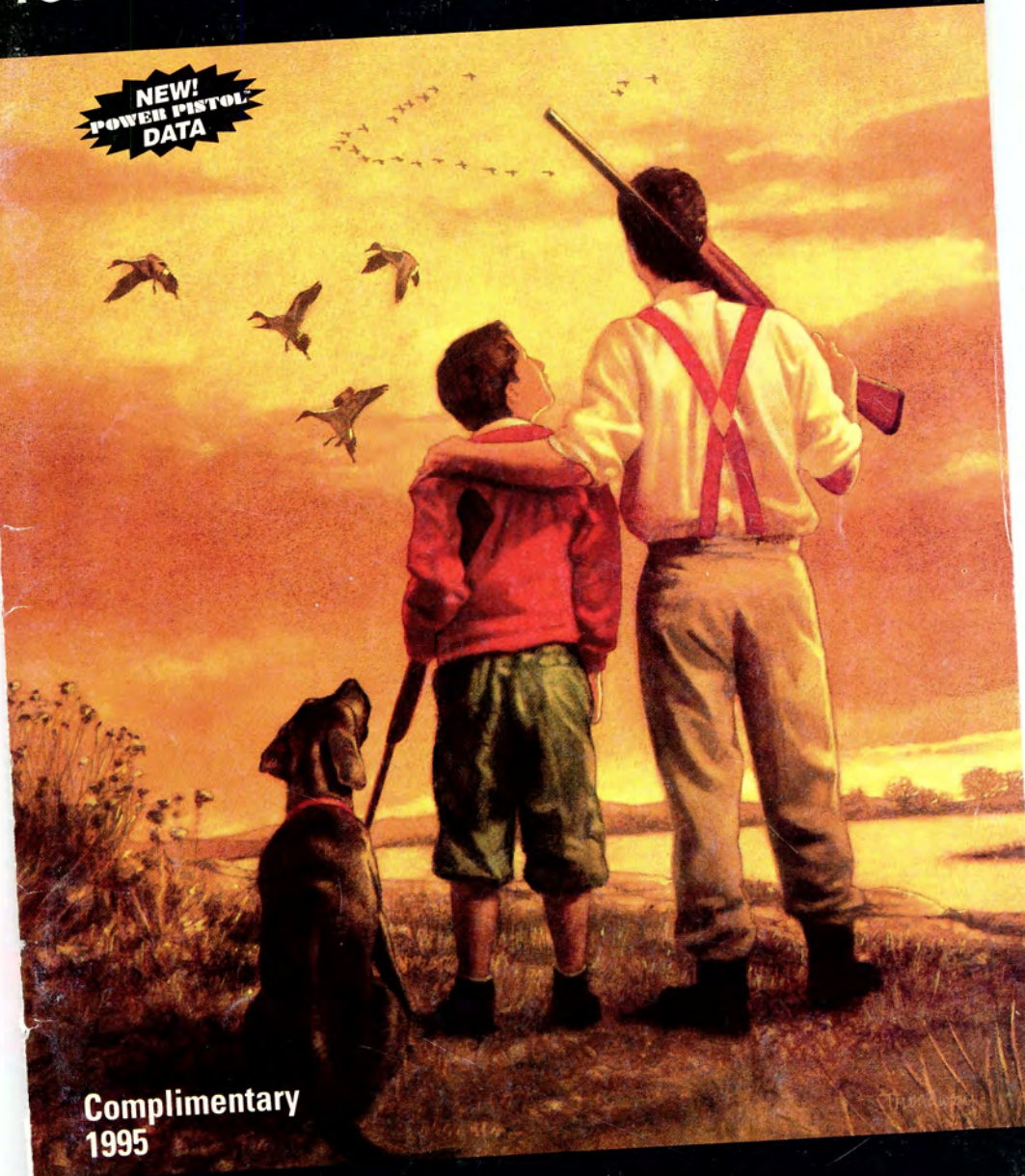


# RELOADERS' GUIDE

for Alliant® Smokeless Powders  
Formerly Hercules Powders

**NEW!**  
**POWER PISTOL**  
**DATA**



**Complimentary**  
**1995**



**ALLIANT POWDER®**

Manufactured by  
Alliant Techsystems  
Smokeless Powders Group



### Caution

Millions of men and women reload ammunition as a hobby or because the cost savings allow them to do more shooting. In order to become or to continue as a safe reloader, **you must be cautious and careful**. You are the production department and the quality control department. Later, when you shoot the ammunition that only you produced and checked, you are the person closest to the gun if it malfunctions because of faulty ammunition — yours.

**Remember — you are dealing with an explosive material. You become a “miniature” manufacturer working with powders and primers that can, if misused, explode or burn, causing serious personal injury (including death) and property damage.**

**Read and study one or more good books that describe reloading techniques in detail. When using smokeless powders, use only the exact type and quantity recommended herein. Store and use smokeless powders — your powders — according to the safety rules listed in this booklet.** Reload for quality, so that the safest and most accurate loads on the shooting line will be yours.

### Ballistics

The ballistic data shown in this booklet were obtained in the laboratory under strictly controlled conditions. **You must load only those exact combinations that are listed.** Even then, different reloading techniques, plus industrial tolerances of each component, likely will cause your ammunition, or ammunition loaded by other competent laboratories, to yield slightly different ballistic data. Therefore, **charge recommendations in this booklet must never be exceeded.** Smart shooters and hunters know that accuracy, not maximum power, is their key to success.

### Disclaimer

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### Powder Warnings

- **NEVER** substitute smokeless powder for black powder, or for Pyrodex, or for any other smokeless powder.
  - **NEVER** mix together any two powders, regardless of type, brand, style, or source.
  - **NEVER** use the data in this *Reloaders' Guide* for any other powders, even if advertised “similar to Bullseye” or “burns same as Red Dot,” etc.
- Violation of any of the above could result in severe personal injury (including death) or gun damage.**

**WARNING: THE SHOTGUN SHELL LOADING DATA IN THIS BOOKLET ARE FOR LEAD SHOT ONLY. STEEL SHOT CANNOT BE SUBSTITUTED. ALSO, DO NOT USE BUFFERS OR FILLERS OF ANY KIND.**

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## Smokeless Powders for Reloading

We currently offer 13 powders for use in reloading. These are listed in the order of decreasing burning rates. Each powder listed is "slower" than those preceding it and "faster" than those following it. Among these Alliant smokeless powders, for example, Red Dot® burns more slowly than Bullseye®, but faster than Green Dot®.

Powder	Principal Use <sup>(1)</sup>	Can Also Be Used In <sup>(1)</sup>
Bullseye®	Handgun Loads	12-Gauge Light Target Loads
Red Dot®	Light and Standard Shotshell Loads, 12-, 16-, and 20-Gauge	Handgun Loads
Green Dot®	Standard and Medium Shotshell Loads, 12-, 16-, and 20-Gauge	Handgun Loads
Unique®	All-Around Shotshell Powder, 12-, 16-, 20-, and 28-Gauge	Handgun Loads
<b>POWER PISTOL™</b>	High performance pistol loads such as the 9mm, .40 S&W, and the 10mm.	Moderate pressure pistol cartridges like the .38 Special, .25 Auto, and .45 ACP
Herco®	Heavy Shotshell Loads 10-, 12-, 16-, 20-, and 28-Gauge	Heavy Handgun Loads
Blue Dot®	Magnum Shotshell Loads 10-, 12-, 16-, 20-, and 28-Gauge	Magnum Handgun Loads
2400™	Magnum Handgun Loads	Some Rifle and Shotshell Loads
Reloder® 7	Light Rifle Loads	Silhouette Loads
Reloder® 12	Medium Rifle Loads	Silhouette Loads
Reloder® 15	Medium Rifle Loads	Silhouette Loads
Reloder® 19	Magnum Rifle Loads	Silhouette Loads
Reloder® 22	Magnum Rifle Loads	

<sup>(1)</sup>Use only in the loads printed in this Guide.

Powder	Packaging			
	1-lb Canister	4-lb Canister	5-lb Canister	8-lb Keg
Bullseye, Red Dot, Green Dot, Unique, Herco, 2400	x	x		x
<b>POWER PISTOL™</b>	x	x		
Blue Dot	x			
Reloder Series	x		x	
			x	

All 13 powders are always in stock at distributors' magazines throughout the U.S.A., and in most countries where reloading is legally permitted and popular. Any reloader unable to purchase any of the 13 powders at retail stores that handle powders should write to the address on the back cover. We cannot ship directly, but we will endeavor to correct supply shortages in your area.

## Powder Information

Powder formulations are double-base type to minimize charge weights and moisture absorption. Each powder grade is shaped into circular flakes or tubes by precision dies and cutters for best combustion efficiency and shot accuracy.

Each powder grade has a different burning speed, either by formulation or by size of the granules. So, **do not blend or mix different powders, and use only the grade and quantity recommended in this *Reloaders' Guide*.**

Many powder grades have a chemical coating on the surfaces of the granules to control the burning rate. All grades have a graphite glaze that allows the granules to flow smoothly from powder measures.

All powders burn with great precision and rapidity inside the gun chamber, generating the hot, high-pressure gas that accelerates the bullet (or shot) and drives it toward the target. **It is critically important for safety that the powder used is matched to the bullet (or shot) weight and other factors; otherwise, the gun parts may be deformed or may even burst and cause serious personal injury (including death).** Shot-to-shot accuracy can also be degraded by deviations from recommended loads. Even after 80 years of producing and testing powders, ballisticians are unable to calculate and predict **exact** ballistic results; we must test-fire our powders with each set of components and record the results. Therefore, **the ballistic values and recommended combinations listed in this booklet must be followed without deviation.**

**Working up charges.** For shotgun loads, use the charge weight shown. However, for all rifle and pistol loads, first load and fire a few cartridges at 10% less charge than is shown, watching for any sign of excessive pressure (difficult extraction, flattened or blown primers, unusual recoil).

**Handgun loads.** Many pistol and revolver loads require only small amounts of fast-burning powders; therefore: (1) guard against accidental double charges, and even multiple charges, whether loading with handtools or with progressive loading devices; (2) be sure that each bullet is positioned in the case so that the minimum overall length is not violated.

### Dram Equivalent

Prior to the commercialization of smokeless powder, shotgun shells were loaded with black powder. The weight measurement system used for black powder was "drams." Compared with black powder, **smokeless powder is more dense and MUCH more energetic, so it cannot safely be measured and used like black powder.** Indeed, a different weight system was selected for smokeless powder: "grains," wherein 7,000 grains equal one pound.

Since many shooters still wanted to be able to compare their smokeless powder loads with the original black powder loads, the term "dram equivalent" evolved. Simply stated, the dram equivalent is an indicator of the velocity of a particular shot load. **But note that the charge and weight of smokeless powder must not be calculated from the dram equivalent.**

### NOTICE

We have inserted information on the properties and storage of smokeless powder for your understanding, so that you can avoid unnecessary risks when using it. This information, on pages 33 through 36, was published initially by the Sporting Arms and Ammunition Manufacturers' Institute, Inc., several years ago in the interest of safety. You must read these pages carefully and comply with the precautions listed. If you have questions, please call or write to us at the address on the back cover.



## Important Safety and Health Precautions

To perform in a gun, powders must ignite easily and burn rapidly. These characteristics require use of common sense to avoid accidents. **YOU MUST OBSERVE THESE PRECAUTIONS:**

1. **DO NOT** smoke when reloading.
2. **DO NOT** use spark-producing tools.
3. **DO NOT** mix powders of different kinds.
4. **DO NOT** leave powder where children can get it.
5. **DO NOT** try to load when distracted.
6. Avoid an open fire or working near spark-producing machinery.
7. Pour out only the amount of powder needed for immediate work.
8. Check the powder measure each time it is used. Make sure the settings have not been accidentally changed. Check-weigh "thrown charges" frequently.
9. Clean up any spilled powders. Use a brush and dustpan; do not use a vacuum cleaner. Dispose of spilled powder as described in the green pages of this Guide.
10. Store powder only in its original container, which was carefully designed for this usage. **DO NOT REPACKAGE.** Do not purchase or accept any Alliant powder not in its original, **FACTORY-SEALED** container.
11. Be sure the powder container is completely empty before discarding. Do not use the container to store other powders or materials, or for any other purpose.
12. Keep always in mind that smokeless powder is an explosive material and highly flammable. It should always be stored and handled in such a way as to avoid impact, friction, heat, sparks, or flame.
13. Wear safety glasses when reloading.
14. This material contains nitroglycerin. Inhalation, skin contact, or ingestion may cause severe headache, nausea, and lowering of blood pressure. **THEREFORE, THE FOLLOWING PRECAUTIONS MUST BE OBSERVED WHEN HANDLING POWDERS:**
  - A. Do not take internally. In case of ingestion, cause vomiting. Call a physician.
  - B. Avoid contamination of food, beverages, or smoking materials.
  - C. Avoid breathing dust. Ensure adequate ventilation during handling.
  - D. Wash thoroughly after handling and before eating, drinking, or smoking.
  - E. Do not carry powder in clothing.

You must also always remember:

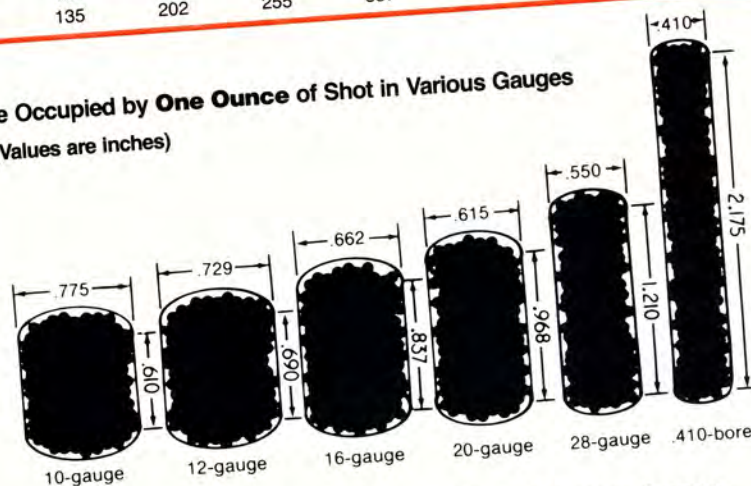
1. **Establish a routine for reloading.** It will result in more uniform loads and less chance of error.
2. Some primers are more powerful than others (they produce more gas at a higher temperature). **Use only the primers specified herein.**
3. Shotshell wads differ in their sealing ability. **Use only the load combinations specified herein.**
4. If you use cast bullets, their diameter, hardness, lubrication, and crimp will all affect the ballistics.
5. **The shotshell loads in this booklet are for use with lead shot only!**
6. **Use only the brands of powder and components shown in our tables. Do not substitute other types.**
7. Discharging firearms in poorly ventilated areas, cleaning firearms, or handling ammunition may result in exposure to lead, a substance known to cause birth defects, reproductive harm, and other serious physical injury. **Have adequate ventilation at all times. Wash hands and face thoroughly after handling and before coming in contact with food, chewing material, and smoking material.**

## Reference Tables

Approximate Number of Pellets in Specific Weights of Lead Shot  
(Sizes 2 Through 9)

Weight, oz	No. 2	No. 4	No. 5	No. 6	No. 7½	No. 8	No. 8½	No. 9
½	45	67	85	112	175	205	242	292
¾	67	101	127	168	262	308	363	439
7/8	79	118	149	197	306	359	425	512
1	90	135	170	225	350	410	485	585
1 1/8	101	152	191	253	393	461	545	658
1 ¼	112	169	213	281	437	513	605	731
1 ½	124	186	234	309	481	564	665	804
1 ¾	135	202	255	337	525	615	730	877

Space Occupied by One Ounce of Shot in Various Gauges  
(Values are inches)



Internal Diameter of the Barrel in Several Shotgun Gauges

10-Gauge—0.775-Inch	16-Gauge—0.662-Inch	28-Gauge—0.550-Inch
12-Gauge—0.729-Inch	20-Gauge—0.615-Inch	.410-Bore—0.410-Inch

Number of Shells That Can Be Loaded With One Pound of Powder on Various  
Grains per Load

(The term grain is a measure of weight: 7,000 grains equal one pound)

Grains/ Load	Loads/ Pound	Grains/ Load	Loads/ Pound	Grains/ Load	Loads/ Pound	Grains/ Load	Loads/ Pound	Grains/ Load	Loads/ Pound	Grains/ Load	Loads/ Pound
12	583	23	304	34	205	45	156	56	125	67	104
13	538	24	291	35	200	46	152	57	123	68	103
14	500	25	280	36	194	47	149	58	121	69	101
15	466	26	269	37	189	48	146	59	119	70	100
16	437	27	259	38	184	49	143	60	117	71	99
17	411	28	250	39	179	50	140	61	115	72	97
18	388	29	241	40	175	51	137	62	113	73	96
19	368	30	233	41	170	52	135	63	111	74	95
20	350	31	225	42	166	53	132	64	109	75	93
21	333	32	218	43	162	54	130	65	108	76	92
22	318	33	212	44	159	55	127	66	106	77	91

Typical Percentage of Pellets in a 30-Inch Circle at 40 Yards (Pattern) for Various Choke Sizes  
(Choke is a Constriction at the Muzzle of a Shotgun Barrel)

Full Choke—70%	Improved Modified Choke—65 to 70%	Modified Choke—55%
Improved Cylinder—50%	True Cylinder—40%	



## Ballistic Data

The velocity and pressure obtained with the specific combinations of shell, wad, primer, bullet or shot weight, powder, and powder weight provided in this booklet were obtained in a laboratory, where considerable effort is made to control the load and test conditions. Velocity was measured with a chronograph (electronic stopwatch). Pressure was measured either by compressing copper cylinders, or electronically, by use of a piezoelectric transducer.

**Guns are designed to take a considerable amount of internal pressure, but if this is exceeded, they burst violently. Be alert to signs of excess pressure, such as heavy recoil, flattened primers, or blown primers. Don't make changes in the suggested loads.**

Tone variations (bold type) used in the reloading tables are for ease of reading and do not represent preferred loads.

Each shotshell table lists **DRAM EQUIVALENT** in the first column. This number is not used in any way during reloading. The quantity of powder to use is listed in **GRAINS**, which are a measure of weight, under each powder column.

Every reloader needs a good-quality scale for weighing each powder charge, or for checking the weight of powder thrown by volumetric loaders.

### Special Notes Regarding Components Other Than Powder

- A. **Shotgun Shells.** Manufacturers may sell ammunition under different brand names that are identical for reloading purposes. Following are popular variations. When in doubt, consult the ammunition producer.
- **Federal Hi Power Plastic** same as **Duck and Pheasant, Field, Game, and Dove** and **Squirrel or Top Gun**.
  - **Federal Premium** (Integral Base Wad).
  - **Remington-Peters.** Same as Mohawk brand shells.
  - **Winchester AA-Type (Compression-Formed)** same as **AA Target, Upland, and Super Double X**.
  - **Winchester Polyformed Type (Reifenhauser Tube)** same as **Duck and Pheasant, Dove and Squirrel, and Sears Brand**.
- B. **Primers**
- **CCI 109** and **CCI 209** are ballistically identical and can be interchanged.
  - **CCI 209M** (Magnum) is "hotter" and cannot be substituted for CCI 109 or 209. Use 209M only as listed.
  - **Rem. 209** is "hotter" and cannot be substituted for Rem. 97★ or Rem. 209P primer.
  - **Rem. 209P** is interchangeable with Rem. 97★ primer.
  - **Federal 209A** is "hotter" and cannot be substituted for Federal 209.
- C. **Wads.** Card wads and fiber wads are used for certain slug and buckshot loads and a few light shotshell loads. **Do not interchange wads.**
- D. **Shot.** Use only clean lead shot. **Do not use steel shot in shotshell loads listed in this Guide.**
- E. **Shot Buffers.** Do not add any buffers or fillers of any kind to shotshell loads listed in this Guide.
- F. **Cards and Fillers.** For revolver, pistol, and rifle cartridge reloading, do not add any cards, kapok, or fillers of any kind to loads listed in this Guide.

### Black Powder

Black powder is entirely different from smokeless powder. **NEVER** substitute one for the other. Smokeless powders have much more energy than black powder. **NEVER** attempt to use smokeless powder in black powder guns or saluting cannon; they may blow up and cause serious personal injury (including death).



# 1995 POWDER BUSHING CHARTS WARNING

A reloading scale is **required** to check the nominal weight of a powder charge. Powder bushings can vary in the charge weight they drop and could vary as much as several grains under certain conditions. Powder density, moisture content, and loading technique can cause a variation from the bushing weights listed on the charts. Also, the loading machine vibration affects charge weights. A complete loading cycle should be completed to **assure** an average powder charge weight.

The information in these tables has been supplied by the reloading machine manufacturers and **is not a reloading recommendation** or a result of Alliant's testing.

## LEE POWDER BUSHING CHART

	(units shown in grains)																			
	.095	.100	.105	.110	.116	.122	.128	.134	.141	.148	.151*	.155	.163	.171	.180	.189	.198	.209	.219	.230
POWDER	11.0	11.6	12.2	12.8	13.5	14.2	14.8	15.5	16.4	17.2	17.5	18.0	18.9	19.8	20.9	21.9	23.0	24.5	25.7	27.0
Red Dot	12.3	13.0	13.6	14.3	15.1	15.8	16.6	17.4	18.3	19.2	19.6	20.1	21.2	22.2	23.4	24.5	25.7	27.0	28.4	29.7
Green Dot	18.0	19.0	19.9	20.8	22.0	23.1	24.3	25.4	26.7	28.0	28.6	29.4	30.9	32.4	34.1	35.8	37.5	39.8	41.8	43.8
Blue Dot	14.3	15.0	15.8	16.5	17.4	18.3	19.2	20.1	21.2	22.2	22.7	23.3	24.5	25.7	27.0	28.4	29.7	31.2	32.7	34.3
Unique	13.9	14.6	15.3	16.1	16.9	17.8	18.7	19.6	20.6	21.6	22.0	22.6	23.8	25.0	26.3	27.6	28.9	30.3	31.7	33.1
Herco	21.0	22.1	23.2	24.3	25.6	27.0	28.3	29.6	31.2	32.7	33.4	34.3	36.0	37.8	39.8	41.8	43.8	45.9	48.0	50.1
2400																				

\*NOTE: Only available with Lee Load-Fast.

## HORNADY POWDER BUSHING CHART For 366 Auto and Apex 91

For 300 Auto and 1400																																					
(units shown in grains)																																					
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44		
GRAINS																																					
Red Dot	384	393	405	423	438	453	468	480	489	498	510	519	522	534	549	558																					
Green Dot	363	378	390	405	420	435	447	456	468	480	492	501	513	522	531	549	558	564	573	588	594																
Unique	342	354	369	381	393	405	414	423	435	444	453	465	474	483	492	501	510	516	522	531	549	558	564	573	588	594	610	625	640	655	670	685	700	715	730		
Herco	357	369	381	393	405	414	426	438	450	462	471	477	489	498	513	522	531	549	558	564	573	588	594	610	625	640	655	670	685	700	715	730	745	760	775		
Blue Dot	256	266	276	286	296	306	316	324	330	339																											
2400																																					

continued

(units shown in grains)

16.2 16.8 17.7 18.7 19.4

(units shown in grains)

10

(units shown in grains)

40.2	44.6	45.8
41.4	42.5	43.6



10-GAUGE, 3½-IN. FEDERAL PLASTIC WITH PAPER BASE WAD														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
4	1¼	1,265	CCI 209M	Rem. SP10 (Note 5)			29.5	8,300						
			Win. 209	Rem. SP10 (Note 5)			29.0	8,800						
4¼	1½	1,285	CCI 209M	Rem. SP10 (Note 4)							36.0	10,300	45.0	8,000
			Win. 209	Rem. SP10 (Note 4)									45.5	8,300
4½	1⅞	1,270	CCI 209M	Rem. SP10 (Note 3)									45.5	10,200
			Win. 209	Rem. SP10 (Note 3)									43.5	9,200
4¾	2	1,210	CCI 209M	Rem. SP10 (Note 2)									44.0	9,400
			Win. 209	Rem. SP10 (Note 2)									42.0	9,800
4¼	2¼	1,165	CCI 209M	Rem. SP10 (Note 1)									42.5	10,200
			Win. 209	Rem. SP10 (Note 1)										

**NOTES:**

1. Add one 20-gauge, ⅛-in.-thick card wad to the inside bottom of the shot cup.
2. Add two 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.
3. Add three 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.
4. Add four 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.
5. Add six 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.

4. Add four 20-gauge.

5. Add six 20-gauge, 1/8-in.-thick card wads to the inside bottom.

Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
4	1 1/4	1,265	CCI 209M	Rem. SP10 (Note 4)			28.5	8,800	31.0	7,500				
			Win. 209	Rem. SP10 (Note 4)			29.0	8,800	31.0	7,600				
4 1/4	1 5/8	1,285	CCI 209M	Rem. SP10 (Note 3)									43.5	8,500
			Win. 209	Rem. SP10 (Note 3)									44.0	9,800
4 1/2	1 7/8	1,270	CCI 209M	Rem. SP10 (Note 2)									44.5	9,100
			Win. 209	Rem. SP10 (Note 2)									42.0	10,400
4 3/4	2	1,210	CCI 209M	Rem. SP10 (Note 1)									42.5	10,100
			Win. 209	Rem. SP10 (Note 1)									40.5	10,400
4 1/4	2 1/4	1,165	CCI 209M	Rem. SP10									41.0	10,500
			Win. 209	Rem. SP10										

**NOTES:**

1. Add two 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.
2. Add three 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.
3. Add four 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.
4. Add six 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.

# 10-GAUGE, 3½-IN. WINCHESTER POLYFORMED WITH PLASTIC BASE WAD

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
4	1¼	1,265	Win. 209	Rem. SP10 (Note 4)			28.5	8,600						
			CCI 209M	Rem. SP10 (Note 4)			28.0	8,500						
4¼	1½	1,285	Win. 209	Rem. SP10 (Note 3)									45.0	8,800
			CCI 209M	Rem. SP10 (Note 3)										
4½	1¾	1,270	Win. 209	Rem. SP10 (Note 2)							35.5	10,400	44.5	8,700
			CCI 209M	Rem. SP10 (Note 2)									45.5	10,200
4¾	2	1,210	Win. 209	Rem. SP10 (Note 1)									45.0	9,800
			CCI 209M	Rem. SP10 (Note 1)									43.5	9,500
4¾	2¼	1,165	Win. 209	Rem. SP10									43.0	9,400
			CCI 209M	Rem. SP10									42.0	10,500
													41.5	10,500

## NOTES:

1. Add one 20-gauge, ⅛-in.-thick card wad to the inside bottom of the shot cup.
2. Add two 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.
3. Add three 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.
4. Add five 20-gauge, ⅛-in.-thick card wads to the inside bottom of the shot cup.



### 12-GAUGE, 3½-IN. FEDERAL UNIBODY PLASTIC SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
4	1⅞	1,200	CCI 209M	Fed. 12SO*									41.0	9,100
				Win. WAA12SL*									41.0	8,900
			Rem. R12L**										40.5	9,600
4¼	1⅞	1,255	Win. 209	Fed. 12SO*									40.0	9,000
													43.0	9,800
			CCI 209M	Fed. 12SO									43.0	9,500
				Win. WAA12SL									42.5	10,100
				Rem. R12L*									42.5	10,100
4¼	2	1,220	Win. 209	Fed. 12SO									42.5	10,000
													42.5	9,800
			CCI 209M	Fed. 12SO									42.0	10,000
				Win. WAA12SL									41.0	9,900
				Rem. R12L									38.5	11,100
4¼	2¼	1,150	CCI 209M	Fed. 12S4									38.5	11,100
				Win. WAA12F114									39.5	11,200
			Rem. SP12										38.0	10,900
			Win. 209	Fed. 12S4										

\*NOTE: For each asterisk (\*), add one 20-gauge, ⅛-in.-thick card wad to the inside bottom of the shot cup.

