SHOOTING PARTICIPATION

4 PRIMARY RULES FOR GUN SAFETY

- Always keep gun pointed in a safe direction
- Treat guns as though they are always loaded
- Keep your finger off of the trigger until your sights are on your intended target
- Always be sure of your target and what's behind it

Sources:
a NSSF® Report: Target Shooting in America 2018
b National Sporting Goods Association: Sports Participation Reports

THOUSANDS OF PLACES TO TARGET SHOOT LISTED @ **WHERETOSHOOT.ORG**
DOWNLOAD OUR FREE MOBILE APP



Safe Gun Handling Practices

Presented by Muzstik

Owning your first gun is a significant responsibility, and as firearms owners, we all have the shared responsibility to learn and apply safe gun handling techniques. It begins with the basics of gun safety:

1. WE TREAT EVERY FIREARM AS IF IT'S LOADED

That means that we never assume a firearm is unloaded. Even if we think a firearm is unloaded, if touching it, we always visually look and feel to ensure that there is not a round in the chamber.

2. WE ALWAYS POINT THE FIREARM IN A SAFE DIRECTION

A safe direction is a direction where the bullet will travel and harm no one in the event of an unwanted discharge.

3. WE ARE ALWAYS CERTAIN OF OUR TARGET AND WHAT LIES BEYOND IT

We don't even think about pulling the trigger until we are confident that not

only are we shooting at our target but also that no one is beyond the target, and we have a proper backstop behind the target. That means not shooting at an animal silhouetted against the sky. You can't see what is on the other side.

4. WE KEEP OUR FINGERS OUTSIDE THE TRIGGER GUARD UNTIL WE ARE READY TO SHOOT

Keeping our fingers away from the trigger prevents unwanted discharge when moving with loaded firearms or accidents in the field if we stumble.

There are also additional layers of safety that you can employ as a firearms owner, such as keeping your firearms secured and locked safely away at all times when not in use and storing your ammunition and your firearms separately. Brightly colored chamber flags can also offer an added safety measure because they allow you to visually identify the status of your firearm when storing, transporting, and using firearms on a

firing line. Although chamber flags clearly offer a visual identifier that the firearm is unloaded, if handling the firearm, again, you should always follow the 4 Basic Rules of Firearms Safety and always physically check the firearm to ensure that it is unloaded.

Additionally, novices or inexperienced persons to firearms handling may not begin to know how to check if a firearm is loaded or unloaded. Using chamber flags can help. They allow for quick and easy visual identification.

Chamber flags are a staple for you to have at your local gun range. They force you to take an extra step to use them as you leave the range helping ensure that yes, your gun is empty. When the range is cold (no one is allowed to shoot or have a loaded gun on the line), they allow your range safety officer to look down the line and clearly see that, yes, you have in fact emptied your firearm, and it is clear. Additionally, chamber flags are not just popular with range safety officers. In

some situations, like private gun ranges or shooting competitions, chamber flags are a requirement.

HOW IT WORKS:

- ALWAYS assume the firearm is loaded
- Remove the magazine from the firearm and clear the chamber
- Lock open the slide if lockable
- Insert Muzstik Chamber Flag
- Close chamber or bolt on chamber flag
- Safely lock away and store your firearm

Firearms safety is no joke, and chamber flags offer an additional layer of visual identification for you and the people around you in the home or on the range. That being said, they are no substitute for consistently executing the basic rules of firearms safety and ensuring that you double or even triple-check firearms to ensure that you know their loaded or unloaded status.

MUZSTIK.COM



YOUTH GUN ACCESS

1.7 MILLION CHILDREN LIVE WITH UNLOCKED & LOADED GUNS

1 OUT OF 3 HOMES WITH KIDS HAVE GUNS

1 IN 3 HANDGUNS ARE KEPT LOADED AND UNLOCKED

More than 75% CHILDREN AGES 5-14 KNOW WHERE THEIR PARENTS KEEP THEIR FIREARMS

36% ADMITTED TO HANDLING THE WEAPONS (contradicting their parents' reports)

UNINTENTIONAL GUN DEATHS AND INJURIES

In 2014, 2,549 CHILDREN AGES 0-19 DIED BY GUNSHOT AND AN ADDITIONAL 13,576 INJURED

89% of unintentional SHOOTING DEATHS

From 2006-2016, 6,885 PEOPLE IN THE U.S. DIED FROM UNINTENTIONAL SHOOTINGS

A federal government study found 8% UNINTENTIONAL SHOOTING DEATHS RESULTED FROM SHOTS FIRED BY CHILDREN <6

occur in the HOME Most of these deaths occur when children are playing with a loaded gun in their parent's absence

The U.S. GAO has estimated that 31% OF UNINTENTIONAL DEATHS CAUSED BY FIREARMS MIGHT BE PREVENTED by the addition of two devices: 8% CHILD-PROOF SAFETY LOCK 23% LOADING INDICATOR

GUN OWNERSHIP STATS

Americans own an estimated 350 MILLION FIREARMS

3 IN 10 American adults currently OWN A FIREARM 66% of gun owners own >1 FIREARM

7 IN 10 adults say they have FIRED A GUN



Benefits of Youth Shooting/Hunting

By Joe Arterburn

Teaching (and learning) hunting and shooting sports provides benefits that span generations, improving not only those who participate, but society in general and the natural world around us.

The passing of hunting and shooting traditions from generation to generation contributes to individual personal development as a responsible member of society and deepens understanding of the world. Involving the next generation in hunting and shooting sports can instill a strong sense of respect, responsibility and discipline, something not necessarily found in influences surrounding youth of today.

To continue, here are 10 benefits of teaching hunting and shooting sports.

SAFETY AND RESPONSIBILITY

For starters, learning to handle firearms safely and proper conduct at a shooting range or in the field can translate to a broader understanding of responsible behavior in other aspects of life. For example, a person who grows

up understanding the responsibilities (and dangers, if not taken seriously) of handling firearms can better understand the responsibility they have regarding not only their safety but that of others when they get behind the wheel of a vehicle.

OUTDOOR SKILLS

Because hunting and most shooting sports take place outside, both present opportunities to learn useful outdoor skills, like navigation, tracking, orienteering and even survival techniques. If you are one who considers excessive screentime a detriment to healthy development, then you can appreciate the benefit of getting kids outdoors, assuring a deeper connection with nature.

CONSERVATION AWARENESS

Youth (and adults) develop a greater understanding of the role responsible hunters have in wildlife conservation by being actively engaged themselves. Even a trip to a sporting-goods store to purchase

a tag can be a learning experience about population and habitat management and how hunting dollars benefit wildlife. Hunting, and being around hunters, can cultivate that mindset. The world needs more conservationists to assure woods, fields and vast natural areas for many generations to come.

FOCUS

Let's face it, with the proliferation of apps and games (and readily available devices) that strive to make content as short and engaging as possible, attention span and focus is not a hallmark of today's youth. However, shooting sports and hunting both require precision through focus and concentration. These skills are invaluable and are transferrable to many other areas that require attention to detail. Imagine the results of students approached their next math exam as though they were behind the sights of a rifle with a chance at harvesting a buck of a lifetime. That is focus on a goal.

