

Section 1: Firearms

Chapter 1: Shotguns

STUDENT PERFORMANCE OBJECTIVES

In this chapter, the student should learn:

1. The difference between shotguns and other types of firearms
2. What a choke is and how it works
3. The four types of shotgun actions
4. The difference between gauges and the dangers of mixing ammunition
5. Four primary safety rules of gun handling
6. How to properly match ammunition to the shotgun
7. How to check a barrel for obstructions
8. How to safely handle, load, and unload firearms while maintaining safe muzzle control
9. Why eye and ear protection are important while shooting
10. The components and types of ammunition used in a shotgun

Safety First

There are important safety rules to follow before a gun is loaded. One of these rules is checking the barrel for an obstruction or blockage. **First, open the action to make sure**

Parts of a Pump Action Shotgun



the firearm is unloaded. If the firearm is a “hinge action,” look through the barrel from the breech end to insure that it is free of obstruction. If the firearm is any other type of action, use a cleaning rod to run through the barrel or use a small dental mirror inserted into the action to look through the barrel insuring that the barrel is free of an obstruction.

When target shooting or practicing, you must also protect yourself by wearing ear protection and eye protection. High sound levels can eventually cause hearing loss, and flying objects could cause eye damage or even blindness.



Each hunter is responsible for handling all firearms safely at **all** times, not only when in the field.

There are four primary rules to follow:

1. **Keep the muzzle (open end of the barrel) pointed in a safe direction** at all times.
2. **Treat every gun as if it is loaded.** No matter how many times you have seen the gun checked, you must still treat it as if it is loaded. Always check every gun yourself.
3. **Always be sure of your target and beyond.** This means that you never point at anything you do not want to shoot and are

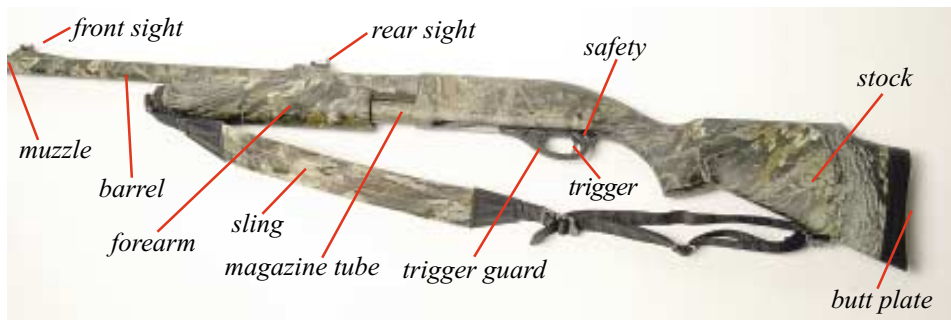
SHOTGUN KEY TERMS

barrel	shot
stock	safety
action	sights
muzzle	wad
gauge	plug
shotshell	magazine
choke	centerfire

aware of what is behind your target to insure a safe backstop.

4. **Keep your finger off the trigger until you are ready to fire.** If you stumble, you may pull the trigger.

Parts of a Pump Action Slug Gun



Shotguns

The main difference between a shotgun and other firearms (rifles and handguns) is the design of the barrel. Traditionally, shotgun barrels differ from rifle/handgun barrels by possessing smooth “bores” and by having comparatively thin walls.

But, before we can fully explain this difference, let’s discuss what a shotgun barrel is and how shotgun barrels are designed.

Parts of a Shotgun

All firearms are composed of three basic parts:

1. **Barrel** - This is *the tube extending from the action that the bullet/shot passes through when a firearm is fired.*
2. **Action** - *This is the part that loads, fires, and unloads the firearm.* There are different types of actions, that will be discussed later.
3. **Stock** - *The action and barrel are attached to the stock. It is the part you hold to aim or point the firearm.*

Barrel

A shotgun is designed to shoot many pellets from a smooth barrel at moving game. These pellets are commonly called **shot**, and are made from lead, steel, or other material. Shotguns can also be used to fire a single projectile with a smooth or rifled barrel at stationary game, such as deer.

