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IMPORTANT INFORMATION:

To select the appropriate load depends on the Velocity that will be required. Although there are general guidelines what velocity will suit a particular application such as Cowboy action, Trap, Skeet or Hunting High energy etc, the load will ultimately depend on the individual shooter. These loads must be seen as a guideline only. Due to a myriad of variables, which is outside the control of AAC ballistic lab these loads cannot to be exact for the conditions of the individual reloader. Please see pages 46, 47 for a more detail discussion addressing the important aspects/parameters of shotshell reloading.

INFORMATION ON SHOTSHELL LOADING

Recoil:

This is certainly the most discussed aspect of the shotgun shooting sport, and this is understandably so, because it determines the “comfort” of shooting hundreds of rounds in quick succession. (See section below on “Perceived recoil” and ergonomics). Because it’s such a subjective issue/subject, the conclusions and recommendations are most of the time unfortunately shrouded in confusion, and corrupted by improper comparisons.

First of all we need to emphasize and acknowledge the following important facts:

- First, there is true recoil energy in measured Ft/lbs of the gun itself, and once the shooter becomes part of the equation, the very subjective issue of “Perceived” or “Felt” recoil.

True Recoil:

- Normal physics still do apply, and in this case Newton’s Third law: For every action there is an equal and opposite reaction. **Formula: Mass of bullet + Mass of powder × Velocity (projectile) = Mass-gun × Velocity-gun.**
- If different groups of ammunition, with the **same shot mass are delivering the same velocity** in a particular shotgun, the recoil **WILL** be the same.

“Perceived” or Felt” Recoil:

Ergonomics

- Because the shooter forms a part of the “launching platform,” this reaction of the total platform will be as diverse as there are shooters.
- One must see the ammunition, gun and shooter as a three part “system” (Combination) forming this “launching platform.” The way these three parts interact and interface, will determine “**how**” the recoil takes place, and how the shooter will “**perceive**” or “**feel**” “**experience**” the recoil. (Notice the emotional aspects.)
- Since the body is the heaviest part of the total recoiling mass, which anchors the system to the ground, it has the most inertial resistance. Since the body is soft, that part of the body interfacing directly with the shotgun, will absorb the energy long before the body starts moving (displacing). Thus the maximum absorption takes place in the few inches of muscle and tissue directly behind the butt.
- That’s why sometimes small and minute differences in *gun design*, hold/stance and balance will lessen the effects of recoil, and this will eventually directly determine the level of *bruising/punishment*, and as such the *endurance of the shooter*. This *endurance-threshold will directly impact the shooters abilities to remain focused and accurate.*
- This “endurance-threshold” is different for each shooter, and are determined by various aspects of the individual’s body structure re muscle, developed muscle (training), body weight and length (Tall = usually flexible, absorb energy better, softer feel, or short stocky = rigid hard recoil. The psychological make-up/preparedness (training) must also be considered.
- Apart from the above aspects, every person has a natural pain-threshold (nerves), and some will be able to endure more than others, before it will start affecting their shooting discipline and results.

Ammunition:

- As can be seen from the formula pressure is not part of the equation. Therefore the “peak”-value published in load guides does not really mean anything. However, Ammunition can be assembled (combination) to deliver similar velocities = true recoil, with a pressure impulse which can be slightly altered, having the same total impulse, but over a slightly longer time base. These changes can then be perceived as being “softer.” However, we must again stress the fact that the comparison must always be fair and clinical (apples with apples) re velocity. A proper average can really only be determined over a 10 and 20 round test, fired at different time’s, and days, to include day to day variation etc.
- This can be achieved by altering any one of the components in the above ammunition “subsystem,” which comprises of the primer, case/hull, wad, powder/burn-rate and the weight of the shot.
- This effect is the result of the combination and never one of the components only. This can only be properly done by thorough experimentation with different primer/s, cases, crimp/assembly methodology (see section below), wad design/s /make, wad tension (assembly), and the weight the shot.

Important Things to Remember and Do to Discern the Difference Between Rounds/Loads What Loads Are Softer and the Importance of Measuring the Velocity

- Do not assume the velocity for *your conditions is the same as the published data*, even if you are duplicating the exact same combination re components i.e. the case/hull, powder type, powder charge, shot weight etc as recommended by any load guide.
- This real difference can only be determined by actually measuring the velocity, for the conditions, components and weapon system as used by the reloader/shooter.
- When loads are compared and the level of “perceived-recoil” has been determined for a particular shooter, have the velocity measured to confirm that the softer load are actually not merely a slower velocity. Since the formula for Kinetic Energy is half the mass × velocity squared, the shooter will detect a difference in recoil within a few feet per second. Especially the seasoned professional shooters that have developed an above average sensitivity and ability to sense variations between “loads.”

BACKGROUND AND BASIC FUNDAMENTALS

- The fundamental difference between a shotshell cartridge and a typical centre fire rifle cartridge is, that the efficiency of the shotshell cartridge is 100% dependant on the round itself. By this we mean that all the “resistive forces” must be generated within the confines of the round itself. No assistance is provided by the gun.
- The reason for this is that the Maximum Peak Pressure is reached *long before* the base of the shot/wad assembly has left the case. (In the case of a CF rifle cartridge, the peak pressure is achieved when the bullet is engraved, therefore the large contribution, as a result of leade/free-bore dimensions on the combustion process. (i.e. bullet/bore interface fit, bullet hardness, bearing surface etc).
- The reason for this is that the critical *engraving force* which is so important to the dynamic combustion process present in a CF rifle caliber is *totally absent in a shotgun*.
- Shotgun and typical straight-case handgun calibers are actually basically the same in their fundamental ratios and dynamics. A shotgun can be described as an oversize low-pressure handgun caliber. That’s why the same powders are used in shotgun and handgun calibers.
- This means that the efficiency re ignition and the subsequent increase in pressure, is totally controlled by the integral configuration and assembly of the round itself. These constitute the main inertial mass (shot mass), the initial internal volume (wad design), the dynamic collapse (primary expansion) of the internal volume (collapsible section of the wad), plus the displacing of the internal assembly and the unfolding of the fold/crimp (secondary/Final expansion).
- The way this COMBINATION interacts, will determine the efficiency Pressure impulse (Profile and time-base) and the Peak-pressure vs Velocity ratio (P/V). The resistive force, presented by friction in a shotgun is negligible.