CONFIDENCE BUILDING

Like most passions, hunting and shooting sports require practice to become proficient, and perhaps a lifetime to master. Hunting and shooting are learning opportunities. Bad shots are nothing more than learning experiences and great shots will provide a sense of achievement they will carry with them a long time, perhaps forever.

FAMILY AND COMMUNITY BUILDING

Participating in shooting sports and hunting can provide opportunities for youths to bond with family members and friends, and become part of the large community of like-minded outdoor enthusiasts which strengthens relationships and creates a sense of belonging, often leading to lifelong memories.

ETHICS AND MORAL COMPASS

Teaching youth about ethical considerations surrounding hunting and shooting sports can promote thoughtful, principled approaches to other aspects of their daily lives. Understanding humane practices, conservation, ethics and the responsible use of natural resources – and their role in the big picture – can help shape their moral compass.

CONNECTING WITH TRADITION

Hunting and shooting sports are a part of the culture and heritage for many families. Teaching these skills can help youth connect with their traditions and show them the importance these factors have had through the years and in the process learn about their ancestors' way of life. Hunting and shooting sports can be a bond, a vital thread connecting generation to generation.

HEALTH AND FITNESS

Engaging in outdoor activities like hunting and shooting can promote physical fitness by encouraging an active lifestyle, getting out and walking, hiking and it soon becomes apparent that the better shape you're in the better able you are to not only get where you need to be but to be able to better perform when the moment of truth presents itself.



PROBLEM SOLVING

Hunting and shooting sports often require critical thinking and problem-solving skills, such as overcoming variables at the range, understanding animal behavior, choosing appropriate equipment and adapting to changing conditions. And knowing when and when not to take that shot. Did that deer just walk behind dense brush? How can we overcome that problem? Life in general is about problem-solving so developing cognitive skills is a lifelong asset

Paramount to teaching firearm safety is choosing safe firearms. Henry Repeating Arms (henryusa.com) offers a premium line of youth model rifles and shotguns designed with integrity and quality materials and craftsmanship to provide a safe, accurate and reliable learning platform.





Plink!

Why the Rimfire Rifle is a Great Choice for New Shooters

Presented by Winchester

The .22 rimfire rifle has long been an American favorite. An excellent choice for beginners, these lightweight firearms are affordable, rugged, accurate, and easy to find at many gun retailers. Made to shoot paper, plink tin cans, whack steel targets, and hunt small game; the low cost ammunition helps new shooters learn the basics of rifle shooting and firearm safety without putting a hole in their wallets.

HISTORY

Initially designed as a pistol cartridge in 1857, the .22 Rimfire (now the .22 Short) made its mark and became a favorite

during the Civil War. Twenty years later, in 1887, J. Stevens Arms and Tool crafted the .22 LR which shot flatter, was more accurate, and hit harder than other .22 rimfire cartridges of the era. The .22 LR cartridge has evolved into the most popular sporting and target shooting round in the world.

VERSATILITY

A rifle chambered in .22 LR is often regarded as the best choice for those new to firearms. The light recoil and quiet report ease beginners into shooting sports and allow them to develop the proper shooting fundamentals. With

the abundance of inexpensive ammo available it encourages new shooters to practice the basics.

As shooters develop their marksmanship skills, the rimfire is a great way to spend the day with friends and relatives, shooting tin cans and various targets. Range days will continue to improve their abilities, confidence at differing ranges, and understanding of firearm safety. For shooters who like to put their skills to the test, friendly competitions can make a day at the range enjoyable for everyone.

Because of their versatility, rimfires are also great small game

hunting firearms. With the perfect blend of range and accuracy, a rimfire rifle packs plenty of punch for game like rabbits, squirrels, and other varmints.

Rimfire rifles are available with different types of actions, and finding the one you want is as easy as spending a bit of time on the internet or taking a trip to your local gun store. Most gun manufacturers produce a well-made, reliable rimfire rifle under \$400.

BOLT-ACTION RIFLES

First up is the bolt-action rifle. This type of rifle is ideal for beginners looking to work on shooting fundamentals and accuracy. With a bolt-action, loading and ejection is performed manually, giving the shooter complete control of the action. A bolt gun encourages the user to take additional time between shots, allowing them to focus on the target and not quickly fire through cartridges. The bolt-action is also the most popular firearm for big game hunting, giving shooters a leg-up when they graduate to larger rifles chambered in hunting calibers.

The Winchester Xpert™ is a lightweight bolt-action rifle that is available with either a wood or composite stock. Built with a precision button-rifled, chrome-moly steel barrel, the Xpert delivers accuracy.



AUTOLOADING RIFLES

Equally popular as the bolt-action is the semi-automatic or autoloading rifle. This type of rifle is easy to shoot, largely because its self-loading operation does the work of chambering and ejecting on its own. Most autoloading rimfire rifles use a blowback operating system that uses gases from a fired round to work the firearm's bolt. When a cartridge is fired, gases propel the bolt rearward, ejecting the spent case from the chamber and picking up a new round from the magazine. Autoloaders provide quick follow-up shots; however, this can lead to beginners rapidly firing through

ammunition instead of focusing on skills and accuracy.

The autoloading Winchester Wildcat® makes shooting a rimfire fast, flawless, and fun. The rifle's advanced design is accurate, reliable, and easy to keep clean.

LEVER-ACTION RIFLES

Lastly is the lever-action. This type of rifle should remind you of western movies with its familiar design. The lever-action is easy and fun to shoot, giving users the chance to experience a rifle design that originated more than 150 years ago. Because of its manual action, marksmen need to take additional time between shots allowing them to think about their shot placement. The lever-action is reliable, accurate, and easy for new shooters to confidently cycle through cartridges.

The Ranger is Winchester Repeating Arms' lever-action entry and performs as great as it looks. Constructed with a lightweight alloy receiver, high-quality barrel, and engineered with light operating forces the Ranger is ready to roll tin cans.

As new firearm owners enter the shooting sports world, the rimfire is a great way to learn shooting fundamentals and the importance of gun safety. Rugged and reliable, the rimfire rifle will continue to introduce beginners into the shooting sports world for generations to come.



Keep Your Hands Sharp With The Right Hunting Knife



Presented by W.R. Case

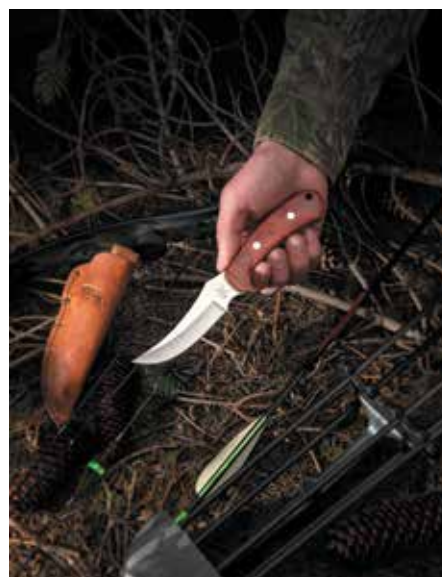
The knife is literally one of man's very first tools and they helped sustain humanity through thousands of years. Today, the ever-growing appetite for knives means our ability to cut things with a sharp tool remains an essential skill.

