

HODGDON® 2017 ANNUAL MANUAL

5000+ LOADS

More Loads Than Any Other Manual

HODGDON® 2017 ANNUAL MANUAL



HODGDON®
THE BRAND THAT'S TRUE®

RELOADING

FOR HANDGUNS AND RIFLES WITH HODGDON®, IMR® & WINCHESTER® POWDERS

DATA FOR THE NEW
CFE BLK™
RIFLE POWDER

DATA FOR THE NEW
WINCHESTER®
PISTOL / SHOTSHELL
572 BALL POWDER®



FROM THE PUBLISHERS OF **SHOOTING TIMES**

HODGDON ANNUAL \$8.99 USA

44

0 72440 22097 3

UPDATES FOR **32 RIFLE & PISTOL CARTRIDGES**



Nosler[®]
UP FRONT

THE POINT

IS THE POINT



RDF BULLETS FEATURE THE SMALLEST MEPLAT
OF ANY NON-TIPPED MATCH BULLET.

Nosler knows what gives competitive shooters an edge, isn't an edge at all. It's a point. And we've worked hard to bring you the smallest one ever—creating the flattest shooting match bullet on the market. Make the switch to RDF and put yourself on the podium.



Nosler.com | 800.285.3701



SEVENTY YEARS AGO



IN NOVEMBER OF 1947, BREWSTER E. (B.E.) HODGDON TOOK out a loan for \$1,500 against a life insurance policy to buy a boxcar of surplus World War II gunpowder, and Hodgdon Powder Co. was born. From our earliest days, Hodgdon has been a family affair. In the early days, Bruce sourced powders and shipped them into Kansas City. Wife Amy and sons J.B. and Bob repackaged the powder and readied powder for shipping.

During the last 70 years, Hodgdon introduced many other powders for handloaders. From longtime favorites H4831 and H4350 to Varget and BL-C(2) today, Hodgdon makes the gunpowder reloading enthusiasts demand.

In 1976 Hodgdon began focusing on muzzleloaders as well. Hodgdon Pyrodex, Hodgdon Triple Seven, and IMR White Hots are all powders and pellets introduced by Hodgdon for today's muzzleloader hunters and shooters.

Over the years, Hodgdon has also acquired other brands and competitors—IMR in 2003 and Goex blackpowder in 2009. Additionally, in 2009 Hodgdon licensed the Winchester brand for powders and about 10 years ago became the exclusive North American distributor for VihtaVuori.

Still, today, Hodgdon Powder Co. remains a family company. Founders J.B. and Bob are in the office nearly every day. Grandson Chris and Grandson-In-Law Erwin have positions in the company. And most employees with last names not Hodgdon feel like they have been “adopted” by the Hodgdon family.

In the Shawnee, Kansas, headquarters, the company hums along, but you will still see guns and taxidermy on the wall and a few bird dogs under desks or in corners. You'll find rifle, shotgun, and handgun shooters here. Since we're based in Kansas, we're avid upland and waterfowl hunters, but we're also North American and African big-game hunters, too.

This is the great thing about Hodgdon—we are who we are.

The world is very different in 2017 than it was in 1947, when B.E., Amy, J.B., and Bob started the company. Our Second Amendment rights are under assault.

Hunting is more challenging due to loss of habitat. Plain more people taking up space. But through it all, Hodgdon remains true to our brand(s) and our founding. We will keep selling gunpowder as long as we have passionate customers who demand the best.

Thanks for your trust,
Tom Shepherd
President & CEO





RELOADING

HODGDON® 2017 ANNUAL MANUAL



COVER PHOTO BY MICHAEL ANSCHUETZ

FEATURES

8 CFE BLK

This new propellant was developed with a popular AR-15 cartridge in mind. "BLK" is the clue.

BY BRYCE M. TOWSLEY

14 Winchester 572

The new spherical Winchester 572 powder is designed for 20- and 28-gauge shotshells, but it's also perfect for pistol cartridges like the 9mm Luger and 38 Super.

BY CHARLES E. PETTY

22 CFE BLK in Varmint Cartridges

Hodgdon's new CFE BLK powder is perfect for 17 Hornet, 17 Ackley Hornet, 17 Fireball, 218 Bee, and 221 Fireball handloads.

BY LAYNE SIMPSON

30 Handloading the 6.5 Creedmoor

Inherent accuracy and eyebrow-raising ability at long range have made the 6.5 Creedmoor the most popular precision cartridge on the market.

BY JOSEPH VON BENEDIKT

38 CFE BLK in the 6.8 SPC

The 6.8 SPC is experiencing a resurgence in popularity, and the brand-new CFE BLK powder is a perfect choice for handloading the nice little cartridge.

BY LANE PEARCE

48 Premium 308 Winchester Handloads

Here are the optimal powders for building top-notch 308 Winchester handloads, along with a detailed look at how the same loads perform in both bolt-action and semiautomatic rifles.

BY STEVE GASH

54 Hog Loads

One of the great things about hog hunting is hunters can use just about any rifle cartridge they want and still end up with pork.

BY JOHN BARSNESS

60 Hodgdon 4831 and Me

The author's been using the same batch of H4831 since the early 1950s, and it still shoots as good as it did back then.

BY JIM CARMICHEL

RELOADING

6 Industry Contacts

65 Reloading Data Introduction

66 Powder Usage Chart

67 Powder Burn Rates

68 Powder Descriptions

72 Legend of Abbreviations

The *Hodgdon Annual Manual* is published by Outdoor Sportsman Group, 1040 6th Ave., 12th Floor, New York, New York. Copyright 2017 by Outdoor Sportsman Group. All rights reserved under international and Pan American Copyright Conventions. Reproduction in whole or in part without written permission of the publisher is strictly prohibited. The *Hodgdon Annual Manual* is published by Outdoor Sportsman Group under license from Hodgdon Powder Company. The *Hodgdon Annual Manual* is a trademark of Hodgdon Powder Company. Printed in the USA.

SWIFT BULLET COMPANY PROUDLY INTRODUCES:

SWIFT RELOADING MANUAL NUMBER TWO



A MUST-HAVE FOR EVERY SERIOUS HANDLOADER AND HUNTER.

FEATURING:

- 475 pages of detailed handloading information
- Beautifully illustrated
- 86 cartridges
- Hunting ballistics for each cartridge
- New powders from Hodgdon, IMR, Alliant, Vihtavuori, and Norma

SWIFT RELOADING MANUAL NUMBER TWO

is developed by hunters with decades of field and reloading experience and is handsomely stitch-bound to provide a striking addition to any handloader's library.

ORDER NOW FROM THE FOLLOWING RETAILERS:

BILL HICKS & CO., LTD.
CABELA'S
CHATTANOOGA
GRAF & SONS

MIDWAY USA
SINCLAIR INTERNATIONAL
THE SPORTSMAN'S GUIDE
SPORTSMAN'S WAREHOUSE

WWW.SWIFTBULLETS.COM | 785-754-3959

Swift
BULLET COMPANY

73 Rifle Data

17 Ackley Hornet.....	73
17 Hornet.....	73
17 Remington Fireball.....	73
17 Remington.....	73
204 Ruger.....	73
22 Hornet.....	74
22 K Hornet.....	75
218 Bee.....	75
221 Fireball.....	75
222 Remington.....	76
223 Remington.....	77
222 Remington Magnum.....	79
22-250 Remington.....	79
220 Swift.....	81
6mm PPC.....	82
6mm BR Remington.....	82
6mm Dasher.....	83
243 Winchester.....	84
6mm Remington.....	86
243 Winchester Super Short Magnum.....	87
6mm-284.....	88
25-20 Winchester.....	89
25-35 Winchester.....	89
250-3000 Savage.....	90
257 Roberts.....	90
25-06 Remington.....	91
25 Winchester Super Short Magnum.....	93
257 Weatherby Magnum.....	93
6.5mm Grendel.....	94
6.5 Creedmoor.....	94
260 Remington.....	95
6.5 x 55mm Swedish Mauser.....	96
6.5mm-06.....	97
6.5-284.....	98
264 Winchester Magnum.....	99
26 Nosler*.....	100
6.8mm Remington SPC.....	100
270 Winchester.....	100
270 Winchester Short Magnum.....	102
270 Weatherby Magnum.....	103
7mm-08 Remington.....	103
7 x 57mm Mauser.....	105
280 Remington.....	107
284 Winchester.....	107
280 Ackley Improved.....	109
7mm Remington Magnum.....	110
7mm Weatherby Magnum.....	111
7mm Shooting Times Westerner.....	112
28 Nosler.....	112
7mm Remington Ultra Mag.....	113
30 Carbine.....	113
300 AAC Blackout.....	114
30-30 Winchester.....	114
30-40 Krag.....	115
7.62 x 54R.....	115
308 Marlin Express.....	116

308 Winchester.....	117
30-06.....	118
300 Winchester Short Magnum.....	121
300 Winchester Magnum.....	123
30 Nosler.....	124
300 Weatherby Magnum.....	124
300 Remington Ultra Mag.....	125
30-378 Weatherby.....	126
7.62 x 39mm Russian.....	127
303 British.....	127
32 Winchester Special.....	127
32-40 Winchester.....	127
8 x 57mm Mauser.....	128
325 Winchester Short Magnum.....	128
8mm Remington Magnum.....	129
338 Marlin Express.....	130
338 Federal.....	130
338-06.....	130
338 Winchester Magnum.....	131
340 Weatherby Magnum.....	133
338 Lapua Magnum.....	133
338 Remington Ultra Mag.....	134
348 Winchester.....	134
357 Magnum.....	134
35 Remington.....	135
358 Winchester.....	135
35 Whelen.....	136
9.3 x 62.....	136
9.3 x 74R.....	136
38-55 Winchester.....	137
375 Winchester.....	137
375 H & H Magnum.....	137
375 Ruger.....	137
375 Remington Ultra Mag.....	138
378 Weatherby Magnum.....	138
40-65 Winchester.....	139
405 Winchester.....	139
416 Remington Magnum.....	139
416 Rigby.....	139
44-40 Winchester.....	140
44 Magnum.....	140
444 Marlin.....	140
45-70 Government (Trapdoor Rifles)*.....	141
45-70 Government (Lever Actions)*.....	141
45-70 Government (Modern Rifles)*.....	142
45-120 Sharps.....	142
458 Winchester Magnum.....	142
470 Nitro Express.....	143
50-140 Sharps.....	143
500 Nitro Express 3".....	143
50 Browning Machine Gun.....	143

144 Pistol Data

22 Hornet.....	144
22 K Hornet.....	144
221 Fireball.....	144

222 Remington.....	144
223 Remington.....	145
6mm-204 RR.....	146
6mm BR Remington.....	146
25 ACP.....	146
25-35 Winchester.....	147
6.5mm JDJ.....	147
7mm TCU.....	147
30 Luger (7.65mm Parabellum).....	147
30 Carbine.....	147
30 Herrett.....	147
30-30 Winchester.....	148
32 ACP.....	148
32 S&W.....	148
32 S&W Long.....	148
32 H&R Magnum.....	148
32-20 Winchester.....	149
327 Federal Magnum.....	149
380 Auto.....	150
38 S&W.....	150
38 Short Colt.....	150
38 Long Colt.....	150
9mm Luger.....	150
38 Super Auto.....	152
38 Super Auto +P.....	153
9 x 23mm Winchester.....	153
38 Special.....	153
38 Special +P.....	154
357 SIG.....	155
357 Magnum.....	155
357 Remington Maximum.....	156
357 Herrett.....	156
35 Remington.....	157
9 x 18mm Makarov.....	157
375 JDJ.....	157
38-40 Winchester.....	157
40 S&W*.....	157
10mm Auto.....	158
41 Remington Magnum.....	159
44 Colt.....	160
44 Russian.....	160
44 S&W Special.....	160
44-40 Winchester.....	160
44 Remington Magnum.....	161
45 S&W (Schofield).....	162
45 GAP (Glock Auto).....	163
45 ACP.....	163
45 Colt*.....	164
45 Colt (Ruger, Freedom Arms & T/C only)*.....	165
454 Casull.....	165
460 S&W Magnum.....	166
45-70 Government.....	167
480 Ruger.....	167
50 Action Express.....	167
500 Wyoming Express.....	167
500 S&W Magnum.....	168

GET 2017 LOADED

500 FREE BULLETS

With the purchase of one of these Lock-N-Load® products:

- Iron Press™ Kit
- Ammo Plant™
- AP™ Press
- Precision Reloaders Kit
- Classic™ Kit
- Classic™ Kit Deluxe
- Classic™ Kit with Auto Charge®
- Hot Tub™ Sonic Cleaner
- Case Prep Center

100 FREE BULLETS

With the purchase of one of these products:

- Custom-Grade™ Dies
- American Series™ Dies
- Lock-N-Load® Quick Trickle™
- Lock-N-Load® Balance Beam Scale
- Lock-N-Load® Case Feeder
- Lock-N-Load® Bullet Feeder



Hornady
Accurate. Deadly. Dependable.

800.338.3220 | HORNADY.COM

For complete details and a redemption form, go to hornady.com. Offer good Jan. 1, 2017 through Dec. 31, 2017. Some restrictions apply.

WARNING:

Ballistic data shown in this manual was obtained in the Hodgdon laboratory under strictly controlled conditions.

Your reloads must contain the exact combinations listed in this manual. **NEVER EXCEED** charge recommendations in this manual.

Ballistic data varies considerably depending on many factors, including components used, how such components are assembled, the type of firearm used, and the reloading techniques and safety precautions utilized by the individual.

NEVER mix any two powders regardless of type, brand, or source. **NEVER** substitute any smokeless powder for black powder, Pyrodex®, or Triple Seven®.

Hodgdon specifically disclaims any warranties with respect to any and all products sold or distributed by it, the safety or suitability thereof, or the results obtained, whether express or implied, including without limitation, any implied warranty of merchantability or fitness for a particular purpose and/or any other warranty. Buyers and users assume all risk, responsibility and liability whatsoever and for any and all injuries (including death), losses, or damages to persons or property (including consequential damages), arising from the use of any product or data, whether or not occasioned by seller's negligence or

based on strict product liability or principles of indemnity or contribution. Hodgdon neither assumes nor authorizes any person to assume for it any liability in connection with the use of any product or data.

The individual assumes the risk of safe loading practices. Failure to do so or violation of any of the above warnings could result in severe personal injury (including death) or gun damage to the user or bystanders.

USE THIS DATA WITH HODGDON, IMR, AND WINCHESTER BRAND POWDERS ONLY. DO NOT EXCEED THE LOADS SHOWN IN THIS GUIDE.

MISSION STATEMENT

Hodgdon Powder Company operates following Biblical principles to honor God. Our mission is to provide quality products and services in a manner which enhances the lives of our employees, families, customers, suppliers, and our communities. In doing so, we will deal with integrity and honesty, reflecting that people are more important than dollars and that our purpose is to bring credit to our Lord Jesus Christ.

TO CONTACT OUR FRIENDS IN THE INDUSTRY:

BARNES BULLETS

P.O. Box 620, Mona, UT 84645
800-574-9200

BEARTOOTH BULLETS

P.O. Box 491, Dept. HLD, Dover, ID 83825-0491
208-437-1865

BERGER BULLETS

4275 N. Palm Street, Fullerton, CA 92835
714-441-7200

BERRY'S MFG.

401 North 3050 East Street, St. George, UT 84790
435-634-1682
BILL WISEMAN & CO.
18456 State Hwy. 6 S., College Station, TX 77845
979-690-3456

BIRCHWOOD CASEY

7887 Fuller Road, Eden Prairie, MN 55344
800-746-6862

BLACK HILLS AMMUNITION

P.O. Box 3090, Rapid City, SD 57709-3090
605-348-5150

BURRIS CO.

920 54th Avenue, Greeley, CO 80631
970-356-1670

BUSHNELL OUTDOOR PRODUCTS

9200 Cody, Overland Park, KS 66214
800-423-3537

CAST PERFORMANCE BULLET CO.

P.O. Box 1466, Rainier, OR 97048
503-556-3006

CZ-USA

P.O. Box 171073, Kansas City, KS 66117
800-955-4486

FEDERAL PREMIUM AMMUNITION

900 Ehlen Drive, Anoka, MN 55303
800-379-1732

FIOCCHI OF AMERICA

6930 N. Fremont Road, Ozark, MO 65721
417-725-4118

FREEDOM ARMS

314 Hwy. 239, Freedom, WY 83120
307-883-2468

HODGDON POWDER CO.

6430 Vista Drive, Shawnee, KS 66218
913-362-9455

HORNADY MFG.

P.O. Box 1848, Grand Island, NE 68802
800-338-3220

HUNTINGTON DIE SPECIALTIES

601 Oro Dam Boulevard, Oroville, CA 95965
530-534-1210

LEE PRECISION

4275 Highway U, Hartford, WI 53027
262-673-3075

LEUPOLD & STEVENS

14400 NW. Greenbrier Pkwy, Beaverton, OR 97006
800-538-7653

LYMAN PRODUCTS

475 Smith Street, Middletown, CT 06457
800-225-9626

MEISTER BULLETS

6311 N. 25th Street, Ozark, MO 65721
866-848-9834

MTM MOLDED PRODUCTS CO.

3370 Obco Court, Dayton, OH 45414
937-890-7461

NOSLER

107 SW. Columbia Street, Bend, OR 97702
800-285-3701

RCBS OPERATIONS/VISTA OUTDOOR

605 Oro Dam Boulevard, Oroville, CA 95965
800-379-1732

REDDING RELOADING EQUIPMENT

1089 Starr Road, Cortland, NY 13045
607-753-3331

REMINGTON ARMS

870 Remington Drive, Madison, NC 27025
800-243-9700

SIERRA BULLETS

1400 West Henry Street, Sedalia, MO 65301
888-223-3006

SPEER BULLETS

2299 Snake River Avenue, Lewiston, ID 83501
800-379-1732

STARLINE

1300 West Henry Street, Sedalia, MO 65301
660-827-6640

SWIFT BULLET CO.

P.O. Box 27, Quinter, KS 67752
785-754-3959

WINCHESTER DIV. OLIN

600 Powder Mill Road, East Alton, IL 62024
618-258-2000

MADE IN THE USA • SINCE 1961

BERRY'S



9MM 147GR HHP



9MM 124GR HBRN



9MM 124GR HBFP

**PREMIUM
PLATED BULLETS
AND
RELOADING SUPPLIES**



berrysmfg.com

401 N. 3050 E. • St. George • UT 84790 • 800-269-7373



CFE BLK

This new propellant was developed with a popular AR-15 cartridge in mind. “BLK” is the clue. **BY BRYCE M. TOWSLEY**

YOU REMEMBER THAT OLD BARBARA MANDREL song “I Was Country When Country Wasn’t Cool”? Yeah, well, that’s me with the 300 AAC Blackout.

Right now this is one of the hottest cartridges in the AR-15 platform, and it’s up there riding the cutting edge of “cool.” But my association with it goes back way before it changed its name and was “discovered” by the cool kids.

Back during the Mesozoic Era, this cartridge was called the 300 Whisper. It was developed by J.D. Jones of SSK Industries in the early 1990s by necking up the 221 Remington Fireball case to take a .30-caliber bullet. Jones designed the cartridge to be used in guns with suppressors at subsonic velocities with heavy 200- to 220-grain bullets. It was the first, and arguably the most successful, of his “Whisper” line of subsonic cartridges.

That was well before the current surge in AR-15 rifle popularity and when hardly anybody was hunting with that rifle

platform. Jones was well known in handgun-hunting circles and was one of the modern-day founding fathers of the sport. He hunted the world with handguns and created some very big developments in firearms and cartridges. He published a magazine on handgun hunting and wrote articles and columns on handgun hunting for some of the largest national magazines. He was presented with Pistolsmith of the Year and Outstanding American Handgunner awards and was inducted into the Handgun Hunters Hall of Fame.

As could be expected, the 300 Whisper quickly found its way into the circle of handgun hunters. SSK Industries chambered barrels for the Thompson/Center Contender. Hunters soon found that using 125-grain bullets going well above the speed of sound worked to shoot deer and similar game.

I was writing about handgun hunting quite a bit back then, and J.D. asked me what I thought of the cartridge. I told him I was inclined to think it was a bit small for hunting deer and similar big game.

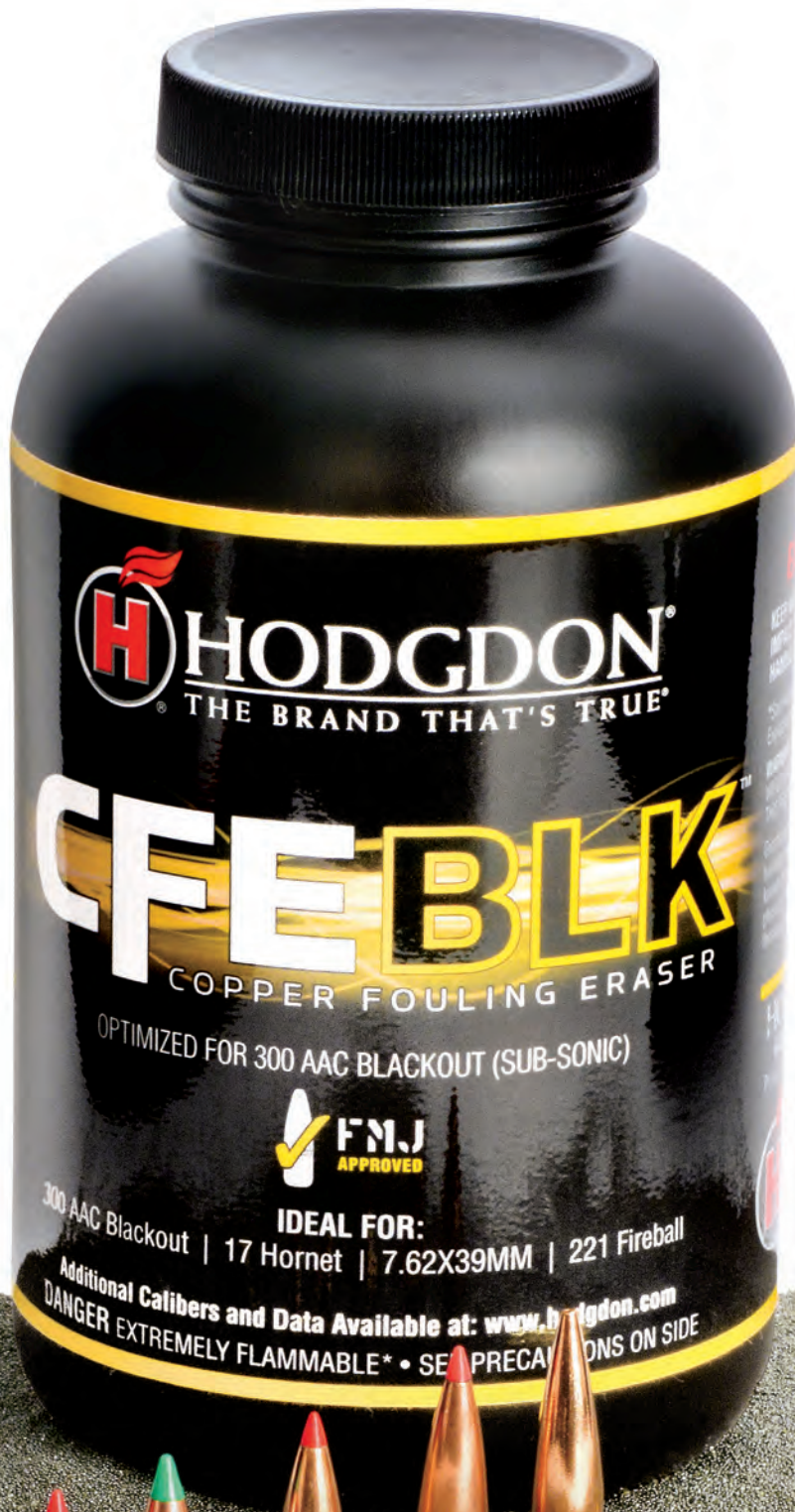
“You ever shoot anything with it?” he asked. I admitted I had not.

The next day there was a Contender barrel and a set of dies on my front porch. J.D.’s note said, “Go shoot some stuff with the cartridge and get back to me.”

So I did—deer and hogs mostly, but some coyotes, woodchucks, prairie dogs, and other game, too. I experimented with handloads and bullets until I thought I knew the cartridge pretty well. As I recall, T/C later brought out a factory barrel, and I shot one quite a bit. I am not really a record keeper, but I am confident that over the years I fired several thousand rounds of 300 Whisper at the range and at game from those single-shot handguns.

The 300 AAC Blackout is essentially the 221 Remington Fireball necked up to .30 caliber. It is designed to shoot bullets weighing from 110 to 220 grains, and often they are longer than the case.





CFE BLK

Cartridges come and go; that's just the way of this business. After a few years of hunting, handloading, and shooting with the cartridge, focus shifted, and I moved on to the next project.

Years went by, and in 2011 I was at the DPMS "Outbreak Omega 4" gathering at Ahlman's Gun Range in Minnesota. At the prize ceremony some lucky guy won an AR-15 chambered for 300 AAC Blackout. When they announced that, there were a lot of puzzled looks in the crowd. "The 300 what?"

I was the gun writer at the table, so everybody expected me to know these things. All eyes turned to me, and somebody said, "What's a 300 AAC Blackout?" I had to admit I didn't have a clue, but you can bet I found out as soon as I could.

The 300 Blackout

The 300 AAC Blackout was "developed" by Advanced Armament Corporation's Research and Development Director Robert Silvers and presented as a S.A.A.M.I. cartridge. It's pretty much the same cartridge as the 300 Whisper, except with a different name. I have looked at the drawings, and the differences are minuscule. The point is we now have a standardized S.A.A.M.I. cartridge that manufacturers can work with.

S.A.A.M.I. (Sporting Arms and Ammunition Manufacturers Institute) sets and controls the standards for manufacturing firearms and ammunition—standards like dimensions and pressure levels. Members all use the same guidelines and standards, which eliminates compatibility issues. The 300 Whisper was a wildcat cartridge without S.A.A.M.I. standards. S.A.A.M.I. set the dimensions for the 300 AAC Blackout cartridge and firearms. It also set the mean average pressure (MAP) at 55,000 psi, the same as for the 223 Remington.

The 300 Blackout has two advantages over the Whisper. Timing is the first. It came along just as the tactical side of shooting was taking off with the mainstream. The second is good marketing.

With some powerhouse names behind the cartridge, the public awareness went through the roof. The "tacticalool" name didn't hurt, either.

I gotta admit, no matter what you call it, it's a lot more fun shooting this cartridge in a semiauto AR-15 than it was from a single-shot handgun.

I concluded again that I wasn't far off with my first opinion. It clearly will take down deer, hogs, and similar game—that's been more than proven—but it's at the low end of the "acceptable" power level for hunting this class of game. However, it whacks smaller game with authority, and it brings a lot to the table for defensive use. It's also a fun cartridge for target shooting.

Hunting or defense, subsonic or Mach II, the 300 Blackout is just not a powerhouse, and it lacks the case capacity to ever claim that title. But with bullets that are engineered specifically for this cartridge, I liken it to a well-trained lightweight MMA fighter who uses every single bit of the available potential to deliver a knockout blow.

It shines most where Jones designed it to be used: with heavy bullets running subsonic. The interest in owning suppressors is growing every day. States are changing regulations to allow them, often for hunting, and there is even a push now to remove silencers/suppressors from the National Firearms Act. That will make them even easier to own and cause an explosion in their use.

In the parts of Europe and Africa where I have hunted, suppressors are common. It puzzles me and many others why they are so difficult to own here. They are nothing more than a muffler,

Hodgdon created the new CFE BLK powder specifically for the 300 Blackout. Even more specifically, it was designed to cycle ARs reliably with heavy-bullet subsonic loads. The new powder also works well in many small rifle cartridges and some handgun cartridges.



The author used RCBS dies, new Hornady brass, and Federal Small Rifle primers to build 300 Blackout handloads with Hornady 110-grain V-Max, Nosler 125-grain Ballistic Tip, Hornady 150-grain InterBond, Hornady 208-grain A-Max, and Berger 230-grain Hybrid Target bullets.

not unlike the one required by law on your car, motorcycle, or lawn mower. If I had used them more over the years, I probably wouldn't need these expensive hearing aids I wear every day. Suppressors and subsonic ammo make good neighbors, and gun ranges will have far fewer complaints with their use. Additionally, they are just fun to shoot!

Handloads Need the Right Powder

Life is not perfect, though. This is a low-volume cartridge, and as a result it doesn't always play nice with handloads in gas-operated, semi-auto rifles—particularly with subsonic loads using heavy-for-caliber bullets and pixie dust powder charges. Remember, any cartridge must produce enough propellant gas to fill the barrel to the gas port while maintaining enough pressure and volume to cycle the rifle's operating system. The AR-15 was designed to operate with a 223 Rem./5.56 cartridge, and when you wander off that path, it can become problematic. Anytime you reduce the case capacity, you reduce the gas volume from a fired cartridge. You can tweak the firearm with adjustable gas ports and modifications to the operating system, but in the end, the ammo does the work, not the gun.

The folks at Hodgdon recognized this and decided to create a new powder designed specifically for the 300 Blackout cartridge. Even more specifically, it was designed to cycle an AR-15 reliably with heavy-bullet subsonic loads. But they didn't want to limit the powder to only that use and developed a propellant that would work across the spectrum of bullet weights used for the 300 Blackout.

The new powder is in the Copper Fouling Eraser (CFE) family of powders. This started in 2012 when Hodgdon introduced CFE 223. I wrote the article on that powder that appeared in that year's *Annual Manual*. I was truly amazed at how well it worked. It reduced fouling as expected, and it was an incredibly accurate powder. Usually, it would provide the highest velocity of any powder I tested in appropriate cartridges. It became my powder of choice in 223 Rem., 204 Ruger, and similar cartridges. It was the first powder I turned to when I built a new 223 Ackley Improved rifle. I just finished the first round of testing with that cartridge using Hornady 55-grain V-Max bullets and could not be happier. It produced excellent accuracy and 3,400+ fps from the first load I tried!

Hodgdon followed in 2014 with CFE Pistol powder, and now for 2017 we have CFE BLK, which is designed for the 300 Blackout but also has shown to work in a wide range of small rifle cartridges and a few handgun cartridges.



How exactly this powder reduces copper fouling is a well-guarded secret—as it should be. When you invent something that's game-changing, you don't tell your competitors how you do it. What we do know is that the powder has an ingredient that greatly deters copper fouling by acting as a shield to the pores of the metal.

I questioned why we needed that in a relatively low-velocity cartridge like the 300 Blackout, and Hodgdon's Ron Reiber replied, "Any cartridge that has high-speed firing rates, or high velocity, benefits from CFE, so it was perfect for the 300 Blackout, and in all those speedy little varmint cartridges, too!"

I guess the 300 Blackout fits the category. It's like the old Lay's potato chip commercial, "Bet you can't eat just one." When shooting the 300 Blackout in an AR-15, you can't just shoot one.

I am amazed at how, time after time, I show up at the range with twice as much ammo as I think I will shoot and suddenly it is all gone. High-volume cartridges can indeed benefit from CFE technology. Believe me, nobody hates cleaning guns more than I do, so this powder is a blessing.

Proof of the Pudding

I know that Hodgdon has tested CFE BLK extensively, but I am the kind of guy who wants to see for himself. Using this powder and Hodgdon's data, I loaded 300 Blackout ammo using

CFE BLK

bullets across the weight spectrum. I used RCBS dies and new Hornady cases primed with Federal Small Rifle primers. The bullets included Hornady 110-grain V-Max, Nosler 125-grain Ballistic Tip (a longtime favorite bullet with handgun deer hunters in the 300 Whisper), and Hornady 150-grain InterBond and 208-grain A-Max bullets.

I shot them across my Oehler 35P chronograph for velocity and consistency, using a DPMS A-15 carbine with a 16-inch barrel and a 1:7 twist rate. I also shot the ammo for velocity from a CMMG MK4 AR-15-type pistol with a 7.5-inch barrel. The velocity results are shown in the accompanying chart. There were no surprises with the carbine; velocities were pretty much as predicted from the load data Hodgdon supplied. What did surprise me were the relatively high velocities from the handgun. Clearly this propellant is “short barrel” friendly.

I shot a few five-shot groups with the rifle and each of the loads while I was measuring velocity and consistency. I don't have a base line of accuracy with this rifle as it's new to me and this is the first ammo I have fired, but groups ranged from pretty good to outstanding. The best was five shots in 0.8 inch with the Hornady 110-grain V-Max bullet. Considering the gun's horrendous “mil-spec” trigger, I think the accuracy speaks well for the potential of this powder.

I was more interested in function with a gas gun, so that was my main focus. The load data I had was developed for a carbine-length gas system, and each and every one of these loads

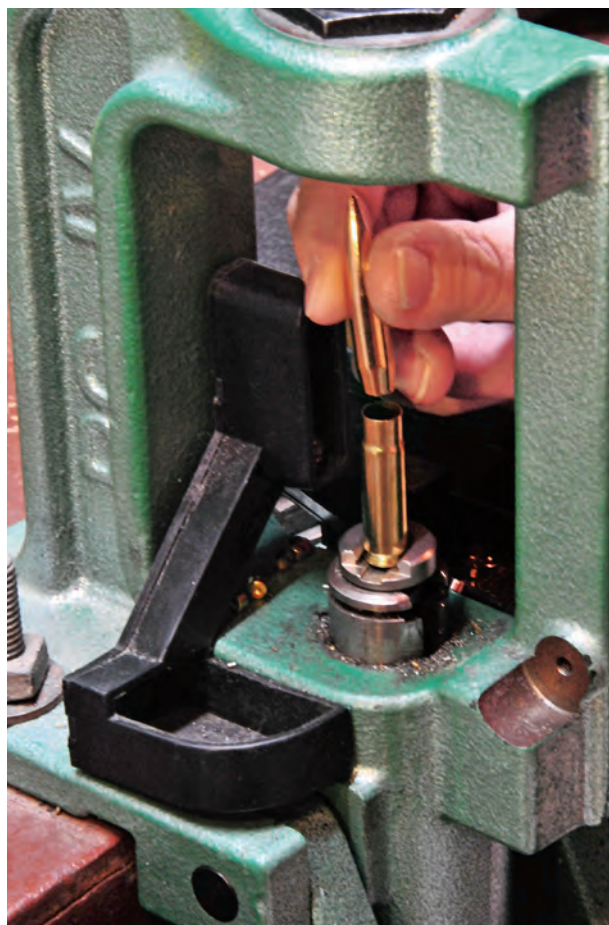
cycled the DPMS carbine flawlessly. I did not have a single failure during the course of testing a multitude of loads, amounting to several hundred rounds in total. After I finished the range testing, I mixed all the remaining ammo up in one big pile and loaded it randomly into 30-round magazines. I fired them into a Savage Range Systems Snail Trap as fast as I could squeeze the trigger on the DPMS carbine. While it was easy to tell the subsonic loads by the different sound and recoil, every round ran without a single issue, that is, except for a very hot barrel and my shop floor littered with brass.

With their short gas systems, AR-15 pistols are finicky beasts, but this pistol ran well with everything except the subsonic loads. I was shooting without a suppressor, and the folks at AAC tell me that if I added a suppressor, the gun should cycle fine. Not to point out the obvious, but what's the point of subsonic ammo if you are not using a suppressor? Reiber told me that it is safe to increase the powder charge with the subsonic loads until the pistol is producing 1,070 fps velocity, which will ensure proper function.

Reiber also explained that this powder's main goal was to function reliably with subsonic loads in carbine-length gas systems, so I went back to the loading bench. I found the heaviest bullets



The author's handloads produced groups that ranged from pretty good to outstanding. More importantly, the loads functioned perfectly in the DPMS carbine.



The small powder charges used for heavy bullets like the 230-grain Berger shown here can cause function problems in gas-operated guns, but the new CFE BLK was designed to eliminate the problems and make these loads function reliably.

CFE BLK LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	VEL. (FPS)	ES (FPS)	SD (FPS)	100-YARD ACCURACY (IN.)
300 AAC Blackout DPMS A-15, 16-in. Barrel									
Hornady	Fed. 205	CFE BLK	23.5	Hornady 110-gr. V-Max	2.040	2228	91	33	1.10
Hornady	Fed. 205	CFE BLK	20.0	Nosler 125-gr. Ballistic Tip	2.060	1962	35	--	1.40
Hornady	Fed. 205	CFE BLK	20.5	Hornady 150-gr. InterBond	2.235	1947	60	17	1.75
Hornady	Fed. 205	CFE BLK	11.6	Hornady 208-gr. A-Max	2.260	1063	59	--	1.85
300 AAC Blackout CMMG MK4, 7.5-in. Barrel									
Hornady	Fed. 205	CFE BLK	23.5	Hornady 110-gr. V-Max	2.040	1935	64	27	----
Hornady	Fed. 205	CFE BLK	20.0	Nosler 125-gr. Ballistic Tip	2.060	1697	23	--	----
Hornady	Fed. 205	CFE BLK	20.5	Hornady 150-gr. InterBond	2.235	1737	43	18	----
Hornady	Fed. 205	CFE BLK	11.7	Hornady 208-gr. A-Max	2.260	1021	16	--	----

NOTES: Accuracy is the average of three, five-shot groups fired from a sandbag benchrest. Velocity is the average of at least five rounds.

I had on my shelf (Berger 230-grain Hybrid Target monsters that look like an ICBM missile). At 1.65 inches, the bullets are much longer than the 300 Blackout case. I loaded 50 rounds and shot them through the carbine. As expected, they cycled without a single hiccup. I should note that I was not using a suppressor on the carbine. So if all the ammo, including the subsonic loads, will cycle with nothing but a squirrel cage flash hider on the muzzle, there should be no issues with a suppressor and the added gas system pressure helping to function the action.

CFE BLK performed exceptionally well in the 300 Blackout with bullets weighing from 110 grains to 230 grains, which is a

very wide bullet weight range in a case this small. Accuracy was excellent, and as expected, even in a new barrel, copper fouling was almost nonexistent. This chrome-lined barrel cleaned up with a few patches and Barnes CR-10 solvent. When I can clean any AR-15 that has had hundreds of rounds through it in less time than it takes Hillary to tell a lie, it makes my heart do its happy dance.

If you are loading and shooting the 300 Blackout, this is sure to become your "do-anything," go-to powder. If you are loading subsonic in this cartridge, you now have the mission-specific propellant you have been waiting for.

All clean. No mess.

The Cyclone Rotary Tumbler is fast, effective, and hands-down delivers the best results of any brass cleaning method.

The included steel pin media and cleaning solution make quick work of stubborn tarnish and grit. Steel media is virtually indestructible, ready for reuse, and perfectly sized to reach every contour of every casing.

The Cyclone also includes our patent-pending, dual pan sifting system. This revolutionary sifting technology separates casings, media pins, and cleaning solution simultaneously, greatly decreasing clean up time.

So you'll get more brilliant brass, more quickly – with a whole lot less mess.

Lyman
Brands that Perform



www.LymanProducts.com



WINCHESTER

572

The new spherical Winchester 572 powder is designed for 20- and 28-gauge shotshells, but it's also perfect for pistol cartridges like the 9mm Luger and 38 Super. **BY CHARLES E. PETTY**

JUST WHEN YOU THINK YOU'VE FINALLY SETTLED on *the* powder for the 9mm Luger, somebody comes along with a monkey wrench in the form of a new one. This time it is Winchester with a number that rang bells—until I figured out it wasn't 571 of yesteryear.

Winchester 572 began at St. Marks Powder Co. as a shotgun powder for use in 20- and 28-gauge target loads, but as is often the case, it turned out to be a good pistol powder, too.

As powder manufacturing methods have improved, it has become possible, and profitable, to define "niches"—powders designed for a specific cartridge or a family of cartridges. And Winchester 572 fit nicely into the 9mm/38 Super niche.

Winchester 572 obviously carries the Winchester name, and once upon a time the St. Marks plant belonged to Winchester. The company sold the plant to General Dynamics and licensed Hodgdon to market powders under the Winchester name. Winchester owns the trademark for "Ball Powder," so nobody else can use it, even if the product was made in the same place. Hodgdon uses "spherical" instead, and this has caused a little confusion.

The label on the new can says "shotshell" and then says, "Also fits a wide range of handgun calibers." Actually, that is true for quite a few shotshell powders, but Winchester suggests that 572 would be especially nice in 9mm Luger and 38 Super. So that's where we start, but the Hodgdon website also has data for quite a few other cartridges, and when time permits I'm going to try it in the 45 ACP.

The 38 Super is enjoying renewed popularity right now with shooters, but the major ammo companies have ignored it for decades. As a result, all the improvements in bullet design we've seen in the 9mm haven't transferred to the Super. One point of contention has been the fact that the nominal bullet diameter for the 9mm is 0.355 inch, while the Super is 0.356 inch. For



The author used 0.355- and 0.356-inch bullets of various weights and styles and Starline brass for 9mm and 38 Super handloads.



WINCHESTER 572

CCI Small Pistol primers were used throughout this project, and the author fired his handloads in a Les Baer Monolith Stinger 4.25-inch-barreled 38 Super pistol and a Les Baer Boss 5-inch-barreled 9mm pistol.

some shooters, this is a cause for great angst, but loading manuals often ignore it and show Super loads with 9mm bullets and vice-versa.

It is questionable whether one thousandth of an inch of diameter matters. And if so, how much? Does the difference have an effect on pressure? Well, probably but not much, and the handloader simply doesn't have the equipment to find out anyhow. But the folks who publish loading manuals do, and that's peachy.

Another factor that can confound handloaders is overall length. Loading manuals always tell us a number, but only one end of that equation matters. If a bullet is seated deeper than the length shown, pressures can go up—sometimes catastrophically. Conversely, seating the bullet out longer reduces pressures, although not as dramatically.

For that reason, I often seat bullets a bit longer than the published length, but there is no arbitrary number. When I begin seating a new bullet weight, I back off the seating stem a little and start seating a bullet. You can easily feel the resistance as it begins to expand the case. I go a bit and stop and look at the round and maybe measure length. When it looks about right, I try the plunk test. If it goes in the pistol barrel's chamber easily but isn't flush with the hood, the seating stem gets turned down a little and the test is repeated. The final step is to finish the crimp and then measure to see if the crimp changed the length and adjust if needed. Then I try it in a magazine; if it fits right, I'm done.

About now somebody is probably yelling at me about a crimp die. Some feel strongly that seating and crimping should be separate operations, and there is nothing wrong with doing it that way if you wish. But in several controlled tests, I have found no clear advantage to either method. Modern dies have a taper crimp built in, so, if nothing else, it saves a bit of time.

After this procedure, the overall length almost always ends up being five to ten thousandths longer than that shown in the manuals, and it has yet to cause me any problems. The lengths shown in the accompanying chart are derived that way, but I have a barrel, caliper, and magazine on the bench, too.

I shot the 38 Super a lot in my IPSC days and never once had a case of "super face," where an overly enthusiastic load ruptured the case and blew gas and sometimes bits of brass all over the shooter. That's one reason why we now have +P 38 Super brass and ramped barrels. In IPSC the 38 Super could make the major power factor—something the 9mm couldn't do.

Today's handloader has a variety of choices in powder available for almost any cartridge he loads. That can be both blessing and curse. Way back when, there might only be a couple of powders



suitable for a cartridge, but now there can be as many as a dozen that might be used. It's up to us to find out which powder best meets our needs. I tend to think of them as niche products, and manufacturers now have the ability to tailor burning rate and density to favor a single cartridge—or a small family of cartridges with similar needs.

While we characterize powders as single or double base depending on whether nitroglycerine is used, there are chemicals and processes that are used to stabilize the chemistry, suppress flash, modify burning rates, and control the porosity of the powder grains that give powder makers considerable flexibility to fit rather narrow niches.

The powder burning rate charts found in most manuals can give us some clues. The numbers do not have specific values. Instead they are *relative* for comparative purposes, from faster to slower based on their position in the chart. So if we know a certain powder is good with one we already load, another powder close to it on the chart may be, too. But we cannot use data from a powder we know to extrapolate to the new one. We already know the folly of apples-to-oranges comparisons, and this is another example.

The 38 Super is the stepchild of the 38 ACP (a.k.a. 38 Auto, 38 Colt Automatic) from 1902. Introduced in 1929, the intent

Dan Wesson
DAN WESSON FIREARMS®

CUSTOM GRADE WITHOUT THE CUSTOM PRICE TAG

What sets us apart?

- Zero MIM
- Fully machined parts
- Extensive hand-fitting and polishing
- Exceptional quality standards

DW Heritage
.45 ACP
Government-size
Stainless Frame and Slide
Tritium Front Sight, Snag-Free Rear
MSRP \$1,298

Dan Wesson CCO
.45 ACP
Alloy Officer Frame
Stainless Commander Slide
Snag-free Tritium Night Sights
MSRP \$1,558

DW ECO
.45 ACP or 9mm
Alloy Officer Frame
Stainless Officer Slide
Two-dot Tritium Sights
MSRP \$1,623-1,662

CZ Drake

Watch it in action on



On the Outdoor Channel

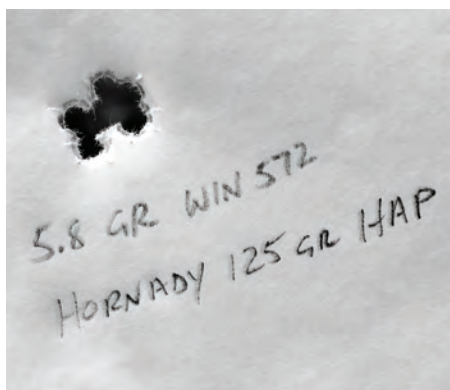
**\$629
MSRP**

- 12 or 20 Gauge
- One-piece CNCed Receiver
- Turkish Walnut Stock
- Hand Engraved Action
- Laser-cut Checkering
- 5 Interchangeable Chokes

 **CZ-USA**
PROTECT • HUNT • COMPETE

**FOR MORE INFORMATION
VISIT CZ-USA.COM**

WINCHESTER 572



Winchester 572 powder proved to be extremely accurate in the 38 Super and 9mm cartridges. The five-shot 9mm group shown (top) measured 0.409 inch; the five-shot 38 Super group shown measured 0.527 inch.



All accuracy testing was done with the guns mounted in a Ransom Rest, and a LabRadar chronograph was used to collect the data. The unit gives true muzzle velocity since there is no screen spacing to have an effect.

was to add some horsepower to the 38 ACP by increasing the allowable chamber pressure. The customary 130-grain FMJ went from 1,040 fps to 1,215 fps. The cases of the ACP and the Super are exactly the same, and for reasons perhaps known only to Mr. Browning, they follow in the footsteps of the 32 ACP and are of semirimmed design.

The original barrels had a shelf inside the hood (headspace extension) that caught the semirim to establish the headspace. This was thought to be responsible for the rather lackluster accuracy of early 38 Super pistols, so when IPSC shooters began to face targets at 50 yards or more, it was changed to headspace on the case mouth as was the situation with most semiautomatics. Then shooters attempting to make major power factors with lighter bullets began to experience ruptured cases due to excessive pressure, so the web was thickened and +P was added to the nomenclature of the Super.

The latest burning rate chart puts Winchester 572 between Accurate No. 5 and HS-6 and just a tad slower than AutoComp and CFE Pistol. Accurate No. 5 used to be my favorite for the 38 Super, and both CFE and AutoComp have done exceptionally well in 9mm.

Putting W572 to a Test

Anytime a new powder is announced, magazines will be swamped the next day with requests for loading data they don't have. And even if they did have the powder, it takes

awhile to load and test ammo and sometimes months before it gets to print. This time things were different. When I received this assignment, Hodgdon already had data on its website. When the powder arrived, I went to work.

My practice is to study the data and establish three charge weights to test. I used Hodgdon's established starting and maximum loads, and then I picked a charge in the middle for the third. When companies are generating data, most of them work up to the maximum charge in a pressure test gun and then choose an arbitrary reduction (usually 10 to 20 percent) for the starting load. They assume that charge will function in most pistols—and it usually does—but the 38 Super pistol I used here was new and tight, so a couple of the starting loads did not function (DNF). It is also possible to work down from that point in search of less recoil or better accuracy, but do it in small steps to avoid sticking a bullet in the bore.

Projects like this require a lot of time loading, shooting, chronographing, and measuring, so anything that speeds up the process is a bonus for me. Enter the LabRadar chronograph. It uses nothing downrange, which greatly simplifies set up, and it is unaffected by ambient light. The unit sits on the bench beside the gun and tracks the bullet by way of Doppler radar. When the unit is placed even with the muzzle of the gun, it is triggered by the sound of the shot, and the display shows "V0," which is the actual muzzle velocity. It will also display five additional velocities at specified distances.

BARNES
OPTIMIZED FOR YOUR TARGET™

*Precision built
from passion.*



TSX® –Barnes' most popular hunting bullet. The TSX has gained worldwide recognition as one of the deadliest, most dependable hunting bullets you can buy.



TIPPED TSX® –The proven performance of the TSX bullet with a polymer tip that improves long-range ballistics. Instant expansion and perfect penetration for quicker kills.



LRX®—LONG-RANGE X: For the long-range hunter who demands pin-point accuracy. Higher B.C. values, ogive and boat tail lengths improve the bullets' long-range ballistics performance.

— WWW.BARNESBULLETS.COM • 800-574-9200 —

WINCHESTER 572 LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	VEL. (FPS)	SD (FPS)	25-YARD ACCURACY (IN.)
9mm Luger Les Baer Boss, 5-in. Barrel								
Starline	CCI 500	W572	5.4	Barnes 80-gr. TAC-XP	1.05	1325	20	0.75
Starline	CCI 500	W572	5.8	Barnes 80-gr. TAC-XP	1.05	1370	23	0.70
Starline	CCI 500	W572	6.2	Barnes 80-gr. TAC-XP	1.05	1448	23	0.92
Starline	CCI 500	W572	5.5	Speer 90-gr. Gold Dot	1.05	1216	19	0.55
Starline	CCI 500	W572	5.9	Speer 90-gr. Gold Dot	1.05	1309	25	0.64
Starline	CCI 500	W572	6.4	Speer 90-gr. Gold Dot	1.05	1347	17	0.68
Starline	CCI 500	W572	5.4	Sierra 95-gr. FMJ	1.05	1208	14	0.81
Starline	CCI 500	W572	5.8	Sierra 95-gr. FMJ	1.05	1275	20	0.55
Starline	CCI 500	W572	6.3	Sierra 95-gr. FMJ	1.05	1347	12	0.82
Starline	CCI 500	W572	5.3	Nosler 115-gr. JHP	1.07	1171	13	0.70
Starline	CCI 500	W572	5.5	Nosler 115-gr. JHP	1.07	1201	14	0.62
Starline	CCI 500	W572	5.7	Nosler 115-gr. JHP	1.07	1221	16	1.21
Starline	CCI 500	W572	5.3	Berry's 124-gr. PHP	1.05	1111	19	1.36
Starline	CCI 500	W572	5.6	Berry's 124-gr. PHP	1.05	1184	20	1.29
Starline	CCI 500	W572	5.8	Berry's 124-gr. PHP	1.05	1210	16	0.83
Starline	CCI 500	W572	4.0	Hornady 125-gr. HAP	1.210	884	20	1.03
Starline	CCI 500	W572	4.3	Hornady 125-gr. HAP	1.210	954	21	0.88
Starline	CCI 500	W572	4.6	Hornady 125-gr. HAP	1.210	1014	12	0.82
Starline	CCI 500	W572	3.5	Remington 147-gr. FMJ	1.260	784	24	1.04
Starline	CCI 500	W572	3.8	Remington 147-gr. FMJ	1.260	835	14	0.65
Starline	CCI 500	W572	4.1	Remington 147-gr. FMJ	1.260	900	12	0.71
38 Super Les Baer Monolith Stinger, 4.25-in. Barrel								
Starline	CCI 500	W572	6.1	SIG SAUER 90-gr. JHP	1.210	1093	100	DNF
Starline	CCI 500	W572	6.5	SIG SAUER 90-gr. JHP	1.210	1131	50	DNF
Starline	CCI 500	W572	7.0	SIG SAUER 90-gr. JHP	1.210	1306	19	1.41
Starline	CCI 500	W572	6.0	Sierra 95-gr. FMJ	1.255	1031	59	DNF
Starline	CCI 500	W572	6.5	Sierra 95-gr. FMJ	1.255	1192	37	1.28
Starline	CCI 500	W572	7.0	Sierra 95-gr. FMJ	1.255	1295	27	1.36
Starline	CCI 500	W572	6.2	Nosler 115-gr. JHP	1.210	1148	12	1.11
Starline	CCI 500	W572	6.6	Nosler 115-gr. JHP	1.210	1226	12	1.35
Starline	CCI 500	W572	7.1	Nosler 115-gr. JHP	1.210	1305	13	1.14
Starline	CCI 500	W572	5.8	Berry's 124-gr. PHP	1.250	1088	14	1.84
Starline	CCI 500	W572	6.3	Berry's 124-gr. PHP	1.250	1159	14	2.62
Starline	CCI 500	W572	6.7	Berry's 124-gr. PHP	1.250	1222	12	3.65
Starline	CCI 500	W572	5.5	Hornady 125-gr. HAP	1.275	1033	9	1.16
Starline	CCI 500	W572	5.8	Hornady 125-gr. HAP	1.275	1082	15	0.77
Starline	CCI 500	W572	6.3	Hornady 125-gr. HAP	1.275	1144	12	0.74
Starline	CCI 500	W572	5.4	Speer 130-gr. TMJ	1.275	1014	17	1.30
Starline	CCI 500	W572	5.8	Speer 130-gr. TMJ	1.275	1074	9	1.30
Starline	CCI 500	W572	6.2	Speer 130-gr. TMJ	1.275	1145	12	1.11
Starline	CCI 500	W572	5.2	Remington 147-gr. FMJ	1.260	962	9	1.05
Starline	CCI 500	W572	5.6	Remington 147-gr. FMJ	1.260	1024	21	0.88
Starline	CCI 500	W572	5.9	Remington 147-gr. FMJ	1.260	1081	11	0.82
DNF = Did Not Function								
NOTES: Accuracy is the average of three, five-shot groups fired with the gun mounted in a Ransom Rest. Velocity is actual as measured by the LabRadar chronograph.								



The W572 powder also proved to be very clean-shooting.

Conventional chronographs really give us the velocity at the midpoint of the screen spacing. So that is 2 feet, and the first screen is 10 feet from the muzzle, so the display tells us the velocity at 11 feet. For most purposes that small discrepancy is ignored.

The heart and soul of the unit is surely the computer program, and the most daunting part is, with the instruction manual on your lap, inputting all the variables. For the most part, one can establish standard distances and use them all the time. Then the only thing you need to change is bullet weight. It records all the data and saves it automatically to an SD card, but old habits die hard, and the data was also recorded on the spreadsheet I made with all the loading data.

The LabRadar saves an incredible amount of time because set up is so simple. Position the unit even with the muzzle, 10

to 12 inches to either side, and there's a small notch on top of the unit that you simply align with the target. Then you can start shooting. When you finish a string, push one button and the display gives you the average, extreme spread, and standard deviation on one screen.

Winchester 572 is a little fluffier than many spherical powders, and most charges come close to 100 percent loading density. In other words, they don't leave much empty space, and some are lightly compressed. That is usually a good thing.

As often as possible, I used the same bullets the Hodgdon technicians did and found very good agreement between their velocities and mine. But the most striking observation was the consistent accuracy among the different charge weights. There is usually a "sweet spot" for accuracy, but with most of the bullets tested, the differences between start and maximum charge were small. While the data speaks for itself, the Speer 90-grain Gold Dot averaged 0.623 inch for all nine groups.

Everyone wants to know about cleanliness. When the test started, the guns were cleaned and received no attention during the test other than a drop or two of oil. When the guns got home from the shooting range, neither bore showed any visible signs of fouling, and a new patch that was run through the 9mm barrel after 315 rounds using nothing but Winchester 572 was only lightly soiled when it came out. Had there been any cast bullets with conventional lube in the test, that result would surely have been different. But it's clear that Winchester 572 is *clean*.



A Proven Combination for Success!





CFE BLK

IN VARMINT CARTRIDGES

Hodgdon's new CFE BLK powder is perfect for 17 Hornet, 17 Ackley Hornet, 17 Fireball, 218 Bee, and 221 Fireball handloads.

BY LAYNE SIMPSON

CFE BLK IS THE THIRD IN THE SERIES OF COPPER Fouling Eraser propellants. CFE 223 was introduced in 2012, and CFE Pistol followed in 2014. Nitroglycerine content makes them double-base propellants.

Like some other spherical powders, this new one from Hodgdon performs best in cartridge case capacity/bullet weight combinations that allow 90 to 100 percent load density. Slightly compressed charges often deliver the lowest shot-to-shot variations in velocity, while dropping much below 90 percent can result in high velocity spreads. Having a burn speed close to H4198 and IMR 4198 makes CFE BLK suitable for use in a variety of applications, including the .17- and .22-caliber varmint cartridges covered in this report. And CFE BLK does have several advantages over those two propellants.

CFE BLK Advantages

Due to a higher density, more CFE BLK can be packed into a case. According to my measurements, its gravimetric density is 0.980 gram per cubic centimeter, the same as for water. When a Redding Handgun/Small Rifle measure is set to throw 20.0 grains of CFE BLK, it throws 16.3 grains of IMR 4198. High density is especially important when loading small-capacity cartridges. The Hornady and Ackley versions of the 17 Hornet are examples. Whereas squeezing in enough IMR 4198 to reach top velocities with those two can be challenging, maximum charges of CFE BLK drop in with a bit of room to spare.

The new powder also flows through good powder measures with minimum charge-to-charge variation in weight. This is especially important when loading ammunition on a progressive press. Smooth flow is also convenient to those who load on a single-stage press as it allows powder charges to be dispensed by a measure as opposed to the slower method of weighing each

charge. Whereas the Redding Model No. 2 scale used in my tests detected no weight variation in charges of CFE BLK dispensed by the Redding measure, IMR 4198 varied by as much as 0.3 grain.

Last but certainly not least, the ability of CFE BLK to reduce copper fouling in barrels gives it a big edge for high-volume shooting of prairie dogs, ground squirrels, and other varmints. I began my shooting tests by using Barnes CR-10 solvent to ensure no copper fouling lurked in the barrels of the test guns. While shooting, I cleaned powder fouling from their barrels after each 25-round string, but applied no additional copper solvent.

The camera rod of my Lyman borescope is too large in diameter for .17-caliber barrels, so for three of the test rifles I relied on cleaning patches wet with copper solvent to detect the presence of metal fouling. The barrels of the Ruger Model 77/17H and the Remington XP-100 had accumulated some, but it vanished after only three applications of solvent. The fouling was a bit heavier in the Marlin 1894, but it was easily removed. Absence of copper fouling in the Shilen barrel of the SSK Industries Contender and the barrels of the Cooper Model 21 and the Sako L46 indicated extremely smooth bores.

Hodgdon's Ron Reiber was the first to try CFE BLK in the field. During May 2016, he thinned the Idaho rockchuck and ground squirrel populations with a custom pistol in 17 Hornet built around a single-shot Sako A1 action. Rod Herrett stocked the gun, and Fred Smith fitted its 15-inch Shilen barrel. Reiber's load consisted of the Remington 6½ primer, Hornady case, and Hornady 20-grain V-Max seated out to lightly engage the rifling. Muzzle velocity was 3,488 fps at a chamber pressure of 46,400 psi. Several five-shot groups fired at 100 yards measured less than 0.250 inch. In testing the ability of the powder to "Erase Copper Fouling," Reiber fired a 467-round string during the varmint shoot with no cleaning, except for occasional dry-brushing to sweep out powder fouling. Patches wet with Barnes CR-10 pushed through the bore revealed a total absence of copper fouling.

CFE BLK IN VARMINT CARTRIDGES



Now let's take a close look at the performance of CFE BLK in several varmint cartridges.

17 Hornet

Rifles chambered for the various .17-caliber centerfire cartridges often have extremely long chamber throats, and the Ruger Model 77/17H test rifle is one of them. The 20-grain bullet of Hornady factory ammunition had to free-travel 0.102 inch prior to rifling engagement. While accuracy was better with that ammo than I had anticipated (averaging 1.55 inches at 100 yards), seating bullets in handloads to lightly contact the rifling shrank group size considerably. An overall cartridge length of 1.815 inches with the Hornady 20-grain V-Max exceeds what the Ruger magazine is capable of handling, so those rounds had to be manually loaded directly into the chamber. When shooting ground squirrels and prairie dogs with a bolt-action rifle, I seldom use its magazine anyway.

The 17 Hornet was given a S.A.A.M.I. maximum overall cartridge length of 1.720 inches to ensure its compatibility with the magazines of rifles originally designed for the .22 Hornet. The magazine of the Ruger rifle will handle longer. It fed cartridges measuring 1.750 inches just fine, but to avoid any feeding issues in the field, I reduced COL to 1.745 inches. That put bullets 0.060 inch off the rifling, and while accuracy was not as good as with bullets touching the rifling, it was considerably better than with a longer jump.

Use of the Remington 6½ primer improved accuracy in Reiber's gun as well as mine. Its cup is softer than that of the Remington 7½ primer, but neither of us experienced pierced primers when using a charge 0.3 grain shy of maximum. When using that primer in this cartridge, it is important to begin with a starting load and keep a close eye on fired primer condition while carefully working up. If Hodgdon's recommended maximum of 12.8 grains is used, switching to the Remington 7½ or Federal 205M primer is advised.

Regardless of the powder used, velocity spread can be a bit high with the 17 Hornet, although it seldom affects accuracy enough to matter within the effective varmint-shooting range

The burn rate of the new CFE BLK is similar to that of IMR 4198, but its spherical shape allows it to flow through a powder measure with no detectable variation in charge-to-charge weight. For that level of consistency, each charge of IMR 4198 has to be weighed on a scale.

of the cartridge. When it comes to choosing a primer, it and the 17 Ackley Hornet can be finicky from rifle to rifle. A friend of mine has two custom rifles in 17 Hornet, and accuracy from one is best with the Remington 6½, while the other prefers the Winchester WSR. A Cooper rifle I shot performed best with the Federal 205M. The Ruger test rifle used in this report preferred the Remington 6½ primer. Like I said, different rifles, different preferences in primers.

17 Ackley Hornet

During my youth, I shot a custom single-shot rifle in 17 Ackley Hornet built on a Winchester Model 1885 action belonging to one of my father's hunting pals. He owned no powder scale and simply filled the case to the brim with IMR 4198, seated a bullet on top, and commenced to terrorize the local crow population. I was reminded of him while loading IMR 4198 in the Ackley cartridge in order to compare its performance with CFE BLK. Hodgdon's recommended maximum of 12.5 grains with a 20-grain bullet fills a case formed from Winchester 22 Hornet brass to its brim.

If the owner of that first rifle in 17 Ackley Hornet were still here, he would likely be tickled to see a load with his favorite powder slightly better the accuracy of CFE BLK. But the difference was not great. Either powder is an excellent choice for P.O. Ackley's little cartridge, but loading CFE BLK is faster because it flows through a good powder measure with much greater uniformity in charge weight.

I was curious to see how Hornady's factory load would perform in my SSK Industries rifle. I first pulled bullets and dumped powder. Running the cases through a 17 Ackley Hornet full-length resizing die with its decap pin removed resized case necks and bumped the shoulder back just enough to allow entry into the chamber of the rifle but left the primer in place. The original powder charge was then poured back in, and the factory bullet was seated to the original overall cartridge length of 1.712 inches. A lot of trouble for sure, but it satisfied my curiosity. I had expected chamber pressure and velocity of the factory load to be a bit lower in the improved chamber, and they were, but accuracy in my rifle was quite good. With the case shoulder bumped back and bullets reseated, it averaged 0.64 inch for five, five-shot groups at 100 yards.

And for those who have grown weary of forming 17 Ackley Hornet cases from 22 Hornet brass, I have included a CFE BLK load in Hornady's 17 Hornet case. As I mentioned, running the case through a 17 Ackley Hornet full-length resizing die bumps back the shoulder, allowing it to fit into the Ackley chamber. It ends up with a shorter neck than a case formed from 22 Hornet brass, but prairie dogs don't seem to mind, and accuracy does not suffer.



WE'RE GAME TO LOOK OVER THE NEXT HILL
IF YOU ARE.



RAZOR^{HD}
 SPOTTING SCOPE

The pinnacle of the high-end spotting scope landscape, Vortex® Optics' new Razor HD Spotting Scopes set a new standard in high-end optical technologies, precision craftsmanship and ultra-sleek functionality. Premium HD lens elements deliver brilliant, razor-sharp, true-to-life views. Fully multi-coated with XR Plus coatings for maximum light transmission. A smooth-as-silk helical-style focus dials in your image. Hunters who need a premium spotter that performs at the highest level have found their match with the Razor HD series.

CFE BLK IN VARMINT CARTRIDGES

17 Remington Fireball

While the 17 Fireball is about 300 fps slower with all bullet weights than the 17 Remington, it is probably more popular today because it burns about 20 percent less powder with each squeeze of the trigger. When carefully prepared handloads are fired in good barrels, accuracy of the two cartridges is the same. And while the burn rate of CFE BLK is too quick for the 17 Remington, Hodgdon recommends it for the smaller cartridge.

Remington factory ammo measures 1.810 inches in length and due to a fairly long chamber throat in the test rifle, the bullet is required to free-travel 0.183 inch prior to engaging the rifling. Despite their long leap through space, five of the 20-grain AccuTip-V bullets consistently landed inside an inch at 100 yards. And accuracy improved with a shorter jump in my handloads. The interior magazine length of Remington Model 700 rifles chambered for this cartridge is shortened at the factory by the installation of a filler block. Although overall cartridge length is restricted to about 1.950 inches, there is still more than enough room to seat bullets close to the rifling should doing so be necessary or desired.

I started my search for accuracy by seating the Nosler and Berger bullets so that they lightly kissed the rifling. Bullet jump was then extended in 0.005-inch increments until the sweet spot was found. It varied among the three bullets tried. The Berger 30-grain bullet delivered only slightly better accuracy with 0.005-inch jump than with no jump, and an increase of another 0.005 inch opened up groups. The Berger 25-grain bullet preferred 0.010 inch. The Nosler 20-grain bullet was happiest at 0.015 inch.

Whereas CFE BLK proved to be an excellent choice for the two 17 Hornets, shot-to-shot velocity spread was quite high when it was asked to burn in the roomier case of the 17 Fireball. In addition to delivering much lower velocity spreads, accuracy was better with IMR 4198 and H335. Other rifles might disagree.

218 Bee

I have owned several rifles in 218 Bee through the years, the first being a Winchester Model 43. My most accurate—and one I still have—is a Sako L46. Another Bee I'll hang onto for a while is a Marlin 1894.

The 218 Bee was developed specifically for the Winchester Model 65 lever action, and

despite its extremely light recoil, it has always been factory loaded with tube-magazine-friendly bullets with flatnose profiles. The use of more streamlined pointed bullets in bolt-action rifles, such as the Winchester 43, Kimber 82, and Sako L46, flattens trajectory and increases downrange punch. But like most rifles in 22 Hornet, the barrels of those in 218 Bee have a rifling twist of 1:16 inches, which is not quick enough to stabilize many of the bullets listed for this cartridge in various reloading manuals. My rifle is extremely accurate with the Hornady 40-grain V-Max and Nosler 40-grain Ballistic Tip, but it will not completely stabilize the 50-grain versions of those two bullets.



The author tested handloads built with CFE BLK in the varmint cartridges (left to right): 17 Hornet, 17 Ackley Hornet, 17 Remington Fireball, 218 Bee, and 221 Remington Fireball. He used the following bolt-action, single-shot, and lever-action rifles (left to right): Ruger Model 77/17H, SSK Industries Contender, Remington Model 700 LTD, Sako L46, Marlin 1894CL, and Cooper Model 21.

Purpose Built for Shooters & Reloaders



***DS-750**

Reloading Accessories



***CAST1**



***R-100 Series**



***P-100 Series**



***P-50 Series**



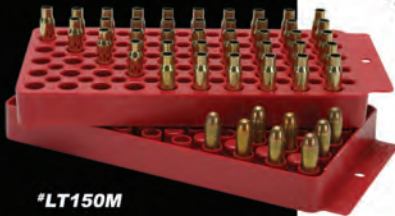
Ammo Storage



***SF-100D**



Multi Gauge Shotgun Cases



***LT150M**



***J-20 Series**



***R-50 Series**



***S25D**



**K-Zone™
Shooting Rest
*KSR-30**



***AC11**



O-Ring Seal Dry Storage Containers



***AC50C-11**

**Made In
U.S.A.**



Check out our website for MTM dealers near you!
MTM Molded Products Co - (937) 890-7461 - www.mtmcase-gard.com

CFE BLK IN VARMINT CARTRIDGES



Two of the very best choices are the Hornady and Sierra Hornet bullets weighing 45 grains. In addition to stabilizing in a 1:16 twist, their thin jackets make them more effective on varmints than bullets of the same weight and even lighter that are constructed for cartridges of higher velocities. The Sierra 40-grain Hornet is also quite good.

When preparing loads for the Marlin rifle, I started with two flatnose bullets: the Hornady 45-grain hollowpoint and the Speer 46-grain softnose. Like those bullets, the Sierra 40- and 45-grain Hornets expand on varmints quite nicely, but since they do not have flat noses, no more than one should be loaded in the tubular magazine of a lever-action rifle. One in the chamber and another in the magazine makes it a two-shooter.

Through the years I have handloaded for several lever-action rifles chambered for the 218 Bee, and recoil is so light I never found it necessary to crimp the mouth of the case into the bullet, so lack of a cannelure on the Sierra bullets is not a factor. While the S.A.A.M.I.-recommended maximum overall cartridge length is 1.680 inches, my Marlin 1894 feeds 1.720-inch-long rounds without a hitch.

Hodgdon's listing of 18.0 grains of CFE BLK as maximum for 30- and 35-grain bullets needs clarification. The S.A.A.M.I. maximum average pressure for the 218 Bee is 40,000 CUP. Pressures generated in Hodgdon's pressure barrel for an 18.0-grain charge behind those two bullet weights was only 33,500 and 35,700 CUP respectively. When dropped from a powder measure, an 18.0-grain charge fills a Winchester case almost to the brim, so when applied to those two bullet weights only, the word "maximum" indicates that 18.0 grains is the maximum amount of CFE BLK the case will hold. But by using a 7-inch drop tube, I managed to coax in 18.5 grains behind the Berger 30-grain and Hornady 35-grain bullets. Pressure indications were still quite mild in my rifle. Respective starting charge weights for those two bullets are 15.8 and 15.3 grains.

Regardless of whether the .221 Fireball cartridge is used in a Remington XP-100 pistol or a Cooper Model 21 rifle, CFE BLK is one of the very best propellants available for use in handloads.

221 Remington Fireball

Whether in a rifle or a long-range handgun, the 221 Fireball is one of my favorite varmint cartridges, mainly due to its accuracy and a small appetite for powder. While perusing the CFE BLK data I received from Hodgdon, I felt a bit disappointed by the absence of my favorite ground squirrel atomizer in that cartridge: the Berger 30-grain hollowpoint.

The introduction of Lil'Gun by Hodgdon in 1999 was one of the best things to happen to the 221 Fireball, and I was curious to see how slower-burning CFE BLK would stack up against it. Starting at 18.0 grains of CFE BLK, I worked up to 21.5 grains, a charge that fills the case about halfway up its neck. Compression is light when the Berger 30-grain bullet is seated to an overall cartridge length of 1.830 inches. Velocity from the 10.75-inch barrel of

the XP-100 was just over 3,100 fps, with accuracy as good as that particular gun has ever produced.

While shooting the Cooper Model 21, I experimented a great deal with bullet jump (or lack of it), and the Berger 30-grain bullet shot best when seated 0.005 inch into the rifling. Velocity from the 24-inch barrel exceeded 3,860 fps. The Sierra 40-grain hollowpoint also preferred 0.005 inch of rifling engagement. The Sierra 40-grain BlitzKing delivered the smallest groups when seated out to lightly kiss the rifling, while the 50-grain BlitzKing preferred 0.005 inch of jump.

Regardless of how bullets were seated, chamber pressures appeared to be on the mild side in the Cooper and Remington guns.

Determined to include a Berger 30-grain load in this report, I asked my friends at Hodgdon to shoot it in their 24-inch pressure barrel. Velocities from pressure barrels are usually higher than velocities from off-the-shelf rifles, but in this case it was quite close at 3,836 fps. A chamber pressure of 40,600 CUP is well below the S.A.A.M.I. maximum of 52,000 CUP for the 221 Fireball and also considerably below the pressure generated by a maximum charge of Lil'Gun with the Berger 30-grainer. Cases last just short of forever, an important consideration when choosing a powder for loading bucketfuls of cartridges needed for defending your position from hordes of crazed flickertails.

As much as I like Lil'Gun in the 221 Fireball, I have to admit CFE BLK has pushed it to second place on my preference chart. Accuracy of the two powders in my guns is about the same, but the new powder pushes 40- and 50-grain bullets faster at slightly lower chamber pressures. Muzzle flash in a 10.75-inch barrel is minimal, while touching off a charge of Lil'Gun is remindful of how the 221 Fireball got its name. All things considered, this new propellant from Hodgdon ranks among the very best choices available for Remington's littlest .22-caliber centerfire cartridge.

CFE BLK LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	FREE-TRAVEL (IN.)	COL (IN.)	VEL. (FPS)	ES (FPS)	100-YARD ACCURACY (IN.)
17 Hornet Ruger Model 77/17H, 24-in. Barrel, 1:9 Twist									
Hornady	Rem. 6½	CFE BLK	12.5	Hornady 20-gr. V-Max	0.000	1.815	3509	82	1.27
Hornady	Rem. 7½	CFE BLK	12.8	Hornady 20-gr. V-Max	0.094	1.745	3537	95	1.59
Hornady	Fed. 205M	CFE BLK	12.8	Hornady 20-gr. V-Max	0.094	1.745	3489	35	1.63
Hornady	Rem. 6½	CFE BLK	11.3	Hornady 25-gr. HP	0.068	1.745	3029	34	1.32
Hornady	Fed. 205M	CFE BLK	11.6	Hornady 25-gr. HP	0.068	1.745	3046	67	1.48
17 Hornet Custom Sako A1 Pistol, 15-in. Barrel, 1:10 Twist									
Hornady	Rem. 6½	CFE BLK	12.5	Hornady 20-gr. V-Max	0.000	1.825	3488	12	0.35
17 Ackley Hornet SSK Industries Contender, 24-in. Barrel, 1:9 Twist									
Winchester	Fed. 205M	H4198	12.5(C)	Hornady 20-gr. V-Max	0.005	1.805	3588	28	0.33
Winchester	Fed. 205M	CFE BLK	12.8	Hornady 20-gr. V-Max	0.005	1.805	3627	52	0.47
Hornady	Fed. 205M	CFE BLK	12.8	Hornady 20-gr. V-Max	0.005	1.805	3644	41	0.41
Winchester	Fed. 205M	CFE BLK	11.5	Hornady 25-gr. HP	0.005	1.805	3215	39	1.18
17 Fireball Remington Model 700 LTD, 24-in. Barrel, 1:9 Twist									
Remington	Rem. 7½	CFE BLK	17.0	Nosler 20-gr. VG	0.015	1.846	3819	163	1.18
Remington	Rem. 7½	IMR 4198	16.7	Nosler 20-gr. VG	0.015	1.846	3983	61	0.47
Remington	Rem. 7½	CFE BLK	15.1	Berger 25-gr. VHP	0.010	1.850	3355	176	0.67
Remington	Rem. 7½	IMR 4198	16.2	Berger 25-gr. VHP	0.010	1.850	3587	54	0.42
Remington	Rem. 7½	CFE BLK	14.5	Berger 30-gr. VHP	0.005	1.823	3320	144	0.58
Remington	Rem. 7½	H335	17.0	Berger 30-gr. VHP	0.005	1.823	3444	32	0.52
218 Bee Sako L46, 24-in. Barrel, 1:16 Twist									
Winchester	Rem. 6½	CFE BLK	18.5(C)	Berger 30-gr. HP	0.010	1.790	3402	94	0.88
Winchester	Rem. 6½	Lil'Gun	14.5	Berger 30-gr. HP	0.010	1.790	3485	75	0.47
Winchester	Rem. 6½	CFE BLK	18.5(C)	Hornady 35-gr. V-Max	0.010	1.720	3388	57	1.16
Winchester	Rem. 6½	CFE BLK	18.0(C)	Sierra 40-gr. HP	0.005	1.765	3214	32	0.52
Winchester	Rem. 6½	Lil'Gun	14.0	Sierra 40-gr. HP	0.030	1.700	3272	36	0.48
Winchester	Rem. 6½	CFE BLK	16.4	Hornady 45-gr. Hornet	0.015	1.720	3014	16	0.57
Winchester	Rem. 6½	Lil'Gun	10.2	Hornady 45-gr. Hornet	0.020	1.710	2658	37	0.51
218 Bee Marlin Model 1894CL, 22-in. Barrel, 1:16 Twist									
Winchester	Rem. 6½	CFE BLK	18.0(C)	Sierra 40-gr. Hornet	0.050	1.720	3176	30	1.54
Winchester	Rem. 6½	CFE BLK	16.4	Hornady 45-gr. HP BEE	0.030	1.660	2986	87	1.46
Winchester	Rem. 6½	CFE BLK	16.4	Speer 46-gr. Bee	0.025	1.670	3022	104	1.72
221 Fireball Remington XP-100, 10.75-in. Barrel, 1:12 Twist									
Nosler	Fed. 205M	CFE BLK	21.5	Berger 30-gr. HP	+0.005	1.914	3107	31	0.75
Nosler	Fed. 205M	Lil'Gun	15.5	Berger 30-gr. HP	+0.005	1.914	3068	65	0.84
Nosler	Fed. 205M	CFE BLK	20.8	Sierra 40-gr. HP	0.010	1.839	3012	50	0.92
Nosler	Fed. 205M	CFE BLK	20.8	Sierra 40-gr. BK	0.010	1.852	2982	53	0.82
Nosler	Fed. 205M	Lil'Gun	15.0	Sierra 40-gr. BK	0.010	1.852	2880	49	0.77
Nosler	Fed. 205M	CFE BLK	19.8	Sierra 50-gr. BK	0.005	1.853	2788	39	1.14
221 Fireball Cooper Model 21 Montana Varminter, 24-in. Barrel, 1:12 Twist									
Nosler	Fed. 205M	CFE BLK	21.5	Berger 30-gr. HP	+0.005	1.996	3862	82	0.31
Nosler	Fed. 205M	Lil'Gun	15.5	Berger 30-gr. HP	+0.005	1.996	3851	48	0.36
Nosler	Fed. 205M	CFE BLK	20.8	Sierra 40-gr. HP	+0.005	1.842	3619	26	0.38
Nosler	Fed. 205M	CFE BLK	20.8	Sierra 40-gr. BK	0.000	1.998	3621	33	0.41
Nosler	Fed. 205M	Lil'Gun	15.0	Sierra 40-gr. BK	0.000	1.998	3473	15	0.45
Nosler	Fed. 205M	CFE BLK	19.8	Sierra 50-gr. BK	0.005	1.949	3344	25	0.51
Nosler	Fed. 205M	H335	22.0	Sierra 50-gr. BK	0.005	1.949	3172	49	0.74

(C) Compressed powder charge

NOTES: Accuracy is the average of five, five-shot groups fired from a sandbag benchrest. Velocity is the average of 10 rounds measured 12 feet from the guns' muzzles.