Crimping: (Assembly)

- This is certainly one of the most important aspects of the Shotshell reloading process.
- The influence of crimp on the ballistics is often ignored, and assumed to be of lesser importance than primers and wad make/design.
- The fact is that the effect of Crimp-strength can totally *overshadow the influence of the other components and parameters*. This is controlled by the following:
 - Crimp depth: Depth setting on crimping machine.
 - Condition of the case: Material hardness resilience.
 - Wad: Length, Stiffness and rigidity/flexibility of collapsible section.
 - Wad Tension: Pre-tension/compression setting on crimping machine.
- Some reloader’s want to extend case life and they tend to crimp as shallow as possible, and with the least crimp strength possible. However, this practice can be problematic if the improper combination of primer, case, wad and powder is used. Example: If a “soft” combination is used, it can lead to underperformance, or in extreme cases, bloopers. It is always wise to use a strong a crimp as possible, for any particular load/combination.

Primers:

- It is well known that different primers deliver different energy levels. The way each company manufacturers and formulates the chemical composition, and configures the hardware (metallic) parts of the primer, all plays a major role in how the primer will deliver the energy to the powder.
- Again, we must emphasize that it’s all about the particular *combination, and whether a change in primer* will show a difference in ballistics.
- Shotgun primers are very sensitive to firing pin energy. This is due to the proportionally large displacement/ deformation that must take place when the primer’s cup is crushed.
- It is extremely difficult to pin the data down to a standard one load, where primer X will always deliver higher performances than Primer Z. AAC developed our loads using a standard typical primer. If all conditions are the same, the difference between primers will rarely be dangerous. It is obvious that if the load one is using, are already running at the maximum level with primer X, it would be unwise to merely change the primer and continue loading. This is also true for *any change in component or procedure*.
- *Once any component or procedure is changed, the combination will react differently*. The proper way to proceed is to reduce the load by about 0.5 grain to 0.7 grains, and then confirm the performance by measuring the velocity or sensing the recoil/flight time. The reloader can then adjust back to the same velocity/recoil level, by increasing or decreasing the charge mass, or by adjusting to a stiffer softer wad or decreasing or increasing the crimp.

Volumetric Loading/Dispensing:

- Always confirm the “thrown weight” from any bushing, bar etc on a scale.
- There are just too many variables that can influence volumetric measuring, of powder.
- These are:
 - The *physical action with which the loading machine is operated*.
 - The *atmospheric conditions* especially *Relative Humidity (RH)*. This is especially true of single base powders which are very hygroscopic. AAC powders S1000 and S1250 are single base powders; N100 is a double base powder.

NOTE: VERIFY POWDER CHARGE WITH A SCALE
PRIOR TO LOADING

Load Bushing Data

BUSHING

Hornady 366/APEX Presses					MEC Single Stage Presses				
Desired Grains	SOLO 1000 Bushing	SOLO 1250 Bushing	2 Improved Bushing	Nitro 100 Bushing	Bushing	SOLO 1000 Grains	SOLO 1250 Grains	2 Improved Grains	Nitro 100 Grains
13.0		354		366					
13.5		360		372	20		13.9	17.0	
14.0	387	369		375	21		14.2	18.0	
14.5	393	378		381	22		14.7	18.7	
15.0	399	384		387	23		15.0	19.4	
15.5	408	390		393	24		15.6	20.2	
16.0	411	396		399	25		16.1	20.5	15.5
16.5	417	402	351	405	26	16.0	17.0	21.6	16.3
17.0	420	408	357	411	27	16.3	17.9	22.6	17.0
17.5	429	414	363	417	28	17.3	18.4	23.5	17.5
18.0	432	420	366	423	29	18.0	19.4		18.3
18.5	435	426	372	429	30	18.8	19.9		19.1
19.0	438	429	378	435	31	19.2	20.5		19.7
19.5	441	435	384	441	32	20.8	21.2		20.3
20.0	447	441	387	447	33	21.4	22.3		20.8
20.5	453	447	393	453	34	22.0	23.1		21.5
21.0	459	453	396	456	35	22.8	23.7		22.3
21.5	468	456	402	457	36	23.3	24.6		23.0
22.0	474	459	408	465	37	23.8	25.2		23.9
22.5	480	465	411		38	24.5	26.4		
23.0		471	417		38A	25.3	26.7		
23.5		477	420		39	26.3	28.3		
24.0		480			39A		29.1		
24.5		486			40		29.6		
25.0		492			40A		30.2		
25.5		495			41		31.9		
26.0		501			41A		32.4		
26.5		502			42		33.6		
27.0		510			42A		34.4		
27.5		513			43		35.5		
28.0		516							
28.5		522							
29.0		525							
29.5		531							
30.0		537							
30.5		—							
31.0		543							
31.5		549							
32.0		555							
33.0		558							
					BUSHING	4100			
					11	13.5			

Ponsness-Warren Presses					MEC Progressive Presses				
Bushing Letter	SOLO 1000 Grains	SOLO 1250 Grains	2 Improved Grains	Nitro 100 Grains	Bushing Number	SOLO 1000 Grains	SOLO 1250 Grains	2 Improved Grains	Nitro 100 Grains
D1		12.0		10.7	20		13.5	17.0	
E		13.7	17.0	11.9	21		13.9	18.0	
E1		14.0	18.4	12.5	22		14.4	18.7	
E2		14.5	19.0	13.1	23		14.8	19.4	
F	14.3	15.5	20.2	13.9	24		15.5	20.2	
F1	14.5	15.7	20.5	14.1	25	14.2	16.0	20.5	14.5
G	15.9	17.5	22.7	15.6	26	14.5	16.8	21.6	15.2
G1	16.4	17.7	23.0	15.9	27	15.5	17.5	22.6	15.7
H	17.5	19.0	24.5	16.7	28	16.2	18.0	23.5	16.5
I	18.5	19.5		17.2	29	17.0	18.9		17.3
J	19.7	20.3		17.9	30	17.4	19.6		17.9
J1	20.4	20.8		18.7	31	19.0	20.1		18.5
K	20.7	21.4		19.1	32	19.6	21.0		19.0
L	21.4	22.5		20.2	33	20.2	22.0		19.7
L	21.4	22.5		20.2	34	21.0	22.6		20.5
M	22.1	23.5		20.3	35	21.5	23.2		21.2
N	23.5	25.0		22.5	36	22.0	24.3		22.1
O	24.0	25.5		23.0	37	22.7	25.0		
P	24.6	26.0		23.7	38	23.5	26.0		
Q		26.3		24.0	38A	24.5	26.5		
R		28.0			39		28.0		
S		28.3			39A		28.9		
T		30.0			40		29.5		
U		32.0			40A		30.1		
V		32.5			41		31.3		
					41A		32.0		
					42		33.0		
					42A		34.0		
					43		35.0		