HUNTING KNIVES, DEFINED

Even the most seasoned experts would agree that the sport of hunting can present some of the biggest challenges in the outdoors that you'll ever face. So, you'll want to be sure you have the right equipment for the job at hand before you head into the woods.

One of the most important equipment choices you'll make centers around your hunting knife. But as easy a task as it may sound to be, choosing the right hunting knife can be a daunting challenge.

While many hunters opt for a traditional fixed blade on their belt when



they venture into the field, others may prefer a folding type that they can slip into their pocket. Many carry both a fixed blade and another folding knife to use in different cutting situations and environments, and to have a backup

blade in case one gets damaged and can't be used safely.

FIXED VS FOLDING

There are pros and cons for both traditional fixed blades and folding knives:



FIXED BLADES

- Lack of moving parts make the knife very strong, stable, and easy to wipe clean
- Larger handle area provides a surer grip and handling
- Knife sizes and blade shapes according to type of game you're hunting
- Sheaths come in a variety of styles and materials to suit your own carrying and draw preferences

- Larger size means your knife is less likely to get left behind when you exit the woods
- Fewer steel choices available



FOLDING KNIVES

- Easy to carry; most can easily fit into your pant pocket without weighing you down
- One blade or multiple (differing blade shapes for more specific tasking)
- Many sizes to accommodate a range of hand sizes
- Locking and non-locking blades according to your own preferences
- Easier to lose
- More steel and handle material choices

HUNTING & KNIVES GO TOGETHER

Many hunters will tell you, "When the hunt is over, the real work begins." While there are probably hundreds of tasks that could include the use of a knife to cut something, using a knife after the hunt is a given. Here's a beginner's guide to knives and some of their more common uses from field to table:



Gutting:

One of the first things you need to do is to establish an exit point for the extraction and removal of the animal's inedible parts. To accomplish this task, you can use a fixed blade knife that has a gut hook blade feature (a short, curved tip at its end). After carefully puncturing a small hole into one end of the animal's belly, you carefully insert the blade hook into the hole and then apply a firm grip to the knife handle and pull the curved edge across the length of the belly to expose the body cavity.



Skinning:

Carefully cutting away the animal's skin without tearing the surrounding muscles or tissues. This helps prevent the skin and hair from getting stuck on the meat and saves on cleanup later.



Deboning: Separating the meat from joints and bone.



Butchering: Cutting meat up into meal-sized portions.



Caping: Removing the skin from the head and neck area of an animal to prepare it for use as a hunting trophy. A floor rug can be made from separating the animal's pelt from its back and torso areas.

SIZE WISE

In today's marketplace, there are an endless array of knives of all sizes to choose from, each with a different fit and feel that can perform to your expectations.

Most fixed blades today generally come with a blade that measures from 2 1/2 to 5" or more. Larger blades (4-5+ inches) can help you tackle larger jobs more easily and quickly, while smaller blades (up to 4 inches) give you more control and maneuverability.

Our hands and fingers are all a little different in size and shape, so the knife you ultimately choose should depend on your comfort level when the knife is in your own hand. The best way to try out different knives is to visit a retailer in person.

SHIP SHAPE BLADES

Blade shapes have developed over time to be more specialized for different uses and application. While there are many variations in blade choices across the knife industry, we'll focus on three most popular blade shapes and their benefits:

Clip Blade: This all-purpose, slender design is a popular choice among hunters, fishers, campers, explorers and everyday taskers who need a handy tool around the home, garage, workshop or garden. The blade edge gives you reliable performance when cutting and slicing, and the well-defined, pointy tip makes easy work of puncturing through material.

Drop Point Blade: The Drop Point blade has a larger belly from spine to edge; the sharpened edge extends further horizontally from handle to tip than most other blade shapes. This design gives the blade a bit more strength while providing good overall control, with the added ability of making longer cuts with a single pass. The point, while not as "pointy" as that found on a Clip blade, is still quite functional for puncturing and digging. This blade design is a good choice for use in the outdoors or at camp.

Skinner Blade: The Skinner, with a curvier edge, is also a popular blade choice. Its accentuated swept edge and pointed tip allows for more all-purpose cutting tasks, making it an especially good choice for post-hunt caping, skinning, gutting and quartering of game.

Choosing the right knife for your outdoor adventures may seem like a tough task. But now that you know more about hunting knives, choosing your own knife can be simple, especially if you visit a retailer or two to try on a few. There are more than 3,000 Case Authorized knife dealers across the USA. Find those nearest you at www.caseknives.com/dealer. Once you find the right knife for you, feel free to order direct from Case and receive 10% off and free shipping as a first-time hunter with code IHEAStudent at checkout! Keep your hands sharp!



The Versatile Bolt Action Rifle



By Mark Gurney

Planning a hunting trip and selecting appropriate gear can be a lot of fun, but also can be overwhelming given the choices available. Selecting an appropriate rifle can be among the most important of those choices, but there are many good options from which to choose. Your task, which should be an enjoyable one, will be figuring out which rifle is best for you.

Hunting rifles will generally fall into three basic types: Single-shot, manual repeater, and semi-automatic. Although some single-shot rifles can be remarkably elegant, most are simple and inexpensive. Whatever they cost, single-shot rifles all have one fundamental drawback: A second or third “follow-up” shot cannot be

accomplished very quickly. While one can argue that a follow-up shot should not be relied upon for hunting success, no one regrets being able to take a second shot should it be needed.

On the other end of the spectrum of complexity and cost is the autoloading rifle. While modern autoloaders are usually quite reliable, autoloaders are mechanically more complex, can be a little heavier, and tend to be a little more pricey than comparable manually repeating rifles. Autoloaders sometimes have limitations on the calibers or the types of ammunition with which they can be effectively paired.

This leaves us with the manually repeating rifle, including the pump action,

the lever action, and the very popular bolt-action rifle. Bolt-actions are easy to understand how to use and they are fundamentally strong and reliable. They offer a wide range of calibers in which they can be chambered, suitable for target practice, plinking, and hunting the smallest game to the biggest animals that walk the earth. Bolt-action rifles can be found in the simplest configurations at modest prices, or can be specifically appointed to a hunter’s tastes – and be priced accordingly.

The operation of a bolt-action rifle is simple in concept and how it works is easy to understand, allowing for a fast learning curve in handling the gun safely. To open the action, the bolt

handle is lifted up, and pulled rearward, exposing the magazine (where cartridges are stored) and the chamber (where the cartridge is placed in the barrel). Pushing the bolt forward will guide a cartridge from the magazine into the chamber. Once all the way forward, the bolt handle is pushed down, locking the cartridge into the chamber and it is ready to fire. The safety is then engaged, and the safety is removed just before firing. After firing, the bolt is cycled the same way, opening the action, ejecting the fired case as the bolt is pulled rearward, guiding a new cartridge into the chamber as the bolt is returned forward, ready to fire again.

Ruger® Firearms offers a variety of bolt-action rifles – let’s take a look.

The Ruger American® Rifle is an enormously popular bolt-action rifle with both novice and experienced hunters, and for a good reason. It offers features and accuracy on par with guns that cost hundreds (if not thousands) of dollars more, and is available in a variety of configurations and calibers that can meet most any hunting need.