HANDLOADING THE 6.5 CREEDMOOR

Inherent accuracy and eyebrow-raising ability at long range have made the 6.5 Creedmoor the most popular precision cartridge on the market. **BY JOSEPH VON BENEDIKT**

I'M GOING TO STICK MY NECK OUT AND DECLARE THAT IN TERMS of popularity and pure usefulness the 6.5 Creedmoor is the 30-06 of the 21st century. It's a superbly efficient cartridge of cutting-edge design. It's well mannered, effective on most game and for long-distance shooting, and easy to handload for extreme accuracy. It's not the elk cartridge that the 30-06 is, but for darned near everything else it's better—and lest you get the wrong impression and tar and feather me for being an ought-six hater, I love the old warhorse cartridge.

As the tale goes, one summer evening during the National Matches at Camp Perry, Hornady's ballistic guru Dave Emary and champion long-range shooter Dennis DeMille found themselves musing on how to create the ultimate long-range competition cartridge. The challenge, they reasoned, was making a cartridge accurate enough that shooters could purchase factory ammunition on their way to a match and—assuming a good shooter behind the trigger—win.

Emary took up the quest, Mr. Hornady laid down the dough, and the wizards in Hornady's R&D division began stirring the cauldron. With practical input from DeMille, a cartridge took shape: a cartridge that in a few short years would become the flagship long-range precision cartridge across America.

Naturally, it was a short-action cartridge. Instead of basing it on the 308 Winchester (that would be far too boring), Hornady chose to use the 30 T/C case, which was based on the legendary but languishing 300 Savage.

Sporting a quite-short 1.92-inch overall case length, the 30 T/C case offered a foundation short enough to load long, aerodynamic

projectiles to standard short-action length without unduly intruding into powder capacity. The 30 T/C's relatively steep 30-degree shoulder was kept to maximize internal capacity, provide distinct headspacing, and promote efficient propellant burn within the combustion chamber. However, it was bumped back 0.022 inch to allow the downsized case neck adequate length to securely, consistently, and concentrically grip a bullet. Maximum pressure, as listed by S.A.A.M.I., was established at 62,000 psi.



Some precision shooters grumble that Lapua brass isn't available for the 6.5 Creedmoor, but Hornady's factory ammo produces half-MOA groups out of accurate rifles, indicating outstanding case quality.

HANDLOADING THE 6.5 CREEDMOOR



Hodgdon's H4350 is the gold standard in 6.5 Creedmoor powders; however, IMR 4451 is proving to be excellent as well. For lightweight 6.5mm bullets, Varget is a good choice.

If you wish, postulate that Hornady got lucky with the design of the 6.5 Creedmoor, but I'll argue heatedly that the engineers did their due diligence, mixed a lot of passion and ballistic know-how into the recipe, and created what just might be the perfect midsize long-range precision cartridge.

Now, I'm no engineer, and I'm certainly no mathematician, but practical experience has shown me that that 6.5 Creedmoor is incredibly well balanced, superbly efficient, and naturally accurate. I've yet to test one that didn't perform excessively well.

Tips for Building Handloads

During the cartridge's short but radically popular life, the 140-grain A-Max load has proven to be the bee's knees for distance work with factory ammo, typically offering 2,700-plus fps in velocity and 1/2- to 3/4-MOA accuracy out of quality rifles. Custom rifles with bona fide match-grade barrels often achieve sub-half-MOA accuracy.

For the most part, 6.5 Creedmoor shooters scorn bullets that weigh less than 140 grains. There are exceptions, but the cartridge offers such spectacular downrange performance with the long, heavy-for-caliber 140-grainers that there are few applications that call for lighter and faster.

When the 6.5 Creedmoor first came out, Hornady printed a handload designed to match factory ballistics on the cartridge box. As I recall, it was 41.5 grains of H4350. However, unless your rifle was wearing a 26-inch barrel, it tended to fall about 50 fps short of factory ammo's advertised 2,700 fps.

Depending on the source, one can find 6.5 Creedmoor data for popular powders with maximum-charge discrepancies of up to 2 grains or more. Handloaders being handloaders, enterprising souls with a thirst for velocity have worked above maximum



While its direct parent is the 30 T/C, the 6.5 Creedmoor (left) harks all the way back to the 300 Savage (right) as its original parent case. The 6.5 Creedmoor's short cartridge case allows long, aerodynamic bullets to be seated out so they don't intrude into internal powder capacity. The sharp shoulder angle maximizes internal capacity, aids precise headspacing, minimizes case stretch, and promotes efficient propellant burn.

loads to match or exceed factory-load speeds. Doing so is risky. As the manual states, begin with suggested starting charges and work up, and never exceed maximum loads. Lest you brush that off, allow me to point out that at 62,000 psi the 6.5 Creedmoor operates at a higher pressure than the 7mm Remington Magnum's 61,000 psi to begin with. Push past that and you get into Weatherby-cartridge pressure realms, and 6.5 Creedmoor cases aren't engineered for that.

Most importantly, pushing those boundaries isn't really necessary. Fire up your trusty ballistic app and crunch the numbers, comparing a 140-grain bullet's trajectory at 2,700 fps and 2,650 fps. Practical difference is minimal.

About the only downside you'll hear precision shooters grumbling about is the lack of Lapua brass for the 6.5 Creedmoor. Lapua is, according to shooters that measure success by group size differences of hundredths of an inch, the holy grail of cartridge brass. Since the Finnish company introduced its 6.5x47mm Lapua cartridge—a superbly accurate but much less popular ballistic twin to the 6.5 Creedmoor—just a few years before the American 6.5mm star was born, Lapua brass is not and is never likely to be made for the 6.5 Creedmoor.

That said, it's pretty hard to argue that Hornady brass housing factory loads that routinely shoot around a half-MOA in match rifles isn't good stuff. I've had outstanding luck with Hornady brass, shooting too many sub-half-MOA groups with different rifles to turn my nose up at what are obviously very consistent cases.

The popularity of the cartridge is such that most of the major ammunition brands are manufacturing 6.5 Creedmoor loads, so brass is becoming available from other manufacturers, including Nosler.

Dillon Precision's XL 650

STANDARD FEATURES:

- Automatic Indexing
- Uses Standard 7/8" x 14 Dies
- Loading Rate: 800-1000 Rds./Hr.
- Comes With One Caliber Conversion
- 5-Station Interchangeable Toolhead
- Automatic Powder Measure
- Automatic Primer System
- Lifetime "No-B.S." Warranty
- **RISK FREE 30-Day Trial Period!**



**XL 650 DVD
Instruction Manual
L67-19484 \$19.95**

Pictured with optional accessories:

Electric Casefeeder	L67-210**
Powdercheck System	L67-21044
Low Powder Sensor	L67-16306
Aluminum Roller Handle	L67-17950
Strong Mount (550/650)	L67-22051
Aluminum Bullet Tray	L67-22214

www.dillonprecision.com

To receive a **FREE Catalog**, call 800-762-3845 and ask for stock number **L67-14690**.

More to the point of this report, one of the IMR Enduron propellants is specifically engineered for the 6.5 Creedmoor.

By a huge margin, H4350 is considered the go-to propellant for the 6.5 Creedmoor, at least for the heavy bullets favored by long-range precision shooters. It's so popular because it almost invariably provides outstanding accuracy and consistency; because it is one of Hodgdon's Extreme line of powders, which shrug off massive temperature swings with imperceptible velocity variation; and because it produces admirable velocities. In a 26-inch barrel, a maximum load of 41.5 grains generates very close to the 2,710 fps that the new Hornady ELD Match factory load is advertised to provide.

For lighter bullets—say, 120 grains down to the very light 95-grain varminting projectiles—Varget is very good.

In order to offer shooters an optional line of powder with similar attributes to its Extreme propellants, Hodgdon—which owns the Canadian IMR brand—recently introduced the Enduron line by IMR. It features outstanding temperature stability that rivals that of the Extreme powders and a copper fouling erasing agent to boot. I've put Enduron powders through some fairly rigorous temperature tests, and it's amazingly stable. Plus, it's my new favorite type of powder for use when breaking in barrels because it so effectively minimizes copper residue left in the rifling.

More to the point of this report, one of the IMR Enduron propellants is specifically engineered for the 6.5 Creedmoor and other cartridges of its ilk. Labeled IMR 4451, it offers burn rates similar to that of H4350. (As always, never substitute charge weights.)

Since it's manufactured in Canada and customs processes are simpler—not to mention shipping—IMR powders are readily available in the United States.

IMR 4451 or H4350

According to Chris Hodgdon, in company tests with the 6.5 Creedmoor, IMR 4451 Enduron powder has proven to offer accuracy and consistency comparable to H4350. While gearing up for this article, I determined to conduct side-by-side tests using IMR 4451 and H4350, beginning with a load of known accuracy using H4350, and see if I could achieve similar results with the newer Enduron propellant in my Ruger Precision Rifle. I enlisted friend and fellow handloader Dale Carter to do the same in his extremely accurate custom 6.5 Creedmoor rifle made by Elk Meadow Performance.

At this point I will confess that I ran my tests performing a series of three-shot groups for

Good long-range match bullets for the 6.5 Creedmoor include (left to right) Hornady 140-grain A-Max, Nosler 140-grain Custom Competition, Berger 140-grain VLD Hunting, Berger 140-grain Hybrid, Sierra 140-grain MatchKing, Hornady 140-grain ELD Match, and Hornady 147-grain ELD Match.

average. Carter, being more diligent, used five-shot groups, and his results are more impressive for it. Group sizes and velocities with both rifles are listed in the accompanying charts, but the quick and dirty of it is this: Using maximum loads of each powder type, IMR 4451 groups averaged a few hundredths of an inch tighter

under Hornady 140-grain ELD Match bullets, and H4350 groups averaged a few hundredths of an inch tighter under Sierra 142-grain MatchKing bullets. Both were within the margin of error of my shooting ability, and the results could easily swap were I to repeat the test.

Carter's pet load consists of 41.0 grains of H4350 under the Berger 140-grain VLD Hunting bullet. It generated 2,716 fps, and five-shot groups averaged 0.56 inch. His rifle also shot well with a 41.0-grain charge of IMR 4451, averaging 2,693 fps and 0.63-inch five-shot groups. After testing with the heavy Berger bullets, he tried IMR 4451 with Hornady 120-grain GMX bullets and got surprisingly good results. Five-shot groups averaged 0.65 inch, and the GMX exited the muzzle of his rifle's 26-inch barrel at 2,876 fps.

Long-Range Precision

For precision work, the 6.5 Creedmoor should be loaded with match-grade bullets, and for long-range precision work, it should be loaded with high-ballistic-coefficient match-grade bullets. Although the cartridge is extremely efficient and admirably consistent, it doesn't generate a tremendous amount of velocity, and to get the most out of it, knowing shooters load long, heavy, low-friction projectiles.

As a Hornady development, the 6.5 Creedmoor was built around and introduced with Hornady's 140-grain A-Max match bullet, and in factory ammunition it proved to be a formidable force. Before long other bullets were added to the factory-ammo lineup—129-grain SST and 120-grain GMX—utilizing the company's blended-propellant Superformance technology. Eventually, a 120-grain A-Max load was added as well. Currently, the 140-grain A-Max has been replaced with the new ELD Match bullet, which features Hornady's new heat- and erosion-resistant Heat Shield tip. It should prove to be an outstanding bullet for long-range work, since it offers extraordinary aerodynamics (BC: .620), better than the 140-grain A-Max (BC: .584).

Even better, Hornady is in final development of a new 147-grain ELD Match bullet. According to Emery, it is expected to have a G1 BC of .650 or higher. It has the same profile as the





BURRISOPTICS.COM

NOT EVERYONE MEASURES

THEIR DAY

BY THE NUMBER

of Facebook likes.

ELIMINATOR III® 3X-12X-44MM

Ranges targets then automatically calculates and displays holdover, eliminating any doubts in both accuracy and whether your day would have been better spent updating your status.



Burris®

FIND WHAT MATTERS



HANDLOADING THE 6.5 CREEDMOOR

Good deer bullets for the 6.5 Creedmoor include (left to right) Sierra 120-grain Pro Hunter, Nosler 120-grain Ballistic Tip, Hornady 129-grain SST, Nosler 129-grain AccuBond Long Range, Sierra 140-grain GameKing, and Berger 140-grain VLD Hunting. The author's niece took this fine mule deer with a single perfect shot at 380-plus yards from her 6.5 Creedmoor rifle.

143-grain ELD-X hunting bullet but a much thinner jacket.

I had the opportunity to accuracy-test the new 147-grain ELD Match loaded over 43.0 grains of IMR 4831 (a prototype load assembled by Hornady, using virgin brass) through my Ruger Precision Rifle. Groups averaged 0.70 inch. Assuming a little fine-tuning to get it shooting sub-half-MOA and reduce the standard deviation, it would arguably be the best long-distance 6.5mm bullet available.

Other precision bullets that offer outstanding long-range performance in the 6.5 Creedmoor are the Sierra 142-grain Match-King (BC: .611), Berger 140-grain Hybrid Target (BC: .607), Berger 140-grain VLD Hunting (BC: .600), and Barnes 140-grain Match Burner (BC: .586).

One of the cartridge's great assets is outstanding barrel life—ballistic technicians and competitive shooters are reporting from 3,500 to 5,000 shots before discernible wear—so fret not that you'll wear it out.

Bullets for Hunting

Although the 6.5 Creedmoor was originally conceived as a match cartridge for competitive shooting to 1,000 yards, it has proven to be both incredibly capable and surprisingly popular in the hands of hunters.

It's easy to see why. Not only is it super-accurate, its mild recoil and report make it easy for most people to shoot well. Combine that with ballistics that perform with classic hunting cartridges like the long-action 270 Winchester to 500 yards (and outclasses them from there to 1,000 yards) and you have a sure winner. However, great hunting bullets are constructed differently than great match bullets, although there is some crossover, such as in the case of Berger's VLD Hunting bullet.

If you focus on game no bigger than mule deer, you'll be well served with one of the "soft" hunting bullets that offer dramatic expansion and medium penetration. Purely in terms of terminal performance, the 6.5 Creedmoor will not generate bullet-destroying levels of velocity—meaning so much speed that a bullet can fragment to nothing on impact and fail to penetrate, at least with the heavier 140-grain range of projectiles. Great options include Sierra's 140-grain GameKing (my favorite deer bullet in my super-light Kimber Hunter, which puts them into tidy half-MOA groups), Nosler's 120-grain Ballistic Tip, Hornady's 129-grain SST, Nosler's 129-grain AccuBond Long Range, and the Berger 140-grain VLD Hunting. With a little load development most of these bullets will provide outstanding accuracy and good on-game performance to 400 yards or more.



If you plan to take on elk, bighorn sheep, mountain goats, caribou, and the like, you'll be best served with a tough bullet designed to break bones and penetrate deeply. Outstanding options are the Barnes 127-grain LRX (a surprisingly accurate bullet), Swift 140-grain A-Frame and 130-grain Scirocco II, Nosler 140-grain Partition and AccuBond, and Hornady 120-grain GMX.

If you want to maximize your downrange reach with a bullet that will get the job done on any hooved game, short of bison and moose, in the Lower 48, opt for Hornady's new 143-grain ELD-X (Extremely Low Drag eXpanding) bullet. Held to the same accuracy standards as the company's ELD Match bullets, it's engineered to provide dependable terminal performance across a vast range of impact velocity (1,600 fps to 3,000 fps) and has an outstanding BC of .625.

Special Concerns

Like almost all cartridges, the 6.5 Creedmoor has some special considerations worth being aware of when handloading. One of these stems from the case length and overall cartridge length; the other is occasionally introduced by the rifles the cartridge is chambered in.

Intentionally, the 6.5 Creedmoor was engineered with a short case to allow plenty of room in the forward end of rifle magazines for long bullets. That way sleek, aerodynamic projectiles can be seated in the case necks without intruding into powder capacity. Of course, chambers have to be cut with fairly long



Tough, heavy-bodied big game requires tough bullets from the 6.5 Creedmoor. Outstanding hunting bullets include (left to right) Hornady 120-grain GMX, Barnes 127-grain LRX, Swift 130-grain Scirocco II, Nosler 140-grain Partition, Swift 140-grain A-Frame, Nosler 140-grain AccuBond, and Hornady 143-grain ELD-X.

throats to enable cartridges with long-seated bullets to fit. It's a perfect marriage of long bullets, efficient cartridge cases, and short-action magazine boxes.

However, shooters who want to load light, short bullets can't seat them to touch the rifling lead—a technique that often benefits accuracy—and get them deep enough in the case mouth to hold securely. Instead, short bullets must be seated adequately deep to be secure and concentric and—when fired—must jump the gap to the rifling. It's not the end of the world, and some reloaders get superb accuracy by jumping bullets. It's just that if you want to shoot light-for-caliber bullets in a standard 6.5 Creedmoor chamber, there's no alternative to jumping them to the rifling.

The other special consideration occasionally encountered is introduced by rifles with magazine overall lengths shorter than a 6.5 Creedmoor cartridge with a long-seated bullet. For the most part, unless you're willing to have a gunsmith modify your magazine, you're stuck seating your bullets to fit into the magazine. Such is the case with the Ruger Precision Rifle that I used for much of the load development in the accompanying charts.

Thankfully, the 6.5 Creedmoor cartridge doesn't seem to care all that much, and bullets forced by short magazines to jump a bit of a gap can still shoot with excellent accuracy. In fact, some seem to benefit.

It's pretty hard to go wrong when handloading the 6.5 Creedmoor. I'd go so far as to say beware of getting complacent—the very first load you try may shoot so well that you just quit on load development. But don't do that. Keep after it. That 0.75-inch average may well become a 0.50-inch average, and in a very accurate rifle, a 0.50-inch load may fine-tune into a 0.25-inch load—presuming, of course, that you do your part and consistently and precisely execute your shots.

Combined with its inherent accuracy, the 6.5 Creedmoor's forgiving nature when handloading and its eyebrow-raising ability at long range have made it the most popular precision cartridge on the market—a place in history that I believe it well deserves.

6.5 CREEDMOOR LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	VEL. (FPS)	SD (FPS)	100-YARD ACCURACY (IN.)
Ruger Precision Rifle, 24-in. Barrel								
Hornady	Fed. 210GM	Varget	43.0	Hornady 95-gr. V-Max	2.600	3217	12	0.98
Hornady	Fed. 210GM	H4350	43.0	Barnes 127-gr. LRX	2.870	2853	8	0.52
Hornady	Fed. 210GM	H4350	43.0	Nosler 129-gr. ABLR	2.835	2777	11	0.73
Hornady	Fed. 210GM	H4350	41.5	Hornady 140-gr. ELD Match	2.810	2663	10	0.61
Hornady	Fed. 210GM	IMR 4451	41.4	Hornady 140-gr. ELD Match	2.810	2645	16	0.60
Hornady	Fed. 210GM	H4350	41.5	Nosler 140-gr. Custom Comp.	2.780	2680	10	0.71
Hornady	Fed. 210GM	H4350	41.5	Sierra 142-gr. MatchKing	2.845	2673	11	0.44
Hornady	Fed. 210GM	IMR 4451	41.4	Sierra 142-gr. MatchKing	2.845	2648	8	0.58
Hornady	Fed. 210GM	IMR 4831	43.0	Hornady 147-gr. ELD Match	2.810	2761	31	0.70
Elk Meadow Performance Custom Rifle, 26-in. Barrel								
Hornady	Fed. 210GM	IMR 4451	42.5	Hornady 120-gr. GMX	N/A	2876	16	0.65
Hornady	Fed. 210GM	H4350	41.0	Berger 140-gr. VLD Hunting	N/A	2716	7	0.56
Hornady	Fed. 210GM	IMR 4451	41.0	Berger 140-gr. VLD Hunting	N/A	2693	7	0.63
Kimber 84M Hunter, 22-in. Barrel								
Hornady	Fed. 210GM	H4350	45.0	Sierra 120-gr. Pro Hunter	2.825	2896	8	0.83
Hornady	Fed. 210GM	IMR 4451	41.0	Nosler 140-gr. AccuBond	2.810	2654	20	1.24
Hornady	Fed. 210GM	IMR 4451	41.0	Sierra 140-gr. GameKing	2.720	2630	14	0.47
Hornady	Fed. 210GM	H4350	41.4	Swift 140-gr. A-Frame	2.720	2658	11	1.00

NOTES: Accuracy for the Ruger and Kimber rifles is the average of three, three-shot groups fired from a benchrest. Accuracy for the Elk Meadow rifle is the average of five, five-shot groups fired from a benchrest. Velocity is the average of at least five rounds measured 10 feet from the guns' muzzles. Ambient temperature: 70 to 80 degrees Fahrenheit. Elevation: 5,050 feet.



CFE BLK IN THE 6.8 SPC

The 6.8 SPC is experiencing a resurgence in popularity, and the brand-new CFE BLK powder is a perfect choice for hand-loading the nice little cartridge. **BY LANE PEARCE**

IF YOU'VE READ THE TWO OTHER FEATURE ARTICLES ON THE new CFE BLK powder elsewhere in this manual, you know Hodgdon has developed yet another propellant that reloaders are really going to appreciate. Several years ago the company introduced the first Copper Fouling Eraser (CFE) propellant designed to eliminate most of the jacket fouling cleaning chore. It was called CFE 223, and it was designed—as the name clearly suggests—for handloaders who enjoy shooting lots of 223 Remington/5.56 NATO ammo in modern sporting rifles. CFE Pistol powder followed soon after, so that handloading pistol shooters had a similar product option.

Two propellants can't possibly satisfy every rifle and pistol handloading need, so this year Hodgdon introduces CFE BLK, the third in the series of CFE propellant offerings.

CFE BLK is specifically targeted at those who enjoy reloading and shooting 300 AAC Blackout ammo. However, this new powder is not restricted to a single cartridge. Among the several other small-capacity cases that CFE BLK is suitable for is the 6.8 Remington Special Purpose Cartridge (SPC), and that's the cartridge I worked with for this special report.

When Hodgdon Product Manager Ron Reiber discussed this assignment with me, I received the news with mixed feelings. As an engineer and avid shooter/handloader, I welcome any opportunity to test and evaluate a new product; however, the cartridge specified introduced an extra level of considerations.

Why? Because I had zero previous experience with the 6.8 SPC. I own many firearms and reload 100+ different cartridges, but I couldn't recall ever firing a single round of 6.8 SPC before this assignment. But I shrugged and thought to myself, "What the heck—how hard could it be?"

The 6.8 SPC

At the urging of a U.S. Special Forces team in 2002, Remington began developing a more effective alternative to the 5.56 NATO cartridge for close-combat situations, and thus the .270-caliber 6.8 SPC was born. S.A.A.M.I. gave the 6.8 SPC round official status in 2004, about when Winchester and Remington were touting their new short and super-short magnums.

At the time, I was not the least interested in ARs. I was much more involved with channeling the extraordinary performance of my new bolt-action 270 WSM on pronghorns and whitetail deer to notice another comparatively puny .270-caliber round.

During the next few years, Remington and Ruger offered bolt actions and/or autoloaders chambered for the 6.8 SPC. When I finally became interested in ARs, the round had lost much of its glamour, and the two big-name manufacturers had dropped every model from production. Most of the AR makers (ArmaLite, Barrett, Bushmaster, Daniel Defense, Double Star, Rock River Arms, LWRCI, Wilson Combat) continue to offer 6.8 SPC models. However, the mainstay 223/5.56 and 308 Win./7.62 NATO rifles and the 6.5 Grendel and 300 AAC Blackout options have the interest of mainstream shooters.

Eventually, I joined the ranks of AR fans and now own AR-15 and AR-10 rifles or dedicated uppers chambered for 204 Ruger, 223 Rem., 308 Win., 338 Federal, and 458 SOCOM cartridges. I had casually considered and quickly dismissed the 6.8 SPC as just another "also-ran."

Then I was assigned to test and evaluate this new Hodgdon propellant specifically in a 6.8 SPC AR. The fact that I didn't have a gun or upper to shoot was quickly remedied and, fortunately, complemented another AR later when I ran into functioning issues with my first one. The T&E effort has been a learning

CFE BLK IN THE 6.8 SPC

The author used Hodgdon's new CFE BLK powder to build handloads using 15 different 0.277-inch bullets (14 are shown). After taking a misstep with the first gun he used and obtaining another correctly configured AR, he found that CFE BLK is an excellent propellant for the 6.8 SPC.



experience and has added yet another round to my lengthening list of favorites.

The 6.8 SPC case is a shortened version of the near-obsolete 30 Remington round (not to be confused with the short, stubby 30 AR Remington cartridge). The 6.8 SPC's case head dimensions and shoulder angle are the same as the 30 Rem., but the overall case length is about one-third of an inch shorter, at 1.686 inches max. Remington chose to retain the original Large Rifle primer; however, Hornady, Federal, Silver State (SSA), and other makers concluded the standard Small Rifle primer was adequate to reliably ignite the 6.8 SPC's relatively small smokeless propellant charge.

More recently, the 6.8 SPC has experienced an unofficial improvement of the S.A.A.M.I.-approved chamber specifications. Referred to as the 6.8 SPC II, the chamber has approximately .050 inch more freebore. I believe that's supposed to avoid excessive pressures when the round is topped with heavier, i.e., longer, bullets. S.A.A.M.I. maximum average pressure spec is 55,000 psi, i.e., the same as the 223 Rem. Because the 6.8 SPC case head diameter is approximately 0.042 inch greater, its bolt thrust is also increased.

Prepping for the Project

Since I didn't own a rifle, or even an upper, when I accepted the assignment, I called a shooting buddy, John Fawcett, for advice. Fawcett offered to loan me an early upper chambered for the S.A.A.M.I.-standard 6.8 SPC round and also suggested I call Skip Patel, proprietor of DRD Tactical firearms. Patel graciously

The 6.8 Remington SPC (center) was created at the urging of a U.S. Special Forces team in 2002 but was never adopted. It's experiencing a surge in popularity today mainly because it delivers better terminal performance in close-combat scenarios than the 5.56 NATO (left) and is better for hunting game than the 300 Blackout (right).

provided one of his switch-barrel, AR-style custom rifles. He didn't offer a 6.8 SPC model, so I purchased a premium, cut-rifled barrel (to my specifications) from Steve Satern to retrofit DRD's CDR-15 rifle.

That's where my lack of knowledge resulted in less than satisfactory results and led to a premature (and wrong) conclusion. I ordered a 20-inch stainless barrel with a rifle-length gas system. Most 6.8 SPC barrels feature 1:10- or 1:11-inch rifling twist rates.





A NEWLY CROWNED KING.



#LONGLIVETHEKING

INTRODUCING THE NEW
TIPPED MatchKing®

1400 West Henry Street
Sedalia, MO 65301

Tech support: 800-223-8799
Other calls: 888-223-3006



How do you make the most accurate bullet in the world even better? By crowning the MatchKing® with an acetal resin tip that lowers drag by improving the ballistic coefficient.

Learn more about the new TMK® (Tipped MatchKing®) bullets at sierrabullets.com.

WWW.SIERRABULLETS.COM

© Copyright 2017 Sierra Bullets



The first gun Lane tried was a DRD Tactical CDR-15 with a Saturn 6.8 SPC barrel (top) that had a rifle-length gas system, but since the 6.8 SPC is optimized for use with a carbine-length gas system, he obtained a Rock River Arms X-Series LAR-6.8 (bottom) set up that way.

I intended to test loads topped with 85- to 120-grain bullets, so I opted for an even tighter, 1:9-inch twist.

Optic selection was easily accomplished. I simply switched a Nikon M300 BLK 1.5-6X 42mm BDC scope from an S&W M&P15 over to the DRD Tactical's Picatinny rail.

I received a broad selection of bullets, several boxes of factory ammo, and 100+ pieces of primed Federal brass. Hodgdon sent me a pound of CFE BLK and four representative load recipes. My initial results, as the accompanying chart indicates, were not so good. Not knowing I had screwed up, I concluded that the new propellant wasn't one of the best ones for loading the 6.8 SPC.

Fortunately, the annual OSG writers' roundtable was scheduled before my review was due. While there, I related my less-than-reliable functioning issues with a couple of much more AR-knowledgeable colleagues. Both promptly stated the 6.8 SPC was designed to optimal reliability when fired in a 16- or 18-inch barrel with a *carbine-length* direct impingement gas system.

Obviously, my gun was tapping gas at a point where the bore pressure had dropped too low to assure 100 percent reliable function. Coupled with the relatively low propellant charges (30.0 grains max) and relatively lightweight bullets, the rifle-length gas setup did not complement the gas port diameter, buffer weight, and buffer spring rate very well.

Fortunately for me, Rock River Arms attended the conference, and I urgently asked the company's media relations contact, Steve Mayer, to check RRA's inventory when he returned to his

office. He was able to ship an X-Series LAR-6.8 rifle to my dealer, and it featured an 18-inch barrel, a carbine-length gas tube, and a wicked-looking muzzle brake. Needless to say, the experts were right, and as the chart clearly shows, CFE BLK performed superbly in every test load fired in the RRA rifle.

Reloading Techniques

First of all, CFE BLK is a very fine spherical powder and meters through my Redding precision pistol powder measure with little and usually no charge weight variation. The only thing I had to remember was to cycle the handle twice to obtain the precise propellant charge. I prepared 500+ handloads (Hodgdon sent me another pound of propellant!) and only mischarged one. I always carefully inspect each tray of charged cases with



While interpolating charge weights from Hodgdon's recommended starting loads, Lane misjudged a few times and blew the primers. Those loads shot well, but they were obviously too hot.

AT
600 ROUNDS
— AN HOUR, —
THERE ARE
FACTORIES
— THAT —
CAN'T
KEEP UP.

RCBS

THE NEW PRO CHUCKER PROGRESSIVE PRESS.

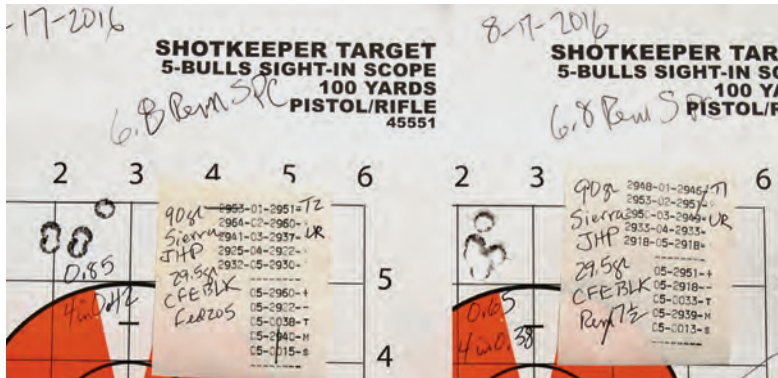
With the first 7-station, auto-indexing press on the market, the power to take high-volume reloading to an elite level is in your hands. Quick Change die plates and powder measures, as well as a spacious 4.625" operating window, maximize production to deliver an unrivaled load rate of up to 600 rounds an hour. All with the level of precision you expect from RCBS. Made in the USA and equipped with a limited lifetime warranty, it's built to last, too.

Also available in a 5-station model.

For more details, visit RCBS.COM



CFE BLK IN THE 6.8 SPC



Once he had the correct gas system in his gun and the proper charge weights of CFE BLK, Lane achieved excellent accuracy with his 6.8 SPC handloads.

Like I said earlier, Hodgdon provided four recommended start/maximum load recipes with the corresponding pressure for the max loads (see chart). That data was based on using Remington cases with 9½ primers and 85-, 90-, 100-, and 115-grain bullets, representing both conventional and monolithic construction. You'll note that their velocities were measured in a 24-inch test barrel. So the results I obtained

are understandably less.

As the performance chart shows, I included several more bullets in the tests. I interpolated the Hodgdon data to start with a reasonably conservative propellant charge and worked up watching for signs of excessive pressure. As you can see in the photo on page 42, I obviously misjudged because I blew a primer on more than one occasion.

Since I was loading for an AR, I full-length resized each case—every time—using a Hornady die set. Because the 6.8 SPC case is based on the old 30 Rem., you need a #12 Hornady shellholder.

The Federal cases had Federal's special 205 AR primers fully crimped in place, and the Hornady brass I used also had the primers crimped in place. The primer pockets were very tight, to the point you could easily crush a primer when seating if you're not careful. I fully recut crimped primer pockets using a Lyman or RCBS powered case-prep tool.

Results

As I've indicated, I started with the DRD Tactical rifle fitted with the 20-inch barrel and rifle-length gas system. I fired two, five-shot groups with each of the different factory loads. Every thing went great until I fired the SSA 90-grain bonded solid-base rounds. I had several jams and concluded the relatively short overall length just wasn't compatible with the rifle. The other nearly 100 rounds of factory ammo loaded with bullets ranging from 90 to 115 grains cycled the action like clockwork.

6.8 SPC FACTORY LOAD ACCURACY & VELOCITY

AMMUNITION	COL (IN.)	VEL. (FPS)	ES (FPS)	SD (FPS)	100-YARD ACCURACY (IN.)
DRD Tactical CDR-15, 20-in. Barrel, 1:9 5R Twist					
Federal Fusion 90-gr. JSP	2.230	2954	60	22	1.16
SSA 90-gr. BSB	2.195	2762	21	8	1.85
Hornady American Gunner 110-gr. BTHP	2.250	2707	22	8	1.03
Hornady Varmint Express 110-gr. V-Max	2.245	2700	47	16	1.25
Federal American Eagle 115-gr. FMJ	2.230	2608	55	19	1.48
Remington Express 115-gr. OTM	2.240	2483	60	21	2.00
SSA 115-gr. HPBT	2.220	2622	49	17	0.91
Rock River Arms LAR-6.8, 18-in. Barrel, 1:10 Twist					
Federal Fusion 90-gr. JSP	2.230	2920	41	17	1.55
SSA 90-gr. BSB	2.195	2712	41	12	1.38
Hornady American Gunner 110-gr. BTHP	2.250	2684	25	8	1.26
Hornady Varmint Express 110-gr. V-Max	2.245	2666	24	9	0.83
Federal American Eagle 115-gr. FMJ	2.230	2570	69	21	1.45
Remington Express 115-gr. OTM	2.240	2512	74	26	3.31
SSA 115-gr. HPBT	2.220	2578	20	7	1.14
Hornady 120-gr. SST	2.245	2538	27	9	1.10
NOTES: Accuracy is the average of two, five-shot groups fired from a sandbag benchrest. Velocity is the average of 10 rounds measured eight feet from the guns' muzzles.					

When I switched over to testing my initial handloads, I quickly ran into a recurring problem. The rifle would always extract and eject the empty case but sometimes failed to feed the next round from the magazine. At first, I figured the starting loads were too light, i.e., not producing enough gas. However, after bumping the charge up to what I considered max, I still had the same problem with about half of the range of bullet weights.

Ignorance is supposedly bliss! I was achieving 1.5 MOA and usually even better results. I blissfully concluded that CFE BLK was simply one of several suitable propellants for reloading the 6.8 SPC, but it shouldn't be at the top of the list. I'd burned almost a whole pound of powder and was just frustrated.

Actually, ignorance is not acceptable—especially when addressing a technical issue. How would my editor and Hodgdon have responded to my report if I'd reported ill-conceived conclusions caused by my improper barrel specifications? My credibility would have been sorely slammed—and rightfully so.

When the Rock River Arms LAR-6.8 X-Series rifle arrived, I mounted the Nikon scope and returned to the range. This time even the SSA 90-grain load fed, fired, extracted, and chambered without a hiccup. RRA touts its rifle will deliver 1.5 MOA accuracy, and as the chart shows, all but one factory load and handload met that target.

I fired about 200 additional handloads and experienced only one misfeed, and that was with the same test load I'd had the most problems with before. The mishap may have been triggered by the residue from 80+ rounds I'd fired since the last cleaning. I also blew two more primers with the same too-hot load I'd shot in the DRD rifle. Sometimes my "lessons learned" take effect slowly. Reducing the charge by one grain eliminated that problem.

However, this time I observed a new anomaly. During the first tests, I loaded the Hornady 120-grain SST bullets in Remington cases with CCI 200 primers. When I repeated the tests, I fired some of the SST bullets with Remington 9½ primers and

CFE BLK LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	VEL. (FPS)	ES (FPS)	SD (FPS)	100-YARD ACCURACY (IN.)
6.8 SPC II DRD Tactical CDR-15, 20-in. Barrel, 1:9 5R Twist									
Federal	Fed. 205M	CFE BLK	30.0	Barnes 85-gr. TAC-X FB	2.220	3060	55	19	1.18
Hornady	CCI #41	CFE BLK	28.5	Barnes 85-gr. MPG FB	2.240	2968	38	15	1.22
Federal	Fed. 205AR	CFE BLK	29.0	Nosler 85-gr. E-Tip	2.220	3035	22	9	1.80
Federal	Fed. 205AR	CFE BLK	30.0	Sierra 90-gr. JHP	2.195	3017	37	12	0.86
Hornady	CCI #41	CFE BLK	27.0	Barnes 95-gr. TAC-TX BT	2.225	2777	64	20	1.02
Hornady	CCI #41	CFE BLK	28.0	Nosler 100-gr. AccuBond	2.245	2898	46	15	1.25
SSA	WSR	CFE BLK	27.1	Speer 100-gr. Varmint HP	2.250	2687	145	64	1.58
Federal	Fed. 205M	CFE BLK	25.5	Barnes 110-gr. TAC-X BT	2.220	2520	51	18	1.35
Hornady	CCI #41	CFE BLK	26.0	Hornady 110-gr. BTHP	2.255	2598	39	16	1.34
Hornady	CCI #41	CFE BLK	26.0	Hornady 110-gr. V-Max	2.250	2623	36	17	1.05
Federal	Fed. 205AR	CFE BLK	25.0	Nosler 110-gr. AccuBond	2.245	2491	44	12	1.33
Hornady	Fed. 205M	CFE BLK	25.5	Sierra 110-gr. SPT	2.245	2502	43	18	1.34
Federal	Fed. 205M	CFE BLK	25.5	Nosler 115-gr. CC-HPBT	2.230	2462	61	30	1.28
Hornady	Fed. 205M	CFE BLK	25.0	Sierra 115-gr. HPBT	2.245	2461	26	9	1.18
Federal	Fed. 205	CFE BLK	24.5	Hornady 120-gr. SST	2.255	2388	79	31	1.96
6.8 SPC II Rock River Arms LAR-6.8, 18-in. Barrel, 1:10 Twist									
Hornady	Fed. 205M	CFE BLK	29.5	Barnes 85-gr. TAC-X FB	2.220	3021	33	10	1.05
Remington	Rem. 9½	CFE BLK	29.5	Nosler 85-gr. E-Tip	2.220	3085	50	21	2.48
Hornady	Fed. 205	CFE BLK	29.5	Sierra 90-gr. JHP	2.195	2946	38	15	0.70
SSA	Rem. 7½	CFE BLK	27.0	Barnes 95-gr. TAC-TX BT	2.225	2772	75	25	1.03
SSA	Rem. 7½	CFE BLK	27.0	Nosler 100-gr. AccuBond	2.245	2757	56	20	1.58
SSA	WSR	CFE BLK	27.1	Speer 100-gr. Varmint HP	2.250	2599	89	27	1.06
SSA	Fed. 205	CFE BLK	26.0	Hornady 110-gr. V-Max	2.250	2584	55	21	1.28
Federal	Fed. 205	CFE BLK	26.0	Nosler 110-gr. AccuBond	2.245	2593	71	24	1.20
Hornady	Fed. 205M	CFE BLK	25.5	Sierra 110-gr. SPT	2.245	2437	86	24	1.35
Federal	Fed. 205	CFE BLK	25.5	Nosler 115-gr. CC-HPBT	2.230	2518	72	31	1.26
Hornady	Fed. 205	CFE BLK	25.0	Sierra 115-gr. HPBT	2.245	2492	55	20	1.01
Remington	Rem. 9½	CFE BLK	24.5	Hornady 120-gr. SST	2.255	2448	31	10	1.17
NOTES: Accuracy is the average of two, five-shot groups fired from a sandbag benchrest. Velocity is the average of 10 rounds measured eight feet from the guns' muzzles.									

CFE BLK IN THE 6.8 SPC

HODGDON CFE BLK STARTING & MAX LOADS

CASE	PRIMER	BULLET	COL (IN.)	STARTING LOAD (GRS.)	VEL. (FPS)	PRESSURE (PSI)	MAX LOAD (GRS.)	VEL. (FPS)	PRESSURE (PSI)
6.8 SPC Hodgdon Pressure Barrel, 24-in. Barrel, 1:10 Twist									
Remington	Rem. 9½	Barnes 85-gr. TAC-X FB	2.230	27.0	2813	39,900	30.0	3097	52,600
Remington	Rem. 9½	Speer 90-gr. JHP	2.255	26.8	2759	38,000	30.1	3049	52,300
Remington	Rem. 9½	Hornady 110-gr. V-Max	2.260	23.5	2408	39,200	26.0	2658	53,400
Remington	Rem. 9½	Sierra 115-gr. HPBT	2.260	22.4	2304	41,800	24.9	2520	53,600

other handloads in Federal and Hornady cases with Federal 205 primers. I noticed the velocities with the Remington-component loads measured up to 100 fps faster than the others. I reviewed my data and noted the same test loads with CCI 200 primers yielded about 50 fps greater velocity compared to the loads using Small Rifle primers.

The Remington cases weighed 2 or 3 grains more than the others, and I later discovered that 20 pieces of Hornady brass weighed 12 grains more than the rest of the Hornady cases. I then selected two pieces of each headstamp and weight range and, after weighing both, filled them with CFE BLK propellant to the case mouth rim.



This photo of inside the RRA LAR-6.8's bore, 4 inches ahead of the chamber, illustrates how CFE BLK's Copper Fouling Eraser technology works. The bore cleaned up easily with a minimum of brushing and swabbing.

After weighing them again to determine the difference, I discovered the Remington cases held only about 0.3 grain less powder than the lighter Federal, SSA, and Hornady cases. But the heavier Hornady cases held about 1 grain less powder than the lighter cases.

Later, I prepared five test loads each with Hornady 120-grain SST bullets in both light and heavy Hornady cases ignited with Federal 205 primers. I shot them back to back and measured a velocity difference of just over 100 fps. The earlier results with the in-between weight Remington brass and Remington 9½ or CCI 200 primers apparently indicate the slightly less reduced case capacity coupled with Large Rifle primers boosted the velocity results similarly.

The 6.8 SPC hasn't gotten the respect it deserves. Compared to the 300 Blackout with similar supersonic-velocity ammo, the 6.8 SPC readily exceeds the more popular load's performance. The 300 Whisper (the 300 Blackout's precursor), as originally conceived by J.D. Jones, was intended to quietly launch heavy .30-caliber bullets at subsonic velocities in a suppressed rifle. The current and essentially identical 300 Blackout cartridge does the same job well. Otherwise, the smaller round can't and doesn't outperform the 6.8 SPC as a conventional sporting cartridge.

And, of course, I must comment on the new CFE BLK powder's impact on minimizing bore fouling. I cleaned both guns four or five times, i.e., typically after firing 50 to 75 rounds at each range session. I soaked the bore with Hoppes, stroked the bore once or twice (max) with a ProShot bore brush, swabbed it out again with a Hoppes-soaked patch, and dried it with three or four clean patches. If I hadn't recently acquired a Lyman Borecam digital borescope, all I could say was, subjectively speaking, the last patch was almost white and the guns shot just fine for each 50- to 75-round session.

Both guns/barrels were new before the test. The photos of the RRA rifle were taken after the last range session and after I had cleaned the bore following the same steps noted earlier. I could see slight traces of copper, but compared to other rifles in my vault, the RRA barrel looks great.

All in all, I was pleased with the results—and the learning experience. One of my writer friends attending the recent roundtable reminded me that Mr. Einstein once stated, "If I knew what I was doing all the time, we wouldn't call it research."

I couldn't have said it better!

6.8 SPC CASE WEIGHTS (GRS.)

BRAND	CASE 1			CASE 2		
	EMPTY	FILLED	DELTA	EMPTY	FILLED	DELTA
Federal	120.8	157.2	36.4	122.4	159.1	36.7
Hornady (Light)	119.4	156.3	36.9	118.4	155.1	36.7
Hornady (Heavy)	131.1	166.4	35.3	130.2	165.8	35.6
Remington	122.9	159.5	36.6	123.0	159.3	36.3
SSA	117.6	154.4	36.8	119.7	156.4	36.7

NOTES: The delta weight is the grains of CFE BLK contained in a fired case filled to the top of the case mouth. This number is for reference only and does not suggest any recommended load data.



Bushnell
NO QUESTIONS ASKED

“YES, THAT’S COVERED”

**LIFETIME
WARRANTY**

INTRODUCING THE LIFETIME WARRANTY THAT COVERS EVERYTHING.

Regardless if it got broken, busted, shattered, cracked or crushed.
No matter what happens, the answer will absolutely always be,
“YES, THAT’S COVERED.”



Find out more at Bushnell.com/YesThatsCovered

Covers the following series of riflescopes, binoculars and spotting scopes. Trophy / Trophy Xtreme / Legend / Elite / Elite Tactical
This warranty is valid for qualifying products within Bushnell Trophy Xtreme and Trophy riflescopes, binoculars, and spotting scopes
purchased after January 1st, 2016. Electronic components, laser rangefinders, red dots, and trail cameras excluded.

PREMIUM 308 WINCHESTER HANDLOADS

Here are the optimal powders for building top-notch 308 Winchester handloads, along with a detailed look at how the same loads perform in both bolt-action and semiautomatic rifles. **BY STEVE GASH**

THE 308 WINCHESTER HAS BEEN THE DE FACTO standard accuracy cartridge for legions of shooters for many years, and it still holds sway, in spite of several new 6.5mm and other “accuracy” cartridges. The 308’s gilt-edged accuracy, ballistic efficiency, and the huge selection of components all contribute to the round’s popularity. Top-notch handloads can be carefully tailored for specific needs, such as F-Class, 1,000-Yard Benchrest, NRA

courses, etc. You name it, and there’s a component set out there just waiting to be discovered by the enterprising handloader. The vast selection of premium bullets and an almost unlimited selection of specialized propellants make the process fun and rewarding, but it can also be complex and a bit overwhelming.

The rifles used in the various shooting disciplines are of two forms: bolt action and AR, which we, in the age of political correctness, euphemistically call “modern sporting rifles.” So I thought a relatively scientific comparison would be in order—with a twist. All hardcore handloaders, myself included, love trying every combination of bullet and powder imaginable in our favorite shootin’ irons, but such an approach quickly becomes unwieldy, unmanageable, and generally unproductive.

I took a different approach here. The idea was to make the loads as similar as possible and to compare their accuracy in two gilt-edged rifles, a bolt action and an AR. To that end, the selection and assembly of components, scopes, and the actual test shooting techniques were all geared for uniformity.

The Powders

There are at least 150 powders available, so I had to choose carefully for this project. In the end, I relied on five from Hodgdon/IMR that work well in many cartridges, especially in the 308. As you might expect, these powders fall in the middle of the burning-rate spectrum and are just about optimal for the case capacity and expansion ratio of the well-balanced and efficient 308 case.

In order of approximate burning rate (from slowest to fastest), the powders used are CFE 223, Varget, IMR 4064, IMR 4166, and IMR 8208 XBR, and except for the spherical CFE 223, each is an extruded powder. Two powders are especially noteworthy because they have Hodgdon/IMR’s revolutionary new copper-reducing chemistry. IMR 4166 uses what Hodgdon calls “Enduron Technology,” while CFE 223 relies on a “Copper Fouling Eraser” additive. Both retard the buildup of jacket fouling, and their continued use actually helps reduce existing fouling as you shoot, so both are eminently suited for shooting programs that result in high-round counts. Varget and IMR 4064 are versatile stalwarts that support a host of cartridges. The relatively new IMR 8208 XBR is actually a little fast burning for the 308, but it turned in excellent accuracy.

Another important aspect of these powders is their bulk density. All fill the case pretty much to the base of the neck, and this helps promote ballistic uniformity. However, charges with IMR 4064 had to be compressed considerably to get the bullets to the desired overall cartridge length (COL).



HODGDON
THE BRAND THAT'S TRUE

CFE 223
COPPER FOULING ERASER

FNJI
APPROVED

IDEAL FOR:
204 Ruger | 223 Rem. | 22-250 Rem. | 308 Win.

and Data Available at: www.hodgdon.com

EXTREMELY FLAMMABLE • SEE PRECAUTIONS ON SIDES

IMR

IMR 4064

SMOKELESS POWDER

DANGER!
EXTREMELY FLAMMABLE
BEFORE USING SEE PRECAUTIONS ON SIDES

NET WT. 1 LB. (454 g)

REDUCES COPPER FOULING

IMR 4166

INSENSITIVE TO TEMPERATURE CHANGES

ENDURON
TECHNOLOGY

204 Ruger • 223 Rem. • 22-250 Rem. • 257 Roberts
30-30 Win. • 308 Win. • 8X57 Mauser

For lead data and additional cartridges go to www.hodgdonreloading.com

BEFORE USING SEE PRECAUTIONS ON SIDES

NET WT. 1 LB. (454 grams)

QUALITY PROPELLANTS FOR OVER 60 YEARS

HODGDON
THE BRAND THAT'S TRUE

TARGET
EXTREME
POWDER

LOADING DATA CENTER

For all our data go to www.hodgdon.com

BULLET	CASE	PRIMER	C.O.L.	VELOCITY
55 gr. Spr. SP	Win.	Win. SR	2.200"	2344 fpm
40 gr. Nos. BT	Win.	Win. LR	2.350"	4178 fpm
		MAX. LR	2.350"	3684 fpm
				2721 fpm

8208

BR

SMOKELESS POWDER

DANGER!
EXTREMELY FLAMMABLE
BEFORE USING SEE PRECAUTIONS ON SIDES

PREMIUM 308 WINCHESTER HANDLOADS



Two premium rifles chambered for the 308 Winchester were used for this project. The bolt action is a Savage Model 12 Low Profile Varminter, and the semiauto is a Rock River Arms LAR-8 Varminter. Both have 26-inch barrels.

The Rifles

Two premium rifles were selected for the tests. The bolt action was a new Savage Model 12 Low Profile Varminter. Its 26-inch, stainless-steel, fluted barrel is free-floated and has a 1:10-inch twist. The rifle also has Savage's AccuTrigger. The laminated wood stock has a fat fore-end that sits well in a benchrest. I mounted a new Burris Veracity 4-20X 50mm scope in Burris 30mm XTR Signature rings to the Weaver-type bases that came on the rifle. So equipped, the rig weighed in at 12 pounds, 8 ounces.

The AR is the LAR-8 Varminter from Rock River Arms (RRA). It also has a 26-inch, stainless-steel barrel with a 1:10-inch twist.



The author used Federal cases, Federal primers, Sierra 168-grain MatchKings, Sierra 175-grain MatchKings, and Hornady 178-grain A-Maxes with the five selected powders.



All powder charges were weighed on an RCBS M-1500 scale, and the handloads were assembled using Hornady dies.

The barrel is not fluted, but it is free-floated within the hand-guard. RRA calls the trigger "two stage," but I can attest that it's as light and crisp as many bolt guns. The scope is a Burris XTR II 5-25X 50mm with an illuminated front focal plane reticle. I used the Burris P.E.P.R. 34mm mount to install the scope. The AR weighed a hefty 14 pounds, 11 ounces with scope and empty magazine.

The fit and finish of the two test rifles were absolutely superb. The trigger pulls were outstanding, and the barrels were so slick that there was little, if any, jacket fouling after a 15-round session. I can recommend both.

The Cases, Primers, and Bullets

I was fortunate to have a large supply of new Federal 308 cases, factory primed with the Federal 210 primer. All test loads were in these new cases; no once-fired cases were used.

All powder charges were weighed on an RCBS M-1500 electronic scale, and Hornady dies in a Redding T-7 Turret press were used to assemble the test ammo.

Rather than use dozens of bullets and powders, I reviewed the bullets often used by match shooters for the 308 Win. and selected three for this test. Match bullets in .30 caliber come in a wide variety of weights, ranging from 135 to 220 grains. Probably the most popular overall are the 165-, 168-, and 175-grain

308 WINCHESTER LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	COL (IN.)	VEL. (FPS)	SD (FPS)	COV (PERCENT)	100-YARD ACCURACY (IN.)
Savage Model 12 Varminter, 26-in. Barrel, 1:10 Twist									
Federal	Fed. 210	CFE 223	47.5	Sierra 168-gr. MatchKing	2.800	2890	8	0.28	0.90
Federal	Fed. 210	Varget	44.6	Sierra 168-gr. MatchKing	2.800	2732	10	0.37	0.83
Federal	Fed. 210	IMR 4064	44.5	Sierra 168-gr. MatchKing	2.800	2819	8	0.28	0.78
Federal	Fed. 210	IMR 4166	42.2	Sierra 168-gr. MatchKing	2.800	2657	9	0.34	0.75
Federal	Fed. 210	IMR 8208 XBR	42.0	Sierra 168-gr. MatchKing	2.800	2701	15	0.56	0.98
Federal	Fed. 210	CFE 223	46.1	Sierra 175-gr. MatchKing	2.800	2791	13	0.47	0.83
Federal	Fed. 210	Varget	43.7	Sierra 175-gr. MatchKing	2.800	2664	13	0.49	1.19
Federal	Fed. 210	IMR 4064	44.2	Sierra 175-gr. MatchKing	2.800	2777	12	0.43	1.18
Federal	Fed. 210	IMR 4166	41.8	Sierra 175-gr. MatchKing	2.800	2655	7	0.26	0.83
Federal	Fed. 210	IMR 8208 XBR	41.2	Sierra 175-gr. MatchKing	2.800	2640	7	0.27	1.25
Federal	Fed. 210	CFE 223	46.1	Hornady 178-gr. A-Max	2.800	2794	11	0.39	1.18
Federal	Fed. 210	Varget	43.7	Hornady 178-gr. A-Max	2.800	2638	8	0.30	1.31
Federal	Fed. 210	IMR 4064	44.2	Hornady 178-gr. A-Max	2.800	2724	13	0.48	0.92
Federal	Fed. 210	IMR 4166	41.8	Hornady 178-gr. A-Max	2.800	2604	10	0.38	1.02
Federal	Fed. 210	IMR 8208 XBR	41.2	Hornady 178-gr. A-Max	2.800	2625	9	0.34	0.90
Rock River Arms LAR-8, 26-in. Barrel, 1:10 Twist									
Federal	Fed. 210	CFE 223	47.5	Sierra 168-gr. MatchKing	2.800	2778	8	0.29	0.77
Federal	Fed. 210	Varget	44.6	Sierra 168-gr. MatchKing	2.800	2626	6	0.23	1.26
Federal	Fed. 210	IMR 4064	44.5	Sierra 168-gr. MatchKing	2.800	2724	4	0.15	0.85
Federal	Fed. 210	IMR 4166	42.2	Sierra 168-gr. MatchKing	2.800	2589	10	0.39	0.83
Federal	Fed. 210	IMR 8208 XBR	42.0	Sierra 168-gr. MatchKing	2.800	2623	3	0.11	0.99
Federal	Fed. 210	CFE 223	46.1	Sierra 175-gr. MatchKing	2.800	2721	7	0.26	1.05
Federal	Fed. 210	Varget	43.7	Sierra 175-gr. MatchKing	2.800	2575	13	0.50	0.49
Federal	Fed. 210	IMR 4064	44.2	Sierra 175-gr. MatchKing	2.800	2690	8	0.30	0.60
Federal	Fed. 210	IMR 4166	41.8	Sierra 175-gr. MatchKing	2.800	2562	12	0.47	0.98
Federal	Fed. 210	IMR 8208 XBR	41.2	Sierra 175-gr. MatchKing	2.800	2571	14	0.54	0.88
Federal	Fed. 210	CFE 223	46.1	Hornady 178-gr. A-Max	2.800	2700	7	0.26	1.05
Federal	Fed. 210	Varget	43.7	Hornady 178-gr. A-Max	2.800	2574	13	0.51	1.16
Federal	Fed. 210	IMR 4064	44.2	Hornady 178-gr. A-Max	2.800	2671	7	0.26	1.21
Federal	Fed. 210	IMR 4166	41.8	Hornady 178-gr. A-Max	2.800	2547	10	0.39	0.97
Federal	Fed. 210	IMR 8208 XBR	41.2	Hornady 178-gr. A-Max	2.800	2577	11	0.43	1.05
NOTES: Accuracy is the average of three, five-shot groups fired from a benchrest. Velocity is the average of 15 rounds measured 12 feet from the guns' muzzles.									

hollowpoint boattails. (Yes, I know 155-grain bullets are used in many matches, but I had to draw the line somewhere.) I concentrated on three popular match-grade bullets: Sierra's 168- and 175-grain MatchKings and Hornady's 178-grain A-Max. The COL for all handloads was 2.800 inches.

The Test Protocol

I've heard many people whine that breaking in the barrel of a new rifle doesn't do any good, but I've never heard anybody say it *hurts* anything, so I generally do some break-in shooting before I start testing. Before shooting for the record, I performed my simple break-in procedure on both new rifles. I loaded some mild loads and miscellaneous factory ammo and shot 20 rounds in each rifle. I cleaned after each shot. Then I shot four, three-shot groups, cleaning after each group. After that, I *thoroughly* cleaned and inspected the bore with a Hawkeye borescope. If there was so much as a hint of copper wash, it was back to the patches and solvents. For the record, I used Butch's Bore Shine

to remove primer and powder fouling and Otis 012-Cu Copper Remover for jacket fouling.

Here's the test protocol. Three, five-shot groups were fired with each handload and each factory load in each rifle at 100 yards. I cleaned after every 15 shots and fired one fouling shot after each cleaning before shooting the next load series.

I did only minimal load work-up for this project. Instead I relied on the extensive and excellent pressure-tested data in Hodgdon's *Annual Manual*. I fired a few starting loads with each powder to get a feel for the rifle (those loads are not included in the load tables) and then went right to the test loads. The test loads I settled on were just a hair under the maximums listed in this manual.

I shot the Savage Model 12 off of a Caldwell Lead Sled DFT and the LAR-8 from a more traditional benchrest so I could use the 20-round magazine that came with the rifle. I loaded the Model 12 single-shot style, but all rounds for the LAR-8 were fed from the AR's magazine.

PREMIUM 308 WINCHESTER HANDLOADS

308 WINCHESTER HANDLOAD OVERALL AVERAGES, BOTH RIFLES

POWDER	100-YARD ACCURACY (IN.)	SD (FPS)	COV (PERCENT)
CFE 223	0.96	10	0.32
Varget	1.04	11	0.40
IMR 4064	0.92	9	0.32
IMR 4166	0.90	10	0.37
IMR 8208 XBR	1.01	10	0.38
Averages	0.97	10	0.36

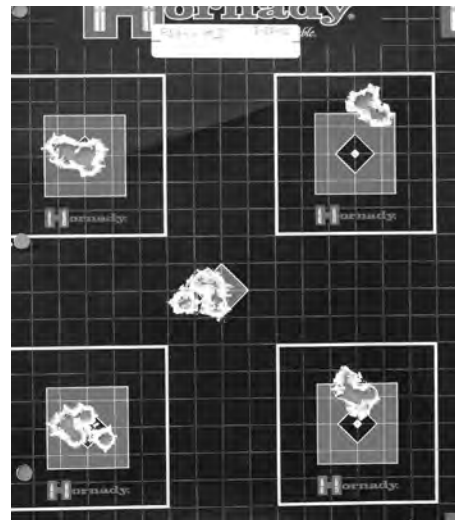
The Results

Okay, to heck with the methods. How did these loads shoot? In a word, great. All of the individual loads and their groups are shown in the accompanying charts, as are some short and sweet summary boxes that point out the differences in results between rifles, bullets, and powders.

Every experiment needs a "control," so I selected six factory loads for comparison and fired each in the two rifles with the same three, five-shot group protocol as with my handloads. The average accuracy of the six factory loads was almost identical in the two rifles, averaging 1.19 inches for the Model 12 and 1.13 inches for the LAR-8. The best load in the bolt gun was the Nosler Match Grade with the 168-grain HPBT, averaging a

308 WINCHESTER HANDLOAD GROUP SIZE AVERAGES (IN.)

POWDER	SIERRA 168-GR. MATCHKING	SIERRA 175-GR. MATCHKING	HORNADY 178-GR. A-MAX	AVERAGE BY POWDER
Savage Model 12, 26-in. Barrel, 1:10 Twist				
CFE 223	0.90	0.83	1.18	0.97
Varget	0.83	1.19	1.31	1.11
IMR 4064	0.78	1.18	0.92	0.96
IMR 4166	0.75	0.83	1.02	0.87
IMR 8208 XBR	0.98	1.25	0.90	1.04
Average by Bullet	0.85	1.06	1.07	
Rock River Arms LAR-8, 26-in. Barrel, 1:10 Twist				
CFE 223	0.77	1.05	1.05	0.96
Varget	1.26	0.49	1.16	0.97
IMR 4064	0.85	0.60	1.21	0.89
IMR 4166	0.83	0.98	0.97	0.93
IMR 8208 XBR	0.99	0.88	1.05	0.97
Average by Bullet	0.94	0.80	1.09	



While all handloads shot well, the RRA LAR-8 was most accurate with Varget and Sierra's 175-grain MatchKing.

308 WINCHESTER FACTORY LOAD ACCURACY & VELOCITY

AMMUNITION	COL (IN.)	VEL. (FPS)	SD (FPS)	COV (PERCENT)	100-YARD ACCURACY (IN.)
Savage Model 12, 26-in. Barrel, 1:10 Twist					
HPR Match 168-gr. HPBT	2.758	2691	17	0.63	1.65
Nosler Match Grade 168-gr. HPBT	2.770	2743	10	0.36	0.59
Federal GM Match 175-gr. MatchKing	2.817	2707	23	0.85	1.37
Barnes Precision Match 178-gr. OTM-BT	2.792	2662	14	0.53	1.14
Hornady Match 178-gr. BTHP	2.797	2592	14	0.54	0.90
Hornady Superformance Match 178-gr. BTHP	2.801	2827	5	0.18	1.46
Rock River Arms LAR-8, 26-in. Barrel, 1:10 Twist					
HPR Match 168-gr. HPBT	2.758	2644	16	0.61	1.19
Nosler Match Grade 168-gr. HPBT	2.770	2700	16	0.59	0.91
Federal GM Match 175-gr. MatchKing	2.817	2631	7	0.27	0.99
Barnes Precision Match 178-gr. OTM-BT	2.792	2600	15	0.58	1.54
Hornady Match 178-gr. BTHP	2.797	2560	15	0.59	1.27
Hornady Superformance Match 178-gr. BTHP	2.801	2754	11	0.40	0.88
NOTES: Accuracy is the average of three, five-shot groups fired from a benchrest. Velocity is the average of 15 rounds measured 12 feet from the guns' muzzles.					



Three, five-round groups were fired with each bullet and powder combination in each rifle. The Savage Model 12 bolt action was most accurate with IMR 4166 and Sierra's 168-grain MatchKing.

tiny 0.59 inch. Tops in the AR was Hornady's Superformance Match load with the 178-grain A-Max bullet, which averaged a delightful 0.88 inch. Interestingly, the average velocity of all factory loads was 56 fps (about 2 percent) faster in the bolt action than in the semiauto.

Now for the handloads. Let's start at the top and work our way down. Again, the average accuracy of all handloads was almost identical in both rifles. For the Model 12, it was 0.99 inch; for the LAR-8, it was 0.94 inch. The powder that turned in the smallest aggregate accuracy was IMR 4166, with a 0.90-inch average, and it was followed closely by IMR 4064 at 0.92 inch.

CFE 223 turned in the highest velocities with all bullets in both rifles, and IMR 4064 was second with all three bullets in both rifles. The lowest velocities in all cases were with IMR 4166, except for the Sierra 175-grain MatchKing in the Model 12 bolt gun, where IMR 8208 XBR was somewhat slower.

An important indicator of load uniformity is standard deviation (SD). Statisticians out there: Get those fingers off the email "send" key! I am well aware of the lack of "statistical significance" between the test results. The differences between the group sizes produced by these gilt-edged rifles is so small that it would take dozens, if not hundreds, of groups to detect a "statistically significant" difference (95 percent, 90 percent, etc.) between them.

For our purposes, SD is just a convenient indicator of the uniformity of a given load. Another comparative measure is the coefficient of variation (COV), which is the SD expressed as a percentage of the mean. I've listed both values in the chart. This statistic is handy because it allows a direct apples-to-apples comparison of loads. A COV of 2 percent is considered good, and

less than 1 percent is very good. The overall average COVs for the test loads was an outstanding 0.36 percent.

The powder that had the lowest SD (9 fps) was IMR 4064, while the powder with the highest SD was Varget (11 fps). Both of these figures are only a hair off of the overall average of 10 fps. In other words, with today's modern powders, uniform cases, and consistent primers, variations in SDs are essentially non-factors.

Aggregate bullet accuracy for both rifles was in this order: Sierra 168-grain MatchKing (0.89 inch), Sierra 175-grain MatchKing (0.93 inch), and Hornady 178-grain A-Max (1.08 inches). The Savage Model 12 liked the Sierra 168-grain MatchKing best (0.85 inch) and the other two bullets tied (1.06 inches). In the RRA LAR-8, the Sierra 175-grain MatchKing came in with a beautiful 0.80-inch average, followed by the Sierra 168-grain MatchKing (0.94 inch) and Hornady 178-grain A-Max (1.09 inches).

Overall, I was extremely impressed with the performance of each of these powders, bullets, and rifles. CFE 223, IMR 4166, IMR 4064, IMR 8208 XBR, and Varget are top choices to try for match loads in the 308 Win. All have an excellent probability for quick success.

Based on my results, I can say that within the huge selection of Hodgdon and IMR powders available, there is bound to be one (or more) that's "perfect." It's a relatively simple matter for the shooter to select a handload that delivers top-notch accuracy for the cartridge at hand with a minimum of fuss and muss. The bottom line is that the handloader can spend less time experimenting with powders, bullets, and primers and more time shooting. The only downside I see is that it eliminates the pleasurable task of handloading endless combinations of components for testing!

HOG LOADS



One of the great things about hog hunting is hunters can use just about any rifle cartridge they want and still end up with pork.

BY JOHN BARSNESS

IN THE 1980S I SOMEHOW DECIDED MY HUNTING LIFE NEEDED a “wild boar,” and a California friend arranged a guided ranch hunt in the western foothills of the Central Valley. Until then I’d only taken Montana big game with over-the-counter tags—pronghorns, whitetails, mule deer, elk, and black bear—and been the chief guide and packer when my wife, Eileen, had drawn a Shiras moose tag.

Some research on possible pig rifles seemed in order.

Back then very few magazines ran articles on hog hunting. The feral pig population hadn’t yet “exploded” across the United States, and only a handful of science nerds used the then-tiny Internet. The little information available said big boars were extremely hard to kill, due to the heavy cartilage shield over their ribs and a surly attitude. Some sources claimed boars frequently grew up to 500 pounds or more, and several said wounded boars were extremely dangerous, due to their “razor-sharp” tusks.

All of this made me briefly consider a recently purchased 375 H&H, but eventually, I decided on a 270 Winchester, partly because I knew the toughness of elk was often greatly exaggerated. Eileen and I had taken elk handily with various 270s, and Eileen’s had proven more than adequate for her bull moose, which dropped very quickly with one Nosler 150-grain Partition through the lungs. A stout 150-grain bullet also seemed like a good idea for a big boar, so I worked up a load with Speer 150-grain Grand Slams, which had proven pretty tough on several Montana animals.

The powder chosen was H4831, the classic 270 propellant ever since Jack O’Connor acquired a bunch of the “war surplus” powder Hodgdon started marketing after World War II. O’Connor worked up some pretty zippy loads—finding the powder somewhat slower burning

than IMR 4350, previously the slowest-burning commercial powder—then went forth and slew all sorts of big game. By coincidence, my H4831 was military-surplus powder, a gift from an old handloader who had decided to quit big-game hunting. I worked up to the same charge O’Connor used with 150-grain bullets and Eileen used on her moose, and the Speer bullets grouped into an inch.

Winter still hung on in Montana in April when we left to drive to California, but in the Central Valley orange poppies bloomed across green hillsides. We arrived in the evening, and my guide, a young man named Mitch, said he hadn’t seen any big boars all winter while escorting other hunters around the ranch. That was discouraging; a magazine had assigned an article on hunting big, fierce boars. We decided to look for one anyway, at least for a day or two.

Early the next morning we came over a rise in a supposedly empty cattle pasture to see a small herd of pigs running toward the far side of the field. The pig in the rear was much larger than the rest, with burly shoulders and a long, wedge-shaped head.



The author’s wife often uses the 308 Winchester as her “big” cartridge. This trophy warthog fell at 300 yards to a Nosler 150-grain E-Tip propelled by 46.0 grains of Varget.



hodgdon.com 55

HOG LOADS



The author (right) took his first wild boar in the 1980s in California's Central Valley, using a 270 Winchester rifle and handloads loaded with the classic 270 powder: original military-surplus H4831. The recovered Speer 150-grain Grand Slam bullet retained 74 percent of its original weight.

"That's a big boar!" Mitch said. I was already aiming. The range looked to be at least 150 yards, and I held the scope's reticle in front of the boar's snout as it ran angling away. After the shot, we heard the hollow thump of a solid chest hit, but the boar kept running. A second shot, taken as the herd dropped into a deep draw, missed high.

A couple of minutes later we were side-hilling through the steep draw, looking for blood between the oaks and chamise brush. Mitch suddenly pointed uphill, where the boar trotted slowly through small oaks. I waited for an opening before shooting, and the boar dropped and rolled downhill toward us. It stopped a few yards away, then rose and staggered briefly toward me, clashing its tusks, before collapsing for the final time.

In the ranch's skinning shed, the boar weighed 245 pounds, but after all these years I can't remember if that was whole or field-dressed. Either way, it was a pretty big pig, with tusks curving nearly 3 inches from its mouth. We found my first shot had been placed well enough—if the pig had been a deer.

None of the material I referenced back then mentioned that a pig's lungs don't extend nearly as far back from the shoulders as those on a deer or elk or most other cloven-hooved big-game animals. The Grand Slam bullet had entered the ribs a few inches behind the left shoulder but only clipped the rear of the left lung before centering the right lung. The second bullet had angled upward through the left shoulder and cracked the bottom of the spine, the reason the boar fell and rolled downhill. We recovered it, perfectly expanded and retaining 74 percent of its original weight, from under the hide on top of the opposite shoulder.

Bullets

In the decades since, both Eileen and I have taken a bunch of feral pigs across the US, though mostly at the epicenter of the porcine epidemic: Texas. I've also done a little hunting of truly wild boars in Europe (*Sus scrofa*, the ancestors of our feral pigs) and some for their New World relative, the collared peccary, in Texas, Arizona, and Old Mexico. Eileen and I have also hunted warthogs in Africa several times.

I've decided wild pigs aren't very dangerous, since only that first boar even vaguely "charged," and aren't very hard to kill. Instead, their reputation for toughness rose partly from the simple cup-and-core bullets most hunters used prior to the 1980s, before they became aware of the advantages of controlled-expansion bullets.

The cartilage shield and relatively heavy shoulder bones of larger boars can disintegrate cup-and-core bullets, which is the reason heavy bullets at moderate velocities were traditionally favored for driven-boar shooting in Europe. But as I discovered in California, a relatively small and fast controlled-expansion bullet will penetrate the cartilage, shoulder, and vitals of a large boar.

The smallest cartridge I've used on a mature boar was the 6.8 Remington SPC, during a hunt in northeast Texas with Bill Wilson of Wilson Combat fame. Wilson likes hunting pigs so much he bought a small ranch primarily for that purpose. While many Texas pig hunters use AR-15s in 223 Remington,



Hodgdon's H4350 might be the most versatile powder for modern pig cartridges, but it also provides some extra zip in older rounds. The author has used H4350 to take pigs in chamberings from the 7x57 Mauser to 375 H&H.



This Texas boar fell to a single Barnes 95-grain TTSX from a Wilson Combat AR-15 in 6.8 SPC, but many feral pigs are taken with deer rifles like the 7x57 Mauser Kilimanjaro Walkabout rifle (below).



The second boar weighed at least twice as much and was taken close to midnight with a suppressed AR-15 equipped with a Gen 3 night-vision scope. Wilson also owns top-notch night-vision binoculars, so we went out after dinner one evening, eventually finding a couple dozen pigs scattered across a cattle pasture half a mile away. We circled into the mild breeze and walked quietly up within 100 yards of the nearest boar as it grazed, quartering away. I rested the AR-15 on Wilson's shooting sticks and waited for the boar to turn slightly before aiming at the same place. This boar also dropped right there—as did a coyote we spotted while hiking back to the ATV—to a 150-yard shot through the shoulders. (Before anybody objects, in Texas it's legal to hunt both varmints and "exotic," non-native animals at night—and feral pigs are exotics.)

With the 6.8 SPC, Wilson prefers a softer bullet for whitetails, specifically Nosler's 110-grain AccuBond, but he prefers the bone-breaking penetration of Barnes's TSXs for pigs. I don't know what powder he uses, but Barnes data lists H4198 as getting almost 2,800 fps with the 95-grain Tipped TSX from a 16.5-inch barrel. That's zipping right along, basically duplicating typical 100-grain 243 Winchester factory loads from 22-inch barrels.

Wilson believes the 6.8 SPC is more reliable on larger boars. It certainly worked well for me during the hunt, while using a pair of Wilson Combat AR-15s and Wilson's handloads featuring Barnes 95-grain Tipped TSX bullets.

The first pig fell just after dark, and my aim was helped by an illuminated-reticle Burris scope. Wilson had earlier explained that while the TSXs penetrate very well, if somebody wants to drop a boar *right there*, without any trailing through the oak thickets, his preferred shot placement is the middle of the neck, just in front of the shoulders. A head shot or high shoulder/spine shot will also do the job if properly placed, but a pig's spine and major blood vessels run right through the middle of the neck, providing a larger target. So I put the red dot on the eating-size boar, and it dropped right there. I've hunted pigs all across Texas, and everybody everywhere has a firm opinion of the maximum size for a good-tasting boar. Those opinions vary from 100 to 150 pounds, and this one weighed maybe 100 pounds.

We didn't get a second shot at any of the other pigs in that pasture. Despite the suppressor, the clatter of the AR's action spooked them into the brush. But the firepower of AR-15s often allows hunters who get into a herd to take several, and these days much of Texas is so infested with feral pigs that many hunters are out to shoot all they can find of any size. (Eileen prefers that sort of pig hunting, so she can bring a cooler stuffed

Powders in the medium burn-rate range work great with pig-suitable bullets in a wide variety of cartridges, including the 223 Remington (Nosler 60-grain Partition), 6.8 Remington SPC (Barnes 95-grain TTSX), 308 Winchester (Nosler 150-grain E-Tip), 9.3x62 Mauser (Nosler 250-grain AccuBond), and 45-70 (Remington 405-grain softpoint).