NOTE: VERIFY POWDER CHARGE WITH A SCALE
PRIOR TO LOADING

Load Bushing Data

LEE AUTO-DISK CAVITIES												
Powder	0.30	0.32	0.34	0.37	0.40	0.43	0.46	0.49	0.53	0.57	0.61	0.66
N100	2.2	2.4	2.5	2.7	3.0	3.2	3.4	3.6	3.9	4.2	4.5	4.9
S1000	2.3	2.4	2.6	2.8	3.0	3.2	3.5	3.7	4.0	4.3	4.6	5.0
S1250	2.2	2.4	2.5	2.7	3.0	3.2	3.4	3.6	3.9	4.2	4.5	4.9
No. 2	2.9	3.0	3.3	3.5	3.8	4.1	4.4	4.6	5.0	5.4	5.8	6.3
No. 5	4.8	5.1	5.5	5.9	6.4	6.9	7.4	7.9	8.5	9.2	9.8	10.6
No. 7	4.6	4.9	5.2	5.7	6.1	6.6	7.0	7.5	8.1	8.7	9.3	10.1
No. 9	4.6	4.9	5.2	5.6	6.1	6.5	7.0	7.5	8.1	8.7	9.3	10.1
4100	4.6	4.9	5.2	5.6	6.1	6.5	7.0	7.5	8.1	8.7	9.3	10.1
1680	4.6	4.9	5.2	5.6	6.1	6.6	7.0	7.5	8.1	8.7	9.3	10.1
5744	4.0	4.2	4.5	4.9	5.3	5.7	6.1	6.5	7.0	7.5	8.1	8.7
2015	4.1	4.4	4.7	5.1	5.5	5.9	6.3	6.7	7.3	7.8	8.4	9.0
2230	4.6	4.9	5.2	5.6	6.1	6.5	7.0	7.5	8.1	8.7	9.3	10.0
2460	4.6	4.9	5.2	5.6	6.1	6.6	7.0	7.5	8.1	8.7	9.3	10.1
2520	4.4	4.7	5.0	5.4	5.9	6.3	6.7	7.2	7.8	8.4	8.9	9.7
2700	4.4	4.7	5.0	5.4	5.8	6.3	6.7	7.2	7.7	8.3	8.9	9.6
4350	4.1	4.3	4.6	5.0	5.4	5.8	6.2	6.6	7.2	7.7	8.2	8.9
3100	4.0	4.3	4.5	4.9	5.3	5.7	6.1	6.5	7.1	7.6	8.2	8.8
Magpro	4.5	4.8	5.0	5.5	5.9	6.4	6.8	7.2	7.8	8.4	9.0	9.7
8700	4.4	4.7	4.9	5.4	5.8	6.3	6.7	7.1	7.7	8.3	8.9	9.6

LEE AUTO-DISK CAVITIES—Cont'd.												
Powder	0.71	0.76	0.82	0.88	0.95	1.02	1.09	1.18	1.26	1.36	1.46	1.57
N100	5.3	5.6	6.1	6.5	7.0	7.6	8.1	8.7	9.3	10.1	10.8	11.6
S1000	5.3	5.7	6.2	6.6	7.1	7.7	8.2	8.9	9.5	10.2	11.0	11.8
S1250	5.3	5.6	6.1	6.5	7.0	7.6	8.1	8.7	9.3	10.1	10.8	11.6
No. 2	6.8	7.3	7.8	8.4	9.0	9.8	10.4	11.3	12.0	13.0	13.9	15.0
No. 5	11.4	12.2	13.2	14.1	15.3	16.4	17.5	18.9	20.2	21.8	23.4	25.2
No. 7	10.9	11.6	12.6	13.5	14.5	15.6	16.7	18.1	19.3	20.8	22.4	24.0
No. 9	10.8	11.6	12.5	13.4	14.5	15.5	16.6	18.0	19.2	20.7	22.2	23.9
4100	10.8	11.6	12.5	13.4	14.5	15.5	16.6	18.0	19.2	20.7	22.2	23.9
1680	10.8	11.6	12.5	13.4	14.5	15.6	16.6	18.0	19.2	20.8	22.3	24.0
2015	9.7	10.4	11.2	12.1	13.0	14.0	14.9	16.2	17.3	18.6	20.0	21.5
2230	10.8	11.6	12.5	13.4	14.5	15.5	16.6	18.0	19.2	20.7	22.2	23.9
2460	10.8	11.6	12.5	13.4	14.5	15.5	16.6	18.0	19.2	20.7	22.2	23.9
2495	9.5	10.2	11.0	11.8	12.7	13.6	14.6	15.8	16.8	18.2	19.5	21.0
2520	10.4	11.1	12.0	12.9	13.9	14.9	16.0	17.3	18.5	19.9	21.4	23.0
2700	10.4	11.1	12.0	12.9	13.9	14.9	15.9	17.2	18.4	19.9	21.3	22.9
4350	9.6	10.3	11.1	11.9	12.8	13.8	14.7	16.0	17.0	18.4	19.7	21.2
3100	9.5	10.2	11.0	11.8	12.7	13.6	14.6	15.8	16.8	18.2	19.5	21.0
Magpro	10.4	11.2	12.0	12.9	13.9	14.9	15.9	17.3	18.4	19.9	21.2	22.9
8700	10.3	11.1	11.9	12.8	13.8	14.8	15.8	17.2	18.3	19.8	21.2	22.8

LEE DIPPERS															
Powder	0.30	0.50	0.70	1.00	1.30	1.60	1.90	2.20	2.50	2.80	3.10	3.40	3.70	4.00	4.30
N100	2.2	3.6	5.3	7.5	9.8	11.9	14.2	16.9	18.9	21.3	23.9	26.4	28.6	30.6	32.5
S1000	1.9	3.4	4.9	7.2	9.2	11.5	13.7	16.2	18.1	20.1	22.8	24.5	27.0	28.9	31.1
S1250	2.1	3.6	5.1	7.5	9.8	12.0	14.3	16.8	18.8	21.2	23.8	26.0	28.4	30.3	32.3
No. 2	2.9	4.9	6.9	10.0	12.9	16.0	18.9	22.3	25.0	28.0	31.4	34.1	37.2	40.1	42.3
No. 5	4.2	7.0	10.2	14.7	19.1	23.5	28.1	32.8	36.9	41.3	46.2	50.0	55.0	58.9	63.0
No. 7	4.4	7.3	10.5	14.9	19.8	24.2	28.7	33.6	38.0	42.2	47.4	51.5	56.3	60.4	64.4
No. 9	4.3	7.3	10.4	14.9	19.4	23.8	28.3	33.1	37.2	41.3	46.3	50.2	55.4	59.1	63.4
4100	4.1	7.1	10.2	14.4	18.6	23.1	27.3	31.6	36.0	39.8	44.3	48.0	52.9	56.9	60.4
1680	4.4	7.2	10.5	14.9	19.5	24.3	28.6	33.3	37.5	42.1	47.3	51.5	56.1	60.1	64.3
5744	3.7	6.4	9.0	13.2	17.5	21.4	25.3	29.8	33.3	37.6	42.1	45.6	50.0	53.4	57.2
2015	3.8	6.3	9.1	13.2	17.2	21.2	25.2	29.3	33.1	37.0	41.2	45.2	49.4	53.1	56.9
2230	4.4	7.2	10.4	14.8	19.4	23.9	28.2	33.5	37.2	41.4	46.3	50.8	55.9	59.7	63.8
2460	4.3	7.1	10.1	14.5	18.9	23.4	28.0	32.6	36.8	41.5	45.7	49.8	54.1	58.6	62.3
2495	3.7	6.1	8.8	12.8	16.8	20.7	24.6	28.6	32.5	36.3	41.2	44.5	48.5	52.0	55.7
2520	4.3	7.2	10.5	14.8	19.4	24.0	28.3	33.0	37.2	41.5	46.4	50.8	55.3	59.2	63.6
2700	4.2	7.0	10.0	14.3	18.6	23.1	27.1	31.9	35.8	40.1	45.1	48.8	53.7	57.4	61.4
4350	3.5	6.1	9.0	12.9	17.1	20.7	24.7	29.1	32.8	36.5	41.0	44.5	48.7	52.4	56.4
3100	3.5	6.0	8.8	12.7	16.6	20.5	24.3	28.4	31.9	35.9	40.3	44.1	48.0	51.5	55.1
MAGPRO	4.3	7.2	10.2	14.7	19.2	23.7	28.0	32.7	37.2	41.6	46.1	50.2	55.3	58.8	63.4
8700	4.3	7.0	10.1	14.4	18.8	23.4	27.4	32.2	36.4	40.7	45.6	49.2	54.1	57.6	61.7