### 12-GAUGE, 3½-IN. REMINGTON PLASTIC SP

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
4	1⅞	1,200	CCI 209M	Rem. R12L*									38.0	10,300
				Fed. 12SO*									38.0	10,100
			Win. WAA12SL*										38.0	10,000
4¼	1⅞	1,255	Win. 209	Rem. R12L*									37.5	10,500
													39.0	10,900
			CCI 209M	Rem. R12L*									39.0	10,600
				Fed. 12SO*									39.0	10,400
				Win. WAA12SL*									38.5	11,000
4¼	2	1,220	Win. 209	Rem. R12L*									39.5	11,100
													39.5	10,800
			CCI 209M	Rem. R12L									39.0	10,700
				Fed. 12SO									39.0	11,200
				Win. WAA12SL									38.0	11,100
4¼	2¼	1,150	CCI 209M	Rem. R12L									37.0	11,100
				Rem. SP12									38.0	11,500
			Win. 209	Fed. 12S4										
			Win. 209	Rem. SP12										

\*NOTE: For each asterisk (\*), add one 20-gauge, ⅛-in.-thick card wad to the inside bottom of the shot cup.

### 12-GAUGE, 3½-IN. WINCHESTER PLASTIC SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
4	1⅞	1,200	Win. 209	Win. WAA12SL									38.5	10,000
				Fed. 12SO									38.5	10,600
			Rem. R12L*										38.5	10,300
4¼	1⅞	1,255	CCI 209M	Win. WAA12SL									38.0	10,100
													40.0	10,800
			Win. 209	Win. WAA12SL									40.5	10,700
				Fed. 12SO									40.0	10,700
				Rem. R12L*									39.5	10,500
4¼	2	1,220	CCI 209M	Win. WAA12SL									40.0	11,200
													40.5	11,000
			Win. 209	Win. WAA12SL									39.0	10,600
				Fed. 12SO									39.0	11,200
				Rem. R12L									37.0	11,200
4¼	2¼	1,150	CCI 209M	Win. WAA12SL										
				Rem. SP12										
			Win. 209	Rem. SP12										

\*NOTE: For each asterisk (\*), add one 20-gauge, ⅛-in.-thick card wad to the inside bottom of the shot cup.

# 12-GAUGE, 2¾-IN. FEDERAL PAPER TARGET SHELLS

12-GAUGE, 2¾-IN. FEDERAL PAPER TARGET SHELLS															
Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot		
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
3¼	1	1,290	Fed. 209A	R12L	20.0	9,300	21.5	8,800							
				12S3	20.5	9,000	23.5	9,400							
			CCI 209M	12SO	20.5	10,400	22.5	9,200							
				12S3	21.0	8,700	23.0	7,800							
			Fed. 209A	12C1	18.0	8,500	19.0	8,200							
				12S3	18.0	8,700	19.5	7,400							
				R12L	18.5	9,300	19.0	8,000							
				RXP12	18.0	8,900	18.5	8,100							
				WWAA12 (White)	18.0	8,600	18.5	8,000							
				Flocchi FTW1	18.5	9,000	20.0	7,900							
				Red PC	18.0	8,300	20.0	7,600							
				Large Uniwad	18.0	8,500	19.0	8,400							
				Hornady Versalite	18.0	8,800	19.5	6,900							
				Windjammer	18.5	8,200	20.5	6,600							
Rem. 209P	Fed. 12C1	18.5	8,300	20.0	7,000										
	Win. 209	12C1	18.5	8,600	19.5	7,500									
	CCI 109	12C1	18.5	8,500	19.0	7,800									
	CCI 209M	12C1	18.5	7,900	20.0	7,400									
	3	1½	1,200	Fed. 209A	12C1	19.0	9,300	20.0	8,600	22.0	8,200				
					12S3	19.0	9,800	21.0	7,800	22.0	7,200				
R12L					19.5	9,500	20.0	8,600	22.0	7,800					
R12H					19.0	9,200	19.5	8,800							
RXP12					19.0	9,900	20.0	8,600	21.0	8,000					
WWAA12 (White)					19.0	10,500	19.5	9,000	21.0	8,600					
Flocchi FTW1					19.5	9,500	21.0	8,200							
Red PC					19.0	10,300	21.0	8,800	22.5	8,400					
Lage Uniwad					18.5	9,400	20.0	8,800	22.0	8,000					
Hornady Versalite					19.0	8,900	21.0	8,300	22.0	7,900					
Windjammer				19.0	8,700	22.0	7,700	23.5	7,600						
Rem. 209P				Fed. 12C1	20.0	9,200	22.0	7,800	24.0	7,000					
Win. 209				12C1	19.5	9,800	21.0	8,100	23.0	7,600					
CCI 109				12C1	19.0	9,200	20.5	8,200	22.0	7,500					
CCI 209M	12C1	20.0	8,700	21.5	7,700	24.0	7,200								
3¼	1½	1,255	Fed. 209A	12C1	21.0	10,200	21.5	7,900	22.5	8,900					
				12S3	21.0	9,400	23.0	9,100	23.0	8,300					
				R12H	21.0	10,000	21.5	9,900	22.5	9,000					
				RXP12	20.5	10,700	21.5	9,300	22.0	8,500					
				WWAA12 (White)	20.5	9,900	22.5	10,500	22.0	9,500					
				Red PC	20.5	9,900	22.5	9,600	24.5	8,500					
				Hornady Versalite	21.5	10,700	23.5	7,500	26.0	7,500					
			Rem. 209P	Fed. 12C1	21.0	10,300	22.5	9,000	24.5	8,300					
			Win. 209	12C1	21.0	10,500	22.5	8,500	24.5	8,400					
			CCI 209M	12C1			24.5	9,900	26.5	9,000					
			Fed. 209A	Fed. 12C1			24.5	9,800	26.5	8,600					
				Fed. 12S3			24.5	9,700	26.5	9,100					
				Rem. RXP12			25.5	9,300	27.5	8,300					
			Rem. 209P	Fed. 12C1					26.5	9,200					
Win. 209	Fed. 12C1					26.5	9,400								
CCI 209M	Fed. 12C1			21.0	10,600	22.5	9,500								
3¼	1¼	1,220	Fed. 209A	Fed. 12S4	23.0	10,500	24.0	9,800							
				Rem. SP12	21.0	9,600	22.0	9,600							
				Win. WAA12	21.0	10,500	22.0	10,000							
				Win. WAA12F114	23.0	9,900	23.5	9,500							
			Rem. 209P	Hornady Versalite	23.0	9,600	23.0	8,800							
				Fed. 12S4	23.0	9,900	25.5	9,100							
				Win. 209	Fed. 12S4			24.5	10,600						
			CCI 209M	Fed. 12S4	23.0	10,500	25.5	9,700							

PC: Pattern Control.

PC: Pattern Control.

continued



12-GAUGE, 2¾-IN. FEDERAL PAPER TARGET SHELLS (contd.)															
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot		
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
3¾	1¼	1,330	Fed. 209A	12S4							29.0	9,400			
				RP12							29.5	9,300			
				SP12							29.5	9,200			
				WWAA F114									37.0	10,300	
3½	1½	1,240	Win. 209 CCI 209M	12S4					28.0	10,700	29.5	9,900	37.0	9,000	
				SP12									34.0	9,900	
				WWAA12 F114									33.0	10,200	
				Rem. 209P	SP12								36.0	8,300	
3¾	1¼	1,295	Win. 209 CCI 209M	SP12									34.5	9,500	
				WWAA12 F114									34.5	9,500	
				Rem. 209P	SP12								35.5	10,300	
				CCI 209M	SP12								36.5	10,600	
4	1½	1,350	Fed. 209A	SP12									38.0	8,600	
				RP12									36.5	10,200	
				Rem. SP12									37.0	10,600	
				Activ T42									37.5	10,700	
3¾	1½	1,150	Win. 209 Rem. 209P CCI 209M Flo. 616	Rem. RP12							25.0	10,200	31.5	9,100	
				Activ T42										32.5	8,800
				Rem. RP12										31.5	9,400
				Activ T42									32.5	9,100	
3½	1¼	1,205	Fed. 209A	Rem. RP12									33.0	9,400	
				Rem. RP12									32.0	9,500	
				Rem. RP12									34.0	9,300	
				Rem. RP12									34.5	10,300	
3¾	1½	1,205	Win. 209 CCI 209M	Rem. RP12									35.0	9,600	
				Rem. RP12									35.0	9,400	
				Rem. RP12											
				Rem. RP12											

12-GAUGE, 2 $\frac{3}{4}$ -IN. FEDERAL GOLD MEDAL PLASTIC TARGET SHELLS														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Hercó		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
—	$\frac{7}{8}$	1,200	Fed. 209A	Fed. 12SO	17.5	7,600								
				Rem. TGT 12	17.5*	7,100								
				Win. WAA12SL	17.0*	7,300								
				Purple PC	17.0*	6,400								
—	$\frac{7}{8}$	1,250	Fed. 209A	Fed. 12SO	19.0	7,900								
				Rem. TGT 12	18.5*	7,800								
				Win. WAA12SL	18.0*	8,000								
				Purple PC	18.5*	7,300								
—	$\frac{7}{8}$	1,300	Fed. 209A	Fed. 12SO	19.5	8,400	22.0	7,500						
				Rem. TGT 12	19.5*	8,500	22.0*	7,200						
				Win. WAA12SL	19.0*	8,400	21.5*	7,600						
				Purple PC	19.5*	7,900	22.5*	7,000						
2 $\frac{1}{2}$	1	1,200	Fed. 209A	Fed. 12SO	18.0	8,300	20.5	7,600						
				Rem. TGT 12	18.0	7,900	20.0	7,000						
				Win. WAA12SL	18.0	8,700	20.0	7,800						
				Purple PC	18.0*	7,400	20.5*	7,300						
3	1	1,255	Fed. 209A	Fed. 12SO	19.5	9,300	21.5	7,900						
				Rem. TGT 12	19.0	8,700	21.5	8,500						
				Win. WAA12SL	18.5	9,100	21.5*	8,000						
				Purple PC	19.5*	8,700								
3 $\frac{3}{4}$	1	1,290	Fed. 209A	Fed. 12SO	20.5	10,300	22.5	8,500						
				Rem. TGT 12	20.0	9,100	22.5	9,000						
				Win. WAA12SL	20.0	10,300	22.5	8,300						
				Purple PC	20.5	9,300	22.5	8,300						
2 $\frac{1}{2}$ Lite	1 $\frac{1}{2}$	1,090	Fed. 209A	Fed. 12S3	17.0	8,400	18.5	7,800						
				Rem. Fig. 8	17.0	7,700	18.0	7,000						
				Win. WAA12SL	17.0	8,100	18.0	7,600						
				Win. WAA12	16.5*	8,500	18.0*	7,700						
				Fiocchi FTW1	16.5*	8,500	18.0*	7,800						
				Hornady Versalite	17.0*	8,600	18.0	7,200						
				Windjammer	17.5	7,600	18.5	6,600						
				Win. 209	17.0	8,400								
				CCI 209M	17.0	8,300								
				Fio. 616	17.5	8,200								
				Fed. 12S3	17.0	8,300								
				Fed. 12S3	17.0	8,300								

continued

continued

12-GAUGE, 2¾-IN. FEDERAL GOLD MEDAL PLASTIC TARGET SHELLS (contd.)																		
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot					
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi				
2¼	1½	1,145	Fed. 209A	Fed. 12S3	18.0	8,800	19.5	8,100										
				Rem. Fig. 8	18.0	8,800	19.0	7,700										
				Rem. RXP12	18.0	9,400	19.0	8,000										
				Win. WAA12SL	18.0	9,200	19.0	8,200										
				Win. WAA12	17.5*	9,400	19.0*	8,200										
				Fiocchi FTW1	18.0*	9,600	19.5	8,600										
				Hornady Versalite	18.0*	9,400	19.0	8,000										
				Windjammer	18.5	8,200	19.5	7,700										
			Rem. 209P	12S3	18.5	8,200	20.5	6,800										
			Win. 209	12S3	17.5	9,600	19.5	8,000										
			CCI 209	12S3	18.0	8,200	19.0	7,800										
			CCI 209M	12S3	18.0	8,600	19.5	7,500										
3	1½	1,200	Fed. 209A	Fed. 12S3	19.5	10,000	20.0	9,000	22.5	7,300								
				Rem. Fig. 8	19.0	9,500	20.0	8,600	22.5	7,300								
				Rem. RXP12	19.0	9,900	20.0	8,800	22.5	7,800								
				Win. WAA12SL	19.0	10,000	20.0	8,800										
				Win. WAA12	19.0*	10,400	20.0	9,200	22.5	8,100								
				Fiocchi FTW1	19.0	10,500	20.5	9,300	22.5	8,100								
				Hornady Versalite	19.0	10,100	20.5	9,400	22.0	8,000								
				Windjammer	19.5	9,600	21.0	8,200	22.5	6,900								
			Rem. 209P	12S3	19.5	9,300	21.5	7,900	24.0	6,900								
			Win. 209	12S3	19.0	10,500	20.5	9,000	23.0	8,600								
			CCI 209	12S3	20.0	9,800	22.0	9,200	24.0	8,300								
			CCI 209M	12S3	19.0	8,900	21.0	8,600	23.5	8,000								
Heavy	1½	1,250	Fed. 209A	Fed. 12S3	21.5	9,500	23.5	8,100	26.0	8,000								
				Rem. Fig. 8	20.0	9,500	22.0	9,200	23.5	7,800	26.0	7,700						
				Rem. RXP12	20.0	10,100	21.5	9,700	23.5	8,400	26.0	8,000						
				Win. WAA12	21.5	9,400	23.0	8,400	26.0	8,300								
				Hornady Versalite	20.0	10,700	21.5	9,000	24.0	8,300	26.0	8,200						
				Windjammer	20.5	9,500	22.5	8,400	24.0	7,700	26.0	7,400						
			Rem. 209P	12S3			23.0	8,800	25.0	7,600								
			Win. 209	12S3			22.5	10,500	24.0	9,800								
			CCI 209M	12S3			22.5	9,800	24.0	9,100								

PC: Pattern Control.

\*Add one 20-gauge, 0.135-in.-thick card under each load.

PC: Pattern Control.

\*Add one 20-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.

Auto-loading shotguns **may not** function with loads having pressures less than 7,000 psi. It is important to have tight crimps to prevent load efficiencies (pressures) from dropping. The efficiency may also drop when these loads are fired at low temperatures.

Nitro cards may be obtained from Ballistic Products, Inc., 20015 75th Avenue North,  
Corcoran, MN 55340. Phone: (612) 494-9237.



12-GAUGE, 2¾-IN. FEDERAL GOLD MEDAL PLASTIC TARGET SHELLS (contd.)														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3½	1⅛	1,310	Fed. 209A	RXP12			24.0	10,400	26.0	10,300				
				WWAA12 (White)			23.0	10,400	25.0	9,200				
3¼	1¼	1,220	Fed. 209A	Hornady Versalite			24.0	8,800	25.0	10,000				
				Windjammer					25.0	9,700				
				12S4					24.0	10,500	25.0	10,200		
				SP12					24.0	10,400	26.0	9,700		
				WWAA12 F114					24.0	10,600	25.0	10,100		
									25.0	9,800	25.5	8,100		
3½	1¼	1,275	Rem. 209P	12S4					24.0	9,500	25.5	9,400		
			Win. 209	12S4					24.5	9,500	25.5	8,700		
			CCI 209M	12S4							27.0	10,100		34.0 8,900
										27.0	10,500			
			Fed. 209A	12S4						27.5	9,200			
			SP12									35.0 8,700		
3¾	1¼	1,330	Rem. 209P	12S4									35.0 9,100	
			Win. 209	12S4									35.0 10,500	
			CCI 209M	12S4									37.0 9,000	
			Fed. 209A	SP12									37.5 8,300	
			Win. 209	SP12									34.0 9,900	
			CCI 209M	SP12								33.0 10,100		
3½	1⅜	1,240	Fed. 209A	RP12									34.5 8,600	
			WWAA12 F114										35.0 8,600	
			Win. 209	RP12									36.0 7,800	
			CCI 209M	RP12									35.5 10,700	
			Rem. 209P	RP12									39.0 8,600	
			Fed. 209A	RP12									36.0 9,200	
3¾	1⅜	1,295	Rem. 209P	RP12									36.5 9,000	
			Win. 209	RP12									33.5 8,300	
			CCI 209M	RP12							25.5 10,100	32.5 9,200		
			Fed. 209A	Rem. RP12								32.5 9,300		
			Win. 209	Activ T42								32.5 9,400		
			Rem. 209P	Activ T42								32.0 9,700		
3¼	1½	1,150	CCI 209M	Activ T42									34.0 9,700	
			Flo. 616	Activ T42									35.5 8,100	
			Fed. 209A	RP12									34.0 9,400	
			Rem. 209P	RP12									34.5 9,900	
			CCI 209M	RP12										
			Win. 209	RP12										

12-GAUGE, 2¾-IN. FEDERAL HI POWER PLASTIC SHELLS WITH ROLLED PAPER BASE WAD															
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot		
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
3¼	1	1,290	Fed. 209A	12S3	21.0	9,400	23.0	7,500							
				R12L	20.5	8,500	22.5	7,400							
2¾	1½	1,145	Fed. 209A	12S3	18.5	7,300	20.0	7,200							
				RXP12	18.5	8,700	19.0	8,700							
				WWAA12 (White)	18.5	9,600	18.5	9,100							
				Hornady Versalite	18.5	8,300	19.5	7,100							
			Rem. 209P	12S3	18.5	8,400	21.0	6,700							
				Win. 209	12S3	18.5	9,100	20.0	8,200						
3	1½	1,200	CCI 209M	12S3	18.5	8,600	20.0	7,600							
			Fed. 209A	12C1	19.0	9,300	20.5	9,400	23.0	7,700					
				12S3	19.5	9,300	20.5	9,100	22.0	8,100					
				RXP12	19.0	9,800	20.0	9,300	21.0	7,700					
				WWAA12 (White)	19.5	9,000	20.0	8,800	22.5	8,000					
Rem. 209P	12S3	20.0	9,200	22.0	7,600										
	Win. 209	12S3	19.5	9,500	21.5	8,900	23.5	8,100							
	CCI 209M	12S3	20.0	9,300	21.5	8,600	24.0	7,700							

continue

continued

# 12-GAUGE, 2¾-IN. FEDERAL HI POWER PLASTIC SHELLS WITH ROLLED PAPER BASE WAD (contd.)

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3¼	1½	1,255	Fed. 209A	12C1	21.0	10,200	22.0	10,100						
				12S3	21.5	10,100	22.0	9,000	24.0	8,100				
				RXP12	21.0	9,800	22.5	10,000	23.0	8,100				
				WWAA12 (White)			22.0	10,300	23.0	8,600				
				Hornady Versalite	20.5	9,700	23.5	8,600	23.5	8,200				
3¼	1¼	1,220	Fed. 209A	12S3	22.0	10,300	23.0	8,500						
				Win. 209	21.5	10,700	23.0	9,400	25.0	9,100				
				CCI 209M	21.5	10,100	22.0	9,600	25.5	8,400				
				12C1			23.0	9,800	23.0	9,000				
				12S4			22.0	10,500	23.0	9,500				
3¼	1¼	1,330	Fed. 209A	R12H			22.0	9,600	23.0	8,300				
				RXP12			21.5	9,500	23.0	9,600				
				WWAA12 (White)			23.0	9,900	23.0	9,400				
				WWAAF114			23.0	9,700	23.5	8,800				
				Hornady Versalite										
3¼	1¼	1,295	Fed. 209A	12S4					25.5	9,000				
				Win. 209					25.0	9,500				
				CCI 209M					25.0	10,000				
				12C1					25.5	10,200	28.5	9,800		
				12S4					25.5	10,200	28.5	9,900		
3¼	1¾	1,295	Fed. 209A	SP12							30.0	10,200	38.0	8,600
				WWAA12 (Red)							30.0	9,500	38.0	9,800
				WWAAF114									38.5	8,600
				Rem. 209P									38.0	9,000
				Win. 209									37.5	8,500
4	1¾	1,350	Fed. 209A	RP12									37.5	9,100
				Win. 209									39.0	8,400
				CCI 209M									39.0	9,400
				RP12									39.0	8,500
				Win. 209									39.5	9,700
3¼	1½	1,150	Fed. 209A	CCI 209M									40.0	9,600
				RP12									39.5	9,600
				Rem. SP12					26.5	8,900			32.5	9,100
				Activ T42									33.5	8,400
				Rem. RP12									32.5	9,500
3½	1½	1,205	Fed. 209A	Activ T42									33.0	8,800
				Win. 209									33.5	7,900
				CCI 209M									32.5	9,500
				RP12									34.5	8,500
				Win. 209									35.0	8,700
3¾	1½	1,260	Fed. 209A	RP12									34.5	8,600
				Win. 209									36.0	9,500
				CCI 209M									37.0	9,600
				RP12									37.0	9,900
				Win. 209									37.0	9,500

## 12-GAUGE, 2¾-IN. FEDERAL ONE-PIECE PLASTIC SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3¼	1¼	1,220	Fed. 209A	Fed. 12S4			25.0	9,100	26.0	8,400		
				Rem. SP12			25.5	8,700	26.5	7,800		
				WAA12F114			25.0	8,700	26.0	8,000		
				Fed. 12S4			25.5	8,800	26.5	9,100		
				Win. 209			25.0	9,200	26.0	8,500		
3½	1¼	1,275	Fed. 209A	CCI 209M			25.5	9,200	26.0	8,900		
				Fed. 12S4								
				Rem. SP12					28.0	9,500		
				WAA12F114					27.5	8,200		
				Fed. 12S4					27.5	8,700		
3¾	1½	1,260	Fed. 209A	Win. 209					28.5	9,400		
				CCI 209M					27.5	9,000		
				RP12					27.5	9,500		
				Win. 209								
				CCI 209M								



### 12-GAUGE, 2¾-IN. FEDERAL ONE-PIECE PLASTIC SHELLS (contd.)

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3¼	1¼	1,330	Fed. 209A	Fed. 12S4 WAA12F114							38.5	8,500
			Win. 209	Fed. 12S4							39.0	7,700
			CCI 209M	Fed. 12S4							39.0	8,400
			Fed. 209A	Rem. SP12 WAA12F114							37.5	9,000
3½	1⅜	1,240	Win. 209	Rem. SP12							37.0	8,100
			CCI 209M	Rem. SP12							38.0	7,900
			Fed. 209A	Rem. RP12							37.5	7,700
			Win. 209	Rem. RP12							37.5	8,300
3¾	1⅝	1,295	Fed. 209A	Rem. RP12							38.5	8,700
			Win. 209	Rem. RP12							38.5	9,500
			CCI 209M	Rem. RP12							38.5	9,300
			Fed. 209A	Rem. RP12							38.0	9,200
3¼	1½	1,150	Fed. 209A	Fed. 12S4 Rem. SP12 Win. WAA12F114 Activ T35					27.0	9,200		
			Win. 209	Fed. 12S4					27.0	8,600		
			Rem. 209P	Fed. 12S4					26.5	8,700		
			CCI 209M	Fed. 12S4					26.5	8,500		
3½	1½	1,205	Fed. 209A	Rem. RP12					26.5	10,100		
			Win. 209	Rem. RP12					26.5	9,900		
			CCI 209M	Rem. RP12					26.5	10,000		
			Fed. 209A	Rem. RP12					26.0	10,100		
3¾	1½	1,260	Win. 209	Rem. RP12							36.0	8,800
			CCI 209M	Rem. RP12							36.0	8,100
			Fed. 209A	Rem. RP12							37.0	8,500
			Win. 209	Rem. RP12							36.0	8,500
3¼	1⅝	1,115	Fed. 209A	Rem. SP12							38.0	9,900
			Win. 209	Rem. SP12							38.0	8,700
			Rem. 209P	Rem. SP12							38.0	9,100
			CCI 209M	Rem. SP12							38.0	10,000

### 12-GAUGE, 3-IN. FEDERAL HI POWER PLASTIC SHELLS WITH ROLLED PAPER BASE WAD

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi
3¾	1⅝	1,295	Fed. 209A	Fed. 12S3	30.5	10,000	38.0	9,000
				Rem. RXP12	30.5	9,300	38.0	8,800
				Win. WAA12 (White)	30.5	9,700		
4	1⅝	1,350	Fed. 209A	Fed. 12S4			40.0	9,400
				Rem. SP12			40.0	8,900
				Win. WAA12F114			40.0	9,800
4	1½	1,315	Fed. 209A	Fed. 12S3			38.0	9,700
				Rem. RXP12			38.5	9,600
				Win. WAA12			37.5	9,800
4	1⅝	1,280	Fed. 209A	Activ TG30			38.0	9,400
				Rem. SP12			39.0	10,400
				Rem. RP12			39.0	10,500
4	1¾	1,245	Fed. 209A	Rem. RP12			36.0	10,300
				Rem. SP12			34.0	10,500
				Rem. RP12			34.5	10,100
3¾	1⅝	1,155	Fed. 209A	Activ T35				

### 12-GAUGE, 3-IN. FEDERAL ONE-PIECE PLASTIC SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3¾	1⅝	1,295	Fed. 209A	Fed. 12S3					31.0	10,500	40.5	7,900
				Rem. RXP12 WAA12					32.0	10,100	38.0	9,800
4	1⅝	1,350	Fed. 209A	Rem. RXP12							42.0	8,000
				WAA12							44.0	9,900

continued

12-GAUGE, 3-IN. FEDERAL ONE-PIECE PLASTIC SHELLS (contd.)												
Dram Equiv.	Shot Weight, oz	Velo- city, fps	Primer	Wad	Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
4	1½	1,315	Fed. 209A	Fed. 12S4 Rem. SP12 WAA12F114							40.0	9,700
4	1½	1,280	Fed. 209A	Fed. 12S4 Rem. SP12 WAA12F114							40.0	9,000
4	1¾	1,245	Fed. 209A	Rem. RP12							42.0	9,800
3¾	1½	1,155	Fed. 209A	Rem. SP12 Activ T35							40.0	10,100
											40.0	9,400
											40.0	10,000
											39.0	10,500
											36.5	9,900
											35.5	9,300

12-GAUGE 2¾-IN. REMINGTON-UMC											
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12-GAUGE, 2¾-IN. REMINGTON PREMIER PLASTIC TARGET SHELLS													36.5	9.90	
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot		
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
—	¾	1,200	Rem. 209P	Rem. TGT 12 Fed. 12SO Win. WAA12SL Purple PC	17.0* 17.0 17.0* 17.5*	6,800 7,200 7,000 6,800									
—	¾	1,250	Rem. 209P	Rem. TGT 12 Fed. 12SO Win. WAA12SL Purple PC	18.5* 18.0 18.5* 18.5*	7,100 7,800 7,800 6,900									
—	¾	1,300	Rem. 209P	Rem. TGT 12 Fed. 12SO Win. WAA12SL Purple PC	20.5 20.0 20.5 20.0	8,200 8,100 8,000 7,500	22.0 22.0 21.5	7,100 8,000 7,900							
2¼	1	1,200	Rem. 209P	Rem. TGT 12 Fed. 12SO Win. WAA12SL Purple PC	18.0 18.0 18.0 18.5	8,700 9,000 9,600 8,300	20.0 19.5 19.5 20.5	8,200 8,600 8,600 7,000							
3	1	1,255	Rem. 209P	Rem. TGT 12 Fed. 12SO Win. WAA12SL Purple PC	19.0 19.5 19.5 19.5	9,500 10,600 10,100 8,900	21.0 21.5 21.5	8,500 9,300 8,900							
3¾	1	1,290	Rem. 209P	Rem. Fig. 8	21.5	9,100	22.0	8,100							
				Rem. TGT 12	21.0	10,700	22.5	8,400							
				Rem. R12L	20.5	9,900									
				Win. WAA12F1	20.5	9,100	23.0	7,200							
				Win. WAA12SL	20.5	10,400	22.5	9,000							
2½	Lite	1½	1,090	Rem. 209P	Fed. 12SO	20.0	10,500	22.0	8,700						
					Purple PC	20.5	9,100	22.5	8,200						
					Rem. R12L	20.5	10,500	22.5	9,200						
					Win. 209	20.0	10,100	22.0	8,700						
					CCI 209M	20.0	10,300	22.0	9,100						
2½	Lite	1½	1,090	Rem. 209P	Rem. Fig. 8	16.5	8,300								
					Rem. RXP12	16.0	8,700								
					Fed. 12S3	16.0	10,300								
					Win. WAA12	16.0	9,400								
					Fiocchi FTW1	16.5	8,500								
					Windjammer	16.5	7,900								
					Red PC	16.5	8,700								
				Fed. 209	Rem. Fig. 8	16.0	9,800								
					Win. 209	Rem. Fig. 8	16.5	8,900							
					CCI 209M	Rem. Fig. 8	16.5	9,100	18.0	8,400					
				Rem. RXP12		16.0	9,300	17.5	8,600						
				Fed. 12S3		16.0	10,100	17.5	8,500						
				Win. WAA12		16.0	9,800	17.0	8,700						
				Fiocchi FTW1		16.5	9,700	17.5	8,500						
				Fio. 616	Windjammer	16.5	8,300	18.0	7,600						
Red PC	16.5	9,200	18.0		7,400										
Rem. Fig. 8	16.5	9,000													

PC: Pattern Control.