HOG LOADS

Whatever rifle you bring to Texas for feral pigs will also work on their New World relative, the collared peccary. This javelina fell to a 45-70 handload consisting of Remington's 405-grain softpoint over 42.0 grains of IMR 4895.

with pork home to Montana, including piglets she splits lengthwise and prepares in a water-smoker. Excuse me while I wipe away some drool before it messes up the keyboard.)

Field Experiences

Most feral pigs probably are shot with rifles typically used for deer because they're taken by deer hunters. For one Texas hunt sponsored by Cabela's, they sent me a limited-edition Winchester Model 70 in 257 Roberts beforehand to work up handloads. The 257 Roberts is one of my very favorite deer rounds. The handload was also a longtime favorite, combining a maximum load of H4350 with the Nosler 115-grain Partition. The biggest pig the 257 took was a boar weighing around 175 pounds, but my shooting position wasn't steady enough to risk a neck shot, so I aimed for the shoulder



but missed slightly. The bullet landed right behind the bone, a typical deer-type lung shot. The boar dropped straight down and never moved.

Several javelinas were also taken on that hunt. Of course, the 257 worked just fine, but one of my companions used the other

Winchester I brought: a lever-action Model 1886 in 45-70. It used handloads featuring Remington 405-grain flatnose softpoints and enough IMR 4895 to duplicate the original blackpowder ballistics. Younger javelinas taste all right, too, and the big, slow bullet didn't shoot up much peccary-pork.

Most feral pigs probably are shot with rifles typically used for deer because they're taken by deer hunters.

HOG LOAD DATA

CASE	PRIMER	POWDER	CHARGE (GRS.)	BULLET	VEL. (FPS)	100-YARD ACCURACY (IN.)
223 Remington Custom Remington 788, 24-in. Barrel						
Remington	CCI BR-4	Varget	25.0	Barnes 53-gr. TSX	3072	0.60
Remington	CCI BR-4	Benchmark	23.5	Nosler 60-gr. Partition	3022	1.05
257 Roberts Winchester Model 70, 22-in. Barrel						
Remington	CCI 200	H4350	43.0	Nosler 115-gr. Partition	2857	0.95
6.8 SPC AR-15, 16.5-in. Barrel						
Remington	Rem. 9½	H4198	27.5	Barnes 95-gr. TTSX	2767	----
270 Winchester Hodgdon Pressure Barrel, 24-in. Barrel						
Winchester	WLR	H4831	55.7	Hornady 150-gr. SP	2804	----
Winchester	WLR	IMR 7977	60.8	Hornady 150-gr. SP	2940	----
7x57 Mauser Kilimanjaro Walkabout, 21-in. Barrel						
Winchester	CCI 200	H4350	45.0	Norma 156-gr. Oryx	2641	0.76
308 Winchester Kilimanjaro Artemis, 21-in. Barrel						
Winchester	CCI 200	Varget	46.0	Nosler 150-gr. E-Tip	2825	0.69
9.3x62 Mauser CZ 550, 23.6-in. Barrel						
Norma	CCI 200	Varget	58.0	Nosler 250-gr. AccuBond	2541	1.12
375 H&H Ruger No. 1 Tropical Rifle, 24-in. Barrel						
Winchester	Fed. 215	H4350	75.0	Nosler 300-gr. Partition	2589	1.50
45-70 Winchester Model 1886, 24-in. Barrel						
Hornady	WLR	IMR 4895	42.0	Remington 405-gr. SP	1291	3.56



Most warthogs are taken with whatever rifle the hunter brings to Africa, so it's often larger than needed for 250-pound boars. In this instance, the rifle was a 375 H&H Ruger No. 1 that was used during the same safari on game up to and including Cape buffalo.

decade or two safari operators have found their clients are often willing to help cull. Many safari companies even offer lower rates for cull hunts, though the hunter must still pay a standard fee for any real trophy, whether a warthog or kudu.

Most hunters headed to Africa don't bring a special warthog-culling rifle and instead use whatever they brought along for general hunting. In Africa that usually means a larger cartridge than used by the average American deer hunter. I've taken more warthogs with the

Pig culling also takes place in Africa, where warthogs are expanding their range into areas where they weren't originally found. Warthogs cause the same problems there as feral pigs cause here, digging under fences and rooting through crops and pastures. Until relatively recently, the problem was semi-controlled by landowners and professional cullers (game meat can be legally sold in much of Africa), but in the last

classic European/African 9.3x62 Mauser than any other round, but the largest cartridge I've used was the 375 H&H, which on the same safari also took a Cape buffalo. It did the job quite efficiently—many years after I had considered taking a 375 on my first pig hunt in California.

That's one of the great things about pig hunting. Hunters can use just about any rifle they want and still end up with pork. 🐷

An In-depth Inventory
Of Specialized Reloading
Equipment & Components

HUNTINGTON

DIE SPECIALTIES

SERVING HANDLOADERS ~ SINCE 1947

DIES & EQUIPMENT

- RCBS Reloading Dies & Products
- Case Trimmers
- Tumblers & Ultrasonic Cleaners
- Forster Products
- Casting Equipment
- DVD's / Books
- Loading Manuals
- Powder Measures
- Powder Scales
- Priming Tools
- Reloading Presses
- Measurement Tools



CASES

- HDS
- Bertram
- Graf
- Hornady
- Horneber
- Jamison
- Lapua
- Magtech
- Norma
- RWS
- Starline



BULLETS

- Barnes
- Custom Bullets
- CCI Specialty Products
- Graf
- 8mm Nambu Bullets
- Hornady
- Sierra
- Woodleigh



RCBS

Starline

SIERRA
The Bulletmaker

BARNES

RWS

GRAF

www.huntingtons.com

- Same great products now with convenient online ordering.
- Representatives knowledgeable on every product we carry.

Hornady
Accuracy. Family Dependable.

WOODLEIGH



BULLETS

LAPUA

FORSTER PRODUCTS



1-866-RELOADS

TOLL FREE 1-866-735-6237

ORDERS 1-530-534-1210

FAX 1-530-534-1212



buy@huntingtons.com



601 Oro Dam Blvd., East
PO Box 991, Oroville, CA 95965 USA



HODGDON 4831 AND ME

The author's been using the same batch of H4831 since the early 1950s, and it still shoots as good as it did back then.

BY JIM CARMICHEL

CALL ME A FUSSY OLD GROUCH, BUT I HAVE TO grin and chuckle every time I hear of modern-day handloaders rending their garments and suffering fits of despair over shortages of powder or primers or bullets or any of the other handloading gadgetry we deem essential to the pursuit of a fulfilling existence. Little are today's handloaders aware that it wasn't too long ago (well, yeah, maybe it was) when not only were reloading components hard to come by, but also the overflowing cornucopia of reloading equipment we now take for granted simply didn't exist. Not only that, the shooting industry that now embraces the large and profitable reloading branch of the gun business was once all but hostile to the proposition of anyone reloading their ammunition.

If you think I'm kidding, come back with me to the gunshop where I made myself a pest every Saturday morning when my family went to town. The year is 1950 and I'm a lad in his early teens enthralled by anything that burned gunpowder, so any place that sold guns drew me like a cat to catnip. Actually, it wasn't a gunshop, but a hardware store, and like all hardware stores of those days, it carried a line of guns plus a shelf or two filled with colorful boxes of ammunition.

What I'm getting to was a boldly lettered sign on the counter: WE DO NOT SELL, BUY OR TRADE ANY FIREARM IN WHICH RELOADED AMMUNITION HAS BEEN FIRED. I reckoned the sign served clear notice about how the management felt about reloaded ammo, but every time I looked at the sign I wondered how they would know if the gun had fallen victim to a reloaded rifle or shotgun shell. Too polite to question their motives, I assumed some ugly stigma was attached to any firearm thus ignobly deflowered and was clearly identifiable thereafter.

Or, rather, that's what retailers, like my local shop, along with a majority of dealers and ammo manufacturers, would have you think because if the growing threat of reloading proved true, they stood to lose the most profitable segment of the firearms industry. After all, selling a shotgun, pistol, or rifle earns a profit only once. But making and selling ammo for that gun turns a profit year after year, hunting season after hunting season. No greater threat to that tidy profit center could be imagined than if consumers began reloading their own ammo. Which was the real reason for that threatening sign on the counter of my favorite gunshop.

Among the instigators of such fear within the shooting industry was a small but determined group of visionaries who traveled far and wide preaching the gospel of handloading. Visionaries like toolmaker Fred Huntington, bulletmakers Joyce Hornady and Vernon Speer, and a hardrock Kansan by the name of Bruce Hodgdon literally carried the message of reloading from town to town, talking to anyone who would listen, setting up their equipment in any sports shop or shooting venue that would have them, and giving demonstrations.

Despite the sign's dire warning, or probably because of it, I figured there must be something worth knowing about the forbidden practice of reloading and started asking around. What I discovered set me on a life's journey that morphed into a career and, eventually, became one of the reasons I'm now on these pages.

The central figure of that discovery was Mr. Hale Williams, an old-school southern gentleman who always wore a white shirt and tie, even when wearing his shooting coat. A gray fedora that he unfailingly tipped at ladies added more inches to his six-foot-six frame, and under the coat of his dark suit was holstered a cocked-and-locked Colt Model 1911. The reason for the Colt was that he was a detective for Southern Railways, and his

HODGDON 4831 AND ME

Bruce Hodgdon began selling war surplus 4831 powder in 1950, and the author used it successfully for high power rifle competition in the late 1960s.

duties included, among other things, kicking gamblers, bootleggers, and suspicious-looking damsels off his trains.

When I learned that Mr. Williams was the man I should see to learn something about handloading, I had to screw up my courage before giving him a telephone call as I fully expected a gruff response and warning that he wasn't to be bothered by gun-struck kids. Instead, after I gibbered my interest in handloading, he politely asked if I would like to visit and see a demonstration. Would the next Saturday be too soon? Thus began a friendship that lasted over 40 years.

Almost every summer Sunday afternoon when he was in town he would drive to our farm in his blue Plymouth and take me off to a magical shooting adventure. Invariably, I'd have a slew of questions about handloading. For the few he couldn't answer he'd direct me to *Complete Guide to Handloading* by Phil Sharpe and *Principles and Practice of Loading Ammunition* by Earl Naramore, which he had loaned me with orders to read and study.

Thinking back on those wondrous days, some of Hale's greatest gifts were the men he introduced me to. Like himself, they were old-school southern gentlemen, and each was deeply involved in reloading and rifle performance.

One, who had been the executive officer on a submarine that sank Japanese warships in the Pacific, helped me get into centerfire target shooting by selling me his glassy-smooth C model '03 Springfield and letting me pay for it a few bucks at a time. It's my longest continuously owned firearm and will never be sold because there's no way to put a price on such memories.

In addition to a part-time custom reloading business, Hale kept a stock of reloading components, mostly bullets and primers, that he sold to a gaggle of handloaders in our area and would special order bigger items like presses and dies and powder measures at discount prices. Which is how I came to own my first reloading equipment: a Pacific "C" press with a set of Pacific loading dies, a Lyman 55 powder measure, and a copy of Lyman's reloading guide, which at that time was the only publication of its type in existence. I still have the press and measure, and they are mounted like trophies on the wall of my loading room.

Naturally, one of the first rifles I loaded for was that 30-06 Springfield. My standard load used Hodgdon 4895 powder that Hale ordered in bulk and weighed out to customers in paper bags. Even today, every time I open a fresh container of powder and sniff its distinctive scent I'm reminded of the many times Hale set a brown paper bag on his kitchen scale and carefully weighed out a pound of the aromatic propellant.

Within a couple years I was loading for more calibers and figured I ought to get in the custom reloading business. I ran an ad in the local paper, offering to reload a customer's fired cases for only a dime each. A box of centerfire ammo cost about \$4, so I anticipated being swamped with business.

But as it turned out, my commercial reloading venture was a financial catastrophe, not only because of sluggish demand but also because many of the customers wanted ammo in odd calibers for the rifles and drillings they'd picked up in Europe. So after investing \$13 (average price for a set of dies in the early 1950s) for a set of loading dies for, say, some prospective



customer's 6.5x58R Sauer drilling, he'd end up buying only three or four rounds, in his words, "Just to see if it will shoot," and never return thereafter.

Thinking back on those times one might assume that about anyone who got in the business of purveying all that easily accessible powder was bound to succeed. But it was anything but easy. It required a lot of reloading knowhow, plus a dogged willingness to learn a lot more. Years later, the name Hodgdon had become a byword in reloading circles. I got to know Bruce pretty well, and one thing I learned about him was that "dogged" could have been his middle name.

Bruce got into the salvage powder business in 1947, just as the government had tons upon tons of surplus wartime propellants to dispose of. One of the first challenges once he had acquired a given batch of powder was finding where it belonged in the reloading spectrum and convincing reloaders that it was workable.

Consider, for example, the powder that had been made to load ammo for the .30-caliber Garand rifle (30-06), which today we know as 4895, one of the all-time favorite propellants for the '06. But in 1950 no loading manual acknowledged a powder by that designation. Meaning that Hodgdon had to develop loading data for it in an ever-widening variety of calibers and bullet weights.

Multiply that by the variety of different powders Bruce was acquiring and you get some idea of the tasks he confronted. In some cases, he found a close fit or similarity of certain newly acquired surplus powders to existing brand-name (DuPont, Hercules, etc.) canister powders and suggested matching his powder to existing load data. (Which for many handloaders, I'm sure, required a leap of faith.) Plus, mainline makers of canister powders were in no way inclined to offer support to an upstart wooing their customers with powders priced at half or less than their established products.



Jim and his prize 300 Win. Mag. Winchester Model 70 with custom stock graced the cover of the March-April 1971 issue of *Rifle* magazine.

Enter 4831

That is how it was in 1950 when Hodgdon introduced a relatively slow-burning powder and christened it 4831. It was a wartime product originally developed for the 20mm Oerlikon, an autoloading cannon used by the American and British navies. As produced at war's end, the 20mm (.787 inch) projectile weighed 2,000 grains, had a velocity of 2,800 fps, and was loaded with 400 grains of the medium-slow-burning powder.

Firing at a rate of some 650 rpm, an Oerlikon burned about 37 pounds of 4831 in a minute, which meant many tons of it had been made for the war, and apparently a lot of it had been left over for Hodgdon to sell because he initially offered it at what was one of the all-time greatest bargain prices—especially if you bought a lot of it. That's how I came to have 20 pounds at one time when normally I could afford no more than one pound of canister powder at a time. I forget the exact details, but the price was significantly less than a buck a pound if you bought 100 pounds or more. It was too good a deal to miss out on, so a few of my shooting pals and I pooled our meager resources and ordered 100 pounds. After divvying up the 100 pounds of loose powder, I had 20 pounds of 4831. I funneled it into a tin drum that formerly had held another brand of powder. My closely protected remaining share of that shipment still resides in that tin drum more than 60 years since the day we popped the lid off the original cardboard barrel. Notice I said closely protected, for which there is a sacred reason, which I'll get to in a moment or two, but first let's discuss the early days of handloading with 4831.

In my vintage copy of the *Lyman Ideal Handbook*, dated 1951, there is no mention of 4831, which is understandable since there had been no time at that date to develop data for any Hodgdon powder, even if they'd had samples. But with the introduction of Speer's first handloader's manual, dated 1954, Hodgdon's 4895

and 4831 were much in evidence. As mentioned earlier, bullet-maker Vernon Speer, like Bruce Hodgdon, was a hard-driving apostle of handloading back in the good old days, and they helped each other at every chance. In fact, I think it can be convincingly argued that Speer was largely responsible for the early success of 4831 by pointing out its possibilities to handloaders of that era.

To better understand how this came about, you must recall that one of the main selling points for handloading your own ammo back then was not just equaling, but actually surpassing, factory ammo velocities. That's the reason for the rather unrestrained virility of some 1950s-era loading data. For example, loads for the 270 Winchester with 130-grain bullets in Speer's 1954 manual listed a husky 60.0 grains of 4831 for a velocity of 3,180 fps, which just happened to be faster than Winchester's advertised velocity for the same caliber and weight bullet. And it just so happened that popular gun writer Jack O'Connor lived just a few blocks from Speer's Lewiston, Idaho, bullet-making plant.

No gun writer ever had it so good. O'Connor had easy access to Speer's shooting tunnel to test new rifles and ammunition and work on his various shooting and writing projects with the full cooperation and invaluable input of Speer's technical staff. It's no secret that O'Connor was also a big fan and promoter of the 270 Win., and when he discovered that the factory ballistics of his favorite caliber could actually be exceeded simply by filling its case to the brim with 4831 and putting a Speer 130-grain bullet on top, he lost no time spreading the news to his many thousands of fans. Thus was the success of 4831 secured.

Wildcatting—the practice of designing and building non-mainline cartridges and rifles—was a popular enterprise in those days. Since nearly all wildcats are characterized by increased capacity/bore size ratios, they almost universally benefit by slower-burning powders, and just at that right moment in time bargain-priced 4831 was there to fill the bill. Some wildcats that I could name simply would never have been born had not their makers had an abundance of 4831 to tinker with.

Projects such as my 25-06, which was then a fairly popular wildcat, were steadily decreasing my 20 pounds of 4831 until by 1968 no more than half remained in the pink tin drum. And it would have continued to disappear had there not been a change in my shooting fortunes.

By then I was out of college and had a job that paid fairly well. I picked up a few stray bucks writing for various shooting publications, mostly about handloading and do-it-yourself gunsmithing. I was also getting back into rifle competition, especially the high power scene and the National Match Course, which was then fired with the 30-06. I had a couple of pretty good rifles, one being the '03 Springfield I'd bought years before and still fired in specialty matches, and another was a good Winchester Model 70 Target Model that had been made even better after I fitted it with a semi-finished stock I got from well-known gunsmith Roy Dunlap. (The '03 Springfield and the Dunlap-stocked Winchester Model 70 continue to occupy honored places in my gun rack.)

HODGDON 4831 AND ME

Jim's batch of 70-year-old 4831 powder hasn't lost its magic. It shoots as good today as it did when it was new.

But for the long-range events at 1,000 yards, I was coming up short and in need of equipment to put me on a somewhat more level playing field with competitors who were hogging most of the trophies with their wind-defying magnums. To get this in perspective, other things being equal, a bullet going fast will be less affected by a crosswind than the same bullet going slow. So, if I maxed out a Sierra 180-grain MatchKing (at that time the prevailing .30-caliber target bullet.) at 2,700 fps with my 30-06, an unexpected 10 mph crosswind would carry it about 10 inches farther off course at 1,000 yards than the same bullet launched 200 fps faster, enough to keep the Magnum-wielding guy or gal I'm shooting against in the V-ring while my bullet drifts over into the 4-ring. That meant I'd have to be a pretty savvy wind dooper to overcome the handicap. I wasn't, so it was time to level the playing field somewhat. The 300 Winchester Magnum had emerged as the round to beat in long-range competition. The winning rifles often were custom jobs by specialists like Dunlap and were pretty well out of my price league. But for dedicated do-it-yourselfers like me, there were other affordable possibilities, so I set out to build my own 300 Win. Mag. target rifle.

So on the afternoon of January 15, 1968, I set out for Charleston, West Virginia, and on the following morning appeared at the door of Douglas Barrel Works and presented my plan to Arlie Gardner, the company's owner. I needed one of Douglas's premium-grade barrels fitted to a Pre-'64 Model 70 action that I had been saving for the project. I wanted all the work done at the Douglas works: fitting a heavy, straight taper barrel; chambering; and opening the face of the bolt, which had previously been a 30-06, for the larger Magnum rim.

Then, as now, Douglas barrels were known for match-winning accuracy, and Arlie must have sensed my determination to build a match-winning rifle because when the newly barreled action arrived I was astonished to find it accompanied by *three more* barrels, all fitted and chambered for the same action. "Try them all." Arlie had written on the invoice. "They check out fine on the air-gauge and should shoot great, but some barrels have an edge that you never find until you actually try them."

Meanwhile, I had ordered a semi-finished stock from Reinhart Fajen, which was pretty much styled after Winchester's Marksman target stock, a design hard to improve on. That's why, except for the light-colored laminated walnut stock and stainless-steel barrel, my rifle looks so much like a vintage Winchester Model 70 Target Model.


By spring of '68 the project was finished, iron sights and scope blocks were mounted, and a supply of gleaming new 300 Win. Mag. cases were ready to be loaded with Sierra's 180-grain MatchKing bullets. Almost all loading data indicated 4831 was



a top choice for the combination, but by then the dwindling stock of my original 4831 was getting old, at least 25 years old and probably older. The reason I'd wanted the 300 Win. Mag. was for its long-range velocity edge, but would that edge be sacrificed to a batch of powder too aged to give me the velocity boost I wanted? There was only one way to find out, and 50 rounds were loaded with 4831 from the old tin drum.

On the advice of my pal Ron Reiber, Hodgdon's chief ballistcian, I'm not saying how much of that early 4831 I loaded in my first batch of ammo because the same charge would probably be dangerously over-pressure with current-manufacture 4831. But what I can tell you is that ancient lot of 4831 really rocked in my new rifle. They were made for each other, the perfect wedding of components and rifle that handloaders have sweet dreams of. Would another powder, a newer lot of 4831, be as good? I never found out because the old tin drum and the small remaining lot of my original 4831 were forever consigned to that rifle.

In time three of the original four Douglas barrels were worn past their prime. Today, that long-serving rifle is fitted with the last of those wonderful barrels, and just enough of that magical 4831 remains for a few more loads. It's 70+ years old. Does any of its magic remain?

The day before I finished this article, I fired a couple of five-shot groups at 100 yards loaded with 4831 made over 70 years ago. How well did it shoot? See the photo. 

RELOADING DATA

Introduction

RIFLE/PISTOL

At the time of this writing, the new *Hodgdon Annual Manual* represents the most complete and up-to-date listing of loading data available. All data is arranged with bullets from lightest to heaviest and powders listed with burning rates from slowest to fastest for quick and easy use. Each cartridge is conveniently indexed for rapid location.

Primarily, the data for this edition were developed through the use of pressure barrels. All loads for standard U.S. cartridges adhere to the guidelines provided by the Sporting Arms and Ammunition Manufacturers' Institute (S.A.A.M.I.). Maximum loads for wildcat cartridges and cartridges not covered by S.A.A.M.I. were obtained by visual case-head signs, such as flat or cratered primers, difficult extraction and measured case heads.

Pressures were gauged by one of two methods: mechanically with Copper Units of Pressure (CUP) or electronically with a transducer as Pounds per Square Inch (PSI). CUP is determined by using a copper slug called a "crusher." The crusher is placed in a fixture over the chamber where a hole passes through the barrel to the chamber. When the cartridge is fired, gases swell and cause the crusher to flatten. The results are compared to a Tarage Table and converted to pressure in CUP. The electronic method utilizes a force transducer, which rests against the cartridge in the chamber. When the cartridge is fired, the gases cause the brass to expand against the force transducer, and the results are measured in pounds per square inch

(PSI). The two systems do not provide the same maximum number for each cartridge, so no correlation can be made between systems. However, each cartridge has a standard for both systems, and therefore, actual maximums are physically the same.

When working up a load, the reloader should always begin with the starting load, advance in small increments, watch for pressure signs and begin again if changing components. Generally, the best powder choice is the powder that most nearly fills the case for the intended velocity. Most cartridges have only a certain number of appropriate powders. Those cartridges that are more versatile can use a wider range of burning speeds. For others, lesser numbers of propellants will give optimum results.

Most often, slower-burning powders are more suitable with heavy bullets, while faster powders are better with lighter bullets. Of course, most reloaders like a powder that delivers near-maximum or maximum results throughout the range of bullets, but that is not always obtainable, since some cartridges (like the 30-06) have too wide a range of bullets for any one burning rate to be ideal.

The reloader who seriously loads for any given rifle/pistol will choose different components (primers, powders, bullets, cases) in varying combinations to obtain the best overall performance and accuracy. After all, the reloader reloads to save money, but he also reloads to improve accuracy and performance, creating special loads he cannot find on the dealer's shelves.

Powder Usage

SHOTGUN	TARGET				LIGHT FIELD					HEAVY FIELD					
	12 GA	20 GA	28 GA	410 BORE	12 GA	16 GA	20 GA	28 GA	410 BORE	10 GA	12 GA	16 GA	20 GA	28 GA	410 BORE
Hodgdon Smokeless Propellant															
Clays	•				•										
Titewad	•				•										
Hi-Skor 700-X	•				•	•									
International	•	•			•		•								
Titegroup	•				•										
Universal	•	•	•		•	•	•	•							
HS-6			•			•	•	•			•				
Hi-Skor 800-X	•	•	•		•	•	•	•		•	•	•	•	•	•
Longshot	•	•	•							•	•	•	•	•	•
H110				•					•						•
Lil' Gun				•					•					•	•
IMR Smokeless Propellant															
IMR 4227				•					•						•
Winchester Smokeless Propellant															
WST	•				•										
Super Handicap	•				•										
WSF	•	•			•	•				•					
572		•	•		•	•	•	•		•	•	•	•	•	•
296				•					•						•

RIFLE	TARGET	SILHOUETTE	LIGHT	MEDIUM	MAGNUM	50 CAL
Hodgdon Smokeless Propellant						
Trail Boss	•		•			
Lil' Gun			•			
CFE BLK	•		•			
H4198	•		•			
H322		•	•	•		
Benchmark	•	•	•	•		
H335	•	•	•	•		
H4895	•	•	•	•		
Varget	•	•	•	•		
BL-(C)2	•	•	•	•		
CFE 223	•	•	•	•		
LEVERevolution	•	•	•	•		
H380		•	•	•		
H414		•	•	•		
H4350		•	•	•		
Hybrid 100V		•	•	•	•	
H4831			•	•	•	
H4831SC			•	•	•	
Superformance			•	•	•	
H1000				•	•	
Retumbo					•	
US869					•	•
H50BMG					•	•
IMR Smokeless Propellant						
IMR 4227			•			
IMR 4198	•		•			
IMR 3031		•	•	•		
IMR 8208 XBR	•	•	•	•		
IMR 4895	•		•	•		
IMR 4166	•		•	•		
IMR 4064	•		•	•		
IMR 4320	•		•	•		
IMR 4350			•	•	•	
IMR 4451		•	•	•	•	
IMR 4831			•	•	•	
IMR 4955			•	•	•	
IMR 7828			•	•	•	
IMR 7828 SSC			•	•	•	
IMR 7977			•	•	•	
Winchester Smokeless Propellant						
748	•	•	•	•		
760		•	•	•	•	

PISTOL	TARGET	LIGHT DUTY	MEDIUM DUTY	MAGNUM
Hodgdon Smokeless Propellant				
Clays	•	•		
Hi-Skor 700-X	•	•		
Titegroup	•	•		
Trail Boss	•	•		
Universal	•	•	•	
HP-38	•	•	•	
HS-6	•	•	•	
Hi-Skor 800-X	•	•	•	
CFE Pistol	•	•	•	•
H110			•	•
Lil' Gun			•	•
IMR Smokeless Propellant				
IMR 4227			•	•
Winchester Smokeless Propellant				
WST	•	•		
AutoComp	•	•	•	
WSF	•	•	•	
231	•	•	•	
572	•	•	•	
296			•	•

RELATIVE BURN RATES FROM FASTEST TO SLOWEST

1. NORMA R1	49. Hodgdon LONGSHOT	97. IMR, Co IMR 4320
2. VihtaVuori N310	50. Alliant 410	98. Winchester 748
3. Accurate Arms Nitro 100	51. Alliant 2400	99. Hodgdon BL-C(2)
4. Alliant e3	52. Ramshot Enforcer	100. Hodgdon CFE 223
5. Hodgdon TITEWAD	53. Accurate Arms No. 9	101. Hodgdon LEVEREVOLUTION
6. Ramshot Competition	54. Accurate Arms 4100	102. Hodgdon H380
7. Alliant Red Dot	55. Alliant Steel	103. Ramshot Big Game
8. Alliant Promo	56. NORMA R123	104. VihtaVuori N540
9. Hodgdon CLAYS	57. VihtaVuori N110	105. Winchester 760
10. Alliant Clay Dot	58. Hodgdon LIL' GUN	106. Hodgdon H414
11. Hodgdon Hi-Skor 700-X	59. Hodgdon H110	107. VihtaVuori N150
12. Alliant Bullseye	60. Winchester 296	108. Accurate Arms 2700
13. Hodgdon TITEGROUP	61. IMR, Co IMR 4227	109. IMR, Co IMR 4350
14. Alliant American Select	62. Accurate Arms 5744	110. IMR, Co IMR 4451
15. Accurate Arms Solo 1000	63. Accurate Arms 1680	111. Hodgdon H4350
16. Alliant Green Dot	64. NORMA 200	112. Alliant Reloder 17
17. Winchester WST	65. Alliant Reloder 7	113. Accurate Arms 4350
18. Hodgdon Trail Boss	66. IMR, Co IMR 4198	114. NORMA 204
19. Winchester Super Handicap	67. Hodgdon CFE BLK	115. Hodgdon HYBRID 100V
20. Hodgdon INTERNATIONAL	68. Hodgdon H4198	116. VihtaVuori N550
21. Accurate Arms Solo 1250	69. VihtaVuori N120	117. Alliant Reloder 19
22. VihtaVuori N320	70. Hodgdon H322	118. IMR, Co IMR 4831
23. Accurate Arms No. 2	71. Accurate Arms 2015BR	119. Ramshot Hunter
24. Ramshot Zip	72. Alliant Reloder 10X	120. Accurate Arms 3100
25. Hodgdon HP-38	73. VihtaVuori N130	121. VihtaVuori N160
26. Winchester 231	74. IMR, Co IMR 3031	122. Hodgdon H4831 & H4831SC
27. Alliant 20/28	75. VihtaVuori N133	123. Hodgdon SUPERFORMANCE
28. Alliant Unique	76. Hodgdon BENCHMARK	124. IMR, Co IMR 4955
29. Hodgdon UNIVERSAL	77. Hodgdon H335	125. NORMA MRP
30. Alliant Power Pistol	78. Ramshot X-Terminator	126. Alliant Reloder 22
31. VihtaVuori N330	79. Accurate Arms 2230	127. VihtaVuori N560
32. Alliant Herco	80. Accurate Arms 2460s	128. VihtaVuori N165
33. Winchester WSF	81. IMR, Co IMR 8208 XBR	129. IMR, Co IMR 7828
34. VihtaVuori N340	82. Ramshot TAC	130. Alliant Reloder 25
35. Hodgdon Hi-Skor 800-X	83. Hodgdon H4895	131. VihtaVuori N170
36. Ramshot True Blue	84. VihtaVuori N530	132. Accurate Arms Magpro
37. Accurate Arms No. 5	85. IMR, Co IMR 4895	133. IMR, Co IMR 7977
38. Winchester 572	86. VihtaVuori N135	134. Hodgdon H1000
39. Hodgdon HS-6	87. Alliant Reloder 12	135. Ramshot Magnum
40. Winchester AutoComp	88. Accurate Arms 2495BR	136. Hodgdon RETUMBO
41. Hodgdon CFE Pistol	89. IMR, Co IMR 4166	137. VihtaVuori N570
42. Ramshot Silhouette	90. IMR, Co IMR 4064	138. Accurate Arms 8700
43. VihtaVuori 3N37	91. NORMA 202	139. VihtaVuori 24N41
44. VihtaVuori N350	92. Accurate Arms 4064	140. Hodgdon H50BMG
45. VihtaVuori 3N38	93. Accurate Arms 2520	141. Hodgdon US869
46. Alliant Blue Dot	94. Alliant Reloder 15	142. VihtaVuori 20N29
47. Accurate Arms No. 7	95. VihtaVuori N140	
48. Alliant Pro Reach	96. Hodgdon VARGET	

HODGDON Smokeless Pistol and Shotgun Powders

» EXTREME POWDERS

In Order of Approximate Burning Rate

TITEWAD® Through advanced technology, Hodgdon Powder Co. has produced a superior flattened spherical shotgun powder. Unlike spherical propellants in the past, TITEWAD features low charge weights, mild muzzle report, minimum recoil and reduced residue for optimum ballistic performance. This outstanding propellant designed for 12 ga. only meters superbly and is ideal for 7/8-, 1- and 1 1/8-oz. loads. As the name implies, "a little goes a long way!"

» **CLAYS®** Introduced in January 1992, CLAYS has "taken the clay target world by storm." It is the most clean-burning, consistent 12-ga. 7/8-oz., 1-oz. and 1 1/8-oz. powder available today. The superb burning characteristics of this powder produce soft, smooth recoil, ultra-clean burning, mild muzzle report and excellent patterns. These features transfer directly to handgun applications where target shooting is the main goal. The 45 ACP and 38 Special are only two of the cartridges where CLAYS provides "tackdriving" target accuracy with flawless functioning.

Hi-Skor 700-X™ This extruded flake powder is ideally suited for shotshells in 12 and 16 gauge where clay target and light field loads are the norm. It doubles as an excellent pistol target powder for such cartridges as the 38 Special and 45 ACP and many more.

TRAIL BOSS® Trail Boss was designed specifically for low-velocity lead bullets suitable for Cowboy Action shooting. It is primarily a pistol powder but has some application in rifles. It is based on a whole new technology that allows very high loading density, good flow through powder measures, stability in severe temperature variation and, most important, additional safety to the handloader.

» **INTERNATIONAL®** INTERNATIONAL is the second in the CLAYS series of powders. It is positioned in burning speed to accommodate 12-ga., 2 3/4" light, medium and heavy 1 1/8-oz. loads, with some very nice 1-oz. listings. Also, it works splendidly in 20 ga., 7/8-oz. target and light field loads. As with CLAYS, clean burning and flawless functioning are the rule.

TITEGROUP® As the name implies, this new spherical propellant was designed for accuracy. Because of the unique design, this powder provides flawless ignition with all types of primers, including the lead-free versions. Unlike pistol powders of the past, powder position in large cases (45 Colt, 357 Magnum and others) has virtually no effect on velocity and performance. Cowboy Action, Bullseye and Combat Shooters should love this one! TITEGROUP has it all: low charge weight, clean burning, mild muzzle report and superb, uniform ballistics.

HP-38® HP-38 is a spherical pistol powder that is great for low velocity and midrange target loads in 38 Special, 44 Special and 45 ACP. This high-energy powder provides economy in loading.

» **UNIVERSAL®** UNIVERSAL handles the broadest spectrum of cartridges for both pistol and shotgun. From the 25 ACP to the 44 Magnum, UNIVERSAL provides outstanding performance. In shotgun, it produces excellent loads in 28 ga. 3/4 oz., 20 ga. 7/8 oz., 16 ga. 1 oz. and even 12 ga. 1 1/4 oz. As with all the "CLAYS" series powders, clean burning and uniformity are part of its attributes.

CFE™Pistol New in 2014, this excellent spherical pistol propellant utilizes our CFE formula, Copper Fouling Eraser, virtually eliminating copper fouling, plus providing top velocities with clean burning

and minimal muzzle flash. For competitive shooters and handloaders seeking the perfect powder for target or self-defense loads, CFE Pistol provides optimum performance in cartridges like the 9mm Luger, 38 Super, 40 S&W, the venerable 45 ACP and many more.

HS-6® HS-6 is a fine spherical propellant that has wide application in pistol and shotshell. In pistol, 9mm, 38 Super, 40 S&W and 10mm Auto are some of the cartridges where HS-6 provides top performance. In shotshell, HS-6 yields excellent heavy field loadings in 10 ga., 12 ga., 16 ga., 20 ga. and even the efficient and effective 28 ga. HS-6 is truly an outstanding spherical propellant.

Hi-Skor 800-X™ This large-grain flake powder is at its best when used in heavy field loads from 10 ga. to 28 ga. In handgun cartridges, 800-X performs superbly in cartridges like the 10mm Auto, 357 Magnum and 44 Remington Magnum. Excellent velocity and uniformity translate into top accuracy.

LONGSHOT® This new spherical shotshell powder is the most versatile heavy field propellant Hodgdon has ever produced. Great field loads in 10 ga., 12 ga., 16 ga., 20 ga. and 28 ga. are shown herein. This propellant provides true magnum velocities with superb patterns. In addition, LONGSHOT is the best choice for those competitors shooting "race" games, such as "Buddy" shoots, "Annie Oakleys" and more.

H110® H110 is the spherical powder that screams "no wimps, please!" It delivers top velocities with top accuracy in the 44 Magnum, 454 Casull and 475 Linebaugh. Silhouette shooters claim it is the most accurate 44 powder they have ever used. In addition, H110 is the choice for the miniscule 410 Bore shotgun. It handles all 2 1/2", 1/2-oz. loads as well as all 1 1/16-oz. loads for the 3" version.

LIL' GUN® The 410 Bore has long been difficult to load due to shortcomings in powder fit and metering, along with poor burning characteristics. Not anymore! LIL' GUN was designed to fit, meter and perform flawlessly in the 410 Bore. No more spilled shot or bulged cases. In addition, LIL' GUN has many magnum pistol applications and is superb in the 22 Hornet.



HODGDON Smokeless Rifle Powders

In Order of Approximate Burning Rate

CFE BLK™ This new spherical propellant was designed expressly for the 300 Remington AAC Blackout cartridge. It provides full function of AR-type rifles throughout the range of bullet weights and is perfect for those subsonic reduced loads. In addition to being outstanding in the 300 Blackout, it performs beautifully in many smaller-capacity cartridges, in particular, varmint specials like the 17 Hornet, 17 Ackley Hornet, 218 Bee, 221 Fireball and many more. It also yields top performance in the 6.8 Remington SPC and the 7.62x39mm Russian cartridge. This fine powder meters like a dream and leaves no copper residue, extending accuracy for longer shooting periods and making cleanup quick and easy. It is truly a remarkable new propellant!

» **H4198™** This Extreme Extruded propellant has gone through some changes since its inception, all the time maintaining the same important burning speed of the past. The kernels were shortened for improved metering, and necessary elements were added to make it extremely insensitive to hot/cold temperatures. H4198 is outstanding in cartridges like the 222 Remington, 444 Marlin and the 7.62x39.

» **H322®** This Extreme Extruded powder has won more bench-rest matches than all other propellants combined. It provides match-grade accuracy in small- and medium-capacity cartridges like the 223 Remington, 6mm PPC and the 7mm TCU. As a fine extruded powder, it flows through powder measures with superb accuracy.

» **BENCHMARK®** As the name implies, this Extreme Extruded propellant was developed for precision cartridges. As such, it is ideally suited for benchrest and small varmint cartridges like the 6mm PPC, 22 PPC, 6mm BR, 22 BR, 223 Remington and 222 Remington. Additionally, it performs superbly in the 308 Winchester with light match bullets like the 147-gr. and 155-gr. versions. With small, easy-metering granules, competitors will love how it flows through progressive presses.

H335® H335 originated as a military powder, used for the 5.56 NATO, or 223 Remington as handloaders know it. Obviously, it sees endless use in the 222 Remington, 223 Remington and other small cartridges. In particular, prairie dog shooters will find this a favorite, as J.B. Hodgdon has for years!

» **H4895®** H4895 is a most versatile rifle powder. This member of the Extreme Extruded line is great for 17 Remington, 250-3000 Savage, 308 Winchester and 458 Winchester, to name just a few. It is amazingly accurate in every cartridge where it is listed in our data. It had its origin in the 30-06 as a military powder and was the first powder Bruce Hodgdon sold to the loading public.

» **VARGET®** The first of Hodgdon's revolutionary Extreme Extruded Powders, VARGET features small extruded grains for uniform metering, insensitivity to hot/cold temperatures and higher energy for improved velocities over other powders in its burning-speed class. Easy ignition and clean burning are other features that translate into superb accuracy, higher scores and more clean, one-shot kills. Outstanding performance and velocity can be obtained in such popular cartridges as the 223 Remington, 22-250 Remington, 308 Winchester, 30-06, 375 H&H and many more.

BL-C(2)® BL-C(2) is a spherical powder that began as a military powder used in the 7.62 NATO, commonly known as the 308 Winchester. When it was first introduced to the handloader, benchrest shooters and other target shooters made it an instant success. BL-C(2) works extremely well in the 223 Remington, 17 Remington, 22 PPC and, of course, the 308 Winchester, plus many more.

CFE™ 223 Introduced in January 2012, this versatile spherical rifle propellant incorporates in its formula CFE, Copper Fouling Eraser. This ingredient, originally used in military propellant, greatly deters copper fouling. It contributes to longer periods of top accuracy with less barrel cleaning time. Being a spherical powder, metering is superbly accurate. CFE 223 yields top velocities in many cartridges, such as the 204 Ruger, 223 Remington/5.56mm NATO, 22-250 Remington and the 308 Winchester/7.62mm NATO, plus many, many more. Match, Varmint and AR shooters will love this one!

LEVEREVOLUTION® Hodgdon® Powder Company and Hornady® Manufacturing have teamed together to answer the frequently asked reloading question: "Can I buy the powder used in Hornady LEVERevolution factory ammunition?" Yes, this is the same spherical propellant used in Hornady's innovative and award-winning high-performance factory ammunition. This fabulous propellant meters flawlessly and makes lever-action cartridges like the 30-30 Winchester yield velocities in excess of 100 fps over any published handloads, with even greater gains over factory ammunition. Other cartridges include the 35 Remington, 308 Marlin Express, 338 Marlin Express and the 25-35 Winchester. The list of cartridges and bullets is limited with this highly specialized powder, but where it works, it really works!

H380® H380 was an unnamed spherical rifle propellant when the late Bruce Hodgdon first used it. When a 38-gr. charge behind a 52-gr. bullet gave one-hole groups from his 22-caliber wildcat (now called 22-250), he appropriately named the powder H380. H380 is also a superb performer in the 220 Swift, 243, 257 Roberts and other fine varmint cartridges.

H414® This spherical powder has an extremely wide range of use. From the 22-250 Remington to the 375 H&H, it will give excellent results. It is simply ideal in the 30-06. As with all of our spherical powders, it delivers incredibly consistent charge weights through nearly any type of powder measure. H414 yields similar results to H4350 in most cartridges, although charge weights will vary.

» **H4350™** The burning speed of this Extreme Extruded propellant has been known to shooters for decades. During that time, Hodgdon has modernized H4350 by shortening the grains for improved metering and making it insensitive to hot/cold temperatures. H4350 is great in such cartridges as the 243 Winchester, 6mm Remington, 270 Winchester, 338 Winchester Magnum and many more. For magnums with light to moderate-weight bullets, it can't be beat!

HYBRID 100V™ This excellent new product is the result of combining the technologies of spherical powders and extruded propellants. The chemistry of a spherical powder is combined with the geometry of an extruded propellant, creating a smooth-metering, super-short-granule, extruded-shaped propellant with high energy. HYBRID 100V has a burn speed between H4350 and H4831, yielding superb performance in such popular calibers as 270 Winchester, 243 Winchester Super Short Magnum, 7mm Remington Magnum, 300 Winchester Magnum and dozens more.

» **H4831®** It is probably safe to say more big game has been taken with H4831 than any other powder. Bruce Hodgdon was the first supplier to introduce this popular burning powder in 1950. Since that time, it has become a favorite for cartridges such as the 270 Winchester, 25-06 Remington, 280 Remington and 300 Winchester Magnum. As an Extreme Extruded propellant, it shares the fine quality of insensitivity to hot/cold temperatures, as well as superb uniformity from lot to lot.

HODGDON Smokeless Rifle Powders cont'd

» **H4831SC**® Ballistically, this Extreme Extruded powder is the exact copy of H4831. Physically, it has a shorter grain size and therefore the designation SC, or short cut. The shorter, more compact kernels allow the powder to flow through powder measures more smoothly, helping to alleviate the constant cutting of granules. With the smoother flow characteristics comes more uniform charge weights, while the individual grains orient more compactly, creating better loading density.

SUPERFORMANCE™ This is another of the spherical powders Hodgdon® Powder Company and Hornady® Manufacturing introduced to answer the frequently asked reloading question: "Can I buy the powder used in Hornady Superformance factory ammunition?" Superformance delivers striking velocities in cartridges like the 22-250 Remington, 243 Winchester and the 300 Winchester Short Magnum. Velocities well in excess of 100 fps over the best published handloads and even larger gains over factory ammunition! Because this propellant is tailored for specific applications, the number of cartridges and bullets is limited, but where it works, it really works!

» **H1000**® This very slow-burning Extreme Extruded powder is perfect for highly overbored magnums like the 7mm Remington Magnum, 7mm STW and the 30-378 Weatherby. In addition, with heavy bullets, H1000 gives top velocity and performance in such cartridges as the 6mm-284, 257 Weatherby, 270 Winchester and

300 Winchester Magnum. In a short period of time this powder has achieved considerable notoriety among long-range match shooters.

» **RETUMBO**® This magnum powder was designed expressly for the really large overbored cartridges such as the 7mm Remington Ultra Magnum, 300 Remington Ultra Magnum, 30-378 Weatherby Magnum, etc. RETUMBO adds 40 to 100 fps more velocity to these cartridges when compared with other normal magnum powders. In addition, it is an Extreme Powder, making it perfect for big-game hunting under all types of conditions.

US869™ This spherical powder is superb with heavy bullets in big, overbore, magnum rifle cartridges. Because it is very dense, it allows the shooter to use enough powder to create true magnum loads. US869 is also used in the 50-caliber BMG, where it yields high velocity and great accuracy with 750- to 800-grain projectiles. It's a truly great 1,000-yard competition propellant.

» **H50BMG**™ As the name implies, this new-generation Extreme Extruded rifle propellant is a clean-burning powder designed expressly for the 50-caliber BMG cartridge. Because it shares the same technology as VARGET, 50 BMG displays a high degree of thermal stability in temperature extremes. Tests have conclusively proven that H50BMG yields very low extreme spreads in velocity and pressure. All this translates into small groups at extended ranges.

IMR Smokeless Pistol and Shotgun Powders

In Order of Approximate Burning Rate

IMR 4227™ This is the magnum pistol powder in the IMR lineup. If it says magnum, IMR 4227 is the choice for true magnum velocities and performance. In rifles, this powder delivers excellent velocity and accuracy in such cartridges as the 22 Hornet and 221 Fireball.

IMR Smokeless Rifle Powders

In Order of Approximate Burning Rate

IMR 4198™ This fast-burning rifle powder gives outstanding performance in cartridges like the 222 Remington, 221 Fireball, 45-70 and 450 Marlin. Varmint shooters with smallbore cartridges love it. Proven metering and necessary elements were added to make it extremely insensitive to hot/cold temperatures. IMR 4198 is outstanding in cartridges like the 222 Remington, 444 Marlin and 7.62x39.

IMR 3031™ A propellant with many uses, IMR 3031 has long been a favorite of 308 Match shooters using 168-grain match bullets. It is equally effective in small-capacity varmint cartridges from 223 Remington to 22-250 Remington, and it's a great 30-30 Winchester powder.

IMR 8208™ **XBR** The latest in the versatile IMR line of fine propellants, this accurate-metering, super-short-grain extruded rifle powder was designed expressly for match, varmint and AR sniper cartridges. Ideally suited for cartridges such as the 223 Remington/5.56 NATO, 308 Winchester/7.62mm NATO and the 6mm PPC, shooters will find IMR 8208 XBR totally insensitive to changes in temperature while yielding max velocities and "tack-driving" accuracy. Clearly, it's the competitor's choice and the Varmint Hunter's "dream powder."

IMR 4895™ Originally a military powder featured in the 30-06, IMR 4895 is extremely versatile. From the 17 Remington to the 243 Winchester to the 375 H&H Magnum, accuracy and performance are excellent. In addition, it is a longtime favorite of Match shooters.

IMR 4166 This fine, extruded propellant is the first in the series of Enduron® Technology powders. The main features of the Enduron® series are copper fouling eliminator, insensitivity to temperature changes, ideal loading density and being environmentally friendly. IMR 4166 is the perfect burn speed for cartridges like the 308 Win./7.62mm NATO, 22-250 Remington, 257 Roberts and dozens more. Positively, a versatile, match-grade propellant.

IMR 4064® The most versatile propellant in the IMR spectrum—223 Remington, 22-250 Remington, 220 Swift, 6mm Remington, 243 Winchester Super Short Magnum, 308 Winchester, 338 Winchester Magnum and the list goes on and on. Versatility with uniformity and accuracy.

IMR 4320™ Short granulation, easy metering and perfect for the 223 Remington, 22-250 Remington, 250 Savage and other medium-burn-rate cartridges. Long a top choice for the vintage 300 Savage as well.

IMR Smokeless Rifle Powders cont'd

IMR 4350™ The number-one choice for the short magnums, both Remington and Winchester versions. For magnums with light to medium bullet weights, IMR 4350 is the best choice.

IMR 4451 Another new Enduron® extruded powder, IMR 4451 gives top performance in the venerable 30-06, 270 Winchester and 300 Winchester Short Magnum, to name just a few. This propellant is ideally suited for many, many mid-range burn speed cartridges. Simply scroll through the list of cartridges on the Hodgdon Reloading Data Center and see how many of your favorite cartridges are covered with this fine powder. Once the shooter tries this one in that favorite cartridge, his search is over!

IMR 4831™ Slightly slower in burn speed than IMR 4350, IMR 4831 gives top velocities and performance with heavier bullets in medium-size magnums.

IMR 4955 This new Enduron® extruded powder is a top performer with such great cartridges as the 270 Winchester, 25-06 Remington, 280 Remington, 300 Winchester Magnum, and many, many more. It falls directly between IMR 4451 and IMR 7977 in burn speed, providing top performance for all such cartridges used for big game. As with all Enduron® powders, it is temperature insensitive and clean burning, minimizes copper fouling and is totally safe for the environment. Adding this propellant to the

Enduron® line filled in an important place in the chart. IMR 4955, plus the original three, provides top loading for cartridges from 223 Remington to the massive 500 Nitro Express Magnum.

IMR 7828™ The BIG magnum powder. This slow burner gives real magnum performance to the large overbored magnums, such as the 300 Remington Ultra Magnum, the 30-378 Weatherby Magnum and the 7mm Remington Ultra Magnum. This powder is highly regarded by most magnum aficionados.

IMR 7828 SSC™ This magnum rifle powder has exactly the same burn rate as standard IMR 7828 and uses the same data. However, due to the super-short kernels, metering is virtually as good as a spherical powder. This allows up to 4 percent more powder space in the case and in many loads yields more velocity than standard 7828. Such loads are marked with an asterisk in the data to show where standard 7828 will not fit.

IMR 7977 The slowest burn rate Enduron® Technology extruded powder is IMR 7977, and it is a true magnum cartridge propellant. It yields outstanding performance in such cartridges as the 300 Winchester Magnum, 7mm Remington Magnum, 338 Lapua and a host of others. Loading density is perfect for magnums, nicely filling the case at maximum charges, contributing to superb uniformity and accuracy. The 7mm Remington Magnum "never had it so good"!

WINCHESTER Smokeless Pistol and Shotgun Powders

In Order of Approximate Burning Rate

WST® The choice for 12-ga. AA duplicate handloads and standard-velocity handgun loads. Ideal for use in 45 Auto match applications. Consistency, clean, low flash and less smoke are benefits to the shooter.

231® One of the most popular reload propellants, 231 is a pistol powder ideally suited to the 38 Special, 45 Auto and 9mm standard loads. Consistency, clean burning, low flash and a broad range of applications make this a powder of choice for any pistol cartridge reloader.

SUPER HANDICAP™ Super Handicap is the same propellant used in Winchester's Super Handicap ammunition. This slow-burning, high-energy propellant gives the shooter great handicap or long-range sporting clays loads up to 1,250 fps with a 1½-oz. shot charge. Great velocity with excellent patterns!

AUTOCOMP™ This new Winchester powder is perfect for the top target game semiauto pistols. In such cartridges as the 9mm, 38 Super, 40 S&W and the ever-popular 45 ACP, maximum velocities with excellent accuracy are the norm. AutoComp ranks tops in efficiency by achieving maximum performance with .3 to .5 grain less powder. All this with less muzzle flash and clean burning!

WSF® Super-Field propellant is the propellant of choice for Winchester 20-ga AA Target loads. WSF is an ideal choice to maximize velocities in 12-ga. 1½-oz. and 1¼-oz. loads. Super-Field also performs well in 38 Super, 9mm and 40 S&W pistol loads. Excellent propellant for action pistol applications.

572® This new Winchester powder is strategically designed to do a myriad of jobs. First, it has the correct burn rate to create the famous ¾ dram equivalent, 1¼-oz., 1,330-fps 12-gauge load, originated by Winchester. And it does it with any brand case! Back Fence competitors and pheasant hunters will be delighted. Now, that is just one application, and it goes on to provide superb clay target loads in 20 gauge and 28 gauge, top field loads in both, and outstanding field loads for the wonderful 16 gauge. It even is used to duplicate the always-popular 28-gauge WAAHS target load. In addition, 572 has a vast number of pistol applications, ranging from the 25 ACP to the 45 ACP and all popular calibers in between. This is one positively versatile and useful propellant.

296® This propellant was developed for Winchester factory-loaded ammunition for 357 Magnum, 44 Magnum and 410 Bore. Its high loading density provides optimal velocity. 296 is recommended by Winchester for 410 Bore AA loads.

WINCHESTER Smokeless Rifle Powders

In Order of Approximate Burning Rate

748® 748 is the powder of choice for 223 Remington ammunition. The low flame temperature of 748 extends barrel life vs. other similar-speed powders. It is ideal for a wide variety of centerfire rifle loads, including 222 Remington, 30-30 Winchester, 308 Winchester and up to 458 Winchester Magnum.

760® Combine Winchester components with 760 to duplicate 30-06 Springfield factory load ballistics. 760 has ideal flow characteristics that give it an advantage over other propellants with similar burn rates. 760 is an excellent choice for 22-250 Remington, 300 Winchester Magnum and 300 WSM.

Legend

BRANDS

BAR	Barnes
BTB	Beartooth Bullets
BER	Berger
BERB	Berry's Bullets
BLX	Bull-X
CPB	Cast Performance Bullets
FA	Freedom Arms
HDY	Hornady
LY	Lyman SPM
MEI	Meister
NOS	Nosler
REM	Remington
SIE	Sierra
SFT	Swift
SPR	Speer
WDLGH	Woodleigh
WIN	Winchester
SFIRE	SinterFire

PRIMERS

LR	Large Rifle
LRM	Large Rifle Magnum
SR	Small Rifle
SRM	Small Rifle Magnum
LP	Large Pistol
LPM	Large Pistol Magnum
SP	Small Pistol
SPM	Small Pistol Magnum

DATA

C	Compressed Powder Charge
----------	--------------------------

BULLETS

AB	AccuBond
A-MAX	Hornady Match
BK	Blitz King
BR	Bench Rest
BT	Ballistic Tip
BTSP	Boat Tail Spire Point
E-TIP	Polymer Tipped Copper Bullet
FMC	Full Metal Case
FMJ	Full Metal Jacket
FMJBT	Full Metal Jacket Boat Tail
FN	Flat Nose
FP	Flat Point
FPJ	Full Plated Jacket
FS	Fail Safe
FTX	Flextip
GC	Gas Check
GDHP	Gold Dot Hollow Point
GDSP	Gold Dot Soft Point
GMX	Gilding Metal Expanding Bullet
GS	Grand Slam
HB	Hollow Base
HC	Hollow Cavity
HP	Hollow Point
HPBT	Hollow Point Boat Tail
HSP	Hollow Soft Point
IB	Inter Bond
JFP	Jacketed Flat Point
JHC	Jacketed Hollow Cavity
JRN	Jacketed Round Nose
JSWC	Jacketed Semi-Wadcutter
LBBWC	Lead Bevel Base Wadcutter
LCN	Lead Conical Nose
LF	Lead Free
LFN	Lead Flat Nose

LFNPB	Lead Flat Nose Plain Base
LFP	Lead Flat Point
LHBWC	Lead Hollow Base Wadcutter
LRN	Lead Round Nose
LSWC	Lead Semi-Wadcutter
MK	MatchKing
MT-SP	Mag Tip Soft Point
PART	Partition
PSPCL	Pointed Soft Point "Core Lokt"
RN	Round Nose
SB	Solid Base
SBT	Spitzer Boat Tail
SCIR	Scirocco
SJ	Short Jacket
SMP	Semi-Pointed
SP	Soft Point, Spitzer, Spire Point
SPT	Spitzer
SPBT	Soft Point Boat Tail
SSP	Single Shot Pistol
SST	Super Shock Tip
ST	Silver Tip
SX	Super Explosive
TMJ	Totally Metal Jacket
TNT	Varmint Bullet
TSX	Triple Shock X Bullet
TTSX	Tipped Triple Shock X Bullet
V-MAX	Varmint Express
WC	Wadcutter
W/GCK	With Gas Check
X	X Bullet
XBT	X Boat Tail
XBTC	X Boat Tail Coated
XFB	X Flat Base
XPB	X Pistol Bullet
XTP	Extreme Terminal Performance

WARNING

For all powders, use only the components shown. If the reloader makes any changes in components or gets new lot numbers, he should begin again with the starting loads and work up to maximum cautiously.

For those loads listed where a starting load is not shown, start 10 percent below the suggested maximum load and then approach maximums carefully, watching for any sign of pressure (difficult extraction, cratered and flattened or blown primers, and unusual recoil).

Powder left in the reloader's powder measure hoppers for extended periods, overnight or several days, should be avoided. Powder needs to be stored in original containers **ONLY** when not in use. Numerous modern smokeless powders are double base in construction, containing both Nitrocellulose and Nitroglycerine. Many powder measures currently available use an inexpensive plastic containing polystyrene, which Nitroglycerine adversely affects when contact is made for extended periods of time, resulting in etching or misshaping the plastic. Normal usage during the reloading process does not provide adequate time for this to occur, so simply draining hoppers into the

original containers when the reloading is completed for the day, prevents ruining the hoppers.

For plated bullets, such as the fine line of Berry's Bullets, use existing lead data for the same-weight plated bullet.

***40 S&W:** This data is intended for use in firearms with barrels that fully support the cartridge in the chamber. Use of this data in firearms that do not fully support the cartridge may result in bulged cases, ruptured cases, case-head separation or other condition that **may result in damage to the firearm and/or result in injury or death of the shooter and/or bystanders.**

***45 Colt:** *45 Colt data is listed in two categories. The first is intended for original Colt revolvers and their replicas. Max pressure, 14,000 CUP.

The second category is *45 Colt (Ruger Blackhawk, Freedom Arms and Thompson/Center Contender/Encore handguns. Max pressure, 30,000 CUP. **Do not use these data in any other make or model of firearm.**

***45-70 Government data usage:** 45-70 data is listed in the following three

divisions based on pressure levels for only the types of firearms intended:

***45-70 Government (Trapdoor Rifle):** These data are intended for Springfield "Trapdoor," Rolling Block and Antique Replicas. Max pressure, 28,000 CUP.

***45-70 Government (Lever Actions):** These data are intended for the 1895 lever-action Marlin **only**. Max pressure, 40,000 CUP. Do not use these data in any of the firearms listed in the Trapdoor section. Do not use pointed bullets in any rifle with a tubular magazine.

***45-70 Government (Modern Rifles):** These data are only for Ruger No. 1 and No. 3 single-shots, Browning 1885 single-shots and Siamese bolt-action rifles. Max pressure, 50,000 CUP. Do not use these data in either of the prior two sections of 45-70 data (Trapdoor and Lever Actions).

***26 Nosler:** Do not reduce starting loads, as doing so can result in pressure spikes that may result in damage to the firearm or injury to the user and/or bystanders.

*Max loads that show an asterisk following the "C" for compressed load with IMR 7828 SSC will not fit with standard IMR 7828. Reduce by four percent.

RIFLE DATA

Starting Loads				Maximum Loads			Starting Loads				Maximum Loads		
Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure	Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
17 ACKLEY HORNET													
Case: Winchester (Ref)				Twist: 1:10"									
Barrel: 24" Trim: 1.380" Primer: Remington 7 1/2, Small Rifle Magnum													
Bullet: 20 GR. HDY V-MAX Dia: .172" Col: 1.800"													
CFE BLK	11.7	3443	36,200 PSI	12.8	3736	45,600 PSI							
H4198	11.5	3246	32,700 CUP	12.5C	3515	44,400 CUP							
H4227	8.5	3080	41,200 CUP	9.2	3238	45,700 CUP							
Lil'Gun	9.4	3369	40,600 CUP	10.0	3509	45,300 CUP							
Bullet: 25 GR. HDY HP Dia: .172" Col: 1.760"													
H335	12.5	2898	35,500 CUP	13.3	3046	45,400 CUP							
H322	12.0	2894	42,500 CUP	13.0C	3153	45,400 CUP							
CFE BLK	10.8	3058	39,500 PSI	11.5	3242	45,500 PSI							
H4198	10.9	3015	38,800 CUP	11.6	3176	45,900 CUP							
Bullet: 30 GR. BER HP Dia: .172" Col: 1.800"													
BL-C(2)	13.0	2795	36,900 CUP	13.5	2922	43,200 CUP							
H335	11.7	2752	38,500 CUP	12.5	2894	44,500 CUP							
Benchmark	12.2	2900	43,200 CUP	13.0C	2975	44,800 CUP							
H322	11.5	2745	36,100 CUP	12.2	2984	45,700 CUP							
CFE BLK	10.0	2726	36,900 PSI	10.7	2917	45,400 PSI							
H4198	10.0	2711	33,400 CUP	10.7	2923	45,600 CUP							
17 REMINGTON													
Case: Remington				Twist: 1:9"									
Barrel: 24" Trim: 1.786" Primer: Remington 7 1/2, Small Rifle Magnum													
Bullet: 20 GR. HDY V-MAX Dia: .172" Col: 2.170"													
CFE 223	25.8	4201	42,200 CUP	27.4	4466	48,100 CUP							
Varget	23.5	3936	37,800 CUP	25.5C	4208	45,200 CUP							
BL-C(2)	23.5	4049	39,400 CUP	25.0	4213	43,700 CUP							
H335	21.0	4132	44,100 CUP	23.5	4290	47,700 CUP							
H4895	23.0	4037	37,000 CUP	25.5C	4436	47,500 CUP							
IMR 8208 XBR	24.0	4138	40,500 CUP	25.5	4378	48,500 CUP							
Benchmark	22.0	3985	38,000 CUP	24.5	4342	50,500 CUP							
H322	21.0	3963	37,500 CUP	23.2	4292	49,500 CUP							
Bullet: 25 GR. HDY HP Dia: .172" Col: 2.150"													
H414	25.0	3748	39,300 CUP	27.0	3989	48,300 CUP							
760	25.0	3748	39,300 CUP	27.0	3989	48,300 CUP							
H380	24.5	3756	41,900 CUP	26.0	3950	46,100 CUP							
CFE 223	24.4	3882	43,000 CUP	26.0	4109	51,100 CUP							
Varget	22.0	3759	39,600 CUP	24.5	4123	50,800 CUP							
IMR 4064				24.0C	4005	50,700 CUP							
BL-C(2)	22.5	3872	44,000 CUP	24.0	4051	49,000 CUP							
IMR 4895				23.5	3995	51,400 CUP							
H335	19.5	3811	45,700 CUP	21.0	3963	51,300 CUP							
H4895	21.0	3760	40,500 CUP	23.0	4033	48,500 CUP							
IMR 8208 XBR	22.7	3882	42,800 CUP	24.2	4072	48,500 CUP							
IMR 3031				22.5	4015	51,700 CUP							
Benchmark	21.5	3791	43,000 CUP	23.3	4038	50,600 CUP							
H322	19.5	3656	40,500 CUP	21.8	3921	49,700 CUP							
Bullet: 30 GR. BER HP Dia: .172" Col: 2.150"													
H414	24.0	3487	39,600 CUP	27.0	3839	50,300 CUP							
760	24.0	3487	39,600 CUP	27.0	3839	50,300 CUP							
H380	22.0	3378	43,300 CUP	24.5	3648	50,500 CUP							
CFE 223	22.8	3522	42,700 CUP	24.3	3746	51,700 CUP							
Varget	20.0	3405	39,700 CUP	22.5	3742	49,700 CUP							
H4895	20.0	3495	44,000 CUP	22.0	3696	49,900 CUP							
IMR 8208 XBR	21.2	3527	42,900 CUP	22.6	3700	48,800 CUP							
Benchmark	20.0	3444	43,200 CUP	22.0	3709	50,500 CUP							
H322	18.0	3311	38,700 CUP	20.0	3594	49,800 CUP							
204 RUGER													
Case: Hornady				Twist: 1:12"									
Barrel: 24" Trim: 1.840" Primer: Federal 205M, Small Rifle Match													
Bullet: 24 GR. HDY NTX Dia: .204" Col: 2.290"													
H335	27.4	4184	47,100 PSI	29.5	4456	55,200 PSI							
H4895	27.0	4061	43,400 PSI	29.5C	4423	54,900 PSI							
IMR 8208 XBR	27.0	3997	40,600 PSI	30.0C	4447	56,000 PSI							
Benchmark	27.3	4109	45,500 PSI	29.0	4373	54,500 PSI							
H322	26.3	4143	48,700 PSI	28.0	4358	56,000 PSI							
IMR 4198	23.0	4166	48,200 PSI	24.5	4383	54,900 PSI							
H4198	22.6	4294	54,100 PSI	24.0	4400	56,600 PSI							

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 26 GR. BAR VG FB							Dia: .204" Col: 2.250"						
CFE 223	29.5	4067	46,300 PSI	31.5	4282	52,600 PSI	Varget	24.0	3071	44,900 PSI	26.0	3287	55,200 PSI
Varget	27.5	3962	47,500 PSI	30.0C	4110	51,000 PSI	IMR 4064	24.0	3079	44,900 PSI	25.8C	3330	55,800 PSI
IMR 4166	26.7	3869	49,500 PSI	28.7C	4064	55,500 PSI	IMR 4166	22.9	3007	47,800 PSI	24.9	3237	57,300 PSI
BL-C(2)	28.9	4004	47,200 PSI	30.7	4173	52,700 PSI	BL-C(2)	25.0	3089	42,900 PSI	27.0	3334	54,500 PSI
IMR 4895	27.7	3934	47,100 PSI	29.5C	4169	54,700 PSI	IMR 4895	24.0	3092	45,400 PSI	26.2C	3344	56,000 PSI
H335	26.8	4149	52,200 PSI	28.5	4278	54,900 PSI	H335	22.5	3039	43,700 PSI	24.3	3268	54,700 PSI
H4895	28.2	4067	48,900 PSI	30.0C	4302	57,300 PSI	H4895	24.0	3167	46,900 PSI	25.7	3352	56,000 PSI
IMR 8208 XBR	27.7	4132	48,400 PSI	29.5C	4309	54,900 PSI	IMR 8208 XBR	23.0	3129	47,800 PSI	24.9	3327	56,100 PSI
Benchmark	27.0	4036	47,600 PSI	28.7	4279	56,700 PSI	IMR 3031	22.0	3046	44,500 PSI	24.0	3284	55,100 PSI
H322	25.9	4055	52,200 PSI	27.5	4229	57,100 PSI	Benchmark	22.5	3110	47,800 PSI	24.0	3256	54,300 PSI
IMR 4198	22.7	4015	49,400 PSI	24.2	4257	56,700 PSI	H322	22.0	3105	48,300 PSI	23.5	3252	55,100 PSI
H4198	23.0	4124	54,100 PSI	24.5	4258	57,300 PSI							
Bullet: 30 GR. BER FB VAR							Dia: .204" Col: 2.235"						
CFE 223	28.7	3761	40,700 PSI	31.3	4202	57,000 PSI	Case: Winchester						
Varget	27.1	3640	41,300 PSI	29.5C	4028	55,200 PSI	Barrel: 24" Trim: 1.393" Primer: Winchester SR, Small Rifle						
BL-C(2)	28.5	3748	43,300 PSI	30.7	4073	55,200 PSI	Bullet: 30 GR. BAR VG FB						
IMR 4895	27.4	3687	44,500 PSI	29.5C	4024	56,600 PSI	Dia: .224" Col: 1.750"						
H335	26.1	3814	48,200 PSI	28.1	4054	57,300 PSI	CFE BLK	12.1	2642	22,900 PSI	13.5C	2819	26,700 PSI
H4895	26.2	3800	44,500 PSI	28.5	4124	56,800 PSI	IMR 4227	10.0	2321	37,300 CUP	11.7C	2703	37,600 CUP
IMR 8208 XBR	26.7	3798	44,500 PSI	28.8	4118	56,400 PSI	296	11.1	2807	33,000 CUP	12.3	3150	41,500 CUP
Benchmark	25.7	3754	44,500 PSI	28.0	4076	56,800 PSI	H110	11.1	2807	33,000 CUP	12.3	3150	41,500 CUP
H322	24.5	3740	44,500 PSI	26.6	4054	56,700 PSI	Lil'Gun	11.7	2863	26,300 CUP	13.0	3055	29,700 CUP
IMR 4198	21.9	3695	45,900 PSI	23.9	3979	56,600 PSI							
H4198	22.2	3789	45,100 PSI	24.2	4073	56,300 PSI							
Bullet: 32 GR. HDY V-MAX							Dia: .204" Col: 2.250"						
CFE 223	29.0	3826	45,400 PSI	30.9	4091	55,000 PSI	Bullet: 35 GR. HDY V-MAX						
Varget	27.0	3557	38,300 PSI	29.0C	3798	47,400 PSI	Dia: .224" Col: 1.725"						
IMR 4166	26.2	3589	47,500 PSI	28.5C	3881	57,400 PSI	CFE BLK	12.0	2383	16,900 PSI	13.3C	2650	22,700 PSI
BL-C(2)	28.5	3772	43,000 PSI	30.7	4081	55,500 PSI	H4198	10.5	2223	23,100 CUP	11.5C	2420	26,300 CUP
IMR 4895	27.0	3627	40,500 PSI	29.0C	3949	51,900 PSI	H4227	10.5	2630	35,600 CUP	11.6C	2896	42,500 CUP
H335	26.0	3703	40,600 PSI	28.3	4044	54,800 PSI	H110	11.0	2805	32,700 CUP	12.3	3060	41,400 CUP
H4895	27.0	3669	40,500 PSI	29.0C	3980	51,100 PSI	Lil'Gun	12.0	2694	22,000 CUP	13.0	2842	24,000 CUP
IMR 8208 XBR	27.5	3917	47,500 PSI	29.0	4130	56,500 PSI							
Benchmark	26.0	3770	45,500 PSI	28.0	4047	57,100 PSI							
H322	25.5	3826	48,300 PSI	27.5	4030	56,400 PSI							
IMR 4198	22.0	3725	42,700 PSI	23.5	4006	55,400 PSI							
Bullet: 35 GR. BER HP							Dia: .204" Col: 2.240"						
CFE 223	28.8	3695	44,500 PSI	30.6	3991	55,600 PSI	Bullet: 40 GR. SPR SP						
Varget	28.0	3705	48,300 PSI	29.0C	3812	53,100 PSI	Dia: .224" Col: 1.725"						
IMR 4064	26.0	3444	40,000 PSI	27.5C	3728	51,000 PSI	CFE BLK	12.1	2484	23,200 PSI	13.5C	2684	28,400 PSI
IMR 4166	25.8	3447	46,300 PSI	28.1C	3767	57,300 PSI	H4198	10.5	2253	26,100 CUP	11.5C	2488	32,800 CUP
BL-C(2)	28.5	3734	47,200 PSI	30.7	3937	54,900 PSI	H4227	9.0	2421	39,900 CUP	10.2	2567	43,000 CUP
IMR 4895	26.5	3550	43,300 PSI	28.3C	3864	55,500 PSI	H110	10.0	2569	32,400 CUP	11.2	2795	41,800 CUP
H335	25.5	3665	45,400 PSI	27.5	3915	56,600 PSI	Lil'Gun	12.0	2667	24,900 CUP	13.0	2826	28,400 CUP
H4895	26.0	3576	42,200 PSI	28.2C	3910	55,700 PSI							
IMR 8208 XBR	27.0	3830	50,700 PSI	28.2	3961	56,300 PSI							
IMR 3031	25.0	3602	44,400 PSI	26.1C	3793	52,800 PSI							
Benchmark	25.0	3590	44,100 PSI	26.6	3863	56,600 PSI							
H322	24.0	3586	45,600 PSI	26.3	3828	55,400 PSI							
Bullet: 40 GR. HDY V-MAX							Dia: .204" Col: 2.250"						
CFE 223	27.3	3518	46,500 PSI	29.0	3769	56,700 PSI	Bullet: 45 GR. BAR XBT						
Varget	26.0	3395	44,100 PSI	28.1C	3647	55,100 PSI	Dia: .224" Col: 1.850"						
IMR 4064	25.5	3379	43,600 PSI	27.5C	3616	52,000 PSI	H4198	10.5	2217	31,500 CUP	11.5C	2390	36,900 CUP
IMR 4166	24.7	3314	48,000 PSI	26.9	3578	57,300 PSI	H4227	8.5	2198	37,000 CUP	9.8	2346	42,700 CUP
BL-C(2)	28.0	3569	47,300 PSI	30.0	3774	56,200 PSI	H110	9.0	2323	35,200 CUP	9.9	2503	40,400 CUP
IMR 4895	26.0	3415	44,700 PSI	27.8C	3695	56,000 PSI	Lil'Gun	12.0	2641	35,700 CUP	13.0	2770	38,500 CUP
H335	25.0	3508	47,300 PSI	26.8	3738	56,700 PSI							
H4895	26.0	3500	45,500 PSI	27.7C	3741	56,000 PSI							
IMR 8208 XBR	26.0	3586	48,300 PSI	27.3	3754	56,300 PSI							
IMR 3031	24.0	3456	46,300 PSI	25.6C	3694	56,600 PSI							
Benchmark	24.0	3419	45,200 PSI	25.7	3646	55,400 PSI							
H322	23.0	3319	41,500 PSI	25.1	3639	55,900 PSI							
Bullet: 50 GR. BER HPBT							Dia: .204" Col: 2.300"						
CFE 223	25.2	3279	54,400 PSI	26.8	3370	55,700 PSI	Bullet: 45 GR. HDY SP						
							Dia: .224" Col: 1.750"						
							Bullet: 50 GR. SIE SP						
							Dia: .224" Col: 1.850"						
							Bullet: 53 GR. BAR XFB						
							Dia: .224" Col: 1.850"						
							Bullet: 55 GR. HDY SP						
							Dia: .224" Col: 1.850"						