The Ruger American Rifle with GO Wild® camo is available in a variety of calibers, suitable for medium to large size game like whitetail deer. The Ruger American Rifle Predator, chambered in .223 Remington, is perfect for smaller game and predators like coyote. The Ruger American® Ranch Rifle is great for bigger or tougher animals like black bear or wild hog. The muzzle break at the end of the barrel helps reduce felt recoil.

Ruger also offers a line of bolt-action Hawkeye® Rifles, classic rifles that are usually supplied in a stock of fine hardwood like American Walnut, or

stocks made of durable and attractive laminate wood. If you’re looking to hunt the most dangerous game in the world, look no further than The Ruger Guide



Gun. Built in durable laminate wood and rust-resistant stainless steel, this example is chambered in .375 Ruger. The Ruger Hawkeye Compact is a short, light, easy to carry gun, suitable for hunting outings that involve lots of hiking and climbing.

Quiet patience in the woods is often rewarded with heart-thumping excitement

as your quarry suddenly appears out of nowhere. The best way to be prepared for this event is to practice, practice, practice! Target shooting with bolt-action rifles, chambered in low cost rimfire calibers like .22 Long Rifle, can provide familiarity or “muscle memory” that will directly apply to your larger caliber hunting rifle. In addition to enjoyable time at the range, there are usually small game opportunities for hunting with a rimfire rifle outside the larger game seasons that can help keep you on top of your game, and be a lot of fun, too.

The Ruger American Rimfire is a line of rifles chambered in .22 LR, .22 WMR (“.22 Magnum”) and .17 HMR. Most Ruger American Rimfires are supplied with interchangeable stock modules that allow the length pull (length of the stock) and the comb height to be modified for smaller or larger shooters and the type of sights or optics in use on the rifle.

The Ruger American Rimfire in GO Wild Camo has a long and tall stock module, ideal for a full-statured shooter, using a telescopic sight. In contrast, the Ruger American Rimfire Compact chambered in .22 LR has a short and low stock module, making it ideal for a smaller-statured shooter, using the supplied iron sights.

Bolt-actions as a whole can serve you well as a novice hunter, and continue to serve you as you become more experienced. You can ask relatives or friends who hunt for their opinions on which bolt-action rifle might be best for you, or your local firearms retailer can be great resource of information and guidance. Best of luck to you as you head out into the field!





Lever Action Rifles: Never Out of Style

By Joe Arterburn

I carried a lever-action rifle the first time I hunted deer on my own. I was a teenager and mighty proud of that .30-30 and determined to join the ranks of successful deer hunters so when that 3x2 whitetail buck hit the ground you could've popped me with a pin I was so pumped up and proud.

Lever-action rifles may have waned in popularity since the advent of bolt-action and semi-auto rifles, but they've never gone away and in fact are still carried afield every year by hunters who appreciate the fast-handling and reliable design.

By the end of the Civil War, lever-actions were on the fast track of

development and manufacturing and were the firearm of choice for hunters across the U.S. Reliable and able to produce backup shots at the jack of the lever, the rifles rode the wave of popularity until it crested in the early 1900s as bolt-actions and semi-autos began to proliferate. One advantage of bolt-actions and semi-autos was their ability to use more pointed, and therefore more aerodynamic bullets.

The major drawback of most lever-action designs (Browning BLR, Winchester 1895 and Savage 99 solved the dilemma with box magazines.) is their reliance on a tubular magazine in which ammunition is stacked one

atop another, the tip of one against the primer of another; the danger being recoil could set off cartridges in the magazine in a dangerous chain reaction. Therefore, lever-action ammunition was flat-nosed with no point to potentially set off a primer. However, game-changers have come along, such as Hornady's LeveRevolution, which features a plastic tip to prevent setting off the primer of another in a tubular magazine. The tipped bullets also offer high ballistic coefficients to deliver flatter trajectory and less wind resistance than flat-topped bullets. Plus, advancements in the design of flat- or round-top bullets, Federal's



HammerDown and Remington's Buckhammer come to mind, have increased accuracy and knock-down power.

Despite being eclipsed, at least early on, in the ammunition department, lever-action rifles have never gone out of style for hunters, sport shooters and saw a resurgence in popularity with the rise of cowboy-action shooting and other Western-era shooting activities. Improved ammo helps with the continued popularity but lever-actions have something else going for them: nostalgia. Who hasn't watched western movies with fast-handling lever-actions playing a starring role? And think of the millions of kids who grew up – and are still growing up – with a Daisy or other lever-action BB gun. Nostalgia is a powerful thing, especially if it can be backed up with a reliable lever-action that leaves nothing wanting in the

accurate-shooting department.

Nostalgia aside, there have always been hunters who appreciate the old-school-cool design and well-balanced feel of a lever-actions especially in close, brushy terrain where fast handling may mean the difference between a missed opportunity and a trophy buck. In short, anywhere where action may come fast and distances are moderate lever-actions are a good choice.

Modern lever-actions come in a variety of calibers, including powerful calibers like .444 and .450 Marlin and the venerable .45-70, which remains popular more than a century after its introduction. Other classic calibers include .30-30 and .35 Remington as well as pistol calibers, such as .44 Magnum and .45 Colt, which give you the advantage of carrying a handgun and rifle of the same caliber. There are more lever-action calibers out there but I want to get to some of the most fun-to-shoot: .22 caliber. Popular for firearms

instruction to youngsters (and adults) and just plain fun to shoot, whether at targets, plinking soup cans or small game, .22-caliber lever-actions remain a popular choice.

Speaking of popular choices, Smith & Wesson made waves this year when they introduced their lever-action Model 1854. Chambered in the powerful .44 Magnum caliber, the Model 1854 brings a fresh look and design to lever-actions. Maintaining the classic looks and fast-handling features hunters love, it features stainless steel receiver, barrel (which is threaded) and other components, plus synthetic stock and forend, to brush off weather extremes and hard use.

It features a XS Ghost Ring rear sight which naturally centers on the gold-bead front sight, plus it comes with a factory-installed picatinny rail for easy installation of optics; a riflescope or red-dot look good on it. A unique feature is the removable magazine tube. Yes, it has the traditional side loading gate through which you load one round after another, but the twist knob at the top of the magazine tube lets you slide the magazine assembly out so you can safely remove any unspent ammunition. This does away with the old-school method of unloading a lever-action which is to cycle each round through the chamber, levering until the magazine is empty.

Like I said, the Model 1854 is making waves. Check it out at smith-wesson.com.



Smith & Wesson





How Modern Hunting Rifles Have Evolved

By Joe Arterburn

A rifle is one of the hunter's most important pieces of gear and it's vitally important to choose a quality rifle. Fortunately, we have progressed from early flintlock designs to our modern rifle systems that help us be more successful in the field.

Even with early firearms being prevalent in the mid-1800s, for hunters they still lacked effectiveness. Hunters using low-velocity lead balls fired in smooth-bore rifles experienced a lack of range, accuracy, and lethality. An archer could send a follow up shot in

less time than it took to reload a flintlock. However, the invention of a percussion cap, essentially the first primer, sparked rapid innovation in firearms. Within only a few years, firearms and cartridges had progressed to designs that are still prevalent today.