PC: Pattern Control.

continued



12-GAUGE, 2¾-IN. REMINGTON PREMIER PLASTIC TARGET SHELLS (contd.)															
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot		
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
2¾	1½	1,145	CCI 209M	Rem. Fig. 8	17.5	9,300	19.0	8,800							
				Rem. RXP12	17.0	9,600	19.0	9,100							
				Fed. 12S3	17.5	10,600	19.0	8,900							
				Win. WAA12	16.5	10,200	19.0	9,400							
				Fiocchi FTW1	17.0	9,900	19.5	9,300							
				Windjammer	17.0	9,000	19.5	7,900							
				Red PC	17.0	9,400	19.0	7,700							
				Hornady Versalite	17.0	9,100	19.0	8,000							
			Fed. 209A	Rem. Fig. 8	16.5	10,300	19.5	10,100							
				Rem. RXP12	16.0	10,600	19.5	10,500							
				Fed. S3	16.5	10,100	19.0	9,900							
				Red PC	17.0	10,700	19.5	10,000							
				Windjammer	17.5	10,500	20.0	9,600							
			Win. 209	Rem. Fig. 8	18.0	9,500	19.0	8,100							
			Rem. 209P	Rem. Fig. 8	18.0	9,200	19.0	7,300							
				Fed. 12S3	18.0	10,100	19.0	8,800							
				Rem. RXP12	17.5	8,900	19.0	7,700							
				Win. WAA12	17.0	10,100	19.0	6,700							
				Fiocchi FTW1	17.5	9,700	19.5	8,800							
				Windjammer	17.5	8,900	19.5	7,800							
				Red PC	17.5	9,000	19.0	7,600							
				Lage Uniwad	17.5	9,900	19.0	8,000							
				Hornady Versalite	17.5	9,000	19.0	8,000							
			CCI 209	Rem. Fig. 8	17.5	8,600	19.5	7,100							
			Fio. 616	Rem. Fig. 8	17.5	8,900	19.0	7,800							
3	1½	1,200	Rem. 209P	Rem. Fig. 8	19.0	10,100	21.0	8,800	22.5	8,200					
				Rem. RXP12	19.0	10,000	20.5	8,700	22.5	8,300					
				Fed. 12S3			20.5	9,700	22.0	9,100					
				Win. WAA12			21.0	8,900	22.0	8,900					
				Fiocchi FTW1	18.5	10,700	20.5	9,900							
				Windjammer	18.5	9,400	20.5	8,200	23.5	7,000					
				Red PC	19.5	10,100	21.0	8,500	22.5	7,800					
				Hornady Versalite			20.0	8,700	22.0	7,900					
			Fed. 209A	Rem. Fig. 8	17.0	10,400	20.5	10,500	23.0	9,200					
				Rem. RXP12	17.0	10,100	21.0	10,400	22.0	9,100					
				Win. 209	19.0	10,400	20.0	8,600	22.5	8,400					
				Rem. Fig. 8	18.5	10,400	20.0	9,300	22.5	9,500					
				Rem. RXP12	18.5	10,500	20.5	9,200	22.5	9,500					
			CCI 209M	Fed. 12S3			20.5	10,200	22.0	9,700					
				Win. WAA12			21.0	9,600	22.0	9,300					
				Fiocchi FTW1	18.5	10,600	20.5	9,700							
				Windjammer	18.5	9,700	20.5	8,700	23.5	8,200					
				Red PC	19.0	10,400	20.5	9,000	22.5	8,700					
				Hornady Versalite	19.0	10,400	20.0	9,200	22.0	8,800					
				CCI 209	Rem. Fig. 8	19.5	9,900	21.0	8,700	22.5	8,500				
				Fio. 616	Rem. Fig. 8	19.5	10,600	20.0	8,700	23.0	8,500				
				Fed. 209	Rem. RXP12			22.0	10,500	24.0	10,100				
				Win. 209	Rem. RXP12			22.0	9,400	24.5	8,800				
Heavy	1½	1,250	CCI 209M	Rem. RXP12			22.0	9,600	24.0	10,400	24.5	9,800			
				Fed. 12S3			21.5	10,600	23.5	10,200	24.5	9,900			
				Win. WAA12			22.5	10,700	24.0	10,300	24.5	10,400			
				Fiocchi FTW1			22.0	9,400	25.0	9,300	25.0	9,400			
				Windjammer			22.0	9,600	24.0	9,400	25.0	9,500			
				Red PC			21.5	10,200	23.5	9,900	24.5	9,900			
				Hornady Versalite			22.0	9,100	23.5	9,100					
				Fio. 616	Rem. RXP12										

continued

PC: Pattern Control.

continued

# 12-GAUGE, 2¾-IN. REMINGTON PREMIER PLASTIC TARGET SHELLS (contd.)

Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3½	1¼	1,310	Rem. 209P	Rem. RXP12					24.5	9,700	27.5	8,400		
				Win. WAA12					25.0	10,500	27.0	8,800		
				Windjammer					26.5	8,600	28.5	8,600		
				Hornady Versalite					25.5	9,900	27.0	8,800		
				Activ T32					25.0	9,900	27.0	9,600		
3½	1¼	1,220	Fed. 209	Rem. RXP12							27.0	9,200		
				Win. 209							27.0	9,200		
				CCI 209M							27.0	9,200		
				Fio. 616							27.0	9,200		
				Rem. RXP12					26.0	9,800	27.0	9,500		
			Rem. 209P	Rem. SP12					25.0	10,000	26.5	9,700		
				Fed. 12S4					26.0	9,900	27.5	9,300		
				Win. WAA12F114					23.5	9,300	25.0	9,600		
				Hornady Versalite					23.0	10,700	25.0	10,400		
				Activ T32					24.0	10,100	24.5	9,300		
3½	1¼	1,275	Fed. 209	Rem. SP12					23.5	9,400	25.0	8,400		
				Win. 209					23.5	9,400	25.0	8,800		
				CCI 209M					23.0	9,900	25.0	9,800		
				Fio. 616					23.5	10,000	24.5	9,600		
				Rem. SP12					23.5	10,300	24.5	10,000		
			Rem. 209P	Rem. SP12					23.0	9,600	24.5	9,300		
				Fed. 12S4									34.5	8,600
				Win. WAA12F114									34.0	10,100
				Activ T35										
				Rem. SP12					26.5	10,500				
3½	1¼	1,330	Win. 209	Rem. SP12					27.0	9,900			35.0	8,500
				CCI 209M									35.0	9,100
				Fio. 616					26.0	10,600			35.5	9,100
				Rem. SP12									34.5	9,800
				Rem. SP12									35.5	9,300
			Rem. 209P	Rem. SP12									37.5	9,700
				Win. 209									36.5	9,700
				CCI 209M									36.5	9,900
				Fio. 616									35.5	10,300
				Rem. SP12									35.5	9,900
3½	1¼	1,240	Fed. 209	Rem. SP12									35.0	9,300
				Win. 209									34.0	9,300
				CCI 209M									35.0	9,100
				Fio. 616									35.0	9,100
				Rem. SP12									34.0	9,400
			Rem. 209P	Rem. SP12									34.0	9,100
				Rem. RP12									37.5	10,300
				Fed. 209									36.5	9,900
				Win. 209									35.5	10,500
				CCI 209M									35.5	10,500
3½	1¼	1,150	Fed. 209	Rem. RP12									35.5	10,400
				Win. 209									35.5	10,000
				CCI 209M									31.0	9,900
				Fio. 616									30.5	10,400
				Rem. RP12									31.0	9,900
			Rem. 209P	Rem. RP12									31.5	10,100
				Activ T42									31.0	9,900
				Fed. 209									31.0	9,800
				Win. 209										
				CCI 209M										

continued



12-GAUGE, 2¾-IN. REMINGTON PREMIER PLASTIC TARGET SHELLS (contd.)														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3½	1½	1,205	Rem. 209P	Rem. RP12 Activ T42									33.0	10,200
			Fed. 209	Rem. RP12									31.5	10,600
			Win. 209	Rem. RP12									33.0	10,300
			CCI 209M	Rem. RP12									33.0	10,200
			Fio. 616	Rem. RP12									33.0	10,100

12-GAUGE, 2¾-IN. REMINGTON-PETERS UNIBODY SP PLASTIC SHELLS														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3¼	1	1,290	Rem. 209	R12L RXP12 WWAA12FI			22.0 21.5 21.0	9,200 9,900 9,900						
			CCI 209	R12L	21.0	9,700	23.5	8,100						
			CCI 209M	R12L	20.0	10,600	22.5	8,100						
			Fed. 209	R12L	19.5	10,400	22.0	9,600						
			Win. 209	R12L	20.0	10,700	21.5	8,800						
2¾	1½	1,145	Rem. 209	RXP12 R12H 12S3 WWAA12 (White) Hornady Versalite	17.5 17.0 17.0 17.0	9,300 10,100 10,200 8,800	19.0 19.0 17.5 18.0	8,800 8,500 9,200 8,500						
			CCI 209	RXP12	18.0	10,100	18.5	9,200						
			CCI 209M	RXP12	17.0	10,200	18.5	9,100						
			Fed. 209	RXP12	17.5	10,500	18.0	9,200						
			Win. 209	RXP12	17.0	10,500	18.5	8,800						
3	1½	1,200	Rem. 209	RXP12 R12H 12S3 WWAA12 (White) Hornady Versalite Windjammer	18.0 18.0 18.0 18.0 18.5 18.0	10,500 10,000 10,000 10,000 9,600 10,100	20.0 19.5 19.5 19.0 20.5 20.0	9,800 9,400 10,000 9,900 8,300 9,200	22.0 21.5 21.5 21.0 22.0 22.0	9,100 8,300 8,800 8,400 8,200 8,100				
			Fed. 209	RXP12			21.0	8,800	23.0	8,300				
			CCI 209	RXP12			20.0	10,000	22.0	8,800				
			CCI 209M	RXP12			20.5	9,800	22.0	8,900				
			Win. 209	RXP12										

continued

continued

# 12-GAUGE, 2¾-IN. REMINGTON-PETERS UNIBODY SP PLASTIC SHELLS (contd.)

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3¼	1½	1,255	Rem. 209	RXP12			20.5	10,300	22.5	9,200				
				R12H			21.0	10,400	22.5	8,300				
				12S3					22.5	9,800				
			Rem. 97★	WWAA12 (White)					22.5	9,200				
				RXP12			21.0	10,600						
				R12H			21.0	10,100						
3½	1½	1,310	Fed. 209	RXP12			20.5	10,200	23.0	10,000				
				RXP12			22.5	10,500	23.0	8,800				
				CC1 209M			21.0	10,100	23.0	9,700				
			Win. 209	RXP12			21.5	10,700	23.5	9,800				
				RXP12					24.0	10,000	25.5	10,200		
				R12H					24.5	10,100	25.5	10,100		
3¾	1¾	1,220	Rem. 209	WWAA12 (White)					24.0	10,300	24.5	10,200		
				R12H					25.5	9,600	27.0	9,300		
				R12H					25.0	10,700	26.5	10,300		
			Fed. 209	SP12			25.0	10,700	26.5	10,700	23.5	9,400	30.0	10,300
				WWAA F114			22.5	9,700	23.0	10,100	23.0	10,100	31.5	10,000
				SP12			22.5	10,700	23.5	10,400	25.5	9,100		
3½	1¾	1,275	CCI 209M	SP12			24.5	9,600						
				SP12			23.0	10,100					32.0	8,500
				SP12			23.0	10,600	24.5	10,500	33.0	9,000		
			Win. 209	SP12									32.0	10,200
				SP12									32.0	10,000
				SP12									32.5	10,600
3¾	1¾	1,330	CCI 209M	SP12									35.5	8,900
				RP12									33.5	9,800
				RP12									35.0	10,300
			CCI 209M	RP12									37.5	9,700
				RP12									35.5	10,400
				RP12									36.0	10,100
3¼	1½	1,150	Rem. 209P	Rem. RP12									32.5	10,500
				Activ T42									32.5	8,000
				Rem. RP12									31.5	9,600
			Fed. 209	Rem. RP12									31.5	9,100
				Rem. RP12									32.0	8,300
				Rem. RP12									32.0	8,400
3¼	1½	1,115	Rem. 209P	Rem. RP12									31.5	9,200
				Activ T42									29.5	10,500
				Activ T42									29.0	10,400
			Fed. 209P	Activ T42									29.5	10,400
				Activ T42									29.5	10,300
				Activ T42									29.5	10,400

# 12-GAUGE, 3-IN. REMINGTON-PETERS SP PLASTIC SHELLS WITH SEPARATE PLASTIC BASE WAD

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3¾	1¾	1,295	CCI 209M	Rem. RXP12*							30.0	9,200		
				Fed. 12S3							29.5	10,000		
				Win. WAA12*							30.0	10,000		
4	1¾	1,350		Rem. RXP12									42.5	8,000
				Fed. 12S3									42.0	8,400
				Win. WAA12									42.0	8,500
4	1½	1,315		Rem. SP12*									40.0	9,400
				Fed. 12S4*									39.5	9,800
				Win. WAA12F114*									39.5	9,800
4	1¾	1,280		Rem. SP12									39.0	9,800
				Fed. 12S4									38.5	10,200
				Win. WAA12F114									38.5	10,500
4	1¾	1,245		Rem. RP12									38.5	10,700
				Activ T35									37.5	10,400
3¾	1¾	1,155		Rem. RP12									34.0	10,300
				Activ T35									34.0	10,100

\*NOTE: For each asterisk (\*), add one 20-gauge, ⅛-in.-thick card wad to the inside bottom of the shot cup.



12-GAUGE, 3-IN. REMINGTON-PETERS UNIBODY SP PLASTIC SHELLS										
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Herco		Blue Dot		2400	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3 3/4	1 1/2	1,295	Win. 209	Rem. RXP12					37.5	9,200
				Fed. 12S3					37.0	9,300
				Win. WAA12SL					35.5	10,100
				Win. WAA12					36.5	9,400
				Activ TG30					36.5	9,200
4	1 1/2	1,350	Win. 209	Rem. RXP12					38.5	9,900
				Fed. 12S4					38.0	10,200
				Win. WAA12F114					38.0	10,500
				Activ T32					38.5	9,800
4	1 1/2	1,315	CCI 209M	Rem. SP12					37.5	10,700

12-GAUGE, 3-IN. 7/8-OZ TARGET LOADS†

Green Dot

12-GAUGE, 2 3/4-IN., 7/8-OZ TARGET LOADS†									
Shell	Velocity, fps	Primer	Wad	Bullseye		Red Dot		Green Dot	
				Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Federal Paper Target	1,200	Fed. 209	Fed. 12SO	17.5	4,500				
			WWAA12F1	17.5*	4,600				
			Rem. PT12	17.5*	5,100				
Federal Gold Medal	1,200	Fed. 209	Fed. 12SO	17.0**	6,300				
			WWAA12F1	17.0**	5,800				
			Rem. PT12	17.5**	5,500				
Winchester Western AA-Type	1,200	Win. 209	WWAA12F1	16.5*	6,700				
			Fed. 12SO	16.5	7,400				
			Rem. PT12	16.5*	7,100				

\*NOTE: For each asterisk (\*), add one 20-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.  
†NOTE: Auto-loading shotguns may not function with loads having pressures less than 7,000 psi.

It is important to have tight crimps to prevent load efficiencies (pressures) from dropping. The efficiency may also drop when these loads are fired at low temperatures.

NOTE: Auto loading  
It is important to have tight crimps to prevent load efficiencies (pressure) are fired at low temperatures.

12-GAUGE, 2¾-IN. WINCHESTER PLASTIC AA SHELLS														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
—	¾	1,200	Win. 209	Win. WAA12SL	16.5*	7,300								
				Fed. 12SO	16.0*	8,000								
				Rem. TGT 12	16.5*	7,300								
				Purple PC	17.0*	7,500								
				Win. WAA12SL	18.0*	9,300								
—	¾	1,250	Win. 209	Fed. 12SO	17.5	9,000								
				Rem. TGT 12	18.0*	8,400								
				Purple PC	18.0*	8,400								
				Win. WAA12SL	19.0	10,300	20.5	8,800						
				Fed. 12SO	19.0	9,400	21.0	8,900						
—	¾	1,300	Win. 209	Rem. TGT 12	19.0*	9,300	21.0	8,400						
				Purple PC	19.5*	9,000	21.5*	7,900						
				Win. WAA12SL	18.0	10,200	19.5	8,500						
				Fed. 12SO	18.0	9,600	19.5	8,400						
				Rem. TGT 12	18.0	9,200	19.5	7,900						
2½	1	1,200	Win. 209	Purple PC	18.0	8,900	19.5	7,000						
				Win. WAA12SL	19.0	10,500	21.0	9,200						
				Fed. 12SO	19.5	9,800	21.0	8,800						
				Rem. TGT 12	19.0	9,700	21.5	8,700						
				Purple PC	20.0	10,200	21.0	8,800						
3	1	1,255	Win. 209	12C1	20.0	10,200	21.0	8,800						
				12S3	20.0	9,900	22.5	9,700						
				RXP12	20.0	10,100	21.0	8,800						
				Win. WAA12SL	20.0	10,100	21.5	9,500						
				WWAA12 (White)	19.0	10,500	20.0	8,700						
3¾	1	1,290	Win. 209	WWAA12 (White)			22.0	9,700						
				Rem. TGT 12	20.0	10,400	22.0	9,000						
				Purple PC	20.0	10,400	22.0	9,000						
				CCI 209M	18.5	10,400	21.5	9,900						
				WWAA12 (White)										

continue

PC: Pattern Control.

continued

12-GAUGE, 2¾-IN. WINCHESTER PLASTIC AA SHELLS (contd.)														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Lite	1½	1,090	Win. 209	Win. WAA12SL	16.0	9,300	18.0	8,000						
				Win. WAA12	16.0	9,500	17.5	8,100						
				Rem. Fig. 8	16.0	8,300	18.0	7,400						
				Rem. RXP12	16.5	9,000	17.5	7,600						
				Fed. 12S3	17.0	10,400	18.0	9,700						
			Fed. 209 Rem. 209P CCI 209M Fio. 616	Hornady Versalite	16.5	9,000	17.5	7,800						
				Red PC	16.0	9,100	18.0	7,300						
				WWAA12 (White)	16.0	9,900								
				WWAA12 (White)	17.0	8,100								
				WWAA12 (White)	17.0	9,800								
2¼	1½	1,145	Win. 209	Win. WAA12SL	16.0	8,900								
				Win. WAA12	17.0	10,000	19.0	9,400						
				Rem. Fig. 8	17.5	9,900	19.0	8,500						
				Rem. RXP12	17.0	8,400	18.0	8,100						
				Fed. 12C1	17.5	9,400	18.5	8,100						
			Fed. 209 Rem. 209P CCI 109 CCI 209M Fio. 616	Fiocchi FTW1	17.5	10,100	19.5	9,600						
				Hornady Versalite	18.0	9,500	19.5	8,000						
				Windjammer	17.5	9,300	18.0	8,400						
				Red PC	17.5	9,500	19.0	8,300						
				WWAA12 (White)	17.0	10,000	18.0	9,200						
3	1½	1,200	Win. 209	WWAA12 (White)	17.5	8,700								
				WWAA12 (White)	17.0	9,200	18.0	8,200						
				WWAA12 (White)	17.5	10,400	18.5	10,100						
				WWAA12 (White)	17.0	10,200	18.5	9,400						
				Win. WAA12SL	18.0	10,400	20.5	10,700	22.5	9,100				
			Fed. 209 Rem. 209P CCI 109 CCI 209M Fio. 616	Win. WAA12	18.5	10,700	20.5	9,300	21.0	9,100				
				Rem. Fig. 8	18.5	9,800	19.5	9,500	22.5	8,300				
				Rem. RXP12	18.5	9,700	19.5	8,900	22.0	8,700				
				Fed. 12C1	18.5	10,700	20.0	9,900	22.5	8,900				
				Fiocchi FTW1	19.0	9,700	21.0	9,000	21.0	8,200				
Heavy	1½	1,250	Win. 209	Hornady Versalite	18.5	9,900	21.0	9,000	22.5	8,200				
				Windjammer	18.5	10,500	20.5	9,800	23.5	9,500				
				Red PC	17.5	10,600	19.5	9,400	21.5	8,200				
				WWAA12 (White)	19.0	9,500	20.0	9,800	23.0	7,500				
				WWAA12 (White)	18.0	10,400	19.0	9,300						
			Fed. 209 Rem. 209P CCI 109 CCI 209M Fio. 616	WWAA12 (White)	18.5	10,500	20.0	10,400	21.5	10,300				
				WWAA12 (White)	18.0	10,500	20.0	9,500	21.5	9,100				
				Win. WAA12SL			21.5	10,500	24.0	9,900				
				Win. WAA12			22.0	10,300	23.5	9,400	25.0	9,500		
				Rem. Fig. 8			21.0	9,500	24.0	9,000	25.0	9,100		
3¾	1½	1,310	Win. 209	Rem. RXP12			21.0	10,200	23.0	9,500	25.0	9,200		
				Fed. 12C1			22.0	9,900	24.0	9,400	24.5	9,200		
				Hornady Versalite			22.0	10,300	24.5	10,000	25.0	9,100		
				Red PC			23.0	8,800						
				Activ T32	21.5	9,600								
			Fed. 209 Rem. 209P CCI 109 CCI 209M Fio. 616	WWAA12 (White)					24.0	10,100				
				WWAA12 (White)					24.0	9,300				
				WWAA12 (White)	22.0	10,500	23.5	10,100						
				RXP12										
				WWAA12 (White)					24.0	9,800	26.5	9,100		
Fed. 209 Rem. 209P CCI 109 CCI 209M Fio. 616	Red PC			23.0	10,200	25.5	10,000	26.5	9,300					
	Hornady Versalite					25.0	9,100							
	WWAA12 (White)					25.0	10,300	26.5	9,900					
	WWAA12 (White)					24.5	10,600							
	WWAA12 (White)					26.0	9,700	27.0	8,100					
					25.5	9,700								

PC: Pattern Control.

PC: Pattern Control.

continued



12-GAUGE, 2¾-IN. WINCHESTER PLASTIC AA SHELLS (contd.)														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3¼	1¼	1,220	Win. 209	12S4					23.5	10,400	25.0	9,300		
				RP12					22.5	9,500				
				WWAA12F114					23.5	9,900	25.0	8,400		
				Hornady Versalite					24.0	9,800	25.5	8,500		
			Win. 209	Activ T35					22.5	10,700	24.5	10,400		
			Fed. 209	WWAA12F114					23.0	10,000	24.0	10,100		
			Rem. 209P	WWAA12F114					24.0	10,000	25.5	8,300		
			CCI 209M	WWAA12F114					23.5	9,900	24.0	9,100		
3½	1¼	1,275	Win. 209	WWAA12F114					23.0	10,300	25.0	9,800		
				SP12							26.5	10,700	34.5	9,900
				12S4									35.0	8,200
				Activ T35							26.0	10,700	34.0	10,500
			Fed. 209	WWAA12F114							26.0	10,700	34.5	9,000
			Rem. 209P	WWAA12F114							26.0	10,700	32.0	9,500
			CCI 209M	WWAA12F114							27.0	9,400	35.0	8,600
			Fio. 616	WWAA12F114							27.0	10,700	34.0	8,600
3¾	1¼	1,330	Win. 209	WWAA12F114							26.0	10,100	38.0	10,200
				RP12									37.0	10,300
				SP12									37.0	10,600
				WWAA12F114									36.5	9,700
			Win. 209	Activ T35									33.5	10,500
			Fed. 209	WWAA12F114									36.5	9,500
			CCI 209M	WWAA12F114									34.0	10,500
				WWAA12F114									33.0	10,600
3¾	1½	1,240	Win. 209	WWAA12F114									33.0	10,400
				SP12									32.0	10,100
				12S4									33.5	8,300
				WWAA12F114									31.0	9,400
			Fed. 209	WWAA12F114									30.0	10,000
			CCI 209M	WWAA12F114									30.0	10,400
			Win. 209	Rem. RP12									30.0	10,400
			Rem. 209P	Activ T42									30.0	10,400
3¾	1½	1,150	CCI 209M	Activ T42										
				Activ T42										

PC: Pattern Control.

\*Add one 20-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.

Auto-loading shotguns **may not** function with loads having pressures less than 7,000 psi. It is important to have tight crimps to prevent load efficiencies (pressures) from dropping. The efficiency may also drop when these loads are fired at low temperatures.