74

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads									
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure							
22 K HORNET																				
Case: Winchester (Ref) Twist: 1:14"																				
Barrel: 24" Trim: 1.393" Primer: Winchester SR, Small Rifle																				
Bullet: 30 GR. BAR VG FB Dia: .224" Col: 1.750"																				
CFE BLK	14.4	3038	26,300 CUP	16.0C	3219	30,300 CUP	H110	12.5	2866	33,000 CUP	13.3	2981	38,200 CUP							
IMR 4227	10.8	2241	27,300 CUP	12.0C	2569	30,600 CUP	Li'l'Gun	12.5	2846	26,500 CUP	14.0	3130	37,400 CUP							
296	11.0	2996	40,200 CUP	11.7	3108	43,100 CUP	Bullet: 46 GR. SPR JFP Dia: .224" Col: 1.670"													
H110	11.0	2996	40,200 CUP	11.7	3108	43,100 CUP	CFE BLK	13.9	2546	27,500 CUP	16.4	2954	38,100 CUP							
Li'l'Gun	12.7	3150	35,200 CUP	13.5	3332	43,000 CUP	H4198	13.5	2417	26,700 CUP	15.0C	2708	37,200 CUP							
Bullet: 35 GR. HDY V-MAX Dia: .224" Col: 1.725"																				
CFE BLK	14.6	2915	23,400 CUP	15.8	3072	28,100 CUP	H4227	9.0	2143	23,300 CUP	10.7	2424	38,200 CUP							
H4227	11.0	2809	39,500 CUP	12.3	3023	46,000 CUP	H110	8.0	2127	25,400 CUP	9.0	2331	36,400 CUP							
H110	11.5	2901	35,100 CUP	12.8	3137	45,500 CUP	Li'l'Gun	9.0	2385	29,900 CUP	10.2	2586	37,300 CUP							
Li'l'Gun	12.5	2980	29,900 CUP	13.5	3122	35,300 CUP	Bullet: 50 GR. NOS BT Dia: .224" Col: 1.900"													
Bullet: 40 GR. NOS BT Dia: .224" Col: 1.900"																				
CFE BLK	14.3	2730	21,800 CUP	15.5C	2988	30,200 CUP	CFE BLK	12.8	2436	27,500 CUP	15.1	2757	38,100 CUP							
H4227	11.0	2684	37,500 CUP	12.2C	2871	45,500 CUP	H4198	13.5	2420	29,500 CUP	14.9C	2654	38,500 CUP							
H110	11.5	2779	33,100 CUP	12.9	3045	45,600 CUP	H4227	9.5	2195	29,500 CUP	10.8	2421	38,400 CUP							
Li'l'Gun	12.5	2891	29,400 CUP	13.5	3001	33,800 CUP	H110	8.5	2174	30,000 CUP	9.4	2332	38,600 CUP							
Bullet: 45 GR. BAR XBT Dia: .224" Col: 1.850"																				
H4227	10.5	2524	40,900 CUP	11.3	2633	45,300 CUP	Li'l'Gun	9.0	2320	31,500 CUP	10.2	2503	36,400 CUP							
H110	10.5	2578	38,700 CUP	11.2	2686	45,300 CUP	221 FIREBALL													
Li'l'Gun	12.0	2773	36,700 CUP	13.0	2896	40,200 CUP	Case: Remington Twist: 1:14"													
Barrel: 24" Trim: 1.390" Primer: Remington 7 1/2, Small Rifle																				
Magnum																				
Bullet: 30 GR. BAR VG FN Dia: .224" Col: 1.790"																				
H4198	18.0	3242	31,900 CUP	20.0C	3636	42,200 CUP	Bullet: 35 GR. HDY V-MAX Dia: .224" Col: 1.745"													
CFE BLK	18.3	3515	37,200 CUP	19.9	3762	46,200 CUP	CFE BLK	18.6	3408	37,500 CUP	20.2	3638	45,800 CUP							
IMR 4227	15.7	3327	45,400 CUP	17.1	3491	49,100 CUP	H4198	18.0	3056	31,900 CUP	20.0C	3423	44,700 CUP							
Li'l'Gun	14.2	3485	41,300 CUP	15.9	3791	49,400 CUP	H4227	14.8	3110	37,500 CUP	16.5	3403	50,600 CUP							
Bullet: 45 GR. SPR SP Dia: .224" Col: 1.750"																				
CFE BLK	14.4	2773	27,300 CUP	16.0C	3010	38,500 CUP	Li'l'Gun	14.0	3354	47,200 CUP	16.0	3535	49,900 CUP							
H4227	10.7	2574	40,700 CUP	11.7	2747	45,500 CUP	Bullet: 36 GR. BAR VG FB Dia: .224" Col: 1.830"													
H110	11.5	2684	37,000 CUP	12.4	2841	45,500 CUP	CFE BLK	17.5	3254	37,700 CUP	19.1	3495	46,300 CUP							
Li'l'Gun	12.0	2716	28,100 CUP	13.2	2893	35,800 CUP	H4198	18.0	3177	35,000 CUP	19.0C	3361	41,500 CUP							
Bullet: 50 GR. SIE BK Dia: .224" Col: 1.900"																				
CFE BLK	13.7	2685	31,600 CUP	15.3C	2838	41,000 CUP	IMR 4227	15.5	3081	41,300 CUP	16.7	3264	49,100 CUP							
H4198	11.5	2246	30,100 CUP	12.5C	2460	38,700 CUP	Li'l'Gun	14.5	3297	41,500 CUP	15.7	3500	48,800 CUP							
H4227	10.0	2398	40,200 CUP	11.0	2538	45,700 CUP	Bullet: 40 GR. NOS BT Dia: .224" Col: 1.830"													
H110	10.4	2491	37,900 CUP	11.1	2619	45,800 CUP	H335	20.0	2782	31,500 CUP	22.0	3048	41,200 CUP							
Li'l'Gun	12.0	2675	34,300 CUP	13.0	2826	40,700 CUP	H322	19.7	2883	33,200 CUP	21.0C	3087	39,100 CUP							
Bullet: 53 GR. BAR XFB Dia: .224" Col: 1.850"																				
H4198	11.2	2195	30,200 CUP	12.5C	2386	42,600 CUP	CFE BLK	18.8	3194	36,600 CUP	20.8	3543	45,800 CUP							
H4227	9.5	2208	39,000 CUP	10.5	2366	45,900 CUP	H4198	17.0	2851	30,000 CUP	19.0C	3195	40,300 CUP							
H110	9.5	2274	40,300 CUP	10.2	2379	46,100 CUP	H4227	14.5	3042	43,100 CUP	16.0	3251	50,200 CUP							
Li'l'Gun	11.5	2552	38,700 CUP	12.3	2695	45,700 CUP	Li'l'Gun	14.5	3172	42,100 CUP	16.0	3384	48,900 CUP							
Bullet: 55 GR. HDY SP Dia: .224" Col: 1.850"																				
CFE BLK	13.5	2549	37,400 CUP	15.0C	2790	41,400 CUP	Bullet: 45 GR. BAR X Dia: .224" Col: 1.830"													
H4198	11.5	2223	31,100 CUP	12.5C	2388	39,400 CUP	H335	19.8	2783	36,300 CUP	22.0	3077	50,000 CUP							
H4227	10.0	2315	43,400 CUP	11.0	2445	46,100 CUP	H322	19.0	2762	31,600 CUP	20.5C	2978	39,900 CUP							
218 BEE																				
Case: Winchester Twist: 1:16"																				
Barrel: 24" Trim: 1.335" Primer: Winchester SR, Small Rifle																				
Bullet: 30 GR. BAR VG FB Dia: .224" Col: 1.680"																				
CFE BLK	15.8	3018	25,300 CUP	18.0C	3358	33,500 CUP	H4198	17.6	2934	37,200 CUP	19.5C	3184	46,500 CUP							
IMR 4227	10.1	2521	29,200 CUP	12.4	2914	38,400 CUP	H4227	13.8	2848	43,500 CUP	15.3	3015	48,600 CUP							
296	11.3	3001	35,500 CUP	12.0	3068	37,200 CUP	Li'l'Gun	13.4	2944	41,400 CUP	14.9	3155	49,400 CUP							
H110	11.3	3001	35,500 CUP	12.0	3068	37,200 CUP	Bullet: 45 GR. SIE SPT Dia: .224" Col: 1.800"													
Li'l'Gun	13.1	3255	35,700 CUP	14.9	3534	38,100 CUP	H335	20.0	2740	32,600 CUP	22.0	3030	44,300 CUP							
Bullet: 35 GR. HDY V-MAX Dia: .224" Col: 1.650"																				
CFE BLK	15.3	2833	22,200 CUP	18.0C	3313	35,700 CUP	H322	19.0	2767	31,400 CUP	20.5C	2955	37,000 CUP							
H4227	11.0	2656	30,400 CUP	13.3	3035	38,300 CUP	CFE BLK	18.5	3095	37,200 CUP	20.1	3319	45,500 CUP							
H110	12.5	2974	33,900 CUP	13.2	3066	37,400 CUP	H4198	17.5	2851	31,700 CUP	19.5C	3178	43,700 CUP							
Li'l'Gun	12.0	2868	25,400 CUP	14.0	3205	37,100 CUP	H4227	14.0	2872	40,900 CUP	15.7	3078	49,100 CUP							
Bullet: 40 GR. SIE BK Dia: .224" Col: 1.820"																				
CFE BLK	15.3	2841	27,400 CUP	18.0C	3257	38,600 CUP	Li'l'Gun	13.8	2964	39,300 CUP	15.3	3202	49,000 CUP							
H4227	11.0	2608	33,800 CUP	12.8	2865	38,700 CUP	Bullet: 50 GR. SPR TNT HP Dia: .224" Col: 1.830"													
H335 19.8 2674 33,100 CUP 22.0 3041 48,600 CUP																				
H322 19.0 2703 31,600 CUP 21.0C 2968 40,100 CUP																				
H4198 16.5 2661 27,800 CUP 18.5C 2996 40,800 CUP																				
CFE BLK 17.9 2881 32,900 CUP 19.8 3202 46,000 CUP																				
H4227 13.0 2629 36,500 CUP 14.8 2901 51,200 CUP																				
Li'l'Gun 13.0 2835 43,400 CUP 14.6 2994 48,200 CUP																				

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads			
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure	
Bullet: 52 GR. SIE HPBT Dia: .224" Col: 1.830"														
H335	19.6	2662	35,500 CUP	21.8	2958	48,200 CUP	BL-C(2)	23.0	2774	28,100 CUP	25.5	3100	37,400 CUP	
H322	18.9	2693	35,100 CUP	21.0C	2987	46,800 CUP	IMR 4895	22.0	2829	33,100 PSI	24.0C	3134	42,800 PSI	
CFE BLK	17.1	2851	39,300 CUP	18.6	3075	46,300 CUP	H335	21.5	2962	36,500 CUP	24.0	3252	46,200 CUP	
H4198	16.7	2692	33,700 CUP	18.5C	2967	45,300 CUP	H4895	20.0	2510	25,000 CUP	23.8C	3080	35,900 CUP	
H4227	13.0	2612	40,900 CUP	14.5	2798	48,100 CUP	IMR 8208 XBR	22.2	3121	38,700 PSI	23.6	3327	47,200 PSI	
Lil'Gun	13.0	2768	43,200 CUP	14.5	2951	48,800 CUP	IMR 3031	20.0	2806	31,000 PSI	22.5C	3226	45,800 PSI	
Bullet: 55 GR. HDY SPSX Dia: .224" Col: 1.830"														
H335	19.3	2602	36,700 CUP	21.5	2891	49,400 CUP	Benchmark	23.0	3092	39,700 CUP	24.5	3290	44,900 CUP	
H322	18.9	2681	36,000 CUP	21.0C	2944	48,200 CUP	H322	20.5	2914	34,600 CUP	22.5	3173	43,600 CUP	
CFE BLK	16.6	2706	37,700 CUP	18.0	2912	45,700 CUP	IMR 4198	17.8	3083	40,600 PSI	19.8	3311	47,600 PSI	
H4198	16.7	2655	34,100 CUP	18.5	2922	46,800 CUP	CFE BLK	16.4	2922	41,000 PSI	18.9	3170	48,300 PSI	
H4227	13.5	2643	48,100 CUP	14.5	2742	49,300 CUP	H4198	18.9	3011	33,400 CUP	21.0	3315	44,800 CUP	
Lil'Gun	13.0	2714	45,200 CUP	14.5	2877	49,800 CUP	H4227	11.0	2259	24,300 CUP	14.5	2863	46,100 CUP	
222 REMINGTON														
Case: Winchester			Twist: 1:14"											
Barrel: 24" Trim: 1.690"			Primer: Winchester SR, Small Rifle											
Bullet: 30 GR. BAR VG Dia: .224" Col: 2.040"														
IMR 8208 XBR	23.0	3234	34,900 PSI	25.0C	3522	42,700 PSI	BL-C(2)	22.5	2693	25,500 CUP	25.0	3000	38,600 CUP	
Benchmark	23.2	3332	35,500 PSI	25.2C	3628	44,200 PSI	IMR 4895	22.0	2845	37,800 PSI	24.0C	3106	47,400 PSI	
H322	23.3	3535	40,300 PSI	25.5C	3817	49,400 PSI	H335	21.3	2861	37,100 CUP	23.6	3120	45,700 CUP	
IMR 4198	19.8	3412	37,200 PSI	21.3	3755	48,900 PSI	H4895	20.0	2466	23,900 CUP	23.8C	3022	36,500 CUP	
CFE BLK	19.5	3593	40,900 PSI	21.2	3827	48,500 PSI	IMR 8208 XBR	21.9	3006	39,200 PSI	23.3	3201	47,100 PSI	
H4198	20.3	3500	37,400 PSI	21.9	3817	48,500 PSI	IMR 3031	20.0	2740	32,000 PSI	22.4C	3156	47,800 PSI	
IMR 4227	15.7	3268	40,000 PSI	17.6	3567	48,400 PSI	Benchmark	22.5	2994	39,200 CUP	24.0	3168	45,800 CUP	
Bullet: 35 GR. HDY V-MAX Dia: .224" Col: 2.025"														
IMR 8208 XBR	23.0	3181	32,000 PSI	25.0C	3464	40,500 PSI	H322	20.2	2810	33,300 CUP	22.2	3079	43,200 CUP	
Benchmark	23.5	3138	33,700 CUP	25.0C	3368	40,900 CUP	IMR 4198	17.0	2850	37,100 PSI	19.3	3152	49,000 PSI	
H322	23.5	3316	36,500 CUP	25.2C	3591	45,600 CUP	CFE BLK	15.8	2744	41,500 PSI	18.7	3026	49,400 PSI	
IMR 4198	18.7	3252	34,300 PSI	20.8	3659	47,500 PSI	H4198	18.5	2890	34,000 CUP	20.5	3160	44,200 CUP	
CFE BLK	19.2	3357	38,900 PSI	21.2	3640	49,300 PSI	Bullet: 53 GR. HDY HP Dia: .224" Col: 2.140"							
H4198	20.5	3366	36,500 CUP	22.0	3591	43,300 CUP	CFE 223	23.7	2904	35,700 PSI	25.8	3211	48,800 PSI	
IMR 4227	15.0	3195	38,500 PSI	17.4	3500	46,500 PSI	Varget	23.0	2863	33,500 CUP	25.0C	3097	42,700 CUP	
H4227	15.0	3095	38,100 CUP	17.2	3342	43,000 CUP	IMR 4320	21.5	2670	34,600 PSI	24.1	3033	48,600 PSI	
Bullet: 35 GR. NOS BT LF Dia: .224" Col: 2.130"														
IMR 8208 XBR	22.1	3096	32,500 PSI	24.5C	3516	42,200 PSI	IMR 4064	20.5	2662	33,300 PSI	23.0C	3024	47,400 PSI	
Benchmark	22.5	3316	34,600 PSI	25.0C	3665	48,600 PSI	748				22.9	2855	36,000 CUP	
H322	21.6	3290	39,700 PSI	23.2	3527	47,600 PSI	BL-C(2)	22.0	2639	29,300 CUP	24.5	2967	42,100 CUP	
IMR 4198	18.5	3220	36,800 PSI	19.9	3539	47,800 PSI	IMR 4895	21.0	2684	34,400 PSI	23.5C	3051	48,200 PSI	
CFE BLK	18.6	3372	41,900 PSI	21.0	3633	48,200 PSI	H335	20.5	2748	35,900 CUP	23.0	3006	46,000 CUP	
H4198	19.3	3472	44,800 PSI	20.5	3612	47,300 PSI	H4895	20.0	2585	27,800 CUP	23.5C	3043	41,600 CUP	
Bullet: 36 GR. BAR VG FB Dia: .224" Col: 2.150"														
H335	23.0	3293	43,000 PSI	24.5	3472	48,700 PSI	IMR 8208 XBR	21.4	2844	36,100 PSI	22.8	3117	48,200 PSI	
IMR 8208 XBR	22.0	3144	36,700 PSI	25.0C	3582	40,400 PSI	IMR 3031	19.5	2693	33,200 PSI	21.7C	3064	47,600 PSI	
IMR 3031	21.1	3147	40,700 PSI	22.4C	3356	47,000 PSI	Benchmark	21.5	2852	38,800 CUP	23.0	3063	45,500 CUP	
Benchmark	22.0	3178	38,500 PSI	24.0C	3471	48,300 PSI	H322	19.3	2724	34,900 CUP	21.5	3005	46,000 CUP	
H322	22.3	3331	41,400 PSI	23.7	3535	47,500 PSI	IMR 4198	16.5	2742	36,500 PSI	18.7	3025	47,900 PSI	
IMR 4198	18.3	3199	40,000 PSI	19.5	3433	48,100 PSI	H4198	17.5	2800	35,300 CUP	19.5	3038	45,500 CUP	
CFE BLK	17.1	3174	45,000 PSI	19.4	3428	48,600 PSI	Bullet: 55 GR. SPR SP Dia: .224" Col: 2.130"							
H4198	19.3	3277	40,500 PSI	20.5	3470	46,700 PSI	CFE 223	23.9	2894	35,000 PSI	25.9	3174	47,600 PSI	
Bullet: 40 GR. SIE HP Dia: .224" Col: 2.125"														
H335	22.5	3125	38,400 CUP	25.0	3371	44,600 CUP	Varget	23.0	2860	34,500 CUP	25.0C	3095	43,000 CUP	
H4895	20.0	2572	23,300 CUP	24.0C	3133	34,200 CUP	IMR 4320	21.5	2647	34,500 PSI	24.0C	2961	46,000 PSI	
IMR 8208 XBR	22.5	3049	30,400 PSI	25.0C	3452	42,800 PSI	IMR 4064	21.5	2739	36,500 PSI	23.0C	2954	44,400 PSI	
Benchmark	23.5	3110	34,800 CUP	25.0	3303	40,700 CUP	748				24.0	2900	38,000 CUP	
H322	20.7	2966	31,700 CUP	23.0	3313	44,000 CUP	BL-C(2)	22.0	2625	28,200 CUP	24.2	2876	35,400 CUP	
IMR 4198	19.0	3226	36,300 PSI	21.2C	3583	48,700 PSI	IMR 4895	21.0	2632	32,700 PSI	23.5C	3017	47,300 PSI	
CFE BLK	18.1	3165	39,900 PSI	20.4	3424	48,400 PSI	H335	20.5	2776	35,300 CUP	23.0	3037	45,600 CUP	
H4198	19.5	3201	35,200 CUP	21.4	3480	45,700 CUP	H4895	20.0	2569	28,900 CUP	23.5C	3023	39,900 CUP	
IMR 4227	14.0	2984	38,100 PSI	16.0	3240	45,200 PSI	IMR 8208 XBR	21.8	2905	38,400 PSI	23.2C	3120	48,500 PSI	
Bullet: 45 GR. SPR SP Dia: .224" Col: 2.130"														
748				25.5	3210	41,000 CUP	IMR 3031	19.5	2687	33,500 PSI	21.6C	3004	46,300 PSI	
NEVER EXCEED MAXIMUM LOADS														
*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.														

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 4064	20.0	2530	34,500 PSI*	22.3C	2862	47,800 PSI	IMR 3031	23.5	3291	42,600 PSI	25.2C	3498	46,200 PSI
BL-C(2)	22.0	2590	33,200 CUP	23.5	2803	44,000 CUP	Benchmark	25.3	3404	39,600 CUP	27.3	3666	51,000 CUP
IMR 4895	20.0	2573	36,200 PSI	22.4C	2907	49,100 PSI	H322	23.5	3376	34,600 CUP	25.5	3574	48,000 CUP
H335	20.0	2602	34,400 CUP	21.3	2759	42,900 CUP	IMR 4198	19.5	3269	42,500 PSI	22.2	3652	53,400 PSI
H4895	21.7	2802	38,500 CUP	23.1C	2937	43,500 CUP	H4198	20.5	3147	29,400 CUP	22.5	3601	49,600 CUP
IMR 8208 XBR	20.5	2737	39,200 PSI	21.8	2920	48,200 PSI	Bullet: 45 GR. SFIRE Dia: .224" Col: 2.220"						
IMR 3031	18.5	2476	32,900 PSI	20.6C	2838	48,700 PSI	H335	23.0	3172	42,000 PSI	25.3	3428	50,700 PSI
Benchmark	19.7	2627	35,900 CUP	21.0	2805	42,800 CUP	IMR 8208 XBR	23.0	3124	38,800 PSI	26.0C	3491	52,100 PSI
H322	19.0	2592	34,800 CUP	20.7	2818	42,900 CUP	IMR 3031	21.0	2981	37,000 PSI	24.0C	3400	52,300 PSI
IMR 4198	15.5	2552	37,100 PSI	17.6	2832	48,400 PSI	Benchmark	22.5	3130	39,600 PSI	25.0	3410	51,000 PSI
H4198	16.9	2633	36,100 CUP	18.0	2771	42,400 CUP	H322	22.0	3088	38,900 PSI	24.6C	3399	50,800 PSI

Bullet: 63 GR. SIE SP Dia: .224" Col: 2.125"						
CFE 223	22.8	2724	36,500 PSI	24.8	2986	48,900 PSI
Varget	22.0	2718	34,500 CUP	24.0C	2935	43,800 CUP
IMR 4320	20.5	2450	34,900 PSI	23.0C	2774	48,400 PSI
IMR 4064	20.0	2490	34,400 PSI	22.4C	2812	47,700 PSI
BL-C(2)	22.0	2626	32,600 CUP	24.2	2864	43,200 CUP
IMR 4895	20.5	2485	35,400 PSI	23.0C	2827	49,200 PSI
H335	19.8	2672	37,800 CUP	22.0	2830	45,700 CUP
H4895	20.0	2537	30,300 CUP	23.5C	2965	45,500 CUP
IMR 8208 XBR	20.2	2681	39,300 PSI	21.5	2865	48,400 PSI
IMR 3031	19.0	2527	35,400 PSI	20.9C	2809	48,400 PSI
Benchmark	21.0	2732	39,000 CUP	22.5	2903	45,700 CUP
H322	18.6	2531	33,600 CUP	20.7	2780	44,400 CUP
IMR 4198	16.0	2519	37,600 PSI	18.0	2759	48,500 PSI
H4198	16.9	2597	36,200 CUP	18.8	2793	43,800 CUP

223 REMINGTON

Case: Winchester Twist: 1:12"
Barrel: 24" Trim: 1.750" Primer: Winchester SR, Small Rifle

Bullet: 35 GR. NOS BT LF Dia: .224" Col: 2.280"						
Varget	25.2	3424	38,500 PSI	28.0C	3751	49,300 PSI
IMR 4320	25.5	3313	39,500 PSI	28.0C	3620	49,800 PSI
BL-C(2)	26.6	3430	39,900 PSI	29.5	3740	50,100 PSI
IMR 4895	24.3	3263	36,400 PSI	27.0C	3620	47,700 PSI
H335	25.7	3647	44,600 PSI	27.9	3885	53,200 PSI
H4895	24.3	3522	39,600 PSI	27.0C	3891	53,000 PSI
IMR 8208 XBR	25.2	3560	41,100 PSI	28.0C	3891	53,400 PSI
IMR 3031	23.4	3423	40,000 PSI	26.0C	3771	51,600 PSI
Benchmark	24.5	3555	42,700 PSI	27.2C	3851	52,900 PSI
H322	24.3	3610	43,800 PSI	25.8	3771	50,600 PSI
IMR 4198	20.4	3651	47,600 PSI	21.7	3804	52,100 PSI
H4198	20.4	3599	45,100 PSI	21.7	3780	52,000 PSI

Bullet: 36 GR. BAR VG FB Dia: .224" Col: 2.200"						
Varget	24.8	3278	37,000 PSI	27.5C	3593	47,300 PSI
IMR 4320	25.2	3289	39,700 PSI	28.0C	3653	52,200 PSI
BL-C(2)	26.8	3345	40,400 PSI	28.5	3500	46,000 PSI
IMR 4895	24.8	3289	39,700 PSI	27.0C	3606	50,100 PSI
H335	26.0	3647	48,300 PSI	27.7	3790	53,200 PSI
H4895	25.5	3487	36,500 PSI	27.3C	3755	49,200 PSI
IMR 8208 XBR	25.4	3548	44,500 PSI	27.0C	3728	50,600 PSI
IMR 3031	23.3	3398	41,600 PSI	24.8C	3600	48,200 PSI
Benchmark	24.4	3508	44,100 PSI	26.0	3702	50,800 PSI
H322	24.2	3523	44,300 PSI	25.7	3721	52,700 PSI
IMR 4198	21.2	3579	43,500 PSI	22.5	3834	52,500 PSI
H4198	21.1	3511	36,800 PSI	22.5	3723	51,800 PSI

Bullet: 40 GR. NOS BT Dia: .224" Col: 2.280"						
CFE 223	27.5	3457	40,600 PSI	29.0	3667	48,200 PSI
Varget	25.0	3310	34,400 CUP	28.0C	3674	47,200 CUP
IMR 4320	26.0	3267	43,500 PSI	27.7C	3456	48,900 PSI
BL-C(2)	26.5	3368	35,400 CUP	28.5	3612	45,400 CUP
IMR 4895	24.9	3164	35,200 PSI	26.5C	3390	44,200 PSI
H335	26.0	3299	34,400 CUP	28.0	3572	44,600 CUP
H4895	25.0	3204	32,100 CUP	27.5C	3573	44,500 CUP
IMR 8208 XBR	25.0	3433	41,500 PSI	26.7C	3659	50,400 PSI

Bullet: 45 GR. SIE SP Dia: .224" Col: 2.240"						
CFE 223	27.5	3358	40,800 PSI	29.0	3536	47,200 PSI
Varget	25.0	3071	30,200 CUP	28.0C	3477	43,700 CUP
IMR 4320	25.5	3158	40,300 PSI	27.8C	3342	46,300 PSI
BL-C(2)	26.5	3266	36,000 CUP	28.5	3559	48,000 CUP
H335	24.0	3280	41,500 CUP	26.2	3456	51,000 CUP
H4895	25.0	3211	33,800 CUP	27.5C	3454	43,400 CUP
IMR 8208 XBR	24.5	3287	41,700 PSI	26.8	3550	52,000 PSI
IMR 3031	22.7	3065	37,700 PSI	25.2C	3374	45,800 PSI
Benchmark	25.3	3327	41,100 CUP	27.3	3554	51,100 CUP
H322	23.0	3164	36,000 CUP	25.0	3424	47,400 CUP
IMR 4198	19.5	3205	44,600 PSI	22.1	3495	52,000 PSI
H4198	20.0	3009	28,800 CUP	22.0	3472	49,100 CUP

Bullet: 50 GR. SPR SP Dia: .224" Col: 2.210"						
CFE 223	27.0	3241	41,500 PSI	28.5	3505	53,600 PSI
Varget	26.5	3242	40,800 CUP	27.5C	3383	44,800 CUP
IMR 4320	24.8	3006	39,400 PSI	27.5C	3270	48,900 PSI
IMR 4166	23.9	3026	43,200 PSI	26.2C	3267	51,600 PSI
748				26.0	3200	40,000 CUP
BL-C(2)	26.0	3187	34,200 CUP	28.0	3428	47,100 CUP
IMR 4895	25.2	3118	43,300 PSI	26.7C	3211	45,200 PSI
H335	24.0	3166	43,000 CUP	26.0	3393	51,700 CUP
H4895	25.0	3200	38,300 CUP	27.5C	3468	51,300 CUP
IMR 8208 XBR	23.5	3111	40,500 PSI	25.8	3407	53,300 PSI
IMR 3031	23.5	3169	44,600 PSI	25.0	3268	46,900 PSI
Benchmark	24.0	3139	38,600 CUP	26.5	3396	50,400 CUP
H322	22.0	3018	36,500 CUP	24.0	3301	49,300 CUP
IMR 4198	19.8	3094	42,800 PSI	21.9	3352	52,100 PSI
H4198	19.5	3023	32,400 CUP	21.5	3223	45,900 CUP

Bullet: 53 GR. SIE HP Dia: .224" Col: 2.200"						
CFE 223	27.0	3245	45,900 PSI	28.5	3415	52,900 PSI
Varget	24.0	3026	38,400 CUP	27.0C	3389	47,900 CUP
IMR 4320	24.0	2929	40,400 PSI	27.5C	3273	52,300 PSI
IMR 4064	24.0	2964	41,600 PSI	25.7C	3178	45,600 PSI
IMR 4166	23.4	2936	44,300 PSI	25.6C	3174	52,500 PSI
748				26.0	3200	43,500 CUP
BL-C(2)	26.0	3090	36,600 CUP	28.0	3328	47,600 CUP
IMR 4895	24.5	3012	43,900 PSI	26.4C	3238	52,300 PSI
H335	24.0	3060	44,100 CUP	26.0	3300	52,000 CUP
H4895	25.0	3166	37,400 CUP	27.0C	3383	48,600 CUP
IMR 8208 XBR	23.0	3032	41,400 PSI	25.4	3310	53,400 PSI
IMR 3031	22.0	2959	40,700 PSI	24.5C	3260	53,300 PSI
Benchmark	24.0	3102	39,900 CUP	26.0	3308	49,800 CUP
H322	21.5	2912	39,200 CUP	23.5	3183	48,900 CUP
IMR 4198	19.0	2972	43,800 PSI	21.4	3268	48,200 PSI
H4198	19.5	2986	34,200 CUP	21.5	3188	46,700 CUP

Bullet: 55 GR. BAR TSX FB Dia: .224" Col: 2.180"						
CFE 223	24.7	3065	44,600 PSI	27.4	3317	54,000 PSI
Varget	22.8	2996	47,600 PSI	24.0C	3134	53,300 PSI
IMR 4320	22.1	2805	41,900 PSI	24.6	3078	52,100 PSI
IMR 4064	21.2	2871	43,900 PSI	23.5C	3116	52,500 PSI
IMR 4166	22.9	2845	45,600 PSI	25.5C	3096	53,800 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

77

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
748	22.5	2862	39,200 PSI	25.0	3104	48,500 PSI	IMR 4064	21.9	2671	42,200 PSI	23.6	2928	53,200 PSI						
BL-C(2)	23.4	2888	41,900 PSI	26.0	3135	50,300 PSI	IMR 4166	21.4	2626	44,000 PSI	23.8C	2890	53,000 PSI						
IMR 4895	21.5	2837	43,000 PSI	23.9C	3107	52,300 PSI	748	22.3	2779	44,600 PSI	24.0	2967	52,400 PSI						
H335	21.3	2920	48,900 PSI	22.7	3063	53,000 PSI	BL-C(2)	22.5	2772	45,100 PSI	24.2	2949	52,500 PSI						
H4895	21.0	2910	43,700 PSI	22.6	3110	51,500 PSI	IMR 4895	22.4	2782	46,900 PSI	24.1	2956	53,400 PSI						
IMR 8208 XBR	21.5	2949	47,600 PSI	23.0	3105	52,900 PSI	H335	19.3	2678	47,500 PSI	21.4	2887	53,600 PSI						
IMR 3031	20.0	2878	46,800 PSI	21.3	3024	52,200 PSI	H4895	21.0	2740	42,300 PSI	23.0	3004	53,000 PSI						
Benchmark	20.0	2885	47,600 PSI	22.2	3066	52,200 PSI	IMR 8208 XBR	21.4	2787	43,400 PSI	23.2	2999	53,000 PSI						
H322	21.0	2953	48,600 PSI	22.4	3083	51,300 PSI	IMR 3031	20.3	2700	43,500 PSI	22.0	2940	53,100 PSI						
Bullet: 55 GR. HDY FMJ Dia: .224" Col: 2.200"						Bullet: 63 GR. SIE SP Dia: .224" Col: 2.200"													
Trail Boss				4.0	1074		CFE 223	25.0	2957	46,300 PSI	26.4	3113	53,500 PSI						
Titegroup				3.1	1064	4,000 CUP	Varget	24.5	3000	42,400 CUP	26.4C	3199	50,700 CUP						
Clays				3.2	1060	3,700 CUP	IMR 4320	23.0	2733	42,500 PSI	25.5	2975	52,900 PSI						
Bullet: 55 GR. SFIRE Dia: .224" Col: 2.220"						Bullet: 69 GR. SIE HPBT Dia: .224" Col: 2.235"													
Varget	23.5	2990	45,200 PSI	25.1C	3149	51,700 PSI	CFE 223	23.5	2788	43,800 PSI	25.8	3029	54,600 PSI						
IMR 4320	23.0	2796	39,300 PSI	25.5	3100	51,100 PSI	Varget	24.0	2784	39,200 CUP	26.0C	3010	50,200 CUP						
IMR 4064	21.0	2711	37,100 PSI	23.0C	2945	44,800 PSI	IMR 4320	23.0	2673	43,500 PSI	24.8	2873	53,100 PSI						
BL-C(2)	24.0	2937	40,800 PSI	27.0	3220	51,500 PSI	IMR 4064	22.5	2690	42,200 PSI	24.0C	2872	50,900 PSI						
IMR 4895	22.0	2827	40,500 PSI	24.6C	3106	50,700 PSI	IMR 4166	21.5	2603	43,000 PSI	24.0	2874	53,900 PSI						
H335	21.4	2969	47,000 PSI	22.8	3099	51,800 PSI	748				24.5	2870	51,500 CUP						
H4895	22.0	2941	40,600 PSI	24.6C	3226	53,500 PSI	BL-C(2)	24.5	2833	40,600 CUP	26.5	3029	50,100 CUP						
Benchmark	21.0	2903	42,600 PSI	23.4	3128	51,000 PSI	IMR 4895	23.3	2783	44,600 PSI	24.8C	2953	53,600 PSI						
H322	21.0	2894	42,800 PSI	23.1	3113	51,700 PSI	H335	22.0	2801	42,400 CUP	24.0	2960	49,500 CUP						
H4198	18.0	2852	42,700 PSI	20.4	3084	51,400 PSI	H4895	24.0	2870	41,100 CUP	26.0C	3069	49,700 CUP						
Bullet: 55 GR. SPR SP Dia: .224" Col: 2.200"						Bullet: 70 GR. SPR SP Dia: .224" Col: 2.140"													
CFE 223	26.0	3133	43,300 PSI	27.8	3329	51,300 PSI	CFE 223	23.0	2719	45,600 PSI	24.7	2900	53,800 PSI						
Varget	25.5	3174	41,300 CUP	27.5C	3384	49,700 CUP	Varget	23.5	2827	41,000 CUP	26.0C	3024	48,400 CUP						
IMR 4320	23.5	2874	41,300 PSI	26.1C	3146	50,700 PSI	IMR 4320	20.3	2490	38,200 PSI	24.3	2799	52,900 PSI						
IMR 4064	23.0	2867	40,300 PSI	25.7C	3201	52,600 PSI	IMR 4064	19.5	2485	42,000 PSI	23.5C	2831	53,300 PSI						
IMR 4166	24.2	2975	44,900 PSI	26.2C	3195	53,200 PSI	IMR 4166	20.9	2503	42,700 PSI	23.3C	2767	52,900 PSI						
748				26.3	3150	39,000 CUP	BL-C(2)	24.5	2774	41,700 CUP	26.5	2954	50,800 CUP						
BL-C(2)	25.5	3069	37,200 CUP	27.5	3313	48,500 CUP	IMR 4895	20.2	2562	45,700 PSI	24.5C	2917	52,300 PSI						
IMR 4895	23.0	2843	39,500 PSI	26.2C	3219	53,200 PSI	H335	21.0	2520	34,500 CUP	23.5	2867	47,900 CUP						
H335	23.0	3018	40,800 CUP	25.3	3203	49,300 CUP	H4895	23.0	2782	40,400 CUP	25.0	2997	50,500 CUP						
H4895	25.0	3176	39,700 CUP	26.0	3315	49,000 CUP	IMR 8208 XBR	20.0	2621	44,100 PSI	21.8	2797	52,800 PSI						
IMR 8208 XBR	23.0	3024	42,100 PSI	25.3	3268	53,100 PSI	IMR 3031	19.0	2582	47,200 PSI	21.2	2729	50,900 PSI						
IMR 3031	21.6	2907	41,100 PSI	24.6C	3233	52,500 PSI	Benchmark	20.5	2665	45,200 CUP	22.8	2869	51,000 CUP						
Benchmark	24.0	3113	42,600 CUP	25.6	3264	50,000 CUP	H322	19.0	2515	37,500 CUP	23.0	2962	51,200 CUP						
H322	21.0	2841	38,600 CUP	23.0	3106	48,900 CUP	Bullet: 62 GR. BAR TAC-XBT Dia: .224" Col: 2.250"												
IMR 4198	18.8	2885	41,600 PSI	20.4	3122	53,600 PSI	CFE 223	25.3	3059	47,900 PSI	27.0	3200	53,200 PSI						
H4198	19.0	2841	34,800 CUP	21.0	3150	47,600 CUP	Bullet: 62 GR. SFT SCIR Dia: .224" Col: 2.260"												
Bullet: 60 GR. HDY V-MAX Dia: .224" Col: 2.250"						Bullet: 75 GR. JLK VLD Dia: .224" Col: 2.250"													
CFE 223	25.0	3007	46,000 PSI	26.7	3176	53,400 PSI	CFE 223	23.0	2680	45,200 PSI	25.0	2876	54,400 PSI						
Varget	25.0	2924	40,400 CUP	27.0C	3159	51,900 CUP	Varget	22.5	2693	40,600 CUP	25.0C	2907	48,400 CUP						
IMR 4320	23.7	2860	45,400 PSI	25.3C	3006	52,100 PSI	IMR 4320	22.5	2554	39,700 PSI	24.2C	2766	53,200 PSI						
IMR 4064	23.0	2837	42,500 PSI	24.7C	3055	52,600 PSI	IMR 4064	21.0	2531	37,500 PSI	24.0C	2827	53,400 PSI						
IMR 4166	22.0	2777	45,800 PSI	24.2C	2985	53,100 PSI	IMR 4166	20.8	2530	45,100 PSI	23.0	2733	53,000 PSI						
BL-C(2)	25.0	2948	44,900 CUP	27.0	3137	51,900 CUP	BL-C(2)	23.0	2646	39,800 CUP	26.0	2858	49,500 CUP						
IMR 4895	23.7	2884	45,000 PSI	25.2C	3052	52,700 PSI													
H335	22.5	2910	43,700 CUP	24.0	3075	50,600 CUP													
H4895	24.0	2918	37,600 CUP	26.0C	3174	50,100 CUP													
IMR 8208 XBR	21.5	2857	43,500 PSI	23.6	3057	51,700 PSI													
IMR 3031	21.0	2815	42,500 PSI	22.5	3008	51,700 PSI													
Benchmark	23.0	2913	42,500 CUP	24.6	3086	49,900 CUP													
H322	22.0	2873	40,300 CUP	23.5	3063	49,800 CUP													
IMR 4198	18.3	2795	42,500 PSI	19.5	2945	52,000 PSI													
H4198	18.0	2747	42,500 CUP	20.0	2953	47,600 CUP													

78

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 4895	21.2	2506	41,200 PSI	23.8C	2786	51,800 PSI	H335	27.5	3532	39,000 CUP	30.0	3803	47,800 CUP
H335	21.0	2624	41,300 CUP	23.0	2814	50,000 CUP	H4895	26.5	3363	34,800 CUP	29.0	3490	45,400 CUP
H4895	22.5	2696	39,900 CUP	24.5	2905	50,000 CUP	H322	25.0	3318	35,300 CUP	27.0	3622	48,400 CUP
IMR 8208 XBR	20.0	2538	40,800 PSI	22.7	2804	53,900 PSI	H4198	23.0	3592	45,400 CUP	24.5	3760	49,100 CUP
IMR 3031	20.0	2543	40,000 PSI	21.8C	2740	53,500 PSI	H4227	15.5	2714	29,400 CUP	17.0	3062	36,600 CUP
Benchmark	21.5	2610	41,900 CUP	23.5	2829	49,400 CUP	Bullet: 45 GR. SPR SP Dia: .224" Col: 2.220"						
H322	20.0	2594	40,700 CUP	22.0	2785	48,100 CUP	IMR 4320				28.0	3340	50,000 CUP
Bullet: 77 GR. SIE HPBT Dia: .224" Col: 2.260"						IMR 4064				27.0C	3245	49,000 CUP	
CFE 223	22.5	2627	45,400 PSI	24.3	2811	53,500 PSI	BL-C(2)	26.0	3302	36,600 CUP	28.0	3664	50,100 CUP
Varget	21.0	2528	42,700 CUP	23.7C	2737	50,700 CUP	IMR 4895				28.0	3425	49,000 CUP
IMR 4320	20.5	2347	42,000 PSI	23.1C	2654	50,300 PSI	H335	26.0	3343	37,800 CUP	28.0	3647	49,600 CUP
IMR 4064	20.0	2397	42,200 PSI	22.7C	2698	53,000 PSI	H4895	26.5	3314	35,400 CUP	29.0	3442	49,700 CUP
IMR 4166	19.9	2452	45,200 PSI	22.0	2663	53,600 PSI	IMR 3031				26.5	3425	49,000 CUP
BL-C(2)	23.0	2640	42,500 CUP	24.9	2804	50,700 CUP	H322	24.5	3159	33,300 CUP	26.5	3532	50,300 CUP
IMR 4895	20.0	2379	41,800 PSI	23.0C	2708	53,100 PSI	IMR 4198				23.0	3420	50,000 CUP
H335	21.0	2582	44,400 CUP	22.6	2738	51,700 CUP	H4198	22.0	3392	42,400 CUP	24.0	3641	50,200 CUP
H4895	20.0	2474	40,300 CUP	22.6C	2727	50,200 CUP	Bullet: 50 GR. HDY SP Dia: .224" Col: 2.305"						
IMR 8208 XBR	20.5	2535	41,800 PSI	23.2	2792	55,000 PSI	IMR 4320				27.5	3260	49,700 CUP
IMR 3031	18.5	2365	42,200 PSI	21.3C	2692	53,700 PSI	IMR 4064				27.0C	3320	49,300 CUP
Benchmark	20.5	2523	37,400 CUP	22.8	2763	50,000 CUP	748				27.2	3220	43,000 CUP
H322	20.0	2578	44,900 CUP	21.8	2721	50,900 CUP	BL-C(2)	25.0	3212	38,400 CUP	27.0	3433	47,300 CUP
Bullet: 80 GR. SIE MK Dia: .224" Col: 2.550"						IMR 4895				27.0	3310	49,500 CUP	
CFE 223	23.0	2638	46,700 PSI	24.4	2785	53,600 PSI	H335	25.0	3232	41,400 CUP	27.0	3476	48,200 CUP
Varget	22.0	2547	40,300 CUP	25.0C	2869	51,500 CUP	H4895	26.0	3166	41,400 CUP	28.5	3306	45,900 CUP
IMR 4320	21.5	2484	42,600 PSI	23.1	2647	51,700 PSI	IMR 3031				26.0C	3350	49,000 CUP
IMR 4064	20.0	2415	39,500 PSI	22.7C	2673	51,900 PSI	H322	24.0	3128	38,100 CUP	26.0	3385	49,300 CUP
IMR 4166	20.3	2446	43,400 PSI	22.6C	2704	54,500 PSI	IMR 4198				21.5	3255	49,500 CUP
BL-C(2)	23.0	2576	39,700 CUP	25.5	2768	49,400 CUP	H4198	21.5	3147	39,600 CUP	23.5	3379	45,400 CUP
IMR 4895	20.0	2346	41,300 PSI	23.0C	2708	53,900 PSI	Bullet: 53 GR. SIE HP Dia: .224" Col: 2.275"						
H335	20.0	2453	39,700 CUP	22.5	2744	50,000 CUP	748				27.2	3270	45,500 CUP
H4895	21.5	2578	40,100 CUP	24.0	2825	50,000 CUP	BL-C(2)	25.0	3074	39,000 CUP	27.0	3313	47,800 CUP
IMR 8208 XBR	19.0	2456	44,400 PSI	21.0	2628	52,900 PSI	H335	25.0	3089	40,000 CUP	27.0	3340	47,600 CUP
IMR 3031	18.5	2336	42,600 PSI	21.0	2632	51,500 PSI	H4895	25.5	3137	40,800 CUP	28.0	3272	48,500 CUP
Benchmark	20.5	2525	43,900 CUP	22.5	2700	49,600 CUP	H322	24.0	3014	39,200 CUP	25.0	3285	49,800 CUP
H322	20.0	2546	40,700 CUP	22.0	2744	49,000 CUP	H4198	21.0	3076	38,400 CUP	23.0	3282	45,900 CUP
Bullet: 82 GR. BER BT TARG Dia: .224" Col: 2.375"						Bullet: 55 GR. HDY SP Dia: .224" Col: 2.325"							
H414	23.2	2478	44,700 PSI	25.0	2667	53,700 PSI	H414	28.5	2968	35,400 CUP	31.0	3209	44,600 CUP
760	23.2	2478	44,700 PSI	25.0	2667	53,700 PSI	H380	28.5	2952	39,000 CUP	31.0	3136	44,900 CUP
CFE 223	21.7	2518	44,000 PSI	23.5	2724	53,300 PSI	IMR 4320				27.0	3095	50,200 CUP
Varget	20.0	2417	44,000 PSI	21.5	2590	52,800 PSI	IMR 4064				26.5C	3180	50,000 CUP
IMR 4320	20.5	2398	45,000 PSI	22.2	2582	53,300 PSI	748				27.2	3215	42,500 CUP
IMR 4166	20.3	2461	46,200 PSI	22.5C	2648	53,400 PSI	BL-C(2)	24.5	3021	38,000 CUP	26.5	3240	46,800 CUP
BL-C(2)	21.1	2429	43,300 PSI	22.9	2617	52,200 PSI	IMR 4895				26.0	3115	49,600 CUP
IMR 4895	20.0	2380	43,100 PSI	21.7	2590	52,700 PSI	H335	24.0	3086	39,800 CUP	26.0	3294	48,100 CUP
H4895	18.9	2448	46,500 PSI	20.4	2585	52,700 PSI	H4895	25.5	3121	39,000 CUP	28.0	3257	48,900 CUP
IMR 8208 XBR	18.4	2392	44,440 PSI	19.9	2554	52,100 PSI	IMR 3031				25.5	3215	49,900 CUP
Bullet: 90 GR. SIE HPBT Dia: .224" Col: 2.380"						IMR 4198				20.5	3090	50,000 CUP	
H414	22.5	2332	41,700 PSI	24.0	2482	52,100 PSI	H4198	21.0	3024	37,800 CUP	23.0	3222	46,300 CUP
760	22.5	2332	41,700 PSI	24.0	2482	52,100 PSI	Bullet: 63 GR. SIE SP Dia: .224" Col: 2.280"						
CFE 223	21.0	2391	45,900 PSI	22.8	2554	53,500 PSI	H414	27.5	2786	34,200 CUP	30.0	3085	45,400 CUP
Varget	21.0	2332	46,700 PSI	22.3C	2447	52,100 PSI	H380	27.5	2839	39,000 CUP	30.0	2977	45,200 CUP
IMR 4320	21.0	2338	47,800 PSI	22.5C	2476	53,800 PSI	BL-C(2)	24.0	2913	39,600 CUP	26.0	3078	49,600 CUP
IMR 4166	19.3	2272	42,600 PSI	21.4C	2510	53,800 PSI	H335	23.5	2910	41,400 CUP	25.5	3057	49,100 CUP
BL-C(2)	21.0	2291	41,400 PSI	22.5	2491	52,300 PSI	H4895	24.5	2869	37,800 CUP	26.5	3046	48,400 CUP
IMR 4895	21.0	2356	46,200 PSI	22.5C	2527	53,000 PSI	H322	21.5	2763	38,100 CUP	23.5	2934	48,900 CUP
H4895	20.0	2352	47,500 PSI	21.5	2481	53,500 PSI	H4198	18.5	2845	40,200 CUP	20.5	3019	47,800 CUP
IMR 8208 XBR	18.0	2270	45,600 PSI	19.6	2419	52,800 PSI	22-250 REMINGTON						
222 REMINGTON MAGNUM						Case: Winchester Twist: 1:14"							
Case: Remington Twist: 1:14"						Barrel: 24" Trim: 1.902" Primer: Winchester LR, Large Rifle							
Barrel: 26" Trim: 1.840" Primer: Remington 7 1/2, Small Rifle Magnum						Bullet: 35 GR. NOS LF Dia: .224" Col: 2.350"							
Bullet: 40 GR. SIE SP Dia: .224" Col: 2.145"						Varget 35.6 3929 42,900 PSI 39.5C 4421 61,000 PSI							
BL-C(2) 27.5 3513 37,800 CUP 30.0 3818 49,200 CUP						IMR 4320 37.5 4084 50,600 PSI 39.9 4393 61,600 PSI							
						IMR 4064 34.7 3855 41,200 PSI 38.5C 4342 56,400 PSI							

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 4166	35.8	3926	46,600 PSI	39.8C	4332	60,300 PSI	H380	38.0	3509	41,900 CUP	41.0	3717	46,600 CUP
IMR 4895	36.8	4087	48,400 PSI	39.2	4396	59,900 PSI	CFE 223	36.0	3596	47,600 PSI	39.3	3932	63,100 PSI
H4895	34.1	4120	47,200 PSI	37.5C	4432	58,200 PSI	Varget	34.0	3630	45,500 CUP	36.0	3784	50,000 CUP
IMR 8208 XBR	35.1	4096	46,900 PSI	39.0	4469	60,700 PSI	IMR 4320	35.0	3550	52,000 PSI	37.5	3789	62,400 PSI
IMR 3031	32.9	4016	44,300 PSI	35.0	4306	55,600 PSI	IMR 4064	34.5	3538	50,200 PSI	36.9C	3795	62,400 PSI
Benchmark	35.7	4170	48,700 PSI	38.0	4476	62,600 PSI	IMR 4166	33.3	3537	52,100 PSI	36.2	3805	62,400 PSI
Bullet: 36 GR. BAR VG FB Dia: .224" Col: 2.350"													
Varget	37.8	4061	50,800 PSI	40.2C	4277	59,800 PSI	BL-C(2)	31.0	3461	44,600 CUP	34.0	3702	49,700 CUP
IMR 4320	37.1	3995	49,800 PSI	39.5	4254	59,600 PSI	IMR 4895	34.5	3509	48,200 PSI	37.0	3808	62,000 PSI
IMR 4064	35.7	3976	48,300 PSI	38.0C	4202	55,700 PSI	H335	31.0	3417	43,200 CUP	33.5	3657	49,200 CUP
IMR 4895	37.1	4063	50,900 PSI	40.0C	4367	63,100 PSI	H4895	32.5	3467	44,400 CUP	35.5	3729	49,600 CUP
H4895	36.6	4130	50,700 PSI	39.0C	4376	61,400 PSI	IMR 8208 XBR	32.5	3612	52,200 PSI	35.5	3837	60,100 PSI
IMR 8208 XBR	36.5	4137	50,700 PSI	38.8	4404	62,300 PSI	IMR 3031	32.0	3474	48,000 PSI	34.0	3768	62,500 PSI
IMR 3031	33.7	3953	45,500 PSI	35.8	4333	61,500 PSI	Benchmark	32.5	3602	45,800 CUP	34.6	3755	49,800 CUP
Benchmark	35.6	4108	51,700 PSI	37.8	4335	61,100 PSI	H322	29.0	3379	45,500 CUP	31.0	3498	48,000 CUP
Bullet: 40 GR. NOS BT Dia: .224" Col: 2.350"													
H414	38.0	3644	39,600 CUP	41.0	3933	47,100 CUP	Hybrid 100V	36.0	3254	43,500 PSI	39.0	3466	50,600 PSI
760	38.0	3644	39,600 CUP	41.0	3933	47,100 CUP	H4350	37.0	3296	46,400 CUP	39.0	3490	47,800 CUP
H380	38.0	3647	34,500 CUP	41.0	3855	39,200 CUP	H414	36.0	3324	40,200 CUP	39.0	3582	46,700 CUP
CFE 223	40.0	4036	47,600 PSI	43.0C	4328	58,300 PSI	760	36.0	3324	40,200 CUP	39.0	3582	46,700 CUP
Varget	37.5	3936	43,400 CUP	39.5	4135	51,100 CUP	H380	38.0	3507	45,400 CUP	41.0	3713	50,700 CUP
IMR 4320	37.0	3945	52,400 PSI	39.5	4201	62,600 PSI	CFE 223	36.0	3557	49,300 PSI	39.2	3855	63,500 PSI
IMR 4064	36.0	3877	47,700 PSI	38.5C	4187	60,500 PSI	Varget	34.0	3490	46,100 CUP	36.5	3664	50,400 CUP
IMR 4166	35.5	3900	52,100 PSI	38.6C	4198	62,300 PSI	IMR 4320	34.0	3480	52,900 PSI	36.5	3689	62,200 PSI
IMR 4895	36.0	3807	45,500 PSI	39.0C	4189	60,200 PSI	IMR 4064	34.0	3461	50,000 PSI	36.3	3713	62,000 PSI
H4895	34.0	3750	43,800 CUP	37.0	4060	48,700 CUP	IMR 4166	33.3	3454	51,000 PSI	36.2	3751	63,400 PSI
IMR 8208 XBR	35.0	3944	47,000 PSI	39.0	4336	63,500 PSI	BL-C(2)	31.0	3410	43,800 CUP	34.0	3606	49,600 CUP
IMR 3031	34.0	3941	50,200 PSI	36.3	4224	62,100 PSI	IMR 4895	34.0	3486	50,900 PSI	36.5	3725	62,400 PSI
Benchmark	34.0	3837	41,600 CUP	36.5	4114	50,100 CUP	H335	30.5	3400	44,400 CUP	33.0	3589	51,100 CUP
Bullet: 45 GR. BAR XBT Dia: .224" Col: 2.340"													
H414	38.0	3537	40,200 CUP	41.0	3899	47,600 CUP	H4895	32.5	3446	45,000 CUP	35.5	3670	49,300 CUP
760	38.0	3537	40,200 CUP	41.0	3899	47,600 CUP	IMR 8208 XBR	32.0	3514	52,300 PSI	35.8	3768	62,700 PSI
H380	38.0	3612	37,900 CUP	41.0	3839	43,500 CUP	IMR 3031	32.0	3474	51,300 PSI	34.1	3691	62,500 PSI
Varget	35.0	3652	46,000 CUP	38.0	3921	49,200 CUP	Benchmark	31.6	3532	46,200 CUP	33.6	3674	50,200 CUP
IMR 4320	36.0	3780	53,100 PSI	38.2	3990	62,500 PSI	H322	28.0	3339	46,200 CUP	30.0	3480	49,800 CUP
IMR 4064	35.0	3708	48,700 PSI	38.0C	4042	63,000 PSI	Trail Boss	9.1	1664	17,200 PSI	13.0	1984	26,600 PSI
BL-C(2)	32.0	3612	42,600 CUP	35.0	3928	49,100 CUP	Bullet: 60 GR. HDY V-MAX Dia: .224" Col: 2.350"						
IMR 4895	35.0	3666	47,400 PSI	38.0	4007	61,700 PSI	Suprform	39.0	3390	45,500 PSI	43.0C	3738	60,000 PSI
H335	31.5	3593	41,400 CUP	34.5	3908	48,500 CUP	Hybrid 100V	35.0	3168	44,900 PSI	38.0C	3366	50,900 PSI
H4895	34.0	3660	47,300 CUP	37.0	3918	49,100 CUP	H4350	39.0	3374	51,600 PSI	41.5C	3570	60,500 PSI
IMR 3031	33.0	3704	47,600 PSI	35.2	4015	62,300 PSI	IMR 4451	35.5	3194	47,800 PSI	38.9C	3479	58,800 PSI
Benchmark	33.5	3786	45,300 CUP	36.0	3979	51,000 CUP	H414	37.0	3273	47,600 PSI	40.0	3548	60,300 PSI
H322	31.0	3490	44,600 CUP	32.5	3720	48,500 CUP	760	37.0	3273	47,600 PSI	40.0	3548	60,300 PSI
Bullet: 50 GR. SIE SP Dia: .224" Col: 2.350"													
H4350	39.0	3410	43,600 CUP	42.0	3579	48,900 CUP	H380	37.5	3335	51,000 PSI	40.5	3580	62,000 PSI
H414	37.0	3494	41,400 CUP	40.0	3765	48,600 CUP	CFE 223	35.0	3441	51,900 PSI	37.6	3688	63,800 PSI
760	37.0	3494	41,400 CUP	40.0	3765	48,600 CUP	Varget	33.0	3318	52,200 PSI	35.8	3503	60,400 PSI
H380	38.0	3562	41,700 CUP	41.0	3742	45,300 CUP	IMR 4166	31.4	3280	51,300 PSI	34.2	3555	62,500 PSI
CFE 223	37.0	3702	51,100 PSI	39.8	3968	62,600 PSI	BL-C(2)	34.0	3276	47,100 PSI	37.0	3560	61,000 PSI
Varget	34.5	3596	43,600 CUP	37.5	3834	50,400 CUP	H335	31.5	3272	50,800 PSI	34.0	3494	61,400 PSI
IMR 4320	35.0	3582	50,200 PSI	38.0	3864	62,800 PSI	H4895	32.0	3340	51,700 PSI	35.0	3551	61,300 PSI
IMR 4064	34.5	3560	47,900 PSI	37.0	3866	61,900 PSI	IMR 8208 XBR	31.5	3412	55,600 PSI	34.0	3550	61,000 PSI
IMR 4166	33.8	3564	51,200 PSI	36.8C	3874	63,200 PSI	Benchmark	29.0	3183	49,000 PSI	32.0	3406	59,900 PSI
BL-C(2)	31.5	3506	43,600 CUP	34.5	3740	48,400 CUP	H322	29.0	3222	50,900 PSI	31.5	3434	62,000 PSI
IMR 4895	35.0	3587	49,100 PSI	37.6	3862	61,500 PSI	Bullet: 62 GR. BAR TAC-X BT Dia: .224" Col: 2.385"						
H335	31.5	3519	44,400 CUP	34.5	3753	48,700 CUP	Suprform	38.3	3240	38,900 PSI	42.5C	3628	54,900 PSI
H4895	33.5	3530	43,800 CUP	36.5	3827	50,200 CUP	IMR 4451	36.0	3258	49,200 PSI	39.0C	3468	59,000 PSI
IMR 8208 XBR	33.0	3728	55,200 PSI	36.0	3925	62,900 PSI	H414	35.8	3247	45,400 PSI	38.9	3537	59,300 PSI
IMR 3031	33.0	3601	49,500 PSI	35.0	3862	62,600 PSI	760	35.8	3247	45,400 PSI	38.9	3537	59,300 PSI
Benchmark	33.5	3718	45,900 CUP	36.0	3903	51,400 CUP	CFE 223	34.0	3284	49,200 PSI	37.0	3584	63,600 PSI
H322	30.0	3441	46,200 CUP	32.0	3628	50,300 CUP	Varget	32.9	3354	54,200 PSI	35.0	3500	60,400 PSI
Bullet: 52 GR. HDY A-MAX Dia: .224" Col: 2.350"													
H4350	39.0	3402	43,800 CUP	41.0	3557	49,400 CUP	IMR 4064	31.5	3239	47,300 PSI	35.0	3544	61,200 PSI
H414	37.0	3461	42,000 CUP	40.0	3692	48,900 CUP	IMR 4166	31.4	3305	51,900 PSI	34.2	3566	63,200 PSI
760	37.0	3461	42,000 CUP	40.0	3692	48,900 CUP	IMR 4895	32.8	3312	51,000 PSI	35.6	3549	62,000 PSI
NEVER EXCEED MAXIMUM LOADS													
*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 63 GR. SIE SP Dia: .224" Col: 2.350"							H4895	37.0	3768	41,400 CUP	40.0	4126	52,000 CUP
Suprform	38.0	3294	44,600 PSI	42.7C	3674	61,400 PSI	IMR 3031	35.0	3904	48,100 CUP	38.5	4189	52,000 CUP
Hybrid 100V	35.0	3146	44,700 PSI	38.0C	3382	53,900 PSI	Bullet: 45 GR. HDY SP Dia: .224" Col: 2.680"						
H4350	36.0	3210	45,400 CUP	38.0	3391	48,000 CUP	H414	41.5	3849	48,700 CUP	45.0	4100	51,700 CUP
IMR 4451	35.0	3184	51,700 PSI	38.4C	3441	62,300 PSI	760	41.5	3849	48,700 CUP	45.0	4100	51,700 CUP
H414	35.0	3262	43,200 CUP	38.0	3432	47,100 CUP	H380	40.5	3784	42,000 CUP	44.0	4041	52,400 CUP
IMR 4350	38.0	3308	52,900 PSI	40.0C	3467	60,300 PSI	Varget	36.0	3777	47,100 CUP	40.2	4002	52,100 CUP
760	35.0	3262	43,200 CUP	38.0	3432	47,100 CUP	H4895	36.5	3676	38,400 CUP	39.5	3996	52,100 CUP
H380	36.0	3266	46,600 CUP	38.5	3419	51,200 CUP	Bullet: 50 GR. HDY SP Dia: .224" Col: 2.680"						
CFE 223	35.0	3400	53,900 PSI	37.3	3597	64,000 PSI	H414	40.5	3663	45,900 CUP	44.0	3826	49,600 CUP
Varget	29.5	3039	39,500 CUP	34.0	3426	50,400 CUP	760	40.5	3663	45,900 CUP	44.0	3826	49,600 CUP
IMR 4064	33.0	3269	50,800 PSI	35.3	3499	62,900 PSI	H380	40.0	3668	41,400 CUP	43.5	3947	53,800 CUP
IMR 4166	32.4	3301	52,900 PSI	34.9	3523	62,600 PSI	Varget	34.5	3616	47,200 CUP	36.0	3770	50,200 CUP
IMR 4895	33.0	3287	51,500 PSI	35.5	3502	62,700 PSI	IMR 4064	35.0	3640	46,900 CUP	38.4	3905	53,000 CUP
H4895	31.5	3317	47,300 CUP	34.0	3486	50,400 CUP	BL-C(2)	35.0	3431	40,200 CUP	38.0	3888	51,000 CUP
IMR 8208 XBR	30.0	3256	52,400 PSI	33.0	3459	62,100 PSI	IMR 4895	35.0	3661	48,700 CUP	38.7	3868	52,900 CUP
IMR 3031	31.0	3284	53,300 PSI	33.1	3457	62,700 PSI	H4895	35.0	3460	39,000 CUP	38.0	3840	51,200 CUP
Bullet: 70 GR. SPR SP Dia: .224" Col: 2.330"							IMR 3031	33.0	3681	48,600 CUP	36.5	3877	53,100 CUP
H1000	36.0	3042	41,100 CUP	38.0	3187	47,500 CUP	Bullet: 52 GR. SIE HPBT Dia: .224" Col: 2.680"						
Suprform	37.0	3206	50,500 PSI	40.8C	3499	63,700 PSI	H414	39.5	3596	43,100 CUP	42.0	3792	49,900 CUP
H4831	35.0	2976	42,000 CUP	38.0	3189	50,300 CUP	760	39.5	3596	43,100 CUP	42.0	3792	49,900 CUP
Hybrid 100V	35.0	3091	49,000 PSI	38.0C	3322	58,500 PSI	H380	39.0	3632	47,100 CUP	41.5	3792	51,400 CUP
H4350	34.0	3007	44,800 CUP	36.0	3129	49,600 CUP	Varget	34.0	3516	42,700 CUP	36.5	3687	50,300 CUP
IMR 4451	34.0	3012	47,700 PSI	37.5C	3269	59,400 PSI	BL-C(2)	35.7	3546	44,200 CUP	38.0	3801	51,200 CUP
H414	31.0	2860	42,000 CUP	34.0	3117	49,400 CUP	H4895	33.8	3588	45,100 CUP	36.0	3736	50,000 CUP
IMR 4350	36.0	3162	54,500 PSI	38.2C	3324	62,500 PSI	Bullet: 55 GR. HDY SP Dia: .224" Col: 2.680"						
760	31.0	2860	42,000 CUP	34.0	3117	49,400 CUP	H4831	41.5	3194	36,600 CUP	46.0	3616	46,600 CUP
H380	33.0	3006	45,200 CUP	35.0	3161	51,500 CUP	Hybrid 100V	38.0	3358	44,700 CUP	42.0C	3627	52,600 CUP
CFE 223	33.0	3147	52,600 PSI	35.8	3373	63,200 PSI	H4350	39.0	3225	42,000 CUP	42.0	3619	50,800 CUP
Varget	29.5	3006	44,700 CUP	32.0	3196	50,300 CUP	IMR 4451	38.0	3401	45,600 CUP	40.9	3650	53,800 CUP
IMR 4320	31.0	3111	55,000 PSI	33.5	3282	62,600 PSI	H414	40.5	3536	47,300 CUP	44.0	3833	53,700 CUP
IMR 4064	31.0	3106	53,200 PSI	33.5	3298	62,600 PSI	760	40.5	3536	47,300 CUP	44.0	3833	53,700 CUP
IMR 4166	30.5	3067	50,200 PSI	33.2	3330	61,800 PSI	H380	39.0	3580	45,900 CUP	42.5	3839	53,300 CUP
IMR 4895	31.0	3111	53,500 PSI	33.3	3278	62,300 PSI	Varget	34.0	3516	47,000 CUP	36.0	3645	51,900 CUP
H4895	28.0	2933	43,000 CUP	31.5	3196	50,700 CUP	IMR 4064	34.0	3498	46,100 CUP	37.5	3742	52,500 CUP
IMR 8208 XBR	28.0	3015	49,800 PSI	31.0	3246	61,600 PSI	BL-C(2)	34.0	3426	44,400 CUP	36.0	3682	49,900 CUP
IMR 3031	29.0	3068	53,600 PSI	31.5	3248	63,600 PSI	IMR 4895	34.0	3546	48,500 CUP	38.0	3739	53,000 CUP
220 SWIFT							H4895	34.0	3481	45,900 CUP	37.0	3698	52,000 CUP
Case: Winchester Twist: 1:14"							IMR 3031	32.0	3490	47,300 CUP	35.2	3687	52,700 CUP
Barrel: 24" Trim: 2.195" Primer: Winchester LR, Large Rifle							Bullet: 60 GR. NOS PART Dia: .224" Col: 2.680"						
Bullet: 35 GR. NOS LF Dia: .224" Col: 2.680"							H4831	41.5	3252	41,600 CUP	46.0C	3556	51,800 CUP
H414	41.4	4011	43,600 CUP	45.0	4304	51,800 CUP	Hybrid 100V	37.5	3287	44,800 CUP	41.0C	3550	50,900 CUP
760	41.4	4011	43,600 CUP	45.0	4304	51,800 CUP	H4350	37.0	3230	39,800 CUP	41.0	3527	50,600 CUP
H380	41.2	3988	41,200 CUP	44.8	4226	47,700 CUP	IMR 4451	37.0	3312	45,600 CUP	39.8	3557	53,400 CUP
Varget	38.5	4035	43,500 CUP	41.0	4251	51,100 CUP	H414	38.5	3425	43,900 CUP	41.7	3647	51,400 CUP
IMR 4064	37.8	3955	42,800 CUP	40.2	4238	51,300 CUP	760	38.5	3425	43,900 CUP	41.7	3647	51,400 CUP
IMR 4895	38.3	3987	47,000 CUP	40.7	4222	52,100 CUP	H380	35.0	3188	44,400 CUP	38.0	3413	51,900 CUP
H4895	37.6	4171	47,400 CUP	40.0	4401	52,300 CUP	Varget	33.0	3242	40,000 CUP	36.0	3473	49,000 CUP
IMR 3031	36.2	4019	45,200 CUP	38.5	4248	51,300 CUP	IMR 4064	33.0	3322	46,600 CUP	36.0	3539	51,800 CUP
Bullet: 36 GR. BAR VG FB Dia: .224" Col: 2.635"							IMR 4166	33.6	3359	48,100 CUP	35.8	3525	53,700 CUP
Varget	40.0	4076	44,600 CUP	42.5	4306	50,900 CUP	IMR 4895	33.0	3270	44,100 CUP	36.0	3520	53,100 CUP
IMR 4064	38.3	3988	43,900 CUP	40.7	4248	51,300 CUP	H4895	30.5	3165	39,200 CUP	33.5	3401	49,600 CUP
IMR 4895	38.5	3985	44,300 CUP	41.0	4237	50,700 CUP	Bullet: 62 GR. BAR TAC-X BT Dia: .224" Col: 2.680"						
H4895	37.6	4002	44,300 CUP	40.0	4251	50,800 CUP	Hybrid 100V	37.8	3254	42,200 CUP	42.0	3539	51,800 CUP
IMR 8208 XBR	38.0	4078	46,800 CUP	40.0	4296	53,000 CUP	H4350	37.2	3177	43,500 CUP	40.5C	3389	52,400 CUP
IMR 3031	36.0	3983	43,800 CUP	37.9	4252	50,600 CUP	IMR 4451	37.2	3251	46,300 CUP	40.0	3501	53,600 CUP
Bullet: 40 GR. SIE HP Dia: .224" Col: 2.680"							H414	37.2	3181	42,900 CUP	40.4	3394	51,200 CUP
H414	42.5	3928	45,500 CUP	46.0	4213	51,600 CUP	760	37.2	3181	42,900 CUP	40.4	3394	51,200 CUP
760	42.5	3928	45,500 CUP	46.0	4213	51,600 CUP	H380	36.7	3160	45,900 CUP	39.0	3338	51,700 CUP
H380	40.5	3867	44,400 CUP	44.0	4124	50,000 CUP	Varget	32.3	3161	44,100 CUP	34.3	3315	50,400 CUP
Varget	38.0	4007	49,800 CUP	40.5	4113	49,800 CUP	IMR 4064	33.2	3236	45,300 CUP	35.3	3369	50,000 CUP
IMR 4064	36.0	3777	44,700 CUP	40.0	4110	51,400 CUP	IMR 4166	31.9	3131	44,900 CUP	34.0	3328	53,000 CUP
IMR 4895	36.0	3743	42,500 CUP	40.5	4093	51,300 CUP	IMR 4895	33.4	3217	46,300 CUP	35.5	3360	50,600 CUP
H335	37.0	3923	44,400 CUP	40.0	4158	53,100 CUP	NEVER EXCEED MAXIMUM LOADS						

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads						
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure				
6mm PPC																	
Case: Sako (REF)			Twist: 1:14"						Case: Remington			Twist: 1:9"					
Barrel: 24"			Trim: 1.510"			Primer: Remington 7 1/2, Small Rifle Magnum			Barrel: 24"			Trim: 1.510"			Primer: Remington 7 1/2, Small Rifle Magnum		
Bullet: 63 GR. SIE SP Dia: .224" Col: 2.680"																	
H4895	31.7	3121	45,700 CUP	33.7	3364	51,400 CUP	H4895	26.0	2714	42,000 CUP	28.0	3034	46,500 CUP				
H4831	41.5	3180	37,200 CUP	46.0	3586	52,000 CUP	IMR 8208 XBR	27.0	2900	47,400 CUP	29.5C	3193	50,300 CUP				
Hybrid 100V	37.5	3269	42,700 CUP	41.0C	3517	51,200 CUP	Benchmark	26.0	2803	35,500 CUP	29.0	3149	50,500 CUP				
H4350	37.0	3181	46,000 CUP	39.0	3474	52,000 CUP	H322	25.0	2967	46,500 CUP	26.5	3068	50,000 CUP				
IMR 4451	36.2	3237	45,400 CUP	39.6	3499	52,800 CUP	H4198	21.0	2745	47,000 CUP	22.0	2839	50,400 CUP				
H414	38.5	3339	44,400 CUP	42.0	3595	52,100 CUP	Bullet: 75 GR. SPR HP Dia: .243" Col: 2.115"										
760	38.5	3339	44,400 CUP	42.0	3595	52,100 CUP	CFE 223	29.0	2776	35,700 CUP	31.0	3050	46,000 CUP				
H380	38.0	3405	45,900 CUP	41.0	3580	51,900 CUP	Varget	26.0	2737	40,000 CUP	28.0	2906	47,000 CUP				
Varget	32.0	3181	42,200 CUP	34.0	3407	49,300 CUP	BL-C(2)	28.5	2788	43,400 CUP	30.5	2974	47,800 CUP				
IMR 4166	33.0	3276	46,800 CUP	34.4	3403	53,200 CUP	H335	24.5	2712	44,000 CUP	27.0	2990	49,000 CUP				
H4895	32.5	3218	40,800 CUP	35.5	3484	51,000 CUP	H4895	25.5	2740	43,500 CUP	27.5	2981	48,500 CUP				
Bullet: 70 GR. SPR SP Dia: .224" Col: 2.680"						Bullet: 80 GR. SPR SP Dia: .243" Col: 2.115"											
H1000	42.0	3149	43,800 CUP	44.0	3317	50,200 CUP	CFE 223	28.0	2763	36,300 CUP	31.0	3042	49,100 CUP				
H4831	37.0	2991	45,800 CUP	42.0	3359	52,600 CUP	Varget	26.0	2689	38,200 CUP	28.0	2843	44,400 CUP				
Hybrid 100V	37.0	3188	44,800 CUP	40.0C	3397	51,800 CUP	BL-C(2)	28.0	2748	42,500 CUP	30.0	2904	47,500 CUP				
H4350	36.0	3027	45,200 CUP	38.0	3313	51,200 CUP	H335	24.0	2650	42,000 CUP	26.0	2822	48,500 CUP				
IMR 4451	35.3	3105	45,400 CUP	38.6	3373	53,800 CUP	H4895	25.0	2641	40,400 CUP	27.0	2904	47,500 CUP				
H414	34.0	2955	44,200 CUP	37.0	3148	50,300 CUP	IMR 8208 XBR	26.0	2811	39,700 CUP	28.3	3023	51,400 CUP				
760	34.0	2955	44,200 CUP	37.0	3148	50,300 CUP	Benchmark	25.0	2674	36,400 CUP	28.0	2970	50,400 CUP				
Varget	31.0	3103	46,500 CUP	33.0	3247	49,900 CUP	H322	23.5	2658	42,000 CUP	25.5	2866	47,500 CUP				
IMR 4166	32.7	3140	46,200 CUP	34.8	3347	53,600 CUP	H4198	19.0	2359	37,600 CUP	21.0	2641	49,500 CUP				
Bullet: 55 GR. NOS BT Dia: .243" Col: 2.100"																	
CFE 223	31.0	3073	36,900 CUP	33.0	3324	44,100 CUP	Bullet: 85 GR. SIE HPBT Dia: .243" Col: 2.080"										
BL-C(2)	31.0	3138	42,600 CUP	33.0	3323	49,900 CUP	CFE 223	27.0	2618	34,800 CUP	30.0	2920	46,900 CUP				
H335	28.0	3096	40,100 CUP	30.2	3342	50,700 CUP	Varget	26.0	2671	43,400 CUP	28.0	2848	50,000 CUP				
Benchmark	28.0	3206	42,100 CUP	30.0	3405	50,000 CUP	BL-C(2)	27.0	2639	43,000 CUP	29.0	2818	48,000 CUP				
H322	27.5	3161	39,100 CUP	29.5	3390	49,600 CUP	H335	23.5	2560	42,500 CUP	25.0	2739	47,500 CUP				
H4198	25.0	3281	42,300 CUP	26.7	3443	50,200 CUP	H4895	24.0	2540	41,500 CUP	26.0	2782	48,000 CUP				
Bullet: 58 GR. HDY V-MAX Dia: .243" Col: 2.075"						Bullet: 107 GR. SIE HPBT Dia: .243" Col: 2.240"											
CFE 223	30.0	3019	35,900 CUP	32.0	3243	43,400 CUP	CFE 223	26.0	2476	38,700 CUP	28.5	2702	48,600 CUP				
BL-C(2)	30.0	3061	42,500 CUP	32.0	3243	49,600 CUP	Varget	26.0	2503	44,900 CUP	27.7C	2626	50,000 CUP				
H335	27.0	2998	38,500 CUP	29.0	3215	49,200 CUP	BL-C(2)	26.3	2463	41,800 CUP	28.0	2599	48,700 CUP				
IMR 8208 XBR	27.5	3084	39,400 CUP	30.0C	3353	49,800 CUP	H335	23.1	2359	39,900 CUP	26.0	2582	51,100 CUP				
Benchmark	27.7	3118	39,800 CUP	29.5	3322	50,000 CUP	H4895	24.5	2426	41,500 CUP	26.8C	2631	49,700 CUP				
H322	27.0	3161	42,500 CUP	29.0	3355	50,600 CUP	IMR 8208 XBR	23.0	2403	42,400 CUP	25.3	2584	51,300 CUP				
H4198	24.0	3109	40,200 CUP	25.7	3349	49,300 CUP	Benchmark	24.0	2437	43,400 CUP	25.8	2584	51,200 CUP				
Bullet: 60 GR. SIE HP Dia: .243" Col: 2.080"																	
CFE 223	30.0	2997	38,600 CUP	32.0	3208	46,600 CUP	6mm BR REMINGTON										
Varget	27.0	2901	40,200 CUP	29.0	3076	44,100 CUP	Case: Remington			Twist: 1:9"							
BL-C(2)	30.0	2959	44,000 CUP	31.5	3041	46,500 CUP	Barrel: 24"			Trim: 1.510"							
H335	26.0	2891	45,200 CUP	28.0	3201	49,000 CUP				Primer: Remington 7 1/2, Small Rifle Magnum							
H4895	27.0	2913	44,500 CUP	29.0	3218	48,500 CUP	Bullet: 55 GR. NOS BT Dia: .243" Col: 2.080"										
IMR 8208 XBR	27.0	3053	40,000 CUP	30.0C	3334	51,100 CUP	CFE 223	34.0	3260	37,300 CUP	36.0	3440	42,500 CUP				
Benchmark	26.0	2909	36,100 CUP	29.0	3236	48,600 CUP	Varget	31.0	3043	31,600 CUP	34.0C	3347	41,800 CUP				
H322	26.0	3090	45,000 CUP	27.0	3165	47,000 CUP	BL-C(2)	34.0	3234	40,400 CUP	36.0	3406	46,400 CUP				
H4198	21.0	2856	46,500 CUP	23.0	2973	49,500 CUP	H335	30.0	3201	37,900 CUP	32.5	3464	50,600 CUP				
Bullet: 65 GR. HDY V-MAX Dia: .243" Col: 2.075"						Bullet: 58 GR. HDY V-MAX Dia: .243" Col: 2.140"											
CFE 223	30.0	2999	39,200 CUP	32.0	3200	46,000 CUP	CFE 223	34.0	3271	38,500 CUP	36.0	3484	46,500 CUP				
BL-C(2)	29.0	2907	40,500 CUP	31.0	3121	49,300 CUP	Varget	31.0	3052	34,300 CUP	34.0C	3355	46,100 CUP				
H335	26.7	2933	41,400 CUP	28.4	3111	49,500 CUP	BL-C(2)	33.0	3203	41,900 CUP	35.0	3386	48,600 CUP				
IMR 8208 XBR	27.0	3064	42,300 CUP	29.5C	3253	50,900 CUP	H335	30.0	3209	41,500 CUP	32.2	3409	51,200 CUP				
Benchmark	26.6	3003	42,700 CUP	28.3	3159	49,800 CUP	H4895	31.5	3250	38,000 CUP	33.5	3415	45,100 CUP				
H322	26.3	2984	38,900 CUP	28.0	3178	49,400 CUP	Bullet: 70 GR. NOS BT Dia: .243" Col: 2.100"										
H4198	23.5	3011	41,700 CUP	25.5	3218	50,500 CUP	Varget	27.0	2845	39,800 CUP	29.0	3034	48,000 CUP				
Bullet: 70 GR. NOS BT Dia: .243" Col: 2.100"						Bullet: 85 GR. SIE HPBT Dia: .243" Col: 2.080"											
Varget	27.0	2845	39,800 CUP	29.0	3034	48,000 CUP	CFE 223	34.0	3260	37,300 CUP	36.0	3440	42,500 CUP				
BL-C(2)	29.0	2812	42,500 CUP	31.0	3012	47,500 CUP	Varget	31.0	3043	31,600 CUP	34.0C	3347	41,800 CUP				
H335	25.0	2846	44,000 CUP	27.5	3033	48,500 CUP	BL-C(2)	34.0	3234	40,400 CUP	36.0	3406	46,400 CUP				