Shotguns are shot from the shoulder and are pointed when firing shot shells. They are aimed when firing a single rifled slug. Always match the ammunition to the shotgun that you are using.

Actions

There are four basic types of actions for shotguns. They are:

1. **Hinge action** - This type is just as the name implies. It opens and closes just like the hinge on a door. This action may have one or two barrels (they may be side by side or one over the other).
2. **Pump action** - This type of action has a forearm in the front

Hinge Action
Closed Open



Pump Action
Closed Open



Bolt Action
Closed Open



Semi-automatic Action
Closed Open



Hinge Actions
Over/Under, Single Shot, and
Side by Side



under the barrel that you pull and push to operate the firearm. This is where it gets the name “pump action.”

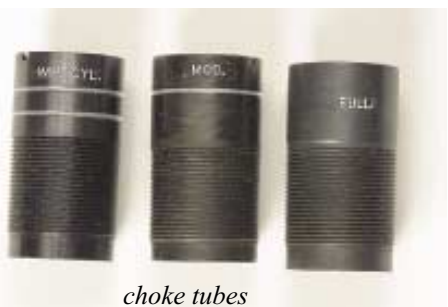
3. **Bolt action** - This type of action has a bolt handle on the side, which must be lifted, pulled to the rear, returned to the front, and locked down to operate the action.
4. **Semi-automatic** - A semi-automatic shotgun fires once and reloads with each pull and release of the trigger.

***IT IS NOT LEGAL TO HUNT WITH A FULLY AUTOMATIC FIREARM.**

Stocks

The barrel and action are attached to the **stock**, or the part you hold to aim or point the firearm. A stock must fit a shooter properly to provide comfort, safety, and accuracy. Stocks are made from a variety of materials, including wood and plastics.

To point a shotgun, the buttstock is placed firmly against the shoulder and the shooter holds the firearm with both hands while resting his/her cheek on the stock.

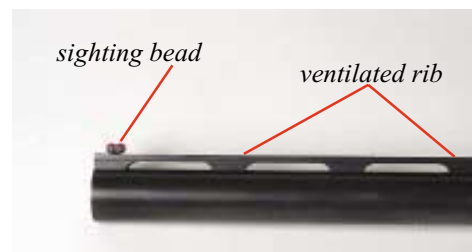


Other Parts of a Shotgun

Some other parts of a shotgun that are important to know and understand are:

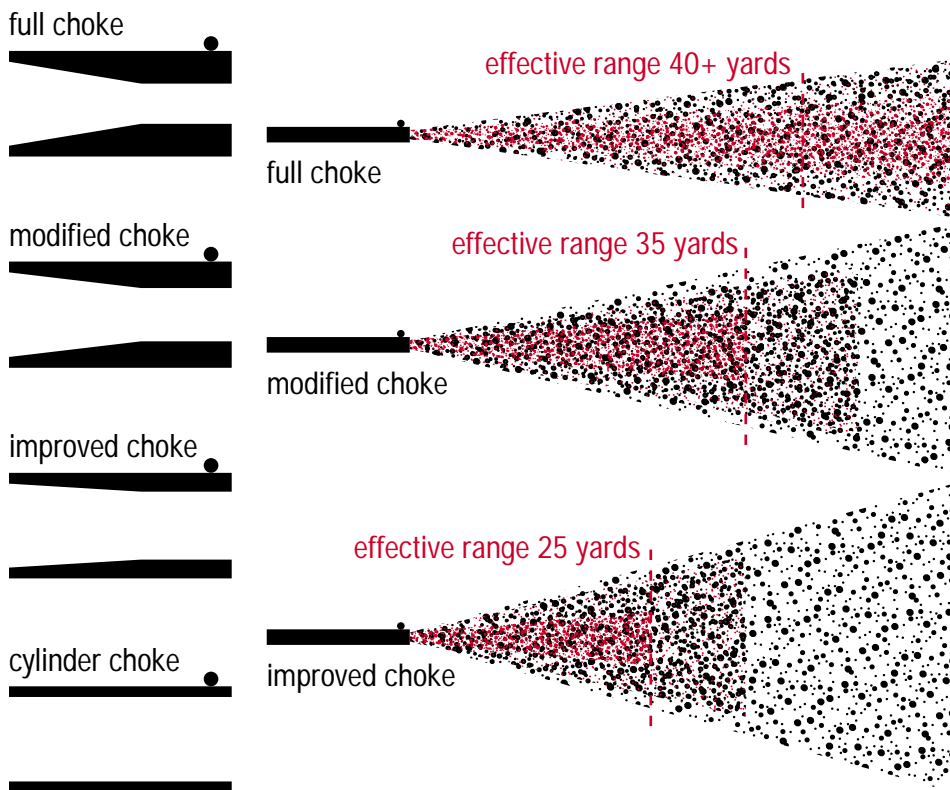
Choke - The choke is a narrow section at the muzzle end of the barrel that controls the spread, or pattern, of the shot. This works in the same way a nozzle controls the spread of water from a garden hose.