# 12-GAUGE, 2¾-IN. WINCHESTER POLYFORMED WITH PLASTIC BASE WAD

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3¼	1	1,290	Win. 209	WAA12F1 Fed. 12SO Rem. Fig. 8 Purple PC	22.0	7,600	23.5	7,000						
			Rem. 209P	WAA12F1	21.0	9,600								
			Fed. 209	WAA12F1	21.5	8,500	23.0	7,800						
			CCI 209M	WAA12F1	21.5	7,900	24.0	6,800						
			Fio. 616	WAA12F1	21.5	7,800								
2½ Lite	1½	1,090	Win. 209	WAA12 Fed. 12S3 Rem. Fig. 8 Hornady Versalite Red PC	21.0	8,200								
			Rem. 209P	WAA12	21.0	8,400	23.0	7,500						
			Fed. 209	WAA12	21.0	8,200								
			CCI 209M	WAA12	21.0	8,400	23.0	7,500						
			Fio. 616	WAA12	21.5	7,900	23.0	7,400						
2¾	1½	1,145	Win. 209	WAA12 Fed. 12S3 Rem. Fig. 8 Hornady Versalite Red PC	16.5	7,800								
			Rem. 209P	WAA12	17.5	7,800	18.5	6,700						
			Fed. 209	WAA12	17.0	6,900	18.5	6,700						
			CCI 209M	WAA12	16.5	7,900	18.5	7,000						
			Fio. 616	WAA12	17.0	8,000	18.5	7,000						
3	1½	1,200	Win. 209	WAA12 Fed. 12S3 Rem. Fig. 8 Hornady Versalite Red PC	17.0	7,600	18.5	7,100						
			Rem. 209P	WAA12	18.0	8,500	20.5	7,300						
			Fed. 209	WAA12	18.0	8,900	19.5	7,000						
			CCI 209M	WAA12	18.0	8,000	20.0	7,200						
			Fio. 616	WAA12	18.0	8,600	20.5	6,800						
3¼	1½	1,255	Win. 209	WAA12 Fed. 12S3 Rem. Fig. 8 Hornady Versalite Red PC Activ T32	18.5	7,800	20.5	6,800						
			Rem. 209P	WAA12	18.0	8,700	20.0	7,000						
			Fed. 209	WAA12	18.0	8,700	20.0	7,000						
			CCI 209M	WAA12	18.0	9,000	20.0	7,400						
			Fio. 616	WAA12	18.5	8,300	20.0	6,800						
3½	1½	1,310	Win. 209	WAA12 Fed. 12S3 Rem. Fig. 8 Hornady Versalite Red PC Activ T32	18.5	8,100								
			Rem. 209P	WAA12	19.5	8,900	22.0	8,700	23.0	7,600				
			Fed. 209	WAA12	19.0	9,600	21.5	8,300	23.5	8,300				
			CCI 209M	WAA12	19.0	8,700	21.5	8,200	23.0	7,400				
			Fio. 616	WAA12	19.0	9,400	21.5	7,700	23.0	7,700				
3¾	1½	1,310	Win. 209	WAA12 Fed. 12S3 Rem. Fig. 8 Hornady Versalite Red PC Activ T32	19.5	8,400	22.0	7,600	23.5	7,600				
			Rem. 209P	WAA12	19.5	9,000			23.5	7,900				
			Fed. 209	WAA12	19.0	9,900	21.5	7,700	23.5	7,900				
			CCI 209M	WAA12	19.5	9,300	21.5	7,600	23.5	7,200				
			Fio. 616	WAA12	21.0	9,400	23.5	8,800	25.0	8,500				
4	1½	1,310	Win. 209	WAA12 Fed. 12S3 Rem. Fig. 8 Hornady Versalite Red PC Activ T32	21.5	9,700	23.5	8,600	25.0	8,400				
			Rem. 209P	WAA12	21.0	9,900	24.0	8,300	25.0	8,000				
			Fed. 209	WAA12	21.0	10,100	23.5	8,000	25.0	7,900				
			CCI 209M	WAA12	21.5	9,500			25.0	8,300				
			Fio. 616	WAA12	20.5	10,200	23.5	8,800	25.0	8,400				
4½	1½	1,310	Win. 209	WAA12 Fed. 12S3 Rem. Fig. 8 Hornady Versalite Red PC Activ T32	21.5	10,000	23.0	8,800	25.0	8,500				
			Rem. 209P	WAA12	21.5	10,100	23.0	8,600	25.0	8,000				
			Fed. 209	WAA12			25.5	8,900	26.5	8,600				
			CCI 209M	WAA12	22.5	10,300	24.5	9,900	26.0	9,400				
			Fio. 616	WAA12	22.5	10,200	25.0	8,900	26.5	9,000				
5	1½	1,310	Win. 209	WAA12 Fed. 12S3 Rem. Fig. 8 Hornady Versalite Red PC Activ T32	22.5	10,200	25.0	8,700	26.5	8,600				
			Rem. 209P	WAA12	22.5	10,200	25.0	8,700	26.5	9,000				
			Fed. 209	WAA12			24.5	9,400	27.0	9,000				
			CCI 209M	WAA12	22.0	9,400	25.0	9,000	27.0	8,500				
			Fio. 616	WAA12	22.5	10,600	24.5	8,900	27.5	9,200				

PC: Pattern Control.



12-GAUGE, 3-IN. WINCHESTER-WESTERN PLASTIC AA-TYPE SHELLS										
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Herco		Blue Dot		2400	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3¾	1¾	1,295	Win. 209	12S3 RXP12 WWAA12 (White)			37.5 38.0 37.5	10,300 9,400 10,000		
4	1¾	1,350		12S4 SP12 WWAA12F114			40.0 40.5 39.0	10,500 9,300 9,900		
4	1½	1,315		SP12			38.5	10,300		
4¼	1¾	1,335		RP12					50.0	10,000
4	1¾	1,245		RP12					45.0	9,900

12-GAUGE, 2¾-IN. ACTIV PLASTIC SHELLS															
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot		
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
2¾	1½	1,145	CCI 209	12S3	18.5	7,800									
			CCI 209M	12S3	17.5	8,100									
			Fed. 209	12S3	18.0	8,700									
			Win. 209	12S3	18.5	9,000									
				12S3	18.0	8,500									
				Rem. PT12 WWAA12F1 Purple PC	17.5 18.5 18.5	8,300 7,700 7,400									
CCI 209	12S3	20.0		8,200											
3	1½	1,200	CCI 209M	12S3	19.5	10,000	21.5	8,700							
			Fed. 209	12S3	19.5	9,600	21.5	7,500							
			Win. 209	12S3	19.5	9,800	21.0	7,700							
				12S3	19.5	10,300	21.5	7,400							
				Rem. PT12 WWAA12F1 Purple PC	19.5 19.5 20.0	9,400 8,700 8,400	22.0 22.5 23.0	8,000 6,500 7,000							
				CCI 209M	12S3 WWAA12 (White)			22.0 23.0	9,400 8,800						
3¼	1½	1,220	CCI 209	Activ T32 WWAA12 (White)			23.0 23.5	9,300 9,000	25.5 25.5	8,100 8,400					
			CCI 209M	Activ T32 WWAA12 (White)			22.0 22.5	9,600 10,000	24.5 24.5	9,000 9,000					
			Fed. 209	Activ T32 WWAA12 (White)			22.5 22.5	10,000 9,800	24.5 24.5	9,200 9,500					
			Win. 209	Activ T32 12C1 RXP12 WWAA12 (White)			23.0 22.0 22.0	9,700 9,900 10,200	24.5 24.5 24.0	9,000 8,900 9,200					
											30.5 29.0	9,800 10,200	39.5 37.0	9,300 10,100	
3¾	1¼	1,330	CCI 209	12S4											
			CCI 209M	Activ T32					27.5	10,500	29.5	10,300			
			Fed. 209	Activ T32 12S4					27.5	10,200	29.0	9,700	39.5 39.0	9,000 8,700	
			Win. 209	Activ T32 12S4 SP12 WWAA12F114							28.5 28.5 30.5	9,800 10,300 10,300	40.0 40.0	8,500 8,800	
3¾	1½	1,295	CCI 209	Activ T35 RP12							29.5	10,500	38.5 38.0	8,700 9,400	
			CCI 209M	Activ T35 RP12									38.0 37.0	9,700 10,200	
			Fed. 209	Activ T35 RP12									39.0 38.0	9,100 9,500	
			Win. 209	Activ T35 RP12									40.0	10,100	
4	1½	1,350	Fed. 209	Activ T35									39.5	10,100	
			Win. 209	Activ T35											

continued

continued

12-GAUGE, 2¾-IN. ACTIV PLASTIC SHELLS (contd.)															
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot		
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
3¾	1½	1,150	CCI 209M	Activ T42											
				Rem. RP12											
			Fed 209	Activ T42									34.0	9,100	
			Rem. 209P	Activ T42									34.5	7,700	
			Win. 209	Activ T42									32.5	8,600	
3¾	1½	1,260	Flo. 616	Activ T42										34.0	8,200
			CCI 209	Activ T42									33.0	9,200	
				Activ T42									33.5	9,100	
			CCI 209M	Activ T42									38.5	9,600	
				RP12									36.5	10,200	
3¾	1½	1,260	Win. 209	Activ T42										35.5	10,000
				RP12										36.0	10,400
				Activ T42									35.5	9,900	
			CCI 209M	Activ T42									31.5	9,600	
			Fed. 209	Activ T42									31.0	9,100	
3¾	1½	1,115	Win. 209	Activ T42										31.5	9,500
			Rem. 209P	Activ T42									31.5	9,400	
				Activ T42									31.0	9,200	
			Flo. 616	Activ T42											
				Activ T42											
12-GAUGE 3-IN. ACTIV PLASTIC SHELLS (contd.)															

12-GAUGE, 3-IN. ACTIV PLASTIC SHELLS														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3 3/4	1 1/2	1,295	CCI 209M	Fed. 12S3 Rem. RXP12 Win. WAA12 Activ T32							31.5 31.5 31.5	10,400 10,000 10,100		
4	1 1/2	1,350	CCI 209M	Rem. RXP12 Win. WAA12 Fed. 12S3 Activ T35							33.5 33.0	10,700 10,400	43.0 42.5 40.5 41.5	8,300 7,900 8,700 8,600
4	1 1/2	1,315	CCI 209M	Fed. 12S4 Rem. R12H Win. WAA12F114 Activ T35									41.0 40.5 41.5 40.0	9,600 9,200 8,500 9,800
4	1 1/2	1,280	CCI 209M	Fed. 12S4 Rem. SP12 Win. WAA12F114 Activ T35									39.0 39.5 41.5 40.0	10,000 10,600 10,100 9,900
4	1 1/4	1,245	CCI 209M	Rem. SP12 Win. WAA12F114 Activ T35									40.0 40.0 41.5 40.0	10,400 10,700 10,100 10,400
3 3/4	1 1/2	1,155	CCI 209M	Rem. SP12 Activ T35									36.5 37.0	10,000 10,200
3 3/4	2	1,120	CCI 209M	Rem. RP12									35.0	10,600
12-GAUGE, 2 3/4-IN. FIOCCHI PLASTIC SHELLS														

12-GAUGE, 2¾-IN. FIOCCHI PLASTIC TARGET SHELLS													37.0	10,200		
													35.0	10,600		
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot			
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi		
—	¾	1,200	Fio. 616	Rem. TGT 12	17.0*	6,900										
				Fed. 12SO	17.5	6,700										
				Win. WAA12SL	17.0*	6,700										
				Purple PC	17.5*	6,400										
—	¾	1,250	Fio. 616	Rem. TGT 12	18.5	7,000										
				Fed. 12SO	19.0	6,900										
				Win. WAA12SL	18.5	6,800										
				Purple PC	19.0*	6,700										
—	¾	1,300	Fio. 616	Fed. 12SO	19.5	8,800										
				Rem. TGT 12	20.0	7,900									22.0	7,600
				Win. WAA12SL	20.0	8,100									22.0	7,900
				Purple PC	20.0*	8,600									22.5	7,700
2¾	1	1,200	Fio. 616	Fed. 12SO	18.0	9,100	20.0	8,100								
				Rem. TGT 12	18.0	8,500	20.0	7,400								
				Win. WAA12SL	18.0	8,500	20.0	7,900								
				Purple PC	18.0	8,100	20.0	7,200								
3	1	1,255	Fio. 616	Rem. TGT 12	19.0	9,300	21.0	8,400								
				Win. WAA12SL	19.0	9,500	21.0	8,100								
				Purple PC	19.0	9,500	21.0	8,200								

PC: Pattern Control.  
\*Add one 20-gauge, 0.135-in.-thick card used to test.

PC: Pattern Control.

\*Add one 20-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.

Continued



12-GAUGE, 2 <sup>3</sup> / <sub>4</sub> -IN. FIOCCHI PLASTIC TARGET SHELLS (contd.)														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3 <sup>3</sup> / <sub>4</sub>	1	1,290	Fio. 616	Rem. TGT 12	20.5	10,100	22.5	8,600						
				Win. WAA12SL	20.5	10,300	22.5	9,400						
				Purple PC	21.0	9,800	23.0	8,400						
				Fiocchi FTW1	16.5	8,100	18.5	6,800						
Lite	1 <sup>1</sup> / <sub>4</sub>	1,090	Fio. 616	Fed. 12S3	16.0	8,400	18.5	6,800						
				Fed. 12C1			18.5	6,800						
				Win. WAA12	17.0	7,600	18.5	7,000						
				Win. WAA12SL	17.0	7,300								
				Rem. Fig. 8	16.0	8,000	18.5	6,500						
				Rem. RXP12	16.5	8,700	18.5	6,700						
				Hornady Versalite	16.5	8,100	18.5	7,100						
				Fiocchi FTW1	17.5	8,800	20.0	7,300						
2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1,145	Fio. 616	Fed. 12S3	18.0	9,200	20.0	7,500						
				Fed. 12C1	18.0	8,800	19.5	7,500						
				Rem. Fig. 8	18.0	8,400	20.0	7,100						
				Rem. RXP12	18.0	8,700	20.0	7,200						
				Win. WAA12	18.0	9,000	20.0	7,600						
				Win. WAA12SL	18.0	8,300								
				Hornady Versalite	17.5	9,000	19.5	7,500						
				Windjammer	18.5	7,400	19.5	7,200						
3	1 <sup>1</sup> / <sub>4</sub>	1,200	Fio. 616	Fiocchi FTW1	19.0	9,300	21.0	7,800	23.5	7,400				
				Fed. 12S3	19.0	9,700								
				Fed. 12C1	19.0	9,500	21.0	8,400	23.5	6,900				
				Rem. Fig. 8	19.5	9,600	21.5	8,500	23.5	7,000				
				Rem. RXP12	19.5	9,700	21.5	7,900	22.5	7,200				
				Win. WAA12	19.5	9,400	21.5	8,100	23.5	6,800				
				Hornady Versalite	18.5	9,500	21.0	8,200	24.0	7,100				
				Windjammer	20.0	8,600	21.0	7,700	24.0	6,400				
Heavy	1 <sup>1</sup> / <sub>4</sub>	1,250	Fio. 616	Fiocchi FTW1	21.0	10,500	23.0	9,200	24.5	8,200	26.0	8,300		
				Fed. 12C1	20.5	10,700	22.5	9,300	24.5	8,000	26.0	7,500		
				Rem. Fig. 8	20.5	10,200	23.0	8,800	24.5	7,600	26.0	7,300		
				Rem. RXP12			23.0	9,200	23.5	8,200	26.0	7,900		
				Win. WAA12			23.0	8,900	25.0	7,800	25.5	7,700		
				Hornady Versalite			22.5	9,300	25.0	7,800	25.5	7,700		
				Windjammer	21.0	9,400	22.5	9,000	25.5	6,900	26.5	7,700		
							25.0	9,600	27.0	8,600				
3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1,310	Fio. 616	12S3			24.5	10,300	27.0	9,200				
				Fed. 209			24.0	10,000	26.5	8,400				
				CCI 209M			25.0	8,700	26.5	8,300				
				Win. 209			23.0	9,700	25.0	8,800				
3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1,220	Fio. 616	WWAA (White)			23.0	10,000	24.5	9,500				
				12S4			24.5	8,000						
				Fed. 209			23.0	10,000						
				CCI 209M			23.0	10,000						
3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1,275	Fio. 616	R12H					25.0	8,700	28.0	9,500		
				WWAA12F114					27.0	10,300	27.5	9,800		
				12S4					26.0	10,100	28.0	8,300		
				Fed. 209										
3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1,300	Fio. 616	CCI 209M					27.0	10,000	30.0	9,500	40.0	8,300
				Win. 209							30.5	8,600	41.0	7,700
				SP12							30.0	9,200	39.5	7,500
				WWAA12F114							30.0	10,300	37.0	8,800
3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1,295	Fio. 616	12S4							30.0	9,200	41.0	7,600
				SP12							30.0	10,100	38.5	8,300
				Fed. 209									38.0	9,100
				CCI 209M									36.0	10,100
3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1,295	Fio. 616	RP12									37.0	9,600
				RP12									38.0	9,500
				CCI 209M										
				Win. 209										

continued

continued

PC: Pattern Control.

12-GAUGE, 2¾-IN. FIOCCHI PLASTIC TARGET SHELLS (contd.)															
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot		
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
4	1½	1,350	Fio. 616	RP12											
			Fed. 209	RP12									41.5	9,400	
			CCI 209M	RP12									39.0	10,200	
			Win. 209	RP12									40.0	10,100	
3¾	1½	1,150	Fio. 616	Activ T42										40.0	9,900
			Rem. 209P	Rem. RP12										32.5	9,000
			Fed. 209	Activ T42										32.5	8,700
			Win. 209	Activ T42										32.5	8,100
			CCI 209M	Activ T42										33.5	8,300
			Fio. 616	RP12										33.5	8,700
3½	1½	1,205	Fed. 209	RP12										34.0	8,500
			CCI 209M	RP12										36.5	9,000
			Win. 209	RP12										34.5	8,500
			Fio. 616	RP12										33.0	9,500
3¼	1½	1,260	CCI 209M	RP12										35.5	8,600
			Win. 209	RP12										37.5	9,600
			Fio. 616	Activ T42										36.5	10,600
			Fed. 209	Activ T42										36.5	10,300
3¼	1½	1,115	Win. 209	Activ T42										31.0	9,600
			Rem. 209P	Activ T42										31.0	9,300
			CCI 209M	Activ T42										31.0	9,000
														31.5	8,600
														31.5	8,900

PC: Pattern Control.

\*Add one 20-gauge, 0.135-in.-thick card wad to the inside of the Auto-loading chamber.

PC: Pattern Control.

\*Add one 20-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.

Auto-loading shotguns **may not** function with loads having pressures less than 7,000 psi. It is important to have tight crimps to prevent load efficiencies (pressures) from dropping. The efficiency may also drop when these loads are fired at low temperatures.



**DANGER!**  
**SMOKELESS GUNPOWDER**  
**EXTREMELY FLAMMABLE**  
KEEP AWAY FROM HEAT, SPARKS  
OR OPEN FLAME  
STORE IN A COOL DRY PLACE  
**KEEP OUT OF THE REACH**  
**OF CHILDREN**

## PROPERTIES AND STORAGE OF SMOKELESS POWDER

Ammunition handloading has become increasingly popular in recent years. This leaflet discusses properties of smokeless powder and offers recommendations for its storage.

This leaflet is intended to increase the knowledge of all concerned individuals and groups regarding smokeless powder. The statements and recommendations made are not intended to supersede local, state, or Federal regulations. Proper authorities should be consulted on regulations for storage and use of smokeless powder in each specific community. A second leaflet entitled "SPORTING AMMUNITION PRIMERS: PROPERTIES, HANDLING, & STORAGE FOR HAND LOADING" supplements this leaflet on smokeless powder.

### PROPERTIES OF SMOKELESS POWDER

Smokeless powders, or propellants, are essentially mixtures of chemicals designed to burn under controlled conditions at the proper rate to propel a projectile from a gun.

Smokeless powders are made in three forms:

1. Thin, circular flakes or wafers
2. Small cylinders
3. Small spheres

Single-base smokeless powders derive their main source of energy from nitrocellulose.

The energy released from double-base smokeless powders is derived from both nitrocellulose and nitroglycerin.

All smokeless powders are extremely flammable; by design, they are intended to burn rapidly and vigorously when ignited.

Oxygen from the air is not necessary for the combustion of smokeless powders since they contain sufficient built-in oxygen to burn completely, even in an enclosed space such as the chamber of a firearm.

In effect, ignition occurs when the powder granules are heated above their ignition temperature. This can occur by exposing powder to:

1. A flame such as a match or primer flash.
2. An electrical spark or the sparks from welding, grinding, etc.
3. Heat from an electric hot plate or a fire directed against or near a closed container even if the powder itself is not exposed to the flame.

**S A A M I**

SPORTING ARMS AND AMMUNITION MANUFACTURERS' INSTITUTE, INC.  
FLINTLOCK RIDGE OFFICE CENTER, 11 MILE HILL ROAD, NEWTOWN, CT 06470-2359



When smokeless powder burns, a great deal of gas at high temperature is formed. If the powder is confined, this gas will create pressure in the surrounding structure. The rate of gas generation is such, however, that the pressure can be kept at a low level if sufficient space is available or if the gas can escape.

In this respect smokeless powder differs from blasting agents or high explosives such as dynamite or blasting gelatin, although smokeless powder may contain chemical ingredients common to some of these products.

High explosives such as dynamite are made to detonate, that is, to change from solid state to gaseous state with evolution of intense heat at such a rapid rate that shock waves are propagated through any medium in contact with them. Such shock waves exert pressure on anything they contact, and, as a matter of practical consideration, it is almost impossible to satisfactorily vent away the effects of a detonation involving any appreciable quantity of dynamite.

Smokeless powder differs considerably in its burning characteristics from common "black powder."

Black powder burns essentially at the same rate out in the open (unconfined) as when in a gun.

When ignited in an unconfined state, smokeless powder burns inefficiently with an orange-colored flame. It produces a considerable amount of light brown noxious smelling smoke. It leaves a residue of ash and partially burned powder. The flame is hot enough to cause severe burns.

The opposite is true when it burns under pressure as in a cartridge fired in a gun. Then it produces very little smoke, a small glow, and leaves very little or no residue. The burning rate of smokeless powder increases with increased pressure.

If burning smokeless powder is confined, gas pressure will rise and eventually can cause the container to burst. Under such circumstances, the bursting of a strong container creates effects similar to an explosion.

For this reason, the Department of Transportation (formerly Interstate Commerce Commission) sets specifications for shipping containers for propellants and requires tests of loaded containers — under actual fire conditions — before approving them for use.

When smokeless powder in D.O.T. approved containers is ignited during such tests, container seams split open or lids pop off — to release gases and powder from confinement at low pressure.

### HOW TO CHECK SMOKELESS POWDER FOR DETERIORATION

Although modern smokeless powders are basically free from deterioration under proper storage conditions, safe practices require a recognition of the signs of deterioration and its possible effects.

Powder deterioration can be checked by opening the cap on the container and smelling the contents. Powder undergoing deterioration has an irritating acidic odor. (Don't confuse this with common solvent odors such as alcohol, ether and acetone.)

Check to make certain that powder is not exposed to extreme heat as this may cause deterioration. Such exposure produces an acidity which accelerates further reaction and has been known, because of the heat generated by the reaction, to cause spontaneous combustion.

Never salvage powder from old cartridges and do not attempt to blend salvaged powder with new powder. Don't accumulate old powder stocks.



The best way to dispose of deteriorated smokeless powder is to burn it out in the open at an isolated location in small shallow piles (not over 1" deep). The quantity burned in any one pile should never exceed one pound. Use an ignition train of slow burning combustible material so that the person may retreat to a safe distance before powder is ignited.

### CONSIDERATIONS FOR STORAGE OF SMOKELESS POWDER

Smokeless powder is intended to function by burning, so it must be protected against accidental exposure to flame, sparks or high temperatures. For these reasons, it is desirable that storage enclosures be made of insulating materials to protect the powder from external heat sources.

Once smokeless powder begins to burn, it will normally continue to burn (and generate gas pressure) until it is consumed.

D.O.T. approved containers are constructed to open up at low internal pressures to avoid the effects normally produced by the rupture or bursting of a strong container.

Storage enclosures for smokeless powder should be constructed in a similar manner:

1. Of fire-resistant and heat-insulating materials to protect contents from external heat.
2. Sufficiently large to satisfactorily vent the gaseous products of combustion which would result if the quantity of smokeless powder within the enclosure accidentally ignited.

If a small, tightly enclosed storage enclosure is loaded to capacity with containers of smokeless powder, the walls of the enclosure will expand or move outwards to release the gas pressure — if the powder in storage is accidentally ignited.

Under such conditions, the effects of the release of gas pressure are similar or identical to the effects produced by an explosion.

Hence only the smallest practical quantities of smokeless powder should be kept in storage, and then in strict compliance with all applicable regulations and recommendations of the National Fire Protection Association (reprinted at end of leaflet).

### RECOMMENDATIONS FOR STORAGE OF SMOKELESS POWDER

**STORE IN A COOL, DRY PLACE.** Be sure the storage area selected is free from any possible sources of excess heat and is isolated from open flame, furnaces, hot water heaters, etc. Do not store smokeless powder where it will be exposed to the sun's rays. Avoid storage in areas where mechanical or electrical equipment is in operation. Restrict from the storage areas heat or sparks which may result from improper, defective or overloaded electrical circuits.

**DO NOT STORE SMOKELESS POWDER IN THE SAME AREA WITH SOLVENTS, FLAMMABLE GASES OR HIGHLY COMBUSTIBLE MATERIALS.**

**STORE ONLY IN DEPARTMENT OF TRANSPORTATION APPROVED CONTAINERS.** Do not transfer the powder from an approved container into one which is not approved.

**DO NOT SMOKE IN AREAS WHERE POWDER IS STORED OR USED.** Place appropriate "No Smoking" signs in these areas.

**DO NOT SUBJECT THE STORAGE CABINETS TO CLOSE CONFINEMENT.** STORAGE CABINETS SHOULD BE CONSTRUCTED OF INSULATING MATERIALS AND WITH A WEAK WALL, SEAMS OR JOINTS TO PROVIDE AN EASY MEANS OF SELF-VENTING.

**DO NOT KEEP OLD OR SALVAGED POWDERS.** Check old powders for deterioration. Destroy deteriorated powders immediately.



**OBEY ALL REGULATIONS REGARDING QUANTITY AND METHODS OF STORAGE.** Do not store all your powders in one place. If you can, maintain separate storage locations. Many small containers are safer than one or more large containers.

**KEEP YOUR STORAGE AND USE AREA CLEAN.** Clean up spilled powder promptly. Make sure the surrounding area is free of trash or other readily combustible materials.

### 10-3 SMOKELESS PROPELLANTS.

**10-3.1** Quantities of smokeless propellants not exceeding 25 lb (11.3 kg), in shipping containers approved by the U.S. Department of Transportation, may be transported in a private vehicle.

**10-3.2** Quantities of smokeless propellants exceeding 25 lb (11.3 kg) but not exceeding 50 lb (22.7 kg), transported in a private vehicle, shall be transported in a portable magazine having wood walls of at least 1-in. (25.4-mm) nominal thickness.

**10-3.3** Transportation of more than 50 lb (22.7 kg) of smokeless propellants in a private vehicle is prohibited.

**10-3.4** Commercial shipments of smokeless propellants in quantities not exceeding 100 lb (45.4 kg) are classified for transportation purposes as flammable solids when packaged according to U.S. Department of Transportation Hazardous Materials Regulations (Title 49, *Code of Federal Regulations*, Part 173.197a), and shall be transported accordingly.

**10-3.5** Commercial shipments of smokeless propellants exceeding 100 lb (45.4 kg) or not packaged in accordance with the regulations cited in 10-3.4 shall be transported according to U.S. Department of Transportation regulations for Class B propellant explosives.

**10-3.6** Smokeless propellants shall be stored in shipping containers specified by U.S. Department of Transportation Hazardous Materials Regulations.

**10-3.7** Smokeless propellants intended for personal use in quantities not exceeding 20 lb (9.1 kg) may be stored in original containers in residences. Quantities exceeding 20 lb (9.1 kg), but not exceeding 50 lb (22.7 kg), may be stored in residences if kept in a wooden box or cabinet having walls of at least 1-in. (25.4-mm) nominal thickness.