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads									
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure							
IMR 8208 XBR	30.0	3207	36,800 CUP	33.5C	3552	50,000 CUP	H335	24.5	2600	41,000 CUP	26.5	2809	49,000 CUP							
Benchmark	30.0	3241	42,000 CUP	32.0	3450	50,600 CUP	H4895	24.5	2590	38,100 CUP	26.5	2770	49,500 CUP							
H322	29.5	3240	40,100 CUP	31.3	3415	48,400 CUP	IMR 8208 XBR	27.0	2782	41,400 CUP	29.8	3016	49,900 CUP							
H4198	26.0	3205	38,000 CUP	28.5	3454	49,900 CUP	Benchmark	27.7	2792	42,100 CUP	29.7	2960	49,800 CUP							
Bullet: 60 GR. SIE HP Dia: .243" Col: 2.080"							Bullet: 90 GR. SPR SP Dia: .243" Col: 2.115"													
CFE 223	34.0	3275	39,800 CUP	36.0	3472	48,000 CUP	CFE 223	30.0	2759	45,100 CUP	32.0	2910	50,600 CUP							
Varget	31.0	3161	36,000 CUP	34.0C	3442	48,500 CUP	Varget	27.5	2674	39,500 CUP	30.2	2886	47,500 CUP							
BL-C(2)	34.0	3154	38,700 CUP	36.0	3375	47,500 CUP	BL-C(2)	29.0	2738	44,000 CUP	31.0	2921	48,800 CUP							
H335	30.0	3184	41,500 CUP	32.0	3411	49,000 CUP	H335	24.0	2432	38,200 CUP	26.0	2688	49,000 CUP							
H4895	31.0	3177	42,000 CUP	33.0C	3384	47,000 CUP	H4895	24.5	2560	40,400 CUP	27.0	2743	48,000 CUP							
IMR 8208 XBR	29.0	3121	36,800 CUP	32.7	3475	48,900 CUP	IMR 8208 XBR	25.0	2599	41,500 CUP	28.0	2813	50,000 CUP							
Benchmark	30.0	3165	41,400 CUP	32.0	3373	49,900 CUP	Benchmark	27.0	2703	43,200 CUP	29.0	2868	49,300 CUP							
H322	30.0	3281	42,000 CUP	32.0	3481	49,500 CUP	H322	22.0	2423	40,600 CUP	24.0	2607	48,000 CUP							
H4198	25.0	3137	39,600 CUP	27.5	3378	50,700 CUP	Bullet: 100 GR. HDY SP Dia: .243" Col: 2.150"													
Bullet: 62 GR. BAR VG FB Dia: .243" Col: 2.140"							CFE 223	28.0	2497	40,000 CUP	30.0	2661	45,200 CUP							
CFE 223	32.0	3033	39,600 CUP	34.0	3183	46,000 CUP	Varget	26.0	2491	43,000 CUP	28.0	2649	48,900 CUP							
Varget	28.7	3102	45,200 CUP	31.5C	3258	49,200 CUP	BL-C(2)	27.0	2379	41,500 CUP	29.0	2599	47,000 CUP							
BL-C(2)	31.1	2963	42,300 CUP	33.0	3130	48,800 CUP	H335	24.0	2339	43,000 CUP	26.0	2537	50,000 CUP							
H335	28.5	2971	41,000 CUP	30.3	3120	48,400 CUP	H4895	24.5	2423	42,500 CUP	27.0	2603	49,000 CUP							
H4895	29.6	3166	41,500 CUP	31.5C	3349	49,300 CUP	IMR 8208 XBR	24.0	2388	40,500 CUP	27.0	2630	49,800 CUP							
IMR 8208 XBR	29.6	3146	41,600 CUP	31.5C	3307	47,900 CUP	Benchmark	26.0	2485	43,100 CUP	28.0	2670	49,500 CUP							
Benchmark	29.1	3060	40,300 CUP	31.0C	3265	48,300 CUP	H322	22.0	2275	42,000 CUP	23.5	2519	50,000 CUP							
H322	27.8	3070	42,000 CUP	29.6	3190	47,600 CUP	Bullet: 107 GR. SIE HPBT Dia: .243" Col: 2.250"													
H4198	24.4	3028	41,800 CUP	26.0	3145	47,700 CUP	CFE 223	28.0	2491	44,200 CUP	30.0	2632	49,000 CUP							
Bullet: 65 GR. HDY V-MAX Dia: .243" Col: 2.140"							Varget	26.0	2367	39,800 CUP	29.0C	2620	50,100 CUP							
CFE 223	33.0	3159	37,800 CUP	35.0	3350	46,700 CUP	BL-C(2)	28.0	2454	38,100 CUP	30.0	2644	44,200 CUP							
Varget	31.0	3021	42,200 CUP	33.0	3268	49,900 CUP	H335	26.0	2482	43,200 CUP	28.0	2649	50,400 CUP							
BL-C(2)	31.5	3012	38,200 CUP	34.0	3254	48,800 CUP	H4895	24.5	2329	37,900 CUP	27.5	2605	49,800 CUP							
H335	27.5	2907	36,800 CUP	30.5	3177	48,100 CUP	IMR 8208 XBR	24.0	2380	42,700 CUP	26.7	2555	50,400 CUP							
H4895	30.0	3064	37,700 CUP	33.0	3366	49,300 CUP	Benchmark	26.0	2466	42,000 CUP	28.0	2613	49,800 CUP							
IMR 8208 XBR	29.0	3084	36,300 CUP	32.3	3397	48,700 CUP	H322	23.0	2325	40,800 CUP	25.5	2525	49,200 CUP							
Benchmark	27.0	2997	36,000 CUP	30.5	3205	46,400 CUP	6MM DASHER													
H322	27.0	2978	36,800 CUP	30.5	3303	49,600 CUP	Case: Lapua (ref) Twist: 1:8"							Barrel: 30" Trim: 1.540" Primer: CCI BR4, Small Rifle Match						
H4198	25.0	3071	42,200 CUP	27.0	3242	49,100 CUP	Bullet: 58 GR. HDY V-MAX Dia: .243" Col: 2.180"													
Bullet: 70 GR. NOS BT Dia: .243" Col: 2.100"							CFE 223	38.3	3673	44,000 CUP	40.7	3897	51,300 CUP							
Varget	31.0	3101	38,900 CUP	34.0C	3342	49,400 CUP	Varget	36.4	3668	45,000 CUP	38.7C	3844	51,000 CUP							
BL-C(2)	33.0	3118	42,500 CUP	35.0	3289	48,000 CUP	IMR 4166	33.8	3427	44,800 CUP	37.2C	3671	51,600 CUP							
H335	29.0	3050	43,000 CUP	31.0	3287	47,000 CUP	IMR 4895	34.5	3434	41,400 CUP	37.5C	3785	51,800 CUP							
H4895	29.0	2895	38,200 CUP	31.0	3188	47,000 CUP	H4895	35.1	3682	42,700 CUP	37.0C	3866	48,000 CUP							
IMR 8208 XBR	29.5	3045	37,100 CUP	32.7	3361	51,600 CUP	IMR 8208 XBR	33.5	3508	41,200 CUP	36.3	3819	50,800 CUP							
Benchmark	29.7	3019	39,900 CUP	31.6	3227	49,000 CUP	Benchmark	33.0	3546	43,300 CUP	36.3	3847	52,000 CUP							
H322	28.0	2976	38,700 CUP	30.0	3200	47,000 CUP	Bullet: 70 GR. NOS BT Dia: .243" Col: 2.180"													
Bullet: 75 GR. SPR HP Dia: .243" Col: 2.115"							CFE 223	36.0	3333	40,900 CUP	38.8	3633	51,200 CUP							
CFE 223	33.0	3071	40,900 CUP	35.0	3242	48,000 CUP	Varget	35.1	3449	43,500 CUP	37.4	3646	51,500 CUP							
Varget	30.5	3057	42,200 CUP	32.5	3239	50,000 CUP	IMR 4895	33.8	3334	43,300 CUP	36.4C	3611	52,400 CUP							
BL-C(2)	31.0	2883	38,200 CUP	33.0	3113	46,000 CUP	H4895	33.7	3457	44,300 CUP	36.3C	3693	51,800 CUP							
H335	28.0	2928	43,000 CUP	30.0	3103	47,000 CUP	IMR 8208 XBR	33.6	3430	44,200 CUP	35.8C	3643	51,400 CUP							
H4895	28.5	2980	40,000 CUP	30.5	3129	47,000 CUP	Bullet: 90 GR. SFT SCIR Dia: .243" Col: 2.280"													
IMR 8208 XBR	28.0	2926	38,900 CUP	30.8	3167	48,800 CUP	H4350	35.2	2990	42,200 CUP	38.3C	3220	51,600 CUP							
Benchmark	29.0	2959	41,700 CUP	31.0	3127	49,600 CUP	CFE 223	31.6	2931	43,200 CUP	35.6	3209	51,500 CUP							
H322	26.0	2756	37,100 CUP	28.0	3096	47,000 CUP	Varget	30.7	2943	43,900 CUP	33.8	3208	52,200 CUP							
Bullet: 80 GR. SPR SP Dia: .243" Col: 2.115"							IMR 4064	31.0	2933	42,500 CUP	34.1	3199	52,100 CUP							
CFE 223	33.0	3046	44,200 CUP	35.0	3225	49,900 CUP	IMR 4895	31.3	2991	42,800 CUP	34.0C	3229	52,300 CUP							
Varget	30.5	2999	43,100 CUP	32.5	3159	50,700 CUP	H4895	30.3	2971	42,300 CUP	32.9C	3182	51,800 CUP							
BL-C(2)	31.0	2894	42,500 CUP	33.0	3089	47,500 CUP	IMR 8208 XBR	29.9	2933	43,100 CUP	32.5	3149	52,400 CUP							
H335	28.0	2957	42,000 CUP	30.0	3090	48,000 CUP	Bullet: 100 GR. SPR BTSP Dia: .243" Col: 2.360"													
H4895	28.0	2945	40,400 CUP	30.0	3100	47,000 CUP	H4350	33.4	2836	41,600 CUP	36.8C	3086	51,700 CUP							
IMR 8208 XBR	27.0	2823	39,800 CUP	30.4	3107	49,500 CUP	IMR 4451	33.4	2777	41,900 CUP	36.7	3045	52,100 CUP							
Benchmark	28.5	2872	40,900 CUP	30.5	3048	49,400 CUP	CFE 223	30.7	2860	44,800 CUP	33.4	3011	51,900 CUP							
H322	26.0	2787	39,300 CUP	28.0	3005	47,000 CUP	Varget	29.5	2820	43,300 CUP	32.5	3023	52,000 CUP							
Bullet: 85 GR. SPR SP Dia: .243" Col: 2.115"							IMR 4064	30.5	2852	43,100 CUP	33.6	3088	52,600 CUP							
CFE 223	33.0	2996	43,300 CUP	35.0	3159	49,900 CUP	NEVER EXCEED MAXIMUM LOADS													
Varget	29.0	2840	43,100 CUP	31.0	3007	50,800 CUP	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.													
BL-C(2)	29.0	2821	43,000 CUP	31.0	2947	48,500 CUP	83													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 8208 XBR	27.9	2756	42,000 CUP	30.4	2928	51,400 CUP	IMR 8208 XBR	37.0	3505	50,000 PSI	40.2	3702	58,500 PSI
Bullet: 107 GR. SIE HPBT Dia: .243" Col: 2.360"							IMR 3031	36.8	3448	43,000 CUP	40.5	3714	50,500 CUP
H4350	33.4	2792	44,600 CUP	35.2C	2917	48,800 CUP	Benchmark	38.5	3587	47,000 CUP	41.2	3713	50,700 CUP
IMR 4451	33.0	2740	42,900 CUP	35.6C	2934	51,100 CUP	Bullet: 62 GR. BAR VG FB Dia: .243" Col: 2.620"						
CFE 223	29.4	2706	43,700 CUP	33.1	2926	51,400 CUP	H414	43.5	3427	50,600 PSI	46.3	3631	58,600 PSI
Varget	29.2	2726	42,900 CUP	31.8	2916	51,900 CUP	760	43.5	3427	50,600 PSI	46.3	3631	58,600 PSI
IMR 4064	29.8	2746	42,300 CUP	32.8C	2978	52,200 CUP	H380	41.9	3450	50,100 PSI	44.5	3625	57,900 PSI
IMR 8208 XBR	27.4	2647	41,700 CUP	30.2	2836	51,500 CUP	CFE 223	34.0	3328	54,200 PSI	38.0	3517	59,300 PSI

243 WINCHESTER

Case: Winchester Twist: 1:10"
Barrel: 24" Trim: 2.035" Primer: Winchester LR, Large Rifle

Bullet: 55 GR. NOS BT Dia: .243" Col: 2.650"						
H414	45.0	3611	37,400 CUP	50.0	3950	51,600 CUP
760	45.0	3611	37,400 CUP	50.0	3950	51,600 CUP
H380	46.0	3704	40,600 CUP	51.0	4010	48,700 CUP
CFE 223	41.0	3684	49,500 PSI	45.3	3941	58,700 PSI
Varget	41.0	3776	42,000 CUP	45.0	4000	50,000 CUP
IMR 4320	40.0	3603	48,600 CUP	45.5	3876	49,800 CUP
IMR 4064	39.5	3554	41,300 CUP	44.0	3875	51,200 CUP
IMR 4166	41.2	3696	48,600 PSI	44.8	3950	57,700 PSI
BL-C(2)	43.0	3779	42,600 CUP	47.0	4025	49,400 CUP
IMR 4895	40.0	3599	42,100 CUP	44.0	3877	50,200 CUP
H4895	40.0	3638	35,100 CUP	44.5	4058	49,300 CUP
IMR 8208 XBR	40.0	3687	47,700 PSI	43.0	3931	58,600 PSI
IMR 3031	37.0	3520	38,300 CUP	40.5	3864	50,900 CUP
Benchmark	39.0	3575	42,600 CUP	41.5	3815	50,100 CUP

Bullet: 55 GR. NOS BT LF Dia: .243" Col: 2.710"						
H414	44.5	3687	50,700 PSI	48.4	3896	57,800 PSI
760	44.5	3687	50,700 PSI	48.4	3896	57,800 PSI
H380	41.7	3654	52,700 PSI	45.3	3826	57,500 PSI
Varget	37.1	3646	53,000 PSI	39.5	3782	57,700 PSI
IMR 4320	38.2	3497	48,200 PSI	41.0	3757	56,500 PSI
IMR 4064	37.6	3606	50,000 PSI	40.0	3801	57,800 PSI
IMR 4166	39.9	3583	46,800 PSI	44.5	3921	58,700 PSI
BL-C(2)	40.9	3689	50,700 PSI	43.5	3868	58,300 PSI
IMR 4895	38.4	3585	50,000 PSI	40.8	3783	57,700 PSI
H4895	35.7	3621	50,700 PSI	38.0	3777	57,100 PSI

Bullet: 58 GR. HDY V-MAX Dia: .243" Col: 2.600"						
H414	46.0	3633	43,600 CUP	49.0	3806	49,100 CUP
760	46.0	3633	43,600 CUP	49.0	3806	49,000 CUP
H380	46.0	3721	47,500 CUP	49.5	3874	51,000 CUP
CFE 223	41.0	3634	50,200 PSI	44.9	3850	57,800 PSI
Varget	41.0	3617	44,800 CUP	44.0	3790	49,800 CUP
IMR 4320	40.5	3448	41,800 CUP	44.8	3822	50,100 CUP
IMR 4064	39.6	3388	39,400 CUP	44.0	3780	50,200 CUP
IMR 4166	40.9	3645	49,800 PSI	44.5	3889	58,600 PSI
IMR 4895	40.5	3551	42,300 CUP	44.7	3819	50,000 CUP
H335	39.5	3714	47,800 CUP	41.5	3812	50,600 CUP
H4895	40.0	3643	43,300 CUP	43.0	3851	49,900 CUP
IMR 8208 XBR	39.0	3581	47,300 PSI	42.3	3825	58,300 PSI
IMR 3031	36.5	3467	40,700 CUP	41.0	3815	50,500 CUP
Benchmark	35.0	3417	41,800 CUP	37.5	3607	50,000 CUP

Bullet: 60 GR. SIE HP Dia: .243" Col: 2.600"						
H414	43.0	3423	38,600 CUP	47.5	3724	49,600 CUP
760	43.0	3423	38,600 CUP	47.5	3724	49,600 CUP
H380	43.0	3514	38,900 CUP	48.0	3781	47,400 CUP
CFE 223	41.0	3541	49,400 PSI	45.0	3785	58,600 PSI
Varget	40.0	3671	45,400 CUP	42.7	3816	50,400 CUP
IMR 4320	40.0	3431	42,500 CUP	44.4	3716	50,500 CUP
IMR 4064	40.0	3476	43,600 CUP	43.8	3766	50,400 CUP
IMR 4166	39.7	3508	48,400 PSI	43.5	3793	58,900 PSI
IMR 4895	39.6	3464	43,500 CUP	43.3	3785	50,800 CUP
H335	35.0	3445	41,400 CUP	39.0	3717	50,300 CUP
H4895	38.0	3521	40,500 CUP	42.0	3812	50,600 CUP

IMR 8208 XBR	37.0	3505	50,000 PSI	40.2	3702	58,500 PSI
IMR 3031	36.8	3448	43,000 CUP	40.5	3714	50,500 CUP
Benchmark	38.5	3587	47,000 CUP	41.2	3713	50,700 CUP
Bullet: 62 GR. BAR VG FB Dia: .243" Col: 2.620"						
H414	43.5	3427	50,600 PSI	46.3	3631	58,600 PSI
760	43.5	3427	50,600 PSI	46.3	3631	58,600 PSI
H380	41.9	3450	50,100 PSI	44.5	3625	57,900 PSI
CFE 223	34.0	3328	54,200 PSI	38.0	3517	59,300 PSI
Varget	39.3	3476	50,900 PSI	41.4	3620	57,100 PSI
IMR 4320	39.0	3425	49,600 PSI	41.4	3602	56,900 PSI
IMR 4064	38.1	3480	51,400 PSI	40.5	3652	58,000 PSI
IMR 4166	38.7	3397	48,100 PSI	42.5	3700	59,000 PSI
IMR 4895	38.1	3460	50,600 PSI	40.5	3658	58,300 PSI
H4895	36.7	3478	51,200 PSI	39.0	3622	57,400 PSI
IMR 8208 XBR	35.0	3321	46,500 PSI	39.0	3598	58,800 PSI
IMR 3031	34.8	3392	49,600 PSI	37.0	3573	58,100 PSI
Benchmark	36.1	3442	52,000 PSI	38.0	3586	58,600 PSI

Bullet: 65 GR. HDY V-MAX Dia: .243" Col: 2.600"						
Suprform	49.0	3530	52,100 PSI	51.9C	3773	57,300 PSI
H414	45.0	3521	41,400 CUP	48.0	3746	49,400 CUP
760	45.0	3521	41,400 CUP	48.0	3746	49,400 CUP
H380	42.0	3448	45,200 CUP	45.0	3627	50,000 CUP
CFE 223	38.0	3360	47,400 PSI	43.0	3632	57,300 PSI
Varget	38.0	3494	43,100 CUP	41.0	3682	49,600 CUP
IMR 4320	40.5	3448	43,800 CUP	43.9	3670	49,500 CUP
IMR 4064	40.0	3415	43,000 CUP	43.4	3698	50,000 CUP
IMR 4166	39.4	3448	48,800 PSI	42.9	3711	58,800 PSI
BL-C(2)	39.0	3493	47,300 CUP	42.0	3612	49,500 CUP
IMR 4895	38.5	3392	42,300 CUP	42.7	3664	50,600 CUP
H4895	38.0	3522	44,500 CUP	41.0	3677	49,200 CUP
IMR 8208 XBR	37.0	3363	45,800 PSI	41.0	3666	58,500 PSI
IMR 3031	36.5	3397	43,800 CUP	39.8	3624	50,200 CUP
Benchmark	37.0	3417	44,300 CUP	40.0	3598	50,600 CUP

Bullet: 70 GR. SPR HP Dia: .243" Col: 2.625"						
Suprform	46.0	3332	43,600 PSI	51.0C	3661	57,900 PSI
H414	42.0	3314	41,600 CUP	46.0	3568	49,800 CUP
760	42.0	3314	41,600 CUP	46.0	3568	49,800 CUP
H380	42.0	3349	42,900 CUP	46.0	3567	48,900 CUP
CFE 223	36.0	3266	51,800 PSI	41.5	3487	57,400 PSI
Varget	38.0	3433	45,500 CUP	40.5	3574	50,100 CUP
IMR 4320	38.5	3325	43,800 CUP	42.5	3541	50,300 CUP
IMR 4064	38.5	3316	43,700 CUP	42.5	3541	50,000 CUP
IMR 4166	38.5	3366	49,600 PSI	41.9	3600	58,800 PSI
BL-C(2)	35.0	3228	47,900 CUP	39.0	3384	50,400 CUP
IMR 4895	38.5	3349	44,300 CUP	42.6	3558	50,000 CUP
H4895	36.0	3286	42,700 CUP	39.5	3477	49,200 CUP
IMR 8208 XBR	35.0	3232	47,600 PSI	38.6	3461	58,100 PSI
IMR 3031	35.5	3218	41,500 CUP	39.0	3485	51,100 CUP
Benchmark	36.5	3128	45,100 CUP	39.3	3491	50,300 CUP

Bullet: 75 GR. HDY HP Dia: .243" Col: 2.640"						
Suprform	45.0	3280	47,400 PSI	49.0	3510	57,900 PSI
H414	42.0	3203	41,100 CUP	46.0	3447	50,100 CUP
760	42.0	3203	41,100 CUP	46.0	3447	50,100 CUP
H380	40.0	3127	42,700 CUP	44.5	3393	48,600 CUP
CFE 223	34.0	3080	50,600 PSI	37.7	3274	57,600 PSI
Varget	36.0	3246	45,000 CUP	38.5	3408	50,500 CUP
IMR 4320	37.7	3180	43,500 CUP	41.5	3420	50,600 CUP
IMR 4064	37.5	3183	43,300 CUP	41.2	3419	50,300 CUP
IMR 4166	37.1	3227	49,300 PSI	40.4	3460	58,600 PSI
BL-C(2)	34.0	3041	45,100 CUP	37.5	3185	49,200 CUP
IMR 4895	37.5	3198	44,200 CUP	41.7	3423	50,400 CUP
H4895	34.0	3101	40,900 CUP	38.0	3354	49,400 CUP
IMR 8208 XBR	34.5	3114	48,200 PSI	37.8	3316	57,900 PSI
IMR 3031	33.2	3061	41,800 CUP	36.7	3298	49,800 CUP

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Bullet: 80 GR. HDY GMX Dia: .243" Col: 2.610"							IMR 7828	41.5	2780	42,300 CUP	45.8C*	3030	50,600 CUP
Hybrid 100V	39.1	3083	48,600 PSI	42.5	3318	58,100 PSI	IMR 4955	44.1	2860	47,500 PSI	48.0C	3115	58,600 PSI
H4350	38.3	3045	52,600 PSI	40.7	3183	58,500 PSI	H4831	42.0	2930	47,000 CUP	44.5C	3052	50,700 CUP
IMR 4451	38.8	3132	51,400 PSI	41.8	3338	58,800 PSI	Hybrid 100V	39.0	2866	42,200 CUP	43.0C	3113	50,200 CUP
H414	38.9	3022	48,400 PSI	42.3	3231	57,300 PSI	IMR 4831	39.5	2793	43,900 CUP	42.8	2985	50,200 CUP
760	38.9	3022	48,400 PSI	42.3	3231	57,300 PSI	H4350	39.0	2917	45,800 CUP	42.0	3087	50,500 CUP
H380	36.9	3022	54,600 PSI	39.3	3135	57,300 PSI	IMR 4451	38.5	2922	49,500 PSI	41.8	3141	58,500 PSI
Varget	34.1	2986	51,200 PSI	36.3	3137	58,700 PSI	H414	39.0	2933	43,800 CUP	42.0	3138	50,700 CUP
IMR 4320	35.7	3011	49,800 PSI	38.0	3182	58,200 PSI	IMR 4350	38.0	2792	43,200 CUP	41.8	2993	50,200 CUP
IMR 4064	34.0	2966	49,500 PSI	36.3	3134	57,600 PSI	760	39.0	2933	43,800 CUP	42.0	3138	50,700 CUP
IMR 4166	35.6	3024	48,200 PSI	39.2	3307	59,400 PSI	H380	36.0	2779	43,000 CUP	38.0	2922	49,100 CUP
BL-C(2)	36.5	3057	49,600 PSI	39.2	3220	57,000 PSI	Varget	33.0	2870	45,000 CUP	35.0	2996	50,200 CUP
IMR 4895	35.3	3032	51,500 PSI	37.5	3165	58,100 PSI	IMR 4064	33.0	2745	43,500 CUP	36.5	2967	51,100 CUP
H4895	32.7	2982	51,900 PSI	34.8	3123	58,100 PSI	IMR 4895	32.0	2687	41,800 CUP	35.5	2908	50,400 CUP
IMR 8208 XBR	33.0	2961	51,400 PSI	35.1	3109	58,800 PSI	H4895	33.0	2865	45,000 CUP	35.0	2990	50,700 CUP
Bullet: 80 GR. SIE BTSP Dia: .243" Col: 2.635"							Bullet: 100 GR. SPR BTSP Dia: .243" Col: 2.650"						
Suprform	44.0	3236	49,300 PSI	48.7	3460	58,400 PSI	H1000	44.0	2876	45,700 CUP	47.0C	3000	49,800 CUP
Hybrid 100V	41.0	3072	40,100 CUP	45.0C	3330	48,400 CUP	IMR 7977	45.6	2927	49,400 PSI	49.1C	3122	58,100 PSI
IMR 4451	42.5	3195	47,700 PSI	46.2	3462	58,300 PSI	IMR 7828	42.5	2796	43,700 CUP	46.0C*	3009	51,100 CUP
H414	42.0	3249	46,300 CUP	45.0	3404	50,100 CUP	IMR 4955	43.1	2799	48,000 PSI	46.9C	3038	58,700 PSI
760	42.0	3249	46,300 CUP	45.0	3404	50,100 CUP	H4831	39.0	2761	44,400 CUP	42.0	2924	50,100 CUP
H380	38.0	3047	44,700 CUP	41.2	3223	50,300 CUP	Hybrid 100V	40.0	2868	45,400 CUP	43.7C	3100	51,700 CUP
Varget	36.0	3193	45,400 CUP	38.5	3355	50,300 CUP	IMR 4831	39.2	2733	43,500 CUP	43.0	2947	50,800 CUP
IMR 4320	37.0	3132	44,000 CUP	40.5	3339	50,600 CUP	H4350	37.0	2806	45,100 CUP	40.0	2973	51,000 CUP
IMR 4064	37.5	3141	45,000 CUP	41.0	3320	50,800 CUP	IMR 4451	39.2	2858	47,900 PSI	42.7	3090	58,400 PSI
IMR 4166	37.0	3171	48,400 PSI	40.3	3409	58,300 PSI	H414	37.0	2800	44,500 CUP	40.0	2963	50,600 CUP
BL-C(2)	35.0	3083	47,100 CUP	38.5	3242	50,600 CUP	IMR 4350	38.5	2760	43,000 CUP	42.0	2958	50,100 CUP
IMR 4895	36.5	3094	43,300 CUP	40.2	3290	50,300 CUP	760	37.0	2800	44,500 CUP	40.0	2963	50,600 CUP
H4895	35.0	3123	45,800 CUP	38.0	3307	50,100 CUP	H380	34.0	2639	43,600 CUP	36.0	2770	50,100 CUP
IMR 8208 XBR	34.0	3013	45,400 PSI	38.0	3269	57,500 PSI	Varget	31.0	2674	42,700 CUP	33.7	2838	50,400 CUP
Bullet: 85 GR. BAR TSX Dia: .243" Col: 2.620"							Bullet: 105 GR. HDY A-MAX Dia: .243" Col: 2.760"						
Hybrid 100V	38.3	3022	47,500 PSI	42.5C	3267	58,100 PSI	Returnbo	46.0	2772	44,200 CUP	49.0C	2986	49,700 CUP
IMR 4831	38.3	3014	49,900 PSI	42.6C	3233	58,500 PSI	H1000	43.0	2798	45,400 CUP	46.0C	2930	50,200 CUP
H4350	37.3	2972	49,600 PSI	40.5	3141	57,300 PSI	IMR 7977	43.7	2820	48,300 PSI	47.0C	3029	58,500 PSI
IMR 4451	40.7	3138	50,200 PSI	43.8	3342	58,700 PSI	IMR 7828	40.6	2721	44,500 CUP	44.0C	2894	50,300 CUP
H414	38.4	2981	50,300 PSI	41.7	3165	57,300 PSI	IMR 4955	41.9	2723	47,400 PSI	45.6C	2959	58,500 PSI
IMR 4350	37.4	2980	48,900 PSI	40.7	3176	57,800 PSI	H4831	38.0	2687	43,900 CUP	41.0	2846	50,200 CUP
760	38.4	2981	50,300 PSI	41.7	3165	57,300 PSI	Hybrid 100V	37.0	2721	43,800 CUP	41.0C	2959	49,300 CUP
H380	36.4	2987	55,700 PSI	38.7	3074	57,300 PSI	IMR 4831	38.0	2661	43,700 CUP	41.5	2870	50,800 CUP
Varget	34.3	2997	52,200 PSI	36.5	3121	58,000 PSI	H4350	35.0	2663	44,300 CUP	37.5	2799	49,500 CUP
IMR 4320	35.3	2996	49,700 PSI	37.6	3158	58,100 PSI	IMR 4451	37.5	2809	51,500 PSI	40.4	2980	58,800 PSI
IMR 4064	33.8	2964	49,200 PSI	36.0	3112	56,700 PSI	H414	36.0	2692	43,700 CUP	39.0	2862	50,100 CUP
IMR 4166	35.9	3019	48,200 PSI	39.5	3249	57,800 PSI	IMR 4350	36.7	2648	43,000 CUP	40.2	2870	50,800 CUP
IMR 4895	34.6	3010	50,700 PSI	36.8	3146	58,000 PSI	760	36.0	2692	43,700 CUP	39.0	2862	50,100 CUP
H4895	32.6	2955	51,800 PSI	34.7	3089	57,500 PSI	H380	33.0	2589	43,700 CUP	35.0	2687	49,800 CUP
Bullet: 90 GR. SPR SP Dia: .243" Col: 2.625"							Bullet: 107 GR. SIE BTHP Dia: .243" Col: 2.850"						
IMR 7828	45.0	2950	46,100 CUP	48.0C*	3130	50,600 CUP	Returnbo	46.0	2785	42,800 CUP	49.0C	2974	48,500 CUP
IMR 4955	43.6	2926	49,700 PSI	47.4C	3153	58,500 PSI	H1000	43.0	2787	44,700 CUP	46.0C	2918	50,100 CUP
H4831	45.0	3010	43,700 CUP	48.0C	3203	50,800 CUP	IMR 7977	44.0	2827	49,400 PSI	47.4C	3008	57,300 PSI
Hybrid 100V	40.0	2934	43,000 CUP	44.0C	3204	50,100 CUP	IMR 7828	40.0	2675	43,000 CUP	43.5	2878	50,100 CUP
IMR 4831	40.5	2858	43,700 CUP	43.9	3050	50,700 CUP	IMR 4955	41.8	2714	47,800 PSI	45.5C	2952	58,500 PSI
H4350	42.0	3039	44,400 CUP	44.5	3185	50,600 CUP	H4831	38.0	2678	43,700 CUP	41.0	2835	50,100 CUP
IMR 4451	37.6	2967	51,900 PSI	40.5	3138	58,300 PSI	Hybrid 100V	38.0	2760	45,300 CUP	41.5C	2957	50,900 CUP
H414	41.0	3024	43,600 CUP	43.5	3185	49,600 CUP	IMR 4831	37.5	2662	43,900 CUP	40.9	2844	50,400 CUP
IMR 4350	39.5	2856	42,700 CUP	43.0	3096	50,800 CUP	H4350	35.0	2671	43,100 CUP	37.5	2800	50,200 CUP
760	41.0	3024	43,600 CUP	43.5	3185	49,600 CUP	IMR 4451	37.5	2807	51,100 PSI	40.4	2967	58,500 PSI
H380	38.0	2892	43,100 CUP	40.5	3060	49,500 CUP	H414	35.0	2664	43,400 CUP	38.0	2809	49,500 CUP
Varget	34.0	2964	44,800 CUP	36.5	3106	50,400 CUP	IMR 4350	36.5	2661	42,100 CUP	39.8	2853	50,600 CUP
IMR 4064	33.5	2796	41,600 CUP	37.0	3020	50,200 CUP	760	35.0	2664	43,400 CUP	38.0	2809	49,500 CUP
IMR 4166	34.3	2857	48,500 PSI	37.7	3097	58,500 PSI	NEVER EXCEED MAXIMUM LOADS						
IMR 4895	33.5	2815	41,800 CUP	36.9	3033	50,200 CUP	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.						
H4895	34.0	2967	44,900 CUP	36.5	3114	50,800 CUP	85						
Bullet: 95 GR. NOS PART Dia: .243" Col: 2.650"							Bullet: 107 GR. SIE BTHP Dia: .243" Col: 2.850"						
H1000	45.0	2946	44,900 CUP	48.0C	3077	50,000 CUP	Returnbo	46.0	2785	42,800 CUP	49.0C	2974	48,500 CUP
IMR 7977	45.3	2903	48,400 PSI	49.3C	3146	58,200 PSI	H1000	43.0	2787	44,700 CUP	46.0C	2918	50,100 CUP

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
H380	33.0	2570	44,400 CUP	34.8	2682	50,100 CUP	IMR 4320	40.0	3380	44,900 PSI	45.3	3794	61,700 PSI
Varget	31.0	2630	45,300 CUP	33.0	2749	50,400 CUP	IMR 4064	40.0	3450	46,500 PSI	45.0	3839	61,800 PSI
H4895	30.5	2613	45,900 CUP	32.5	2719	49,900 CUP	IMR 4166	40.9	3511	51,200 PSI	45.0	3782	61,100 PSI
6MM REMINGTON													
Case: Winchester Twist: 1:9"													
Barrel: 24" Trim: 2.223" Primer: Remington 9 1/2, Large Rifle													
Bullet: 55 GR. NOS BT Dia: .243" Col: 2.800"													
H414	46.0	3626	43,900 PSI	51.0	4016	58,800 PSI	IMR 4320	39.0	3412	45,000 PSI	43.5	3777	60,900 PSI
760	46.0	3626	43,900 PSI	51.0	4016	58,800 PSI	IMR 3031	38.0	3426	46,700 PSI	42.2	3765	61,600 PSI
H380	48.0	3793	49,900 PSI	53.0	4083	60,700 PSI	Benchmark	39.0	3472	49,000 PSI	41.3	3694	60,200 PSI
Varget	43.0	3678	45,700 PSI	47.5	4023	58,800 PSI	Bullet: 70 GR. SIE HPBT Dia: .243" Col: 2.810"						
IMR 4320	43.0	3603	43,900 PSI	47.8	4047	60,300 PSI	Suprform	50.0	3509	48,600 PSI	54.0	3812	61,000 PSI
IMR 4166	42.7	3694	48,100 PSI	47.0	4026	60,100 PSI	H4350	46.0	3360	46,700 PSI	50.8C	3671	59,800 PSI
BL-C(2)	44.0	3680	44,800 PSI	48.8	4094	60,100 PSI	H414	44.0	3305	44,600 PSI	49.0	3693	60,900 PSI
H4895	42.0	3656	43,700 PSI	46.5	4066	59,300 PSI	760	44.0	3305	44,600 PSI	49.0	3693	60,900 PSI
IMR 8208 XBR	40.0	3533	39,700 PSI	45.0	4044	59,300 PSI	H380	43.0	3334	47,900 PSI	48.0	3653	61,000 PSI
IMR 3031	40.0	3656	44,500 PSI	45.0	4090	61,200 PSI	Varget	40.0	3355	47,800 PSI	44.5	3639	59,500 PSI
Benchmark	40.0	3656	44,800 PSI	44.5	4028	59,600 PSI	IMR 4320	40.0	3342	47,400 PSI	45.3	3718	63,400 PSI
Bullet: 55 GR. NOS BT LF Dia: .243" Col: 2.825"													
H380	48.0	3770	50,900 PSI	53.0	4018	59,100 PSI	IMR 4064	40.0	3355	45,600 PSI	44.5	3710	61,200 PSI
Varget	43.0	3679	46,900 PSI	47.0	4027	60,700 PSI	IMR 4166	40.5	3443	51,500 PSI	44.6	3712	61,800 PSI
IMR 4320	43.0	3594	45,400 PSI	47.5	4030	61,500 PSI	748	40.0	3324	46,300 PSI	45.0	3691	63,400 PSI
748	43.0	3645	46,100 PSI	48.0	4036	60,500 PSI	IMR 4895	40.0	3364	46,500 PSI	44.6	3735	63,200 PSI
BL-C(2)	44.0	3686	46,400 PSI	48.8	4041	59,300 PSI	H4895	39.0	3435	51,200 PSI	43.0	3653	60,100 PSI
IMR 4895	43.0	3695	47,800 PSI	47.0	4061	61,100 PSI	IMR 8208 XBR	38.0	3236	43,000 PSI	42.7	3616	59,500 PSI
H4895	41.0	3598	43,200 PSI	46.0	4071	61,800 PSI	IMR 3031	38.0	3335	46,500 PSI	42.0	3673	62,400 PSI
IMR 8208 XBR	40.0	3540	42,200 PSI	44.6	4013	60,800 PSI	Benchmark	38.0	3315	46,800 PSI	41.0	3579	59,300 PSI
IMR 3031	39.0	3609	45,200 PSI	43.7	4043	61,100 PSI	Bullet: 75 GR. HDY HP Dia: .243" Col: 2.825"						
Benchmark	40.0	3584	44,900 PSI	44.0	4005	61,700 PSI	Suprform	47.0	3297	47,500 PSI	52.0	3637	60,700 PSI
Bullet: 58 GR. HDY V-MAX Dia: .243" Col: 2.775"													
H414	45.0	3534	43,200 PSI	49.7	3925	59,100 PSI	Hybrid 100V	44.0	3213	47,700 PSI	48.0C	3491	57,900 PSI
760	45.0	3534	43,200 PSI	49.7	3925	59,100 PSI	H4350	44.0	3262	48,600 PSI	49.0	3563	61,200 PSI
H380	46.0	3627	47,300 PSI	50.0	3898	56,700 PSI	H414	42.0	3151	44,400 PSI	47.0	3513	58,800 PSI
Varget	42.0	3571	44,600 PSI	46.7	3953	59,600 PSI	IMR 4350	44.0	3206	47,300 PSI	48.5C	3509	58,600 PSI
IMR 4320	43.0	3616	46,800 PSI	47.0	3974	61,100 PSI	760	42.0	3151	44,400 PSI	47.0	3513	58,800 PSI
IMR 4064	42.0	3599	44,500 PSI	46.3C	3970	58,400 PSI	H380	41.0	3154	47,200 PSI	45.5	3465	59,800 PSI
IMR 4166	42.2	3635	48,900 PSI	46.4	3968	61,700 PSI	Varget	38.0	3207	48,500 PSI	42.6	3480	59,500 PSI
BL-C(2)	42.0	3502	41,800 PSI	46.5	3939	60,000 PSI	IMR 4320	38.0	3185	47,800 PSI	43.0	3508	60,900 PSI
IMR 4895	42.0	3597	44,900 PSI	46.7	4029	62,100 PSI	IMR 4064	39.0	3275	50,600 PSI	43.0	3553	62,100 PSI
H4895	41.0	3590	44,500 PSI	46.0	3972	58,900 PSI	IMR 4166	39.4	3298	49,800 PSI	43.4	3564	60,600 PSI
IMR 8208 XBR	40.0	3537	42,700 PSI	44.5	3939	58,600 PSI	748	39.0	3244	50,600 PSI	43.0	3502	61,900 PSI
IMR 3031	40.0	3642	46,900 PSI	44.2	3981	61,100 PSI	IMR 4895	38.0	3255	50,600 PSI	43.0	3558	63,100 PSI
Benchmark	39.0	3500	42,200 PSI	43.0	3896	59,000 PSI	H4895	37.0	3230	49,900 PSI	41.5	3482	60,500 PSI
Bullet: 60 GR. SIE HP Dia: .243" Col: 2.700"													
H414	45.0	3466	43,800 PSI	50.0	3877	60,300 PSI	IMR 8208 XBR	37.0	3184	48,100 PSI	41.5	3470	59,700 PSI
760	45.0	3435	37,100 CUP	50.0	3877	60,300 PSI	IMR 3031	36.0	3217	50,500 PSI	40.0	3494	63,200 PSI
H380	45.0	3546	47,400 PSI	50.0	3874	59,700 PSI	Bullet: 80 GR. BARTTSX BT Dia: .243" Col: 2.810"						
Varget	42.0	3565	47,200 PSI	46.5	3900	60,200 PSI	Suprform	46.0	3202	45,000 PSI	51.0C	3581	59,600 PSI
IMR 4320	42.0	3488	45,100 PSI	47.2	3899	61,100 PSI	H4350	42.0	3065	43,900 PSI	47.5	3427	58,800 PSI
IMR 4064	42.0	3570	46,400 PSI	46.2C	3930	60,400 PSI	IMR 4451	43.1	3090	43,100 PSI	48.2C	3505	59,200 PSI
748	41.0	3532	47,500 PSI	46.5	3870	61,100 PSI	H414	42.0	3134	46,400 PSI	47.0	3471	60,700 PSI
BL-C(2)	41.0	3454	42,600 PSI	46.7	3870	59,200 PSI	IMR 4350	43.0	3086	43,300 PSI	48.0C	3484	58,800 PSI
IMR 4895	42.0	3609	49,100 PSI	46.5	3955	62,500 PSI	760	42.0	3134	46,400 PSI	47.0	3471	60,700 PSI
H4895	41.0	3544	45,300 PSI	46.0	3934	61,400 PSI	H380	41.0	3115	47,100 PSI	45.5	3411	59,500 PSI
IMR 8208 XBR	40.0	3488	43,000 PSI	44.5	3907	60,500 PSI	Varget	38.0	3140	47,900 PSI	42.5	3416	59,800 PSI
IMR 3031	40.0	3584	47,800 PSI	44.3	3925	62,200 PSI	IMR 4320	39.0	3112	46,400 PSI	43.5	3441	60,800 PSI
Benchmark	39.0	3478	44,400 PSI	43.0	3826	59,000 PSI	IMR 4064	38.0	3094	44,700 PSI	42.0	3415	58,700 PSI
Bullet: 65 GR. HDY V-MAX Dia: .243" Col: 2.825"													
Suprform	49.0	3495	44,700 PSI	54.5	3927	62,700 PSI	748	38.0	3075	45,800 PSI	43.0	3431	61,300 PSI
H4350	48.0	3564	50,900 PSI	51.5C	3763	58,900 PSI	IMR 4895	38.0	3129	47,500 PSI	42.3	3418	59,400 PSI
H414	44.0	3388	44,900 PSI	49.2	3777	60,700 PSI	H4895	37.0	3169	49,500 PSI	41.3	3419	60,500 PSI
760	44.0	3388	44,900 PSI	49.2	3777	60,700 PSI	IMR 8208 XBR	36.0	3068	46,400 PSI	40.3	3363	60,100 PSI
H380	44.0	3438	47,800 PSI	49.0	3763	60,000 PSI	IMR 3031	35.0	3039	45,100 PSI	39.2	3356	59,300 PSI
Varget	41.0	3468	47,600 PSI	45.5	3775	60,200 PSI	Bullet: 80 GR. SPR SP Dia: .243" Col: 2.775"						
Suprform 46.0 3207 49,100 PSI 51.4 3536 61,000 PSI													
Hybrid 100V 44.0 3186 50,500 PSI 48.0C 3458 61,500 PSI													
H4350 42.0 3123 46,700 PSI 47.0 3430 59,400 PSI													
IMR 4451 43.6 3174 47,800 PSI 48.0C 3492 60,900 PSI													
H414 42.0 3134 47,400 PSI 46.7 3439 59,600 PSI													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 4350	41.0	3108	52,000 PSI	46.5	3410	62,800 PSI	IMR 4831	42.0	2889	50,500 PSI	46.2C	3149	62,100 PSI
760	42.0	3134	47,400 PSI	46.7	3439	59,600 PSI	H4350	41.0	2879	47,900 PSI	45.5	3137	59,800 PSI
H380	40.0	3068	47,800 PSI	44.5	3358	58,900 PSI	IMR 4451	42.2	2938	48,200 PSI	45.9	3189	60,100 PSI
Varget	38.0	3148	49,400 PSI	41.8	3376	59,400 PSI	H414	39.0	2774	44,400 PSI	43.5	3093	58,500 PSI
IMR 4320	36.0	3079	50,400 PSI	39.8	3321	61,700 PSI	IMR 4350	40.0	2842	50,200 PSI	44.6C	3126	62,600 PSI
IMR 4064	35.0	3066	51,600 PSI	39.6	3346	61,800 PSI	760	39.0	2774	44,400 PSI	43.5	3093	58,500 PSI
IMR 4166	39.2	3223	50,600 PSI	43.1	3492	62,100 PSI	Varget	36.0	2843	49,800 PSI	40.2	3055	59,200 PSI
748	35.0	3132	58,800 PSI	39.2	3297	61,800 PSI	IMR 4064	34.0	2765	50,000 PSI	38.0	2982	61,000 PSI
IMR 4895	35.0	3067	50,800 PSI	39.4	3337	61,800 PSI	748	34.5	2766	55,300 PSI	38.5	2964	61,500 PSI
H4895	37.0	3167	50,900 PSI	40.5	3377	59,900 PSI	IMR 4895	34.0	2737	48,800 PSI	38.5	3016	62,400 PSI
IMR 8208 XBR	37.0	3156	51,600 PSI	40.7	3353	59,800 PSI	H4895	34.0	2749	45,900 PSI	38.5	3035	59,900 PSI
IMR 3031	33.0	3006	48,900 PSI	37.2	3296	61,600 PSI							
Bullet: 85 GR. NOS PART Dia: .243" Col: 2.825"							Bullet: 105 GR. HDY A-MAX Dia: .243" Col: 2.825"						
Hybrid 100V	43.0	3143	51,700 PSI	47.5C	3411	62,200 PSI	H1000	47.0	2817	45,800 PSI	50.0C	2980	53,300 PSI
IMR 4831	44.0	3058	49,300 PSI	48.5C	3379	62,400 PSI	H4831	44.0	2839	49,400 PSI	47.5C	3028	57,900 PSI
H4350	42.0	3075	48,200 PSI	46.5	3350	59,300 PSI	Hybrid 100V	40.0	2849	51,900 PSI	43.7C	3078	62,500 PSI
IMR 4451	44.4	3142	48,800 PSI	48.3C	3455	62,900 PSI	IMR 4831	41.0	2785	48,800 PSI	45.7C	3075	62,100 PSI
H414	41.0	3007	45,900 PSI	45.8	3329	59,500 PSI	H4350	40.0	2838	49,700 PSI	43.5	3029	58,800 PSI
IMR 4350	42.0	2996	48,900 PSI	47.0	3335	62,100 PSI	H414	40.0	2826	50,700 PSI	43.0	3009	58,600 PSI
760	41.0	3007	45,900 PSI	45.8	3329	59,500 PSI	IMR 4350	39.0	2713	48,200 PSI	43.8	3027	62,600 PSI
H380	39.0	2937	46,800 PSI	43.5	3243	59,000 PSI	760	40.0	2826	50,700 PSI	43.0	3009	58,600 PSI
Varget	37.0	3020	49,200 PSI	41.0	3270	59,100 PSI	Varget	34.0	2711	47,400 PSI	38.0	2946	58,800 PSI
IMR 4320	36.0	2945	49,300 PSI	40.5	3249	62,900 PSI	IMR 4064	33.0	2659	49,200 PSI	37.2	2894	60,700 PSI
IMR 4064	37.0	3006	49,700 PSI	41.0	3277	61,700 PSI							
748	36.0	3020	54,800 PSI	40.2	3235	61,200 PSI	Bullet: 107 GR. SIE HPBT Dia: .243" Col: 2.950"						
IMR 4895	36.5	2998	50,500 PSI	40.7	3261	61,800 PSI	Returnbo	47.0	2836	44,900 PSI	50.0C	3033	55,200 PSI
H4895	35.5	3003	48,400 PSI	39.5	3253	59,200 PSI	H1000	47.0	2818	47,400 PSI	50.0C	2980	55,100 PSI
							IMR 7828 SSC	42.0	2739	50,300 PSI	47.0C*	3023	63,000 PSI
							H4831	43.0	2779	48,300 PSI	48.0C	3042	59,600 PSI
							Hybrid 100V	40.0	2870	54,400 PSI	43.5	3053	62,800 PSI
							IMR 4831	40.0	2772	48,800 PSI	44.5	3080	63,600 PSI
							H4350	39.0	2779	48,800 PSI	43.5	3016	59,600 PSI
							H414	39.0	2757	49,800 PSI	43.0	3001	60,400 PSI
							IMR 4350	39.0	2750	49,300 PSI	43.5	3044	63,800 PSI
							760	39.0	2757	49,800 PSI	43.0	3001	60,400 PSI
							Varget	34.0	2652	46,300 PSI	38.5	2930	60,200 PSI
							IMR 4064	33.0	2650	48,900 PSI	37.0	2869	60,800 PSI
							Bullet: 115 GR. BAR RN Dia: .243" Col: 2.825"						
							Returnbo	47.0	2711	43,200 CUP	50.0C	2878	49,000 CUP
							H1000	43.0	2665	43,800 CUP	45.5	2793	49,600 CUP
							H4831	39.0	2598	43,800 CUP	42.0	2761	49,800 CUP
							H4350	36.0	2537	43,200 CUP	39.0	2696	49,700 CUP
243 WINCHESTER SUPER SHORT MAGNUM													
Case: Winchester						Twist: 1:10"							
Barrel: 24"				Trim: 1.660"		Primer: Winchester LR, Large Rifle							
Bullet: 95 GR. NOS BT Dia: .243" Col: 2.825"							Bullet: 58 GR. HDY V-MAX Dia: .243" Col: 2.220"						
H1000	47.0	2835	43,000 PSI	50.5C	3056	52,900 PSI	H414	49.0	3704	50,200 PSI	52.0	3947	60,800 PSI
IMR 7828 SSC	44.0	2818	48,400 PSI	48.7C	3130	61,800 PSI	760	49.0	3704	50,200 PSI	52.0	3947	60,800 PSI
H4831	44.0	2798	43,700 PSI	49.5C	3125	57,600 PSI	H380	47.5	3688	48,700 PSI	50.5	3872	56,300 PSI
Hybrid 100V	41.0	2930	50,700 PSI	45.5	3226	63,100 PSI	CFE 223	44.0	3759	53,300 PSI	48.5	4030	62,900 PSI
IMR 4831	42.0	2887	49,000 PSI	47.0C	3218	63,000 PSI	Varget	44.0	3739	52,000 PSI	47.0	3975	62,800 PSI
H4350	41.0	2909	48,100 PSI	45.5	3167	59,200 PSI	IMR 4320	44.0	3661	49,300 PSI	47.5	3977	62,500 PSI
IMR 4451	43.2	2984	48,400 PSI	47.0C	3273	61,500 PSI	IMR 4064	42.5	3698	49,300 PSI	45.5	3966	60,400 PSI
H414	40.0	2847	45,900 PSI	44.5	3164	60,100 PSI	BL-C(2)	46.0	3841	52,600 PSI	49.2	4068	62,700 PSI
IMR 4350	41.0	2867	49,900 PSI	45.5C	3153	61,500 PSI	IMR 4895	43.0	3716	49,500 PSI	46.2	4017	62,600 PSI
760	40.0	2847	45,900 PSI	44.5	3164	60,100 PSI	H4895	42.0	3756	51,700 PSI	45.3	4021	63,100 PSI
Varget	36.0	2843	47,800 PSI	40.0	3091	58,900 PSI	IMR 8208 XBR	40.0	3677	50,200 PSI	44.3	3985	63,200 PSI
IMR 4064	35.5	2828	51,000 PSI	39.5	3069	62,000 PSI	IMR 3031	40.0	3642	46,900 PSI	44.0	4013	63,300 PSI
748	36.0	2750	48,600 PSI	39.7	3042	62,200 PSI							
IMR 4895	36.0	2835	51,300 PSI	40.0	3095	63,300 PSI							
H4895	35.0	2855	50,100 PSI	38.7	3076	60,100 PSI							
							Bullet: 62 GR. BAR VG FB Dia: .243" Col: 2.240"						
							H414	47.0	3551	54,200 PSI	50.0	3751	62,600 PSI
							760	47.0	3551	54,200 PSI	50.0	3751	62,600 PSI
							H380	45.1	3455	53,100 PSI	48.0	3666	61,900 PSI
							CFE 223	37.0	3500	56,900 PSI	40.0	3669	62,500 PSI
							Varget	39.9	3441	54,900 PSI	42.4	3637	61,900 PSI
							IMR 4320	40.6	3469	54,900 PSI	43.2	3658	62,600 PSI
							IMR 4064	38.8	3498	56,600 PSI	41.3	3671	63,100 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
BL-C(2)	43.5	3596	56,200 PSI	46.3	3759	62,500 PSI	H414	39.0	2909	54,300 PSI	41.8	3059	62,100 PSI
IMR 4895	40.3	3559	58,400 PSI	41.5	3653	62,400 PSI	IMR 4350	40.0	2898	52,600 PSI	43.5C	3104	62,600 PSI
H4895	38.0	3497	55,700 PSI	40.0	3641	62,800 PSI	760	39.0	2909	54,300 PSI	41.8	3059	62,100 PSI
IMR 8208 XBR	38.5	3562	54,800 PSI	40.9	3726	62,300 PSI	H380	37.0	2810	52,600 PSI	40.0	2989	62,400 PSI
IMR 3031	36.6	3473	56,500 PSI	38.5	3632	62,300 PSI	Varget	34.0	2829	53,600 PSI	36.6	2981	62,100 PSI
Bullet: 70 GR. NOS BT Dia: .243" Col: 2.230"													
Suprform	50.0	3541	49,700 PSI	54.0C	3821	61,000 PSI	IMR 4064	35.0	2847	53,000 PSI	38.0	3029	62,300 PSI
H4350	45.0	3385	48,000 PSI	48.7C	3614	58,400 PSI	BL-C(2)	35.0	2840	54,300 PSI	37.5	2980	62,500 PSI
IMR 4451	44.8	3370	49,800 PSI	48.7	3669	63,000 PSI	IMR 4895	35.0	2840	52,300 PSI	38.0	3020	61,900 PSI
H414	46.0	3420	48,800 PSI	49.0	3618	58,900 PSI	H4895	33.0	2809	55,100 PSI	35.5	2946	63,600 PSI
IMR 4350	45.0	3374	48,500 PSI	48.0C	3566	56,400 PSI	IMR 8208 XBR	31.5	2764	52,500 PSI	35.0	2982	63,100 PSI
760	46.0	3420	48,800 PSI	49.0	3618	58,900 PSI	6MM - 284						
H380	45.0	3420	51,100 PSI	48.0	3602	60,200 PSI	Case: Winchester (REF) Twist: 1:10"						
CFE 223	42.0	3519	57,500 PSI	46.0	3710	62,600 PSI	Barrel: 26" Trim: 2.160" Primer: Winchester LR, Large Rifle						
Varget	41.0	3474	54,500 PSI	43.7	3655	63,400 PSI	Bullet: 55 GR. NOS BT Dia: .243" Col: 2.780"						
IMR 4320	42.0	3439	51,900 PSI	45.0	3663	62,600 PSI	H4350	55.0	3738	42,300 CUP	59.0C	4039	51,600 CUP
IMR 4064	40.0	3420	49,100 PSI	43.5	3672	61,900 PSI	H414	53.0	3847	46,300 CUP	56.5	4038	52,000 CUP
BL-C(2)	43.0	3528	55,100 PSI	46.2	3707	62,900 PSI	760	53.0	3847	46,300 CUP	56.5	4038	52,000 CUP
IMR 4895	40.0	3419	50,500 PSI	43.5	3681	62,100 PSI	H380	52.0	3833	44,000 CUP	56.0	4082	51,800 CUP
H4895	39.0	3434	52,500 PSI	42.0	3618	62,500 PSI	Varget	47.0	3779	47,500 CUP	50.5	3921	51,600 CUP
IMR 8208 XBR	38.0	3445	54,000 PSI	41.5	3646	62,900 PSI	H4895	47.0	3837	47,100 CUP	50.0	4050	51,700 CUP
IMR 3031	38.0	3428	53,100 PSI	40.8	3627	62,400 PSI	Bullet: 60 GR. SIE HP Dia: .243" Col: 2.680"						
Bullet: 80 GR. SIE BTSP Dia: .243" Col: 2.220"													
Suprform	47.0	3404	54,800 PSI	52.0C	3648	64,200 PSI	H4831	56.0	3584	46,400 CUP	60.0C	3756	51,400 CUP
H4350	45.0	3323	52,600 PSI	48.7C	3545	63,000 PSI	H4350	54.0	3719	44,800 CUP	58.0	3976	52,300 CUP
IMR 4451	42.5	3205	51,500 PSI	46.2	3460	62,500 PSI	H414	51.0	3654	45,300 CUP	54.5	3881	51,700 CUP
H414	45.0	3349	54,600 PSI	48.0	3514	63,100 PSI	760	51.0	3654	45,300 CUP	54.5	3881	51,700 CUP
IMR 4350	44.0	3267	51,700 PSI	47.8C	3507	62,500 PSI	H380	51.0	3726	46,700 CUP	54.0	3910	52,000 CUP
760	45.0	3349	54,600 PSI	48.0	3514	63,100 PSI	Varget	45.0	3672	47,700 CUP	49.0	3855	52,400 CUP
H380	44.0	3331	56,300 PSI	46.7	3487	63,600 PSI	H4895	45.0	3740	47,200 CUP	48.5	3910	52,100 CUP
CFE 223	36.0	3165	54,500 PSI	39.0	3338	62,600 PSI	Bullet: 62 GR. BAR VG FB Dia: .243" Col: 2.775"						
Varget	39.0	3288	54,400 PSI	42.0	3462	63,300 PSI	H4831	55.0	3607	46,400 CUP	59.0C	3777	50,300 CUP
IMR 4320	40.0	3233	51,200 PSI	43.8	3474	63,200 PSI	IMR 4831	49.5	3487	44,100 CUP	55.0C	3849	51,800 CUP
IMR 4064	39.0	3250	51,700 PSI	42.2	3458	62,400 PSI	H4350	48.0	3489	41,600 CUP	54.3C	3863	52,500 CUP
BL-C(2)	40.0	3309	55,300 PSI	43.5	3493	63,600 PSI	H414	49.0	3578	43,100 CUP	53.0	3833	51,600 CUP
IMR 4895	39.0	3263	52,600 PSI	42.0	3449	62,500 PSI	IMR 4350	49.0	3474	40,400 CUP	54.0C	3843	50,700 CUP
H4895	38.5	3255	53,300 PSI	41.0	3409	62,500 PSI	H380	47.0	3470	43,300 CUP	50.5	3724	50,700 CUP
IMR 8208 XBR	35.0	3137	50,500 PSI	39.0	3394	62,400 PSI	Varget	44.0	3583	44,500 CUP	48.5	3851	51,800 CUP
IMR 3031	36.0	3188	52,000 PSI	39.0	3379	62,400 PSI	H4895	40.0	3408	40,600 CUP	44.5	3707	50,800 CUP
Bullet: 90 GR. SFT SCIR Dia: .243" Col: 2.300"													
IMR 7828	44.0	3002	51,900 PSI	48.5C*	3280	63,900 PSI	Bullet: 65 GR. HDY V-MAX Dia: .243" Col: 2.735"						
Suprform	42.0	3183	59,500 PSI	47.6C	3362	63,800 PSI	H4831	54.0	3481	43,800 CUP	57.5	3678	51,300 CUP
H4831	44.0	3045	55,800 PSI	47.0C	3200	63,200 PSI	IMR 4831	50.0	3379	43,100 CUP	54.4	3675	52,000 CUP
Hybrid 100V	40.0	2887	45,700 PSI	44.0C	3157	55,400 PSI	H4350	51.7	3584	44,500 CUP	55.0	3767	49,800 CUP
IMR 4831	43.0	3089	55,400 PSI	46.0C	3255	62,800 PSI	H414	49.8	3558	44,200 CUP	53.0	3740	50,000 CUP
H4350	41.0	3087	56,200 PSI	44.0C	3245	62,900 PSI	IMR 4350	49.0	3333	42,300 CUP	53.5	2669	52,000 CUP
IMR 4451	37.8	2970	56,200 PSI	41.1	3148	63,000 PSI	760	49.8	3558	44,200 CUP	53.0	3740	50,000 CUP
H414	41.5	3042	51,300 PSI	44.5	3216	59,300 PSI	H380	47.0	3480	44,700 CUP	50.0	3660	50,600 CUP
IMR 4350	42.0	3084	55,100 PSI	44.9C	3263	63,100 PSI	Varget	44.0	3532	45,200 CUP	47.0	3688	49,800 CUP
760	41.5	3042	51,300 PSI	44.5	3216	59,300 PSI	H4895	43.0	3528	42,800 CUP	46.0	3724	50,400 CUP
H380	40.0	3000	52,500 PSI	43.5	3196	62,100 PSI	Bullet: 70 GR. HDY SP Dia: .243" Col: 2.730"						
Varget	36.0	2979	53,200 PSI	39.2	3175	63,200 PSI	IMR 7828 SSC	51.0	3240	44,400 CUP	55.8	3496	51,400 CUP
IMR 4320	37.0	2972	52,900 PSI	39.8	3147	61,700 PSI	H4831	55.0	3442	45,900 CUP	58.5C	3632	51,900 CUP
IMR 4064	36.0	2995	54,900 PSI	38.3	3138	61,600 PSI	Hybrid 100V	49.0	3447	46,300 CUP	53.0	3691	52,400 CUP
BL-C(2)	38.0	3033	53,200 PSI	41.0	3198	62,000 PSI	IMR 4831	50.0	3296	42,000 CUP	54.0	3619	51,900 CUP
IMR 4895	35.5	2956	52,500 PSI	38.5	3153	61,900 PSI	H4350	52.0	3550	46,300 CUP	55.0	3731	52,200 CUP
H4895	35.0	2954	52,000 PSI	37.7	3124	61,900 PSI	H414	49.0	3496	45,500 CUP	52.5	3717	51,800 CUP
IMR 8208 XBR	32.0	2866	52,200 PSI	35.8	3098	63,600 PSI	IMR 4350	48.0	3268	42,500 CUP	53.0	3601	52,200 CUP
Bullet: 100 GR. SPR BTSP Dia: .243" Col: 2.300"													
IMR 7828	43.0	2909	53,500 PSI	47.0C*	3136	63,500 PSI	760	49.0	3496	45,500 CUP	52.5	3717	51,800 CUP
H4831	41.5	2878	54,000 PSI	45.0	3058	63,000 PSI	H380	46.5	3419	45,500 CUP	49.5	3585	51,900 CUP
Hybrid 100V	41.0	2907	51,600 PSI	45.0C	3153	63,200 PSI	Bullet: 75 GR. HDY V-MAX Dia: .243" Col: 2.750"						
IMR 4831	40.5	2897	53,200 PSI	44.2	3098	62,800 PSI	IMR 7828 SSC	50.0	3188	43,800 CUP	54.3	3406	50,900 CUP
H4350	39.0	2938	55,400 PSI	41.7	3074	62,300 PSI	H4831	53.0	3331	45,200 CUP	56.5	3566	52,200 CUP
IMR 4451	38.4	2885	54,600 PSI	41.8	3075	63,700 PSI	Hybrid 100V	46.0	3255	43,000 CUP	50.7	3583	52,300 CUP
Bullet: 75 GR. HDY V-MAX Dia: .243" Col: 2.750"													
IMR 4831	50.0	3322	45,300 CUP	53.3	3560	52,500 CUP							

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
H4350	49.0	3466	46,800 CUP	53.0	3644	52,300 CUP	Bullet: 115 GR. BAR SP			Dia: .243"		Col: 2.650"	
H414	48.0	3420	45,900 CUP	51.0	3571	51,800 CUP	Retumbo	50.0	2805	47,500 CUP	53.0C	2934 51,900 CUP	
IMR 4350	48.0	3191	42,100 CUP	52.3	3534	52,100 CUP	H1000	46.0	2682	46,400 CUP	49.0	2805 52,200 CUP	
760	48.0	3420	45,900 CUP	51.0	3571	51,800 CUP	H4831	43.0	2670	46,500 CUP	46.0	2797 51,800 CUP	
H380	44.0	3278	45,600 CUP	47.0	3441	51,800 CUP	25-20 WINCHESTER						
Bullet: 80 GR. SPR SP			Dia: .243"	Col: 2.730"			Case: Remington			Twist: 1:14"			
H1000	55.0	3296	46,700 CUP	59.0C	3467	52,000 CUP	Barrel: 24"		Trim: 1.320"	Primer: Winchester SR, Small Rifle			
IMR 7828 SSC	49.0	3166	45,900 CUP	53.5	3407	51,600 CUP	Bullet: 60 GR. HDY FP			Dia: .257"	Col: 1.600"		
H4831	52.0	3306	47,100 CUP	55.0	3440	52,000 CUP	H322	14.0	1799	23,600 CUP	15.0C	1900 25,700 CUP	
Hybrid 100V	46.0	3262	45,400 CUP	49.7	3469	52,000 CUP	H4198	12.0	1814	20,200 CUP	14.2C	2101 25,800 CUP	
IMR 4831	48.0	3234	43,300 CUP	52.3	3511	52,000 CUP	H4227	9.6	1854	24,200 CUP	10.2	1962 26,700 CUP	
H4350	47.5	3259	45,600 CUP	50.5	3447	51,800 CUP	H110	8.5	1831	23,500 CUP	9.3	1931 26,600 CUP	
H414	47.0	3293	45,900 CUP	50.0	3460	52,200 CUP	Bullet: 71 GR. LRNFP			Dia: .258"	Col: 1.545"		
IMR 4350	47.0	3186	42,300 CUP	51.2	3451	52,100 CUP	H4227	6.0	1146	13,700 CUP	7.0	1346 18,200 CUP	
760	47.0	3293	45,900 CUP	50.0	3460	52,200 CUP	HS-6	4.3	1206	18,700 CUP	5.3	1428 21,900 CUP	
Bullet: 85 GR. BAR TSX			Dia: .243"	Col: 2.750"			Bullet: 75 GR. SPR FP			Dia: .257"	Col: 1.575"		
Retumbo	55.0	3272	44,300 CUP	57.0C	3398	49,000 CUP	H322	12.0	1523	22,300 CUP	13.5	1702 26,700 CUP	
H1000	51.0	3234	48,200 CUP	55.5C	3374	51,700 CUP	H4198	10.5	1530	18,100 CUP	12.8	1877 27,300 CUP	
IMR 7828 SSC	48.0	3176	46,200 CUP	51.8	3362	51,900 CUP	H4227	8.3	1521	21,000 CUP	9.3	1741 27,900 CUP	
H4831	46.0	3137	46,200 CUP	50.0	3332	51,700 CUP	H110	7.4	1513	23,700 CUP	8.4	1691 28,000 CUP	
Hybrid 100V	45.0	3194	43,900 CUP	49.8	3434	52,200 CUP	Bullet: 85 GR. LRNFP			Dia: .258"	Col: 1.600"		
IMR 4831	47.0	3215	45,100 CUP	50.5	3422	51,700 CUP	H4227	6.0	1129	18,500 CUP	7.0	1317 20,500 CUP	
H4350	43.0	3116	43,100 CUP	47.5	3343	51,800 CUP	HS-6	4.5	1261	19,600 CUP	5.3	1391 25,300 CUP	
H414	44.5	3190	45,100 CUP	47.5	3333	51,200 CUP	Bullet: 86 GR. REM SP			Dia: .257"	Col: 1.600"		
IMR 4350	47.0	3195	43,800 CUP	50.7	3407	51,700 CUP	H322	11.3	1358	22,100 CUP	12.0	1517 26,300 CUP	
Bullet: 90 GR. NOS E-TIP			Dia: .243"	Col: 2.800"			H4198	10.5	1576	24,500 CUP	11.5	1673 26,500 CUP	
Retumbo	52.0	3035	39,500 CUP	57.0C	3278	46,800 CUP	H4227	8.0	1444	23,700 CUP	8.6	1545 27,600 CUP	
H1000	52.0	3001	41,200 CUP	57.0C	3236	48,200 CUP	H110	7.0	1422	23,900 CUP	7.5	1502 27,100 CUP	
IMR 7828 SSC	50.0	2967	39,600 CUP	56.0C*	3340	49,900 CUP	25-35 WINCHESTER						
H4831	49.0	2986	41,100 CUP	54.5C	3267	50,100 CUP	Case: Winchester			Twist: 1:8"			
Hybrid 100V	46.0	3064	41,300 CUP	51.0C	3387	50,000 CUP	Barrel: 24"		Trim: 2.033"	Primer: Winchester LR, Large Rifle			
IMR 4831	47.0	2963	38,100 CUP	52.5C	3340	48,500 CUP	Bullet: 60 GR. HDY JFP			Dia: .257"	Col: 2.300"		
H4350	46.0	3064	43,700 CUP	50.0C	3244	49,100 CUP	CFE 223	32.0	2731	23,900 CUP	35.0	2951 26,200 CUP	
H414	45.0	2940	40,000 CUP	49.5	3227	49,400 CUP	Vargat	28.0	2677	27,900 CUP	31.5C	2972 36,200 CUP	
IMR 4350	47.0	3029	40,800 CUP	51.5C	3316	50,100 CUP	BL-C(2)	32.0	2797	24,600 CUP	35.0	3023 29,800 CUP	
Bullet: 90 GR. SPR SP			Dia: .243"	Col: 2.750"			H335	27.0	2865	31,800 CUP	30.0	3026 36,200 CUP	
Retumbo	55.5	3185	46,300 CUP	59.0C	3338	51,900 CUP	H4895	26.0	2796	32,300 CUP	30.5C	3014 36,200 CUP	
H1000	52.0	3072	45,900 CUP	55.5	3241	51,900 CUP	IMR 8208 XBR	25.0	2838	34,500 CUP	27.5	2913 36,300 CUP	
IMR 7828 SSC	47.0	3036	44,500 CUP	51.5	3306	52,100 CUP	Benchmark	23.0	2626	29,700 CUP	25.7	2867 36,600 CUP	
H4831	49.0	3101	47,100 CUP	52.5	3272	52,200 CUP	H322	22.0	2522	27,700 CUP	24.5	2793 35,900 CUP	
Hybrid 100V	44.0	3134	45,400 CUP	48.0	3330	51,700 CUP	CFE BLK	24.0	2872	28,300 CUP	26.5	3062 35,500 CUP	
IMR 4831	46.0	3109	45,100 CUP	49.5	3316	52,700 CUP	H4198	20.0	2626	29,700 CUP	21.7	2827 36,100 CUP	
H4350	44.5	3077	46,300 CUP	47.5	3223	51,800 CUP	Bullet: 75 GR. SPR JFP			Dia: .257"	Col: 2.280"		
H414	44.0	3046	45,500 CUP	47.0	3193	51,800 CUP	LVR	30.0	2707	27,800 CUP	34.0C	2992 33,100 CUP	
IMR 4350	46.0	3099	44,200 CUP	50.0	3337	52,200 CUP	CFE 223	30.0	2611	27,100 CUP	33.0	2802 30,100 CUP	
760	44.0	3046	45,500 CUP	47.0	3193	51,800 CUP	Vargat	26.5	2487	29,800 CUP	29.0	2672 36,300 CUP	
Bullet: 100 GR. NOS PART			Dia: .243"	Col: 2.760"			BL-C(2)	31.5	2680	29,700 CUP	34.0	2815 32,600 CUP	
Retumbo	54.0	3018	44,400 CUP	57.5	3219	51,800 CUP	H335	23.0	2440	31,000 CUP	25.5	2595 36,400 CUP	
H1000	52.0	3007	47,300 CUP	55.0	3145	52,200 CUP	H4895	25.0	2471	32,000 CUP	27.4	2689 36,500 CUP	
IMR 7828 SSC	47.0	2904	43,500 CUP	52.0	3189	51,200 CUP	IMR 8208 XBR	23.0	2444	29,200 CUP	25.7	2660 34,200 CUP	
H4831	48.0	2960	46,400 CUP	51.0	3108	52,100 CUP	Benchmark	21.0	2305	28,600 CUP	23.0	2502 36,400 CUP	
Hybrid 100V	44.0	2971	44,700 CUP	48.5	3242	52,800 CUP	H322	21.0	2256	25,900 CUP	23.5	2543 35,900 CUP	
IMR 4831	46.0	2991	43,600 CUP	50.3	3231	51,900 CUP	CFE BLK	19.6	2384	31,400 CUP	20.5	2470 35,400 CUP	
H4350	43.0	2925	46,300 CUP	46.0	3066	52,000 CUP	H4198	19.0	2422	32,300 CUP	20.5	2515 35,500 CUP	
IMR 4350	46.0	3015	44,900 CUP	50.0	3249	52,300 CUP	Bullet: 90 GR. LFP W/GCK			Dia: .257"	Col: 2.320"		
Bullet: 105 GR. SPR SP			Dia: .243"	Col: 2.800"			Trail Boss	5.5	1224	22,000 CUP	8.0	1414 23,200 CUP	
Retumbo	51.0	2901	45,700 CUP	54.5C	3070	52,000 CUP	Titegroup	5.0	1369	18,000 CUP	7.0	1513 28,900 CUP	
H1000	47.0	2794	45,700 CUP	50.0	2913	51,600 CUP	Clays	5.0	1284	25,100 CUP	6.0	1344 34,000 CUP	
H4831	45.0	2804	47,700 CUP	48.0	2978	52,200 CUP	Bullet: 117 GR. HDY RN			Dia: .257"	Col: 2.550"		
Bullet: 107 GR. SIE HPBT			Dia: .243"	Col: 2.800"			H380	27.0	2172	30,100 CUP	30.0	2357 34,900 CUP	
Retumbo	53.0	2972	45,700 CUP	56.5C	3138	51,800 CUP	NEVER EXCEED MAXIMUM LOADS						
H1000	51.0	2879	45,700 CUP	54.5	3069	52,400 CUP	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.						
H4831	48.0	2946	48,000 CUP	51.0	3049	52,200 CUP	89						

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Bullet: 75 GR. HDY HP Dia: .257" Col: 2.795"							Varget	36.0	2990	36,300 CUP	40.0	3269	44,900 CUP
Hybrid 100V	45.0	3145	36,500 CUP	49.0C	3380	42,900 CUP	IMR 4064	39.8	3040	39,600 CUP	42.3	3211	46,300 CUP
IMR 4831	46.5	3017	34,100 CUP	51.5C	3403	43,500 CUP	IMR 4166	37.4	2969	38,800 CUP	41.6	3234	47,100 CUP
H4350	47.0	3129	35,200 CUP	50.0	3422	44,000 CUP	BL-C(2)	40.0	2864	30,600 CUP	43.5	3231	45,000 CUP
H414	48.0	3343	37,200 CUP	52.0	3555	45,300 CUP	IMR 4895	39.5	3042	39,800 CUP	42.0	3238	46,400 CUP
IMR 4350	47.8	3254	41,700 CUP	52.0C	3496	46,600 CUP	H335	39.0	2951	30,600 CUP	43.0	3300	44,400 CUP
760	48.0	3343	37,200 CUP	52.0	3555	45,300 CUP	H4895	38.5	2954	33,600 CUP	42.0	3372	47,600 CUP
H380	44.0	3258	37,800 CUP	48.0	3563	45,600 CUP	IMR 8208 XBR	39.4	3129	40,200 CUP	42.0	3314	46,800 CUP
CFE 223	38.0	3160	38,500 CUP	42.0	3369	44,800 CUP	Bullet: 100 GR. SPR SPBT Dia: .257" Col: 2.770"						
Varget	37.0	3155	34,700 CUP	41.0	3453	43,700 CUP	IMR 4955	46.0	2890	38,900 CUP	50.0C	3152	46,700 CUP
IMR 4064	41.7	3320	39,700 CUP	44.3	3517	46,400 CUP	H4831	45.0	2660	29,100 CUP	49.0	3010	44,100 CUP
IMR 4166	39.4	3167	38,400 CUP	43.8	3471	47,500 CUP	Hybrid 100V	44.0	2968	38,800 CUP	48.0C	3205	45,400 CUP
BL-C(2)	42.0	3094	31,800 CUP	46.0	3531	46,700 CUP	IMR 4831	46.3	2965	41,000 CUP	49.2C	3134	47,100 CUP
IMR 4895	40.9	3288	39,700 CUP	43.5	3496	46,500 CUP	H4350	43.0	2833	34,200 CUP	45.0	2970	45,400 CUP
H335	42.0	3161	31,200 CUP	46.0	3548	45,000 CUP	IMR 4451	41.5	2781	38,800 CUP	46.2	3067	47,100 CUP
H4895	40.5	3201	34,800 CUP	44.0	3561	47,300 CUP	H414	44.0	2919	33,600 CUP	45.0	3098	44,500 CUP
IMR 8208 XBR	40.5	3390	39,300 CUP	43.0	3456	44,900 CUP	IMR 4350	44.8	2896	38,400 CUP	47.7	3077	47,000 CUP
Benchmark	39.0	3226	39,200 CUP	41.7	3434	45,000 CUP	760	44.0	2919	33,600 CUP	45.0	3098	44,500 CUP
Bullet: 80 GR. BAR TTSX BT Dia: .257" Col: 2.780"							H380	40.5	2868	37,800 CUP	44.0	3108	46,600 CUP
H4350	44.0	2999	36,000 CUP	48.5	3290	45,000 CUP	Varget	34.0	2724	34,400 CUP	38.0	2981	44,900 CUP
IMR 4451	43.2	2930	35,100 CUP	48.6	3350	45,000 CUP	IMR 4064	38.8	2904	40,900 CUP	41.3	3076	47,300 CUP
H414	43.0	3047	37,300 CUP	48.0	3377	45,000 CUP	IMR 4166	35.4	2749	39,100 CUP	39.4	3022	47,400 CUP
IMR 4350	45.0	3008	35,100 CUP	49.2C	3326	43,600 CUP	BL-C(2)	36.0	2692	32,400 CUP	39.0	2958	45,400 CUP
760	43.0	3047	37,300 CUP	48.0	3377	45,000 CUP	IMR 4895	39.0	2921	41,200 CUP	41.0	3061	45,900 CUP
H380	41.0	2988	36,700 CUP	45.0	3257	44,600 CUP	H335	36.0	2776	37,200 CUP	39.0	3042	47,800 CUP
CFE 223	35.0	3038	40,700 CUP	39.0	3243	44,300 CUP	H4895	35.0	2661	30,600 CUP	38.0	2990	46,100 CUP
Varget	39.0	3061	37,500 CUP	43.0	3287	45,000 CUP	IMR 8208 XBR	37.1	2991	39,400 CUP	39.5	3085	44,700 CUP
IMR 4064	39.0	3071	35,300 CUP	43.5	3419	45,000 CUP	Bullet: 115 GR. NOS PART Dia: .257" Col: 2.890"						
IMR 4166	39.0	3120	38,800 CUP	42.8	3378	46,700 CUP	IMR 7828 SSC	42.0	2480	35,500 CUP	46.3	2724	43,700 CUP
748	39.0	3094	41,300 CUP	42.5	3248	44,700 CUP	IMR 4955	42.3	2654	39,300 CUP	46.0	2873	47,200 CUP
BL-C(2)	39.0	3114	42,300 CUP	43.0	3277	45,000 CUP	H4831	43.0	2479	30,400 CUP	46.0	2760	46,000 CUP
IMR 4895	39.0	3058	37,000 CUP	43.0	3357	45,000 CUP	Hybrid 100V	42.0	2845	40,700 CUP	46.0C	3049	46,600 CUP
H4895	37.0	3090	38,800 CUP	40.8	3281	44,600 CUP	IMR 4831	42.6	2670	37,900 CUP	46.3	2867	46,000 CUP
IMR 8208 XBR	36.0	3062	38,400 CUP	39.8	3284	44,700 CUP	H4350	41.0	2660	40,600 CUP	43.0	2777	44,400 CUP
IMR 3031	36.0	3036	35,800 CUP	40.3	3343	44,900 CUP	IMR 4451	39.5	2609	38,400 CUP	43.4	2841	47,000 CUP
Benchmark	35.5	2990	36,900 CUP	39.5	3285	45,000 CUP	H414	39.5	2574	36,000 CUP	43.0	2720	44,200 CUP
Bullet: 90 GR. HDY GMX Dia: .257" Col: 2.880"							IMR 4350	41.9	2666	39,800 CUP	45.5	2866	46,600 CUP
IMR 7828 SSC	44.0	2847	41,000 CUP	49.0C	3038	44,600 CUP	760	39.5	2574	36,000 CUP	43.0	2720	44,200 CUP
IMR 4955	44.5	2916	40,300 CUP	48.5C	3165	47,100 CUP	H380	37.0	2567	39,600 CUP	40.0	2754	45,900 CUP
H4831	40.0	2645	35,200 CUP	44.5	2925	44,600 CUP	Varget	31.0	2462	34,300 CUP	35.0	2701	44,900 CUP
Hybrid 100V	40.0	2823	37,100 CUP	44.5	3128	44,300 CUP	IMR 4064	36.1	2650	39,400 CUP	38.4	2756	46,300 CUP
IMR 4831	41.0	2841	38,800 CUP	45.3	3031	44,600 CUP	IMR 4166	33.6	2506	38,400 CUP	37.8	2776	47,400 CUP
H4350	38.0	2729	36,000 CUP	42.0	2968	44,200 CUP	BL-C(2)	33.0	2402	33,600 CUP	36.0	2673	47,100 CUP
IMR 4451	38.7	2706	35,900 CUP	43.0	3008	44,300 CUP	IMR 4895	36.7	2667	40,500 CUP	38.6	2770	46,500 CUP
H414	39.0	2832	39,200 CUP	42.5	2984	43,700 CUP	H4895	33.0	2433	31,200 CUP	36.0	2702	45,100 CUP
IMR 4350	40.0	2837	39,400 CUP	44.0	3025	44,200 CUP	IMR 8208 XBR	34.8	2707	39,200 CUP	37.0	2798	45,000 CUP
H380	36.0	2661	38,500 CUP	40.0	2862	44,100 CUP	Bullet: 120 GR. SIE HPBT Dia: .257" Col: 2.775"						
Varget	35.0	2788	39,100 CUP	38.0	2968	44,600 CUP	IMR 7828		47.0C	2745	43,900 CUP		
IMR 4064	35.0	2773	36,900 CUP	38.5	2973	44,500 CUP	IMR 4831		44.0	2810	45,000 CUP		
IMR 4166	34.2	2696	36,800 CUP	38.0	2984	45,100 CUP	IMR 4350		41.5	2780	45,000 CUP		
BL-C(2)	35.0	2749	39,800 CUP	38.0	2916	44,500 CUP	IMR 4064		35.5	2695	44,000 CUP		
IMR 4895	36.0	2787	37,500 CUP	39.8	3023	44,500 CUP	IMR 4895		33.5	2615	45,000 CUP		
H4895	33.0	2739	37,700 CUP	36.5	2943	44,800 CUP	25-06 REMINGTON						
IMR 8208 XBR	33.0	2739	38,300 CUP	36.3	2927	44,100 CUP	Case: Remington	Twist: 1:10"					
Bullet: 90 GR. SIE HPBT Dia: .257" Col: 2.775"							Barrel: 24"	Trim: 2.484" Primer: Remington 9 1/2, Large Rifle					
IMR 4955	47.5	3017	38,200 CUP	51.8C	3315	46,300 CUP	Bullet: 75 GR. HDY V-MAX Dia: .257" Col: 3.100"						
H4831	48.0	2786	27,600 CUP	52.0	3236	39,500 CUP	H1000	58.0	3135	35,300 CUP	62.0C	3339	40,000 CUP
Hybrid 100V	45.0	3061	38,800 CUP	49.0C	3282	44,800 CUP	IMR 7828 SSC	56.0	3252	44,300 CUP	59.7C*	3486	50,600 CUP
IMR 4831	47.4	3049	37,500 CUP	51.5C	3313	45,800 CUP	H4831	58.0	3393	41,800 CUP	62.0C	3599	49,300 CUP
H4350	44.0	2890	36,100 CUP	46.0	3040	43,700 CUP	Hybrid 100V	51.0	3395	44,300 CUP	55.5	3625	50,900 CUP
IMR 4451	42.7	2914	36,400 CUP	48.8	3318	47,900 CUP	IMR 4831	53.0	3197	43,200 CUP	58.0C	3540	51,600 CUP
H414	46.0	3107	34,800 CUP	50.0	3368	44,400 CUP	H4350	54.0	3460	43,300 CUP	58.5	3700	50,900 CUP
IMR 4350	47.0	3084	41,800 CUP	50.0C	3299	47,900 CUP	IMR 4451	53.8	3464	48,100 PSI	58.5	3781	60,300 PSI
760	46.0	3107	34,800 CUP	50.0	3368	44,400 CUP	H414	51.0	3471	44,500 CUP	55.0	3626	50,100 CUP
IMR 4007 SSC	42.8	3027	39,800 CUP	45.5	3215	47,300 CUP	NEVER EXCEED MAXIMUM LOADS						
H380	43.0	3083	38,400 CUP	47.0	3364	45,400 CUP	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.						