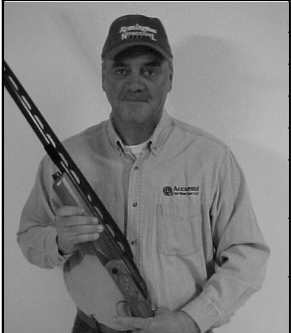
LEE CHARGE BAR BUSHINGS																	
Powder	.095	.100	.105	.110	.116	.122	.128	.134	.141	.148	.151	.155	.163	.171	.180	.189	.198
NITRO100	11.3	11.9	12.5	13.0	13.8	14.5	15.2	15.9	16.7	17.6	17.9	18.4	19.3	20.3	21.4	22.4	23.5
SOLO 1000	11.4	12.0	12.6	13.2	13.9	14.7	15.4	16.1	17.0	17.8	18.2	18.6	19.6	20.6	21.6	22.7	23.8

BUSHING

SHOTSHELL DATA 56 SHOTSHELL DATA

To ensure that Accurate powders are always in touch with the shooters, we have established a relationship with two shooters i.e. Steve Corwin and Mike Roese. They both hail from Ohio, and are excellent shotgunners with years of experience and a professional approach to the sport.

Accurate Arms wish to include the loads used by these two shooters supported by AAC utilizing our powders. AAC has supplied a Oehler M43 Personal ballistic system to them to develop and measure the ballistic parameters of their loads both internally (pressure) as well as external ballistics (velocity etc).

Name: Steve Corwin	
	Age: 50
	Length: 6'00"
	Weight: 210
	Shooting history:
	Year Started: Started in the ATA in 1991
	Number of Competitions won: Numerous State, Satellite and Grand American trophies
	Total Number of rounds fired: 28,000 Dbls; 34,000 Hdcp; 33,000 Singles
	Typical no of rounds per season: 15,000

Additional information: I started shooting in the NSCA with my son. We then got into international skeet where we both were on the All-American team.

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Caliber:					
Load 1		Load 2		Load 3	
Application:	<i>Skeet or trap</i>	Application:	<i>Trap</i>	Application:	<i>Trap</i>
Yard line:	<i>16</i>	Yard line:	<i>27</i>	Yard line:	<i>27</i>
Powder:	<i>Nitro 100</i>	Powder:	<i>Solo 1000</i>	Powder:	<i>Solo 1250</i>
Chargemass:	<i>17.3 grains</i>	Chargemass:	<i>20.3 grains</i>	Chargemass:	<i>25.5 grains</i>
Case:	<i>Rem STS</i>	Case:	<i>Rem STS</i>	Case:	<i>Winchester</i>
Primer:	<i>Cheddite 209</i>	Primer:	<i>Cheddite 209</i>	Primer:	<i>Fed 209</i>
Wad:	<i>Claybuster CB 3118-12A Comparative: Rem Fig 8</i>	Wad:	<i>Claybuster CB 3118-12A Comparative: Rem Fig 8</i>	Wad:	<i>Claybuster CB4118-12 Comparative: Windjammer</i>
Shot weight:	<i>1½ oz</i>	Shot weight:	<i>½ oz</i>	Shot weight:	<i>1½</i>
Shot Size	<i>8</i>	Shot Size	<i>7½</i>	Shot Size	<i>6,7 or 7.5</i>
Velocity:	<i>1165 Ft/p/sec</i>	Velocity:	<i>1230 fps</i>	Velocity:	<i>1288 fps</i>
Pressure:	<i>10000 Psi</i>	Pressure:	<i>10900 Psi</i>	Pressure:	<i>8100 Psi</i>
Gun:	<i>K-80</i>	Gun:	<i>K-80</i>	Gun:	<i>K-80</i>
Weight of gun:	<i>10 lbs</i>	Weight of gun:	<i>10 lbs</i>	Weight of gun:	<i>10 lbs</i>
True recoil:	<i>13.04 Ft-lbs</i>	True recoil:	<i>15.30 Ft-lbs</i>	True recoil:	<i>17.62 Ft-lbs</i>
<i>Steve's Comments re Felt/perceived recoil and the load in general:</i>		<i>Steve's Comments re Felt/perceived recoil and the load in general:</i>		<i>Steve's Comments re Felt/perceived recoil and the load in general:</i>	
<i>Very good skeet and 16 yard load. The felt recoil is very good</i>		<i>Very good handicap load. The recoil is very nice too do to the type of powder that it is.</i>		<i>For those of you that like to play the games this is an excellent load.</i>	