If the barrel has a smooth bore, which means that the inside of the barrel is smooth like a pipe, the choke size will be stamped on the side of the barrel. If your gun uses screw-in choke tubes, the side of the



tubes will be marked to label the type of choke.

The most restricted choke is the **full** choke, and is used for longer distance shooting. The next, more open choke is the **modified** choke, and is considered the best all-around choke. The **improved cylinder** choke is used for closer range. The **cylinder** choke has no constriction and is best used for very close shots and for rifled slugs.



Sights - Sights are mechanical devices that aid in aiming the firearm. When the shotgun shoots a single projectile, called a slug, it must be aimed. Common sights used when shooting slugs are open sights, telescopic sights, or electronic sights.

When using pellets in a shotgun, there is often just a bead near the muzzle and/or a rib that runs down the top of the barrel. This is because when firing shotshells, shotguns are pointed rather than aimed.

Safety - The "safety" is a mechanical device that locks the trigger on the firearm to prevent pulling the trigger. **The firearm may still fire if it is dropped or otherwise jarred. Always keep the muzzle pointed in a safe direction.** Remember, any mechanical device can fail. It is your responsibility to make sure that the safety on your gun is working correctly. Do not take a gun into the field if the safety is not working. The safety on a shotgun can be in many different places. Read your gun's instruction manual or have a knowledgeable person show you where the safety on your gun is located.

Magazine - The magazine is the part of the gun that holds extra ammunition. All magazines hold the ammunition that will feed into the gun when the action is operated. Some magazines can be removed from the firearm. Other magazines are permanently attached.

Plug - You may hear this word used when discussing shotguns. A plug is a device that is inserted into the shotgun magazine to reduce the number of shells the gun can hold. This is required by federal law for migratory game bird