In the U.S., the invention of self-contained metallic cartridges allowed for repeating rifles, and lever-actions to be developed. These rifles were very effective and harvested untold numbers of game. However, while lever actions won the West, Peter Paul Mauser created

the '98 Mauser rifle in Europe. The 98 Mauser was the first popular bolt-action, push feed repeating rifle and gained widespread popularity. It was the primary rifle for the German military and many other militaries followed suit with similar bolt action designs of their own. This platform became popular with sportsmen for its ability to fire more accurate and powerful cartridges than other firearm designs. It was reliable, easy to use, and more effective. The bolt action rifle gave sportsmen the opportunity to take game at extended ranges with confidence.



Because of these characteristics, the bolt-action was the perfect platform to develop our modern hunting rifle on. The receiver could accommodate a variety of cartridge sizes and precisely threading the barrel into it allowed for excellent accuracy. Accuracy and reliability have

always been the two driving factors in perfecting a hunting rifle, and bolt action rifles have come a long way since the Mauser.

Compare the 98 Mauser to one of the most modern rifles on the market, the SIG Cross. Obviously, this rifle

has some major visual differences from the others, despite it still being bolt-action. First, the wood stock has been traded for an aluminum chassis. Chassis give rifles complete modularity to fit a variety of shooters by adjusting length of pull, cheek weld height, grip, and more. Adjustability means the rifle can transform to properly fit many shooters, making it a great fit for the family. It also gives hunters the option for many different attachments on the forend of the rifle. You could attach a bipod, clip into a tripod, and even connect weights if you needed to reduce recoil. This buttstock also folds, so this rifle can reduce to a mere 25 inches to easily fit in a pack. It's also extremely lightweight allowing a much greater degree of comfort for long treks into the field seeking game.

Moving on to the receiver. Normally the action to stock or chassis is a two-piece design. Not here. The receiver is one piece, top to bottom. This means the rifle is more rigid, improving accuracy. It's stronger, and therefore safer. The action design also allows for barrels to be interchanged easily by the user with no gunsmith required. This means that you get to choose your caliber for the hunting application that day! Finally, the barrel comes threaded and ready for your muzzle device of choice.

The modern hunting rifle has come a long way from the original flintlocks. Today you can purchase one rifle that is accurate and reliable, is compatible with any attachment, fits anyone in your family, and has multiple cartridge options. It truly is an evolution in rifle technology.



SIG SAUER



Up Your Game: Hunting with a Wheelgun

By Joe Arterburn

While it is true that hunting with a revolver presents challenges, there is no reason anyone who has chosen the right revolver and suitable ammunition – and follows basic fundamental techniques of accurate shooting – can't successfully hunt with a handgun.

Look at it this way. Bullets of the same caliber essentially travel just as far from a revolver as they do from a rifle. All you need to do is make sure you accurately aim and fire that revolver at a distance you're comfortable shooting at a game animal. That comfort comes from practice.

Where considered legal hunting firearms, handguns can reliably take medium-sized game, such as deer,

antelope, wild hogs and, actually it goes up from there. And small-game and varmint hunting is a great place to begin and practice handgun hunting and shooting skills before stepping up to bigger game. Hunters take bear and even larger animals with handguns and that is an attainable goal; just make sure you practice until you are comfortable with the range and knock-down requirements of ethical hunting of bigger game.

The first step is to choose the right handgun for you. We are talking revolvers here because of their reliable performance and proven history as hunting firearms. The first decision is whether you want a single-action or double-action revolver. In short, a single-

action requires the hammer to be cocked before you can pull the trigger. A double-action can be fired by either pulling back the hammer to the cocked position, then pulling the trigger or you can simply pull the trigger which draws back (The first action.) and releases the hammer (The second action.) firing the cartridge then resetting the trigger to be pulled again to fire another round.

Choosing the proper caliber is important to ethical hunting. Your chosen caliber must have the proven terminal performance to cleanly kill the animal you intend to hunt. For small game, such as squirrels and rabbits, .22 caliber is fine and a good and inexpensive place to practice hunting and shooting skills.

Larger animals will require larger calibers which for hunting purposes generally start in the .357 Magnum range for medium-size game and go up from there, .44 Magnum being a popular caliber; .45 Colt one of my favorites; and then ranging up in the .350 Legend, .454 Casull and 460 Smith & Wesson, even .500 Smith & Wesson territory for big game. Just be aware with those largest calibers there is, according to Newton's third law, an equal and opposite reaction that occurs after pulling the trigger. Or in a single word, recoil.

Sights will be a major consideration. With practice – and reasonable eyesight – open sights will do fine. The deciding factor is if you can see and properly align the sights when shooting at distant targets. Practice, as always, is the key. Long eye-relief pistol scopes and red-dot sights are other sighting options, and can help immensely in target acquisition and accuracy. The magnification of scopes can help you see the game animal and assist in shot placement. Red-dot sights likewise help in getting on target quickly, pinpointing your aim, and helping you stay on target.

As in any hunting or shooting, a steady aim is paramount. In rifle shooting, the firearm is braced against your shoulder held in place, positioned and steadied along two points of the rifle, the grip and the stock. With a revolver you have only the handle to grip, preferably in a two-hand stance, but be careful not to place your support hand in front of the



cylinder where it meets the barrel because hot gases escape at that juncture and can cause injury.

As in rifle hunting, a revolver must be held steady to provide an accurate aim and the best assurance is to use a good rest or at least the steadiest shooting posture you can perform. A monopod, bipod or tripod goes a long way in providing a steady rest or barring that find a natural rest over a tree branch or boulder. If you find yourself in a situation without a rest, you can fall back on techniques you hopefully practiced, such as shooting from a sitting position with arms braced on your knees. Shooting from a prone position is also a good thing to practice and have in your back pocket.

A great place to start your revolver-

selection process is to visit Smith and Wesson's website and click on the "revolver" tab. You'll have before you a wide selection of different frame sizes, grip options and calibers. You can filter by caliber, which helps you zero in according to the game you plan to hunt. And you can filter by sight design or even choose an optics-ready revolver if a scope or red-dot sight is in your plans.

For more information, visit smith-wesson.com.



Smith & Wesson





Turkey Load Science

Presented by Federal Ammunition

The sum of a product's overall quality can only be determined by the quality of each individual part. For shotshells, that means the hull, primer, powder, wads—and most importantly—the projectiles (pellets).

All major ammunition manufacturers build different product line options based on their own product specifications, standards, and price points. Understanding the differences in pellet material might just be the most important aspect when understanding shotshell ammunition in general, especially when it comes to turkey loads.

To help gain this understanding, here's a look at what two ammunition companies—Federal and HEVI-Shot—have available for turkey hunters in terms of pellet options. These examples will help any hunter navigate through the many options of shotshell projectiles.

Ammunition engineers believe the most important part of any turkey load is

the pellet. Yes, quality primers to ignite the powder; reliable propellant to push the payload at the ideal velocity; wads to control the shot string; and hulls to keep it all together, tight, and protected are all critical. But the pellet is most crucial: It's the only component that makes the lethal connection to the wild turkey.

Modern shotshell manufacturers mainly use a choice of four different pellet materials in their turkey loads.