SHOTSHELL DATA 58 SHOTSHELL DATA

		16-Ga., 2 ³ / ₄ -IN. Shotshell Target and Field Loads				SOLO 1000		NITRO 100		SOLO 1250	
		Min. Overall Length: 2 ⁹ / ₃₂ -IN.		Max. Crimp Depth: 3/ ₃₂ -IN.							
Shell Brand	Ounces Lead	Dram Equivalent	Approx. Velocity, Ft./Sec.	Primer Type	Wad Type	Grains Wt.	Approx. Pressure PSI	Grains Wt.	Approx. Pressure PSI	Grains Wt.	Approx. Pressure PSI
FED FIELD & HI-P	1	2 ¹ / ₂	1165	FED209A	AA16 + 1-135	16.0	10500	14.5	9700	18.5	8000
				WIN 209	AA16 + 1-135	16.0	9700	15.0	9800	19.0	7400
				REM209P	SP16 + 1/4	17.5	8800	15.0	8700	20.0	7600
				CCI 209	AA16 + 1-135	17.5	9100	15.0	8900	19.0	8500
				FED209A	BPSP16			18.5	7300		
	1	2 ³ / ₄	1220	FED209A	AA16 + 1-135	17.0	11100	16.0	10900	19.0	9300
				WIN 209	AA16 + 1-135	17.0	11200	16.5	10200	20.0	8300
				REM209P	SP16 + 1/4	18.0	11500	15.5	10000	22.0	8900
				CCI 209	AA16 + 1-135	—	—	15.5	10000	20.0	8900
				FED209A	BPSP16	—	—			20.0	8900
	1 ¹ / ₈	2 ³ / ₄	1185	FED209A	WAA16					19.5	10600
				WIN 209	WAA16					20.0	9500
WIN AA	1	2 ¹ / ₂	1165	FED209A	WAA16					17.0	9200
				WIN 209	WAA16					17.0	9500
				REM209P	WAA16					17.5	7800
				CCI 209	WAA16					17.0	7800
	1	2 ³ / ₄	1220	FED209A	WAA16					18.5	10600
				WIN 209	WAA16					18.5	10700
				REM209P	WAA16					18.5	9300
				CCI 209	WAA16					18.5	10100
	1 ¹ / ₈	2 ³ / ₄	1185	FED209A	REMS P16					18.5	10700
				WIN 209	REMS P16					19.5	9800
ACTIV	1	2 ¹ / ₂	1165	FED209A	AA16 + 1-135	15.0	10500	15.0	10700	17.5	6000
				WIN 209	AA16 + 1-135	15.5	10900	15.0	10100	17.5	6000
				CCI 209	AA16 + 1-135	15.5	10300	15.5	9600	19.0	6500
	1	2 ³ / ₄	1220	FED209A	AA16 + 1-135					20.0	8400
				WIN 209	AA16 + 1-135					20.0	8000
				CCI 209	AA16 + 1-135					20.0	8300
	1 ¹ / ₈	2 ³ / ₄	1185	FED209A	WAA16					19.0	9600
				WIN 209	WAA16					19.0	9200

SHOT SHELL

20-Ga., Cowboy Action Loads					SOLO 1000		NITRO 100	
Shotshell Brand	Ounces Lead	Approx. Velocity Ft./Sec.	Primer Type	Wad	Grains Wt.	Approx. Pressure PSI	Grains Wt.	Approx. Pressure PSI
WIN AA	3/4	1037	WIN 209	WAA20	—	—	9.5	7400
		990	WIN 209	WAA20	10.4	7100	—	—
REM STS	3/4	1021	REM 209	WAA + 1-135	—	—	9.5	7400
		1030	REM 209	WAA + 1-135	10.5	7600	—	—
FED HI-P	3/4	1072	FED209A	WAA + 1-135	—	—	10.5	7500
		1042	FED209A	WAA + 1-135	11.0	7400	—	—

20-Ga., 2 ³ / ₄ -IN. Shotshell Target and Field Loads						SOLO 1250	
Shotshell Brand	Ounces Lead	Dram Equivalent	Approx. Velocity Ft./Sec.	Primer Type	Wad Type	Grains Solo 1250	Approx. Pressure PSI
Winchester AA (one-piece) 8-point crimp	7/8	2 ¹ / ₄	1155	WIN 209	WAA20	14.0	11400
				WIN 209	REM RXP 20	14.5	10300
				WIN 209	P.C. 20	14.5	9900
	7/8	SKEET	1200	WIN 209	P.C. 20	15.5	11800
				WIN 209	WAA20F1	15.0	12000
				WIN 209	REM RXP 20	15.5	11500

SHOTSHELL DATA 59 SHOTSHELL DATA

20-Ga., 2¼-IN. Shotshell Target and Field Loads					SOLO 1250			
Shotshell Brand	Ounces Lead	Dram Equivalent	Approx. Velocity Ft./Sec.	Primer Type	Wad Type	Grains Solo 1250	Approx. Pressure PSI	
Winchester Dove & Quail (polyformed with plastic base wad) 6-point crimp	7/8	2¼	1155	WIN 209	WAA20	17.5	10200	
				WIN 209	WAA20F1	17.5	9000	
				WIN 209	REM RXP 20	17.5	8900	
				WIN 209	P.C. 20	17.0	9300	
				WIN 209	WINDJAMMER	16.5	10000	
				CCI 209	WAA20	16.5	8800	
				REM209P	WAA20	16.5	9300	
				FED209A	WAA20	16.0	9400	
	7/8	SKEET	1200	WIN 209	WAA20	18.5	10700	
				WIN 209	REM RXP 20	18.5	10800	
				CCI 209	WAA20	18.5	10800	
				REM209P	WAA20	18.5	10400	
	Remington STS (one-piece) 8-point crimp	7/8	2¼	1155	REM209P	REM RXP 20	16.0	10200
					REM209P	REM SP20	16.0	10000
REM209P					WAA20	16.0	10800	
REM209P					WINDJAMMER	16.0	10400	
REM209P					REM RXP 20	17.0	11200	
WIN 209					REM RXP 20	17.0	11400	
FED209A					REM RXP 20	17.0	11400	
Federal Hi-Power and Target (two-piece with plastic base wad) 6-point crimp	7/8	2¼	1155	FED209A	FED 20S1	18.0	8900	
				FED209A	REM RXP 20	18.5	8700	
				FED209A	P.C. 20	18.5	8800	
				FED209A	WINDJAMMER	18.0	9100	
				FED209A	W-28	18.5	8400	
				CCI 209	FED 20S1	18.5	8900	
	7/8	SKEET	1200	WIN 209	FED 20S1	18.0	9100	
				FED209A	FED 20S1	19.0	9900	
				FED209A	REM RXP 20	19.5	10400	
				FED209A	P.C. 20	19.5	10100	
				CCI 209	FED 20S1	19.5	10400	
ACTIV Industries 6-point crimp	7/8	2¼	1155	WIN 209	W-28	17.5	8700	
				WIN 209	P.C. 20	18.0	8900	
				WIN 209	WINDJAMMER	17.5	9200	
				CCI 209	W-28	18.0	9400	
				FED209A	W-28	17.5	9900	
	7/8	SKEET	1200	WIN 209	W-28	18.5	10600	
				WIN 209	P.C. 20	19.0	10400	
				WIN 209	WINDJAMMER	18.5	10800	
				CCI 209	W-28	19.0	10400	
				FED209A	W-28	18.5	10300	

S H O T S H E L L

SHOTSHELL DATA 60 SHOTSHELL DATA

28-Gauge Shotshell Target Loads						SOLO 1250	
Shotshell Brand	Ounces Lead	Dram Equivalent	Approx. Velocity Ft./Sec.	Primer Type	Wad Type	Grains Solo 1250	Approx. Pressure PSI
REMINGTON PREMIER	¾	SKEET	1155	REM 209	REM PT 28	13.0	10700
					P.C.	12.5	11000
					BP Sporting*	12.5	9900
	¾	SKEET	1200	REM 209	REM PT 28	13.5	12000
					P.C.	13.5	11900
					BP Sporting*	13.0	10400
FEDERAL	¾	SKEET	1155	CCI 209	BP Sporting*	13.0	11400
					FED 28S1	13.0	12500
	¾	SKEET	1200	REM 209	BP Sporting*	13.5	10300
WIN	¾	SKEET	1155	WIN 209	REM PT 28	12.5	12200

*Note: BP Sporting Wad used with 11/16 oz. No. 9 only.