Barrel Markings



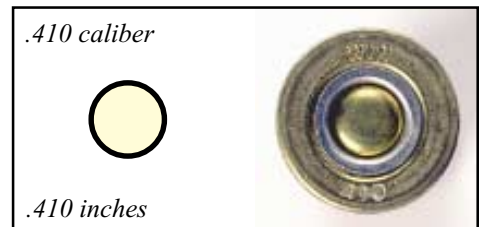
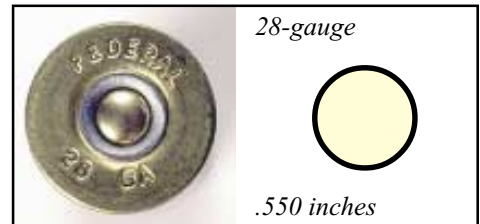
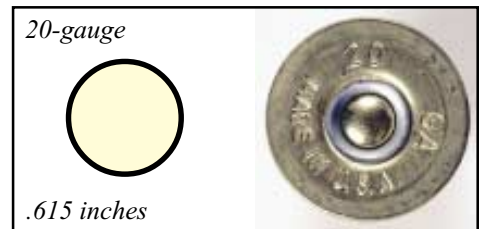
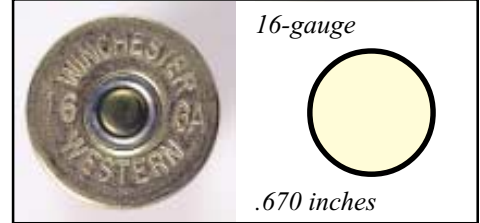
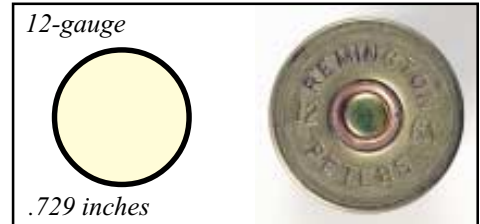
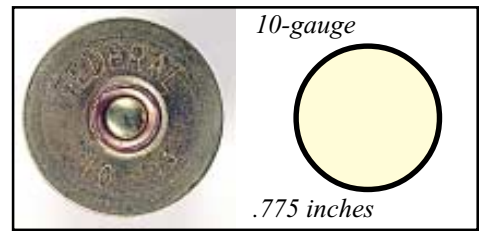
20-gauge barrel chambered for 3 inch shells



12-gauge barrel chambered for 2 3/4 inch shells



12-gauge barrel chambered for 2 3/4 to 3 1/2 inch shells



magazine plug

hunting and is required by state law for hunting deer with a shotgun in Ohio.

Shotgun Gauges

Shotguns and their ammunition are identified by **gauge**. The larger the gauge number, the smaller the diameter of the bore. Common shotgun gauges will be 28, 20, 16, 12, and 10. Some shotguns use a caliber measurement instead of gauge. For example, a .410 is really a caliber measurement, not a gauge. This measurement would equal a 67 gauge.

Shotgun Ammunition

All shotgun ammunition is called **centerfire** because *the primer is in the center of the back of the case*. However, most shooters call shotgun ammunition by the gauge of the casing that holds all the parts of the ammunition together. *The complete package that holds all the parts of the ammunition for shotguns is called a **shotshell**.*

Shotgun ammunition must be identified by gauge, case length, and type of projectile. Look at the shotgun barrel to find the gauge and case length to be used in that gun. All shotgun shells are stamped with their gauge on the rear of the case. Another place to

identify ammunition is the ammunition box itself.

It is very important to correctly match ammunition to the shotgun and to match the correct shot size to the game being hunted. Only carry the correct ammunition for the firearm you are using. Using the wrong ammunition can damage the gun and injure yourself and/or bystanders. For example a 20-gauge shell will slide down a 12-gauge barrel causing an obstruction. When a 12-gauge shell is loaded and fired the gun will explode.

The main parts of a shotgun shell are:

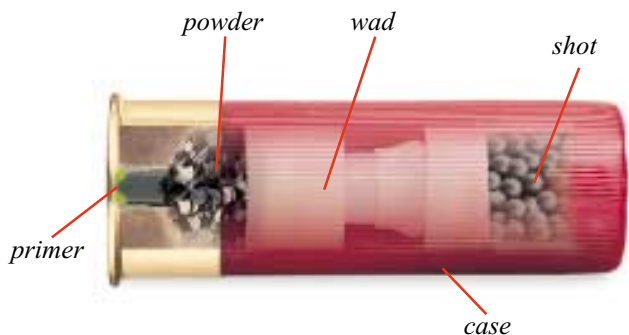
1. **Case** - The tube that holds everything together.
2. **Primer** - Ignites the powder charge when struck by the firing pin.