These are: Steel is made of Iron (Fe), Carbon (C) and other elements to create an ultra-strong pellet material. Bismuth (Bi) is naturally a brittle metal, but when it's mixed with Tin (Sn) and other elements it makes for a robust shot pellet. Lead (Pb) is a heavy metal that is soft and malleable, yet very dense. Copper (Cu) often coats lead pellets to protect and improve its performance. Tungsten (W) is a rare, ultra-hard metal. When mixed with softer metals it becomes a heavy-duty alloy that's much heavier and more effective long-range than any other pellet on the planet.

At its core, the main differential between all these metals is density. Density is measured by taking a cube of metal that is one-by-one-by-one-centimeter in size and weighing it in grams. This gives you the data in grams per cubic centimeter (g/cc).

Of the four shot materials, steel has the lightest density of 7.8 g/cc. Bismuth



is next at 9.6 g/cc. The density of lead is 11.2 g/cc. Regarding Tungsten, different alloy recipes dictate its density. For example, HEVI-Shot's recipe for its tungsten shot has a density of 12 g/cc. However, the industry's most ultra-dense recipe for a nonlead pellet is called Tungsten Super Shot (TSS) which has a density of 18 g/cc.

Regarding lethality, it's considered to be the same order: steel, bismuth, lead, and then tungsten.

Why is this? Well, density directly correlates to a pellet's penetration energy and penetration ability which together causes lethality.

Penetration energy is a measure of energy per surface area. Pellet mass and retained velocity both play a factor in this equation: $(Ke=1/2 mv^2) / (\text{surface area of pellet})$.

A heavier material will carry its penetration energy and ability longer. In other words, it will hit harder at short and moderate distances, as well as still kill at greater distances compared to a lighter material.

Think about it: if you had a whiffle ball,

a tennis ball, and a baseball thrown at you at the same speed, which one would do the most bruising damage? At five yards? At forty yards?

The size of the projectile (surface area of pellet) effects penetration ability. Think about it: if punctured in the foot by a large nail or a small needle, which one goes deeper? Well, it's the same when shooting large shot size No. 4 compared to the tiny size of No. 9.

The size of shot also affects the quantity of pellets in the payload (it's pellet count): A one-centimeter cube of steel weighs a lot less than a one-centimeter cube of tungsten. Because TSS is 56-percent denser than steel, hunters can choose loads with pellets that are up to six sizes smaller in a similar pellet payload weight. This means, in a 3-inch shotshell hull with a 1-3/4-ounce payload weight, you can fit a lot more pellets of tiny No. 9s compared to the larger shot size No. 4.

The quantity of pellets that leave a shotgun's muzzle directly correlates to the number of pellets in the down range pattern. More pellets in any given pattern

increases the possibility of a pellet penetrating the target.

In summary, if you choose a shotshell that features a pellet material that is denser than another material, you will benefit by having more downrange energy, deeper penetration, and/or higher pellet counts, which leads to fuller patterns with more hits on target at longer distances. It's just science and it just makes sense.

Federal's current product list of factory ammo includes: Grand Slam (all copper-plated lead pellets), 3rd Degree (a mix of lead, copper-plated lead, and tungsten super shot pellets), and HEAVYWEIGHT TSS (all tungsten super shot pellets).

HEVI-Shot's current product list of factory ammo includes: HEVI-Metal Turkey (a mix of steel and bismuth pellets), Magnum Blend (all 12 g/cc tungsten pellets); and HEVI-18 (all tungsten super shot pellets).

For more information on these turkey loads and all other products from Federal and HEVI-Shot, visit:

www.federalpremium.com and www.hevishot.com.





Savage AccuTrigger

Triggering Safety Innovation

By Joe Aterburn

At one time in the past, almost all rifles had the same problem. Their triggers were stiff; it took a heavy pull to “break,” releasing the sear to start the firing process. This was a built-in safety design to prevent accidental firing from a rifle being dropped or jarred. Safe and functional, yes, but stiff triggers worked against accuracy.

Activating the trigger is one of the human variables affecting accuracy. A crisp, light trigger pull minimizes the negative effect a shooter has on accuracy. When the trigger breaks

cleanly and consistently at light pressure, the shooter’s interface is clean and consistent, and accuracy is the result. Conversely, the more a shooter tugs on a stiff trigger, the more accuracy is adversely affected.

In 2003, Savage Arms introduced the AccuTrigger which addressed safety, performance, reliability and accuracy for their line of production rifles. Savage’s first goal was to produce a trigger with a crisp, clean break and no creep. Creep, or travel, is the slack felt when pulling some triggers before the sear is engaged. With

Step 1 accomplished, Savage set out to make it user-adjustable. Previously, lightening trigger pull typically involved disassembling the trigger and polishing the surface of the sear and/or trigger to create a smoother break; usually by a gunsmith. AccuTrigger is easily adjustable, without complicated disassembly.

Importantly, Step 3 was to create a new level of safe operation to minimize, if not eliminate, accidental discharge from dropping, jarring or similar incidents. Preventing accidental

discharge had previously been the job of the safety mechanism. The quandary was a light trigger pull improved accuracy but made it easier for jarring to release the sear causing accidental discharge but heavier trigger pull affected accuracy, and still doesn’t guarantee accidental discharge prevention.



Enter AccuRelease, a unique safety mechanism that sets AccuTrigger apart. AccuRelease, in simple terms, is a physical block in the path of the sear; think of it as a seesaw mechanism. A blade through the trigger shoe acts much like a two-stage trigger; it must first be depressed which lowers the seesaw block out of the way of the sear before the trigger is pulled. Even if the trigger is hit from the side, for instance when you