SHOTSHELL

.410-BORE, 2½-IN. PLASTIC SHELLS					4100	
Shotshell Brand	Ounces Lead	Velocity, FPS	Primer	Wad	Grains*	Approx. PSI
FEDERAL OR REMINGTON	½	1200	FED209A	WAA41	13.5	9400
			FED209A	REM SP410	13.5	9700
			FED209A	P.C.	13.5	9600
WINCHESTER AA	½	1200	FED209A	P.C.	13.5	10700
			FED209A	REM SP410	13.5	11100
			FED209A	WAA41	13.5	11200
			FED209A	FC410SC	13.5	12600

*4100: 13.5 gr requires MEC #11 Bushing.

12-Gauge 2¾" Shotshell Slug Data Lee Drive Key Slug					No. 2 Improved		No. 5	
Shotshell Brand	Slug Wt. Ounces	Velocity Ft./Sec.	Primer	Wad	Grains Wt.	Approx. Pressure PSI	Grains Wt.	Approx. Pressure PSI
ACTIV	7/8 oz.	1501	WIN 209	ACTIV TG-30 + .135 NITRO CARD	25.5	10300	—	—
ACTIV	7/8 oz.	1593	WIN 209	ACTIV TG-30 + .135 NITRO CARD	—	—	40.0	10700
ACTIV	1 oz.	1553	WIN 209	ACTIV TG-30	—	—	41.5	10300
Fed G.M.	7/8 oz.	1509	WIN 209	ACTIV TG-30 + .070 NITRO CARD	25.5	9700	—	—
Fed G.M.	7/8 oz.	1638	WIN 209	ACTIV TG-30 + .135 NITRO CARD	—	—	42.0	10200
Fed G.M.	1 oz.	1529	WIN 209	FED 12S3	—	—	41.5	9100
Rem STS	7/8 oz.	1466	WIN 209	ACTIV TG-30	22.5	10700	—	—
Rem STS	1 oz.	1535	WIN 209	WAASL	—	—	38.5	10800
WIN AA	7/8 oz.	1492	WIN 209	ACTIV TG-30	25.0	10000	—	—
WIN AA	7/8 oz.	1608	WIN 209	ACTIV TG-30	—	—	40.0	10800
WIN AA	1 oz.	1494	WIN 209	WAA	—	—	38.5	9700

SHOTSHELL DATA	61	SHOTSHELL DATA
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20-Gauge 2 ³ / ₄ " Shotshell Slug Data Lee Drive Key Slug					No. 5		No. 7	
Shotshell Brand	Slug Wt. Ounces	Velocity Ft./Sec.	Primer	Wad	Grains Wt.	Approx. Pressure PSI	Grains Wt.	Approx. Pressure PSI
ACTIV	3/4 oz.	1569	WIN 209	FED 20S1 + .250" FELT WAD	—	—	32.0	11900
FED TGT	3/4 oz.	1492	WIN 209	FED 20S1 + .250" + .125"	26.0	11900	—	—
REM TGT	3/4 oz.	1518	WIN 209	FED 20S1 + .500" CORK WAD	—	—	30.0	11500
WIN AA	3/4 oz.	1565	WIN 209	FED 20S1 + .250" FELT WAD	—	—	32.0	11900

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A QUICK GUIDE TO PRIMERS AND WAD ASSEMBLIES

Primers:

Manufacturer	Designation	Comments
CCI-ATK	CCI 209	Standard output.
CCI-ATK	CCI 209 M	Magnum primer for hard to ignite powders. Note: All Accurate powders ignite very easily; does not need extra Energy.
CHEDDITE	CHED 209	Standard output.
FEDERAL	FED 209A	Standard + output. However under certain conditions can produce slightly higher performance.
FIOCCHI	FIO 616	Standard output very mild.
REMINGTON	209	Standard output.
WINCHESTER	209	Standard output.

IMPORTANT NOTE: Please see page 47 re background on primers.

WADS: 12 gauge

Manufacturer	Designation	Shot weight oz
Claybuster	CB 4100-12	$\frac{7}{8}$ and 1
	CB 0178-12	$\frac{7}{8}$
	CB 1100-12	$1\frac{1}{8}$
	CB 2100-12	$1\frac{1}{8}$
	CB 4118-12B	$1\frac{1}{8}$
	CB 3118-12A	$1\frac{1}{8}$
	CB 3118-12AR	$1\frac{1}{8}$
	CB 1118-12	$1\frac{1}{8}$
	CB 0118-12	$1\frac{1}{8}$
	CB 2118-12	$1\frac{1}{8}$
Remington	REM 12 L	1
	Rem 12 H	$1\frac{1}{8}$
	Rem Fig 8	$1\frac{1}{8}$
	Rem RXP 12	$1\frac{1}{8}$
	Rem TGT 12	$1\frac{1}{8}$
Winchester	WAA 12 L (Gray)	$\frac{7}{8}$
	WAA 12 SL (Pink)	1
	WAA 12 (White)	$1\frac{1}{8}$
	WT 12 (Orange)	$1\frac{1}{8}$

WADS: 20 gauge

Manufacturer	Designation	Shot weight oz
Claybuster	CB 1078-20	$\frac{3}{4}$
Remington	Rem RXP 20	$\frac{7}{8}$
Winchester	WIN AA 20 (White)	$\frac{7}{8}$, $\frac{3}{4}$, 1
Federal	20 S 1	$\frac{7}{8}$

Continued on page 63

WADS: 28 gauge

<i>Manufacturer</i>	<i>Designation</i>	<i>Shot weight oz</i>
<i>Claybuster</i>	<i>CB 1034-28</i>	$\frac{3}{4}$
<i>Federal</i>	<i>28 S1</i>	$\frac{3}{4}$
<i>Remington</i>	<i>PT 28</i>	$\frac{3}{4}$
<i>Winchester</i>	<i>WAA 28 HS (Red)</i>	$\frac{3}{4}$
	<i>WAA 28 (Pink)</i>	$1\frac{3}{4}$