3. **Powder** - The fuel that burns to create the pressure that propels the shot.
4. **Wad** - *A disc-shaped piece of fiber or plastic that acts as a piston to seal in the gases that push the projectiles out of the barrel.*
5. **Projectiles** - Shotguns use two types of projectiles. They are:
 - A. **Shot** - Shot consists of many small round pellets that make up the load. Each diameter of shot is given a number. The larger the number, the smaller the diameter of the shot. (The chart on page 8 shows actual shot size.) Shot can be made of lead, steel, or other materials.
 - B. **Slugs** - A slug is a single, large projectile. Shotguns shooting a slug or a single projectile may have a rifled barrel to spin the slug so it is more stable in flight.

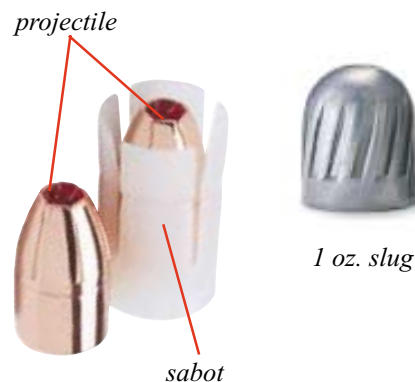
Parts of a Shotgun Shell



How the Parts of a Shotgun Shell Go Together



Single Projectiles for Shotguns



Average Pellet Count for Shotshells

Shot Size	STEEL - Weight of Shot in Ounces								
	3/4	15/16	1	1-1/8	1-1/4	1-3/8	1-1/2	1-9/16	1-5/8
7	316	395	422	475	527	580	633	659	685
6	236	395	315	354	394	433	472	492	512
5	182	228	243	273	304	334	364	380	395
4	144	180	192	216	240	264	288	300	312
3	118	143	158	178	197	217	237	247	257
2	94	117	125	141	156	172	187	195	203
1	77	97	103	116	129	142	154	161	167
BB	54	67	72	81	90	99	108	112	117
BBB	46	58	62	70	77	85	93	97	101
T	39	49	52	58	65	71	78	81	84
F	30	37	40	45	50	55	60	62	65

Shot Size	LEAD - Weight of Shot in Ounces												
	1/2	11/16	3/4	7/8	1	1-1/8	1-1/4	1-3/8	1-1/2	1-5/8	1-7/8	2	2-1/4
9	292	402	439	512	585	658	731	804	877	951	1097	1170	1316
8 1/2	249	342	373	435	497	559	621	683	745	808	932	994	1118
8	205	282	307	359	410	461	512	564	615	666	769	820	922
7 1/2	175	241	262	306	350	394	437	481	525	569	656	700	787
6	112	155	169	197	225	253	281	309	337	366	422	450	506
5	85	117	127	149	170	191	212	234	255	276	319	340	382
4	67	93	101	118	135	152	169	186	202	219	253	270	304
2	43	60	65	76	87	98	109	120	130	141	163	174	196
BB	25	34	37	44	50	56	62	69	75	81	94	100	112

Actual Shot Sizes

Shot Sizes	F	T	BBB	BB	1	2	3	4	5	6	7	7 1/2	8	8 1/2	9
Diameter in Inches	.22	.20	.19	.18	.16	.15	.14	.13	.12	.11	.10	.095	.09	.085	.08

Buckshot Sizes	No. 000	No. 00	No. 0	No. 1	No. 2	No. 3	No. 4
Diameter in Inches	.36	.33	.32	.30	.27	.25	.24