**10-3.8** Not more than 20 lb (9.1 kg) of smokeless propellants, in containers of 1-lb (0.45-kg) maximum capacity, shall be displayed in commercial establishments.

**10-3.9** Commercial stocks of smokeless propellants shall be stored as follows:

(a) Quantities exceeding 20 lb (9.1 kg), but not exceeding 100 lb (45.4 kg), shall be stored in portable wooden boxes having walls of at least 1-in. (25.4-mm) thickness.

(b) Quantities exceeding 100 lb (45.4 kg), but not exceeding 800 lb (363 kg), shall be stored in nonportable storage cabinets having walls of at least 1-in. (25.4-mm) thickness. Not more than 400 lb (181 kg) may be stored in any one cabinet and cabinets shall be separated by a distance of at least 25 ft (7.63 m) or by a fire partition having a fire resistance of at least 1 hour.

(c) Quantities exceeding 800 lb (363 kg), but not exceeding 5,000 lb (2268 kg), may be stored in a building if the following requirements are met:

1. The warehouse or storage room shall not be accessible to unauthorized personnel.
2. Smokeless propellant shall be stored in nonportable storage cabinets having wood walls at least 1 in. (25.4 mm) thick and having shelves with no more than 3 ft (0.92 m) separation between shelves.
3. No more than 400 lb (181 kg) shall be stored in any one cabinet.
4. Cabinets shall be located against walls of the storage room or warehouse with at least 40 ft (12.2 m) between cabinets.
5. Separation between cabinets may be reduced to 20 ft (6.1 m) if barricades twice the height of the cabinets are attached to the wall, midway between each cabinet. The barricades shall extend at least 10 ft (3 m) outward, shall be firmly attached to the wall, and shall be constructed of ¼-in. (6.4-mm) boiler plate, 2-in. (51-mm) thick wood, brick, or concrete block.
6. Smokeless propellant shall be separated from materials classified by the U.S. Department of Transportation as flammable liquids, flammable solids, and oxidizing materials by a distance of 25 ft (7.63 m) or by a fire partition having a fire resistance of at least 1 hour.
7. The building shall be protected by an automatic sprinkler system installed according to NFPA 13, *Standard for the Installation of Sprinkler Systems*.

(d) Smokeless propellants not stored according to (a), (b) and (c) above shall be stored in a Type 4 magazine constructed and located according to Chapter 6.

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12-GAUGE, 3-IN. FIOCCHI PLASTIC SHELLS												
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3 3/4	1 1/8	1,295	Fio. 616	Fed. 12S3 Rem. RXP12 Win. WAA12 Flocchi FTW1					31.5 9,100 32.5 8,600 31.5 8,900 31.0 9,200			
			Win. 209 CCI 209M	Fed. 12S3 Fed. 12S3					29.5 10,600 30.0 10,000		37.5 8,800 37.0 9,000	
4	1 3/8	1,350	Fio. 616	Fed. 12S4 Rem. SP12 Win. WAA12F114 Activ T32					32.0 10,700 32.5 10,100 32.5 10,700 32.5 10,300			
			Win. 209 CCI 209M	Fed. 12S4 Fed. 12S4							38.5 10,100 38.0 10,400	
4	1 1/2	1,315	Fio. 616	Fed. 12S4 Rem. SP12 Win. WAA12F114 Activ T35							39.0 10,300 39.0 9,700 39.0 9,400 39.0 9,000	
			Win. 209 CCI 209M	Fed. 12S4 Fed. 12S4							39.0 10,600 38.0 10,400	
4	1 5/8	1,280	Fio. 616	Fed. 12S4 Rem. SP12 Win. WAA12F114 Activ T35							39.0 10,700 39.5 9,700 38.5 10,500 39.0 10,500	
											37.5 10,300	
4	1 3/4	1,245	Fio. 616	Activ T35							34.5 10,700 34.5 10,300	
3 3/4	1 7/8	1,155	Fio. 616	Rem. RP12 Activ T35								

12-GAUGE, 2 3/4-IN., 1-OZ TARGET LOADS									
Shell	Dram Equiv. Velocity, fps	Primer	Wad (See note)	Bullseye		Red Dot		Green Dot	
				Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Federal Paper Target	2 3/4 1,200	Fed. 209A	Fed. 12SO	18.5	7,800	19.0	8,000		
			Fed. 12S3	18.5*	8,500	18.5	7,400		
			Rem. PT12	18.0	6,200	18.0	7,500		
			Rem. R12L	18.5*	7,800	18.5	7,100		
			Rem. RXP12	18.5*	7,600	19.0	7,200		
			WWAA12F1	18.0*	7,500	18.5*	8,100		
			WWAA12 (White)	18.5*	8,700	18.5	7,800		
			Pacific Versalite	18.5*	8,500	18.0	7,300		
			Lage Uniwad	19.0*	8,600	19.0	7,100		
			Windjammer	19.0*	7,300	19.0*	7,400		
			Purple PC	19.0	6,400	19.0	7,100		
				18.5	7,600	19.0	7,600		
Federal Gold Medal	2 3/4 1,200	Fed. 209A	Fed. 12SO	18.0	6,900	18.5	6,600		
			Purple PC	18.5	6,200	18.0	7,800		
			Purple PC	19.0	7,100	19.0	7,200		
				18.0	7,600	18.0	7,900	21.0 7,100	
				17.5*	9,000	18.5	7,500	21.0 6,100	
				17.5**	9,500	18.0*	8,700	20.0 7,600	
				18.5*	7,600	18.0*	8,500	20.0* 8,200	
				19.0	5,700	18.0*	8,400	21.0 7,200	
				19.0	8,400	18.5	6,900		
						19.0	7,600		
						18.0	6,900		
				18.5	5,600	18.5	7,200	20.5 6,100	
						18.5	6,700		

continued

PC: Pattern Control.

\*NOTE: For each asterisk (\*), add one 20-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.

12-GAUGE, 2¾-IN., 1-OZ TARGET LOADS (contd.)									
Shell	Dram Equiv. Velocity, fps	Primer	Wad (See note)	Bullseye		Red Dot		Green Dot	
				Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Remington Premier Plastic Target Shells	2¾ 1,200	Rem. 209P	Rem. Fig. 8	17.0	7,100	18.0	8,400	20.0	6,500
			Fed. 12SO	17.5	7,800	18.0	8,800	19.5	7,200
			Win. WAA12F1	17.5	6,900	18.0	7,800	19.0	6,200
			Purple PC	18.0	6,900	18.5	7,700	20.5	6,200
			Pacific Versalite	17.0	7,500	17.5	8,600	20.0	6,600
Peters Target (Blue Magic)	2¾ 1,200	CCI 209M	Rem. Fig. 8	17.0	8,300	17.5	8,900	18.5	7,700
			Fed. 209	17.5	7,500	18.0	8,400	20.0	7,200
			Win. 209	17.5	7,900	18.0	7,100	20.0	7,100
			Rem. 209	17.5	7,200	17.5	8,300	19.0	7,300
			Purple PC	17.5	7,200	17.5	8,300	19.0	7,300
		Rem. 97★	Fed. 12SO	18.0	10,300	18.0	9,400	19.5	7,300
			Fed. 12S1	18.5*	8,500	18.0*	8,600	20.0	7,100
			Rem. R12L	17.5*	8,300	18.0*	8,000	20.0	7,500
			Rem. RXP12	17.5*	8,800	18.0*	8,400	19.5	7,500
			WWAA12 (White)	17.5*	9,900	18.0*	9,100	21.0	7,500
		CCI 209M	WWAA12F1	18.0	8,700	18.0	8,500	20.5	6,700
			Lage Uniwad	18.0*	9,600	18.0*	8,600	20.5	6,700
			Windjammer	18.0*	8,700	19.0*	8,300		
			R12L	17.5	9,000	18.0	8,800		
			Purple PC	17.0	7,400	17.5	8,000	19.5	7,000
		Fed. 209	Purple PC	18.0	6,300	18.5	8,400	20.0	6,400
			Win. 209	18.0	6,800	18.0	7,700		
Winchester-Western AA-Type	2¾ 1,200	Win. 209	Fed. 12SO	18.0	9,600	18.0	9,600	19.5	8,400
			Fed. 12S1	17.5*	8,700	18.0	8,400		
			Rem. R12L	18.0*	8,800	18.0	7,600	20.0	7,100
			Rem. RXP12	17.5	8,800	18.0	8,300	20.0	7,100
			WWAA12 (White)	17.5*	9,900	18.0	8,800	19.5	7,500
		CCI 209	WWAA12F1	18.0**	9,500	18.0	9,000	20.0	7,600
			Lage Uniwad	17.5*	8,900	18.0	8,000	20.5	7,400
			Windjammer	18.0**	9,500	18.0*	9,100	20.0	7,600
			Purple PC	17.5	7,300	17.5	8,800	19.5	6,900
			Purple PC	18.0	7,300	18.5	7,800	21.0	6,300
		CCI 209M	WWAA12 (White)	17.5	7,900	17.5	9,900		
			Purple PC	17.5	7,600	17.5	8,500	19.0	6,600
		Fed. 209	Purple PC	17.5	7,600	17.5	8,900	19.0	7,200
			Rem. 209	17.5	7,400	17.5	8,600	19.0	7,700

PC: Pattern Control.

\*NOTE: For each asterisk (\*), add one 20-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.

28-GRAM INTERNATIONAL TARGET LOADS WITH 12-GAUGE, 2¾-IN. FEDERAL GOLD MEDAL PLASTIC TARGET SHELLS													
Dram Equiv.	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
				Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3½	1,345	Fed. 209A	Fed. 12SO	23.0	9,900	24.5	9,100	27.5	7,400				
			Rem. Fig. 8	22.5	9,500	25.0	8,400						
			Win. WAA12SL	22.5	9,600	24.5	8,400						
			Purple PC	23.0	8,800	25.0	8,200						

PC: Pattern Control.

28-GRAM INTERNATIONAL TARGET LOADS WITH 12-GAUGE, 2¾-IN. REMINGTON PREMIER PLASTIC TARGET SHELLS													
Dram Equiv.	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
				Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3½	1,345	Rem. 209P	Rem. Fig. 8	21.5	10,600	23.0	9,700	26.0	8,300				
			Fed. 12S3			23.0	10,300						
			Win. WAA12SL			23.0	10,100	27.0	8,500				
			Purple PC	21.5	10,600	24.0	9,900	27.0	7,800				

PC: Pattern Control.



### 28-GRAM INTERNATIONAL TARGET LOADS WITH 12-GAUGE, 2 $\frac{3}{4}$ -IN. WINCHESTER-WESTERN PLASTIC AA-TYPE SHELLS

Dram Equiv.	Veloc-ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
				Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3 $\frac{1}{2}$	1,345	Win. 209	Win. WAA12SL Rem. Fig. 8 Fed. 12S3 Purple PC			22.5	10,600	25.5	10,200				
								25.0	9,600				
								25.5	9,500				
								26.5	8,700				

PC: Pattern Control.

### 28-GRAM INTERNATIONAL TARGET LOADS WITH 12-GAUGE, 2 $\frac{3}{4}$ -IN. FIOCCHI PLASTIC TARGET SHELLS

Dram Equiv.	Veloc-ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
				Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3 $\frac{1}{2}$	1,345	Fio. 616	Fed. 12S3 Rem. Fig. 8 Win. WAA12SL Purple PC	22.0	9,600	24.0	8,800	26.5	7,500				
								21.5	9,700				
								24.0	8,800				
								27.0	7,700				

PC: Pattern Control.

### 16-GAUGE, 2 $\frac{3}{4}$ -IN. FEDERAL PLASTIC HI POWER SHELLS WITH PAPER BASE WAD

Dram Equiv.	Shot Weight, oz	Veloc-ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
2 $\frac{3}{4}$	1	1,220	Fed. 209A	Win. WAA16 Activ G28			19.0	9,800	21.0	8,400	21.5	8,100		
									21.5	8,200	21.5	8,000		
3	1	1,275	Fed. 209A	Win. WAA16 Activ G28			19.0	10,600	23.0	8,800	23.5	8,700		
									23.0	9,000	23.5	8,500		
2 $\frac{3}{4}$	1 $\frac{1}{8}$	1,185	Fed. 209A	Rem. SP16 Win. WAA16			18.5	10,200	21.5	8,900	22.0	9,100		
									21.0	8,700	22.0	9,100		
3	1 $\frac{1}{8}$	1,240	Fed. 209A	Rem. SP16 Win. WAA16					22.5	9,600	23.5	10,100		
									22.0	10,200	24.0	10,200		
3 $\frac{1}{4}$	1 $\frac{1}{8}$	1,295	Fed. 209A	Rem. SP16							24.5	10,300	32.0	8,600
3 $\frac{1}{4}$	1 $\frac{1}{4}$	1,260	Fed. 209A	Rem. SP16									30.5	10,200

### 16-GAUGE, 2 $\frac{3}{4}$ -IN. REMINGTON-PETERS SP PLASTIC SHELLS WITH PLASTIC BASE WAD

Dram Equiv.	Shot Weight, oz	Veloc-ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
2 $\frac{1}{2}$	1	1,165	Rem. 209P	Win. WAA16 Activ G28			16.5	10,200	19.0	8,600				
									19.5	8,400				
2 $\frac{3}{4}$	1	1,220	Rem. 209P	Win. WAA16 Activ G28					20.0	9,400	21.0	9,700		
									20.5	8,600	21.0	8,900		
3	1	1,275	Rem. 209P	Win. WAA16 Activ G28					21.0	10,200	22.0	9,600		
									21.0	10,200	22.0	9,800		
2 $\frac{3}{4}$	1 $\frac{1}{8}$	1,185	Rem. 209P	Win. WAA16 Activ G28					20.0	10,300	21.0	10,600		
									20.5	10,700	21.0	10,500		
3	1 $\frac{1}{8}$	1,240	Rem. 209P	Rem. SP16									27.0	9,900

### 16-GAUGE, 2 $\frac{3}{4}$ -IN. WINCHESTER AA-TYPE SHELLS

Dram Equiv.	Shot Weight, oz	Veloc-ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
2 $\frac{1}{2}$	1	1,165	Win. 209	Win. WAA16 Activ G28			17.5	10,300	19.0	9,200				
									19.0	9,100				
2 $\frac{3}{4}$	1	1,220	Win. 209	Win. WAA16 Activ G28					19.5	10,500	20.0	10,200		
											20.0	10,100		
3	1	1,275	Win. 209	Rem. SP16									29.0	9,300
													27.0	10,000

### 16-GAUGE, FIOCCHI PLASTIC SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
2½	1	1,165	Fio. 616	Win. WAA16 Activ G28	15.5	10,400	17.5	9,400	19.0	8,100				
2¾	1	1,220	Fio. 616	Activ G28 Win. WAA16	17.0	10,000	18.0	8,200	19.5	7,900				
3	1	1,275	Fio. 616	Activ G28 Win. WAA16			18.0	10,500	20.0	9,000	21.0	8,500		
2¾	1½	1,185	Fio. 616	Win. WAA16 Rem. SP16					20.5	8,800	21.0	8,900		
3	1½	1,240	Fio. 616	Rem. SP16					21.5	9,600	22.0	9,000		
3¼	1½	1,295	Fio. 616	Rem. SP16					19.5	10,600	21.0	10,200		
									20.5	9,900	23.5	10,700	31.0	8,900
													32.5	9,200

### 16-GAUGE, ACTIV ALL-PLASTIC SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
2½	1	1,165	CCI 209	Activ G28	16.5	10,100	18.0	9,200	20.0	7,900				
2¾	1	1,220	CCI 209	Activ G28 Win. WAA16			19.5	9,800	21.5	8,700	23.0	8,500		
3	1	1,275	CCI 209	Activ G28 Win. WAA16			19.5	9,700	21.5	8,300	22.5	8,000		
2¾	1½	1,185	CCI 209	Win. WAA16 Rem. SP16					23.0	9,100	24.5	8,700		
3	1½	1,240	CCI 209	Win. WAA16 Rem. SP16			19.0	10,600	22.5	8,700	24.0	9,000		
3¼	1½	1,295	CCI 209M	Rem. SP16					20.5	9,200	22.0	9,400		
3¼	1½	1,260	CCI 209M	Rem. SP16					21.5	9,200	22.0	8,800		
									22.0	10,000	23.0	10,200	31.0	9,100
									22.5	10,200	24.0	9,400	30.0	10,000

### 20-GAUGE, 2¾-IN. FEDERAL PAPER TARGET SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
2¼	¾	1,200	Fed. 209	20S1 RXP20 WWAA20	12.5**	11,400	14.0	9,700	15.5	9,200				
					13.5**	10,500	14.0	10,200	16.0	8,100				
					13.0**	10,500	14.0	8,800	15.5	9,200				
2¼	7/8	1,155	CCI 109	20S1 RXP20 WWAA20	15.0	10,900	17.0	8,900						
									17.0	6,800				
			Fed. 209	20S1 RXP20 WWAA20	14.0	11,400	15.0	9,900	15.5	9,000				
							14.5	10,100	15.5	9,200				
			CCI 109	20S1 RXP20 WWAA20	14.0	10,000	14.5	8,900	15.0	8,800				
							15.0	8,700	15.0	8,800				
Skeet	7/8	1,200	CCI 209M	20S1			14.5	8,400	15.0	8,000				
							14.5	9,800	16.0	8,600				
			Fed. 209	20S1 RXP20 WWAA20			15.0	9,600	15.5	9,400				
							15.5	10,900	16.5	9,800				
			CCI 109	20S1 RXP20 WWAA20			15.0	9,700	16.0	9,200				
							15.0	9,000	17.0	8,400				
2½	1	1,165	CCI 209M	20S1			16.0	9,900	17.0	8,500				
							15.5	8,800	17.0	8,500				
			Fed. 209	RXP20 SP20 WWAA20 WWAA20F1			15.0	10,500	17.0	9,900	17.0	9,600		
											17.0	11,500		
												16.5	11,500	
												16.0	11,200	
												16.5	11,300	

\*NOTE: For each asterisk (\*), add one 20-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.



20-GAUGE, 2¾-IN. FEDERAL PLASTIC TARGET SHELLS														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
2¼	¾	1,200	Fed. 209	20S1	13.0***	10,100	15.0*	9,000	15.0**	9,000				
				RXP20	13.0***	9,400	15.0*	8,600	16.0**	8,600				
				WWAA20	13.0***	10,300	15.0*	8,900	16.0**	8,200				
				Windjammer*	14.0	9,300	15.5	8,700	17.0	7,500				
2¼	¾	1,155	Fed. 209	Hornady Versalite			15.5	10,000						
				Windjammer			15.0	10,000	16.5	8,600				
				Lage Uniwad			16.0	10,100						
				Win. WAA20			14.5	9,700						
			CCI 109	20S1	13.5	10,500	14.5	8,400	16.0	8,600				
				RXP20	15.0	8,500	14.5	8,000						
				WWAA20	13.5	9,700	15.5	8,700	17.0	8,300				
				Lage Uniwad			14.5	9,100	16.0	8,700				
Skeet	½	1,200	CCI 209M	20S1			16.0	10,900	17.0	10,600	18.5	10,200		
				Windjammer			16.5	11,000						
				Lage Uniwad			16.5	10,600						
				Fed. 20S1			16.0	10,500						
			Fed. 209	Hornady Versalite			15.5	9,400	17.0	8,500	17.0	9,300		
				20S1			16.0	9,600	17.0	9,200	18.0	8,800		
				RXP20			15.5	9,100	17.0	8,500	17.0	9,100		
				WWAA20			16.0	10,000	18.0	8,800				
				Lage Uniwad			16.5	9,300	17.0	9,100	17.5	7,600		
			CCI 209M	20S1			16.0	10,800			17.0	9,600		
				SP20							17.0	11,300		
				RXP20							16.5	11,100		
2½	1	1,165	Fed. 209	WWAA20F1					15.5	11,300			24.0	10,200
				Rem. SP20								24.0	10,100	
2¼	1	1,220	Fed. 209	Win. WAA20F1							18.5	9,800		
				CCI 209M	20S1									23.0
2¼	1½	1,175	Fed. 209	Rem. SP20										

© 1995 in. thick card wad to the inside bottom of the shot cup.

\*NOTE: For each asterisk (\*), add one 28-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.  
Add one (1) ¼ inch .410 bore card wad to the bottom of the shot cup for each asterisk (\*).

Add one (1) 1/4 inch .410 bore card wad to the bottom of the shot cup for each asterisk (\*).

20-GAUGE FEDERAL 3-IN. PLASTIC SHELLS														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3	1 1/16	1,255	Fed. 209	Win. WAA20									26.5	9,400
				Rem. RXP20									27.0	9,200
3 3/4	1 1/16	1,310	Fed. 209	Rem. RXP20									28.0	10,200
				Win. WAA20									28.5	10,600
				Fed. 20S1									28.0	10,300
3	1 1/8	1,230	Fed. 209	Rem. SP20*									26.5	10,300
				Win. WAA20F1									26.0	10,100
3	1 1/8	1,185	Fed. 209	Rem. SP20*									25.5	10,600
				Win. WAA20F1									25.5	10,400

inside bottom of the shot cup for each asterisk (\*).

Add one (1) 28 gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup for each asterisk (\*).

20-GAUGE, 2¾-IN. REMINGTON PREMIER PLASTIC TARGET SHELLS														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
2¼	¾	1,200	Rem. 209P	Rem. RXP20**	13.0	10,700	14.0	10,000	15.5	8,700				
				Win. WAA20**	13.0	11,500	14.0	10,500	15.5	8,900				
				Fed. 20S1**	13.0	10,600	14.0	10,000	15.5	8,400				
				Hornady Versalite**	13.5	11,500	14.5	10,000	16.0	8,900				
				Windjammer**	13.0	11,200	14.0	10,300	15.5	8,900				
				Lage Uniwad**	13.5	11,100	14.0	9,800	15.5	8,600				
2¼	¾	1,155	Rem. 209P	Rem. RXP20			14.5	11,500	15.5	10,000	16.5	10,000		
				Fed. 20S1					15.5	10,000	16.0	10,000		
				Win. WAA20			14.0	11,100	15.5	10,200	16.0	9,500		
				Hornady Versalite			14.0	11,500	15.5	9,700	16.0	9,600		
				Windjammer			14.0	11,200	15.5	9,900	16.0	9,500		
				Lage Uniwad			14.0	11,400	15.5	10,000	16.0	9,600		
			Fed. 209	Rem. RXP20				15.5	10,700	16.5	10,500			
			Win. 209	Rem. RXP20				15.5	10,300	16.5	10,200			
			Fio. 616	Rem. RXP20				16.0	10,700	16.5	10,100			
			CCI 209M	Rem. RXP20				15.5	11,000	16.5	10,500			
Skeet	¾	1,200	Rem. 209P	CCI 209	Rem. RXP20		14.5	10,900	16.0	9,500	16.5	8,900		
				Rem. RXP20					16.5	10,700	17.0	10,600		
				Fed. 20S1					16.5	10,800	17.0	10,500		
				Win. WAA20					16.5	10,900	17.0	10,700		
				Hornady Versalite					16.5	10,200	17.5	10,400		
			Fed. 209	Windjammer					16.0	10,400	17.0	10,100		
				Lage Uniwad					16.5	10,400	17.5	10,300		
				Rem. RXP20					16.5	11,300	17.0	11,000		
				Win. 209	Rem. RXP20				16.5	11,300	17.0	10,600		
				Fio. 616	Rem. RXP20				16.5	11,200	17.0	10,700		
				CCI 209M	Rem. RXP20				16.0	11,300	17.0	10,800		
				CCI 209	Rem. RXP20				16.5	9,900	17.5	9,400		

\*NOTE: For each asterisk (\*), add one ¼-in. 0.410 bore and to the first 1000 grains.

\*NOTE: For each asterisk (\*), add one  $\frac{1}{8}$ -in., 0.410 Bore card to the inside bottom of the shot cup.

continued



20-GAUGE, 2¾-IN. REMINGTON PREMIER PLASTIC TARGET SHELLS (contd.)														
Dram Equiv.	Shot Weight, oz	Veloc- ity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
2½	1	1,155	Rem. 209F	Rem. SP20 Win. WAA20F1							17.5	11,500	21.5	9,000
			Fed. 209	Rem. SP20									20.5	11,300
			Win. 209	Rem. SP20									21.5	10,600
			Fio. 616	Rem. SP20									22.5	9,800
			CCI 209M	Rem. SP20									21.5	10,500
2¾	1	1,220	CCI 209	Rem. SP20									22.0	9,500
			Rem. 209P	Rem. SP20 Win. WAA20F1									24.0	11,100
			Win. 209	Rem. SP20									23.5	10,900
			Fio. 616	Rem. SP20									22.0	11,100
			CCI 209M	Rem. SP20									23.5	11,000
2¾	1½	1,175	CCI 209	Rem. SP20									22.5	10,900
			Rem. 209P	Rem. SP20									23.0	10,300
			Win. WAA20F1	Rem. SP20									22.0	11,300
													22.0	11,500

20-GAUGE, 2¾-IN. REMINGTON-PETERS RXP PLASTIC TARGET SHELLS															
Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot		
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
2¼	¾	1,200	Rem. 97★	RXP20	12.5**	11,300	13.5*	10,400	15.5	9,900					
				20S1	12.5*	11,400	13.5	11,100	15.5	9,900					
				WWAA20	12.5*	11,400	13.5	10,400	15.0	9,400					
2¼	7/8	1,155	Rem. 97★	20S1	12.0	11,500	13.0	11,500							
				RXP20	12.0	11,500	14.0	11,300							
			CCI 109	WWAA20			13.5	11,100							
				Lage Uniwad			14.0	10,500							
Skeet	7/8	1,200	Rem. 97★	20S1	13.0	11,300	14.0	10,700							
				RXP20	12.0	11,300	14.0	10,700							
			CCI 109	WWAA20			14.5	11,300	15.5	9,300					
				Lage Uniwad											
Skeet	7/8	1,200	Rem. 97★	20S1					16.0	10,500	17.0	10,600			
				RXP20					16.0	9,700	17.0	10,600			
			CCI 109	WWAA20					16.0	10,700					
				Lage Uniwad					16.0	10,900					
Skeet	7/8	1,200	CCI 109	20S1			14.5	10,900	16.0	10,500	17.0	11,300			
				RXP20					16.0	10,800	17.0	9,900			
			CCI 209M	WWAA20			15.5	11,400	16.5	10,400	16.5	10,400			
				Lage Uniwad					16.0	10,500	16.5	10,700			
2½	1	1,165	Rem. 97★	RXP20					15.5	10,800					
				20S1					16.0	10,600					
				RXP20					15.5	11,200					
2¾	1	1,220	Rem. 97★	WWAA20							18.0	11,000			
				RXP20											

20 gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.

\*NOTE: For each asterisk (\*), add one 28-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.