WADS: 410 gauge

<i>Manufacturer</i>	<i>Designation</i>	<i>Shot weight oz</i>
<i>Claybuster</i>	<i>CB 1050-41</i>	$\frac{1}{2}$
<i>Federal</i>	<i>410 SC</i>	$\frac{1}{2}$
<i>Remington</i>	<i>SP 410</i>	$\frac{1}{2}$
<i>Winchester</i>	<i>WAA 410 HS (Red)</i>	$\frac{1}{2}$
	<i>WAA 410 (White)</i>	$\frac{1}{2}$

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Pick up ad which is already at printer



Caliber: 12 Gauge
Case/Hull: Remington STS
Powder: Nitro 1000
Primers: CCI 209 *see special notes re Primers on pages 47 and 62

Case Length: 2 $\frac{2}{3}$ "
Cartridge Length: 2.330"
Crimp Depth: 0.080"

Type of Crmpip: Fold
No. of Folds: 8

Application:		LOW KE and Recoil Light Loads/Cowboy Action				Standard Loads Standard Target: Trap Skeet, etc.						HIGH KE and Recoil Extreme Target Loads/Hunting							
Claybuster Wads		1050 Fps		1100 Fps		1150 Fps		1200 Fps		1250 Fps		1300 Fps		1350 Fps		1400 Fps		1450 Fps	
Wad	Weight oz.	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi
CB4100-12	$\frac{7}{8}$					14.9	6100	15.8	6900	16.7	7800	17.6	8600	18.5	9500	19.5	10300	20.4	11100
CB017-12	$\frac{7}{8}$					14.8	6700	15.6	7500	16.5	8300	17.4	9100	18.3	10000	19.2	10800		
CB4100-12	1	13.7	6100	14.6	7000	15.5	7800	16.4	8700	17.4	9700	18.3	10600	19.3	11500				
CB1100-12	1	13.9	6600	14.7	7500	15.4	8200	16.5	9300	17.5	10200	18.3	11100						
CB2100-12	1	13.3	6800	14.3	7900	15.2	6600	16.3	10000	17.4	11200								
CB4118-12B	$1\frac{1}{8}$	13.8	7200	14.9	8400	16.0	9700	17.0	10800										
CB3118-12A	$1\frac{1}{8}$	13.5	8200	14.6	9500	15.9	11000												
CB3118-12AR	$1\frac{1}{8}$	13.7	7940	14.7	9227	15.7	10514												
CB1118-12	$1\frac{1}{8}$	13.5	8600	14.6	9800	15.5	10800												
CB0118-12	$1\frac{1}{8}$	13.5	8000	14.7	9300	16.0	10800												
CB2118-12	$1\frac{1}{8}$	13.6	8700	14.7	9900	15.8	11100												

Application:		LOW KE and Recoil Light Loads/Cowboy Action				Standard Loads Standard Target: Trap Skeet, etc.						HIGH KE and Recoil Extreme Target Loads/Hunting							
Remington Wads		1050 Fps		1100 Fps		1150 Fps		1200 Fps		1250 Fps		1300 Fps		1350 Fps		1400 Fps		1450 Fps	
Wad	Weight oz.	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi
REM 12L	1	13.0	6700	14.0	7800	14.8	8700	15.8	9800	16.9	11000								
REM 12H	$1\frac{1}{8}$	13.6	8000	14.7	9200	15.7	10200												
REM FIG 8	$1\frac{1}{8}$	13.7	7700	14.8	9000	15.7	10200												
REM RXO 12	$1\frac{1}{8}$	13.3	8500	14.5	9700	16.1	11200												
REM TGT 12	$1\frac{1}{8}$	13.7	8000	14.8	9200	15.8	10400												

Application:		LOW KE and Recoil Light Loads/Cowboy Action				Standard Loads Standard Target: Trap Skeet, etc.						HIGH KE and Recoil Extreme Target Loads/Hunting							
Winchester Wads		1050 Fps		1100 Fps		1150 Fps		1200 Fps		1250 Fps		1300 Fps		1350 Fps		1400 Fps		1450 Fps	
Wad	Weight oz.	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi
WAA 12 L	$\frac{7}{8}$			13.1	6000	14.0	7000	15.1	8200	16.0	9200	17.0	10300	18.0	11400				
WAA 12 L	1	12.8	6700	13.8	7900	14.4	8600	15.8	10200										
WAA 12	$1\frac{1}{8}$	13.0	9300	14.2	10600	14.8	11300												

SHOTSHELL DATA 50 SHOTSHELL DATA

Caliber: 12 gauge
 Case/Hull: Remington STS
 Powder: Solo 1250
 Primers: CCI 209 *see special notes re Primers on pages 47 and 62

Case Length: 2¾"
 Cartridge Length: 2.330"
 Crimp Depth: 0.080"

Type of Crimp: Fold
 No. of Folds: 8

Application:

Claybuster Wads

		LOW KE and Recoil Light Loads/Cowboy Action				Standard Loads Standard Target: Trap Skeet, etc.						HIGH KE and Recoil Extreme Target Loads/Hunting							
		1050 Fps		1100 Fps		1150 Fps		1200 Fps		1250 Fps		1300 Fps		1350 Fps		1400 Fps		1450 Fps	
Wad	Weight oz.	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi
CB4100-12	¾									23.6	6000	24.3	6400	25	6900	25.7	7300	26.4	7700
CB0178-12	¾									24.3	6100	25.1	6500	25.9	6900	26.7	7300	27.5	7700
CB4100-12	1							22.7	6500	23.6	7100	24.5	7800	25.4	8400	26.3	9000	27.2	9600
CB1100-12	1							23.9	6400	24.8	6900	25.8	7400	26.7	8000	27.7	8500	28.7	9000
CB2100-12	1					22.0	6400	23.1	7100	23.9	7600	24.9	8200	25.8	8800	26.8	9500	27.7	10100
CB4118-12B	1½			21.9	6100	22.7	6700	23.9	7400	24.9	8100	25.9	8700	26.9	9300	27.8	10000	28.8	10600
CB3118-12A	1½			21.1	6200	22.8	7600	23.3	8000	24.4	9000	25.5	9900	26.7	10800				
CB3118-12AR	1½			21.3	6400	22.3	7000	23.6	7900	24.6	8600	25.9	8700	26.9	9300	27.8	10000	28.8	10600
CB1118-12	1½			20.0	6400	20.8	7000	22.3	8200	23.5	9300	24.7	10200	25.9	11200				
CB0118-12	1½			21.4	6500	22.4	6900	23.1	7800	24.3	8600	25.2	9400	26.2	10100	27.1	10800	28.1	11500
CB2118-12	1½			20.2	6700	21.9	8300	22.4	8800	23.5	9800	24.6	10800						