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 4350	50.0	3195	41,800 CUP	55.0	3493	51,000 CUP	IMR 4955	52.5	3106	49,600 PSI	57.7C	3415	61,700 PSI
760	51.0	3471	44,500 CUP	55.0	3626	50,100 CUP	H4831	50.0	3205	56,200 PSI	54.5C	3363	61,000 PSI
H380	47.0	3331	45,000 CUP	51.0	3494	49,900 CUP	Hybrid 100V	46.0	3152	49,100 PSI	50.7	3436	59,500 PSI
Varget	46.0	3454	43,400 CUP	49.7	3660	51,200 CUP	IMR 4831	48.0	3219	53,400 PSI	52.8	3437	60,400 PSI
IMR 4064	44.0	3322	43,600 CUP	48.5	3566	51,200 CUP	H4350	45.0	3117	51,300 PSI	49.5	3344	60,600 PSI
IMR 4895	43.0	3250	44,100 CUP	48.0	3529	50,900 CUP	IMR 4451	46.5	3169	52,200 PSI	52.3	3429	61,000 PSI
H4895	45.0	3474	45,000 CUP	48.5	3642	50,800 CUP	H414	45.0	3122	51,900 PSI	49.5	3339	59,800 PSI
Bullet: 80 GR. BAR TTSX BT Dia: .257" Col: 3.075"							IMR 4350	47.0	3223	54,800 PSI	52.0	3437	61,800 PSI
IMR 7828 SSC	57.0	3350	49,900 PSI	61.0C*	3582	58,500 PSI	Varget	41.0	3098	51,600 PSI	44.0	3261	58,800 PSI
IMR 4955	55.4	3318	48,700 PSI	60.9C	3626	61,900 PSI	IMR 4064	40.0	3043	48,900 PSI	44.0	3253	57,300 PSI
Hybrid 100V	50.0	3353	46,400 PSI	54.0C	3624	56,600 PSI	IMR 4166	41.5	3019	47,000 PSI	46.7	3347	59,800 PSI
IMR 4831	52.0	3301	45,600 PSI	56.0C	3569	55,200 PSI	IMR 4895	41.0	3070	49,200 PSI	46.0	3351	59,900 PSI
H4350	51.0	3347	48,500 PSI	55.0C	3560	56,900 PSI	H4895	39.0	3053	50,800 PSI	43.0	3281	60,200 PSI
IMR 4451	51.5	3388	48,700 PSI	56.0C	3673	59,800 PSI	Bullet: 90 GR. SIE HPBT Dia: .257" Col: 3.100"						
H414	48.0	3379	52,800 PSI	53.0	3586	60,300 PSI	H1000	58.0	3142	40,300 CUP	62.0C	3330	47,500 CUP
IMR 4350	51.0	3372	49,300 PSI	55.0C	3600	57,300 PSI	IMR 7977	57.0	3126	45,100 PSI	62.0C	3419	55,700 PSI
760	48.0	3379	52,800 PSI	53.0	3586	60,300 PSI	IMR 7828 SSC	55.0	3145	46,400 CUP	59.5C*	3374	52,900 CUP
H380	49.0	3394	52,800 PSI	52.5	3597	60,800 PSI	IMR 4955	53.0	3161	49,000 PSI	58.3	3451	61,900 PSI
Varget	45.0	3389	51,800 PSI	49.0	3613	60,900 PSI	H4831	54.0	3213	46,000 CUP	58.0	3481	50,400 CUP
IMR 4064	45.0	3377	49,500 PSI	49.5	3645	61,400 PSI	Hybrid 100V	50.0	3217	46,400 CUP	54.0	3404	51,500 CUP
IMR 4166	44.5	3339	48,300 PSI	50.0	3616	60,700 PSI	IMR 4831	51.0	3095	42,900 CUP	55.5	3374	51,100 CUP
IMR 4895	45.0	3385	50,500 PSI	49.5	3661	61,900 PSI	H4350	49.0	3191	44,000 CUP	53.0	3370	50,700 CUP
H4895	43.0	3408	52,100 PSI	47.5	3630	61,500 PSI	IMR 4451	50.3	3270	50,900 PSI	54.7	3517	61,200 PSI
Bullet: 85 GR. NOS BT Dia: .257" Col: 3.230"							H414	47.0	3135	44,300 CUP	51.0	3315	50,200 CUP
H1000	58.0	3218	41,000 CUP	62.0C	3442	48,100 CUP	IMR 4350	49.0	3088	42,800 CUP	53.5	3348	51,400 CUP
IMR 7977	57.0	3256	49,200 PSI	62.0C	3564	60,600 PSI	760	47.0	3135	44,300 CUP	51.0	3315	50,200 CUP
IMR 7828 SSC	55.0	3186	46,200 CUP	59.2C*	3417	51,900 CUP	Varget	42.0	3165	45,000 CUP	45.0	3312	50,400 CUP
IMR 4955	53.0	3210	49,700 PSI	58.3	3499	61,700 PSI	IMR 4064	42.0	3117	45,100 CUP	45.8	3298	51,100 CUP
H4831	54.0	3302	46,000 CUP	58.0	3473	51,700 CUP	IMR 4895	42.0	3106	46,000 CUP	45.9	3269	49,200 CUP
Hybrid 100V	49.0	3223	44,100 CUP	54.0	3490	51,200 CUP	H4895	41.0	3128	44,100 CUP	44.0	3257	51,000 CUP
IMR 4831	49.0	3021	42,400 CUP	55.0	3417	51,600 CUP	Bullet: 100 GR. NOS PART Dia: .257" Col: 3.200"						
H4350	49.0	3255	44,400 CUP	53.0	3445	50,700 CUP	H1000	56.0	3055	44,600 CUP	59.7C	3212	50,700 CUP
IMR 4451	48.6	3289	51,600 PSI	52.9	3494	59,100 PSI	IMR 7977	55.5	3064	48,600 PSI	61.0C	3372	61,300 PSI
H414	48.0	3248	45,000 CUP	52.0	3443	50,600 CUP	IMR 7828 SSC	53.0	2940	40,700 CUP	57.2C	3203	51,300 CUP
IMR 4350	48.0	3107	43,700 CUP	53.0	3398	50,800 CUP	IMR 4955	51.4	3033	50,500 PSI	56.5	3287	61,500 PSI
760	48.0	3248	45,000 CUP	52.0	3443	50,600 CUP	H4831	51.0	3025	46,800 CUP	54.3	3172	51,400 CUP
H380	45.0	3130	43,700 CUP	49.0	3321	51,200 CUP	Hybrid 100V	48.0	3034	44,200 CUP	52.5	3295	51,800 CUP
Varget	43.0	3271	45,000 CUP	46.5	3449	50,900 CUP	IMR 4831	49.0	2981	41,700 CUP	54.0	3233	51,400 CUP
IMR 4064	42.0	3149	45,700 CUP	45.7	3353	50,200 CUP	H4350	47.0	3038	47,800 CUP	50.0	3155	51,500 CUP
IMR 4166	42.0	3148	47,700 PSI	47.2	3466	59,900 PSI	IMR 4451	46.8	3092	52,700 PSI	51.9	3329	61,600 PSI
IMR 4895	41.0	3063	43,300 CUP	45.5	3297	50,100 CUP	H414	42.0	2843	44,600 CUP	47.0	3059	50,700 CUP
H4895	41.0	3176	44,600 CUP	44.5	3369	51,600 CUP	IMR 4350	48.0	2975	43,200 CUP	52.8	3257	51,200 CUP
Bullet: 87 GR. SPR HP Dia: .257" Col: 3.115"							760	42.0	2843	44,600 CUP	47.0	3059	50,700 CUP
H1000	58.0	3176	36,200 CUP	62.0C	3296	43,700 CUP	Varget	41.0	2974	45,600 CUP	44.0	3125	51,400 CUP
IMR 7977	58.9	3209	46,500 PSI	62.0C	3407	54,000 PSI	IMR 4064	40.0	2904	40,400 CUP	44.0	3122	50,800 CUP
IMR 7828 SSC	55.0	3133	43,600 CUP	59.5C*	3398	51,600 CUP	IMR 4166	41.0	2956	48,000 PSI	46.1	3243	59,700 PSI
IMR 4955	53.5	3184	48,600 PSI	58.8	3496	61,800 PSI	IMR 4895	42.0	3009	46,000 CUP	45.3	3155	50,400 CUP
H4831	56.0	3232	43,500 CUP	60.0	3421	50,500 CUP	H4895	40.0	2921	44,200 CUP	43.0	3072	51,000 CUP
Hybrid 100V	50.0	3214	42,400 CUP	55.0	3499	49,300 CUP	Trail Boss	13.4	1454	25,500 PSI	19.2	1712	30,600 PSI
IMR 4831	52.0	3099	41,900 CUP	56.5	3398	50,600 CUP	Bullet: 117 GR. HDY SPBT Dia: .257" Col: 3.165"						
H4350	50.0	3234	45,600 CUP	54.5	3409	50,800 CUP	Returnbo	56.0	2876	44,600 CUP	60.5C	3079	50,700 CUP
IMR 4451	50.9	3260	49,500 PSI	55.7	3545	61,400 PSI	H1000	55.0	2936	47,200 CUP	58.5C	3046	51,000 CUP
H414	47.0	3138	43,800 CUP	50.5	3327	51,100 CUP	IMR 7977	53.0	2889	50,000 PSI	58.0C	3153	61,700 PSI
IMR 4350	50.0	3086	41,800 CUP	54.8	3378	50,900 CUP	IMR 7828 SSC	51.0	2879	46,600 CUP	55.0	3037	51,200 CUP
760	47.0	3138	43,800 CUP	50.5	3327	51,100 CUP	IMR 4955	49.3	2811	49,700 PSI	54.2	3063	61,500 PSI
Varget	43.0	3231	44,900 CUP	46.0	3382	50,500 CUP	H4831	48.0	2748	43,000 CUP	52.0	2937	50,900 CUP
IMR 4064	42.0	3091	42,000 CUP	46.5	3344	50,600 CUP	Hybrid 100V	46.0	2981	43,100 CUP	50.5	3111	50,400 CUP
IMR 4166	43.2	3155	47,300 PSI	48.6	3467	59,600 PSI	IMR 4831	48.0	2839	42,600 CUP	53.0	3137	51,400 CUP
IMR 4895	42.0	3148	45,800 CUP	46.0	3341	51,000 CUP	H4350	44.0	2737	44,300 CUP	47.7	2923	50,800 CUP
H4895	43.0	3243	47,700 CUP	45.5	3364	51,600 CUP	IMR 4350	47.0	2851	42,700 CUP	52.0	3106	51,300 CUP
Bullet: 90 GR. HDY GMX Dia: .257" Col: 3.115"							Varget	37.0	2637	42,900 CUP	41.0	2838	50,100 CUP
Returnbo	56.0	3250	51,000 PSI	60.0C	3432	58,700 PSI	H4895	37.0	2641	44,500 CUP	40.0	2797	50,600 CUP
H1000	56.0	3248	54,900 PSI	60.0C	3377	59,300 PSI	Bullet: 120 GR. SFT SP Dia: .257" Col: 3.150"						
IMR 7977	55.9	3200	51,200 PSI	60.8C	3473	61,300 PSI	Returnbo	56.0	2806	43,700 CUP	60.0C	2991	50,300 CUP
IMR 7828 SSC	52.0	3198	52,300 PSI	57.0C	3437	61,500 PSI	H1000	52.0	2772	44,900 CUP	55.5	2902	50,600 CUP

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 7977	52.3	2797	49,800 PSI	57.2	3064	61,000 PSI	Suprform	44.0	2845	48,800 PSI	48.5C	3081	60,300 PSI
IMR 7828 SSC	50.0	2752	44,400 CUP	54.0	2923	50,300 CUP	H4831	44.0	2733	52,100 PSI	47.0C	2883	60,900 PSI
IMR 4955	48.7	2716	48,800 PSI	53.5	2994	61,600 PSI	Hybrid 100V	40.0	2782	48,100 PSI	43.5C	2986	56,700 PSI
H4831	48.0	2705	45,800 CUP	51.5	2856	51,200 CUP	IMR 4831	42.0	2767	53,900 PSI	44.7C	2919	61,300 PSI
Hybrid 100V	46.0	2796	44,500 CUP	50.0	3009	51,200 CUP	H4350	42.0	2806	52,800 PSI	45.3C	2999	63,000 PSI
IMR 4831	48.0	2787	42,200 CUP	53.0C	3065	50,900 CUP	H414	42.0	2810	52,900 PSI	44.7	2958	62,300 PSI
H4350	44.0	2643	42,900 CUP	47.5	2816	50,900 CUP	IMR 4350	41.0	2733	50,400 PSI	44.5C	2944	61,300 PSI
IMR 4350	48.0	2831	43,500 CUP	52.0C	3049	50,800 CUP	760	42.0	2810	52,900 PSI	44.7	2958	62,300 PSI
Varget	38.0	2584	45,100 CUP	41.0	2755	51,900 CUP	H380	40.0	2722	51,200 PSI	43.2	2910	62,700 PSI
H4895	37.0	2541	45,400 CUP	40.0	2694	51,700 CUP	Varget	36.0	2726	53,700 PSI	38.7	2871	62,600 PSI
25 WINCHESTER SUPER SHORT MAGNUM													
Case: Winchester Twist: 1: 10"													
Barrel: 24" Trim: 1.660" Primer: Winchester LR, Large Rifle													
Bullet: 75 GR. HDY V-MAX Dia: .257" Col: 2.350"													
CFE 223	46.0	3506	54,300 PSI	50.0	3762	63,500 PSI							
Varget	43.0	3437	49,700 PSI	46.5	3677	62,200 PSI							
IMR 4320	44.0	3447	51,200 PSI	47.4	3671	62,000 PSI							
IMR 4064	43.0	3471	50,300 PSI	46.7C	3740	62,200 PSI							
BL-C(2)	45.0	3482	48,000 PSI	49.3	3775	61,000 PSI							
IMR 4895	43.0	3477	50,400 PSI	46.3	3703	62,100 PSI							
H4895	42.0	3473	49,700 PSI	45.2	3708	61,800 PSI							
IMR 8208 XBR	40.0	3341	47,200 PSI	45.0	3687	62,700 PSI							
Bullet: 85 GR. NOS BT Dia: .257" Col: 2.350"													
H380	45.0	3216	47,700 PSI	48.0	3405	56,100 PSI							
CFE 223	43.0	3277	54,200 PSI	46.3	3454	62,300 PSI							
Varget	40.0	3180	46,200 PSI	44.9	3497	62,200 PSI							
IMR 4320	43.0	3267	50,200 PSI	46.0	3491	62,000 PSI							
IMR 4064	41.0	3237	47,600 PSI	45.0C	3532	62,200 PSI							
BL-C(2)	44.0	3361	51,500 PSI	47.5	3547	61,600 PSI							
IMR 4895	41.0	3226	47,100 PSI	45.0	3545	62,800 PSI							
H4895	40.0	3268	50,700 PSI	43.3	3475	62,100 PSI							
IMR 8208 XBR	38.0	3174	48,900 PSI	42.4	3456	62,600 PSI							
Bullet: 87 GR. SIE SP Dia: .257" Col: 2.300"													
IMR 4831	45.0	3130	54,100 PSI	48.2C	3284	60,600 PSI							
H414	45.0	3171	50,600 PSI	48.0	3342	58,200 PSI							
IMR 4350	44.0	3090	50,600 PSI	47.0C	3276	58,500 PSI							
760	45.0	3171	50,600 PSI	48.0	3342	58,200 PSI							
H380	44.0	3183	54,200 PSI	47.5	3363	62,200 PSI							
CFE 223	43.0	3307	59,700 PSI	46.3	3449	63,600 PSI							
Varget	40.0	3189	49,800 PSI	44.0	3431	62,600 PSI							
IMR 4064	40.0	3179	47,800 PSI	43.3	3412	60,700 PSI							
IMR 4895	40.0	3195	48,100 PSI	43.9	3452	61,700 PSI							
H4895	40.0	3271	53,000 PSI	43.3	3456	62,300 PSI							
IMR 8208 XBR	38.0	3152	49,500 PSI	42.7	3423	62,100 PSI							
Bullet: 100 GR. SPR BT Dia: .257" Col: 2.300"													
IMR 7828	46.0	2931	51,400 PSI	49.5C*	3125	60,600 PSI							
Suprform	48.0	3155	49,900 PSI	52.0C	3381	59,700 PSI							
Hybrid 100V	42.0	3000	47,400 PSI	45.0C	3177	54,000 PSI							
IMR 4831	45.0	3025	54,200 PSI	48.0C	3183	62,900 PSI							
H4350	45.0	3035	51,400 PSI	48.5C	3233	61,300 PSI							
H414	44.0	3015	50,400 PSI	47.5	3221	60,800 PSI							
IMR 4350	44.0	3018	54,600 PSI	47.0C	3198	61,400 PSI							
760	44.0	3015	50,400 PSI	47.5	3221	60,800 PSI							
H380	43.0	3010	53,500 PSI	46.5	3190	62,800 PSI							
CFE 223	39.0	3018	57,100 PSI	43.2	3190	63,900 PSI							
Varget	39.0	3022	50,000 PSI	42.8	3248	62,700 PSI							
IMR 4320	40.0	3022	50,700 PSI	43.0	3227	61,600 PSI							
IMR 4064	39.0	3065	52,600 PSI	42.0	3245	62,400 PSI							
BL-C(2)	42.0	3136	52,400 PSI	44.5	3264	58,900 PSI							
IMR 4895	39.0	3055	51,900 PSI	42.5	3259	62,400 PSI							
H4895	38.0	3042	50,500 PSI	41.5	3243	61,700 PSI							
IMR 8208 XBR	36.0	2954	51,200 PSI	40.0	3166	62,100 PSI							
Bullet: 115 GR. NOS BT Dia: .257" Col: 2.350"													
IMR 7828	44.0	2728	52,100 PSI	47.0C*	2910	61,600 PSI							
NEVER EXCEED MAXIMUM LOADS													
*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.													

RIFLE DATA

Starting Loads				Maximum Loads			Starting Loads				Maximum Loads		
Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure	Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
H4831	68.0	3498	45,000 CUP	72.0	3664	52,200 CUP	Benchmark	26.0	2355	34,800 PSI	29.0C	2653	49,600 PSI
H4350	63.0	3544	44,400 CUP	67.0	3739	51,600 CUP	H322	25.0	2325	35,900 PSI	27.7C	2607	49,800 PSI
H414	62.5	3543	44,800 CUP	66.5	3746	51,700 CUP	IMR 4198	21.5	2298	35,900 PSI	24.3C	2567	49,700 PSI
H4198	22.0	2324	37,000 PSI	24.8	2576	49,900 PSI	H4198	22.0	2324	37,000 PSI	24.8	2576	49,900 PSI
Bullet: 90 GR. SIE HPBT Dia: .257" Col: 3.150"													
H1000	76.0	3494	43,800 CUP	80.0C	3671	50,000 CUP	Bullet: 120 GR. BARTSX Dia: .264" Col: 2.200"						
H4831	67.0	3420	44,400 CUP	71.0	3611	52,500 CUP	H335	25.0	2142	37,400 PSI	28.0	2415	48,400 PSI
H4350	62.5	3524	46,600 CUP	66.5	3685	52,400 CUP	IMR 8208 XBR	25.0	2094	34,600 PSI	28.0C	2419	50,000 PSI
H414	62.0	3458	44,000 CUP	66.0	3671	52,200 CUP	Benchmark	24.5	2133	36,900 PSI	27.3	2401	50,200 PSI
Bullet: 100 GR. SPR SPBT Dia: .257" Col: 3.200"													
H1000	73.0	3410	45,800 CUP	78.0	3575	52,400 CUP	H322	23.0	2074	37,700 PSI	25.8C	2347	50,000 PSI
IMR 7828				73.0	3655	53,100 CUP	IMR 4198	20.3	2062	40,600 PSI	22.7C	2280	50,100 PSI
H4831	64.0	3312	45,800 CUP	68.0	3462	52,500 CUP	H4198	20.5	2074	41,000 PSI	22.9C	2272	49,700 PSI
H4350	59.0	3312	44,900 CUP	63.0	3500	52,400 CUP	Bullet: 123 GR. SIE HPBT Dia: .264" Col: 2.250"						
H414	59.0	3294	45,300 CUP	62.5	3449	51,800 CUP	H335	26.0	2288	37,800 PSI	28.7	2508	49,800 PSI
Bullet: 115 GR. BAR XFB Dia: .257" Col: 3.250"													
H1000	67.0	3147	50,000 CUP	71.0	3265	52,700 CUP	IMR 8208 XBR	25.5	2180	33,900 PSI	28.5C	2497	50,000 PSI
H4831	60.0	3030	46,200 CUP	64.0	3170	52,000 CUP	Benchmark	25.0	2225	36,900 PSI	27.5C	2460	49,900 PSI
H4350	56.0	2988	46,900 CUP	60.0	3188	52,500 CUP	H322	24.0	2192	36,600 PSI	26.6C	2434	49,900 PSI
Bullet: 117 GR. HDY SPBT Dia: .257" Col: 3.220"													
H1000	70.0	3169	45,200 CUP	74.0	3321	51,800 CUP	IMR 4198	22.0	2263	43,300 PSI	24.2C	2385	50,500 PSI
IMR 7828				70.0	3390	52,600 CUP	H4198	21.0	2153	37,700 PSI	23.7C	2375	50,000 PSI
H4831	62.0	3099	44,800 CUP	66.0	3252	52,300 CUP	6.5 CREEDMOOR						
H4350	57.0	3112	46,000 CUP	60.5	3266	52,000 CUP	Case: Hornady Twist: 1:8"						
Bullet: 120 GR. SFT SP Dia: .257" Col: 3.220"													
H1000	69.0	3103	45,700 CUP	73.0	3256	51,800 CUP	Barrel: 24" Trim: 1.910" Primer: Federal 210M, Large Rifle Match						
IMR 7828				69.0	3325	53,000 CUP	Bullet: 95 GR. HDY V-MAX Dia: .264" Col: 2.670"						
H4831	61.0	3013	44,600 CUP	65.0	3184	51,800 CUP	H4350	43.0	2972	45,000 PSI	47.0C	3224	56,100 PSI
H4350	56.0	3000	44,400 CUP	60.0	3189	51,800 CUP	H414	42.0	2991	46,100 PSI	46.5	3243	57,100 PSI
6.5MM GRENDL													
Case: Lapua Twist: 1:9"													
Barrel: 24" Trim: 1.515" Primer: Federal 205M, Small Rifle Match													
Bullet: 85 GR. SIE HP Dia: .264" Col: 2.240"													
H335	29.0	2705	37,700 PSI	32.0	2956	49,300 PSI	H4350	43.0	2972	45,000 PSI	47.0C	3224	56,100 PSI
H322	27.0	2625	36,600 PSI	30.1C	2927	49,400 PSI	H414	42.0	2991	46,100 PSI	46.5	3243	57,100 PSI
IMR 4198	24.0	2645	38,100 PSI	26.4C	2898	50,000 PSI	760	42.0	2991	46,100 PSI	46.5	3243	57,100 PSI
H4198	24.5	2674	38,500 PSI	27.2C	2919	49,500 PSI	CFE 223	40.4	3152	54,500 PSI	43.0	3274	60,000 PSI
Bullet: 90 GR. SPR TNT HP Dia: .264" Col: 2.200"													
H335	28.5	2613	35,200 PSI	31.7	2912	49,400 PSI	Varget	39.0	3051	49,000 PSI	43.0	3286	60,100 PSI
IMR 8208 XBR	29.0	2580	34,700 PSI	31.0C	2794	42,400 PSI	IMR 4064	38.0	3009	45,800 PSI	41.6	3281	58,700 PSI
Benchmark	28.5	2662	37,700 PSI	30.5C	2870	47,000 PSI	IMR 4166	38.7	3022	48,300 PSI	42.6	3285	59,900 PSI
H322	26.5	2534	34,600 PSI	29.5C	2863	49,500 PSI	748	39.0	3050	50,200 PSI	43.0	3259	59,000 PSI
IMR 4198	23.5	2562	36,600 PSI	26.2C	2844	49,900 PSI	BL-C(2)	40.0	3082	49,800 PSI	44.0	3313	60,300 PSI
H4198	24.0	2594	36,800 PSI	26.8C	2854	49,400 PSI	IMR 4895	38.0	3006	46,600 PSI	42.2	3295	60,400 PSI
Bullet: 95 GR. HDY V-MAX Dia: .264" Col: 2.230"													
H335	28.0	2570	37,400 PSI	31.2	2841	50,200 PSI	H4895	37.0	3059	50,400 PSI	41.0	3276	60,300 PSI
IMR 8208 XBR	28.0	2527	35,600 PSI	31.0C	2840	49,600 PSI	IMR 8208 XBR	36.0	3041	50,800 PSI	40.0	3228	58,900 PSI
Benchmark	27.0	2476	33,900 PSI	30.0C	2807	49,700 PSI	Bullet: 100 GR. BARTTSX BT Dia: .264" Col: 2.655"						
H322	26.0	2477	35,900 PSI	28.8C	2768	49,300 PSI	H4350	39.9	2895	49,200 PSI	44.7	3133	60,300 PSI
IMR 4198	22.5	2470	36,700 PSI	25.2C	2740	49,900 PSI	H414	39.7	2893	47,100 PSI	44.5	3163	60,400 PSI
H4198	23.0	2483	36,600 PSI	25.8C	2750	49,300 PSI	760	39.7	2893	47,100 PSI	44.5	3163	60,400 PSI
Bullet: 100 GR. NOS BT Dia: .264" Col: 2.200"													
H335	28.0	2509	38,200 PSI	30.7	2744	49,700 PSI	Varget	34.8	2867	50,700 PSI	39.0	3101	62,100 PSI
IMR 8208 XBR	29.0	2542	38,300 PSI	30.8C	2732	47,600 PSI	IMR 4064	35.1	2847	47,300 PSI	39.5	3116	60,400 PSI
Benchmark	27.0	2460	36,300 PSI	29.9C	2739	49,900 PSI	IMR 4166	37.3	2870	49,300 PSI	41.0	3131	59,900 PSI
H322	26.0	2420	36,700 PSI	29.0C	2716	49,800 PSI	IMR 4895	35.4	2819	46,600 PSI	39.8	3103	59,800 PSI
IMR 4198	22.0	2334	34,400 PSI	25.1C	2646	49,600 PSI	H4895	33.1	2819	49,100 PSI	37.3	3063	61,000 PSI
H4198	23.0	2414	36,800 PSI	25.6C	2666	49,800 PSI	IMR 8208 XBR	33.2	2812	49,300 PSI	37.4	3056	60,900 PSI
Bullet: 107 GR. SIE HPBT Dia: .264" Col: 2.250"													
H335	27.0	2413	36,900 PSI	30.0	2677	49,500 PSI	Bullet: 100 GR. NOS BT Dia: .264" Col: 2.760"						
IMR 8208 XBR	27.0	2356	34,600 PSI	29.8C	2667	49,300 PSI	H4350	40.5	2905	48,500 PSI	45.0C	3156	59,800 PSI
NEVER EXCEED MAXIMUM LOADS													
*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Varget	37.0	2863	48,600 PSI	41.0	3093	60,200 PSI	IMR 4350	39.2	2511	48,300 PSI	41.7C	2687	58,600 PSI
IMR 4064	36.0	2799	44,100 PSI	39.7	3081	58,500 PSI	760	36.5	2470	50,900 PSI	40.2	2634	58,300 PSI
IMR 4166	36.7	2841	48,600 PSI	40.4	3086	60,200 PSI	H380	35.5	2399	47,000 PSI	39.2	2618	59,100 PSI
748	37.0	2848	49,000 PSI	41.3	3086	59,300 PSI	Varget	34.5	2489	52,600 PSI	36.3	2598	60,100 PSI
BL-C(2)	38.0	2912	50,300 PSI	42.0	3103	59,000 PSI	IMR 4064	34.6	2503	52,400 PSI	36.8	2614	59,500 PSI
IMR 4895	36.0	2816	45,800 PSI	40.0	3083	59,700 PSI	IMR 4166	32.0	2383	48,900 PSI	35.5	2598	60,600 PSI
H4895	35.0	2846	49,400 PSI	39.0	3073	60,900 PSI	IMR 4895	33.8	2479	51,200 PSI	36.0	2599	59,500 PSI
IMR 8208 XBR	34.0	2812	48,900 PSI	37.8	3027	59,700 PSI	H4895	32.4	2426	49,800 PSI	34.5	2551	58,000 PSI
							IMR 8208 XBR	32.2	2431	51,500 PSI	33.5	2518	58,000 PSI
Bullet: 120 GR. HDY A-MAX Dia: .264" Col: 2.670"													
H4350	40.5	2709	47,700 PSI	45.0C	2965	60,800 PSI	260 REMINGTON						
IMR 4451	40.2	2618	46,200 PSI	44.7	2929	61,400 PSI	Case: Remington Twist: 1:9"						
H414	40.0	2684	47,100 PSI	44.5	2960	61,500 PSI	Barrel: 24" Trim: 2.025" Primer: Remington 9 1/2, Large Rifle						
760	40.0	2684	47,100 PSI	44.5	2960	61,500 PSI	Bullet: 95 GR. HDY V-MAX Dia: .264" Col: 2.780"						
Varget	36.0	2668	49,600 PSI	40.2	2891	60,400 PSI	IMR 4955	47.5	3007	47,900 PSI	50.5C	3224	57,100 PSI
IMR 4064	35.0	2666	47,200 PSI	38.9	2903	59,800 PSI	H4350	47.0	3135	51,200 PSI	49.7	3284	58,100 PSI
IMR 4166	34.7	2642	50,500 PSI	38.5	2867	61,500 PSI	H414	46.0	3136	50,700 PSI	49.0	3313	58,600 PSI
748	36.0	2650	56,900 PSI	40.4	2899	59,900 PSI	760	46.0	3136	50,700 PSI	49.0	3313	58,600 PSI
BL-C(2)	37.0	2678	46,600 PSI	41.3	2941	60,500 PSI	H380	44.0	3088	51,300 PSI	47.0	3262	59,500 PSI
IMR 4895	35.0	2670	48,600 PSI	39.0	2895	59,300 PSI	CFE 223	40.4	3081	51,200 PSI	43.0	3240	58,500 PSI
H4895	34.0	2672	50,500 PSI	37.4	2858	60,400 PSI	Varget	39.0	3070	50,200 PSI	42.0	3244	58,500 PSI
IMR 8208 XBR	32.0	2564	45,800 PSI	36.0	2818	60,300 PSI	IMR 4166	39.2	3073	51,100 PSI	42.4	3259	59,500 PSI
Bullet: 123 GR. SIE HPBT Dia: .264" Col: 2.670"													
H4350	40.0	2680	45,500 PSI	44.8	2951	59,700 PSI	BL-C(2)	41.0	3093	51,900 PSI	43.5	3236	58,300 PSI
IMR 4451	40.1	2627	46,600 PSI	44.6	2930	61,500 PSI	H335	34.5	2968	55,700 PSI	38.3	3114	58,000 PSI
H414	40.0	2670	45,200 PSI	44.2	2938	58,900 PSI	H4895	38.0	3069	51,300 PSI	40.8	3225	58,500 PSI
760	40.0	2670	45,200 PSI	44.2	2938	58,900 PSI	IMR 8208 XBR	37.6	3038	51,900 PSI	40.0	3166	58,200 PSI
Varget	36.0	2712	51,100 PSI	39.8	2887	59,200 PSI	Benchmark	40.0	3190	51,400 PSI	43.5	3391	59,600 PSI
IMR 4064	35.0	2673	48,300 PSI	38.8	2882	58,300 PSI	Bullet: 100 GR. BAR XFB Dia: .264" Col: 2.750"						
IMR 4166	34.2	2624	49,200 PSI	38.0	2855	61,000 PSI	H4831	46.0	2925	52,800 PSI	48.8C	3055	58,600 PSI
748	37.0	2650	45,600 PSI	40.8	2900	58,900 PSI	H4350	42.0	2946	52,900 PSI	45.0	3077	58,200 PSI
BL-C(2)	37.0	2640	43,800 PSI	41.3	2916	58,600 PSI	H414	43.0	2929	50,600 PSI	46.0	3101	58,000 PSI
IMR 4895	35.0	2663	47,700 PSI	39.2	2896	59,900 PSI	760	43.0	2929	50,600 PSI	46.0	3101	58,000 PSI
IMR 8208 XBR	32.0	2570	46,100 PSI	36.0	2806	59,000 PSI	H380	41.0	2860	52,000 PSI	43.5	3004	58,200 PSI
Bullet: 130 GR. NOS AB Dia: .264" Col: 2.750"													
H4350	35.2	2464	49,300 PSI	39.2	2687	60,400 PSI	Varget	36.5	2861	52,000 PSI	39.5	3027	58,900 PSI
IMR 4451	37.5	2479	47,800 PSI	41.7C	2735	59,500 PSI	BL-C(2)	37.0	2804	50,700 PSI	40.5	3002	59,100 PSI
H414	35.4	2490	50,500 PSI	39.3	2693	60,000 PSI	H335	33.0	2685	50,300 PSI	36.0	2878	58,400 PSI
760	35.4	2490	50,500 PSI	39.3	2693	60,000 PSI	H4895	35.0	2810	51,300 PSI	38.0	2974	58,800 PSI
Varget	31.4	2414	51,500 PSI	34.9	2610	61,400 PSI	Benchmark	38.0	2981	50,700 PSI	41.0	3171	59,900 PSI
IMR 4064	31.0	2352	47,600 PSI	34.9	2585	59,600 PSI	Bullet: 107 GR. SIE HPBT Dia: .264" Col: 2.780"						
IMR 4166	32.0	2416	47,800 PSI	35.7	2663	60,400 PSI	IMR 4955	46.5	2872	47,800 PSI	49.5C	3078	57,100 PSI
748	33.0	2494	56,200 PSI	34.8	2586	60,500 PSI	H4831	50.0	2963	50,300 PSI	51.0C	3027	54,000 PSI
BL-C(2)	31.2	2358	52,600 PSI	34.9	2529	60,400 PSI	Hybrid 100V	42.0	2835	46,600 PSI	46.0C	3071	56,100 PSI
IMR 4895	32.9	2435	49,600 PSI	37.0	2668	61,000 PSI	H4350	46.0	2997	50,400 PSI	49.0	3164	58,700 PSI
H4895	30.1	2361	48,500 PSI	33.8	2583	61,200 PSI	H414	43.5	2917	46,900 PSI	46.5	3151	58,100 PSI
IMR 8208 XBR	30.5	2378	49,700 PSI	34.0	2589	61,200 PSI	760	43.5	2917	46,900 PSI	46.5	3151	58,100 PSI
Bullet: 140 GR. HDY A-MAX Dia: .264" Col: 2.820"													
Hybrid 100V	36.0	2451	45,300 PSI	40.9C	2736	59,600 PSI	H380	43.0	2908	48,500 PSI	46.0	3107	58,200 PSI
H4350	36.0	2464	49,200 PSI	40.0C	2660	59,200 PSI	CFE 223	39.7	2955	54,900 PSI	42.2	3081	58,900 PSI
IMR 4451	37.0	2414	47,700 PSI	41.1	2670	60,700 PSI	Varget	38.5	2947	49,800 PSI	41.5	3125	58,700 PSI
H414	36.0	2460	50,100 PSI	40.2	2672	60,300 PSI	IMR 4166	37.8	2935	52,000 PSI	40.7	3099	59,500 PSI
IMR 4350	37.0	2460	47,500 PSI	41.0C	2607	59,800 PSI	BL-C(2)	40.0	2951	50,400 PSI	42.7	3097	57,800 PSI
760	36.0	2460	50,100 PSI	40.2	2672	60,300 PSI	H335	37.0	2862	50,300 PSI	39.2	3014	58,400 PSI
H380	34.5	2388	47,800 PSI	38.5	2605	59,500 PSI	H4895	38.0	2950	51,900 PSI	40.7	3074	58,000 PSI
Varget	32.0	2371	47,400 PSI	35.8	2598	59,900 PSI	IMR 8208 XBR	37.2	2900	52,300 PSI	39.1	3001	57,900 PSI
IMR 4064	32.0	2393	48,700 PSI	35.7	2603	60,800 PSI	Benchmark	40.0	3158	50,900 PSI	42.5	3227	59,500 PSI
IMR 4166	31.7	2359	48,300 PSI	35.2	2576	60,100 PSI	Bullet: 120 GR. SPR SP Dia: .264" Col: 2.780"						
IMR 4895	33.7	2491	52,700 PSI	35.9	2609	60,200 PSI	H1000	49.0	2710	44,600 PSI	51.0C	2810	49,300 PSI
H4895	30.0	2316	46,800 PSI	34.0	2555	60,400 PSI	IMR 7828				47.0C	2895	57,800 PSI
IMR 8208 XBR	30.0	2335	49,200 PSI	32.8	2511	59,300 PSI	IMR 4955	43.8	2739	51,400 PSI	46.6	2911	59,900 PSI
Bullet: 142 GR. SIE HPBT Dia: .264" Col: 2.780"													
Hybrid 100V	39.0	2581	50,200 PSI	41.5	2737	58,900 PSI	H4831	47.0	2812	52,100 PSI	50.0C	2954	59,200 PSI
H4350	38.8	2573	52,300 PSI	41.5	2694	59,800 PSI	Hybrid 100V	41.0	2738	50,200 PSI	45.0C	2934	58,500 PSI
IMR 4451	37.3	2422	46,600 PSI	41.4	2691	61,200 PSI	IMR 4831				44.0	2885	58,400 PSI
H414	36.5	2470	50,900 PSI	40.2	2634	58,300 PSI	H4350	43.5	2814	51,400 PSI	46.5	2960	58,200 PSI
							IMR 4451	40.8	2727	50,300 PSI	43.7	2894	58,000 PSI
							H414	42.5	2802	51,000 PSI	45.5	2968	58,600 PSI
							IMR 4350				43.0	2885	58,000 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
760	42.5	2802	51,000 PSI	45.5	2968	58,600 PSI	Bullet: 142 GR. SIE HPBT Dia: .264" Col: 2.780"						
H380	40.0	2686	51,500 PSI	43.0	2844	58,100 PSI	IMR 4955	42.3	2535	50,100 PSI	45.1C	2702	59,200 PSI
Varget	36.0	2716	50,300 PSI	39.0	2877	58,300 PSI	H4831	45.0	2601	50,900 PSI	48.0C	2747	58,700 PSI
IMR 4320				37.5	2805	58,400 PSI	Hybrid 100V	38.0	2464	46,800 PSI	42.0C	2690	57,500 PSI
IMR 4064				37.0	2805	57,700 PSI	H4350	41.5	2590	50,100 PSI	44.5	2735	58,000 PSI
IMR 4166	35.0	2684	50,100 PSI	38.0	2867	59,000 PSI	IMR 4451	38.8	2545	50,100 PSI	41.5	2717	58,900 PSI
BL-C(2)	37.0	2686	52,800 PSI	40.0	2840	58,900 PSI	H414	41.0	2588	50,400 PSI	43.5	2734	58,800 PSI
IMR 4895				36.0	2770	57,100 PSI	760	41.0	2588	50,400 PSI	43.5	2734	58,800 PSI
H335	34.0	2613	51,600 PSI	36.7	2755	58,600 PSI	H380	39.0	2490	50,100 PSI	41.5	2636	58,300 PSI
H4895	35.0	2664	51,900 PSI	38.0	2813	58,900 PSI	Varget	35.0	2541	54,000 PSI	37.5	2645	59,100 PSI
IMR 3031				34.0	2720	57,600 PSI	IMR 4166	32.2	2440	48,900 PSI	35.0	2624	59,300 PSI
Benchmark	37.0	2768	51,200 PSI	40.0	2935	59,500 PSI	H4895	34.0	2486	52,000 PSI	36.2	2597	58,200 PSI
Bullet: 123 GR. SIE HPBT Dia: .264" Col: 2.780"						Bullet: 160 GR. HDY RN Dia: .264" Col: 2.860"							
IMR 4955	45.3	2767	51,100 PSI	48.0C	2937	59,700 PSI	H1000	48.0	2498	50,500 PSI	50.0C	2595	56,400 PSI
IMR 4451	41.0	2704	47,900 PSI	43.9	2926	58,700 PSI	IMR 7977	46.3	2488	52,700 PSI	48.3C	2597	58,600 PSI
IMR 4166	35.7	2704	51,200 PSI	38.4	2858	59,000 PSI	IMR 7828				45.0	2580	58,100 PSI
Bullet: 125 GR. NOS PART Dia: .264" Col: 2.780"						Bullet: 85 GR. SIE HP Dia: .264" Col: 2.800"							
H1000	48.0	2685	46,300 PSI	51.0C	2821	53,300 PSI	H4350	47.0	2909	31,600 CUP	52.0C	3283	42,100 CUP
IMR 7977	45.2	2658	49,200 PSI	48.7	2866	58,900 PSI	IMR 4451	44.9	2939	40,800 CUP	47.8C	3141	45,800 CUP
IMR 4955	42.3	2664	50,900 PSI	45.0	2830	59,000 PSI	H414	45.0	3071	35,500 CUP	50.0	3265	40,900 CUP
H4831	45.0	2725	51,600 PSI	48.0C	2862	58,000 PSI	IMR 4350	46.0	2896	37,500 CUP	49.0C	3117	43,100 CUP
Hybrid 100V	40.0	2657	48,600 PSI	44.0C	2876	58,600 PSI	760	45.0	3071	35,500 CUP	50.0	3265	40,900 CUP
H4350	41.0	2714	50,900 PSI	44.3	2867	57,900 PSI	H380	43.0	2932	33,400 CUP	48.0	3231	42,900 CUP
IMR 4451	39.7	2691	51,100 PSI	42.5	2854	58,200 PSI	CFE 223	44.0	3003	37,000 CUP	48.0	3301	44,800 CUP
H414	40.0	2691	50,500 PSI	43.0	2852	58,100 PSI	Varget	40.0	3128	36,600 CUP	44.0	3350	42,300 CUP
760	40.0	2691	50,500 PSI	43.0	2852	58,100 PSI	IMR 4064	40.0	2993	39,000 CUP	43.5	3205	44,900 CUP
H380	39.0	2641	50,300 PSI	42.0	2806	58,900 PSI	BL-C(2)	43.0	2931	33,400 CUP	47.5	3261	44,500 CUP
Varget	34.5	2624	51,200 PSI	37.5	2785	58,400 PSI	IMR 4895	40.0	2979	39,200 CUP	43.5	3183	45,000 CUP
IMR 4166	34.2	2620	49,500 PSI	37.2	2813	59,000 PSI	H335	40.0	3023	36,800 CUP	44.5	3314	45,200 CUP
BL-C(2)	36.5	2623	51,600 PSI	38.5	2746	58,200 PSI	H4895	40.0	3031	34,600 CUP	44.0	3370	45,100 CUP
H4895	34.0	2623	54,300 PSI	37.0	2743	58,900 PSI	Bullet: 100 GR. SIE HP Dia: .264" Col: 2.850"						
Bullet: 130 GR. NOS AB Dia: .264" Col: 2.780"						Bullet: 107 GR. SIE HPBT Dia: .264" Col: 3.050"							
H1000	46.9	2658	46,000 PSI	50.0C	2814	54,000 PSI	IMR 7828 SSC	46.5	2721	39,700 CUP	50.5C*	2915	45,300 CUP
IMR 4955	42.1	2617	53,600 PSI	44.8C	2759	58,800 PSI	IMR 4955	46.0	2775	33,800 CUP	50.0C	3089	45,000 CUP
H4831	43.2	2682	51,700 PSI	46.6C	2845	59,400 PSI	H4831	46.0	2552	27,800 CUP	51.0C	2883	37,500 CUP
Hybrid 100V	39.9	2666	49,800 PSI	42.8	2835	58,300 PSI	IMR 4831	46.5	2827	37,500 CUP	49.5C	3014	43,200 CUP
H4350	39.7	2646	50,600 PSI	42.7	2816	59,000 PSI	H4350	45.0	2724	31,400 CUP	50.0C	3172	46,000 CUP
H414	38.7	2640	49,800 PSI	41.6	2816	58,800 PSI	IMR 4451	44.2	2810	41,000 CUP	47.1C	2988	46,200 CUP
760	38.7	2640	49,800 PSI	41.6	2816	58,800 PSI	H414	44.5	2879	36,500 CUP	49.5	3183	45,400 CUP
H380	37.8	2572	50,800 PSI	40.7	2738	58,900 PSI	IMR 4350	45.0	2842	40,100 CUP	48.5C	3032	45,200 CUP
Varget	34.6	2563	50,500 PSI	37.2	2719	58,800 PSI	760	44.5	2879	36,500 CUP	49.5	3183	45,400 CUP
IMR 4166	33.0	2535	50,100 PSI	35.9	2717	59,400 PSI	H380	43.0	2845	36,000 CUP	48.0	3092	43,000 CUP
BL-C(2)	35.0	2527	51,700 PSI	37.7	2676	59,500 PSI	CFE 223	41.0	2793	37,900 CUP	45.0	3037	44,900 CUP
H4895	33.0	2504	50,700 PSI	36.0	2677	59,500 PSI	Varget	38.0	2892	37,800 CUP	42.0	3177	45,800 CUP
Bullet: 140 GR. NOS PART Dia: .264" Col: 2.780"						Bullet: 107 GR. SIE HPBT Dia: .264" Col: 3.050"							
H1000	48.0	2619	51,200 PSI	50.5	2730	57,000 PSI	IMR 4064	39.0	2894	41,000 CUP	42.7	3074	46,000 CUP
IMR 7977	42.5	2523	51,100 PSI	45.8C	2686	58,900 PSI	BL-C(2)	39.5	2734	38,900 CUP	43.8	2948	45,200 CUP
IMR 7828				47.0C	2755	57,200 PSI	IMR 4895	39.0	2847	40,800 CUP	42.5	3024	45,600 CUP
H4831	43.0	2568	53,000 PSI	45.7	2686	59,000 PSI	H335	37.0	2686	36,300 CUP	41.0	2991	46,000 CUP
Hybrid 100V	37.0	2464	49,500 PSI	41.0C	2670	58,400 PSI	H4895	37.0	2820	38,800 CUP	41.0	3033	46,000 CUP
IMR 4831				44.0	2715	57,000 PSI	Bullet: 107 GR. SIE HPBT Dia: .264" Col: 3.050"						
H4350	39.0	2530	51,900 PSI	42.0	2677	58,800 PSI	IMR 7828 SSC	46.5	2721	39,700 CUP	50.5C*	2915	45,300 CUP
IMR 4451	36.4	2479	51,000 PSI	39.0	2631	58,500 PSI	IMR 4955	46.0	2766	35,800 CUP	50.0C	3071	46,000 CUP
H414	38.0	2496	50,700 PSI	41.0	2656	58,800 PSI	H4831	46.0	2590	34,500 CUP	51.0C	2911	42,700 CUP
IMR 4350				43.0	2715	57,000 PSI	Hybrid 100V	43.0	2724	41,300 CUP	47.0C	2946	46,100 CUP
760	38.0	2496	50,700 PSI	41.0	2656	58,800 PSI	NEVER EXCEED MAXIMUM LOADS						
H380	37.0	2434	51,200 PSI	40.0	2594	58,900 PSI	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.						
Varget	34.0	2469	53,300 PSI	36.0	2578	59,400 PSI							
IMR 4320				36.0	2600	57,600 PSI							
IMR 4064				36.0	2615	56,900 PSI							
IMR 4166	31.7	2426	49,600 PSI	34.5	2597	58,500 PSI							
BL-C(2)	34.0	2412	52,800 PSI	36.6	2557	59,000 PSI							
IMR 4895				35.5	2605	57,600 PSI							
H4895	32.0	2367	50,500 PSI	34.3	2517	58,400 PSI							
IMR 3031				32.5	2505	56,200 PSI							

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
IMR 4831	46.0	2795	38,900 CUP	49.0C	2997	44,800 CUP	Bullet: 142 GR. SIE HPBT Dia: .264" Col: 3.050"						H1000	48.0	2453	37,500 CUP	51.5C	2601	41,600 CUP
H4350	43.0	2706	36,000 CUP	48.0C	3035	45,600 CUP	IMR 7977	46.0	2494	39,500 CUP	49.3	2666	45,400 CUP						
IMR 4451	43.2	2758	41,800 CUP	46.0	2933	46,100 CUP	IMR 7828 SSC	44.0	2457	38,600 CUP	47.7	2671	45,500 CUP						
H414	43.0	2743	36,100 CUP	47.5	3036	45,900 CUP	IMR 4955	42.5	2479	37,500 CUP	46.2	2725	46,100 CUP						
IMR 4350	44.0	2773	39,400 CUP	47.8	2994	45,600 CUP	H4831	42.5	2383	37,300 CUP	47.0	2604	45,300 CUP						
760	43.0	2743	36,100 CUP	47.5	3036	45,900 CUP	Hybrid 100V	40.0	2420	39,300 CUP	44.0	2658	46,200 CUP						
H380	41.0	2749	39,200 CUP	45.0	2941	45,800 CUP	IMR 4831	43.0	2500	38,400 CUP	46.5	2704	44,900 CUP						
CFE 223	41.0	2836	40,700 CUP	45.6	3004	45,900 CUP	H4350	39.0	2427	38,400 CUP	43.7	2653	45,800 CUP						
Varget	38.0	2742	39,800 CUP	42.0	2952	45,600 CUP	IMR 4451	39.7	2442	39,900 CUP	42.7	2622	45,900 CUP						
IMR 4064	38.0	2791	39,500 CUP	41.5	2982	45,200 CUP	H414	39.0	2399	37,200 CUP	43.0	2653	45,300 CUP						
BL-C(2)	41.0	2784	37,300 CUP	44.5	3050	45,600 CUP	IMR 4350	41.0	2452	38,000 CUP	44.8	2667	45,100 CUP						
IMR 4895	37.5	2776	40,600 CUP	40.8	2955	45,500 CUP	760	39.0	2399	37,200 CUP	43.0	2653	45,300 CUP						
H335	36.0	2660	37,800 CUP	40.0	2948	45,800 CUP	H380	35.0	2239	35,600 CUP	38.5	2437	45,300 CUP						
H4895	37.0	2777	39,600 CUP	39.7	2943	45,900 CUP	Varget	34.0	2334	38,100 CUP	38.0	2559	45,700 CUP						
Bullet: 120 GR. NOS BT Dia: .264" Col: 3.000"							IMR 4064	35.0	2430	40,300 CUP	38.0	2582	45,600 CUP						
IMR 7828 SSC	45.5	2590	40,200 CUP	49.5C	2802	45,600 CUP	IMR 4895	35.0	2416	40,000 CUP	38.3	2574	45,700 CUP						
IMR 4955	44.2	2630	36,900 CUP	48.1C	2901	45,500 CUP	H4895	32.5	2311	37,800 CUP	35.8	2511	45,800 CUP						
H4831	44.5	2528	36,200 CUP	49.5C	2802	45,900 CUP	Bullet: 160 GR. HDY RN Dia: .264" Col: 3.000"												
Hybrid 100V	41.0	2553	39,300 CUP	45.5	2787	46,000 CUP	H1000	45.0	2265	35,000 CUP	50.0C	2517	45,300 CUP						
IMR 4831	44.5	2674	38,400 CUP	48.5C	2913	46,200 CUP	IMR 7977	45.5	2335	38,700 CUP	48.5C	2508	45,300 CUP						
H4350	41.5	2545	36,800 CUP	46.0	2792	45,800 CUP	IMR 7828 SSC	43.0	2335	40,100 CUP	47.0	2512	45,600 CUP						
IMR 4451	41.0	2548	40,600 CUP	44.0	2761	46,300 CUP	IMR 4955	43.0	2409	40,500 CUP	46.8	2563	46,100 CUP						
H414	40.0	2528	37,000 CUP	44.5	2783	46,000 CUP	H4831	44.0	2327	36,600 CUP	48.0C	2524	46,000 CUP						
IMR 4350	43.0	2631	39,500 CUP	46.8C	2863	46,000 CUP	Hybrid 100V	40.0	2317	39,300 CUP	43.5	2490	45,600 CUP						
760	40.0	2528	37,000 CUP	44.5	2783	46,000 CUP	IMR 4831	42.0	2362	38,900 CUP	45.5	2503	45,100 CUP						
H380	40.0	2555	38,200 CUP	44.3	2784	46,000 CUP	H4350	40.0	2317	38,800 CUP	43.0	2445	44,900 CUP						
Varget	35.0	2579	36,800 CUP	39.0	2812	45,300 CUP	IMR 4451	38.9	2261	38,000 CUP	41.9	2439	46,100 CUP						
IMR 4064	37.0	2625	41,300 CUP	40.0	2764	45,100 CUP	H414	38.5	2262	38,400 CUP	41.0	2383	44,700 CUP						
IMR 4895	36.0	2569	39,200 CUP	39.6	2767	45,900 CUP	IMR 4350	40.0	2320	39,800 CUP	43.8	2513	45,900 CUP						
H4895	34.0	2571	43,000 CUP	37.8	2715	46,000 CUP	760	38.5	2262	38,400 CUP	41.0	2383	44,700 CUP						
Bullet: 129 GR. HDY SP Dia: .264" Col: 2.935"							Varget	32.5	2173	38,200 CUP	36.0	2354	45,600 CUP						
IMR 7828 SSC	45.0	2537	38,900 CUP	49.0C*	2734	45,000 CUP	IMR 4064	34.0	2243	39,500 CUP	36.5	2360	44,700 CUP						
IMR 4955	44.1	2574	36,200 CUP	48.0C	2827	45,300 CUP	IMR 4895	33.0	2189	37,700 CUP	36.0	2346	44,600 CUP						
H4831	44.0	2449	35,600 CUP	48.5C	2689	45,000 CUP	6.5MM-06												
Hybrid 100V	41.0	2504	39,300 CUP	45.5	2743	46,400 CUP	Case: Winchester (REF)			Twist: 1:9"									
IMR 4831	43.0	2549	37,200 CUP	47.0C	2792	45,100 CUP	Barrel: 24"			Trim: 2.484" Primer: Federal 210M, Large Rifle Match									
H4350	40.0	2430	35,100 CUP	45.5	2703	45,500 CUP	Bullet: 85 GR. SIE HP Dia: .264" Col: 3.140"												
IMR 4451	40.5	2496	40,600 CUP	43.8	2667	45,400 CUP	IMR 7828 SSC	54.0	3114	47,400 PSI	60.5	3455	61,900 PSI						
H414	39.5	2460	37,900 CUP	43.5	2677	45,700 CUP	IMR 4955	55.8	3279	50,900 PSI	60.7	3550	63,100 PSI						
IMR 4350	42.0	2584	40,000 CUP	46.0	2793	45,800 CUP	Hybrid 100V	52.0	3372	50,200 PSI	56.5	3582	59,400 PSI						
760	39.5	2460	37,900 CUP	43.5	2677	45,700 CUP	IMR 4831	51.0	3145	45,900 PSI	57.0	3526	62,400 PSI						
H380	38.5	2440	38,400 CUP	42.5	2654	45,500 CUP	H4350	53.0	3336	52,300 PSI	57.5	3574	62,300 PSI						
Varget	34.0	2472	36,900 CUP	37.5	2664	46,000 CUP	IMR 4451	48.8	3230	57,300 PSI	54.2	3438	63,800 PSI						
IMR 4064	36.0	2534	39,800 CUP	39.2	2704	45,800 CUP	H414	50.0	3276	48,500 PSI	55.0	3558	60,600 PSI						
IMR 4895	35.0	2488	38,400 CUP	39.0	2703	45,600 CUP	IMR 4350	50.0	3176	48,000 PSI	56.0	3542	63,800 PSI						
H4895	33.0	2373	38,200 CUP	36.3	2561	45,600 CUP	H380	50.0	3333	53,700 PSI	55.0	3552	63,000 PSI						
Bullet: 140 GR. SPR SP Dia: .264" Col: 3.030"							Varget	48.0	3453	58,400 PSI	52.0	3588	62,500 PSI						
H1000	46.5	2423	37,600 CUP	51.5C	2651	46,000 CUP	IMR 4064	45.0	3334	56,100 PSI	49.0	3515	63,900 PSI						
IMR 7977	45.6	2445	38,600 CUP	49.1C	2646	45,300 CUP	H4895	43.0	3245	49,900 PSI	46.5	3442	60,600 PSI						
IMR 7828 SSC	44.0	2460	38,300 CUP	48.2	2678	45,800 CUP	Bullet: 95 GR. HDY V-MAX Dia: .264" Col: 3.200"												
IMR 4955	42.5	2497	39,200 CUP	46.3	2684	45,500 CUP	IMR 7828 SSC	53.0	3056	50,100 PSI	59.0	3368	63,500 PSI						
H4831	42.5	2382	38,100 CUP	47.0	2586	45,700 CUP	IMR 4955	54.0	3143	50,900 PSI	59.3	3446	63,300 PSI						
Hybrid 100V	40.0	2418	38,300 CUP	44.5	2642	45,200 CUP	Hybrid 100V	52.0	3319	52,500 PSI	56.5C	3540	63,100 PSI						
IMR 4831	43.0	2507	39,100 CUP	46.3	2700	45,400 CUP	IMR 4831	50.0	3094	48,800 PSI	56.0	3442	63,600 PSI						
H4350	39.5	2418	38,600 CUP	44.0	2617	45,700 CUP	H4350	50.0	3204	52,100 PSI	54.5	3436	63,300 PSI						
IMR 4451	39.9	2426	41,000 CUP	43.0	2592	46,200 CUP	IMR 4451	49.2	3102	51,900 PSI	54.2	3385	63,000 PSI						
H414	37.5	2393	40,000 CUP	41.5	2565	45,600 CUP	H414	49.0	3226	52,700 PSI	52.5	3418	61,900 PSI						
IMR 4350	41.0	2486	39,300 CUP	45.0	2677	46,000 CUP	IMR 4350	49.0	3116	50,200 PSI	54.0	3410	63,300 PSI						
760	37.5	2393	40,000 CUP	41.5	2565	45,600 CUP	H380	47.0	3182	55,400 PSI	50.5	3347	62,900 PSI						
H380	36.5	2316	37,600 CUP	40.5	2520	45,100 CUP	Varget	44.0	3167	51,600 PSI	49.0	3414	63,100 PSI						
Varget	32.5	2312	37,500 CUP	36.0	2528	46,000 CUP	IMR 4064	42.0	3090	52,000 PSI	47.0	3342	63,800 PSI						
IMR 4064	35.0	2394	39,500 CUP	38.0	2563	45,800 CUP	H4895	43.0	3209	55,400 PSI	46.0	3359	63,000 PSI						
IMR 4895	34.5	2364	38,900 CUP	37.8	2550	45,500 CUP													
H4895	32.5	2305	38,100 CUP	35.8	2493	45,700 CUP													

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Bullet: 100 GR. NOS BT Dia: .264" Col: 3.200"													
IMR 7828 SSC	51.0	2960	50,300 PSI	56.7	3257	62,800 PSI	IMR 4955	43.4	2498	53,800 PSI	47.7	2703	63,400 PSI
IMR 4955	52.5	3073	51,900 PSI	57.8	3363	63,300 PSI	H4831	45.0	2542	52,300 PSI	49.5	2731	62,300 PSI
H4831	53.0	3085	53,200 PSI	57.7	3304	63,400 PSI	Hybrid 100V	45.0	2635	48,900 PSI	49.0	2848	61,600 PSI
Hybrid 100V	51.5	3225	53,400 PSI	56.0C	3427	62,300 PSI	IMR 4831	43.0	2532	49,500 PSI	47.8	2772	62,300 PSI
IMR 4831	49.0	3068	51,400 PSI	54.0	3338	63,400 PSI	H4350	42.0	2558	52,400 PSI	45.5	2737	62,700 PSI
H4350	49.0	3119	53,800 PSI	53.0	3315	63,300 PSI	IMR 4451	41.2	2432	51,400 PSI	46.0	2652	62,800 PSI
IMR 4451	47.2	3021	52,100 PSI	52.5	3301	63,400 PSI	IMR 4350	42.0	2521	51,000 PSI	46.8	2742	62,300 PSI
H414	46.0	3057	52,400 PSI	50.0	3260	62,200 PSI	Bullet: 142 GR. SIE HPBT Dia: .264" Col: 3.300"						
IMR 4350	47.0	3000	49,700 PSI	52.5	3293	62,400 PSI	H1000	49.0	2555	49,800 PSI	55.0C	2816	63,300 PSI
H380	44.0	2963	51,300 PSI	47.8	3172	62,500 PSI	IMR 7977	50.6	2538	48,400 PSI	55.6	2815	61,400 PSI
Varget	43.0	3070	53,000 PSI	47.0	3268	63,300 PSI	IMR 7828 SSC	45.0	2530	51,100 PSI	50.0	2761	62,800 PSI
IMR 4064	41.0	2962	51,000 PSI	45.4	3198	62,100 PSI	IMR 4955	45.5	2554	52,600 PSI	50.0	2746	62,400 PSI
H4895	42.0	3083	56,400 PSI	44.0	3205	62,900 PSI	H4831	45.0	2559	50,000 PSI	50.3	2795	62,900 PSI
Bullet: 107 GR. SIE HPBT Dia: .264" Col: 3.300"													
H1000	56.0	2945	49,300 PSI	60.0C	3141	58,700 PSI	Hybrid 100V	45.0	2678	50,500 PSI	49.5	2889	63,200 PSI
IMR 7828 SSC	50.0	2909	50,800 PSI	55.3	3172	62,400 PSI	IMR 4831	41.0	2449	49,300 PSI	46.2	2702	63,000 PSI
IMR 4955	51.3	2972	50,900 PSI	55.8	3241	62,400 PSI	H4350	42.0	2572	51,300 PSI	46.0	2768	62,900 PSI
H4831	51.0	2985	51,800 PSI	55.5	3200	62,500 PSI	IMR 4451	42.3	2508	51,300 PSI	47.0	2726	62,000 PSI
Hybrid 100V	49.0	3136	52,700 PSI	53.0	3309	60,600 PSI	Bullet: 160 GR. HDY RN Dia: .264" Col: 3.300"						
IMR 4831	48.0	2985	51,200 PSI	53.0	3246	62,900 PSI	H1000	51.0	2492	53,600 PSI	55.0	2650	62,400 PSI
H4350	47.0	3022	52,600 PSI	51.5	3234	62,700 PSI	IMR 7977	51.5	2448	49,100 PSI	56.5	2689	61,600 PSI
IMR 4451	46.6	2946	51,400 PSI	51.8	3230	63,400 PSI	IMR 7828 SSC	45.0	2351	51,200 PSI	49.5	2558	62,400 PSI
H414	46.0	3031	53,400 PSI	49.5	3215	62,600 PSI	IMR 4955	46.0	2434	53,100 PSI	50.6	2616	62,400 PSI
IMR 4350	46.0	2921	49,400 PSI	51.5	3209	63,000 PSI	H4831	46.0	2461	52,700 PSI	50.0	2625	62,600 PSI
H380	43.0	2891	50,000 PSI	47.5	3132	62,700 PSI	Hybrid 100V	45.0	2507	49,600 PSI	49.5	2702	62,700 PSI
Varget	42.0	2993	52,700 PSI	45.8	3185	62,700 PSI	IMR 4831	42.0	2347	50,500 PSI	46.3	2546	62,000 PSI
Bullet: 120 GR. SFT SP Dia: .264" Col: 3.150"													
H1000	55.0	2837	53,900 PSI	58.5C	2986	62,700 PSI	6.5-284						
IMR 7977	52.7	2746	50,200 PSI	58.0C	3005	61,000 PSI	Case: Winchester (REF) Twist: 1:9"						
IMR 7828 SSC	47.0	2676	50,800 PSI	52.0	2931	62,600 PSI	Barrel: 24" Trim: 2.160" Primer: Federal 210, Large Rifle						
IMR 4955	44.3	2675	52,300 PSI	48.3	2884	62,900 PSI	Bullet: 85 GR. SIE HP Dia: .264" Col: 2.750"						
H4831	48.0	2765	51,400 PSI	52.5	2970	62,300 PSI	IMR 7828 SSC	54.0	3089	60.5C*	3542		
Hybrid 100V	46.0	2822	48,300 PSI	50.0	3035	60,300 PSI	IMR 4955	55.8	3177	60.7	3518		
IMR 4831	44.0	2716	51,500 PSI	48.7	2941	62,600 PSI	IMR 4831	51.0	3144	57.0	3602		
H4350	45.0	2823	54,300 PSI	49.0	2996	63,300 PSI	H4350	53.0	3260	57.5	3531		
IMR 4451	44.2	2714	52,100 PSI	48.6	2954	62,600 PSI	IMR 4451	48.8	3077	54.2	3386		
H414	42.0	2706	49,700 PSI	46.0	2925	62,800 PSI	H414	50.0	3158	55.0	3504		
IMR 4350	42.5	2683	51,400 PSI	47.2	2913	62,900 PSI	IMR 4350	50.0	3123	56.0	3585		
H380	39.0	2604	49,900 PSI	42.5	2812	62,000 PSI	H380	50.0	3254	55.0	3527		
Bullet: 129 GR. HDY SP Dia: .264" Col: 3.245"													
H1000	51.0	2683	53,800 PSI	55.5C	2885	62,700 PSI	Varget	48.0	3378	52.0	3587		
IMR 7977	52.1	2672	49,800 PSI	57.2	2937	62,300 PSI	IMR 4064	45.0	3314	49.0	3535		
IMR 7828 SSC	45.0	2603	50,800 PSI	50.5	2879	63,700 PSI	H4895	43.0	3210	46.5	3417		
IMR 4955	46.7	2699	53,700 PSI	51.2	2897	62,400 PSI	Bullet: 95 GR. HDY V-MAX Dia: .264" Col: 2.820"						
H4831	47.0	2721	54,100 PSI	51.0	2889	62,900 PSI	IMR 7828 SSC	53.0	2977	59.0	3370		
Hybrid 100V	45.0	2742	50,600 PSI	49.0	2925	60,400 PSI	IMR 4955	54.0	3093	59.3C	3440		
IMR 4831	42.0	2611	51,000 PSI	47.0	2857	62,700 PSI	Hybrid 100V	52.0	3294	56.5	3505		
H4350	43.0	2676	51,400 PSI	47.0	2876	62,500 PSI	IMR 4831	50.0	3051	56.0	3486		
IMR 4451	43.2	2618	52,900 PSI	48.0	2855	62,900 PSI	H4350	50.0	3088	54.5	3349		
IMR 4350	41.0	2609	52,400 PSI	45.9	2834	62,900 PSI	IMR 4451	49.2	3066	54.2	3353		
Bullet: 130 GR. NOS AB Dia: .264" Col: 3.265"													
H1000	47.7	2670	51,400 PSI	53.0	2880	61,600 PSI	H414	49.0	3122	52.5	3346		
IMR 7977	50.6	2645	50,900 PSI	55.5C	2908	61,600 PSI	IMR 4350	49.0	3059	54.0	3418		
IMR 7828 SSC	47.0	2637	49,300 PSI	52.2	2904	61,700 PSI	H380	47.0	3066	50.5	3291		
IMR 4955	44.3	2602	52,500 PSI	48.7	2829	62,300 PSI	Varget	44.0	3165	49.0	3380		
H4831	44.0	2638	54,700 PSI	48.8	2824	62,300 PSI	IMR 4064	42.0	3096	47.0	3341		
Hybrid 100V	45.0	2752	55,800 PSI	47.3	2867	62,300 PSI	H4895	43.0	3195	46.0	3318		
IMR 4831	43.5	2609	50,800 PSI	48.3	2845	61,900 PSI	Bullet: 100 GR. NOS BT Dia: .264" Col: 2.800"						
H4350	42.1	2615	51,300 PSI	46.7	2821	61,500 PSI	IMR 7828 SSC	51.0	2860	56.7	3201		
IMR 4451	41.4	2558	51,400 PSI	46.4	2821	62,400 PSI	IMR 4955	52.5	2986	57.8C	3286		
IMR 4350	43.4	2607	49,700 PSI	48.2	2867	62,300 PSI	H4831	53.0	2969	57.7	3211		
Bullet: 140 GR. SPR GS-SP Dia: .264" Col: 3.200"													
H1000	49.0	2570	52,900 PSI	53.5C	2761	62,600 PSI	Hybrid 100V	51.5	3211	56.0C	3435		
IMR 7828 SSC	45.0	2482	48,600 PSI	50.5	2766	62,000 PSI	IMR 4831	49.0	2950	54.0	3318		
NEVER EXCEED MAXIMUM LOADS													
*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads			
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure	
Varget	43.0	3083		47.0	3227		IMR 7828 SSC	45.0	2484		50.0	2719		
IMR 4064	41.0	3003		45.4	3221		IMR 4955	45.5	2481		50.0	2707		
H4895	42.0	3058		44.0	3143		H4831	45.0	2479		50.3	2714		
Bullet: 107 GR. SIE HPBT Dia: .264" Col: 2.920"								Hybrid 100V	45.0	2666		49.5	2901	
H1000	56.0	2808		60.0C	2985		IMR 4831	41.0	2460		46.2	2692		
IMR 7828 SSC	50.0	2779		55.3	3105		H4350	42.0	2583		46.0	2735		
IMR 4955	51.3	2867		55.8C	3156		Bullet: 160 GR. HDY RN Dia: .264" Col: 2.980"							
H4831	51.0	2842		55.5	3084		H1000	51.0	2454		55.0	2622		
Hybrid 100V	49.0	3167		53.0	3358		IMR 7977	51.5	2534		56.5C	2789		
IMR 4831	48.0	2888		53.0	3222		IMR 7828 SSC	45.0	2376		49.5	2557		
H4350	47.0	2898		51.5	3118		IMR 4955	46.0	2449		50.6	2653		
IMR 4451	46.6	2919		51.8	3205		H4831	46.0	2433		50.0	2582		
H414	46.0	2883		49.5	3110		Hybrid 100V	45.0	2548		49.5	2755		
IMR 4350	46.0	2845		51.5	3191		IMR 4831	42.0	2367		46.3	2567		
H380	43.0	2735		47.5	3020		264 WINCHESTER MAGNUM							
Varget	42.0	2970		45.8	3125		Case: Winchester			Twist: 1:8"				
IMR 4064	40.0	2916		43.5	3105		Barrel: 26" Trim: 2.490" Primer: Winchester LRM, Large Rifle Magnum							
Bullet: 120 GR. SFT SP Dia: .264" Col: 2.780"								Bullet: 85 GR. SIE HP Dia: .264" Col: 3.100"						
H1000	55.0	2743		58.5C	2901		H1000	74.0	3270	37,600 CUP	78.0	3480	48,000 CUP	
IMR 7977	52.7	2732		58.0C	3024		H4831	67.0	3304	39,000 CUP	73.0	3812	54,100 CUP	
IMR 7828 SSC	47.0	2636		52.0	2899		Hybrid 100V	65.0	3646	53,300 PSI	69.0	3863	62,500 PSI	
IMR 4955	44.3	2499		48.3	2685		H4350	59.0	3396	43,600 CUP	61.0	3669	52,400 CUP	
H4831	48.0	2651		52.5	2871		H414	57.0	3310	40,200 CUP	62.0	3633	52,200 CUP	
Hybrid 100V	46.0	2739		50.0	2979		H380	54.5	3295	44,100 CUP	58.0	3612	50,600 CUP	
IMR 4831	44.0	2671		48.7	2920		H4895	50.5	3264	44,600 CUP	55.0	3625	52,900 CUP	
H4350	45.0	2744		49.0	2897		Bullet: 100 GR. HDY SP Dia: .264" Col: 3.230"							
IMR 4451	44.2	2732		48.6	2989		H1000	72.0	3164	42,500 CUP	77.0	3428	47,500 CUP	
H414	42.0	2577		46.0	2797		H4831	65.5	3239	45,900 CUP	71.0	3680	53,900 CUP	
IMR 4350	42.5	2624		47.2	2878		Hybrid 100V	59.5	3427	54,500 PSI	63.3	3548	61,100 PSI	
H380	39.0	2463		42.5	2626		H4350	56.0	3194	44,100 CUP	59.0	3570	52,600 CUP	
Bullet: 129 GR. HDY SP Dia: .264" Col: 2.935"								H414	54.0	3202	45,000 CUP	59.0	3389	52,600 CUP
H1000	51.0	2638		55.5C	2820		H380	51.5	3039	44,100 CUP	56.0	3374	51,000 CUP	
IMR 7977	52.1	2724		57.2C	3018		H4895	49.0	2970	44,100 CUP	53.0	3405	54,200 CUP	
IMR 7828 SSC	45.0	2536		50.5	2832		Bullet: 120 GR. SPR SP Dia: .264" Col: 3.250"							
IMR 4955	46.7	2623		51.2	2837		Returnbo	66.3	3091	50,400 PSI	70.5	3299	61,700 PSI	
H4831	47.0	2670		51.0	2859		H1000	65.5	3050	49,100 PSI	69.7	3267	62,100 PSI	
Hybrid 100V	45.0	2731		49.0	2910		H4831	60.6	3027	49,100 PSI	64.5	3254	62,000 PSI	
IMR 4831	42.0	2559		47.0	2832		Hybrid 100V	56.4	3080	53,500 PSI	60.0	3232	60,600 PSI	
H4350	43.0	2670		47.0	2863		IMR 4831	58.0	3105	56,400 PSI	60.7	3212	61,600 PSI	
IMR 4451	43.2	2695		48.0	2942		H4350	54.5	3045	53,000 PSI	58.0	3185	61,200 PSI	
IMR 4350	41.0	2574		45.9	2821		IMR 4350	56.5	3075	54,700 PSI	60.0	3226	61,900 PSI	
Bullet: 130 GR. NOS AB Dia: .264" Col: 2.950"								Bullet: 129 GR. HDY SP Dia: .264" Col: 3.250"						
H1000	47.7	2570		53.0	2812		Returnbo	63.5	3005	51,900 PSI	67.5	3171	61,500 PSI	
IMR 7977	50.6	2670		55.5C	2939		H1000	60.2	2942	54,500 PSI	64.0	3064	60,700 PSI	
IMR 7828 SSC	47.0	2589		52.2	2872		IMR 7828 SSC	58.7	2925	52,100 PSI	62.4	3109	60,800 PSI	
IMR 4955	44.3	2481		48.7	2698		H4831	58.3	2927	52,500 PSI	62.0	3101	61,400 PSI	
H4831	44.0	2541		48.8	2779		Hybrid 100V	53.0	2922	51,000 PSI	56.7	3045	59,700 PSI	
Hybrid 100V	45.0	2746		47.3	2884		IMR 4831	55.5	2931	52,300 PSI	59.0	3090	60,700 PSI	
IMR 4831	43.5	2628		48.3	2898		H4350	53.6	2929	53,500 PSI	57.0	3067	60,900 PSI	
H4350	42.1	2645		46.7	2874		IMR 4350	54.4	2913	51,800 PSI	57.8	3081	61,000 PSI	
IMR 4451	41.4	2588		46.4	2867		Bullet: 130 GR. NOS AB Dia: .264" Col: 3.280"							
IMR 4350	43.4	2667		48.2	2935		Returnbo	59.9	2932	54,300 PSI	64.1	3090	60,800 PSI	
Bullet: 140 GR. SPR GS-SP Dia: .264" Col: 2.910"								H1000	56.1	2835	54,600 PSI	60.4	3005	62,100 PSI
H1000	49.0	2503		53.5C	2694		IMR 7828 SSC	55.8	2863	55,600 PSI	60.1	3053	63,200 PSI	
IMR 7828 SSC	45.0	2462		50.5	2718		H4831	55.3	2864	56,100 PSI	59.2	2984	60,500 PSI	
H4831	45.0	2520		49.5	2722		Hybrid 100V	50.7	2809	54,800 PSI	54.5	2970	61,900 PSI	
Hybrid 100V	45.0	2696		49.0	2895		IMR 4831	53.5	2788	52,800 PSI	57.8	2989	61,400 PSI	
IMR 4831	43.0	2536		47.8	2762		H4350	50.7	2786	54,600 PSI	55.0	2956	62,000 PSI	
H4350	42.0	2548		45.5	2720		IMR 4350	52.2	2792	52,500 PSI	56.4	3007	62,400 PSI	
IMR 4451	41.2	2495		46.0	2739		Bullet: 140 GR. NOS PART Dia: .264" Col: 3.260"							
IMR 4350	42.0	2539		46.8	2753		Returnbo	59.7	2904	57,000 PSI	63.5	3026	63,000 PSI	
Bullet: 142 GR. SIE HPBT Dia: .264" Col: 2.900"								H1000	55.0	2810	58,600 PSI	58.5	2900	61,800 PSI
H1000	49.0	2436		55.0C	2700									
IMR 7977	50.6	2586		55.6C	2788									