20-GAUGE, 2¾-IN. REMINGTON-PETERS UNIBODY SHELLS													
Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Green Dot		Unique		Herco		Blue Dot		2400
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
Skeet	¾	1,200	Rem. 209	Rem. RXP20 WAA20 Hornady Versalite			16.5	10,800	16.5	10,200			
			Fed. 209	Rem. RXP20			16.5	11,200					
			CCI 209M	Rem. RXP20			16.0	11,500	16.5	10,700			
			Win. 209	Rem. RXP20			16.5	10,900	17.5	11,300			
2½	1	1,165	Rem. 209	Rem. SP20 WAA20F1					17.5	10,900			
			Fed. 209	Rem. SP20							21.0	11,500	
			CCI 209M	Rem. SP20							21.5	11,100	
			Win. 209	Rem. SP20							22.0	10,500	
2¾	1	1,220	Fed. 209	Activ W32							22.0	11,300	
												29.5	10,500

20-GAUGE, 2¾-IN. REMINGTON SP WITH PLASTIC BASE WAD													
Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
Skeet	¾	1,200	Rem. 209	Rem. RXP20 WWAA20					16.5	9,100			
2½	1	1,165	Rem. 209	Rem. SP20 WAA20F1					16.5	9,800			
2¾	1	1,220	Rem. 209	Rem. SP20 WAA20F1							17.5	11,300	
												17.5	10,700
												23.0	10,300
												24.0	10,100

20-GAUGE, 2¾-IN. WINCHESTER-WESTERN PLASTIC XPRT RANGER SHELLS (POLYFORMED SHELL)													
Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
2¼	¾	1,155	Win. 209	20S1 WWAA20					14.5	9,700			
Skeet	¾	1,200	Win. 209	20S1 RXP20 WWAA20					14.5	9,800			
				RXP20					15.5	10,800			
2½	1	1,165	Win. 209	RXP20					15.5	9,700			
									15.5	10,700			
									16.0	11,100			

20-GAUGE, 2¾-IN. WINCHESTER-WESTERN PLASTIC AA-TYPE SHELLS													
Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	
2¼	¾	1,200	Win. 209	WWAA20	12.0**	10,900	14.0*	10,800	15.5*	9,100			
2¼	¾	1,155	Win. 209	20S1	12.0**	11,100	14.0*	9,900	15.5	9,700			
				RXP20	12.5**	10,800	14.0*	10,200	15.5*	9,900			
				20S1			14.0	10,300	15.0	10,100			
				RXP20			14.5	9,900	15.0	8,700			
				WWAA20			14.0	10,300	15.0	9,800			
			CCI 109	Lage Uniwad			14.0	11,400	15.5	10,500			
				20S1			14.0	9,500	15.5	9,600			
				RXP20			14.5	9,300	15.5	7,800			
				WWAA20			14.0	10,000	15.5	9,200			
				Lage Uniwad			14.0	10,900	16.0	10,100			
			CCI 209M	WWAA20					15.0	10,200			

\*NOTE: For each asterisk (\*), add one 28-gauge, 0.135-in.-thick card wad to the inside bottom of the shot cup.

continued



### 20-GAUGE, 2¾-IN. WINCHESTER-WESTERN PLASTIC AA-TYPE SHELLS (contd.)

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Skeet	¾	1,200	Win. 209	20S1			14.5	10,300	15.5	10,400	16.5	10,700		
				RXP20			15.0	10,000	16.0	9,000	16.5	9,000		
				WWAA20			14.5	10,600	16.0	10,500	16.5	9,600		
			CCI 109	20S1			14.5	10,500	16.0	10,000	16.5	10,200		
				RXP20			15.0	10,000	16.0	9,900	16.5	8,800		
				WWAA20			14.5	10,300	16.0	10,700	16.5	10,200		
2½	1	1,165	Win. 209	Lage Uniwad					16.5	10,800				
				WWAA20							17.5	10,000		
				RXP20							16.5	9,600		
				SP20							16.5	10,000		
				WWAA20							16.5	10,400		
													23.0	11,300
2¾	1	1,220	Win. 209	RXP20									23.5	11,400
				SP20									23.0	11,500
				WWAA20F1										

### 20-GAUGE, 3-IN. WINCHESTER-WESTERN PLASTIC AA-TYPE SHELLS

20-GAUGE, 3-IN. WINCHESTER-WESTERN LOADS										
Dram Equiv.	Shot Weight, oz	Velo- city, fps	Primer	Wad	Herco		Blue Dot		2400	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
3	1 1/16	1,255	Win. 209	SP20			26.0	10,600		
	1 1/8	1,230		WWAA20F1			25.5	11,100		
				SP20			25.5	11,000		
2 3/4	1 1/4	1,135		WWAA20F1			23.0	10,200		
				SP20			24.0	10,900		
3	1 1/4	1,190		SP20			25.0	11,500	34.5	9,600
				SP20						
3 1/4	1 1/4	1,240			SP20					

### 20-GAUGE, 2¾-IN. ACTIV SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Skeet	¾	1,200	CCI 209M	Fed. 20S1							18.0	9,500		
				Hornady Versalite							18.0	9,800		
				WAA20							18.0	9,500		
			Win. 209	Rem. RXP20							18.5	9,500		
				Hornady Versalite							18.5	9,300		
				Hornady Versalite							18.0	9,300		
2½	1	1,165	Fed. 209	Hornady Versalite							18.0	9,500		
				Hornady Versalite										
				Hornady Versalite										
			Rem. 209	Hornady Versalite							16.5	10,000		
				Activ W28							17.5	10,300		
				Fed. 20S1							18.0	11,300		
2¾	1	1,220	CCI 209M	WAA20							16.5	10,800		
				Hornady Versalite							18.5	10,900		
				Rem. RXP20										
			Win. 209	Activ W28							17.0	10,900		
				Activ W28							18.0	10,700		
				Activ W28										

### 20-GAUGE, 2¾-IN. FIOCCHI SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
2¼	¾	1,155	Fio. 615	Fed. 20S1			15.0	9,100	17.0	9,100				
				Hornady Versalite			15.5	9,700	18.0	8,300				
				Lage Uniwad			15.5	9,500	17.5	8,600				
			Fed. 209	Fed. 20S1			14.5	11,100	15.5	10,000				
				Fed. 20S1			14.5	10,000	16.0	9,400				
				Fed. 20S1			14.5	10,600	16.5	9,000				
			CCI 209M	Fed. 20S1			14.5	10,500	16.0	9,200				
				Fed. 20S1			14.5	10,400	16.0	9,500				

continued

### 20-GAUGE, 2¾-IN. FIOCCHI SHELLS (contd.)

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Skeet	¾	1,200	Fio. 615	Fed. 20S1			16.0	10,900	18.0	9,700	18.0	9,200		
				Rem. RXP20			16.5	10,300			19.0	8,500		
				WAA20			16.0	10,800	17.5	9,600	18.5	8,700		
				Hornady Versalite			16.0	10,000			19.0	8,300		
				Lage Uniwad			17.5	8,200	19.0	8,000				
			Fio. 616	Fed. 20S1			15.5	10,600	17.5	10,000	18.0	9,200		
2¾	1	1,220	Fed. 209	Fed. 20S1			15.5	11,100	17.0	10,800	17.5	10,200		
			Win. 209	Fed. 20S1			16.0	10,400	16.0	10,100	18.0	9,900		
			Rem. 209	Fed. 20S1			15.5	10,800			16.5	9,900		
			CCI 209M	Fed. 20S1			15.5	10,700	17.0	10,000	17.0	9,900		
			Fio. 616	Rem. SP20									24.5	10,300
			Fio. 615	Rem. SP20									27.5	9,200
3	1	1,275	Fed. 209	Rem. SP20									23.0	10,300
			Win. 209	Rem. SP20									22.5	10,600
			Rem. 209	Rem. SP20									24.0	10,700
			CCI 209M	Rem. SP20									26.0	10,800
			Fio. 616	Rem. SP20									25.0	10,300
			Fed. 209	Rem. SP20									26.0	10,600
2¾	1½	1,175	Win. 209	Rem. SP20									23.5	10,000
			Fio. 616	Rem. SP20									23.5	10,700
			Fed. 209	Rem. SP20									23.5	11,400
			Win. 209	Rem. SP20										

### 28-GAUGE, 2¾-IN. FEDERAL PLASTIC TARGET SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Skeet	¾	1,200	Fed. 209	28S1A					13.5	11,600	14.0	11,700	17.5	9,600
				SP28			12.5	11,800	13.0	11,200	13.0	10,100	18.0	9,900
			WAA28				13.5	10,500	14.0	10,900	17.5	8,700		
2¼	¾	1,295	CCI 109	SP28			13.0	10,000	13.5	9,400	14.5	10,000	18.5	9,800
			Fed. 209	WAA28					14.0	10,400	15.0	10,500		
				SP28									20.0	10,900

### 28-GAUGE, 2¾-IN. REMINGTON-PETERS PLASTIC TARGET SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Skeet	¾	1,200	Rem. 209P	28S1A					13.5	11,300	14.5	11,200	18.0	9,200
				SP28			12.0	10,500	13.0	9,100	14.0	8,700	18.0	7,600
			CCI 109	WAA28			12.0	10,300	13.0	8,900	14.0	8,800	18.0	7,700
				28S1A			13.0	11,800	14.0	10,900	14.5	10,700	18.5	10,100
2¼	¾	1,295	Rem. 209P	SP28			12.0	10,200	13.0	9,100	14.0	8,900	18.0	7,500
				WAA28			12.0	10,400	13.0	9,100	14.0	8,300	18.0	7,300
			Rem. 209P	SP28					15.0	10,600	16.5	10,300	21.0	9,700
				WAA28										

### 28-GAUGE, 2¾-IN. WINCHESTER-WESTERN PLASTIC AA-TYPE SHELLS

Dram Equiv.	Shot Weight, oz	Velocity, fps	Primer	Wad	Red Dot		Green Dot		Unique		Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Skeet	¾	1,200	Win. 209	WAA28			12.5	11,900	13.0	9,400	14.0	8,400		
			CCI 109	WAA28					13.0	8,400	14.0	7,900		



### .410-BORE, 2½-IN. PLASTIC SHELLS

Shell	Shot Weight, oz	Velocity, fps	Primer	Wad	2400	
					Grains	Approx. psi
Federal	½	1,200	Fed. 209	Fed. 410SC Rem. SP410 WWAA41	13.5 13.0 13.0	11,900 11,500 11,300
			Fed. 410	Fed. 410SC	13.5	12,000
Rem.-Peters	½	1,200	Rem. 97★	Rem. SP410 Fed. 410SC WWAA41	13.0 13.5 14.0	11,500 11,400 11,500
				Rem. SP410 Fed. 410SC WWAA41	14.5 14.0 14.5	10,500 10,600 10,300
			CCI 209	Rem. SP410	13.5	11,000
			CCI 209M	Rem. SP410	13.0	11,700
Winchester-Western AA-Type	½	1,200	Win. 209	WWAA41	13.0	12,100
			CCI 209	Fed. 410SC Rem. SP410	13.5	12,000

### .410-BORE, 3-IN. PLASTIC SHELLS

Shell	Shot Weight, oz	Velocity, fps	Primer	Wad	2400	
					Grains	Approx. psi
Rem.-Peters	1¼	1,135	Rem. 97★	Rem. SP410 Fed. 410SC WWAA41	14.5 14.5 14.5	13,000 12,600 12,300
				Rem. SP410	14.0	12,700
			Fed. 410	Rem. SP410	14.5	12,200
			CCI 209M	Rem. SP410	14.5	12,200

### 10-GAUGE, 3½-IN. BUCKSHOT LOADS

Primer	Shell	No. and Size Buckshot	Velocity, fps	Wad	Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi
Fed. 209	Federal Plastic	40-4's	1,275	SP10 + .270 in. 20 ga. Card			45.0	10,100
		17-0's	1,300	SP10 + .135 in. 20 ga. Card			46.0	10,000
Rem. 57★	Remington Plastic	40-4's	1,275	SP10 + .270 in. 20 ga. Card			46.0	10,100
		17-0's	1,300	SP10 + .135 in. 20 ga. Card			48.5	9,800
Win. 209	W-W Plastic	40-4's	1,275	SP10 + .270 in. 20 ga. Card			47.5	10,000
		17-0's	1,300	SP10			51.0	9,500

### 12-GAUGE, 2¾-IN. BUCKSHOT LOADS

Primer	Shell	No. and Size Buckshot	Velocity, fps	Wad	Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi
Fed. 209	Federal Hi Power Plastic	34-4's	1,250	Card .135 + ¾ Fiber + Card .135			37.0	10,700
		9-00's	1,325	Card .135 + ¼ + ¾ + ½ Fiber	30.0	9,400		
Win. 209	Winchester-Western AA-Type	34-4's	1,250	Card .135 + ¾ + Card .135			39.0	10,900
		9-00's	1,325	Card .135 + ¼ + ¼ Fiber	30.0	10,000		
Rem. 97★	Remington RXP Plastic	9-00's	1,325	Card .135 + ¼ + ¾ Fiber	29.0	10,100		

12-GAUGE, 3-IN. BUCKSHOT LOADS										
Primer	Shell	No. and Size Buckshot	Velocity, fps	Wad	Herco		Blue Dot		2400	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
Fed. 209	Fed. HI Power	33-4's	1,250	Bal. Prod. GS&SC						
		18-1's	1,225	Bal. Prod. GS&SC			37.0	10,500	50.0	8,100
		12-0's	1,275	RP12 + .200 in. 20 ga. Card	31.5	9,800	36.0	9,700		
Rem. 97★	Rem. Unibody	33-4's	1,250	Bal. Prod. GS&SC						
		18-1's	1,225	Bal. Prod. GS&SC					46.0	9,400
		12-0's	1,275	RP12 + .200 in. 20 ga. Card	29.5	10,000	35.5	9,800		
Win. 209	WWAA-Type	33-4's	1,250 1,300	Bal. Prod. GS&SC					46.5 49.0	9,000 9,800
		18-1's	1,225 1,300	Bal. Prod. GS&SC			34.5	9,900		
		12-0's	1,275	RP12 + .200 in. 20 ga. Card			37.5	9,900	50.5	9,200

GS: Gas seal; SC: shot cup.

GS: Gas seal; SC: shot cup.

12-GAUGE, 2¾-IN. RIFLED SLUG LOADS — ROLLED CRIMP									
Slug Weight, oz — Type	Primer	Shell	Velocity, fps	Wad	Unique		Herco		
					Grains	Approx. psi	Grains	Approx. psi	
⅞ — Cast	Fed. 209	Federal HI Power Plastic	1,570	Card .135 + ⅜ + ¼ + 2 Card .135	33.0	10,000			
	Rem. 97★	Remington RXP Plastic	1,570	Card .135 + ⅜ + 2 Card .135			35.5	8,000	
				Card .135 + ¼ + ¼ + 2 Card .135	34.0	10,800			
				Card .135 + ¼ + ¼ Fiber + 2 Card .135			35.0	9,700	
1 — Brenneke	Win. 209	Winchester-Western AA-Type	1,570	Card .135 + ¼ + Fiber + 2 Card .135	34.5	9,800			
	Fed. 209	Federal HI Power Plastic	1,570	Card .135 + ¼ Fiber + 2 Card .135			29.0	8,600	
	Win. 209	Winchester-Western AA-Type	1,570	Card .135 + ¼ + ¼ Fiber			37.0	10,700	
				Card .135 + ⅜ Fiber + ⅜			37.0	9,700	

12-GAUGE, 3-IN. RIFLED SLUG LOADS — ROLLED CRIMP										
Slug Weight, oz — Type	Primer	Shell	Velocity, fps	Wad	Herco		Blue Dot		2400	
					Grains	Approx. psi	Grains	Approx. psi	Grains	Approx. psi
% — Cast	Fed. 209	Fed. HI Power	1,570	.135 Card + ½ + ⅓ + .135 Card						
	Rem. 97★	Rem. Unibody	1,570	.135 Card + ½ + ⅓ + .135 Card	40.0	10,500				
	Win. 209	WWAA-Type	1,570	.135 Card + ½ + .135 Card	37.5	10,600				
1 — Brenneke	Fed. 209	Fed. HI Power	1,525	.135 Cards(2) + ⅓ Filler	37.5	9,700				
	Rem. 97★	Rem. Unibody	1,525	.135 Cards(2) + ⅓ Filler			45.0	10,400		
	Win. 209	WWAA-Type	1,525	.135 Cards(2) + ⅓ Filler					56.5	10,000
									57.5	9,400



20-GAUGE, 2¾-IN. BUCKSHOT LOADS								
Primer	Shell	No. and Size Buckshot	Velocity, fps	Wad	Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi
Fed. 209	Federal Hi Power Plastic	18-4's	1,275	SP20	19.0	11,000	25.0	9,300
		24-3's	1,200	SP20 Petals Removed			24.0	11,200
		12-1's	1,275	SP20 Petals Removed			25.5	10,100
Win. 209	Winchester-Western AA-Type	18-4's	1,275	SP20			24.0	9,600
		12-1's	1,275	SP20 Petals Removed			25.5	10,400

20-GAUGE, 3-IN. BUCKSHOT LOADS								
Primer	Shell	No. and Size Buckshot	Velocity, fps	Wad	Herco		Blue Dot	
					Grains	Approx. psi	Grains	Approx. psi
Fed. 209	Federal Hi Power Plastic	18-3's	1,220	RXP20	19.5	8,400		
		21-3's	1,220	SP20			26.0	7,800
		18-3's	1,220	WWAA20F1	19.5	8,300		
Rem. 97★	Rem.-Peters Plastic (Old Style)	21-3's	1,220	WWAA20F1			26.0	8,500
			1,220	SP20			26.0	8,700
		18-3's	1,220	WWAA20F1	19.0	9,500		
Win. 209	Winchester-Western AA-Type	18-3's	1,220	WWAA20F1			25.0	9,400
		21-3's	1,200	RP20				

20-GAUGE, 2¾-IN. RIFLED SLUG LOADS — ROLLED CRIMP							
Slug Weight, oz — Type	Primer	Shell	Velocity, fps	Wad	Herco		
					Grains	Approx. psi	
5/8	Fed. 209	Fed. Hi Power	1,570	.125 Card + ½ In. Fiber + 2 Card .125 each	25.5	9,800	
Cast	Win. 209	WWAA-Type	1,570	.125 Card + ½ In. Fiber + 2 Card .125 each	25.5	10,200	

# PISTOL AND REVOLVER LOADS

Cartridge/Bullet	Primer	Min. OAL, Inches	Bbl Length	Bullseye			Red Dot			Green Dot			Unique			Hercu			Blue Dot			2400								
				Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi						
.25 Auto 50 FMC	Rem. 1½	0.875	2.0	1.3	760	15,000	1.1	740	15,500	1.4	785	15,400	1.7	760	14,800	1.7	735	15,600												
				2.2	835	12,500	2.1	805	12,900	2.3	810	11,900	2.5	820	11,200	3.2	880	13,500												
.32 H&R Magnum 85 JHP 90 LWC (target) 90 LWC 98 LRN	Fed. 100	1.320 1.160 1.160 1.160 1.320	5.0 5.0 5.0 5.0 5.0	3.4 2.2 3.3 3.4	1,020 800 1,060 1,020	18,700 9,500 19,600 19,500	3.4 2.1 3.1 3.1	1,030 800 1,020 980	19,200 9,400 20,000 19,700	3.5 2.2 3.3 3.5	1,035 805 1,050 1,010	19,500 9,600 20,400 19,600	4.1 2.5 3.7 4.0	1,050 800 1,110 1,000	18,700 8,400 20,300 19,000	4.6 2.8 4.0	1,060 805 1,070	18,900 8,500 20,400		6.6 3.7 5.1	1,100 805 1,150	19,000 7,800 20,300								
				95 JHP 100 FPI 100 LRN	Win. W.S.P.	0.965 0.965 0.965	4.0 4.0 4.0	3.6 3.2 3.2	970 960 920	21,200 21,100 21,000	3.1 2.7 2.7	905 865 865	21,300 21,300 21,300	3.5 3.2 3.2	925 910 910	21,300 21,600 21,600	4.3 3.985	985	20,900								6.2	1,150	20,400	
9mm Luger 95 FMC 125 L 125 FMC 147 XTP	Win. 1½-108	1.055 1.120 1.150 1.150 1.140	4.0 4.0 4.0 4.0 4.0	5.5 4.0 4.9 4.2	1,295 1,180 1,165 1,155	31,400 31,000 32,100 32,000	5.3 4.5 4.6 3.4	1,285 1,150 1,145 895	32,100 32,600 32,000 32,400	5.5 4.7 5.2 3.7	1,240 1,150 1,165 930	25,500 30,000 32,100 32,200	6.5 6.1 6.0 4.4	1,250 1,185 1,165 1,010	26,400 30,100 29,400 32,700	6.8 6.3 6.2 4.9	1,225 1,180 1,165 1,010	24,400 28,700 28,500 30,500		8.3 8.0 8.2 6.2	1,180 1,190 1,190 1,050	22,000 29,200 29,700 30,200								
				110 JHP 125 JSP 148 LWC (target) 148 LWC 158 LWC 158 JSP 170 FMC 180 JFP 200 LRN	Fed. 200	1.560 1.570 1.330 1.330 1.580 1.580 1.585 1.580 1.575	5.6 5.6 5.6 5.6 5.6 5.6 5.6 5.6 5.6	9.0 8.4 7.6 5.7 6.8 6.6 6.2 5.3	1,690 1,550 1,475 1,475 1,320 1,320 1,175 1,135 1,085	31,700 32,800 34,000 34,000 33,900 33,100 33,900 34,000 33,900	7.7 7.0 4.6 5.0 5.5 6.0 6.1 5.3 4.6	1,560 1,410 1,300 1,215 1,160 1,025 930 990	34,000 34,000 33,600 34,000 34,000 33,200 33,600	10.0 7.3 2.8 5.0 9.0 7.0 6.0 5.0	1,660 1,310 1,310 1,240 1,215 1,090 1,010 1,015	31,300 33,600 14,100 34,000 34,000 33,700 34,000	10.0 9.6 3.3 6.4 6.8 7.8 7.0 6.0	1,735 1,585 1,775 1,695 1,265 1,280 1,125 1,105	34,100 33,800 10,000 33,900 33,900 33,600 33,900	13.0 9.8 10.5 6.7 7.9 6.2 7.0 6.1	1,885 1,590 1,795 1,510 1,365 1,305 1,175 1,105	33,300 33,600 34,000 33,900 34,000 33,500 33,900	16.0 14.5 14.0 14.5 10.3 10.7 9.7 8.2	2,040 1,795 1,795 1,625 1,490 1,420 1,310 1,225	33,800 34,000 34,000 33,900 33,800 33,300 33,900		17.6	1,810	31,800	
.38 Super Auto +P 115 JHP 130 FMC 147 XTP 158 L	Rem. 1½	1.255 1.260 1.275 1.275	5.0 5.0 5.0 5.0	5.5 5.0 4.6	1,240 1,170 1,095	33,900 33,600 33,600	4.7 4.5 4.0	1,155 1,095 1,035	33,500 33,900 34,000	5.7 5.2 4.9	1,225 1,135 1,045	33,800 33,600 33,900	6.6 6.2 5.8	1,265 1,200 1,105	33,800 34,000 33,800	6.8 6.3 6.4	1,260 1,180 1,135	33,900 33,500 33,800		10.2 9.1 8.6	1,360 1,265 1,220	33,000 32,500 33,900				10.9	1,215	33,600		
				38 Special 10 JHP 125 JSP 148 LWC (target) 148 LWC 158 LWC 160 JSP 200 LRN	Fed. 100	1.430 1.440 1.180 1.180 1.420 1.435 1.540	5.6 5.6 5.6 5.6 5.6 5.6 5.6	4.5 4.4 2.7 2.8 3.6 3.5 3.0	1,085 1,500 785 815 910 805 760	14,900 15,300 15,900 15,900 15,500 15,600 15,100	4.0 3.9 2.3 2.5 3.1 3.2 2.8	1,000 950 730 750 835 715 725	15,800 15,600 14,800 15,800 15,800 15,700 15,100	4.6 4.3 4.7 2.9 3.5 3.1 3.1	1,050 985 765 800 870 750 750	16,000 15,900 14,600 15,500 15,600 15,800 15,500	5.6 5.3 3.3 3.3 3.5 4.2 3.6	1,090 1,015 775 815 820 800 780	15,400 16,000 14,100 15,300 16,000 15,600 15,700	5.6 5.5 7.3 3.5 4.5 4.4 3.8	1,090 1,040 1,080 15,800 16,000 15,800 15,500		7.8 7.3 8.3 5.3 6.2 6.1 5.3	1,170 1,035 1,035 810 955 845 850	15,700 15,600 15,600 13,600 15,600 15,800 16,000				7.5	990
																												7.6	850	15,900
																												7.0	870	15,800

See Special Reloading Precautions on page 63. See Notes and Key on page 52.