Application:

Remington Wads

		LOW KE and Recoil Light Loads/Cowboy Action				Standard Loads Standard Target: Trap Skeet, etc.						HIGH KE and Recoil Extreme Target Loads/Hunting							
		1050 Fps		1100 Fps		1150 Fps		1200 Fps		1250 Fps		1300 Fps		1350 Fps		1400 Fps		1450 Fps	
Wad	Weight oz.	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi
REM12L	1					21.5	6100	22.6	6600	23.7	7200	24.8	7800	25.9	8400	27.0	9000	28.1	9600
REM12H	1½			20.2	6000	21.3	7000	22.5	8000	23.6	9000	24.8	10000	26.0	11000				
REMF8	1½					21.2	6000	22.3	6700	23.3	7400	24.4	8100	25.4	8800	26.4	9500	27.5	10200
REMRXP12	1½					20.9	6800	22.2	8000	23.5	9300	24.8	10500						
REMTGT12	1½					22.5	6600	23.5	7400	24.4	8100	25.3	8900	26.3	9600	27.2	10400		

Application:

Winchester Wads

		LOW KE and Recoil Light Loads/Cowboy Action				Standard Loads Standard Target: Trap Skeet, etc.						HIGH KE and Recoil Extreme Target Loads/Hunting							
		1050 Fps		1100 Fps		1150 Fps		1200 Fps		1250 Fps		1300 Fps		1350 Fps		1400 Fps		1450 Fps	
Wad	Weight oz.	Chrg. Grains	Press Psi	Chrg. Mass	Press Psi	Chrg. Mass	Press Psi	Chrg. Mass	Press Psi	Chrg. Mass	Press Psi	Chrg. Mass	Press Psi	Chrg. Mass	Press Psi	Chrg. Mass	Press Psi	Chrg. Mass	Press Psi
WAA12L	¾									23.1	6500	23.9	7000	24.7	7500	25.5	7900	26.3	8400
WAA12SL	1					21.3	6400	22.3	7200	23.2	7900	24.2	8700	25.1	9400	26.1	10200	27.1	10900
WAA12	1½			20.0	6400	21.1	7500	22.2	8700	23.4	9900	24.5	11100						
WT12	1½			20.2	6100	21.3	7200	22.4	8300	23.5	9500	24.6	10600						

SHOTSHELL DATA

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SHOTSHELL DATA

Caliber: 12 Gauge
 Case/Hull: WAA (2 piece)
 Powder: Solo 1250
 Primers: CCI 209 *see special notes re Primers on pages 47 and 62

Case Length: 2¾"
 Cartridge Length: 2.300"
 Crimp Depth: 0.070"

Type of Crimp: Fold
 No. of Folds: 8

SHOTSHELL DATA 55 SHOTSHELL DATA

Application:		LOW KE and Recoil Light Loads/Cowboy Action				Standard Loads Standard Target: Trap Skeet, etc.						HIGH KE and Recoil Extreme Target Loads/Hunting							
Claybuster Wads		1050 Fps		1100 Fps		1150 Fps		1200 Fps		1250 Fps		1300 Fps		1350 Fps		1400 Fps		1450 Fps	
Wad	Weight oz.	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi
CB4100-12	¾							23.0	5683	23.8	6090	24.7	6497	25.5	6904	26.4	7311	27.2	7717
CB0178-12	¾							22.2	5733	23.0	6206	23.9	6679	24.7	7152	25.6	7625	26.4	8097
CB4100-12	1			20.3	5679	21.2	6178	22.1	6678	23.0	7177	23.9	7677	24.8	8176	25.7	8675	26.6	9175
CB1100-12	1					21.2	5595	22.2	6426	23.1	7256	24.1	8086	25.1	8917	26.1	9747	27.1	10577
CB2100-12	1					21.1	5915	22.1	6797	23.0	7679	24.0	8561	25.0	9444	25.9	10326	26.9	11208
CB4118-12B	1½			20.5	5799	21.6	6808	22.7	7816	23.8	8824	24.8	9832	25.9	10840				
CB3118-12A	1½			19.9	6304	21.1	7253	22.3	8202	23.5	9151	24.7	10099	25.9	11048				
CB3118-12AR	1½			19.9	5673	21.0	6892	22.1	8112	23.2	9332	24.3	10551						
CB1118-12	1½					20.3	7241	21.5	8283	22.8	9326	24.0	10369	25.2	11411				
CB0118-12	1½					20.4	6850	21.6	8129	22.7	9408	23.9	10687						
CB2118-12	1½			19.2	5783	20.5	7117	21.7	8451	23.0	9785	24.3	11119						

Application:		LOW KE and Recoil Light Loads/Cowboy Action				Standard Loads Standard Target: Trap Skeet, etc.						HIGH KE and Recoil Extreme Target Loads/Hunting							
Remington Wads		1050 Fps		1100 Fps		1150 Fps		1200 Fps		1250 Fps		1300 Fps		1350 Fps		1400 Fps		1450 Fps	
Wad	Weight oz.	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi
REM 12 L	1					21.0	5900	22.1	6601	23.2	7301	24.3	8002	25.3	8702	26.4	9403	27.5	10103
REM 12 H	1½					21.0	6831	22.3	8078	23.5	9325	24.8	10572	26.0	11818				
REM FIG 8	1½					21.0	6801	22.2	7933	23.4	9065	24.6	10198	25.8	11330				
REM RXP 12	1½			19.1	5937	20.3	7253	21.5	8568	22.7	9884	23.8	11189						
REM TGT 12	1½	19.2	6042	20.0	6647	20.9	7241	21.8	7840	22.6	8439	23.5	9038	24.4	9637	25.2	10236	26.1	10835

Application:		LOW KE and Recoil Light Loads/Cowboy Action				Standard Loads Standard Target: Trap Skeet, etc.						HIGH KE and Recoil Extreme Target Loads/Hunting							
Winchester Wads		1050 Fps		1100 Fps		1150 Fps		1200 Fps		1250 Fps		1300 Fps		1350 Fps		1400 Fps		1450 Fps	
Wad	Weight oz.	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi	Chrg. Grains	Press Psi
WAA 12 L	¾							21.7	5757	22.6	6458	23.5	7159	24.4	7861	25.3	8562	26.1	9263
WAA 12 SL	1					20.5	6106	21.6	6958	22.8	7814	23.9	8669	25.0	9524	26.2	10379	27.3	11234
WAA 12	1½			19.5	5656	20.6	7163	21.8	8679	22.9	10191	24.0	11702						
WT 12	1½			19.2	5616	20.3	7000	21.5	8384	22.7	9768	23.9	11153						