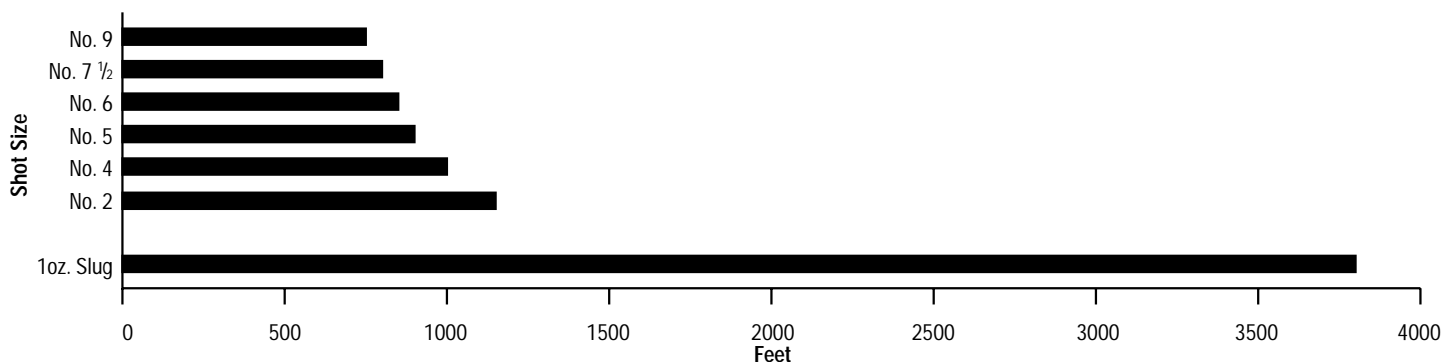


Selecting the Right Shotshell

GAME	GAUGE	DISTANCE (Yards)	CHOKE	LEAD SHOT	STEEL SHOT
Turkey	10, 12, 20	20-30	F	4, 5, 6, 7½	
	10, 12	30+	F/EF	4, 5, 6	
Pheasant	12, 16, 20	20-30	IC/M	5, 6, 7½	3, 4, 5, 6
	12, 16	30+	M/F	4, 5, 6	3, 4, 5
Ruffed Grouse	12, 16, 20, 28	20-30	SK/IC/M	6, 7½, 8	5, 6, 7
	12, 16, 20	30+	IC/M	5, 6, 7½	4, 5
Quail	12, 16, 20, 28	20-30	SK/IC/M	7½, 8, 9	6, 7
	12, 16, 20	30+	IC/M	7½, 8	5, 6
Dove	12, 16, 20, 28	20-30	SK/IC/M	7½, 8, 9	6, 7
	12, 16, 20	30+	IC/M	7½, 8	7
Woodcock Rail Snipe	12, 16, 20, 28	20-30	SK/IC/M	7½, 8, 9	
	12, 16, 20	30+	IC/M	7½, 8	7
Rabbit Squirrel	12, 16, 20, 28, 410	20-30	IC/M	4, 5, 6, 7½	2, 4
	12, 16, 20	30+	IC/M/F	4, 5, 6	2
Large Ducks* (Mallard, Pintail)	10, 12, 16	20-30	IC/M		1, 2, 3, 4
	10, 12, 16	30+	IC/M/F		BB, 1, 2, 3
Medium Ducks* (Wood Duck, Widgeon)	12, 16, 20	20-30	IC/M		2, 3, 4, 5, 6
	12, 16, 20	30+	IC/M/F		1, 2, 3, 4, 5
Small Ducks* (Teal, Bufflehead)	12, 16, 20	20-30	IC/M		3, 4, 5, 6
	12, 16, 20	30+	IC/M/F		3, 4, 5
Large Geese* (Giant, Western Canada)	10, 12	20-30	IC/M		T, BBB, BB
	10, 12	30+	IC/M/F		T, BBB, BB
Medium Geese* (Snow, Lesser Canada)	10, 12	20-30	IC/M		BBB, BB, 1
	10, 12	30+	IC/M/F		BBB, BB, 1

* Hunting of waterfowl requires non-toxic shot.

How Far Will a Shotgun Shoot?



These distances may vary by shotgun gauge, case length, and choke.