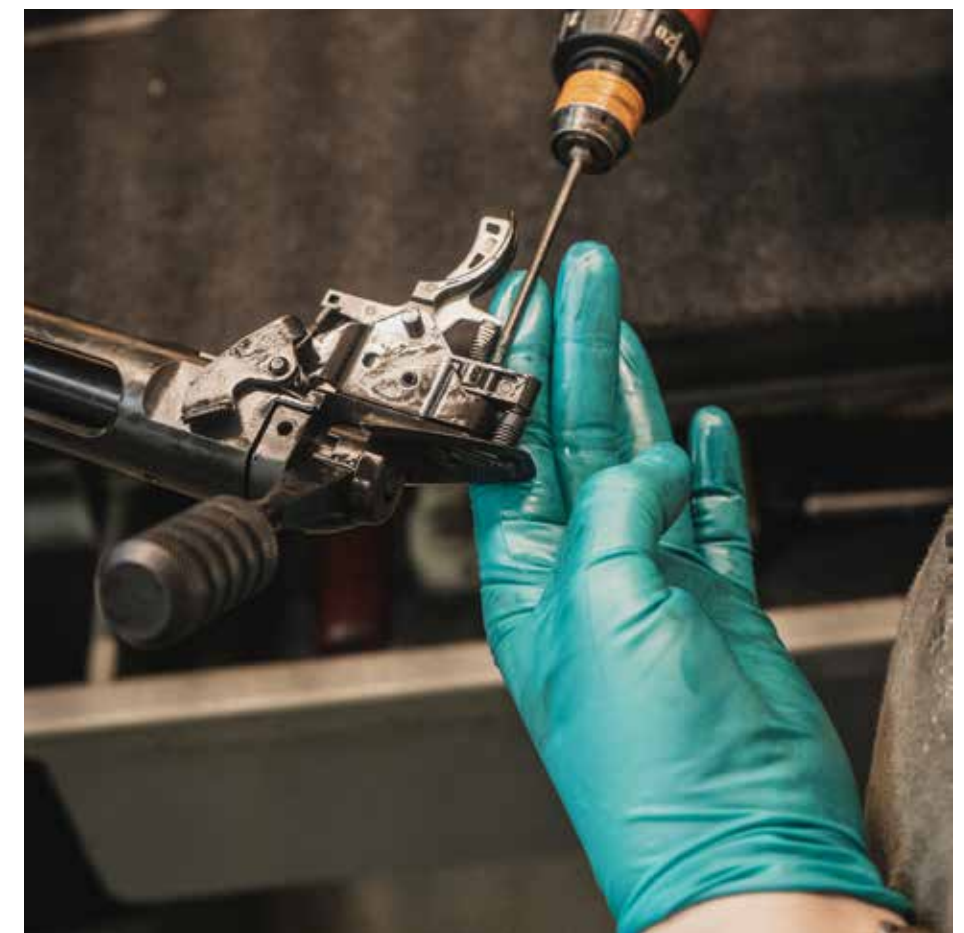


reach a finger into the trigger guard, the sear can’t fall when the blade is extended and the seesaw is up in blocking position. The trigger blade, which engages naturally in the triggering motion, must be depressed for the sear to fall.

Even when the safety is in the “fire” position, AccuRelease prevents accidental discharge by blocking the sear, even if the rifle is dropped or jarred. Again, the tang-mounted safety is the first level of safety; AccuRelease adds a reliable and important next level.

From a performance and accuracy standpoint, AccuTrigger can be adjusted with a simple key to as low as 1.5 pounds of trigger pull to a stout six pounds. With practice at the range, you can determine what setting is best for your hunting or shooting application. Some stock designs allow adjustments without removing the barreled action, but even those requiring removal are easily accomplished without a gunsmith. It’s as simple as inserting the key and twisting gently, clockwise to increase pull weight, counterclockwise to lessen it. And don’t worry, you can’t over-adjust, dismantle or damage the system by turning it too far.

After introducing AccuTrigger, the revolutionary design still sets the standard for what shooters expect from their rifle trigger: safety, performance, reliability and accuracy. Look-alike triggers have followed and from the outside appear similar but inside where it really matters, they don’t provide the sear-blocking safety features of AccuTrigger.



The Next Chapter in the Evolution of Hunting Binoculars

By Joe Arterburn

I still have the field glasses my mother kept on the kitchen window sill so she could watch birds, rabbits and other wildlife that flitted and scampered across the farmyard, or to keep an eye on us kids as we played out by the barn. They seem primitive compared to the advances in optical technology we enjoy today.

Those field glasses, essentially double telescopes, were little more than magnifying lenses set in a simple mechanism that at the turn of the wheel moved the eyepiece lenses in and out in tandem until the image was in focus, more or less.

Sometimes the term field glasses is

used interchangeably with binoculars and while they are similar, there are fundamental differences. Field glasses use twin convex objective lenses toward the front and smaller concave lenses near the eyepiece, offering comparative low magnification. Binoculars, however, use prisms inside each barrel to reflect and direct the light and image from the objective lenses along a greater path length which provides greater magnification at the viewing end. If you think that's an amazing accomplishment in optics design, it is more amazing when you learn binoculars were invented by Ignazio Porro, an Italian inventor, in the 1850s. Porro prisms in modern optics

still bear his name.

These optical developments were quickly adapted to many fields, such as stargazing by amateurs and astronomy by scholars, natural study, wildlife and bird watching and even as opera glasses for viewing a theater stage, and soon were in use militarily and in the more peaceful recreation (and occupation) of hunting.

Hunters as much as anyone have benefited from the race by optics manufacturers to produce better and better optics. The quality of glass used in lenses has leapt a hundredfold, improving image resolution and definition; and now common are lens coatings to improve light transmission and image quality;

and correct color aberrations. All this, and waterproof, dust-proof, fog-proof, shock-proof construction, are common in today's top binoculars; unheard of in Porro's day.

Manufacturers constantly work at improving aspects you probably never considered when looking through your binocular, such as edge-to-edge clarity, field of view and other considerations that keep optical engineers up at night.

One problem you may have noticed is the stronger the magnification the harder it is to hold the binocular steady. Especially at high magnification, it can seem impossible to hold still enough for a steady image, making it difficult to concentrate on the viewed object, for instance, to field judge that distant whitetail buck.

Using a rest, even mounting binoculars to a tripod, can help but are not always the answer. You may not have or want to carry a tripod, and it may not be effective. Plus, having binoculars in hand, not on a tripod or other rest, and available for instant offhand use is a valuable asset for hunters pursuing wary game.

As I said, optical engineers lose sleep

working out solutions to issues like this and in this case the answer is image-stabilizing binoculars, in which shaking and vibration are electronically cancelled.

My first experience with a SIG SAUER ZULU6 HDX 16x42 binocular with Optical Image Stabilization technology was eye-opening, no pun intended. (The HDX refers to the top-quality glass used to enhance light transmission, resolution and definition, all the things we just discussed.)

The difference was instantly noticeable. I was seeing clearly, even at a distance with the 16X magnification, as I would with high-end binoculars and then I realized what the binos were doing; my viewing field was steady; no shake, no vibration; just steady panning across the field; then switching to Target mode, I felt I could really zero in on detail.

The test is to view something 100 or so yards away with the bino off; then while still looking through it turn it on. Holy cow. The involuntary shaking stopped. Then I tried manually shaking the bino while viewing. It didn't care; the image remained steady.

Scan mode is for viewing along and

picking apart distant terrain and Target mode lets you lock in, increasing stability up to 50 percent, meaning you can get down to the serious business of identifying and field judging that distant buck. And, it's easier to stay locked on target, so you aren't constantly adjusting to find a steady view.

An added plus with these is I can view longer and with less eye strain, even less muscle strain; you know how long periods of trying to steady binoculars seems to strain eye, neck and back muscles? With these, that's history.

I'm a run-and-gun, spot-and-stalk hunter, so offhand glassing is key and these are a game-changer. I about said this is the pinnacle of binocular development, but I'm sure they're already working on the next great development.

Progress never sleeps. Neither do optical engineers.

You can check out ZULU6 HDX binoculars at [sigsauger.com](https://www.sigsauger.com)

SIGSAUER





Modern Optics a Boon to Ethical Hunting

By Joe Arterburn

The goal of hunting is to take a big-game animal quickly and humanely, minimizing suffering and assuring the animal is quickly recovered, meat properly cared for and the animal respected.

The greatest advancement toward that goal has been the development of optics technology that greatly improves the ability of hunters to make accurate, ethical shots.