# PISTOL AND REVOLVER LOADS (contd.)

Cartridge/Bullet	Primer	Min. OAL, Inches	Bullseye			Red Dot			Green Dot			Unique			Herco			Blue Dot			2400			
			Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi				
.38 Special +P 90 JHP 110 JHP 125 JSP 158 LSWC 160 JSP 200 LRN	Fed. 100	1.410	5.5	1.340	17,000	4.5	1.245	17,000	5.1	1.260	16,900	6.3	1.300	16,800	6.5	1.310	17,100	9.1	1.345	16,900				
		1.430	5.6	1.175	17,400	4.2	1.040	17,500	4.8	1.100	17,500	5.9	1.160	17,500	5.9	1.150	17,500	8.2	1.205	16,800				
		1.445	5.6	1.090	17,500	4.1	965	17,000	4.6	1.015	17,500	5.6	1.070	17,500	5.8	1.050	16,900	7.5	1.065	16,800	7.8	1.035	17,400	
		1.420	5.6	3.8	945	17,200	3.2	855	16,800	3.7	910	17,200	4.5	950	17,100	4.7	965	17,300	6.3	995	17,000	7.1	890	17,500
		1.435	5.6	3.7	820	17,100	3.3	750	17,400	3.6	770	17,300	4.4	885	17,100	4.6	835	17,200	5.5	885	17,100			
.380 Auto 88 JHP 90 JHP 95 FMC 100 FMJ-RN	Win. 1 1/8-108	1.540	5.6	3.3	795	17,100	2.9	750	17,000	3.2	775	17,100	3.7	800	17,100	4.0	825	17,000	5.5	885	17,100			
		0.960	3.7	3.2	980	14,300	3.1	965	14,600	3.4	940	14,600	4.0	920	13,600	4.1	995	14,900	6.0	1,000	14,700			
		0.960	3.7	3.0	940	12,900	3.1	940	14,300	3.2	890	12,800	4.0	940	14,000	4.0	960	14,800	6.0	980	14,800			
		0.975	3.7	3.2	900	14,700	3.1	885	14,900	3.5	890	14,700	4.2	910	14,600	4.4	910	14,600	6.5	910	14,200			
		0.975	3.7	3.3	985	20,100	2.8	920	19,900	3.1	955	20,000	4.3	1,005	19,500									
.3840 Win 150 gr. Sierra JHP 180 gr. Sierra JHP 200 gr. Hornady FMJ-RFP	Rem. 2 1/8	1.585	5.6	6.5	960	12,600	6.2	910	12,800	6.8	950	12,700	8.2	990	13,200	9.2	995	13,100	11.8	1,020	13,100	14.1	970	13,100
		1.585	5.6	5.6	820	12,200	5.1	740	12,500	5.6	745	12,700	6.9	815	13,200	7.3	795	13,100	10.3	875	13,200	13.0	875	13,400
		1.585	5.6	5.3	750	12,400	4.8	685	12,400	5.5	730	12,500	6.7	765	13,100	7.3	785	13,300	9.9	840	13,500	12.7	830	13,500
		1.105	4.0	7.6	1,350	33,600	6.7	1,280	33,200	7.5	1,330	33,100	8.5	1,290	26,600	8.2	1,215	33,900	11.5	1,285	34,000	12.1	1,110	33,600
		1.105	4.0	6.7	1,225	34,000	5.9	1,155	34,000	6.2	1,175	33,800	8.0	1,245	34,000	7.4	1,125	34,000	8.8	1,065	34,000	10.9	1,025	33,900
.40 S&W Auto 135 JHP 150 JHP 170 XTP 180 JHP 190 JHP 200 FMJ	Win. 1 1/8-108	1.124	4.0	5.5	1,015	33,500	5.1	985	34,000	5.6	1,045	33,700	6.4	1,065	33,800	7.0	1,045	34,000	8.8	1,065	34,000	10.6	975	33,600
		1.125	4.0	5.5	1,015	33,900	5.0	980	34,000	5.3	1,010	33,600	6.1	1,010	34,000	6.7	1,000	33,800	8.7	1,040	33,800	8.5	925	33,600
		1.130	4.0	5.4	955	34,000	4.9	895	33,600	5.1	955	33,600	5.3	955	33,900	5.8	955	34,000	7.9	960	33,800			
		1.130	4.0	4.6	945	33,600	4.1	890	33,500	4.3	890	33,600				8.2	1,230	33,800	11.5	1,340	34,100	13.6	1,270	33,600
		1.250	5.5	6.7	1,190	34,000							7.5	1,200	33,800	7.5	1,145	33,600	10.1	1,180	33,500	12.6	1,190	33,800
.41 Rem. Magnum 200 JHP 210 JSP 220 JHP	Fed. 150	1.250	5.5	6.2	1,135	35,900						7.0	1,125	35,700	7.5	1,140	35,800	10.4	1,220	35,800	12.9	1,210	36,000	
		1.250	5.5	6.4	1,125	35,900						7.2	1,050	35,800	7.2	1,050	35,800	10.0	1,185	36,000	12.5	1,195	35,800	
		1.250	5.5	6.3	1,050	35,500						5.8	940	33,700	6.5	965	33,500	8.9	1,110	33,100	11.2	1,115	34,100	
		1.260	5.5	5.3	940	33,600																		
		1.580	5.8	8.0	1,235	35,700	7.5	1,200	33,400	8.3	1,170	35,000	10.0	1,280	35,700	10.3	1,320	35,900	14.0	1,470	36,000	17.5	1,420	34,700
.44 Rem. Special 180 JHC 246 LRN 246 LRN 200 JSP	Rem. 2 1/8	1.575	5.8	8.3	1,245	34,300	8.2	1,225	34,300	8.7	1,165	35,800	9.3	1,265	35,400	10.1	1,265	35,400	13.5	1,425	33,800	17.5	1,425	33,900
		1.575	5.8	7.5	1,150	35,800	7.4	1,125	35,900	7.9	1,140	35,800	9.0	1,215	35,300	9.3	1,220	35,800	12.5	1,365	35,800	16.4	1,365	34,300
.44 S&W Special 180 JHC 246 LRN 246 LRN 200 JSP	Win. 7-111	1.600	5.6	6.5	910	12,000	6.4	885	12,100	6.7	925	12,400	9.0	985	12,500	9.8	1,000	12,600	13.5	1,020	11,900	16.0	950	11,400
		1.590	5.6	4.5	765	11,700	4.3	740	11,900	5.0	785	11,900	6.0	800	11,700	7.7	805	12,100	9.2	845	12,300	11.3	805	11,500
		1.590	5.6	6.6	1,070	12,300	5.9	920	12,400	6.6	990	12,200	8.0	1,090	12,400	8.5	1,100	12,500	12.0	1,225	12,500	14.5	1,230	12,500
		1.590	24	6.6	1,070	12,300	5.9	920	12,400	6.6	990	12,200	8.0	1,090	12,400	8.5	1,100	12,500	12.0	1,225	12,500	14.5	1,230	12,500
		1.580	24	5.0	850	12,200	4.7	800	12,300	5.5	850	12,200	6.7	950	12,500	7.1	955	12,400	9.9	1,125	12,500	12.0	1,130	12,500

continued

continued

See Special Reloading Precautions on page 63. See Notes and Key on page 52.

# PISTOL AND REVOLVER LOADS (contd.)

Cartridge/Bullet	Primer	Min. OAL, Inches	Bbl Length	Bullseye			Red Dot			Green Dot			Unique			Herco			Blue Dot			2400		
				Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi
<b>.44 Rem. Magnum</b> 180 JHC 200 JHP 225 JHP 240 L (GC) 240 USP 265 JHP 300 HP/XTF 310 LSWC	Fed. 150	1.585	5.7	11.5	1.520	33,400	10.0	1.410	34,600	11.3	1.470	34,600	13.0	1.550	35,000	13.6	1.560	34,900	19.0	1.725	34,000	23.3	1.760	33,700
		1.575	5.7	11.0	1.420	34,000	9.7	1.320	34,600	10.7	1.370	34,500	13.0	1.475	34,400	13.0	1.455	34,500	17.0	1.565	33,400	23.2	1.665	34,300
		1.575	5.7	9.5	1.270	34,600	8.2	1.185	34,600	9.2	1.220	34,700	10.7	1.290	34,800	11.0	1.285	34,700	15.2	1.445	34,900	20.5	1.510	34,400
		1.585	5.7	8.8	1.175	34,400	8.8	1.175	34,900	9.5	1.170	34,600	11.8	1.255	35,000	12.5	1.330	33,800	13.6	1.475	34,700	20.6	1.510	34,700
		1.620	5.7	8.3	1.215	34,700	7.7	1.090	35,000	8.7	1.190	35,000	10.3	1.255	35,000	10.5	1.245	34,700	14.6	1.380	34,800	18.7	1.440	34,800
		1.600	5.7	7.5	1.110	34,800	7.1	1.000	34,800	7.8	1.045	35,000	9.3	1.125	34,600	9.5	1.125	34,700	12.7	1.250	34,600	17.0	1.300	34,800
		1.600	5.7	7.3	995	35,000	6.7	855	35,000	6.9	865	35,000	8.3	955	34,800	8.4	1.015	35,000	11.7	1.105	34,200	15.9	1.190	35,000
<b>.455 Webley</b> 220 MK IV L	CCI 300	1.000	6.0	3.6	765	12,500	3.4	745	12,400	3.5	755	12,300	4.4	800	12,600	4.8	790	12,700	c.u.p.					
		1.245	6.0	3.8	750	12,600	3.4	685	12,300	3.6	690	12,400	4.3	710	12,600	4.9	735	12,700	c.u.p.					
<b>.45 A.C.P.</b> 185 Cast Lead 185 LWC 185 JHP 200 LSW (target) 200 JHP 230 L (target) 230 JHP 230 FMC 240 JHP 260 JHP	Federal 150	1.270	5.0	6.9	1.175	19,400	5.8	1.155	18,800	6.6	1.165	19,300	7.8	1.190	19,200	8.5	1.185	19,100	10.6	1.000	19,500			
		1.190	5.0	5.7	985	15,800	4.8	900	14,100	5.3	910	14,500	6.0	875	13,400	6.7	950	15,800	9.0	920	13,600			
		1.275	5.0	6.7	985	19,400	5.9	940	19,500	6.8	990	19,300	8.2	1,030	18,900	8.2	990	18,500						
		1.175	5.0	6.0	980	9,800	4.0	805	9,400	4.3	805	9,800	5.1	810	9,600									
		1.190	5.0	6.0	960	19,400	5.2	890	19,200	5.9	915	18,900	7.1	975	19,500	7.7	955	19,300	10.6	1,000	19,500			
		1.230	5.0	4.0	810	13,900	4.0	810	12,800	4.3	805	13,200	5.0	790	11,800	5.2	815	13,600	8.8	915	13,300			
		1.190	5.0	5.4	805	19,200	5.0	820	19,500	5.4	845	19,500	6.4	880	19,400	6.2	890	16,200	8.5	900	16,200			
		1.210	5.0	5.0	805	16,200	5.0	910	16,200	5.4	920	15,800	6.0	895	16,000	6.2	890	16,200	8.3	865	19,300			
		1.210	5.0	5.0	810	18,900	4.5	770	19,200	5.0	790	19,300	5.9	820	19,200	6.5	820	19,200	8.3	865	19,300			
		1.210	5.0	4.5	725	19,400							5.4	760	19,400	5.9	750	18,600	8.3	780	19,000			
<b>.45 Colt</b> 200 JHP	Win 7-111	1.550	7.3	6.0	870	11,800	7.0	915	12,600	8.0	940	12,500	9.0	895	11,600	9.5	895	11,400	c.u.p.					
		1.550	7.3	5.4	805	11,800	6.0	830	12,000	6.8	855	12,300	8.0	850	11,800	9.0	910	12,600	c.u.p.					
		1.580	7.3	5.0	605	12,400	4.8	550	12,200	5.7	645	12,500	6.8	690	12,600	7.2	670	12,500	c.u.p.					
<b>.45 Win. Magnum</b> 200 JHP 230 FMJ 260 JHP	Win 7-111	1.475	5.0										14.0	1,385	34,500	17.0	1,490	37,000	22.0	1,570	37,200	26.8	1,580	37,200
		1.475	5.0										13.1	1,270	34,900	16.0	1,370	37,500	20.0	1,430	36,900	25.4	1,475	37,300
		1.475	5.0										11.5	1,145	34,400	14.5	1,250	37,400	18.6	1,340	36,900	22.5	1,345	37,100

- NOTES:**
- Do not intermix cases of different manufacture, nor bullets, nor primers.
  - Be sure that each case is crackfree and completely empty.
  - Unless specifically recommended, use standard primers. Magnum primers are neither needed nor recommended for most calibers.
  - Do not exceed the powder weight shown, and guard against accidental multiple charges of powder.
  - Start with 10% less powder than shown. Work up gradually, watching for signs of high pressure.
  - Be sure that every completed cartridge is not shorter than the length listed.
  - Watch for signs of case head separation.
- Notes and Key pertain to Pistol and Revolver tables.  
See *Special Reloading Precautions* on page 63.
- Key**
- BR = Bench Rest
  - FMC = Full Metal Case
  - FMJ = Full Metal Jacket
  - FN = Flat Nose
  - FP = Flat Point
  - GC = Gas Check
  - HB = Hollow Base
  - HC = Hollow Cavity
  - HP = Hollow Point
  - J = Jacketed
  - L = Lead
  - M = Match
- psi = Chamber pressure,  
PSP = Piezo system  
RN = Roped Soft Point  
SB = Solid Base  
SJ = Semi-jacketed  
SP, Pt. = Soft Point  
WC = Wad Cutter  
Wt = weight  
Bbl = barrel  
in. = inches
- gr. = grains  
Vel. = velocity  
fps = feet per second  
c.w. = powder charge weight  
c.u.p. = chamber pressure,  
in copper  
Min. OAL = minimum overall length, measured from base to tip of bullet



SILHOUETTE LOADS											
Cartridge/Bullet	Primer	Min. OAL, Inches	Blue Dot			2400			Reloder 7		
			c.w., gr.	Vel., fps	c.u.p.	c.w., gr.	Vel., fps	c.u.p.	c.w., gr.	Vel., fps	c.u.p.
<b>.222 Remington (Rem. case)</b> 50 gr. Sierra Spitzer 53 gr. Sierra BRHP 55 gr. Sierra Spitzer 60 gr. Hornady Spire Pt. 68.0 gr. Hornady BTHP	Fed. 205M	2.090				12.9	2,425	43,800	19.3	2,700	43,800
		2.104				12.4	2,345	43,800	18.2	2,575	43,500
		2.125				12.0	2,250	43,100	17.6	2,495	43,400
		2.125				12.0	2,180	43,800	17.0	2,400	43,800
		2.125				11.3	1,990	43,800	16.5	2,230	43,200
<b>.223 Remington (Rem. case)</b> 55 gr. Sierra Spitzer 60 gr. Hornady Spire Pt. 70 gr. Hornady Spire Pt.	Fed. 205M	2.250				15.9	2,430	48,500	22.1	2,670	48,900
		2.250				15.4	2,320	48,500	21.4	2,550	49,500
		2.250				13.0	1,965	48,600	17.0	2,180	48,800
<b>7mm BR Rem. (Rem. case)</b> 120 gr. Sierra Spitzer 145 gr. Speer Spitzer	Rem. 7½ BR	2.300				20.2	2,160	47,100	27.8	2,425	47,400
		2.300				17.7	1,800	47,200	24.8	2,130	47,800
<b>7mm/08 (Rem. case)</b> 120 gr. Sierra Spitzer 145 gr. Speer Spitzer	Fed. 210 BR	2.750				27.5	2,310	48,100	37.2	2,560	48,900
		2.750				23.5	1,970	48,300	33.0	2,250	48,300
<b>.30-30 Winchester (Fed. case)</b> 152 gr. Cast Lead 170 gr. Rem. SPCL	Fed. LR #210	2.500	13.0	1,525	29,000	16.0	1,650	33,300	25.0	1,950	34,900
		2.500				16.0	1,500	34,700	23.5	1,800	34,900
<b>.35 Remington (Rem. case)</b> 158 gr. Hornady L 170 gr. Sierra FMJ 200 gr. Rem. SPCL	Fed. LR #210	2.400	15.5	1,574	25,200	21.0	1,715	25,300	28.5	1,875	26,600
		2.400	13.0	1,300	22,400	17.0	1,450	23,400			
		2.510				22.0	1,650	31,700	30.0	1,825	31,700
<b>.357 Magnum (Win. case)</b> 158 gr. Rem. SP 170 gr. Sierra FMJ 180 gr. Speer FMJ 180 gr. Sierra FPJ	Fed. 200	1.580	12.0	1,600	42,900	14.6	1,640	42,300			
		1.580	10.7	1,445	41,700	13.2	1,450	43,000			
		1.580	9.6	1,265	42,300	11.8	1,320	42,900			
		1.580	9.2	1,250	42,400	12.1	1,350	41,700			
<b>.357 Maximum (Rem. case)</b> 125 gr. Speer JHP 158 gr. Hornady HP 160 gr. Speer SP 170 gr. Sierra FMJ 180 gr. Sierra FPJ 200 gr. Speer FMJ	Rem. 7½ BR	1.900	15.0	1,860	38,200	20.5	2,045	38,200	26.0	1,845	33,600
		1.975				18.0	1,790	40,400	26.0	1,830	32,700
		1.975	15.3	1,760	40,700	17.4	1,775	41,200	25.5	1,840	40,100
		1.975	14.5	1,675	41,300	16.5	1,670	40,500	25.0	1,760	39,700
		1.975	14.9	1,610	39,400	16.8	1,590	39,000	22.3	1,650	41,400
		1.975	11.6	1,275	41,300	14.1	1,340	41,300			
<b>.44 Rem. Magnum (Rem. case)</b> 180 gr. Sierra HC 240 gr. Speer FMJ 250 gr. Sierra FPJ 265 gr. Hornady FP	Fed. 150	1.590	18.8	1,875	37,900	23.0	1,910	37,800			
		1.590	15.5	1,550	37,600	18.8	1,560	36,800			
		1.590	15.0	1,525	36,800	19.0	1,600	37,800			
		1.590	14.1	1,420	36,300	17.4	1,460	37,400			

Test barrels were 14 inches long, except .357 Maximum, which was 12½ inches.

See Notes and Key on page 62.

See Special Reloading Precautions on page 63.

CENTERFIRE RIFLE																						
Cartridge/Bullet	Primer	Min. OAL, Inches	Case	BBI Length	2400			Reloder 7			Reloder 12			Reloder 15			Reloder 19			Reloder 22		
					Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi
.17 Rem Hornady 25HP	Rem. 7½	2.140	Rem.	24							21.8	3,750	50,100	22.8	3,915	50,200						
.22 Hornet Speer 40SP																						
Speer 45 Spitz	Win. 6½-116	1.710	Win.	24	7.5	2,250	c.u.p. 41,000	11.0	2,265	c.u.p. 19,800												
Hornady 50SPSX		1.710		24	7.1	2,065	c.u.p. 41,300	10.6	2,170	20,300												
.22250 Rem. Speer 45 Spitz	Win. 8½-120	1.710		24	7.0	1,945	c.u.p. 41,700	10.5	2,115	21,500												
Hornady 50SPSX																						
.220 Swift Speer 45 Spitz		2.300	Win.	24							35.5	3,760	59,400									
Hornady 50SPSX		2.350	Win.	24							34.3	3,575	58,900									
Hornady 55FMJBT		2.350		24							33.3	3,425	59,200	35.3	3,625	59,400						
.220 Rem. Fireball Speer 40SP		2.645	Horn.	24							32.5	3,290	58,500	34.7	3,485	59,400	41.0	3,510	57,800			
Hornady 50SPSX		2.660	Horn.	24							36.6	3,760	50,100	39.0	4,010	50,300						
Hornady 55FMJBT		2.630	Horn.	24							36.1	3,675	50,500	38.6	3,850	49,800	44.0	3,650	50,400			
Hornady 60 Sp. Pl.		2.680	Horn.	24										38.0	3,775	50,500	43.9	3,610	50,500			
.221 Rem. Fireball Speer 40SP		1.800		10½	15.5	2,700	c.u.p. 46,500							35.8	3,540	50,400	43.0	3,575	50,400	c.u.p. 49,900		
Sierra 50 Spitz	Rem. 7½	1.825	Rem.	10½	13.8	2,410	c.u.p. 43,500															
Sierra 53BRHP		1.825		10½	13.5	2,320	c.u.p. 43,600															
Nosler 60 Spitz		1.825		10½	13.3	2,200	c.u.p. 46,300	18.1	2,250	34,000												
.222 Rem. Speer 45 Spitz		2.090		24																		
Sierra 50SMP	Rem. 7½ BR	2.130	Rem.	24	19.8	3,225	47,500															
Sierra 55FMJBT		2.130		24	20.0	3,115	47,400															
Hornady 60SPPT		2.130		24																		
.222 Rem. Mag. Speer 45 Spitz		2.280		24	23.0	3,400	c.u.p. 46,500															
Sierra 50 Spitz	Rem. 7½	2.280	Rem.	24	22.5	3,250	c.u.p. 45,400															
Sierra 53BRHP		2.280		24	22.0	3,120	c.u.p. 44,500															
Sierra 55 Spitz		2.280		24	22.0	3,100	c.u.p. 46,000															

See Notes and Key on page 62.

continued

See Notes and Key on page 62.

continued



# CENTERFIRE RIFLE (contd.)

Cartridge/Bullet	Primer	Min. OAL, Inches	Case	Bbl Length	2400			Reloder 7			Reloder 12			Reloder 15			Reloder 19			Reloder 22		
					Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi
<b>.223 Rem.</b> Speer 45 Spitz Hornady 50SP Sierra 50HPBT Hornady 55FMJBT Hornady 60 Sp. Pl. Hornady 68BTHP	Fed. 205M	2.210 2.250 2.250 2.215 2.250 2.260		24	14.9 14.5 14.0	3,030 2,795 2,685	49,600 48,500 49,900	21.8 21.5 20.9 20.5	3,375 3,195 3,165 3,080	53,200 53,000 53,300 52,400	26.0 27.0 27.5 27.5 25.5 24.0	3,490 3,335 3,310 3,255 3,070 2,935	52,300 52,300 52,700 52,200 53,300 52,600	28.5 28.3 28.0 26.5 25.6	3,535 3,440 3,390 3,240 3,030	53,500 53,100 53,600 53,000 52,800						
<b>.225 Win.</b> Win. 50PSP Win. 55PSP	Win. 8 1/2-120	2.450 2.450	Win.	24				22.0 22.0	3,130 3,075	44,000 44,500												
<b>.243 Win.</b> Sierra 60HP Speer 75HP Speer 80 Spitz Sierra 100 Spitz BT	Win. 8 1/2-120	2.550 2.610 2.685 2.700	Win.	24				30.2	3,320	54,800	38.5 34.0	3,450 3,125 3,060	56,400 57,500 57,000	36.5	3,145	57,500	44.5 41.0	3,270 2,925	57,100	41.7	2,950	57,500
<b>6mm Remington</b> Sierra 60HP Speer 75HP Speer 80 Spitz Sierra 100 Spitz BT	Rem. 9 1/2	2.760 2.790 2.790 2.800	Rem.	24							41.8 39.0 38.0	3,665 3,340 3,205	62,800 62,200 62,300	43.6 40.6 40.5	3,820 3,410 3,340	62,700 62,300 63,000	49.5 46.0	3,435 3,145	61,700 62,500	51.5 48.0	3,450 3,205	60,900 62,500
<b>.25-06 Rem.</b> Sierra 75HP Speer 87 Spitz Speer 100 Spitz Sierra 120HPBT	Fed. 210	3.090 3.090 3.200 3.225	Fed.	24							48.0 44.5	3,580 3,290	59,900 59,500	47.2 44.9	3,425 3,190	61,000 61,000	57.3 54.3 50.5	3,525 3,320 3,025	59,800 61,000 60,400	55.9 52.5	3,355 3,080	61,100 60,400
<b>.2570 Win.</b> Rem. 86SP	CCI 400	1.590	Rem.	24	8.0	1,340	18,300	11.5	1,460	15,000												
<b>.250 Savage</b> Sierra 75HP		2.400		24							37.8	3,250	43,800	38.3 36.0	3,350 3,135	43,700 43,800	c.u.p. c.u.p. c.u.p.	41.0 2,940 2,855	42,800 43,400	40.0	2,680	43,600
Speer 87 Spitz Speer 100 Spitz Sierra 120HPBT	Rem. 9 1/2	2.450 2.500 2.510	Rem.	24																40.0	2,680	c.u.p. 43,600

continued

See Notes and Key on page 62.

# CENTERFIRE RIFLE (contd.)

Cartridge/Bullet	Primer	Min. OAL, Inches	Case	Bbl Length	2400			Reloder 7			Reloder 12			Reloder 15			Reloder 19			Reloder 22		
					Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi
.257 Roberts Sierra 75HP		2.775		24							39.0	3.160	c.u.p. 42,800	41.8	3.340	c.u.p. 42,700						
Speer 87 Spitz	Win.	2.775		24							36.5	2.930	c.u.p. 43,300	41.0	3.185	c.u.p. 43,200						
Speer 100 Spitz	8½-120	2.775	Win.	24													44.7	2.930	c.u.p. 43,100			
Sierra 120HPBT		2.775		24																		
.257 Roberts + P Sierra 75HP		2.775		24							41.0	3.365	c.u.p. 48,000	43.4	3.510	c.u.p. 48,000				44.0	2.785	c.u.p. 43,000
Speer 87 Spitz	Win.	2.775		24							39.5	3.165	c.u.p. 48,000	43.5	3.310	c.u.p. 48,000						
Speer 100 Spitz	8½-120	2.775	Win.	24													47.2	3.110	c.u.p. 47,900			
Sierra 120HPBT		2.775		24																		
.257 Wby. Mag. Sierra 75HP		3.075		26																46.5	2.945	c.u.p. 48,000
Speer 87 Spitz		3.150		26													73.3	3.895	52,900	77.0	3.900	53,000
Speer 100 Spitz	Fed. 215	3.170	Wby.	26													68.4	3.650	53,000	73.0	3.675	52,700
Barnes 115 Spitz		3.170		26													64.5	3.420	52,700	69.0	3.460	52,400
Nosler 120 Sp		3.170		26													61.3	3.175	53,000	64.5	3.200	52,700
6.5x55 Swedish Mauser																	59.7	3.100	53,000	62.7	3.140	52,900
Hornady 129SP		2.935		24																		
Speer 140 Spitz	CCI 200	3.000	Norma	24	25.8	2.130	c.u.p. 43,600	36.7	2.465	c.u.p. 44,400				38.8	2.620	c.u.p. 44,400	48.0	2.815	c.u.p. 44,500			
Hornady 160RN		2.975		24							35.0	2.395	c.u.p. 44,500	36.6	2.480	c.u.p. 44,200	46.0	2.650	c.u.p. 44,000	48.1	2.700	c.u.p. 44,400
.264 Win. Mag. Hornady 129 Sp. Pl		3.270		24	25.0	1.940	c.u.p. 44,000	35.2	2.225	c.u.p. 44,200				35.6	2.325	c.u.p. 44,000	45.0	2.500	c.u.p. 44,300	47.0	2.535	c.u.p. 44,000
Speer 140 Spitz	Win. 8½-120	3.340	Win.	24													57.0	3.070	c.u.p. 51,800			
Hornady 160RN		3.315		24													56.0	2.945	c.u.p. 51,800	57.0	2.960	c.u.p. 51,300
.270 Win. Speer 100 Spitz		3.150		24																57.0	2.780	c.u.p. 51,800
Speer 130 Spitz		3.250		24																		
Sierra 140SPT	Win.	3.280		24																		
Sierra 150 Spitz BT	8½-120	3.320	Win.	24										53.8	3.465	52,000	64.0	3.510	61,800	60.0	3.160	61,500
Nosler 150 Spitz		3.325		24										47.3	2.840	61,600	57.5	3.110	61,600	60.0	2.930	59,400
				24										47.0	2.770	61,600	55.5	2.945	61,400	58.5	3.010	61,800
				24													56.5	2.810	61,800	59.5	2.845	60,300

See Notes and Key on page 62.