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 7828 SSC	54.5	2769	54,000 PSI	58.0	2927	60,700 PSI	IMR 4227	21.0	2590	44,200 PSI	23.9	2795	51,000 PSI
H4831	51.7	2753	55,600 PSI	55.0	2853	59,400 PSI	Lil'Gun	20.0	2784	46,500 PSI	22.7	2923	53,500 PSI
Hybrid 100V	51.2	2787	55,700 PSI	54.5	2912	61,800 PSI							
IMR 4831	51.9	2755	54,700 PSI	55.2	2907	61,700 PSI							
H4350	48.9	2713	55,300 PSI	52.0	2829	60,800 PSI							
IMR 4350	51.2	2752	53,500 PSI	54.5	2903	61,400 PSI							

Bullet: 160 GR. HDY RN Dia: .264" Col: 3.350"

Returnbo	60.2	2703	54,800 PSI	64.0	2846	61,000 PSI
H1000	61.5	2730	55,500 PSI	65.4	2857	62,200 PSI
IMR 7828 SSC	58.6	2764	56,500 PSI	62.3	2861	61,200 PSI
H4831	58.1	2725	54,800 PSI	61.8	2847	61,500 PSI
Hybrid 100V	52.7	2690	57,400 PSI	56.0	2784	61,500 PSI
IMR 4831	55.5	2680	54,000 PSI	59.0	2810	60,900 PSI
H4350	53.4	2675	56,600 PSI	56.8	2784	61,500 PSI
IMR 4350	54.5	2696	53,800 PSI	58.0	2834	62,100 PSI

26 NOSLER*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Nosler Twist: 1:8"
 Barrel: 24" Trim: 2.575" Primer: Winchester LRM, Large Rifle
 Magnum

Bullet: 100 GR. NOS BT Dia: .264" Col: 3.300"

US 869	90.4	3427	53,200 PSI	96.2	3698	63,000 PSI
H50BMG	89.0	3387	54,600 PSI	93.7	3548	61,300 PSI
Returnbo	81.2	3493	56,200 PSI	85.5	3675	62,400 PSI
H1000	77.9	3484	57,000 PSI	82.0	3628	63,100 PSI
IMR 7977	78.3	3484	57,000 PSI	82.5	3625	62,500 PSI
IMR 7828	74.8	3500	56,400 PSI	78.8	3662	63,000 PSI

Bullet: 120 GR. BAR TTSX BT Dia: .264" Col: 3.300"

US 869	84.6	3184	54,200 PSI	90.0	3409	63,800 PSI
H50BMG	74.0	3143	59,000 PSI	78.0	3245	62,600 PSI
Returnbo	68.5	3127	56,000 PSI	74.0	3299	62,800 PSI
H1000	65.8	3122	56,700 PSI	71.0	3269	62,300 PSI
IMR 7977	67.8	3130	57,300 PSI	73.0	3287	62,700 PSI
IMR 7828	63.5	3094	55,800 PSI	68.5	3266	62,100 PSI

Bullet: 129 GR. NOS ABLR Dia: .264" Col: 3.300"

US 869	84.8	3136	51,400 PSI	90.3	3377	62,000 PSI
H50BMG	82.0	3075	54,700 PSI	86.5	3267	62,800 PSI
Returnbo	70.5	3185	58,400 PSI	74.0	3301	64,300 PSI

Bullet: 140 GR. SFT SP Dia: .264" Col: 3.300"

US 869	78.0	2983	54,200 PSI	84.5	3188	63,000 PSI
H50BMG	66.0	2899	59,200 PSI	72.5	3026	63,000 PSI
Returnbo	62.0	2847	54,500 PSI	67.5	3010	61,700 PSI

6.8 MM REMINGTON SPC

Case: Remington Twist: 1:10"
 Barrel: 24" Trim: 1.676" Primer: Remington 9 1/2, Large Rifle

Bullet: 85 GR. BAR TAC-X FB Dia: .277" Col: 2.230"

Benchmark	27.9	2595	31,800 PSI	31.0C	2848	40,000 PSI
H322	28.0	2637	33,600 PSI	31.0C	2949	45,600 PSI
IMR 4198	24.8	2770	39,200 PSI	27.5C	3025	51,800 PSI
CFE BLK	27.0	2813	39,900 PSI	30.0	3097	52,600 PSI
H4198	25.2	2829	40,400 PSI	27.4	3030	50,900 PSI
Lil'Gun	19.7	2836	49,500 PSI	21.0	2927	52,400 PSI

Bullet: 90 GR. SPR HP Dia: .277" Col: 2.255"

Benchmark	29.0	2705	38,900 PSI	31.0C	2853	45,900 PSI
H322	29.0	2765	42,100 PSI	31.0C	2929	49,500 PSI
IMR 4198	24.0	2669	37,800 PSI	27.3C	2970	52,000 PSI
CFE BLK	26.8	2759	38,000 PSI	30.1	3049	52,300 PSI
H4198	26.0	2810	47,700 PSI	28.6C	3012	54,000 PSI

Bullet: 100 GR. BAR X Dia: .277" Col: 2.260"

Benchmark	28.0	2588	42,000 PSI	30.0C	2755	51,200 PSI
H322	27.0	2502	37,700 PSI	30.0C	2803	52,300 PSI
IMR 4198	23.0	2525	40,500 PSI	25.3C	2755	52,400 PSI
H4198	24.0	2542	40,500 PSI	26.5	2791	52,900 PSI
IMR 4227	20.0	2431	46,800 PSI	22.9	2643	53,000 PSI

Bullet: 110 GR. HDY V-MAX Dia: .277" Col: 2.260"

H335	27.0	2487	41,700 PSI	29.5	2694	53,600 PSI
H4895	27.0	2335	33,900 PSI	29.0C	2550	42,400 PSI
IMR 8208 XBR	28.0	2496	38,500 PSI	30.0C	2690	48,600 PSI
IMR 3031	26.0	2450	42,100 PSI	28.0C	2605	48,700 PSI
Benchmark	27.0	2518	44,000 PSI	28.8C	2665	52,000 PSI
H322	27.0	2571	47,600 PSI	29.0C	2697	53,600 PSI
IMR 4198	22.0	2422	41,700 PSI	24.2C	2619	51,300 PSI
CFE BLK	23.5	2408	39,200 PSI	26.0	2658	53,400 PSI
H4198	23.0	2431	40,600 PSI	25.3C	2651	52,000 PSI

Bullet: 115 GR. SIE HPBT Dia: .277" Col: 2.260"

H335	27.0	2415	40,800 PSI	29.0	2569	48,500 PSI
H4895	27.0	2302	34,300 PSI	29.0C	2495	42,800 PSI
IMR 8208 XBR	28.0	2483	41,800 PSI	30.0C	2647	51,400 PSI
Benchmark	26.0	2400	42,400 PSI	28.5C	2581	51,800 PSI
H322	26.0	2421	43,500 PSI	28.2C	2608	53,300 PSI
IMR 4198	22.0	2386	43,100 PSI	23.5C	2515	50,000 PSI
CFE BLK	22.4	2304	41,800 PSI	24.9	2520	53,600 PSI
H4198	22.0	2413	47,800 PSI	24.0C	2534	52,300 PSI

270 WINCHESTER

Case: Winchester Twist: 1:10"
 Barrel: 24" Trim: 2.530" Primer: Winchester LR, Large Rifle

Bullet: 90 GR. SIE HP Dia: .277" Col: 3.200"

H4350	58.0	3401	43,700 CUP	62.0C	3603	49,800 CUP
H414	55.0	3361	42,200 CUP	59.0	3585	50,700 CUP
IMR 4350	56.0	3251	41,900 CUP	60.3	3516	50,800 CUP
760	55.0	3361	42,200 CUP	59.0	3585	50,700 CUP
H380	53.0	3344	45,600 CUP	56.3	3462	50,900 CUP
CFE 223	52.6	3408	54,200 PSI	56.0	3579	62,200 PSI
Varget	51.0	3409	46,000 CUP	55.0	3596	51,400 CUP
IMR 4320	48.5	3220	46,800 CUP	52.7	3425	51,500 CUP
IMR 4064	49.6	3295	44,400 CUP	54.0	3538	50,500 CUP
IMR 4166	46.9	3300	53,900 PSI	51.0	3520	63,100 PSI
BL-C(2)	49.0	3328	45,400 CUP	52.0	3475	50,100 CUP
IMR 4895	49.0	3268	43,700 CUP	53.3	3507	50,300 CUP
H335	46.0	3313	46,100 CUP	49.0	3459	50,900 CUP
H4895	50.0	3482	48,100 CUP	53.0	3595	50,400 CUP
IMR 8208 XBR	45.6	3380	57,900 PSI	48.0	3476	61,900 PSI
IMR 3031	46.0	3299	45,000 CUP	50.2	3487	50,600 CUP

Bullet: 100 GR. SPR SP Dia: .277" Col: 3.145"

H4350	56.0	3258	44,000 CUP	59.4	3401	50,200 CUP
H414	53.0	3262	46,000 CUP	56.0	3383	50,700 CUP
IMR 4350	54.0	3072	40,100 CUP	59.5	3383	50,200 CUP
760	53.0	3262	46,000 CUP	56.0	3383	50,700 CUP
H380	50.0	3160	46,200 CUP	53.7	3274	50,300 CUP
CFE 223	53.0	3356	54,900 PSI	55.8	3514	62,900 PSI
Varget	48.0	3232	44,400 CUP	52.0	3397	50,200 CUP
IMR 4320	46.2	3066	47,100 CUP	50.0	3220	51,000 CUP
IMR 4064	48.0	3116	40,800 CUP	52.7	3380	50,100 CUP
BL-C(2)	45.0	3144	47,300 CUP	47.3	3243	50,500 CUP
IMR 4895	48.0	3180	47,900 CUP	52.2	3367	51,500 CUP
H335	41.0	3058	45,300 CUP	43.5	3185	50,200 CUP
H4895	47.0	3298	47,000 CUP	50.0	3401	50,200 CUP
IMR 3031	45.5	3139	44,700 CUP	49.0	3339	50,400 CUP

100

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Bullet: 110 GR. HDY HP Dia: .277" Col: 3.250"													
IMR 4955	57.1	2984	49,400 PSI	62.5C	3205	58,200 PSI	Varget	43.0	2797	43,900 CUP	46.0	2931	49,600 CUP
H4831	58.0	3057	42,600 CUP	62.0C	3214	48,200 CUP	IMR 4320	45.6	2850	48,600 CUP	47.0	2916	50,200 CUP
Hybrid 100V	53.0	3072	49,500 PSI	57.0C	3240	56,100 PSI	IMR 4064	43.0	2745	43,100 CUP	47.5	2932	50,000 CUP
H4350	54.0	3164	46,900 CUP	57.0	3267	50,100 CUP	IMR 4895	43.0	2768	43,000 CUP	46.9	2957	50,600 CUP
H414	51.0	3058	43,500 CUP	55.0	3241	50,700 CUP	H4895	42.0	2782	44,700 CUP	45.0	2922	51,000 CUP
IMR 4350	52.5	2997	43,000 CUP	57.8	3308	50,900 CUP	IMR 8208 XBR	42.8	2840	57,600 PSI	45.0	2934	62,800 PSI
760	51.0	3058	43,500 CUP	55.0	3241	50,700 CUP	Trail Boss	14.0	1318	22,800 PSI	19.7	1537	27,100 PSI
H380	48.0	2976	46,000 CUP	52.0	3124	50,500 CUP	Bullet: 135 GR. SIE BT Dia: .277" Col: 3.340"						
CFE 223	50.4	3142	53,500 PSI	53.6	3304	61,700 PSI	H1000	61.0	2915	43,100 CUP	63.0C	3011	47,600 CUP
Varget	43.0	3072	44,100 CUP	48.7	3248	50,800 CUP	IMR 7977	58.9	2876	48,900 PSI	62.0C	3043	56,500 PSI
IMR 4320	45.5	3031	48,700 CUP	49.7	3152	50,100 CUP	IMR 7828	54.0	2696	40,200 CUP	60.0	3046	50,000 CUP
IMR 4064	46.0	3036	45,800 CUP	50.7	3223	50,300 CUP	IMR 4955	54.8	2794	52,400 PSI	59.9C	3036	63,800 PSI
IMR 4166	45.5	3018	52,100 PSI	49.5	3250	63,300 PSI	H4831	55.0	2812	43,600 CUP	59.5C	3010	51,000 CUP
BL-C(2)	45.0	2971	47,300 CUP	47.5	3089	50,200 CUP	Hybrid 100V	50.0	2830	49,900 PSI	55.0	3056	61,600 PSI
IMR 4895	46.0	3045	43,400 CUP	50.2	3269	51,100 CUP	IMR 4831	51.0	2774	40,400 CUP	55.8	2990	51,100 CUP
H335	42.0	2958	46,800 CUP	45.0	3081	50,800 CUP	H4350	50.0	2834	44,400 CUP	53.5	2994	50,700 CUP
H4895	45.0	3113	46,700 CUP	47.5	3215	50,800 CUP	IMR 4451	51.4	2878	54,300 PSI	55.3	3060	63,400 PSI
IMR 8208 XBR	44.1	3064	56,400 PSI	46.4	3146	59,500 PSI	H414	47.0	2785	45,400 CUP	50.0	2910	50,500 CUP
IMR 3031	44.0	3024	46,000 CUP	47.2	3159	49,500 CUP	IMR 4350	50.0	2772	41,700 CUP	54.9	3007	50,000 CUP
Bullet: 120 GR. BAR XFB Dia: .277" Col: 3.270"													
H4831	58.0	2918	45,800 CUP	62.0C	3112	51,200 CUP	760	47.0	2785	45,400 CUP	50.0	2910	50,500 CUP
IMR 4831	51.5	2793	40,600 CUP	56.7	3112	50,100 CUP	H380	44.0	2667	43,600 CUP	47.0	2803	50,500 CUP
H4350	51.0	2886	44,700 CUP	55.0	3069	51,200 CUP	Varget	41.0	2701	40,800 CUP	45.0	2902	50,200 CUP
H414	49.0	2814	43,100 CUP	53.0	3017	51,100 CUP	IMR 4320	43.0	2718	43,500 CUP	46.5	2887	50,300 CUP
IMR 4350	50.5	2836	42,300 CUP	56.0	3131	50,500 CUP	IMR 4064	43.5	2775	44,500 CUP	47.3	2934	50,700 CUP
760	49.0	2814	43,100 CUP	53.0	3017	51,100 CUP	IMR 4166	42.3	2709	49,200 PSI	47.0	2968	63,100 PSI
H380	46.0	2698	43,200 CUP	49.5	2980	51,000 CUP	IMR 4895	43.0	2755	43,400 CUP	47.7	2972	51,100 CUP
Varget	44.0	2858	46,300 CUP	47.0	3010	51,000 CUP	H4895	41.0	2735	44,300 CUP	44.0	2879	50,600 CUP
IMR 4320	44.2	2782	43,800 CUP	48.5	3029	51,000 CUP	Bullet: 140 GR. SFT SP Dia: .277" Col: 3.280"						
IMR 4064	45.5	2937	45,600 CUP	49.2	3096	51,000 CUP	H1000	59.0	2771	41,800 CUP	63.0C	2979	50,800 CUP
IMR 4895	44.0	2883	44,900 CUP	48.2	3057	50,600 CUP	IMR 7977	58.9	2892	51,700 PSI	62.0C	3023	59,500 PSI
H4895	42.0	2799	45,000 CUP	45.0	2950	50,400 CUP	IMR 7828	52.0	2628	40,500 CUP	57.2	2939	50,600 CUP
IMR 3031	42.5	2864	48,000 CUP	45.0	2976	49,300 CUP	IMR 4955	54.0	2713	51,700 PSI	59.0	2955	62,900 PSI
Bullet: 130 GR. BAR TSX Dia: .277" Col: 3.230"													
H1000	57.0	2716	42,100 PSI	60.0C	2846	48,200 PSI	H4831	54.0	2716	43,900 CUP	58.0C	2888	50,100 CUP
IMR 7977	56.0	2736	42,300 PSI	59.5C	2936	50,700 PSI	Hybrid 100V	50.0	2787	53,600 PSI	54.2C	2964	62,300 PSI
IMR 7828 SSC	55.0	2815	48,700 PSI	60.2C	3083	62,400 PSI	IMR 4831	50.6	2738	44,400 CUP	54.0	2896	50,700 CUP
IMR 4955	55.5	2852	52,000 PSI	60.7C	3096	63,500 PSI	H4350	49.0	2737	44,500 CUP	52.0	2870	50,400 CUP
H4831	54.0	2747	45,500 PSI	60.0C	3025	59,000 PSI	IMR 4451	49.9	2775	51,600 PSI	53.7	2977	62,700 PSI
Hybrid 100V	52.2	2994	55,700 PSI	55.5	3144	63,100 PSI	H414	46.0	2644	42,900 CUP	48.9	2788	49,800 CUP
IMR 4831	52.0	2822	46,600 PSI	57.0C	3113	61,700 PSI	IMR 4350	49.0	2712	43,800 CUP	53.2	2916	51,000 CUP
H4350	51.0	2905	52,500 PSI	55.5	3111	63,500 PSI	760	46.0	2644	42,900 CUP	48.9	2788	49,800 CUP
IMR 4451	51.5	2889	51,300 PSI	55.5	3109	62,300 PSI	Varget	41.0	2623	44,300 CUP	43.7	2772	50,500 CUP
H414	48.0	2840	50,400 PSI	52.5	3059	62,100 PSI	IMR 4320	41.5	2614	42,700 CUP	44.5	2775	50,000 CUP
IMR 4350	50.0	2824	48,900 PSI	55.0C	3104	62,800 PSI	IMR 4064	42.0	2608	43,300 CUP	46.1	2828	50,800 CUP
760	48.0	2840	50,400 PSI	52.5	3059	62,100 PSI	IMR 4166	41.8	2645	49,400 PSI	46.5	2915	63,600 PSI
H380	47.0	2810	51,900 PSI	50.8	2989	61,200 PSI	IMR 4895	42.0	2650	44,600 CUP	45.6	2828	50,100 CUP
Varget	44.0	2849	54,800 PSI	48.0	3013	63,600 PSI	H4895	40.0	2627	45,300 CUP	42.6	2768	50,600 CUP
IMR 4064	42.0	2760	49,400 PSI	47.3	3013	62,900 PSI	Bullet: 150 GR. HDY SP Dia: .277" Col: 3.285"						
IMR 4166	43.5	2842	52,900 PSI	47.3	3032	62,100 PSI	H1000	55.0	2689	44,900 CUP	59.0C	2831	51,000 CUP
IMR 8208 XBR	42.3	2798	55,700 PSI	45.0	2922	62,400 PSI	IMR 7977	56.5	2717	50,600 PSI	60.8C	2940	61,300 PSI
Bullet: 130 GR. HDY SP Dia: .277" Col: 3.180"													
H1000	61.0	2900	42,900 CUP	64.0C	3025	48,100 CUP	IMR 7828	51.2	2536	39,800 CUP	56.8	2850	50,400 CUP
IMR 7977	58.9	2869	46,900 PSI	62.0C	3038	55,100 PSI	IMR 4955	51.7	2560	50,000 PSI	56.6	2829	63,900 PSI
IMR 7828	56.0	2862	43,800 CUP	60.2	3085	50,300 CUP	H4831	52.0	2651	46,300 CUP	55.7	2804	51,200 CUP
IMR 4955	55.8	2812	51,800 PSI	61.0C	3060	63,100 PSI	Hybrid 100V	48.0	2650	53,600 PSI	52.0	2811	61,900 PSI
H4831	56.0	2843	44,400 CUP	60.0C	3019	51,000 CUP	IMR 4831	46.3	2498	40,500 CUP	53.0	2815	50,900 CUP
Hybrid 100V	51.0	2845	51,000 PSI	56.0C	3066	61,800 PSI	H4350	46.0	2575	43,400 CUP	49.0	2724	51,000 CUP
IMR 4831	51.0	2759	42,900 CUP	55.8	3002	50,300 CUP	IMR 4451	48.3	2636	52,800 PSI	52.0	2815	62,000 PSI
H4350	51.0	2865	45,200 CUP	54.3	3012	50,500 CUP	H414	45.0	2569	45,000 CUP	48.0	2706	51,200 CUP
IMR 4451	52.6	2902	53,000 PSI	56.0	3089	62,900 PSI	IMR 4350	48.0	2642	44,600 CUP	51.6	2809	50,900 CUP
H414	50.0	2843	44,700 CUP	53.5	3003	50,800 CUP	760	45.0	2569	45,000 CUP	48.0	2706	51,200 CUP
IMR 4350	50.2	2806	43,700 CUP	55.0	3028	49,900 CUP	IMR 4064	42.0	2584	44,000 CUP	45.0	2719	50,700 CUP
760	50.0	2843	44,700 CUP	53.5	3003	50,800 CUP	IMR 4166	40.7	2506	49,700 PSI	45.3	2766	63,800 PSI
H380	47.0	2744	46,400 CUP	49.8	2884	51,000 CUP	IMR 4895	41.5	2560	44,500 CUP	44.5	2704	50,600 CUP
Bullet: 160 GR. NOS PART Dia: .277" Col: 3.340"													
H1000	55.0	2614	44,200 CUP	59.0C	2765	50,900 CUP	IMR 7977	56.4	2662	50,700 PSI	60.0C	2843	59,800 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads					
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure			
IMR 7828	50.5	2450	38,900 CUP	56.0	2758	50,300 CUP	IMR 4451	58.3	3018	52,900 PSI	62.0	3246	60,800 PSI			
IMR 4955	52.3	2536	50,800 PSI	57.2	2778	63,100 PSI	H414	56.0	2976	52,900 PSI	60.0	3178	62,900 PSI			
H4831	50.0	2510	43,000 CUP	54.0	2673	50,500 CUP	IMR 4350	57.0	2966	51,200 PSI	63.0	3222	62,900 PSI			
Hybrid 100V	48.0	2578	49,900 PSI	53.0C	2796	63,300 PSI	H380	55.0	2996	56,900 PSI	59.0	3122	62,800 PSI			
IMR 4831	48.5	2481	41,800 CUP	52.9	2680	50,300 CUP	Varget	48.0	2900	51,600 PSI	52.5	3106	62,500 PSI			
H4350	46.0	2501	43,600 CUP	49.0	2646	51,100 CUP	IMR 4064	49.0	2952	53,900 PSI	53.5	3128	63,000 PSI			
IMR 4451	47.7	2526	50,000 PSI	51.3	2751	62,700 PSI	IMR 4166	48.8	2932	54,000 PSI	53.2	3139	63,700 PSI			
IMR 4350	46.5	2483	42,100 CUP	51.0	2706	50,500 CUP	IMR 4895	49.0	2940	53,100 PSI	53.8	3136	62,900 PSI			
IMR 4320	40.0	2453	44,500 CUP	42.8	2584	51,000 CUP	Bullet: 130 GR. HDY SP Dia: .277" Col: 2.730"									
IMR 4064	40.0	2401	42,200 CUP	43.3	2580	50,400 CUP	H1000	71.0	3100	55,400 PSI	73.0C	3168	58,700 PSI			
IMR 4166	39.9	2434	49,100 PSI	44.3	2681	62,700 PSI	IMR 7977	68.8	3085	55,300 PSI	72.5C	3279	64,500 PSI			
IMR 4895	40.0	2334	44,100 CUP	43.2	2573	50,100 CUP	IMR 7828	63.0	3031	55,000 PSI	67.0	3201	63,000 PSI			
Bullet: 180 GR. BAR JRN Dia: .277" Col: 3.300"						IMR 4955	63.1	3000	53,200 PSI	67.2	3239	64,200 PSI				
H1000	50.0	2404	45,100 CUP	54.0	2540	50,600 CUP	H4831	63.0	3085	56,300 PSI	67.0	3228	63,400 PSI			
IMR 7828	48.0	2307	40,900 CUP	52.8	2529	50,400 CUP	Hybrid 100V	57.0	2992	52,400 PSI	63.0C	3259	64,600 PSI			
H4831	47.0	2358	46,000 CUP	50.5	2501	51,100 CUP	IMR 4831	59.0	3022	54,800 PSI	63.5	3208	63,300 PSI			
270 WINCHESTER SHORT MAGNUM						H4350	57.0	3093	56,600 PSI	60.5	3226	63,500 PSI				
Case: Winchester Twist: 1:10"						IMR 4451	59.3	3010	53,000 PSI	63.2	3221	62,400 PSI				
Barrel: 24" Trim: 2.090" Primer: Winchester LRM, Large Rifle Magnum						H414	57.0	3065	53,800 PSI	61.0	3235	62,700 PSI				
Bullet: 90 GR. SIE HP Dia: .277" Col: 2.700"						IMR 4350	58.0	3022	53,200 PSI	62.5	3230	63,000 PSI				
IMR 4955	69.0	3474	53,200 PSI	73.5C	3742	63,800 PSI	760	57.0	3065	53,800 PSI	61.0	3235	62,700 PSI			
H4831	69.0	3525	54,900 PSI	73.0C	3703	63,400 PSI	H380	56.0	3032	56,100 PSI	59.5	3174	63,200 PSI			
H4350	64.0	3568	55,000 PSI	67.5	3733	62,800 PSI	Varget	51.0	3040	56,400 PSI	54.0	3169	63,200 PSI			
IMR 4451	64.5	3477	52,100 PSI	68.6	3712	62,300 PSI	IMR 4064	51.0	3005	56,400 PSI	54.3	3140	63,800 PSI			
H414	64.0	3609	54,800 PSI	68.0	3789	63,400 PSI	IMR 4166	50.5	2952	55,000 PSI	54.1	3132	63,500 PSI			
760	64.0	3609	54,800 PSI	68.0	3789	63,400 PSI	IMR 4895	50.0	2953	53,500 PSI	54.0	3120	62,500 PSI			
H380	62.0	3561	56,200 PSI	65.5	3711	62,900 PSI	Trail Boss	16.0	1516	38,100 PSI	22.5	1832	47,900 PSI			
Varget	57.0	3610	57,600 PSI	60.5	3734	62,800 PSI	Bullet: 135 GR. SIE HPBT Dia: .277" Col: 2.840"									
IMR 4166	56.0	3492	55,500 PSI	59.6	3670	62,600 PSI	H1000	69.0	3056	54,400 PSI	73.0C	3205	62,600 PSI			
H4895	53.0	3508	52,900 PSI	56.5	3690	62,500 PSI	IMR 7977	67.8	3001	52,600 PSI	72.2C	3232	63,600 PSI			
Bullet: 100 GR. SPR HP Dia: .277" Col: 2.700"						IMR 7828	62.0	2986	52,000 PSI	67.0C	3211	62,900 PSI				
IMR 4955	67.6	3343	53,200 PSI	72.0C	3601	64,200 PSI	IMR 4955	61.9	2956	52,300 PSI	65.9	3194	64,000 PSI			
H4831	67.0	3352	52,900 PSI	71.0C	3542	62,700 PSI	H4831	62.0	3056	55,400 PSI	65.5	3192	62,900 PSI			
Hybrid 100V	61.0	3293	51,600 PSI	66.5	3543	61,700 PSI	Hybrid 100V	54.0	2826	54,400 PSI	59.5	3055	63,900 PSI			
H4350	62.0	3458	55,000 PSI	65.5	3585	62,900 PSI	IMR 4831	60.0	3032	54,700 PSI	64.0C	3198	62,700 PSI			
IMR 4451	63.1	3315	51,400 PSI	67.2	3581	62,800 PSI	H4350	58.0	3093	57,000 PSI	61.5	3211	63,100 PSI			
H414	62.0	3451	54,600 PSI	65.0	3613	63,000 PSI	IMR 4451	58.6	3004	53,600 PSI	62.4	3200	62,600 PSI			
760	62.0	3451	54,600 PSI	65.0	3613	63,000 PSI	H414	57.0	3041	54,000 PSI	61.0	3208	63,200 PSI			
H380	60.0	3361	54,300 PSI	63.5	3518	62,600 PSI	IMR 4350	58.0	3003	51,800 PSI	62.5	3210	61,600 PSI			
Varget	55.0	3416	55,700 PSI	58.5	3573	63,300 PSI	760	57.0	3041	54,000 PSI	61.0	3208	63,200 PSI			
IMR 4166	56.0	3341	55,600 PSI	59.8	3516	62,500 PSI	H380	55.0	2943	52,800 PSI	58.0	3116	63,000 PSI			
H4895	51.0	3338	53,200 PSI	54.5	3505	62,500 PSI	Varget	51.0	3000	54,800 PSI	54.0	3134	63,000 PSI			
Bullet: 110 GR. HDY HP Dia: .277" Col: 2.800"						IMR 4064	50.0	2947	54,500 PSI	54.3	3108	62,800 PSI				
H1000	71.0	3279	55,400 PSI	73.0C	3360	60,400 PSI	IMR 4166	49.5	2891	53,400 PSI	53.8	3104	63,900 PSI			
IMR 4955	65.8	3166	50,500 PSI	70.0	3470	63,600 PSI	IMR 4895	50.0	2933	53,600 PSI	54.0	3093	62,100 PSI			
H4831	64.0	3265	56,300 PSI	67.5	3404	63,000 PSI	Bullet: 140 GR. SFT SP Dia: .277" Col: 2.800"									
Hybrid 100V	59.0	3115	49,800 PSI	65.0C	3426	62,300 PSI	Retumbo	68.0	3016	53,200 PSI	71.0C	3165	61,300 PSI			
H4350	59.0	3287	55,900 PSI	63.0	3436	63,200 PSI	H1000	66.0	2984	55,700 PSI	70.0C	3137	63,500 PSI			
IMR 4451	61.5	3212	51,900 PSI	65.5	3463	62,900 PSI	IMR 7977	67.1	2928	52,600 PSI	71.4C	3148	62,600 PSI			
H414	59.0	3283	55,600 PSI	62.5	3435	62,800 PSI	IMR 7828	61.0	2922	54,100 PSI	64.5	3081	61,900 PSI			
760	59.0	3283	55,600 PSI	62.5	3435	62,800 PSI	IMR 4955	61.7	2895	53,300 PSI	65.7	3116	63,800 PSI			
H380	55.0	3173	56,300 PSI	59.0	3327	62,900 PSI	H4831	59.0	2974	57,000 PSI	62.5	3085	63,000 PSI			
Varget	53.0	3276	57,000 PSI	56.0	3406	63,200 PSI	Hybrid 100V	55.0	2862	52,900 PSI	60.0	3071	61,600 PSI			
IMR 4166	52.8	3190	55,000 PSI	56.5	3381	63,400 PSI	IMR 4831	57.0	2860	53,100 PSI	61.5	3059	62,600 PSI			
Bullet: 130 GR. BAR TSX Dia: .277" Col: 2.800"						H4350	54.0	2928	54,500 PSI	58.0	3087	63,100 PSI				
H1000	69.0	3066	55,100 PSI	73.0C	3196	61,100 PSI	IMR 4451	57.9	2935	53,500 PSI	61.6	3114	61,700 PSI			
IMR 7977	67.6	3031	52,600 PSI	72.0C	3236	61,600 PSI	H414	55.0	2932	53,700 PSI	58.0	3068	62,600 PSI			
IMR 7828	63.0	2938	49,200 PSI	67.5C	3160	58,700 PSI	IMR 4350	56.0	2876	52,300 PSI	60.5	3081	62,200 PSI			
IMR 4955	63.7	3070	55,100 PSI	67.8C	3268	64,100 PSI	760	55.0	2932	53,700 PSI	58.0	3068	62,600 PSI			
H4831	63.0	3002	53,200 PSI	67.0C	3160	60,700 PSI	H380	53.0	2865	55,500 PSI	56.5	3005	62,700 PSI			
Hybrid 100V	55.0	2927	56,700 PSI	58.5	3074	62,800 PSI	IMR 4166	47.7	2735	50,600 PSI	Bullet: 150 GR. HDY SP Dia: .277" Col: 2.740"					
IMR 4831	60.0	2966	51,800 PSI	65.5C	3232	63,700 PSI	Retumbo	66.0	2908	53,300 PSI	70.0C	3071	63,000 PSI			
H4350	57.0	3041	55,700 PSI	61.5	3191	62,900 PSI	H1000	64.0	2864	54,600 PSI	67.5C	3001	62,800 PSI			
102 NEVER EXCEED MAXIMUM LOADS						IMR 7977	66.9	2859	54,500 PSI	71.2C	3054	63,800 PSI				

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 7828	59.0	2785	55,400 PSI	63.1	2952	63,200 PSI	Bullet: 160 GR. NOS PART Dia: .277" Col: 3.250"						
IMR 4955	59.7	2763	52,500 PSI	63.7	2974	63,200 PSI	H1000	74.0	2872		78.0	3051	
H4831	56.0	2804	54,500 PSI	60.0	2962	63,100 PSI	H4831	62.0	2674		65.0	2901	
Hybrid 100V	54.0	2752	52,100 PSI	59.0	2954	61,800 PSI	H4350	58.0	2666		61.0	2738	
IMR 4831	55.0	2739	54,400 PSI	59.3	2916	63,000 PSI	7MM-08 REMINGTON						
H4350	53.0	2846	55,600 PSI	56.5	2978	63,000 PSI	Case: Remington			Twist: 1:9.5"			
IMR 4451	55.8	2785	53,600 PSI	60.0	2977	62,600 PSI	Barrel: 24" Trim: 2.025" Primer: Remington 9 1/2, Large Rifle						
H414	54.0	2845	55,400 PSI	57.5	2991	63,200 PSI	Bullet: 100 GR. BAR XFB Dia: .284" Col: 2.650"						
IMR 4350	54.0	2754	52,900 PSI	58.5	2934	62,200 PSI	H414	47.0	3041	44,900 CUP	49.5	3157	50,100 CUP
760	54.0	2845	55,400 PSI	57.5	2991	63,200 PSI	760	47.0	3041	44,900 CUP	49.5	3157	50,100 CUP
H380	51.0	2749	56,700 PSI	54.5	2885	63,100 PSI	H380	47.0	3080	42,100 CUP	49.0	3171	46,300 CUP
Bullet: 160 GR. NOS PART Dia: .277" Col: 2.830"							Varget	42.0	3060	40,800 CUP	45.7	3277	49,600 CUP
Returnbo	65.0	2826	53,400 PSI	68.5	2989	62,600 PSI	BL-C(2)	43.0	3109	44,600 CUP	46.5	3231	50,000 CUP
H1000	63.0	2802	57,400 PSI	66.5	2913	63,200 PSI	H335	39.0	2977	44,600 CUP	41.2	3123	49,700 CUP
IMR 7977	65.2	2773	53,700 PSI	70.2C	2986	63,500 PSI	H4895	41.0	3037	41,000 CUP	45.0	3286	49,900 CUP
IMR 7828	57.0	2663	52,700 PSI	61.5	2858	62,600 PSI	Benchmark	40.0	2968	41,400 CUP	42.5	3144	49,600 CUP
IMR 4955	59.0	2721	53,900 PSI	63.3	2912	63,600 PSI	H322	37.5	2917	40,300 CUP	40.0	3105	49,000 CUP
H4831	57.0	2784	58,400 PSI	60.0	2877	63,300 PSI	Bullet: 115 GR. SPR HP Dia: .284" Col: 2.655"						
Hybrid 100V	51.0	2551	53,900 PSI	56.0	2747	62,500 PSI	H414	46.5	2906	41,400 CUP	49.5	3062	47,900 CUP
IMR 4831	54.0	2650	53,000 PSI	58.2	2829	62,500 PSI	760	46.5	2906	41,400 CUP	49.5	3062	47,900 CUP
H4350	52.0	2735	56,100 PSI	55.0	2834	62,600 PSI	H380	47.0	2925	40,200 CUP	49.0	3046	44,700 CUP
IMR 4451	55.2	2723	54,000 PSI	59.4	2903	62,600 PSI	CFE 223	45.4	2924	35,800 CUP	50.4	3231	49,700 CUP
H414	52.0	2718	56,100 PSI	55.5	2844	63,100 PSI	Varget	43.0	3019	41,200 CUP	46.3	3216	50,100 CUP
IMR 4350	54.0	2692	53,900 PSI	57.5	2850	63,000 PSI	IMR 4320	43.2	2933	45,100 CUP	46.0	3074	50,500 CUP
760	52.0	2718	56,100 PSI	55.5	2844	63,100 PSI	IMR 4064	42.0	2918	41,100 CUP	44.5	3101	49,900 CUP
270 WEATHERBY MAGNUM							IMR 4166	43.3	3028	51,600 PSI	46.1	3183	59,400 PSI
Case: Weatherby			Twist: 1:12"				BL-C(2)						
Barrel: 26"			Trim: 2.539"			Primer: CCI 250, Large Rifle Mag-num							
Bullet: 90 GR. SIE HP Dia: .277" Col: 3.150"							IMR 4895	41.7	2871	41,000 CUP	45.0	3062	49,400 CUP
H1000	78.0	3183		81.0	3269		H335	39.0	2900	42,300 CUP	42.0	3067	50,100 CUP
H4831	72.0	3386		78.0	3631		H4895	42.0	3007	42,400 CUP	45.0	3172	49,900 CUP
H4350	66.0	3317		70.0	3631		IMR 8208 XBR	40.6	2866	40,100 CUP	43.2	3022	48,400 CUP
H414	65.0	3304		68.0	3592		IMR 3031	39.0	2922	44,300 CUP	41.8	3066	50,500 CUP
H4895	63.0	3388		67.0	3647		Benchmark	40.0	2887	42,000 CUP	43.5	3103	50,500 CUP
Bullet: 100 GR. SPR SP Dia: .277" Col: 3.250"							H322	39.0	2951	44,800 CUP	41.0	3053	49,800 CUP
H1000	77.0	3062		81.0	3287		Bullet: 120 GR. NOS BT Dia: .284" Col: 2.800"						
IMR 7828				78.5C	3645	48,200 CUP	H4350	48.0	2895	39,300 CUP	50.0C	3039	44,600 CUP
H4831	74.0	3482		77.0	3666		H414	46.5	2867	40,600 CUP	49.0	3023	47,600 CUP
H4350	65.0	3282		69.0	3509		760	46.5	2867	40,600 CUP	49.0	3023	47,600 CUP
H414	65.0	3231		68.0	3450		H380	46.0	2881	40,200 CUP	48.0	2977	43,400 CUP
H4895	63.0	3377		66.0	3597		CFE 223	46.0	2944	40,700 CUP	49.5	3151	50,000 CUP
Bullet: 110 GR. HDY HP Dia: .277" Col: 3.290"							Varget	42.5	2996	43,800 CUP	45.0	3117	49,900 CUP
H1000	76.0	3045		81.0	3242		IMR 4320	42.0	2861	45,400 CUP	44.7	3001	50,400 CUP
H4831	73.0	3397		76.0	3482		IMR 4064	41.0	2839	41,500 CUP	43.9	3017	50,000 CUP
H4350	64.0	3214		68.0	3477		IMR 4166	41.5	2861	40,600 CUP	44.8	3055	49,000 CUP
H414	63.0	3187		66.0	3334		BL-C(2)	43.5	2932	41,400 CUP	46.5	3109	50,100 CUP
Bullet: 130 GR. SPR SP Dia: .277" Col: 3.250"							IMR 4895	41.5	2861	43,900 CUP	44.0	3022	49,800 CUP
H1000	76.0	2941		81.0	3259		H335	39.5	2810	42,100 CUP	42.0	2984	49,400 CUP
IMR 7828				76.0	3500	53,000 CUP	H4895	41.0	2931	42,200 CUP	43.7	3085	49,700 CUP
H4831	67.0	3087		70.0	3205		IMR 8208 XBR	40.1	2830	40,500 CUP	42.7	2997	48,900 CUP
H4350	62.0	3110		66.0	3262		IMR 3031	38.5	2826	42,700 CUP	41.0	2987	50,500 CUP
Bullet: 140 GR. HDY BTSP Dia: .277" Col: 3.280"							Benchmark	39.0	2812	40,900 CUP	41.3	2968	49,000 CUP
H1000	75.0	2849		80.0	3145		Bullet: 130 GR. SIE HPBT Dia: .284" Col: 2.800"						
IMR 7828				73.5	3325	53,000 CUP	H4350	47.0	2871	43,000 CUP	50.0C	2998	47,400 CUP
H4831	65.0	2904		68.0	3112		H414	44.0	2761	40,900 CUP	47.0	2925	50,000 CUP
H4350	60.0	2926		64.0	3140		IMR 4350	45.0	2730	41,200 CUP	47.0C	2846	46,300 CUP
Bullet: 150 GR. NOS PART Dia: .277" Col: 3.250"							760	44.0	2761	40,900 CUP	47.0	2925	50,000 CUP
H1000	75.0	2902		79.0	3132		H380	45.0	2804	41,900 CUP	47.0	2934	45,700 CUP
IMR 7828				72.0	3215	53,600 CUP	CFE 223	41.9	2765	37,300 CUP	45.5	2957	47,800 CUP
H4831	65.0	2872		68.0	3057		Varget	40.0	2830	43,400 CUP	43.5	3004	50,100 CUP
H4350	60.0	2846		63.0	2986		IMR 4320	40.0	2709	43,200 CUP	42.5	2863	50,100 CUP
NEVER EXCEED MAXIMUM LOADS							IMR 4064	39.0	2711	39,600 CUP	41.7	2890	49,900 CUP
							IMR 4166	40.2	2759	43,200 CUP	43.3	2950	49,500 CUP
							BL-C(2)	41.5	2857	44,000 CUP	44.2	2989	49,800 CUP
							IMR 4895	40.0	2759	43,300 CUP	42.4	2801	50,000 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
H335	37.0	2690	44,800 CUP	39.0	2809	49,500 CUP	IMR 4451	41.4	2469	48,600 PSI	44.6	2662	58,700 PSI
H4895	39.5	2824	43,500 CUP	42.0	2957	50,200 CUP	H414	43.4	2576	43,500 CUP	46.2	2733	50,400 CUP
IMR 8208 XBR	39.1	2755	42,600 CUP	41.6	2922	50,400 CUP	IMR 4350	41.4	2380	37,600 CUP	46.0C	2633	46,100 CUP
IMR 3031	37.0	2709	42,400 CUP	39.5	2860	50,000 CUP	760	43.4	2576	43,500 CUP	46.2	2733	50,400 CUP
Benchmark	37.0	2701	41,500 CUP	39.8	2861	50,200 CUP	H380	41.4	2441	41,400 CUP	45.0	2646	49,900 CUP
Bullet: 139 GR. HDY SP Dia: .284" Col: 2.800"													
H4350	47.0	2729	40,400 CUP	50.0C	2906	47,500 CUP	CFE 223	39.5	2501	43,500 CUP	42.0	2668	49,200 CUP
IMR 4451	44.0	2655	48,600 PSI	47.4	2850	58,000 PSI	Varget	37.3	2448	43,400 CUP	39.7	2580	50,700 CUP
H414	45.5	2710	40,400 CUP	47.0	2810	44,100 CUP	IMR 4320	38.5	2430	42,200 CUP	41.0	2609	49,800 CUP
IMR 4350	45.5	2646	39,700 CUP	48.0C	2793	45,200 CUP	IMR 4064	37.4	2468	43,900 CUP	39.8	2576	49,900 CUP
760	45.5	2710	40,400 CUP	47.0	2810	44,100 CUP	IMR 4166	36.5	2463	42,800 CUP	39.5	2623	49,500 CUP
H380	44.0	2674	41,800 CUP	47.0	2807	46,800 CUP	BL-C(2)	38.5	2463	41,400 CUP	41.0	2630	48,800 CUP
CFE 223	41.4	2666	38,900 CUP	45.0	2847	48,900 CUP	IMR 4895	38.3	2512	44,800 CUP	41.0	2655	50,600 CUP
Varget	40.5	2721	44,700 CUP	43.5	2877	50,000 CUP	H335	35.2	2373	43,500 CUP	37.4	2522	50,400 CUP
IMR 4320	40.7	2643	43,700 CUP	43.3	2772	49,200 CUP	H4895	34.8	2428	45,200 CUP	37.0	2561	50,700 CUP
IMR 4064	40.0	2682	42,500 CUP	42.5	2847	49,900 CUP	IMR 8208 XBR	35.2	2404	44,600 CUP	37.4	2518	50,700 CUP
IMR 4166	40.4	2722	42,300 CUP	43.5	2879	49,400 CUP	IMR 3031	34.8	2400	43,900 CUP	37.0	2553	49,000 CUP
BL-C(2)	41.0	2641	41,200 CUP	44.7	2857	49,900 CUP	Benchmark	34.8	2369	45,900 CUP	37.0	2506	50,600 CUP
IMR 4895	40.5	2706	43,600 CUP	43.2	2851	49,900 CUP	Bullet: 150 GR. SIE HPBT Dia: .284" Col: 2.800"						
H335	37.5	2585	42,700 CUP	40.0	2730	49,400 CUP	H4350	42.0	2549	40,600 CUP	45.4	2724	51,500 CUP
H4895	39.0	2678	42,500 CUP	42.5	2857	50,200 CUP	IMR 4451	41.1	2525	48,200 PSI	44.2	2726	58,600 PSI
IMR 8208 XBR	39.0	2642	41,200 CUP	41.5	2783	49,000 CUP	H414	44.0	2640	43,600 CUP	46.5	2776	50,000 CUP
IMR 3031	38.0	2633	42,000 CUP	40.3	2797	49,900 CUP	IMR 4350	44.0	2637	41,800 CUP	46.5C	2746	46,600 CUP
Benchmark	37.5	2624	40,300 CUP	40.5	2799	49,600 CUP	760	44.0	2640	43,600 CUP	46.5	2776	50,000 CUP
Bullet: 140 GR. SFT SP Dia: .284" Col: 2.750"													
H4350	45.0	2692	42,300 CUP	48.0C	2868	49,800 CUP	H380	42.0	2583	43,000 CUP	45.5	2748	49,900 CUP
IMR 4451	42.3	2621	50,700 PSI	45.5C	2798	59,100 PSI	CFE 223	39.9	2529	41,500 CUP	42.5	2688	48,200 CUP
H414	43.5	2624	41,900 CUP	46.0	2791	49,500 CUP	Varget	38.5	2597	42,400 CUP	41.3	2731	50,000 CUP
IMR 4350	43.7	2616	38,600 CUP	46.5C	2826	50,000 CUP	IMR 4320	39.0	2587	43,000 CUP	41.5	2711	49,400 CUP
760	43.5	2624	41,900 CUP	46.0	2791	49,500 CUP	IMR 4064	38.0	2569	42,600 CUP	40.3	2723	48,800 CUP
H380	43.0	2645	44,200 CUP	45.7	2775	49,400 CUP	IMR 4166	38.3	2570	41,200 CUP	41.3	2755	50,000 CUP
CFE 223	39.7	2577	38,400 CUP	43.2	2796	48,800 CUP	BL-C(2)	39.0	2559	43,000 CUP	41.5	2699	49,600 CUP
Varget	39.5	2695	43,700 CUP	42.2	2819	49,800 CUP	IMR 4895	39.0	2605	44,000 CUP	41.5	2737	50,700 CUP
IMR 4320	39.0	2588	41,400 CUP	41.4	2749	49,800 CUP	H335	35.0	2471	44,700 CUP	37.5	2605	49,900 CUP
IMR 4064	38.0	2593	41,200 CUP	40.5	2770	50,300 CUP	H4895	37.0	2546	43,300 CUP	40.5	2723	50,000 CUP
IMR 4166	39.3	2665	39,200 CUP	42.3	2841	49,400 CUP	IMR 8208 XBR	36.9	2539	43,200 CUP	39.3	2677	49,900 CUP
BL-C(2)	40.0	2660	44,800 CUP	42.5	2796	49,700 CUP	IMR 3031	36.2	2533	43,000 CUP	38.5	2684	49,900 CUP
IMR 4895	38.5	2596	40,100 CUP	41.0	2752	49,600 CUP	Benchmark	36.0	2526	43,300 CUP	38.5	2667	50,200 CUP
H335	35.5	2536	43,800 CUP	37.5	2647	49,800 CUP	Bullet: 154 GR. HDY SP Dia: .284" Col: 2.800"						
H4895	38.0	2618	42,000 CUP	40.5	2769	49,700 CUP	IMR 4955	45.0	2389	46,000 PSI	49.5C	2624	59,100 PSI
IMR 8208 XBR	37.3	2606	43,200 CUP	39.7	2732	48,800 CUP	H4831	48.0	2550	40,900 CUP	49.5C	2625	44,500 CUP
IMR 3031	36.0	2537	40,700 CUP	38.3	2695	49,600 CUP	Hybrid 100V	42.5	2541	42,900 CUP	46.0C	2713	47,500 CUP
Benchmark	36.0	2564	42,600 CUP	38.3	2688	49,300 CUP	IMR 4831	44.2	2517	38,400 CUP	47.0C	2655	45,100 CUP
Trail Boss	11.0	1211	36,200 CUP	16.0	1472	43,300 CUP	H4350	42.3	2531	46,100 CUP	45.0	2645	51,300 CUP
Bullet: 145 GR. SPR SP Dia: .284" Col: 2.730"													
H4350	45.0	2647	42,300 CUP	48.0C	2801	49,800 CUP	IMR 4451	42.5	2539	50,000 PSI	45.8C	2726	59,100 PSI
IMR 4451	42.7	2589	50,000 PSI	45.9C	2771	58,800 PSI	H414	43.0	2569	41,200 CUP	46.0	2731	49,600 CUP
H414	43.0	2589	41,200 CUP	46.0	2788	49,500 CUP	IMR 4350	44.2	2595	43,100 CUP	47.0C	2744	50,200 CUP
IMR 4350	45.0	2668	43,900 CUP	48.0C	2847	50,200 CUP	760	43.0	2569	41,200 CUP	46.0	2731	49,600 CUP
760	43.0	2589	41,200 CUP	46.0	2788	49,500 CUP	H380	41.5	2462	42,400 CUP	44.0	2627	49,600 CUP
H380	43.0	2603	45,000 CUP	45.5	2716	49,900 CUP	CFE 223	38.7	2444	39,600 CUP	41.2	2696	47,000 CUP
CFE 223	39.3	2519	36,000 CUP	42.7	2701	47,400 CUP	Varget	38.5	2530	44,100 CUP	41.2	2666	50,300 CUP
Varget	39.0	2639	46,200 CUP	41.5	2745	50,200 CUP	IMR 4320	39.0	2530	44,500 CUP	41.5	2698	50,400 CUP
IMR 4320	39.5	2606	44,700 CUP	42.0	2737	49,800 CUP	IMR 4064	38.0	2552	45,600 CUP	40.5	2697	50,700 CUP
IMR 4064	38.5	2590	45,000 CUP	41.0	2728	50,300 CUP	IMR 4166	38.2	2557	50,300 PSI	40.7	2710	59,000 PSI
IMR 4166	40.0	2686	51,000 PSI	43.0	2854	60,200 PSI	BL-C(2)	38.0	2387	40,800 CUP	40.5	2566	49,500 CUP
BL-C(2)	39.0	2516	41,700 CUP	41.7	2693	49,600 CUP	IMR 4895	38.4	2532	45,500 CUP	40.8	2687	50,700 CUP
IMR 4895	40.0	2598	45,700 CUP	42.5	2753	50,700 CUP	H335	35.0	2374	41,700 CUP	37.5	2506	49,000 CUP
H4895	38.5	2599	44,400 CUP	41.0	2728	49,800 CUP	H4895	37.0	2484	44,200 CUP	39.5	2592	49,900 CUP
IMR 8208 XBR	37.8	2589	43,700 CUP	40.2	2721	50,200 CUP	IMR 8208 XBR	36.2	2482	43,200 CUP	38.5	2587	49,100 CUP
IMR 3031	36.5	2512	44,000 CUP	38.8	2659	49,800 CUP	IMR 3031	36.7	2498	43,800 CUP	39.0	2624	50,400 CUP
Benchmark	36.0	2487	40,900 CUP	39.5	2693	50,700 CUP	Benchmark	36.0	2467	42,900 CUP	38.5	2597	49,500 CUP
Bullet: 150 GR. BAR TTSX BT Dia: .284" Col: 2.770"													
H4350	41.9	2475	40,100 CUP	45.5C	2659	50,400 CUP	IMR 4955	43.6	2368	47,200 PSI	47.9C	2573	58,700 PSI
NEVER EXCEED MAXIMUM LOADS													
*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
H414	42.5	2566	43,300 CUP	45.5	2684	49,600 CUP	IMR 4350	41.4	2310	39,200 CUP	46.0C	2556	48,500 CUP
IMR 4350	43.0	2513	43,500 CUP	46.0C	2681	49,300 CUP	760	40.5	2322	40,600 CUP	43.0	2495	50,100 CUP
760	42.5	2566	43,300 CUP	45.5	2684	49,600 CUP	H380	40.0	2303	45,600 CUP	42.7	2415	49,900 CUP
H380	40.5	2413	42,800 CUP	43.0	2566	49,700 CUP	Varget	35.0	2231	43,400 CUP	37.5	2344	49,500 CUP
CFE 223	37.9	2421	42,000 CUP	40.3	2525	49,500 CUP	IMR 4320	38.5	2355	43,900 CUP	41.0	2464	49,700 CUP
Varget	36.5	2451	43,400 CUP	39.0	2562	49,900 CUP	IMR 4064	37.5	2308	43,300 CUP	40.0C	2433	49,700 CUP
IMR 4320	38.0	2485	44,900 CUP	40.4	2623	50,800 CUP	IMR 4166	35.6	2346	49,300 PSI	38.2	2502	59,700 PSI
IMR 4064	36.5	2438	42,000 CUP	38.7	2564	49,000 CUP	BL-C(2)	35.0	2154	40,000 CUP	37.0	2298	49,500 CUP
IMR 4166	36.7	2491	50,400 PSI	39.3	2641	58,800 PSI	IMR 4895	38.0	2343	43,900 CUP	40.5	2466	49,400 CUP
BL-C(2)	37.0	2382	43,900 CUP	39.5	2533	49,700 CUP	H335	34.0	2195	46,200 CUP	36.0	2276	49,800 CUP
IMR 4895	37.5	2477	43,100 CUP	40.0	2601	50,300 CUP	H4895	35.0	2240	44,500 CUP	37.5	2354	49,700 CUP
H335	34.0	2335	44,100 CUP	36.5	2468	49,900 CUP	IMR 8208 XBR	33.4	2264	43,200 CUP	35.5	2372	48,200 CUP
H4895	35.0	2420	44,400 CUP	38.5	2530	50,000 CUP	IMR 3031	35.2	2270	44,900 CUP	37.5	2381	49,700 CUP
IMR 8208 XBR	35.5	2459	45,400 CUP	37.7	2554	49,900 CUP	Benchmark	34.0	2202	42,400 CUP	36.5	2333	49,700 CUP
IMR 3031	34.5	2378	43,000 CUP	36.7	2516	49,200 CUP							
Benchmark	36.0	2457	44,100 CUP	38.5	2592	50,700 CUP							

7 x 57MM MAUSER

Case: Winchester Twist: 1:8.75"
Barrel: 24" Trim: 2.225" Primer: Winchester LR, Large Rifle

Bullet: 162 GR. HDY A-MAX Dia: .284" Col: 2.875"

IMR 4955	43.9	2390	48,700 PSI	47.8C	2575	59,000 PSI
H4831	47.5	2501	39,000 CUP	48.5C	2555	42,400 CUP
Hybrid 100V	41.0	2455	40,300 CUP	45.0C	2651	46,900 CUP
H4350	41.4	2443	40,400 CUP	45.0	2622	50,500 CUP
IMR 4451	41.9	2506	50,100 PSI	45.1C	2674	58,600 PSI
H414	43.0	2553	42,100 CUP	45.0	2632	44,500 CUP
IMR 4350	44.0C	2494	40,000 CUP	46.0C	2655	46,900 CUP
760	43.0	2553	42,100 CUP	45.0	2632	44,500 CUP
H380	42.5	2508	42,400 CUP	44.0	2590	45,800 CUP
Varget	38.5	2504	43,400 CUP	41.0	2644	49,800 CUP
IMR 4320	38.5	2478	42,300 CUP	41.0	2635	49,900 CUP
IMR 4064	37.0	2463	42,000 CUP	39.5	2624	49,900 CUP
IMR 4166	36.5	2505	50,200 PSI	39.1	2634	58,600 PSI
IMR 4895	38.0	2471	42,100 CUP	40.6	2650	49,300 CUP
H335	36.5	2467	45,200 CUP	38.2	2585	50,100 CUP
H4895	37.0	2462	43,700 CUP	39.5	2600	49,800 CUP
IMR 8208 XBR	36.2	2499	41,000 CUP	40.2	2725	50,800 CUP
IMR 3031	35.7	2452	43,200 CUP	38.0	2598	50,300 CUP
Benchmark	36.0	2441	43,100 CUP	38.0	2557	49,200 CUP

Bullet: 100 GR. HDY HP Dia: .284" Col: 2.900"

Hybrid 100V	45.0	2693	32,100 CUP	48.0C	2881	38,400 CUP
H4350	51.0	2993	36,000 CUP	54.0C	3166	41,200 CUP
H414	50.0	3072	38,400 CUP	54.0	3299	46,200 CUP
IMR 4350	46.1	2889	36,800 CUP	51.2C	3080	45,100 CUP
760	50.0	3072	38,400 CUP	54.0	3299	46,400 CUP
H380	50.0	3077	41,800 CUP	52.5	3228	45,500 CUP
Varget	45.0	3123	42,000 CUP	48.0	3250	45,600 CUP
IMR 4064	42.8	2986	40,800 CUP	45.5	3139	46,100 CUP
BL-C(2)	46.0	3085	42,900 CUP	48.5	3205	45,900 CUP
IMR 4895	41.9	2967	43,300 CUP	45.5	3129	45,800 CUP
H4895	44.0	3095	41,200 CUP	46.0	3208	45,400 CUP
IMR 8208 XBR	40.0	2939	40,500 CUP	44.0	3113	45,500 CUP
Benchmark	41.5	2987	39,900 CUP	44.3	3138	45,800 CUP

Bullet: 110 GR. SPR HP Dia: .284" Col: 2.980"

H4350	51.0	2865	36,000 CUP	54.0C	3046	41,900 CUP
H414	50.0	2911	36,800 CUP	53.5	3101	44,100 CUP
IMR 4350	46.0	2660	35,000 CUP	52.0C	3016	45,600 CUP
760	50.0	2911	36,800 CUP	53.5	3101	44,100 CUP
H380	49.0	2933	41,000 CUP	52.0	3085	45,300 CUP
Varget	41.0	2902	40,900 CUP	45.5	3081	46,000 CUP
IMR 4320	41.4	2846	43,400 CUP	44.0	2915	44,600 CUP
IMR 4064	42.8	2860	38,400 CUP	46.0	3058	45,800 CUP
IMR 4895	41.8	2832	39,200 CUP	44.5	2955	42,500 CUP
H4895	43.0	2939	39,600 CUP	46.0	3078	45,000 CUP
IMR 8208 XBR	39.0	2823	43,400 CUP	43.5	3006	45,900 CUP
IMR 3031	40.0	2833	40,300 CUP	43.0	2995	45,700 CUP
Benchmark	41.0	2874	39,300 CUP	44.0	3034	45,700 CUP

Bullet: 120 GR. NOS BT Dia: .284" Col: 3.000"

IMR 7828 SSC	49.1	2571	36,600 CUP	54.5C*	2825	44,900 CUP
IMR 4955	46.9	2588	36,200 CUP	51.0C	2823	44,800 CUP
H4831	50.0	2650	36,500 CUP	52.5C	2777	40,800 CUP
Hybrid 100V	44.0	2615	35,300 CUP	48.0C	2806	41,700 CUP
IMR 4831	46.4	2602	34,800 CUP	51.5C	2896	44,400 CUP
H4350	48.0	2790	40,300 CUP	51.0C	2945	45,800 CUP
IMR 4451	44.1	2608	41,300 CUP	47.5	2814	45,900 CUP
H414	48.0	2784	37,800 CUP	51.0	2938	45,600 CUP
IMR 4350	45.0	2622	36,900 CUP	50.0C	2896	45,700 CUP
760	48.0	2784	37,800 CUP	51.0	2938	45,600 CUP
H380	44.5	2716	40,000 CUP	47.5	2860	46,000 CUP
Varget	41.0	2820	41,700 CUP	44.0	2979	46,000 CUP
IMR 4064	39.9	2673	37,900 CUP	42.5	2807	43,400 CUP
IMR 4895	40.9	2744	40,100 CUP	43.5	2878	45,300 CUP
H4895	40.0	2732	40,900 CUP	42.0	2859	45,400 CUP
IMR 8208 XBR	37.0	2652	42,800 CUP	41.0	2821	45,800 CUP
IMR 3031	38.6	2695	39,200 CUP	41.0	2828	45,400 CUP
Benchmark	39.0	2743	42,900 CUP	41.5	2863	46,000 CUP

Bullet: 168 GR. SIE HPBT Dia: .284" Col: 2.800"

IMR 7828	46.0	2385	40,700 CUP	49.0C*	2547	46,700 CUP
IMR 4955	43.7	2352	50,000 PSI	47.6C	2525	59,100 PSI
H4831	47.0	2438	39,700 CUP	49.0C	2545	45,000 CUP
Hybrid 100V	40.0	2443	42,800 CUP	44.0C	2623	48,200 CUP
IMR 4831	44.0	2402	38,500 CUP	46.0C	2517	42,900 CUP
H4350	41.6	2431	42,500 CUP	44.2	2551	50,700 CUP
IMR 4451	41.1	2468	51,100 PSI	44.2C	2625	59,100 PSI
H414	44.0	2557	44,600 CUP	46.5	2670	49,800 CUP
IMR 4350	43.7	2469	42,500 CUP	46.5C	2643	49,300 CUP
760	44.0	2557	44,600 CUP	46.5	2670	49,800 CUP
H380	42.0	2458	45,800 CUP	44.5	2565	49,900 CUP
Varget	37.5	2430	44,600 CUP	40.0	2540	50,100 CUP
IMR 4320	38.0	2430	41,300 CUP	40.5C	2565	48,700 CUP
IMR 4064	37.5	2466	43,200 CUP	39.8	2597	50,200 CUP
IMR 4166	36.5	2467	52,000 PSI	39.2	2599	59,200 PSI
BL-C(2)	38.0	2370	42,700 CUP	40.5	2492	49,500 CUP
IMR 4895	37.5	2439	42,300 CUP	40.0	2583	49,800 CUP
H335	35.0	2328	44,700 CUP	37.0	2421	49,600 CUP
H4895	36.5	2390	45,400 CUP	39.0	2504	49,700 CUP
IMR 8208 XBR	34.9	2414	46,400 CUP	37.1	2486	49,600 CUP
IMR 3031	36.0	2431	45,200 CUP	38.2	2565	50,100 CUP
Benchmark	36.0	2389	43,500 CUP	38.0	2517	49,400 CUP

Bullet: 175 GR. NOS PART Dia: .284" Col: 2.800"