To understand how far we've come, it's best to look back centuries to early hunting firearms that provided provender for the first and subsequent settlers

to arrive and spread across the North American continent. Most of those rifles had open sights consisting of a notched U-shaped rear "buckhorn" sight through which the shooter sighted to center the front blade sight. With proper alignment, reasonably accurate shots could be made but distance to the target could only be estimated by the shooter, who through practice knew the rifle's impact point at a set distance, say, 100 yards. The term "Kentucky windage," thought coined by early-day marksmen using long-barreled flintlock or percussion Kentucky rifles, refers to the practice of holding off

target either left or right to account for wind and above the target to account for distance. Open sights continued well into the development of modern centerfire firearms and are still in use and a viable option today.

But the development of optical systems, particularly riflescopes, started a progression of improvements in accurately placing shots. Riflescopes' magnification provided better discernment of targets and crosshair reticles provided a precise aiming point on the game animal. Early scopes had fixed magnification power and simple

crosshairs and with practice many hunters became proficient in their use. Improvements came in the way of adjustable magnification ranges and crosshairs with multiple aiming points, or bullet-drop compensating (BDC) reticles with hashmarks providing holdover points corresponding with specific ranges. Again with practice hunters became more precise but the drawback was ranges had to be estimated or determined with handheld rangefinders as they came onto the hunting scene.

Early rangefinders were by today's standards simple mechanisms that measured line-of-sight A-to-B distance. Today's rangefinders incorporate technology that factor in angles of inclination (uphill) or declination (downhill), with some monitoring environmental conditions and, with input about your specific ammunition, calculate ballistic solutions to make that perfect shot.

Another popular method of matching aiming point with distance is to dial the riflescope's elevation turret to a point matching the determined distance to the target, a system that works but takes time to dial in that distance correction, time that may be fleeting should the game animal be alarmed or otherwise inclined to depart quickly.

But what if all three aspects were

instantly at your disposal? Riflescope, rangefinder and ballistic calculator?

The Sig Sauer BDX (Ballistics Data Xchange) system integrates their rangefinder (or rangefinding binocular) and riflescope with their smartphone app using your ammunition's specifics, such as velocity, ballistic coefficient and environmental data, to create a shooting solution that it sends via Bluetooth to the riflescope.

It works like this. The rangefinder determines distance and the app combines it with ballistics data and calculates and sends the shooting solution to the riflescope which displays an illuminated hold-over dot compensating for the exact distance. You simply put that illuminated dot on target and begin your shooting sequence. It will also display the velocity and energy that will remain in your bullet at the terminal end of the displayed shooting distance, information you can use to determine if it will indeed be an ethical shot at that range.

But it should be noted that all the technology in the world does not exempt a hunter from practicing, practicing, practicing with their firearms until a high level of proficiency and competence is reached – and maintained with continual practice. Accomplished shooters and hunters know they will never, ever practice too much.

Nor are technological advancements a reason or excuse to take long-distance shots to which you are not accustomed or competent; it is not a substitute for basic hunting skills, like stalking, tracking and patience.

You may think it sucks to miss an animal, especially one you've worked hard to hunt, to finally get in range, but it sucks much, much more to wound an animal. A miss is a miss and can be learned from and overcome; a wounded animal is a heavy responsibility requiring determined follow-up and, hopefully, a successful outcome and sigh of relief.

But a wounded animal not recovered is heart-breaking, a haunting dream of a hunter's responsibility unfulfilled.

When you pull the trigger you unleash a powerful, deadly force the results of which are fully your responsibility, and the bullet cannot be called back nor the responsibility ignored or transferred. Having the latest technology on your side to assure your bullet hits what and where you intend is a giant step down the road to ethical hunting.

Check out the Sig Sauer BDX system at sig-sauer.com



Field-Dressing Deer: Not As Complicated As It Seems



By Joe Arterburn

I learned to field-dress deer from a page torn from an outdoor magazine which I kept in my hunting jacket, ready for the big day. Since then I've taught our three sons, and others, showing them it is not as complicated as it seems.

What I tell them first is to have the right tools, most importantly a sharp knife with sturdy blade about four inches long and a handle that will provide grip even if bloody.

Ready? Here we go. If you have help, it'll be easier. Either way, roll the deer onto its back, preferably with its head uphill so everything runs downhill. If you have help, have them hold the deer

in position; if not prop it with rock, logs or whatever is at hand.

The first step is reaming the anus. Start by driving the knife directly below the anus through the hide parallel to the spine. With the blade feel for the bone that encircles the anus and use that for a cutting guide. With the knife all the way in, cut around the anus until it is completely detached. Tying it off with string or zip tie will prevent spillage.

Next, with your knife edge up, insert the knife just under the hide and make a slit up to the sex organs. (If you slit the hide with the knife edge down you will cut bits of hair that will find its way onto the meat.) If state law requires the sex

organs to remain attached, cut around them and with the knife edge still up continue slitting just the hide up to the breast bone. Stop there if you intend to have the deer mounted. If not, continue slitting up to the neck.

If regulations allow sex organs to be removed, cut around the udder of a doe or the penis and testicles of a buck, pulling and cutting until they detach.

It helps to skin the hide back a ways, using your blade to cut stubborn tissue. Once the hide is slit, start back at the pelvis and make a deep cut through the meat to the pelvic bone from the body cavity to the anus, then flip the knife edge up and work it under the muscle



and tissue of the body cavity using two fingers of your free hand alongside and under the blade to ensure you don't puncture the stomach or intestines. If you do, just keep working and keep spillage to a minimum. Cut through the muscle and tissue all the way up to the breastbone; the intestines and stomach will likely bulge out and that's OK. If you've already slit up past the breastbone (and not planning to mount the deer) you can cut through the

breastbone cartilage with your knife or a saw, which allows you to spread the ribs and makes the rest of the process easier.

You'll see about mid-body the diaphragm, a thick muscle-like divider between the heart and lungs and stomach and intestines. With your knife cut through the diaphragm and work the edge along the ribs, pushing entrails away, and cutting the diaphragm all the way to the spine; then repeat on the

other side.

Next, reach up as far as possible into the body cavity (It's easier if you've split the breastbone.) and cut the windpipe and esophagus in two as far up as you can reach. Grab the windpipe with both hands and pull down, freeing the entrails as you pull. Use your knife to cut any connective tissue holding it back. Pull the entrails over the anus and out of the cavity. The anus, previously reamed, should pull out through the pelvis, but force and additional cutting may be required.

With the entrails to one side, remove excess fat and tissue and be sure you've completely removed the windpipe and esophagus, which can cause meat spoilage. Lift the deer's front end to encourage draining of the cavity. Don't wash meat with water unless it's been contaminated by stomach or intestine content, urine or feces.

Hang the deer by the head or antlers to encourage cooling.

Congratulations. You've just field-dressed a deer.

Always looking for the right knife, I came across Buck Knives' made-in-USA PakLite Series, which includes knives designed to take your game from the field to kitchen

True to their name, they're lightweight thanks to skeletonized construction that does away with handle material where it isn't needed. The PakLite Field Knife, weighing only 3.1 ounces, is a general-purpose knife with 4-inch skinner-shaped blade for detailed field-dressing while lessening the chance of puncturing things you prefer not to puncture. The series also includes the Cape knife for fine cutting chores, Hide knife for skinning and Processor for getting your venison ready to eat.

Check them out at buckknives.com



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