continued



# CENTERFIRE RIFLE (contd.)

Cartridge/Bullet	Primer	Min. OAL, Inches	Case	Bbl Length	2400			Reloader 7			Reloader 12			Reloader 15			Reloader 19			Reloader 22		
					Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi
<b>.270 Wby. Mag.</b> Speer 100 Spitz		3.160		26																		
Speer 130 Spitz		3.260		26																		
Sierra 140 SBT	Fed. 215	3.275	Wby.	26																		
Sierra 150 SBT		3.285		26																		
Nosler 150 Spitz		3.285		26																		
<b>7-30 Waters</b> Hornady 120 Sp. Pl.	Fed. 210	2.640	Fed.	24																		
Hornady 139 F.P.		2.650		24																		
<b>7mm-08 Rem.</b> Hornady 120 Sp. Pl.		2.750		24																		
Hornady 139 Sp. Pl.		2.800		24																		
Speer 145 Spitz	Rem. 9½	2.800	Rem.	24																		
Sierra 150 HPBT		2.800		24																		
Sierra 160 Spitz BT		2.800		24																		
<b>7x57 Mauser</b> Hornady 120 Sp. Pl.	Fed. 210	2.965		24																		
Hornady 139 Sp. Pl.		3.015		24																		
Speer 145 Spitz		3.040		24																		
Sierra 160 Spitz BT		3.040		24																		
<b>.280 Rem.</b> Hornady 120SP		3.310		24																		
Hornady 139 Sp. Pl.		3.320		24																		
Speer 145 Spitz	Rem. 9½	3.320	Rem.	24																		
Sierra 160 Spitz BT		3.325		24																		
<b>.284 Win.</b> Hornady 120SP		2.800		24																		
Hornady 139SP	Win. LR	2.795	Win.	24																		
Speer 145 Spitz	8½-120	2.790		24																		
Nosler 150 Part.		2.800		24																		
Sierra 160 Spitz BT				24																		
<b>7mm Rem. Mag.</b> Hornady 120 Sp. Pl.		3.275		24																		
Hornady 139 Sp. Pl.		3.275		24																		
Speer 145 Spitz	Rem. 9½	3.280	Fed.	24																		
Sierra 160 Spitz BT		3.285		24																		
Sierra 175 Spitz BT		3.285		24																		

continued

# CENTERFIRE RIFLE (contd.)

Cartridge/Bullet	Primer	Min. OAL, Inches	Case	Bbl Length	2400			Reloder 7			Reloder 12			Reloder 15			Reloder 19			Reloder 22		
					Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi
<b>7mm Wby. Mag.</b> Hornady 120 Sp. Pt.		3.200		26										61.3	3.370	c.u.p. 52,500	74.0	3.505	c.u.p. 52,100	74.8	3.355	c.u.p. 52,300
Hornady 139 Sp. Pt.		3.280		26													70.9	3.315	c.u.p. 52,500	72.4	3.245	c.u.p. 52,500
Speer 145 Spitz	Fed. 215	3.240	Wby.	26													68.0	3.165	c.u.p. 52,200			
Nosler 150 Spitz		3.250		26													67.3	3.145	c.u.p. 52,500	72.0	3.220	c.u.p. 52,400
Sierra 160 Spitz		3.240		26													64.8	3.045	c.u.p. 52,300	70.7	3.110	c.u.p. 52,500
Sierra 175 Spitz		3.245		26													60.5	2.850	c.u.p. 52,200	67.4	2.965	c.u.p. 52,500
<b>.30 Carbine</b> Hornady 100SJ	CCI 400	1.625	Fed.	20	12.3	1.815	c.u.p. 34,500															
Cast (GC) 112L		1.625		20	10.3	1.590	35,700															
<b>.30-06 Springfield</b> Sierra 110JHP		3.100		24	30.9	2.715	55,900	45.0	3.145	56,400	57.0	3.280	58,300	58.6	3.465	58,100	65.5	2.995	47,300			
Hornady 125 Spitz		3.120		24	30.0	2.575	55,100	42.0	2.915	56,600	55.3	3.170	58,300	56.8	3.275	58,500	63.5	2.895	50,900	63.0	2.815	46,000
Barnes X 150		3.210		24	29.4	2.330	56,000	43.8	2.780	57,000	53.6	2.960	58,400	53.6	3.005	58,500	62.1	2.950	56,400	62.0	2.845	50,600
Nosler 165 Part.	Fed. 210	3.220	Fed.	24										50.6	2.910	58,500	62.0	2.890	58,500	62.0	2.755	51,300
Speer 165 Spitz		3.250		24	29.2	2.295	55,400	40.5	2.610	56,800	51.1	2.785	57,900	49.8	2.815	58,500	62.0	2.880	56,100	62.0	2.824	52,500
Nosler 180 Spitz		3.250		24	28.2	2.210	55,400	39.8	2.505	56,900	49.6	2.695	58,500	48.5	2.720	58,200	60.0	2.900	57,000	60.0	2.710	51,000
Nosler 180 Part.		3.250	Win.	24										45.3	2.515	56,800	60.0	2.750	57,100	60.0	2.675	51,500
Win. W.L.R.		3.200	Fed.	24	26.0	2.075	55,600	37.4	2.340	57,400	46.0	2.520	58,300	47.0	2.600	56,500	57.2	2.985	55,300	59.0	2.670	52,000
Sierra 190 MKing	Fed. 210	3.300		24							44.8	2.440	58,300	46.0	2.505	58,500	58.0	2.720	58,100	60.0	2.755	56,600
Sierra 200 Spitz BT		3.300		24													59.8	2.630	58,500	58.4	2.660	58,400
<b>.30-30 Win.</b> Sierra 125JFP		2.470		24	30.0	2.630	c.u.p. 34,100	30.0	2.630	34,100	37.0	2.555	39,900									
Sierra 150JFP	Win. 8x-120	2.525	Win.	24	27.5	2.190	c.u.p. 33,800	27.5	2.190	33,800	33.5	2.320	40,400	36.0	2.450	40,600						
Hornady 170JFP		2.545		24	24.0	1.910	c.u.p. 34,500	24.0	1.910	34,500	32.0	2.160	40,100	34.1	2.330	40,500						
<b>.300 Savage</b> Sierra 125SPT		2.600		24																		
Sierra 150SPT	Rem. 9x	2.600	Rem.	24							46.0	2.920	44,300									
Sierra 165SPT		2.600		24							43.0	2.635	41,400									
<b>.300 H&amp;H Mag.</b> Hornady 150 Sp. Pt.		3.570		24							41.0	2.485	40,800									
Speer 165 Spitz		3.555		24										63.8	3.270	c.u.p. 52,300	75.0	3.275	c.u.p. 52,500			
Nosler 180 Part.	Fed. 210	3.535	Fed.	24										60.9	3.065	c.u.p. 52,300	72.7	3.150	c.u.p. 52,500			
Speer 180 Spitz		3.575		24										58.0	2.910	c.u.p. 52,300	70.3	3.040	c.u.p. 52,500	71.0	3.040	c.u.p. 52,100
Sierra 200 Spitz BT		3.590		24										56.7	2.850	c.u.p. 52,400	69.8	3.055	c.u.p. 52,500	71.5	3.070	c.u.p. 52,000
														55.0	2.725	c.u.p. 52,100	67.0	2.910	c.u.p. 52,100	69.0	2.935	c.u.p. 52,200

See Notes and Key on page 62.

continued



# CENTERFIRE RIFLE (contd.)

Cartridge/Bullet	Primer	Min. OAL, Inches	Case	Bbl Length	2400			Reloader 7			Reloader 12			Reloader 15			Reloader 19			Reloader 22		
					Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi
<b>.300 Win. Mag.</b> Hornady 150 Sp. Pl. Speer 165 Spitz Win. 180 F.S. Win. 180 F.S.	Win.	3.340		24							59.0	3.105	61.200	65.3	3.180	61.000	76.7	3.225	61.000	81.5	3.275	60.400
	8 1/2-120	3.340	Win.	24							62.0	2.935	60.600	62.6	2.980	60.100	74.6	3.070	61.000	79.4	3.135	60.800
	Win. W.L.R.	3.340	Win.	24													72.3	2.990	61.000	76.9	3.030	60.300
	Win.	3.340	Win.	24													72.3	2.850	55.700	76.0	2.870	54.500
<b>.300 Wby. Mag.</b> Hornady 150 Sp. Pl. Speer 165 Spitz Speer 180 Spitz Nosler 180 Part.	Win.	3.540		26													68.0	2.810	60.300	73.4	2.875	60.300
	8 1/2-120	3.540	Win.	26																		
	Win.	3.510	Win.	26																		
	Fed. 215	3.515	Win.	26																		
<b>.303 British</b> Hornady 123SP Speer 150 Spitz Speer 180RN	Win.	3.550		26																		
	8 1/2-120	3.550	Win.	26																		
	Win.	2.860	Win.	24																		
	Win.	2.935	Win.	24																		
<b>7.62 x 39</b> Speer 100 Pinker Sierra 110HP Hornady 123SP	Win.	2.940		24																		
	Win.	1.830		20																		
	CCI 200	2.055	Fed.	20																		
	Win.	2.155	Win.	20																		
<b>.308 Win.</b> Sierra 150JP Sierra 110HP Sierra 125 Spitz	Win.	2.000		20																		
	Win.	2.600		24																		
	Fed.	2.700	Fed.	24																		
	Win.	2.600	Win.	24																		
<b>8mm Mauser</b> Hornady 125SP Speer 150 Spitz Speer 170 Spitz	Win.	2.820		24																		
	Win.	2.975	Win.	24																		
	Win.	3.015	Win.	24																		
	Win.	3.015	Win.	24																		

continued

See Notes and Key on page 62.

CENTERFIRE RIFLE (contd.)																						
Cartridge/Bullet	Primer	Min. OAL, Inches	Case	Bbl Length	2400			Reloeder 7			Reloeder 12			Reloeder 15			Reloeder 19			Reloeder 22		
					Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi
8mm Rem. Mag. Speer 170S Spitz Speer 200 Spitz Hornady 220 Sp. Pt.	Rem. 9/M	3.500	Rem.	24																		
		3.325		24																		
		3.600		24																		
.348 Win. Rem. 150SP	Rem. 9/2	2.790	Rem.	24				48.0	2.750	c.u.p. 34.900												
Rem. 200SP		2.790		24				45.0	2.330	35.600												
.338 Win. Mag. Hornady 200 Sp. Pt.	Win.	3.340		24																		
Nosler 210 Spitz	8 1/2-120	3.330		24																		
Hornady 225 Sp. Pt.		3.325	Win.	24																		
Barnes 225X		3.335		24																		
Win. 230 F.S.	Win. W.L.R.	3.335		24																		
Hornady 250RN	Win. 8 1/2-120	3.330		24																		
.340 Wby. Mag. Hornady 200 Sp. Pt.		3.660		26																		
Nosler 210 Spitz	Fed. 215	3.595		26																		
Hornady 225 Sp. Pt.		3.645	Wby.	26																		
Hornady 250RN		3.665		26																		
.35 Rem. Rem. 150SPCL		2.485		24																		
Cast (GC) 158L	Win. 8 1/2-120	2.485	Win.	24				32.0	2.290	c.u.p. 30.700												
Rem. 200SPCL		2.485		24				28.0	2.200	c.u.p. 29.800												
.350 Rem. Mag. Rem. 150SPCL		2.485		24				31.0	2.115	c.u.p. 30.700												
Rem. 200SPCL		2.800		20				55.0	3.075	c.u.p. 47.500												
Rem. 250PSP	Rem. 9/M	2.800	Rem.	20				48.0	2.550	c.u.p. 48.500												
.358 Win. Rem. 200PSP	Win. 8 1/2-120	2.780		20				43.0	2.230	c.u.p. 49.300												
Win. 250ST		2.780	Win.	24				38.0	2.420	c.u.p. 46.100	50.0	2.455	c.u.p. 44.100									
.35 Whelen Hornady 200SP		2.780		24				34.5	2.075	c.u.p. 44.700												
Hornady 250RN	Rem. 9/M	3.125	Rem.	24				51.5	2.630	c.u.p. 50.300	60.0	2.590	c.u.p. 43.200	60.0	2.675	c.u.p. 44.800						
		3.225		24				47.6	2.330	c.u.p. 50.400	60.0	2.505	c.u.p. 49.700	59.5	2.550	c.u.p. 48.400						

See Notes and Key on page 62.

continued

See Notes and Key on page 62.



# CENTERFIRE RIFLE (contd.)

Cartridge/Bullet	Primer	Min. OAL, Inches	Case	Bbl Length	2400			Relo 7			Relo 12			Relo 15			Relo 19			Relo 22		
					Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi	Chg	Wt	psi
.375 Win. Hornady 220FP	Win. 8 1/2-120	2.555	Win.	24	23.5	1.900	c.u.p. 44,000	36.0	2.260	c.u.p. 45,500	75.0	2.835	c.u.p. 49,500	77.0	2.980	c.u.p. 50,000	79.0	2.540	c.u.p. 49,600	115.0	3.050	c.u.p. 47,200
.375 H&H Mag. Hornady 220FP	Rem. 9 1/2-120	3.360	Rem.	24							73.5	2.540	c.u.p. 49,700	73.4	2.685	c.u.p. 49,500						
.375 H&H Mag. Hornady 270SP	Rem. 9 1/2-120	3.545	Rem.	24										66.5	2.455	c.u.p. 49,600						
.375 H&H Mag. Hornady 300MC	Rem. 9 1/2-120	3.550	Rem.	24										90.5	2.940	c.u.p. 53,300	110.8	3.110	c.u.p. 53,100	114.0	2.965	c.u.p. 51,600
.378 Wby. Mag. Hornady 270SP	Fed. 215	3.620	Wby.	26																		
Barnes 300 Solid		3.625		26																		
.3855 Win. NW 255SP	CCI 200	2.530	IVI	24	18.0	1.410	c.u.p. 23,500	26.5	1.725	c.u.p. 26,000												
.38/40 Win. 150 Sierra JHP	Rem. 2 1/2	1.585	Rem.	24	14.1	1.425	c.u.p. 13,100	25.8	1.745	c.u.p. 13,500												
180 Sierra JHP		1.585		24	13.9	1.305	c.u.p. 13,400	24.0	1.610	c.u.p. 13,400												
200 Hornady FMJFP		1.585		24	12.7	1.225	c.u.p. 13,500															
.416 Rem. Mag. Barnes 300X		3.600		24							90.0	2.790	c.u.p. 52,100	90.5	2.890	c.u.p. 52,400	83.0	2.140	c.u.p. 35,600	103.0	2.590	c.u.p. 40,000
Barnes 350X		3.600		24							85.0	2.525	c.u.p. 52,400	85.0	2.610	c.u.p. 52,400	82.0	2.130	c.u.p. 35,600	101.0	2.455	c.u.p. 40,300
Hornady 400RN	Rem. 9 1/2-120	3.565	Rem.	24							82.0	2.390	c.u.p. 52,000	82.0	2.445	c.u.p. 51,700				96.0	2.355	c.u.p. 39,600
A Square 400 Solid		3.600		24							81.0	2.410	c.u.p. 52,400	81.0	2.455	c.u.p. 50,900				96.0	2.360	c.u.p. 40,300
.416 Rigby Barnes 300X		3.650		24																		
Barnes 350X	Fed. 215	3.675	Fed.	24																		
Hornady 400RN		3.725		24																		
A Square 400 Solid		3.725		24																		
.416 Wby. Mag. Barnes 325X		3.650		26																		
Barnes 350X		3.650		26																		
Hornady 400SP	Fed. 215	3.615	Wby.	26																		
A Square 400 Solid		3.680		26																		
.44/40 Win. Rem. 200SP	Rem. 2 1/2	1.590	Rem.	24	14.5	1.230	c.u.p. 12,500	23.5	1.290	c.u.p. 12,100												
Cast 240L		1.580		24	12.0	1.130	c.u.p. 12,500															

continued

See Notes and Key on page 62.

# CENTERFIRE RIFLE (contd.)

Cartridge/Bullet	Primer	Min. OAL., Inches	Case	Bbl Length	2400			Reloder 7			Reloder 12			Reloder 15			Reloder 19			Reloder 22		
					Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi	Chg Wt	fps	psi
.444 Marlin Speer 240SP Cast (GC) 2401 Hornady 265FP	Rem. 9/8	2.500		24	25.0	1,730	c.u.p. 21,900	51.0	2,400	38,100												
		2.500	Rem.	24	22.0	1,725	c.u.p. 27,900	42.5	2,080	28,900												
		2.500		24	25.0	1,715	c.u.p. 22,100	47.0	2,215	35,800												
.45/70 Gov't Hornady 300HP Cast (GC) 385L Speer 400FN	Rem. 9/8	2.475		24	30.0	1,650	c.u.p. 23,000	50.0	2,075	24,700												
		2.575	Rem.	24	25.0	1,340	c.u.p. 21,300	45.0	1,810	25,100												
		2.700		24	25.0	1,280	c.u.p. 24,000	40.0	1,580	24,900												
.458 Win. Mag. Hornady 300HP Cast (GC) 385L Hornady 500FMJ	Win. 8 1/2-120	2.950		24	35.0	1,590	c.u.p. 13,500	70.0	2,555	41,400												
		3.000	Win.	24	30.0	1,290	c.u.p. 14,200	65.0	2,285	42,100												
		3.280		24	35.0	1,415	c.u.p. 32,600	64.0	2,000	47,000												

## NOTES:

1. Do not intermix cases of different manufacture, nor bullets, nor primers.
2. Be sure that each case is crackfree and completely empty.
3. Unless specifically recommended, use standard primers. Magnum primers are neither needed nor recommended for most calibers.
4. Do not exceed the powder weight shown, and guard against accidental multiple charges of powder.
5. Start with 10% less powder than shown. Work up gradually, watching for signs of high pressure.
6. Be sure that every completed cartridge is not shorter than the length listed.
7. Watch for signs of case head separation.

Notes and Key pertain to Silhouette and Centerfire rifle tables.

## Key

BR = Bench Rest  
 BMC = Full Metal Case  
 FMJ = Full Metal Jacket  
 FN = Flat Nose  
 FS = Flat Point  
 GC = Gas Check  
 HB = Hollow Base  
 HC = Hollow Cavity  
 HP = Hollow Point  
 J = Jacketed  
 L = Lead

M = Match  
 psi = Chamber pressure,  
 piezo system  
 RN = Rotted Soft Point  
 SB = Round Nose  
 SJ = Solid Base  
 SP = Semijacketed  
 Sp. Pl = Spire Point  
 WC = Wad Cutter  
 Wt = weight  
 Bbl = barrel

in. = inches  
 gr. = grains  
 Vel. = velocity  
 fps = feet per second  
 c.w. = powder charge weight  
 c.u.p. = chamber pressure,  
 minimum overall  
 length, measured  
 from base to  
 tip of bullet

Min. OAL = minimum overall length, measured from base to tip of bullet



## Pistol and Revolver Cartridges Special Reloading Precautions

Most pistols and revolvers function best when loaded with a quick-burning powder such as Bullseye. **Since peak pressure is reached very quickly, the SEATING DEPTH of the bullet is very important: the deeper the bullet, the higher the pressure. If the bullet is seated too deeply, dangerous pressures will be generated, which could burst the gun and cause severe personal injury (including death).**

**Equally critical is the powder charge. Guard AGAINST multiple charges when reloading.** Certain cartridges (notably .38 Special) have been reloaded accidentally with double and even triple charges, with catastrophic results when fired in the gun.

- A. Prevent deeply seated bullets.**
  - 1. Your assembled cartridges must be as long as, or longer than, the minimum length listed for the combination you are reloading.
  - 2. Set your bullet station accordingly and lock tool securely.
  - 3. Keep bullet station clean of accumulating lead and grease.
  - 4. Inspect all loaded rounds for overall length.
  - 5. Be sure every bullet is held tightly by shell mouth, especially pistol loads (recoil drives magazine against bullet noses of contained cartridges).
- B. Prevent multiple charges.**
  - 1. **Handloading:** Keep track of every powder charge, then look inside all shells and compare powder levels.
  - 2. **Progressive reloading:** Be sure every shell is truly empty; don't back up the turret; don't jiggle the handle; don't use a shell to clean out the powder train (use a paper cup or equivalent).
- C. Inspection.**
  - 1. Discard cases with split mouths.
  - 2. Discard cases with enlarged primer pockets.
  - 3. Do not use cases that are designed for primer-propelled practice cartridges; such cases may not be designed for full power loads.

## Physical Effect of Gun Recoil (Kick)

The rearward motion of every gun, its recoil, increases when heavier shot or heavier bullets are fired, and when higher velocity loads are fired. This motion must be opposed by the shoulder, or the pistol hand, of the shooter. Whenever the recoil is perceptibly annoying to the shooter, accuracy on succeeding firings undoubtedly diminishes.

When the shooting condition *demands* heavy loads and high velocity, recoil kick can be reduced by using a heavier gun, and by spreading the force over a larger area of the anatomy, such as by using a wider stock, larger grip, plus shoulder pad or softer grip. Excellent publications available to the reloader, plus his or her own growing sophistication, have generated a wholesome trend away from maximum loads and toward accuracy of loads no more powerful than needed to accomplish the particular shot. Reducing recoil increases accuracy.

Contributing to increased accuracy as well as the pleasantness of shooting is in two main areas:

- 1. This *Reloaders' Guide* includes many reduced loads.
- 2. Our research indicates that the burning rate of powders has a modest effect on recoil. For example, whenever two or more powders are listed for the same load, the slower one usually is chosen by the expert shooter as giving milder felt recoil. An intriguing aspect of reloading at home is the freedom to assemble, for example, trap loads with Red Dot or Green Dot powder, then to shoot them alternately to decide which seems more comfortable.

## Handloading Precautions

1. **Understand what you are doing and why.** Read handbooks and manuals on reloading. Talk to experienced reloaders. Write or call suppliers of components if you have questions or are in doubt.
2. Stay **alert** when reloading. **Do not reload when distracted.**
3. Establish a loading procedure and follow it. **Do not vary your sequence of operations.**
4. **Examine empty cases** (shotshell or metallic) to be sure they are in good condition before reloading. Never force live cartridges into or out of the chamber of a gun.
5. **Do not use cases that are designed for primer-propelled practice cartridges;** such cases may not be designed for full power loads.
6. **Do not ream out or enlarge flash holes of metallic cartridge cases.** This may change the ignition rate and result in dangerous pressures.
7. **Do not punch out live primers.** Fire the empty primed shells in a gun.
8. **Do not mix primers.** Primers differ in brisance of ignition, which affects pressure and velocity. Use only the primer listed.
9. **The shotshell loading data in the *Reloaders' Guide* are for LEAD SHOT only. Do not use steel shot.**
10. One-piece plastic wads for shotshells vary in compressibility and gas-sealing effectiveness. Use only the wad listed.
11. If you "throw," or measure powder charges by volume, check-weigh the charge frequently. **Do not mix powders.**
12. **Do not use powders near a flame, spark-producing machinery, or heating device.** Do not expose powders to temperatures above 100°F.
13. Keep out of reach of children.
14. **Do not smoke while reloading.**

## CRUSHER/PIEZO PRESSURE TABULATION

The following table lists the maximum average pressures, measured by the crusher system (c.u.p.) or piezo system (psi), utilized for the centerfire rifle recommendations in this brochure. The values listed in the "C.U.P." and "PSI" columns are approximately the same pressure. The difference is due to the measuring system used and does not indicate that a pressure change has occurred.

CARTRIDGE	C.U.P.	PSI
.22-250 Remington	53,000	62,000
.222 Remington	46,000	50,000
.223 Remington	52,000	55,000
6mm Remington	52,000	65,000
.243 Winchester	52,000	60,000
.25-06 Remington	53,000	63,000
.257 Roberts	45,000	54,000
.257 Roberts + P	50,000	58,000
.270 Winchester	52,000	65,000
7mm-08 Remington	52,000	57,500
7-30 Waters	40,000	45,000
7 x 57 Mauser	46,000	51,000
7mm Remington Magnum	52,000	61,000
.280 Remington	50,000	60,000
.30 Carbine	40,000	
.30-06 Springfield	50,000	60,000
.30-30 Winchester	38,000	42,000
.300 Savage	46,000	
.300 Winchester Magnum	54,000	64,000
.303 British	45,000	49,000
.308 Winchester	52,000	60,000
8mm Mauser	37,000	
8mm Remington Magnum	54,000	65,000
.338 Winchester Magnum	54,000	64,000
.35 Remington	35,000	
.45-70 Government	28,000	





POWER PISTOL™						
Cartridge/Bullet	Primer	Minimum OAL, inches	Barrel Length, inches	Maximum Charge <sup>(1)</sup>	Velocity (fps)	Pressure (psi)
<b>9mm Luger</b> Speer 95 FMJ Speer 115 FMJ Sierra 125 FMJ Hornady 147 XTP	Win. SP (1½-108)	1.055 1.120 1.150 1.140	4.0 4.0 4.0 4.0	7.8 gr. 6.7 gr. 6.6 gr. 5.7 gr.	1,445 1,280 1,235 1,095	32,900 33,500 34,000 34,000
<b>9 x 18mm Makarov</b> Sierra 95 JHP Sierra 100 FPJ 100 LRN	Win. SP (1½-108)	0.965 0.965 0.965	4.0 4.0 4.0	4.7 gr. 4.7 gr. 4.2 gr.	1,010 995 950	21,600 21,400 21,600
<b>.357 Magnum</b> Hornady 110 JHP Speer 125 JSP Speer 158 JSP Sierra 170 FMJ Sierra 180 FPT	Fed. 200	1.565 1.570 1.574 1.585 1.580	5.6 5.6 5.6 5.6 5.6	9.7 gr. 9.2 gr. 8.0 gr. 8.0 gr. 7.0 gr.	1,690 1,555 1,305 1,195 1,145	34,000 33,500 33,800 33,300 33,800
<b>.38 Super Auto +P</b> Hornady 115 JHP Speer 130 FMJ Hornady 147 XTP	Rem. SP 1½	1.255 1.260 1.275	5.0 5.0 5.0	7.3 gr. 6.8 gr. 6.2 gr.	1,345 1,255 1,155	34,400 34,600 34,900
<b>.38 Special +P</b> Hornady 110 JHP Speer 125 JSP Speer 160 JSP	Fed. 100	1.430 1.445 1.435	5.6 5.6 5.6	6.5 gr. 6.3 gr. 4.9 gr.	1,200 1,165 880	17,100 17,200 17,300
<b>.380 Auto</b> Hornady 90 XTP Speer 95 FMJ Hornady 100 FMJ	Win. SP (1½-108)	0.960 0.975 0.980	3.7 3.7 3.7	4.8 gr. 4.7 gr. 4.6 gr.	1,105 1,065 1,035	21,500 21,000 20,600
<b>.40 Smith &amp; Wesson</b> Nosler 135 JHP Sierra 150 JHP Hornady 170 JHP Sierra 180 JHP Sierra 190 JHP Hornady 200 FMJ	Win. SP (1½-108)	1.090 1.105 1.120 1.125 1.130 1.130	4.0 4.0 4.0 4.0 4.0 4.0	9.3 gr. 8.2 gr. 7.3 gr. 6.9 gr. 6.9 gr. 6.3 gr.	1,340 1,215 1,105 1,050 1,020 960	34,000 33,300 33,300 33,700 33,100 33,700
<b>.44 Magnum</b> Hornady 300 HP/XTP	Fed. 150	1.535	5.7	9.1 gr.	1,015	34,500
<b>.45 ACP</b> Speer 185 JHP Speer 200 JHP Speer 230 FMC Sierra 240 JHC	Fed. 150	1.190 1.190 1.190 1.190	5.0 5.0 5.0 5.0	8.6 gr. 7.4 gr. 7.2 gr. 6.5 gr.	1,025 965 895 835	18,800 19,900 20,000 19,900
<b>.45 ACP +P</b> Speer 185 JHP Speer 200 JHP Speer 230 FMC Sierra 240 JHC	Fed. 150	1.190 1.190 1.190 1.190	5.0 5.0 5.0 5.0	9.1 gr. 8.2 gr. 7.5 gr. 7.1 gr.	1,075 1,030 930 890	21,700 22,200 22,000 22,200

(1) Start with 10% less powder than shown. Work up gradually, watching for signs of high pressure.  
See Notes and Key on page 52.  
See Special Reloading Precautions on page 63.

NOTES:



## SOME PUBLICATIONS ON RELOADING

These and other good literature pertinent to reloading usually are stocked at local gun and ammunition retail stores.

<u>Title</u>	<u>Publisher</u>
• <i>Basic Rules for Reloading Safety</i>	National Reloading Manufacturers Association 4905 S. W. Griffith Drive, Beaverton, OR 97005
• <i>Handloading</i>	NRA Bookservice, 1600 Rhode Island Ave., N.W., Washington, DC 20036
• <i>Speer Reloading Manual</i>	Blount Industries, Box 856, Lewiston, ID 83501
• <i>RCBS Reloading Guide</i>	RCBS, Box 1919, Oroville, CA 95965
• <i>Tips on Better Reloading</i>	Remington Arms, Bridgeport, CT 06602
• <i>Hornady Handbook of Cartridge Reloading</i>	Hornady Mfg. Co., Box 1848, Grand Island, NB 68801
• <i>Sierra Bullets Reloading Manual</i>	Sierra, 10532 Painter Ave., Santa Fe Springs, CA 90670
• <i>Lyman Cast Bullet Handbook</i>	Lyman Products, Middlefield, CT 06455
• <i>Lyman Shotshell Handbook</i>	
• <i>Lyman Pistol and Revolver Handbook</i>	
• <i>Nosler Reloading Manual</i>	Nosler Bullets, Inc., P.O. Box 671, Bend, OR 97709
• <i>Reloading with MEC</i>	MEC, Box 267, Mayville, WI 53050
• <i>Hornady Reloading Tools and Accessories</i>	Hornady Mfg. Co., Box 1848, Grand Island, NB 68801
• <i>Ponsness-Warren Catalog</i>	Ponsness-Warren, Box 8, Rathdrum, ID 83858
• <i>Handloader's Digest</i>	DBI Books, 540 Frontage Rd., Northfield, IL 60093
• <i>ABC's of Reloading</i>	
• <i>The Handbook of Shotshell Reloading</i>	SKR Industries, Inc., P.O. Box 1382, San Angelo, TX 76902

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