IMR 4955	43.0	2266	48,700 PSI	46.8C	2437	59,200 PSI
H4831	47.0	2443	46,600 CUP	49.0C	2516	49,400 CUP
Hybrid 100V	40.0	2359	41,500 CUP	44.0C	2568	48,300 CUP
H4350	39.9	2303	41,900 CUP	42.4	2451	50,400 CUP
IMR 4451	40.7	2442	50,400 PSI	43.8C	2598	58,800 PSI
H414	40.5	2322	40,600 CUP	43.0	2495	50,100 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads				
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		
Bullet: 130 GR. SPR SP				Dia: .284"				Col: 2.800"							
IMR 7828 SSC	48.9	2675	42,800 CUP	52.0C*	2802	45,700 CUP	760	42.0	2406	40,100 CUP	44.5	2532	45,400 CUP		
IMR 4955	47.3	2569	38,900 CUP	51.1C	2783	45,400 CUP	H380	39.0	2298	40,200 CUP	42.0	2455	46,000 CUP		
Hybrid 100V	43.0	2536	35,000 CUP	47.0C	2721	41,000 CUP	Varget	34.0	2265	40,900 CUP	36.0	2372	45,600 CUP		
IMR 4831	45.1	2674	42,800 CUP	48.0	2776	45,700 CUP	IMR 4320	35.4	2286	40,500 CUP	37.7	2401	45,000 CUP		
H4350	47.0	2682	40,500 CUP	50.0	2848	46,000 CUP	IMR 4064	36.3	2345	41,000 CUP	38.6	2448	45,300 CUP		
IMR 4451	43.5	2537	40,900 CUP	46.9C	2716	46,000 CUP	IMR 4895	36.9	2381	40,600 CUP	39.3	2487	45,600 CUP		
IMR 4350	43.7	2621	40,500 CUP	46.5	2749	45,600 CUP	H4895	34.0	2271	40,200 CUP	36.0	2383	46,000 CUP		
H380	43.0	2575	41,500 CUP	46.5	2769	46,000 CUP	IMR 8208 XBR	32.0	2206	39,500 CUP	36.0	2401	45,800 CUP		
Varget	39.0	2678	40,400 CUP	42.0	2800	45,700 CUP	IMR 3031	34.5	2341	40,200 CUP	36.7	2441	45,600 CUP		
IMR 4320	36.2	2461	38,700 CUP	38.5	2597	44,100 CUP	Benchmark	34.0	2291	40,900 CUP	36.0	2365	45,700 CUP		
IMR 4064	37.6	2556	40,700 CUP	40.0	2680	45,300 CUP	Bullet: 160 GR. NOS PART								
IMR 4895	37.6	2556	40,700 CUP	40.0	2691	45,200 CUP	IMR 7828 SSC	45.1	2370	41,200 CUP	48.0	2483	45,400 CUP		
H4895	38.0	2579	40,600 CUP	41.0	2704	46,000 CUP	IMR 4955	43.6C	2329	39,800 CUP	46.4C	2449	45,500 CUP		
IMR 8208 XBR	35.0	2488	41,700 CUP	39.0	2676	46,100 CUP	H4831	43.0	2311	41,500 CUP	46.0	2415	45,700 CUP		
IMR 3031	34.0	2466	38,400 CUP	36.2	2578	44,700 CUP	Hybrid 100V	40.5	2337	36,600 CUP	43.5C	2468	41,600 CUP		
Benchmark	39.0	2674	43,300 CUP	41.2	2765	46,000 CUP	IMR 4831	43.5	2416	42,400 CUP	46.2	2515	45,300 CUP		
Bullet: 140 GR. NOS BT				Dia: .284"				Col: 3.000"							
IMR 7828 SSC	47.3	2492	37,200 CUP	50.3C	2632	44,800 CUP	H4350	40.0	2314	42,100 CUP	42.5	2399	45,400 CUP		
IMR 4955	46.2	2509	39,400 CUP	49.7C	2695	45,400 CUP	IMR 4451	39.5	2257	40,900 CUP	42.5	2410	45,800 CUP		
H4831	47.0	2520	42,500 CUP	49.5C	2719	46,000 CUP	H414	40.0	2292	40,200 CUP	42.5	2405	45,400 CUP		
Hybrid 100V	42.0	2466	35,900 CUP	46.5C	2654	43,300 CUP	IMR 4350	41.8	2389	42,000 CUP	44.4	2499	45,500 CUP		
IMR 4831	46.1	2604	40,700 CUP	49.0	2759	46,100 CUP	760	40.0	2292	40,200 CUP	42.5	2405	45,400 CUP		
H4350	43.0	2530	40,400 CUP	46.5	2682	46,000 CUP	H380	37.0	2186	40,800 CUP	39.5	2299	46,000 CUP		
IMR 4451	41.8	2422	41,100 CUP	45.0	2599	46,000 CUP	Varget	33.0	2160	41,100 CUP	35.0	2261	45,900 CUP		
H414	44.0	2548	40,400 CUP	47.0	2715	46,000 CUP	IMR 4320	34.8	2212	39,100 CUP	37.0	2331	44,500 CUP		
IMR 4350	44.2	2534	39,600 CUP	47.0	2683	45,300 CUP	IMR 4064	35.4	2255	39,400 CUP	37.6	2357	45,000 CUP		
760	44.0	2548	40,400 CUP	47.0	2715	46,000 CUP	IMR 4895	34.7	2227	38,300 CUP	37.0	2312	44,600 CUP		
H380	41.0	2467	41,500 CUP	44.0	2614	46,000 CUP	H4895	33.0	2165	40,200 CUP	34.5	2245	44,700 CUP		
Varget	35.0	2368	40,800 CUP	37.7	2516	46,000 CUP	IMR 8208 XBR	31.0	2106	38,000 CUP	34.5	2287	45,900 CUP		
IMR 4320	36.1	2378	37,400 CUP	38.4	2505	45,000 CUP	IMR 3031	33.2	2207	41,400 CUP	35.3	2337	45,500 CUP		
IMR 4064	38.1	2498	41,800 CUP	40.5	2615	45,600 CUP	Benchmark	32.5	2174	40,800 CUP	34.7	2284	45,700 CUP		
IMR 4895	37.8	2454	40,000 CUP	40.2	2678	44,700 CUP	Bullet: 168 GR. SIE HPBT								
H4895	35.0	2376	39,800 CUP	37.5	2530	45,800 CUP	H1000	49.0	2338	40,800 CUP	52.0C	2485	46,000 CUP		
IMR 8208 XBR	33.0	2335	44,100 CUP	37.0	2522	46,100 CUP	IMR 7828 SSC	45.0	2329	40,400 CUP	48.0	2567	45,200 CUP		
IMR 3031	35.0	2426	40,600 CUP	37.2	2528	45,400 CUP	IMR 4955	44.5C	2377	40,200 CUP	47.3C	2510	45,600 CUP		
Benchmark	35.5	2441	40,900 CUP	38.0	2571	45,700 CUP	H4831	43.0	2244	38,100 CUP	46.0	2393	43,900 CUP		
Bullet: 150 GR. BAR TTSX				Dia: .284"				Col: 2.965"							
IMR 7828 SSC	43.0	2317	39,500 CUP	47.0C*	2492	45,000 CUP	Hybrid 100V	41.0	2338	37,400 CUP	45.5C	2534	45,000 CUP		
IMR 4955	45.6	2472	39,700 CUP	49.0C	2621	45,700 CUP	IMR 4831	43.7	2392	40,100 CUP	46.5	2534	45,600 CUP		
H4831	42.0	2318	39,000 CUP	46.0C	2495	45,000 CUP	H4350	40.0	2267	40,400 CUP	42.5	2378	44,100 CUP		
Hybrid 100V	38.0	2329	40,600 CUP	42.0C	2516	44,200 CUP	IMR 4451	39.8	2277	40,200 CUP	43.0	2432	46,000 CUP		
IMR 4831	40.0	2314	38,900 CUP	44.0C	2515	44,200 CUP	H414	40.0	2276	40,700 CUP	42.5	2378	45,000 CUP		
H4350	38.0	2288	36,900 CUP	42.5C	2502	45,300 CUP	IMR 4350	42.8	2363	40,100 CUP	45.6	2515	45,900 CUP		
IMR 4451	39.7	2363	40,600 CUP	42.7C	2491	45,300 CUP	760	40.0	2276	40,700 CUP	42.5	2378	45,000 CUP		
H414	38.0	2321	40,900 CUP	42.0	2493	45,500 CUP	H380	37.0	2149	38,600 CUP	39.5	2272	44,500 CUP		
IMR 4350	39.0	2320	39,800 CUP	43.5C	2532	44,800 CUP	Varget	34.5	2232	36,600 CUP	37.5	2404	45,500 CUP		
760	38.0	2321	40,900 CUP	42.0	2493	45,500 CUP	IMR 4320	34.8	2212	38,100 CUP	37.0	2343	45,800 CUP		
H380	36.0	2216	36,700 CUP	40.5	2405	45,500 CUP	IMR 4064	36.6	2298	41,800 CUP	39.0	2397	46,000 CUP		
Varget	32.0	2183	38,600 CUP	36.5	2415	45,900 CUP	IMR 4895	35.7	2245	39,500 CUP	38.0	2344	44,900 CUP		
IMR 4320	34.0	2232	42,100 CUP	37.5	2369	45,300 CUP	H4895	33.0	2118	36,400 CUP	34.5	2211	42,600 CUP		
IMR 4064	34.0	2297	42,400 CUP	37.0	2423	45,600 CUP	IMR 8208 XBR	31.0	3100	39,100 CUP	34.0	2260	45,800 CUP		
IMR 4895	34.0	2261	39,900 CUP	38.0	2430	45,600 CUP	IMR 3031	33.8	2227	41,400 CUP	36.0	2318	45,500 CUP		
H4895	31.0	2167	37,700 CUP	35.0	2403	45,700 CUP	Benchmark	33.5	2212	40,900 CUP	36.0	2336	46,000 CUP		
IMR 3031	32.0	2246	42,200 CUP	36.0	2429	46,000 CUP	Bullet: 175 GR. NOS PART								
Benchmark	31.0	2194	40,300 CUP	35.0	2356	45,000 CUP	H1000	42.0	2038	41,000 CUP	44.5	2239	45,500 CUP		
Bullet: 150 GR. NOS BT				Dia: .284"				Col: 3.000"							
IMR 7828 SSC	46.1	2381	37,800 CUP	49.0C	2517	44,700 CUP	IMR 7828 SSC	41.6	2180	40,400 CUP	44.3	2299	44,700 CUP		
IMR 4955	44.9	2398	37,800 CUP	48.3C	2575	45,600 CUP	IMR 4955	40.7	2184	40,600 CUP	43.3C	2284	45,500 CUP		
H4831	45.0	2411	41,700 CUP	48.0	2542	46,000 CUP	H4831	37.0	2098	41,300 CUP	40.0	2201	45,700 CUP		
Hybrid 100V	41.0	2374	35,100 CUP	44.5C	2530	40,200 CUP	Hybrid 100V	38.0	2163	34,800 CUP	41.0C	2300	40,800 CUP		
IMR 4831	43.7	2437	39,900 CUP	46.5	2575	45,000 CUP	IMR 4831	37.8	2124	39,500 CUP	40.2	2229	44,400 CUP		
H4350	41.0	2364	38,800 CUP	44.0	2513	45,500 CUP	H4350	35.0	2066	39,700 CUP	37.0	2159	43,400 CUP		
IMR 4451	41.0	2347	40,000 CUP	44.1C	2509	45,600 CUP	IMR 4451	35.5	2027	38,900 CUP	38.3	2178	45,000 CUP		
H414	42.0	2406	40,100 CUP	44.5	2532	45,400 CUP	H414	35.0	2033	40,100 CUP	37.0	2119	44,500 CUP		
IMR 4350	42.3	2403	40,200 CUP	45.0	2535	45,400 CUP	IMR 4350	37.0	2076	35,800 CUP	40.0	2231	44,600 CUP		
								760	35.0	2033	40,100 CUP	37.0	2119	44,500 CUP	
								Varget	31.0	2005	34,200 CUP	35.0	2178	45,500 CUP	
								IMR 4320	34.0	2103	39,100 CUP	36.2	2213	44,900 CUP	
								IMR 4064	33.1	2063	40,400 CUP	35.2	2161	44,700 CUP	

106

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
280 REMINGTON													
Case: Remington						Twist: 1:10"							
Barrel: 24" Trim: 2.530" Primer: Remington 9 1/2, Large Rifle													
Bullet: 100 GR. SIE HP Dia: .284" Col: 3.180"													
IMR 4955	59.6	3104	49,500 PSI	63.5C	3307	58,600 PSI	IMR 4451	47.5	2604	50,800 PSI	51.1	2772	58,000 PSI
H4831	59.0	3053	38,900 CUP	63.0C	3266	46,000 CUP	H414	43.0	2456	41,500 CUP	47.3	2640	49,400 CUP
H4350	56.0	3167	41,400 CUP	60.5	3379	49,200 CUP	760	43.0	2456	41,500 CUP	47.3	2640	49,400 CUP
H414	54.0	3243	42,100 CUP	57.5	3395	47,100 CUP	Varget	39.0	2485	44,000 CUP	42.0	2611	49,800 CUP
760	54.0	3243	42,100 CUP	57.5	3395	47,100 CUP	H4895	38.0	2430	43,700 CUP	41.5	2588	50,000 CUP
H380	52.0	3231	42,200 CUP	55.5	3368	47,800 CUP	Bullet: 160 GR. SFT SP Dia: .284" Col: 3.240"						
Varget	48.0	3254	42,400 CUP	51.3	3433	48,300 CUP	H1000	57.0	2517	40,700 CUP	61.0C	2714	47,500 CUP
BL-C(2)	49.0	3226	41,700 CUP	53.0	3409	48,300 CUP	IMR 7977	56.4	2560	47,100 PSI	60.0C	2773	56,900 PSI
H4895	47.0	3226	42,800 CUP	50.5	3418	49,000 CUP	IMR 4955	51.4	2531	50,200 PSI	54.7	2697	58,500 PSI
Bullet: 115 GR. SPR HP Dia: .284" Col: 3.180"						Bullet: 162 GR. HDY A-MAX Dia: .284" Col: 3.330"							
IMR 4955	58.2	2973	50,800 PSI	62.0C	3151	58,700 PSI	H1000	56.0	2526	40,300 CUP	60.0C	2711	47,200 CUP
H4831	58.0	3014	40,600 CUP	62.0C	3190	47,300 CUP	IMR 7977	56.0	2595	49,500 PSI	59.6C	2761	57,400 PSI
H4350	54.0	3017	40,200 CUP	58.5	3234	48,100 CUP	IMR 4955	51.6	2511	48,900 PSI	54.9	2689	58,100 PSI
H414	52.0	3012	40,300 CUP	56.0	3192	47,400 CUP	H4831	51.0	2517	44,100 CUP	54.5	2644	49,300 CUP
760	52.0	3012	40,300 CUP	56.0	3192	47,400 CUP	Hybrid 100V	47.5	2528	39,800 CUP	51.5C	2746	47,500 CUP
H380	48.0	2902	42,200 CUP	52.0	3090	48,600 CUP	H4350	46.0	2468	42,300 CUP	49.5	2614	49,900 CUP
Varget	46.0	3040	43,500 CUP	49.0	3170	47,700 CUP	IMR 4451	46.5	2512	48,700 PSI	50.2	2696	57,900 PSI
BL-C(2)	45.0	2927	42,300 CUP	49.0	3118	48,400 CUP	H414	43.0	2400	41,400 CUP	47.5	2669	49,900 CUP
H4895	46.0	3033	42,600 CUP	49.0	3175	48,300 CUP	760	43.0	2400	41,400 CUP	47.5	2669	49,900 CUP
Bullet: 120 GR. BARTSX Dia: .284" Col: 3.230"						Bullet: 168 GR. SIE HPBT Dia: .284" Col: 3.330"							
IMR 7828 SSC	60.2	3054	50,000 PSI	64.0C*	3234	58,300 PSI	H1000	56.0	2506	39,400 CUP	60.0C	2700	49,300 CUP
IMR 4955	56.8	2907	50,000 PSI	60.5C	3098	58,700 PSI	IMR 7977	54.4	2525	48,800 PSI	58.3C	2699	57,000 PSI
Suprform	54.0	3072	48,900 PSI	60.0	3304	57,300 PSI	IMR 4955	49.8	2475	50,400 PSI	53.0	2640	58,600 PSI
H4831	58.0	2923	43,600 PSI	63.0C	3124	53,100 PSI	H4831	51.0	2462	42,400 CUP	54.5	2605	49,200 CUP
IMR 4831	57.0	3060	49,500 PSI	61.0C	3259	57,400 PSI	Hybrid 100V	47.0	2537	42,100 CUP	51.0C	2704	48,100 CUP
H4350	55.5	3093	49,100 PSI	59.0C	3254	57,400 PSI	H4350	46.0	2422	41,300 CUP	50.0	2586	49,400 CUP
H414	53.0	3033	49,700 PSI	56.2	3191	56,900 PSI	IMR 4451	46.0	2482	50,000 PSI	49.8	2659	58,600 PSI
IMR 4350	55.5	3038	49,500 PSI	59.0C	3210	56,800 PSI	Varget	40.0	2424	45,800 CUP	42.2	2523	49,900 CUP
H380	51.7	3044	50,700 PSI	55.0	3210	58,000 PSI	H4895	38.0	2329	45,900 CUP	41.2	2468	49,600 CUP
Varget	47.7	3007	48,800 PSI	50.7	3177	57,200 PSI	Bullet: 175 GR. HDY SP Dia: .284" Col: 3.300"						
IMR 4064	47.6	2994	48,700 PSI	50.6	3160	57,000 PSI	H1000	54.0	2502	47,000 CUP	57.0C	2583	49,600 CUP
748	47.0	2935	49,600 PSI	50.0	3061	56,400 PSI	IMR 7977	52.3	2432	49,900 PSI	55.7C	2591	57,100 PSI
BL-C(2)	48.0	3002	50,000 PSI	50.6	3125	55,800 PSI	IMR 4955	49.0	2388	50,800 PSI	52.2	2530	58,000 PSI
H4895	46.9	3067	54,300 PSI	49.9	3171	57,200 PSI	H4831	48.0	2362	44,400 CUP	51.0	2477	49,800 CUP
Bullet: 140 GR. NOS PART Dia: .284" Col: 3.230"						Bullet: 115 GR. SPR SP Dia: .284" Col: 2.800"							
IMR 4955	53.5	2683	49,700 PSI	57.0	2860	58,600 PSI	H4350	55.0	3096	39,600 CUP	60.0C	3368	49,000 CUP
Suprform	54.0	2905	55,400 PSI	57.0	2983	58,600 PSI	H414	54.0	3157	41,800 CUP	58.5	3393	49,900 CUP
H4831	54.0	2732	41,000 CUP	58.5	2927	48,500 CUP	760	54.0	3157	41,800 CUP	58.5	3393	49,900 CUP
Hybrid 100V	50.0	2669	41,300 CUP	54.0C	2847	47,000 CUP	Varget	51.0	3242	45,900 CUP	54.0	3435	52,900 CUP
H4350	50.0	2756	41,900 CUP	53.5	2918	48,500 CUP	IMR 4320	50.0	3170	43,600 CUP	53.2	3354	50,900 CUP
IMR 4451	50.4	2747	51,500 PSI	54.2	2913	58,700 PSI	IMR 4064	49.5	3123	39,500 CUP	53.2	3419	51,700 CUP
H414	47.0	2710	41,800 CUP	51.0	2867	47,900 CUP	IMR 4895	49.8	3220	43,100 CUP	53.0	3422	51,900 CUP
760	47.0	2710	41,800 CUP	51.0	2867	47,900 CUP	H4895	47.0	3213	45,800 CUP	51.5	3428	51,600 CUP
Varget	42.0	2674	41,400 CUP	45.5	2838	48,100 CUP	IMR 8208 XBR	48.9	3322	44,800 CUP	52.0	3478	52,000 CUP
H4895	42.0	2711	43,200 CUP	45.2	2830	48,400 CUP	IMR 3031	47.0	3198	42,900 CUP	50.0	3390	51,900 CUP
Bullet: 145 GR. SPR SP Dia: .284" Col: 3.160"						284 WINCHESTER							
IMR 4955	55.0	2680	50,600 PSI	58.6C	2860	58,700 PSI	Case: Winchester						
H4831	48.0	2579	46,900 CUP	53.0	2727	50,000 CUP	Twist: 1:10"						
Hybrid 100V	50.0	2691	43,000 CUP	54.0C	2866	49,100 CUP	Barrel: 24" Trim: 2.160" Primer: Winchester LR, Large Rifle						
H4350	45.0	2553	44,500 CUP	48.8	2714	49,900 CUP	Bullet: 100 GR. SIE HP Dia: .284" Col: 2.800"						
H414	43.0	2491	44,700 CUP	46.5	2639	48,900 CUP	H4350	55.0	3096	39,600 CUP	60.0C	3368	49,000 CUP
760	43.0	2491	44,700 CUP	46.5	2639	48,900 CUP	H414	54.0	3157	41,800 CUP	58.5	3393	49,900 CUP
Varget	39.0	2469	44,900 CUP	43.0	2690	48,000 CUP	760	54.0	3157	41,800 CUP	58.5	3393	49,900 CUP
H4895	38.0	2434	43,800 CUP	41.0	2596	48,400 CUP	Varget	51.0	3242	45,900 CUP	54.0	3435	52,900 CUP
Bullet: 150 GR. NOS PART Dia: .284" Col: 3.300"						Bullet: 115 GR. SPR SP Dia: .284" Col: 2.800"							
H1000	56.0	2647	43,500 CUP	60.0C	2797	49,300 CUP	H4350	54.0	3008	40,200 CUP	59.0C	3305	52,200 CUP
IMR 7977	57.3	2634	47,200 PSI	61.0C	2822	55,600 PSI	NEVER EXCEED MAXIMUM LOADS						
IMR 4955	52.1	2620	51,400 PSI	55.5	2776	58,700 PSI	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.						
H4831	50.0	2579	45,100 CUP	53.7	2709	49,500 CUP	107						
H4350	46.0	2550	42,500 CUP	49.7	2700	49,300 CUP							

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
H414	52.0	2963	41,000 CUP	57.4	3273	51,700 CUP	H414	50.0	2801	45,600 CUP	53.5	2968	50,900 CUP						
760	52.0	2963	41,000 CUP	57.4	3273	51,700 CUP	IMR 4350	50.6	2634	39,400 CUP	55.0C	2872	49,900 CUP						
Varget	49.0	3096	46,900 CUP	53.0	3281	53,400 CUP	760	50.0	2801	45,600 CUP	53.5	2968	50,900 CUP						
H4895	45.0	3000	43,500 CUP	50.0	3245	52,400 CUP	Varget	44.0	2674	45,400 CUP	48.7	2863	52,800 CUP						
Bullet: 120 GR. HDY V-MAX Dia: .284" Col: 2.825"							IMR 4320	45.9	2666	43,200 CUP	48.8	2816	51,800 CUP						
H4831	56.0	2846	38,900 CUP	60.0C	3018	45,200 CUP	IMR 4064	45.0	2643	43,200 CUP	47.9	2810	51,900 CUP						
Hybrid 100V	51.0	2909	39,400 CUP	55.0C	3050	44,700 CUP	IMR 4895	44.7	2644	43,700 CUP	47.6	2775	51,000 CUP						
H4350	53.0	3017	44,700 CUP	57.0C	3174	49,600 CUP	H4895	43.0	2719	48,100 CUP	46.5	2818	52,300 CUP						
H414	50.0	2897	42,800 CUP	54.8	3191	52,200 CUP	Bullet: 160 GR. BARTSX Dia: .284" Col: 2.870"												
IMR 4350	51.8	2878	38,000 CUP	57.5C	3168	46,500 CUP	IMR 7828 SSC	53.1	2491	41,000 CUP	59.0C*	2810	52,000 CUP						
760	50.0	2897	42,800 CUP	54.8	3191	52,200 CUP	H4831	50.0	2391	38,300 CUP	55.5C	2629	47,400 CUP						
Varget	45.0	2919	43,200 CUP	50.5	3158	52,200 CUP	IMR 4831	51.5	2520	41,900 CUP	56.0C	2771	51,500 CUP						
IMR 4320	48.4	3039	46,300 CUP	51.5	3187	52,100 CUP	H4350	47.0	2497	43,700 CUP	52.0C	2672	50,400 CUP						
IMR 4064	47.0	2924	40,100 CUP	50.2	3202	51,500 CUP	H414	47.0	2495	40,300 CUP	51.0	2702	47,700 CUP						
IMR 4895	47.9	2991	42,900 CUP	50.9	3192	51,800 CUP	IMR 4350	49.7	2496	42,100 CUP	54.0C	2705	51,300 CUP						
H4895	43.0	2880	41,400 CUP	48.0	3120	51,600 CUP	760	47.0	2472	47,700 CUP	50.7	2657	51,900 CUP						
IMR 8208 XBR	45.1	3032	45,600 CUP	48.0	3134	52,600 CUP	Varget	42.0	2397	43,100 CUP	46.5	2632	51,800 CUP						
Bullet: 130 GR. BAR XBT Dia: .284" Col: 2.850"							IMR 4320	45.2	2527	45,100 CUP	48.1	2678	51,500 CUP						
H4831	56.0	2788	40,500 CUP	60.0C	2923	46,300 CUP	IMR 4064	44.2	2527	48,100 CUP	47.0	2648	52,100 CUP						
H4350	53.0	2920	45,700 CUP	57.0C	3095	50,900 CUP	IMR 4895	44.0	2501	45,100 CUP	46.8	2620	51,000 CUP						
H414	50.0	2780	41,000 CUP	55.0	3080	51,200 CUP	H4895	40.0	2374	42,800 CUP	45.0	2593	51,500 CUP						
760	50.0	2780	41,000 CUP	55.0	3080	51,200 CUP	Bullet: 162 GR. HDY BTSP Dia: .284" Col: 2.970"												
Varget	45.0	2844	47,400 CUP	49.7	3026	52,700 CUP	IMR 7828 SSC	53.5	2601	42,100 CUP	58.2C*	2852	51,600 CUP						
H4895	44.0	2853	47,300 CUP	47.5	2984	52,100 CUP	H4831	53.0	2617	44,500 CUP	58.0C	2816	50,900 CUP						
Bullet: 130 GR. SPR SP Dia: .284" Col: 2.800"							Hybrid 100V	49.0	2666	40,900 CUP	54.0C	2864	48,900 CUP						
IMR 4831				59.0C	3100	50,600 CUP	IMR 4831	50.6	2580	39,000 CUP	55.0C	2823	50,800 CUP						
IMR 4350				57.0	3130	53,600 CUP	H4350	50.0	2712	47,600 CUP	53.5C	2847	53,000 CUP						
IMR 4064				50.0	3085	54,000 CUP	H414	48.0	2610	42,900 CUP	52.5	2822	50,700 CUP						
IMR 4895				45.0	2905	52,800 CUP	IMR 4350	49.9	2605	41,600 CUP	53.7C	2797	51,400 CUP						
IMR 3031				48.0	3055	54,000 CUP	760	48.0	2610	42,900 CUP	52.5	2822	50,700 CUP						
Bullet: 139 GR. HDY SST Dia: .284" Col: 2.915"							Varget	42.0	2557	43,800 CUP	47.0	2764	52,500 CUP						
H4831	56.0	2760	40,000 CUP	60.0C	2923	46,900 CUP	IMR 4320	45.1	2648	43,600 CUP	48.0	2758	50,400 CUP						
Hybrid 100V	51.0	2835	42,000 CUP	55.0C	2996	46,800 CUP	IMR 4064	44.3	2585	42,300 CUP	47.1	2764	51,600 CUP						
IMR 4831	54.1	2813	41,100 CUP	57.5C	2969	45,700 CUP	IMR 4895	44.7	2613	43,800 CUP	47.6	2770	51,500 CUP						
H4350	52.0	2840	44,300 CUP	57.0C	3079	52,400 CUP	H4895	40.0	2502	42,900 CUP	44.2	2703	51,600 CUP						
H414	50.0	2792	39,800 CUP	55.0	3075	51,200 CUP	Bullet: 168 GR. SIE HPBT Dia: .284" Col: 2.990"												
IMR 4350	51.3	2671	37,800 CUP	57.0C	2985	48,100 CUP	IMR 7828 SSC	53.5	2578	43,800 CUP	58.5C*	2801	52,200 CUP						
760	50.0	2792	39,800 CUP	55.0	3075	51,200 CUP	H4831	53.0	2602	45,100 CUP	58.0C	2807	52,700 CUP						
Varget	45.0	2777	44,400 CUP	49.5	2996	52,600 CUP	Hybrid 100V	49.0	2610	42,200 CUP	54.0C	2829	49,200 CUP						
IMR 4320	47.7	2742	43,100 CUP	50.7	3035	52,400 CUP	IMR 4831	50.9	2595	42,600 CUP	55.3C	2807	51,900 CUP						
IMR 4064	46.6	2845	43,500 CUP	49.5	3018	51,400 CUP	H4350	50.0	2668	47,400 CUP	53.5C	2822	53,000 CUP						
IMR 4895	46.5	2812	42,500 CUP	49.6	2986	51,400 CUP	H414	48.0	2585	42,500 CUP	52.5	2830	51,900 CUP						
H4895	43.0	2811	48,000 CUP	47.0	2943	51,700 CUP	IMR 4350	49.2	2542	40,600 CUP	53.5	2793	52,700 CUP						
IMR 8208 XBR	42.8	2772	43,900 CUP	45.5	2914	51,900 CUP	760	48.0	2585	42,500 CUP	52.5	2830	51,900 CUP						
Bullet: 145 GR. SPR SP Dia: .284" Col: 2.800"							Varget	42.0	2576	45,400 CUP	47.0	2736	52,500 CUP						
IMR 7828 SSC	54.0	2614	38,900 CUP	60.0C*	2902	50,700 CUP	IMR 4320	44.0	2506	48,600 CUP	46.8	2685	51,600 CUP						
H4831	55.0	2733	45,200 CUP	60.0C	2945	52,500 CUP	IMR 4064	43.7	2536	44,300 CUP	46.5	2690	52,500 CUP						
Hybrid 100V	51.0	2811	43,900 CUP	55.0C	2950	48,500 CUP	IMR 4895	43.7	2543	44,300 CUP	46.5	2683	51,600 CUP						
IMR 4831	52.5	2721	41,600 CUP	57.0C	2941	50,900 CUP	H4895	40.0	2531	46,200 CUP	44.0	2689	52,300 CUP						
H4350	50.0	2743	45,600 CUP	55.0	2964	53,200 CUP	Bullet: 175 GR. SFT SP Dia: .284" Col: 2.930"												
H414	49.0	2735	43,100 CUP	54.0	2985	52,800 CUP	IMR 7828 SSC	52.5	2428	40,800 CUP	57.0C*	2664	49,800 CUP						
IMR 4350	51.5	2713	42,700 CUP	56.0C	2935	52,000 CUP	H4831	52.0	2482	44,500 CUP	57.0C	2695	52,900 CUP						
760	49.0	2735	43,100 CUP	54.0	2985	52,800 CUP	Hybrid 100V	48.0	2472	40,300 CUP	53.0C	2702	47,400 CUP						
Varget	45.0	2771	48,300 CUP	49.0	2905	52,500 CUP	IMR 4831	49.1	2417	39,600 CUP	54.0C	2674	49,900 CUP						
IMR 4320	46.3	2717	44,500 CUP	49.3	2858	51,500 CUP	H4350	47.0	2483	44,900 CUP	51.5C	2649	52,000 CUP						
IMR 4064	45.1	2696	44,800 CUP	48.0	2831	50,800 CUP	H414	48.0	2494	45,100 CUP	52.0	2722	52,600 CUP						
IMR 4895	44.9	2656	43,400 CUP	47.8	2828	50,400 CUP	IMR 4350	48.5	2433	40,500 CUP	52.7C	2633	49,600 CUP						
H4895	43.0	2736	47,500 CUP	46.5	2856	51,600 CUP	760	48.0	2494	45,100 CUP	52.0	2722	52,600 CUP						
Bullet: 150 GR. SFT SCIR Dia: .284" Col: 2.950"							Varget	42.0	2413	45,800 CUP	46.0	2582	52,600 CUP						
IMR 7828 SSC	53.1	2573	38,700 CUP	59.0C*	2861	49,900 CUP	IMR 4320	43.6	2496	47,100 CUP	46.4	2609	51,400 CUP						
H4831	55.0	2682	45,200 CUP	59.0C	2852	50,100 CUP	NEVER EXCEED MAXIMUM LOADS												
Hybrid 100V	49.0	2713	44,200 CUP	54.0C	2900	49,200 CUP	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.												
IMR 4831	52.0	2652	39,600 CUP	56.5C	2865	48,100 CUP													
H4350	50.0	2721	46,100 CUP	54.7C	2913	52,300 CUP													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
280 ACKLEY IMPROVED																			
Case: Nosler						Twist: 1:9"													
Barrel: 24"						Trim: 2.530" Primer: Winchester LR, Large Rifle													
Bullet: 120 GR. NOS BT Dia: .284" Col: 3.320"																			
H1000	62.0	2924	45,100 PSI	66.0C	3120	54,400 PSI	H4831	54.1	2705	51,900 PSI	57.5C	2840	59,900 PSI						
IMR 7828 SSC	59.2	2997	52,500 PSI	63.0	3219	62,200 PSI	Hybrid 100V	51.2	2782	51,400 PSI	54.5	2952	60,100 PSI						
IMR 4955	61.5	3030	53,200 PSI	65.0C	3217	62,200 PSI	IMR 4831	51.2	2756	53,500 PSI	54.5	2881	60,800 PSI						
H4831	61.1	3024	52,200 PSI	65.0C	3240	60,900 PSI	H4350	49.5	2736	55,600 PSI	52.7	2855	61,600 PSI						
Hybrid 100V	54.9	3097	50,500 PSI	58.5	3312	60,500 PSI	IMR 4451	51.0	2684	49,600 PSI	55.7	2890	61,700 PSI						
IMR 4831	56.4	2967	48,900 PSI	60.0	3223	60,100 PSI	H414	47.3	2689	53,200 PSI	50.3	2818	60,100 PSI						
H4350	55.5	3120	54,000 PSI	59.0	3271	61,400 PSI	IMR 4350	51.0	2746	52,600 PSI	54.5	2893	60,100 PSI						
IMR 4451	56.0	3003	51,000 PSI	59.6	3236	61,700 PSI	760	47.3	2689	53,200 PSI	50.3	2818	60,100 PSI						
H414	53.1	3059	52,700 PSI	56.5	3237	62,000 PSI	Varget	43.0	2632	53,800 PSI	45.8	2750	60,900 PSI						
IMR 4350	55.0	3056	53,100 PSI	58.5	3222	60,900 PSI	IMR 4064	44.2	2686	54,600 PSI	47.0	2799	61,900 PSI						
760	53.1	3059	52,700 PSI	56.5	3237	62,000 PSI	IMR 4895	44.7	2665	51,600 PSI	47.5	2805	62,000 PSI						
Varget	47.0	2988	52,200 PSI	50.0	3153	61,300 PSI	H4895	41.4	2598	52,800 PSI	44.0	2716	59,900 PSI						
IMR 4320	47.5	2970	51,000 PSI	50.5	3141	60,300 PSI	Bullet: 150 GR. SFT SCIR Dia: .284" Col: 3.330"												
IMR 4064	47.8	3046	54,200 PSI	50.9	3180	60,400 PSI	H1000	58.5	2724	57,100 PSI	62.2C	2883	60,300 PSI						
748	48.0	3005	52,800 PSI	51.0	3177	60,600 PSI	IMR 7977	58.8	2710	52,200 PSI	62.2C	2910	61,600 PSI						
BL-C(2)	50.3	3089	55,800 PSI	53.5	3242	61,900 PSI	IMR 7828 SSC	54.0	2668	51,600 PSI	59.0	2902	60,600 PSI						
IMR 4895	47.7	3039	54,100 PSI	50.7	3174	60,800 PSI	IMR 4955	56.6	2694	54,100 PSI	60.3C	2859	61,900 PSI						
H4895	44.7	2974	51,800 PSI	47.5	3128	60,700 PSI	H4831	53.6	2657	51,500 PSI	57.0	2773	61,200 PSI						
IMR 3031	45.1	3014	55,700 PSI	48.0	3120	60,200 PSI	Hybrid 100V	50.3	2744	52,500 PSI	53.6	2930	50,000 PSI						
Bullet: 130 GR. SIE HPBT Dia: .284" Col: 3.320"						Bullet: 160 GR. NOS AB Dia: .284" Col: 3.330"													
H1000	60.6	2910	51,600 PSI	64.5C	3065	59,800 PSI	H1000	57.3	2672	54,200 PSI	61.0C	2808	61,100 PSI						
IMR 7828 SSC	56.4	2907	52,800 PSI	60.0	3079	61,300 PSI	IMR 7977	59.6	2690	53,100 PSI	63.5C	2872	61,700 PSI						
IMR 4955	58.4	2877	51,800 PSI	62.2	3070	62,300 PSI	IMR 7828 SSC	54.5	2667	51,900 PSI	58.0	2849	61,300 PSI						
H4831	57.3	2910	53,800 PSI	61.0	3060	61,300 PSI	H4831	54.0	2674	55,000 PSI	57.5C	2812	62,000 PSI						
Hybrid 100V	53.4	3028	53,600 PSI	56.9	3206	61,800 PSI	IMR 4831	52.2	2663	53,100 PSI	55.5	2847	61,900 PSI						
IMR 4831	54.8	2939	52,800 PSI	58.3	3128	62,000 PSI	H4350	48.4	2633	54,100 PSI	51.5	2747	60,700 PSI						
H4350	50.8	2913	53,300 PSI	54.0	3051	60,000 PSI	IMR 4451	50.5	2602	53,100 PSI	53.7	2735	59,100 PSI						
IMR 4451	53.0	2875	52,600 PSI	56.5	3065	61,600 PSI	H414	47.5	2594	52,700 PSI	50.5	2736	60,800 PSI						
H414	50.3	2932	53,500 PSI	53.5	3071	61,700 PSI	IMR 4350	50.5	2647	53,600 PSI	53.7	2813	61,600 PSI						
IMR 4350	51.3	2901	53,200 PSI	54.6	3067	61,200 PSI	760	47.5	2594	52,700 PSI	50.5	2736	60,800 PSI						
760	50.3	2932	53,500 PSI	53.5	3071	61,700 PSI	Varget	43.2	2551	53,200 PSI	46.0	2685	62,000 PSI						
Varget	44.7	2855	53,500 PSI	47.5	2991	60,800 PSI	IMR 4064	42.3	2517	52,900 PSI	45.0	2668	61,400 PSI						
IMR 4320	43.2	2787	51,000 PSI	46.0	2948	60,400 PSI	IMR 4895	43.0	2532	51,300 PSI	45.8	2670	60,000 PSI						
IMR 4064	44.2	2859	52,400 PSI	47.0	3007	61,800 PSI	H4895	40.9	2496	52,300 PSI	43.5	2615	59,500 PSI						
748	44.8	2851	52,000 PSI	47.7	2994	60,600 PSI	Bullet: 162 GR. HDY BTSP Dia: .284" Col: 3.325"												
BL-C(2)	46.5	2888	52,600 PSI	49.5	3026	61,300 PSI	H1000	56.8	2653	52,300 PSI	60.4	2797	61,300 PSI						
IMR 4895	44.7	2867	52,300 PSI	47.5	2982	58,000 PSI	IMR 7977	58.4	2662	50,900 PSI	62.2C	2847	60,100 PSI						
H4895	42.8	2813	51,200 PSI	45.5	2953	60,300 PSI	IMR 7828 SSC	54.0	2678	53,600 PSI	57.3	2824	61,900 PSI						
IMR 3031	42.0	2830	53,800 PSI	44.6	2941	60,300 PSI	IMR 4955	55.9	2663	54,500 PSI	59.5	2801	62,200 PSI						
Bullet: 140 GR. NOS BT Dia: .284" Col: 3.330"						Bullet: 168 GR. SIE HPBT Dia: .284" Col: 3.330"													
H1000	60.0	2778	48,200 PSI	64.0C	2972	58,700 PSI	Returnbo	59.0	2652	49,000 PSI	63.0C	2831	59,300 PSI						
IMR 7977	61.0	2794	49,800 PSI	65.0C	3014	60,200 PSI	H1000	57.8	2641	52,500 PSI	61.5C	2789	61,100 PSI						
IMR 7828 SSC	56.2	2738	48,600 PSI	59.8	2967	60,200 PSI	IMR 7977	58.9	2641	52,900 PSI	62.7C	2822	61,400 PSI						
IMR 4955	59.3	2849	54,400 PSI	61.8	2985	62,300 PSI	NEVER EXCEED MAXIMUM LOADS												
H4831	58.3	2841	53,600 PSI	62.0C	3012	61,100 PSI	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.												
Hybrid 100V	52.6	2883	51,400 PSI	56.0	3068	60,700 PSI	109												
IMR 4831	54.5	2821	51,200 PSI	58.0	3025	60,900 PSI													
H4350	52.2	2893	55,200 PSI	55.5	3012	61,600 PSI													
IMR 4451	53.0	2776	52,000 PSI	56.6	2986	61,900 PSI													
H414	50.3	2830	52,700 PSI	53.5	2991	62,200 PSI													
IMR 4350	52.0	2814	52,700 PSI	55.4	2992	61,800 PSI													
760	50.3	2830	52,700 PSI	53.5	2991	62,200 PSI													
Varget	44.6	2754	54,100 PSI	47.4	2903	60,400 PSI													
IMR 4064	43.7	2728	52,300 PSI	46.5	2876	61,200 PSI													
IMR 4895	44.2	2737	52,800 PSI	47.0	2870	60,500 PSI													
H4895	42.8	2737	53,600 PSI	45.5	2876	61,600 PSI													
Bullet: 150 GR. BARTSX Dia: .284" Col: 3.230"						Bullet: 168 GR. HDY BTSP Dia: .284" Col: 3.325"													
H1000	54.5	2592	54,100 PSI	61.0C	2826	56,900 PSI	H1000	56.8	2653	52,300 PSI	60.4	2797	61,300 PSI						
IMR 7977	59.6	2734	51,200 PSI	63.5C	2928	60,300 PSI	IMR 7977	58.4	2662	50,900 PSI	62.2C	2847	60,100 PSI						
IMR 7828 SSC	54.0	2737	53,900 PSI	57.5	2863	59,200 PSI	IMR 7828 SSC	54.0	2678	53,600 PSI	57.3	2824	61,900 PSI						
IMR 4955	58.4	2749	53,300 PSI	62.2C	2911	61,600 PSI	IMR 4955	55.9	2663	54,500 PSI	59.5	2801	62,200 PSI						
Bullet: 150 GR. BARTSX Dia: .284" Col: 3.230"						Bullet: 168 GR. SIE HPBT Dia: .284" Col: 3.330"													
H1000	54.5	2592	54,100 PSI	61.0C	2826	56,900 PSI	Returnbo	59.0	2652	49,000 PSI	63.0C	2831	59,300 PSI						
IMR 7977	59.6	2734	51,200 PSI	63.5C	2928	60,300 PSI	H1000	57.8	2641	52,500 PSI	61.5C	2789	61,100 PSI						
IMR 7828 SSC	54.0	2737	53,900 PSI	57.5	2863	59,200 PSI	IMR 7977	58.9	2641	52,900 PSI	62.7C	2822	61,400 PSI						
IMR 4955	58.4	2749	53,300 PSI	62.2C	2911	61,600 PSI													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 7828 SSC	53.8	2618	52,600 PSI	57.2	2776	61,000 PSI	Bullet: 120 GR. HDY SP	Dia: .284"	Col: 3.230"				
IMR 4955	55.3	2601	53,200 PSI	58.9	2768	62,100 PSI	IMR 7828	68.0	3044	50,000 PSI	72.5C	3261	59,100 PSI
H4831	54.0	2653	55,100 PSI	57.7	2779	62,000 PSI	IMR 4955	63.9	2994	49,900 PSI	69.5	3222	59,700 PSI
Hybrid 100V	49.5	2671	53,300 PSI	52.7	2826	62,200 PSI	H4831	65.0	3095	45,800 CUP	68.5	3236	50,600 CUP
IMR 4831	52.0	2633	51,400 PSI	55.3	2798	61,400 PSI	Hybrid 100V	60.0	3092	50,100 PSI	65.5	3327	59,600 PSI
H4350	48.4	2621	54,500 PSI	51.5	2734	61,800 PSI	IMR 4831	64.0	3040	51,300 PSI	68.2	3231	58,500 PSI
IMR 4451	50.0	2579	53,700 PSI	53.5	2729	61,600 PSI	H4350	62.0	3106	44,700 CUP	65.0	3226	50,100 CUP
H414	47.0	2571	53,200 PSI	50.3	2717	61,600 PSI	H414	61.0	3126	45,500 CUP	64.5	3261	50,700 CUP
IMR 4350	49.8	2632	53,100 PSI	53.0	2762	61,100 PSI	IMR 4350	62.0	3050	49,900 PSI	66.5	3251	59,000 PSI
760	47.0	2571	53,200 PSI	50.3	2717	61,600 PSI	Varget	53.0	3021	45,200 CUP	57.0	3218	50,900 CUP
Varget	43.0	2518	53,700 PSI	46.0	2667	62,100 PSI	IMR 4064	54.0	3062	52,600 PSI	58.2	3212	59,400 PSI
IMR 4064	42.3	2532	55,900 PSI	45.0	2643	62,300 PSI	IMR 4895	54.0	3049	52,200 PSI	57.9	3189	58,700 PSI
IMR 4895	42.8	2530	53,700 PSI	45.5	2650	61,300 PSI	Bullet: 130 GR. SPR SP	Dia: .284"	Col: 3.185"				
H4895	40.4	2474	52,300 PSI	43.0	2595	60,900 PSI	IMR 7828	65.0	2943	50,800 PSI	70.0	3159	59,300 PSI
							IMR 4955	62.9	2915	51,700 PSI	68.4	3123	60,200 PSI
Bullet: 175 GR. SFT SP							H4831	63.0	2952	46,300 CUP	66.0	3051	50,200 CUP
Returnbo	56.7	2604	52,400 PSI	60.3C	2743	59,800 PSI	Hybrid 100V	57.0	2931	49,400 PSI	62.5	3157	59,000 PSI
H1000	55.5	2544	52,700 PSI	59.0C	2675	61,100 PSI	IMR 4831	62.0	2971	53,200 PSI	66.3	3125	59,800 PSI
IMR 7977	57.4	2531	52,200 PSI	61.1C	2710	60,600 PSI	H4350	58.0	2953	45,100 CUP	61.5	3082	50,800 CUP
IMR 7828 SSC	53.1	2505	51,400 PSI	56.5	2686	61,700 PSI	IMR 4451	58.3	3031	51,800 PSI	63.4	3228	59,800 PSI
IMR 4955	54.9	2519	53,400 PSI	58.5C	2656	62,000 PSI	H414	59.0	2985	46,500 CUP	61.0	3064	49,400 CUP
H4831	52.0	2496	51,900 PSI	55.5	2651	62,000 PSI	IMR 4350	60.0	2964	52,300 PSI	64.0	3131	59,300 PSI
Hybrid 100V	49.2	2559	52,200 PSI	52.4	2721	61,100 PSI	Varget	51.0	2877	45,700 CUP	54.0	2998	49,400 CUP
IMR 4831	51.7	2545	51,200 PSI	55.0	2702	61,400 PSI	IMR 4064	52.0	2904	52,200 PSI	55.4	3048	59,600 PSI
H4350	47.7	2515	54,700 PSI	50.7	2626	62,100 PSI	Bullet: 139 GR. HDY GMX	Dia: .284"	Col: 3.290"				
IMR 4451	49.5	2475	53,200 PSI	52.8	2626	61,000 PSI	Returnbo	68.0	2869	45,500 PSI	74.0C	3128	58,400 PSI
H414	45.9	2469	52,600 PSI	48.8	2594	59,700 PSI	H1000	67.5	2847	46,300 PSI	73.0C	3065	56,000 PSI
IMR 4350	50.0	2529	51,300 PSI	53.3	2681	60,700 PSI	IMR 7977	64.8	2790	46,400 PSI	70.0C	3064	56,900 PSI
760	45.9	2469	52,600 PSI	48.8	2594	59,700 PSI	IMR 7828	63.4	2841	45,800 PSI	70.0C	3191	59,400 PSI
							IMR 4955	60.6	2773	50,200 PSI	65.9	3007	60,100 PSI
							H4831	64.5	2878	50,200 PSI	68.8	3054	58,100 PSI
							Hybrid 100V	58.5	2914	49,800 PSI	62.2	3114	59,500 PSI
							IMR 4831	61.6	2862	48,400 PSI	65.5	3085	58,400 PSI
							H4350	56.1	2834	45,300 PSI	59.7	3007	57,800 PSI
							IMR 4451	57.3	2909	51,800 PSI	62.3	3114	59,500 PSI
							H414	56.2	2820	51,300 PSI	59.8	3043	59,300 PSI
							IMR 4350	59.6	2902	49,300 PSI	63.4	3099	58,500 PSI
							760	56.2	2820	51,300 PSI	59.8	3043	59,300 PSI
							Bullet: 140 GR. NOS PART	Dia: .284"	Col: 3.250"				
							Returnbo	71.0	2955	46,100 CUP	75.0C	3107	49,400 CUP
							H1000	67.0	2934	46,200 CUP	70.0	3036	50,600 CUP
							IMR 7977	66.5	2891	47,400 PSI	72.0	3175	59,900 PSI
							IMR 7828	64.0	2867	50,000 PSI	69.0	3095	59,200 PSI
							IMR 4955	62.0	2840	50,700 PSI	67.4	3061	60,200 PSI
							H4831	61.0	2841	46,300 CUP	64.0	2950	50,200 CUP
							Hybrid 100V	57.0	2895	49,100 PSI	63.0	3138	59,800 PSI
							IMR 4831	61.0	2880	52,200 PSI	65.4	3053	59,400 PSI
							H4350	56.0	2808	45,500 CUP	59.0	2927	50,000 CUP
							IMR 4451	57.1	2934	50,000 PSI	62.0	3136	58,800 PSI
							H414	58.0	2897	46,700 CUP	60.2	2967	49,300 CUP
							IMR 4350	59.0	2877	51,400 PSI	62.8	3045	58,600 PSI
							760	58.0	2897	46,700 CUP	60.2	2967	49,300 CUP
							Trail Boss	17.2	1405	21,400 PSI	24.5	1724	31,000 PSI
							Bullet: 150 GR. BAR TTSX BT	Dia: .284"					
							Col: 3.225"						
							Returnbo	66.9	2895	47,900 PSI	73.5C	3115	57,200 PSI
							H1000	67.2	2847	49,200 PSI	73.8	3083	59,100 PSI
							IMR 7977	64.0	2788	49,900 PSI	69.2C	3041	59,800 PSI
							IMR 7828	63.4	2851	48,400 PSI	68.7	3100	59,200 PSI
							IMR 4955	59.8	2719	49,900 PSI	65.1	2940	60,100 PSI
							H4831	62.7	2852	50,600 PSI	68.0	3080	60,200 PSI
							Hybrid 100V	56.8	2829	47,800 PSI	60.7	3071	59,000 PSI
							IMR 4831	60.4	2848	49,600 PSI	65.0	3075	59,600 PSI
							H4350	57.9	2836	50,800 PSI	62.5	3041	59,800 PSI
							IMR 4451	55.2	2842	51,800 PSI	60.0	3005	58,800 PSI

110

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads									
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure							
IMR 4350	58.9	2856	49,800 PSI	63.7	3059	59,300 PSI	Bullet: 180 GR. BER VLD Dia: .284" Col: 3.290"						Retumbo	64.4	2638	46,400 PSI	70.8C	2914	59,600 PSI	
Bullet: 150 GR. NOS PART Dia: .284" Col: 3.270"							H1000	63.2	2605	46,000 PSI	69.5C	2884	60,000 PSI	IMR 7977	61.9	2573	48,700 PSI	67.0C	2793	59,200 PSI
Retumbo	68.0	2818	43,300 CUP	72.5C	2998	50,300 CUP	IMR 7828	59.6	2570	45,300 PSI	65.5	2874	58,900 PSI	IMR 4955	56.9	2537	50,900 PSI	61.9	2716	60,200 PSI
H1000	65.0	2835	46,200 CUP	68.0	2936	49,900 CUP	H4831	58.6	2652	51,800 PSI	64.5	2830	60,200 PSI	Hybrid 100V	53.6	2594	48,800 PSI	59.0	2810	59,700 PSI
IMR 7977	65.5	2741	45,400 PSI	70.9C	3042	58,900 PSI	IMR 4831	56.4	2608	48,900 PSI	62.0	2841	59,500 PSI	H4350	52.0	2553	48,000 PSI	56.0	2752	59,000 PSI
IMR 7828	62.0	2792	51,700 PSI	66.2	2952	58,500 PSI	IMR 4451	51.3	2590	51,400 PSI	55.8	2757	59,600 PSI	IMR 4350	55.5	2622	49,300 PSI	61.0	2837	59,400 PSI
IMR 4955	60.6	2747	50,600 PSI	65.9	2952	60,100 PSI	7MM WEATHERBY MAGNUM						Case: Remington Twist: 1:10"							
H4831	59.0	2775	45,300 CUP	62.0	2986	51,100 CUP	Barrel: 24" Trim: 2.539" Primer: Federal 215M, Large Rifle Magnum Match						Bullet: 140 GR. SFT SP Dia: .284" Col: 3.250"							
Hybrid 100V	55.0	2746	48,800 PSI	60.0	2975	59,500 PSI	H1000	75.0	3104	42,800 CUP	79.0C	3273	49,900 CUP	IMR 7977	72.5	3022	44,500 CUP	77.5C	3269	54,800 CUP
IMR 4831	58.0	2758	51,500 PSI	62.5	2925	59,400 PSI	IMR 7828	69.0	3098	45,100 CUP	74.0	3326	55,100 CUP	IMR 7828	69.0	3098	45,100 CUP	74.0	3326	55,100 CUP
H4350	55.0	2781	45,700 CUP	57.0	2859	50,100 CUP	H4831	69.0	3023	43,600 CUP	74.0	3258	54,000 CUP	Hybrid 100V	60.0	2931	44,800 CUP	66.0	3196	53,300 CUP
IMR 4451	55.8	2861	51,700 PSI	60.7	3045	59,400 PSI	IMR 4831	65.0	3031	42,800 CUP	69.5	3255	52,800 CUP	H4350	64.0	3046	43,800 CUP	68.5	3248	54,000 CUP
IMR 4350	57.0	2786	52,400 PSI	60.8	2931	59,400 PSI	IMR 4350	62.0	3037	41,400 CUP	67.0	3261	53,100 CUP	Trail Boss	18.5	1365	22,700 CUP	26.5	1529	30,500 CUP
Bullet: 160 GR. NOS PART Dia: .284" Col: 3.290"							Bullet: 150 GR. NOS PART Dia: .284" Col: 3.250"						Bullet: 160 GR. BAR TTSX Dia: .284" Col: 3.250"							
US 869	77.0	2786	52,300 PSI	80.0	2897	58,300 PSI	H1000	75.0	3073	45,400 CUP	79.0C	3223	52,200 CUP	IMR 7977	72.5	2984	46,400 CUP	77.5C	3186	54,500 CUP
Retumbo	65.0	2756	43,200 CUP	69.5C	2915	49,900 CUP	IMR 7828	67.0	2989	48,500 CUP	72.0	3212	54,100 CUP	IMR 7828	67.0	2989	48,500 CUP	72.0	3212	54,100 CUP
H1000	63.0	2729	43,300 CUP	66.0	2839	49,600 CUP	H4831	68.0	2973	44,800 CUP	72.0	3152	53,500 CUP	H4831	68.0	2973	44,800 CUP	72.0	3152	53,500 CUP
IMR 7977	63.7	2673	46,700 PSI	68.9	2934	58,500 PSI	Hybrid 100V	61.0	2967	41,500 CUP	65.5C	3133	53,900 CUP	Hybrid 100V	61.0	2967	41,500 CUP	65.5C	3133	53,900 CUP
IMR 7828	60.0	2709	50,500 PSI	64.0	2868	58,200 PSI	IMR 4831	64.0	2957	44,300 CUP	69.0	3172	53,900 CUP	IMR 4831	64.0	2957	44,300 CUP	69.0	3172	53,900 CUP
IMR 4955	58.7	2646	50,600 PSI	63.9	2846	59,800 PSI	H4350	64.0	3012	45,800 CUP	68.0	3180	54,000 CUP	H4350	64.0	3012	45,800 CUP	68.0	3180	54,000 CUP
Supreme 780	61.8	2829	52,400 PSI	65.7	2948	58,000 PSI	IMR 4350	62.0	3003	44,000 CUP	66.5	3175	54,100 CUP	IMR 4350	62.0	3003	44,000 CUP	66.5	3175	54,100 CUP
H4831	58.0	2695	46,400 CUP	60.0	2787	49,800 CUP	Bullet: 175 GR. HDY SP Dia: .284" Col: 3.350"						Bullet: 175 GR. HDY SP Dia: .284" Col: 3.350"							
Hybrid 100V	53.0	2647	49,600 PSI	58.0	2839	58,300 PSI	US 869	78.0	2751	41,600 CUP	80.0	2862	45,200 CUP	H1000	70.0	2844	45,000 CUP	74.7C	3022	54,000 CUP
IMR 4831	57.0	2707	50,600 PSI	61.0	2858	58,400 PSI	IMR 7977	68.5	2765	46,600 CUP	73.2C	2964	55,000 CUP	IMR 7977	68.5	2765	46,600 CUP	73.2C	2964	55,000 CUP
H4350	53.0	2651	46,400 CUP	55.5	2745	49,800 CUP	IMR 7828	64.0	2773	45,000 CUP	67.5	2942	52,600 CUP	IMR 7828	64.0	2773	45,000 CUP	67.5	2942	52,600 CUP
IMR 4451	54.3	2757	51,900 PSI	59.4	2945	59,700 PSI	H4831	63.0	2724	43,500 CUP	67.5	2895	53,400 CUP	H4831	63.0	2724	43,500 CUP	67.5	2895	53,400 CUP
IMR 4350	56.0	2697	49,700 PSI	59.5	2856	58,500 PSI	Hybrid 100V	57.0	2658	46,000 CUP	62.0C	2826	52,600 CUP	Hybrid 100V	57.0	2658	46,000 CUP	62.0C	2826	52,600 CUP
Bullet: 162 GR. HDY SPBT Dia: .284" Col: 3.290"							Bullet: 150 GR. NOS PART Dia: .284" Col: 3.250"						Bullet: 160 GR. BAR TTSX Dia: .284" Col: 3.250"							
US 869	77.0	2820	49,800 PSI	80.0	2921	54,400 PSI	H1000	75.0	3073	45,400 CUP	79.0C	3223	52,200 CUP	IMR 7977	72.5	2984	46,400 CUP	77.5C	3186	54,500 CUP
Retumbo	69.0	2787	43,900 CUP	73.5C	2963	50,500 CUP	IMR 7828	67.0	2989	48,500 CUP	72.0	3212	54,100 CUP	IMR 7828	67.0	2989	48,500 CUP	72.0	3212	54,100 CUP
H1000	67.0	2800	45,400 CUP	70.0	2905	49,600 CUP	H4831	68.0	2973	44,800 CUP	72.0	3152	53,500 CUP	H4831	68.0	2973	44,800 CUP	72.0	3152	53,500 CUP
IMR 7977	64.0	2702	47,500 PSI	69.5C	2955	59,300 PSI	Hybrid 100V	61.0	2967	41,500 CUP	65.5C	3133	53,900 CUP	Hybrid 100V	61.0	2967	41,500 CUP	65.5C	3133	53,900 CUP
IMR 7828	61.0	2724	50,800 PSI	65.0	2882	59,000 PSI	IMR 4831	64.0	2957	44,300 CUP	69.0	3172	53,900 CUP	IMR 4831	64.0	2957	44,300 CUP	69.0	3172	53,900 CUP
IMR 4955	59.0	2659	50,700 PSI	64.2	2863	60,200 PSI	H4350	64.0	3012	45,800 CUP	68.0	3180	54,000 CUP	H4350	64.0	3012	45,800 CUP	68.0	3180	54,000 CUP
H4831	60.0	2731	43,300 CUP	64.0	2871	49,800 CUP	IMR 4350	62.0	3003	44,000 CUP	66.5	3175	54,100 CUP	IMR 4350	62.0	3003	44,000 CUP	66.5	3175	54,100 CUP
Hybrid 100V	55.0	2725	49,700 PSI	60.0	2922	59,500 PSI	Bullet: 175 GR. SIE RN Dia: .284" Col: 3.270"						Bullet: 175 GR. NOS PART Dia: .284" Col: 3.290"							
IMR 4831	58.0	2710	49,900 PSI	61.8	2877	59,500 PSI	US 869	77.0	2688	44,700 PSI	79.0	2826	51,300 PSI	US 869	74.0	2632	49,300 PSI	77.0	2758	56,200 PSI
H4350	55.0	2677	43,400 CUP	58.0	2799	49,400 CUP	Retumbo	71.0	2752	44,200 CUP	75.0C	2899	50,700 CUP	Retumbo	64.0	2650	45,400 CUP	68.0	2800	51,200 CUP
IMR 4451	53.9	2755	51,200 PSI	58.7	2938	59,200 PSI	H1000	69.0	2744	45,600 CUP	71.0	2806	49,400 CUP	H1000	61.0	2567	45,000 CUP	64.5	2692	50,400 CUP
IMR 4350	56.0	2704	49,700 PSI	60.0	2861	58,100 PSI	IMR 7828	62.0	2680	50,400 PSI	66.0	2839	58,700 PSI	IMR 7977	61.9	2576	48,900 PSI	67.3	2822	60,200 PSI
Bullet: 170 GR. SIE RN Dia: .284" Col: 3.270"							Bullet: 175 GR. HDY SP Dia: .284" Col: 3.350"						Bullet: 175 GR. HDY SP Dia: .284" Col: 3.350"							
US 869	77.0	2688	44,700 PSI	79.0	2826	51,300 PSI	US 869	78.0	2751	41,600 CUP	80.0	2862	45,200 CUP	US 869	78.0	2751	41,600 CUP	80.0	2862	45,200 CUP
Retumbo	71.0	2752	44,200 CUP	75.0C	2899	50,700 CUP	H1000	70.0	2844	45,000 CUP	74.7C	3022	54,000 CUP	H1000	70.0	2844	45,000 CUP	74.7C	3022	54,000 CUP
H1000	69.0	2744	45,600 CUP	71.0	2806	49,400 CUP	IMR 7977	68.5	2765	46,600 CUP	73.2C	2964	55,000 CUP	IMR 7977	68.5	2765	46,600 CUP	73.2C	2964	55,000 CUP
IMR 7828	62.0	2680	50,400 PSI	66.0	2839	58,700 PSI	IMR 7828	64.0	2773	45,000 CUP	67.5	2942	52,600 CUP	IMR 7828	64.0	2773	45,000 CUP	67.5	2942	52,600 CUP
H4831	63.0	2749	46,300 CUP	65.0	2806	48,900 CUP	H4831	63.0	2724	43,500 CUP	67.5	2895	53,400 CUP	H4831	63.0	2724	43,500 CUP	67.5	2895	53,400 CUP
Hybrid 100V	54.0	2604	49,400 PSI	59.0	2807	59,500 PSI	Hybrid 100V	57.0	2658	46,000 CUP	62.0C	2826	52,600 CUP	Hybrid 100V	57.0	2658	46,000 CUP	62.0C	2826	52,600 CUP
IMR 4831	59.0	2672	50,500 PSI	63.0	2828	59,100 PSI	IMR 4831	60.0	2756	46,400 CUP	64.0	2880	53,000 CUP	IMR 4831	60.0	2756	46,400 CUP	64.0	2880	53,000 CUP
H4350	58.0	2701	44,600 CUP	60.0	2767	48,500 CUP	H4350	60.0	2755	45,900 CUP	63.7	2899	53,600 CUP	H4350	60.0	2755	45,900 CUP	63.7	2899	53,600 CUP
IMR 4350	57.0	2669	50,700 PSI	61.5	2829	59,200 PSI	IMR 4350	59.0	2784	45,800 CUP	63.0	2885	53,400 CUP	IMR 4350	59.0	2784	45,800 CUP	63.0	2885	53,400 CUP
Bullet: 175 GR. NOS PART Dia: .284" Col: 3.290"							Bullet: 180 GR. BER VLD Dia: .284" Col: 3.350"						Bullet: 180 GR. BER VLD Dia: .284" Col: 3.350"							
US 869	74.0	2632	49,300 PSI	77.0	2758	56,200 PSI	US 869	75.2	2698	42,800 CUP	81.8C	2927	50,900 CUP	US 869	75.2	2698	42,800 CUP	81.8C	2927	50,900 CUP
Retumbo	64.0	2650	45,400 CUP	68.0	2800	51,200 CUP	H1000	66.3	2733	44,400 CUP	72.1C	2939	53,600 CUP	H1000	66.3	2733	44,400 CUP	72.1C	2939	53,600 CUP
H1000	61.0	2567	45,000 CUP	64.5	2692	50,400 CUP	IMR 7977													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
7MM SHOOTING TIMES WESTERNER																			
Case: Federal						Twist: 1:10"													
Barrel: 24" Trim: 2.840" Primer: Federal 215, Large Rifle						Magnum													
Bullet: 120 GR. SIE SP Dia: .284" Col: 3.585"																			
Returnbo	85.0	3330	47,900 CUP	89.5C	3519	54,300 CUP	H1000	70.0	2833	47,700 CUP	74.0	2944	51,900 CUP						
H1000	82.0	3255	45,300 CUP	86.0	3405	51,800 CUP	IMR 7977	69.7	2771	48,700 CUP	75.0	2949	53,800 CUP						
IMR 7977	79.7	3216	44,300 CUP	85.7	3491	54,300 CUP	IMR 7828	67.5	2770	47,700 CUP	71.7	2910	53,000 CUP						
IMR 7828	75.8	3289	50,800 CUP	80.6	3436	53,000 CUP	IMR 4955	62.2	2633	46,200 CUP	67.7	2841	54,400 CUP						
IMR 4955	72.2	3250	47,300 CUP	78.1	3420	54,000 CUP	Hybrid 100V	64.0	2771	47,900 CUP	68.0	2883	52,900 CUP						
H4831	75.0	3200	46,300 CUP	78.5	3348	51,900 CUP	IMR 4831	63.5	2698	47,900 CUP	67.5	2831	53,900 CUP						
Hybrid 100V	69.0	3256	47,200 CUP	75.0	3498	53,800 CUP	Bullet: 180 GR. BER VLD Dia: .284" Col: 3.655"												
IMR 4831	71.2	3257	46,100 CUP	75.7	3387	50,700 CUP	US 869	81.8	2822	46,200 CUP	87.0	2988	52,700 CUP						
H4350	69.0	3185	45,400 CUP	73.0	3350	52,300 CUP	H50BMG	80.8	2772	48,800 CUP	86.0C	2894	52,400 CUP						
IMR 4350	68.0	3236	44,000 CUP	72.5	3402	52,700 CUP	Returnbo	69.3	2760	49,700 CUP	73.8	2876	53,500 CUP						
Bullet: 139 GR. HDY SPBT Dia: .284" Col: 3.585"						Bullet: 120 GR. NOS BT Dia: .284" Col: 3.340"													
Returnbo	83.0	3165	47,700 CUP	88.0C	3347	54,300 CUP	US 869	93.2	3192	48,900 PSI	101.0C	3535	62,500 PSI						
H1000	81.0	3119	46,400 CUP	85.5	3284	52,300 CUP	H50BMG	90.2	3062	43,900 PSI	97.0C	3346	55,600 PSI						
IMR 7977	76.4	3041	45,300 CUP	82.2	3283	53,700 CUP	Returnbo	83.8	3170	44,900 PSI	90.2	3576	62,900 PSI						
IMR 7828	75.0	3190	49,700 CUP	79.7	3333	52,800 CUP	H1000	84.0	3268	50,500 PSI	89.4C	3547	63,000 PSI						
IMR 4955	69.9	3001	47,300 CUP	76.0	3267	54,300 CUP	IMR 7977	82.2	3280	51,000 PSI	87.5	3545	62,700 PSI						
H4831	72.0	3018	44,400 CUP	76.5	3181	51,900 CUP	IMR 7828	79.9	3336	52,600 PSI	84.8	3594	62,900 PSI						
Hybrid 100V	67.0	3085	45,800 CUP	72.0	3264	52,500 CUP	IMR 4955	77.8	3313	52,600 PSI	82.8	3566	63,100 PSI						
IMR 4831	70.5	3156	48,500 CUP	75.0	3302	54,200 CUP	H4831	78.5	3323	54,700 PSI	83.5	3507	62,400 PSI						
H4350	69.0	3079	46,700 CUP	71.0	3183	52,300 CUP	IMR 4831	75.0	3249	49,700 PSI	81.6	3557	62,500 PSI						
IMR 4350	67.2	3125	46,000 CUP	71.5	3274	53,100 CUP	Bullet: 140 GR. NOS E-TIP Dia: .284" Col: 3.340"												
Bullet: 145 GR. SPR SP Dia: .284" Col: 3.565"						Bullet: 145 GR. SPR SPBT Dia: .284" Col: 3.340"													
US 869	86.0	3055	48,300 CUP	91.0	3209	52,900 CUP	US 869	88.9	3083	52,800 PSI	94.6	3307	62,700 PSI						
Returnbo	77.0	3052	48,000 CUP	81.5C	3195	53,700 CUP	H50BMG	85.7	3080	57,500 PSI	91.2C	3206	62,900 PSI						
H1000	74.0	3023	47,400 CUP	77.0	3120	52,100 CUP	Returnbo	78.3	3089	53,800 PSI	83.4	3275	62,700 PSI						
IMR 7977	72.5	2957	45,700 CUP	78.0	3187	54,200 CUP	H1000	75.4	3096	57,400 PSI	80.3	3226	63,000 PSI						
IMR 7828	69.5	2975	48,800 CUP	74.0	3136	53,700 CUP	IMR 7977	75.0	3042	55,200 PSI	79.8	3211	62,600 PSI						
IMR 4955	67.2	2954	46,400 CUP	73.1	3140	54,100 CUP	IMR 7828	73.3	3098	54,800 PSI	78.0	3260	62,500 PSI						
H4831	68.0	2937	47,800 CUP	72.0	3063	52,300 CUP	IMR 4955	70.7	3074	56,900 PSI	75.3	3218	63,100 PSI						
Hybrid 100V	64.0	2959	46,600 CUP	69.0	3144	53,000 CUP	H4831	70.1	3012	54,000 PSI	74.6	3190	62,800 PSI						
IMR 4831	64.5	2909	46,000 CUP	69.0	3048	52,200 CUP	IMR 4831	69.9	3040	53,900 PSI	74.4	3220	62,600 PSI						
IMR 4350	65.0	2965	47,800 CUP	69.0	3168	54,300 CUP	Bullet: 150 GR. BARTTSX BT Dia: .284" Col: 3.340"												
Bullet: 150 GR. BARTSX Dia: .284" Col: 3.530"						Bullet: 160 GR. NOS PART Dia: .284" Col: 3.340"													
US 869	83.0	2930	43,600 CUP	88.0	3081	48,900 CUP	US 869	88.2	3025	55,500 PSI	93.8	3199	63,700 PSI						
H50BMG	80.0	2908	46,600 CUP	84.0C	3005	49,500 CUP	H50BMG	83.2	2934	55,900 PSI	88.6C	3086	62,800 PSI						
Returnbo	71.0	2929	46,200 CUP	77.0C	3140	53,500 CUP	Returnbo	76.0	2984	55,700 PSI	80.9	3131	63,000 PSI						
H1000	71.0	2889	45,000 CUP	76.0C	3038	51,600 CUP	H1000	75.8	2984	57,800 PSI	80.6	3114	63,500 PSI						
IMR 7977	71.0	2975	48,600 CUP	76.4	3127	52,500 CUP	IMR 7977	73.5	2922	55,900 PSI	78.2	3076	62,600 PSI						
IMR 7828 SSC	69.0	2909	46,600 CUP	72.0	3047	52,200 CUP	Bullet: 162 GR. HDY SPBT Dia: .284" Col: 3.340"												
IMR 4955	65.3	2898	47,200 CUP	71.0	3085	54,000 CUP	US 869	89.0	3013	54,100 PSI	94.2	3195	62,600 PSI						
H4831	65.0	2842	47,100 CUP	70.0	3022	53,100 CUP	NEVER EXCEED MAXIMUM LOADS												
Hybrid 100V	64.0	2910	47,300 CUP	68.5	3060	52,800 CUP	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.												
IMR 4831	62.0	2849	44,500 CUP	66.5	3019	53,200 CUP													
IMR 4350	60.0	2813	46,100 CUP	65.5	3006	53,900 CUP													
Bullet: 160 GR. SFT SP Dia: .284" Col: 3.565"						Bullet: 175 GR. NOS PART Dia: .284" Col: 3.585"													
US 869	85.0	2922	46,400 CUP	90.0	3041	50,800 CUP	US 869	84.0	2908	50,100 CUP	88.0	3020	53,200 CUP						
H50BMG	88.0	2929	46,100 CUP	90.0C	2970	46,600 CUP	H50BMG	85.0	2851	46,900 CUP	89.0C	2973	52,300 CUP						
Returnbo	75.0	2909	46,700 CUP	80.2	3056	53,600 CUP	Returnbo	72.0	2819	48,300 CUP	77.0	2967	54,200 CUP						
H1000	76.0	2930	44,300 CUP	80.7	3084	51,500 CUP													
IMR 7977	72.5	2872	46,000 CUP	78.0	3084	54,000 CUP													
IMR 7828	72.5	2900	48,400 CUP	77.0	3085	54,200 CUP													
IMR 4955	65.5	2788	46,400 CUP	71.2	2998	54,200 CUP													
H4831	70.0	2884	45,900 CUP	74.0	3037	52,300 CUP													
Hybrid 100V	64.0	2850	46,300 CUP	69.0	3013	52,500 CUP													
IMR 4831	65.0	2730	41,600 CUP	69.5	2926	51,800 CUP													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
H50BMG	83.8	2908	54,200 PSI	90.7C	3103	63,800 PSI	IMR 4831	79.0	3058	50,100 PSI	85.0	3322	62,100 PSI
Returnbo	77.8	2982	53,900 PSI	82.8	3161	62,900 PSI	Bullet: 150 GR. SFT SCIR Dia: .284" Col: 3.600"						
H1000	76.3	2975	55,100 PSI	81.2	3153	63,500 PSI	US 869	102.0	3137	58,800 PSI	104.5	3226	63,200 PSI
Bullet: 175 GR. NOS PART Dia: .284" Col: 3.340"						H50BMG	97.0	3048	55,000 PSI	103.0C	3222	63,200 PSI	
US 869	85.7	2873	52,900 PSI	91.2	3085	62,700 PSI	Returnbo	89.0	3054	53,000 PSI	95.0C	3299	63,600 PSI
H50BMG	80.9	2850	57,800 PSI	84.8	2955	62,900 PSI	H1000	87.0	3045	54,400 PSI	92.0	3230	63,100 PSI
Returnbo	72.3	2858	56,000 PSI	78.0	3018	64,000 PSI	IMR 7828	80.0	3035	53,600 PSI	86.0	3247	62,900 PSI
H1000	72.8	2864	57,300 PSI	77.5	2996	63,800 PSI	H4831	82.0	3146	61,900 PSI	84.0	3187	63,100 PSI
IMR 7977	71.6	2792	54,600 PSI	77.0	2973	63,400 PSI	Hybrid 100V	72.0	3006	53,600 PSI	78.3	3207	62,900 PSI
IMR 7828	68.1	2831	55,900 PSI	71.7	2959	62,500 PSI	IMR 4831	77.0	3007	52,700 PSI	83.0	3229	62,500 PSI
Bullet: 180 GR. BER VLD Dia: .284" Col: 3.340"						Bullet: 154 GR. HDY SP Dia: .284" Col: 3.630"							
US 869	85.1	2854	51,900 PSI	90.6	3087	62,900 PSI	US 869	101.8	3060	56,400 PSI	104.5	3211	62,800 PSI
H50BMG	85.2	2808	53,700 PSI	90.6C	2968	62,900 PSI	H50BMG	94.0	2989	54,800 PSI	100.0C	3170	63,100 PSI
Returnbo	76.6	2804	51,600 PSI	81.5	3017	63,300 PSI	Returnbo	90.0	3055	53,400 PSI	96.2	3289	63,900 PSI
H1000	74.8	2830	55,100 PSI	79.6	2976	62,400 PSI	H1000	85.0	3051	56,700 PSI	90.0	3192	63,300 PSI
IMR 7977	73.7	2761	52,500 PSI	78.5	2957	62,600 PSI	Bullet: 160 GR. NOS PART Dia: .284" Col: 3.600"						
IMR 7828	69.6	2825	54,700 PSI	74.1	2966	62,200 PSI	US 869	97.0	2928	50,400 PSI	103.0	3192	62,900 PSI
7MM REMINGTON ULTRA MAGNUM						Bullet: 162 GR. HDY SPBT Dia: .284" Col: 3.650"							
Case: Remington Twist: 1.9.5"						US 869	100.5	3075	58,700 PSI	103.5	3173	62,800 PSI	
Barrel: 24" Trim: 2.840" Primer: Remington 9 1/2M, Large Rifle Magnum						H50BMG	94.0	2979	56,000 PSI	100.0	3119	62,600 PSI	
Bullet: 100 GR. HDY HP Dia: .284" Col: 3.500"						Returnbo	89.0	3009	53,100 PSI	95.0	3223	62,700 PSI	
H1000	98.0	3515	52,200 PSI	104.0C	3750	62,700 PSI	H1000	84.0	2993	55,600 PSI	89.0	3127	62,500 PSI
H4831	90.0	3585	55,900 PSI	95.0	3754	62,800 PSI	Bullet: 168 GR. SIE HPBT Dia: .284" Col: 3.650"						
H4350	82.0	3618	55,500 PSI	87.0	3804	63,300 PSI	US 869	96.0	2899	53,100 PSI	101.5	3089	61,900 PSI
Bullet: 110 GR. SPR TNT HP Dia: .284" Col: 3.500"						H50BMG	94.0	2942	55,600 PSI	100.0	3118	63,400 PSI	
H1000	96.0	3437	52,100 PSI	102.0	3676	62,600 PSI	Returnbo	89.0	2986	54,400 PSI	94.0	3171	63,300 PSI
H4831	88.0	3431	53,500 PSI	93.5	3652	63,000 PSI	H1000	85.0	2988	57,500 PSI	90.0	3116	63,500 PSI
H4350	82.0	3519	56,000 PSI	86.0	3675	63,200 PSI	Bullet: 175 GR. SFT SP Dia: .284" Col: 3.600"						
Bullet: 115 GR. SPR HP Dia: .284" Col: 3.450"						US 869	95.0	2851	51,800 PSI	102.0	3077	63,000 PSI	
Returnbo	98.0	3398	54,100 PSI	104.0C	3683	64,100 PSI	H50BMG	91.0	2888	57,000 PSI	96.0	3019	63,100 PSI
H1000	95.0	3380	54,500 PSI	101.0	3589	63,100 PSI	Returnbo	86.0	2919	57,300 PSI	91.5	3069	63,400 PSI
H4831	87.0	3364	54,000 PSI	91.5	3565	62,800 PSI	H1000	82.0	2871	56,700 PSI	87.0	3021	63,500 PSI
H4350	82.0	3472	57,600 PSI	85.5	3592	63,400 PSI	30 CARBINE						
Bullet: 120 GR. NOS BT Dia: .284" Col: 3.600"						Case: Winchester Twist: 1:20"							
Returnbo	96.0	3326	52,100 PSI	102.5C	3601	62,300 PSI	Barrel: 20" Trim: 1.285" Primer: CCI 400, Small Rifle						
H1000	94.0	3368	54,600 PSI	99.5	3572	63,100 PSI	Bullet: 85 GR. SIE RN Dia: .308" Col: 1.625"						
H4831	85.0	3344	54,600 PSI	90.0	3536	63,000 PSI	H4227	14.5	2054	25,200 CUP	15.5C	2181	30,700 CUP
H4350	81.0	3475	59,700 PSI	83.0	3552	62,900 PSI	296	16.5	2293	26,000 CUP	17.5	2458	34,800 CUP
Bullet: 130 GR. BAR XBT Dia: .284" Col: 3.560"						Bullet: 100 GR. HDY SJ Dia: .308" Col: 1.760"							
US 869	105.0	3285	57,300 PSI	108.3	3405	63,800 PSI	IMR 4227			16.0C	2005	40,000 CUP	
H50BMG	102.0	3289	56,900 PSI	107.0C	3413	62,300 PSI	Bullet: 100 GR. SPR SP Dia: .308" Col: 1.625"						
Returnbo	93.0	3223	52,400 PSI	99.5C	3514	63,600 PSI	H4227	13.0	1879	28,900 CUP	14.5C	2026	33,600 CUP
H1000	90.0	3224	53,700 PSI	95.5	3430	62,900 PSI	296	14.5	2075	28,200 CUP	15.5	2202	36,100 CUP
H4831	83.0	3235	55,600 PSI	88.0	3412	63,100 PSI	H110	14.5	2075	28,200 CUP	15.5	2202	36,100 CUP
Bullet: 140 GR. BAR XBT Dia: .284" Col: 3.560"						Bullet: 110 GR. HDY JRN Dia: .308" Col: 1.680"							
US 869	102.0	3162	56,400 PSI	104.7	3275	62,400 PSI	IMR 4227	13.0	1826	30,100 CUP	14.5C	2003	38,800 CUP
H50BMG	101.0	3092	54,200 PSI	107.0C	3271	62,400 PSI	H4227	13.0	1826	30,100 CUP	14.5C	2003	38,800 CUP
Returnbo	90.0	3142	55,200 PSI	96.5C	3353	63,400 PSI	296	14.0	2006	32,000 CUP	15.0	2106	36,500 CUP
H1000	90.0	3196	59,300 PSI	95.0	3277	62,700 PSI	H110	14.0	2006	32,000 CUP	15.0	2106	36,500 CUP
IMR 7828				86.8	3290	62,000 PSI	Li'l'Gun	14.0	2032	26,700 CUP	15.0	2132	28,300 CUP
H4831	82.0	3123	56,200 PSI	87.0	3279	63,100 PSI	Bullet: 110 GR. HDY JRN Dia: .308" Col: 1.680"						
IMR 4831				79.3	3220	62,000 PSI	IMR 4227	13.0	1826	30,100 CUP	14.5C	2003	38,800 CUP
Bullet: 145 GR. SPR GSSP Dia: .284" Col: 3.580"						Bullet: 110 GR. HDY JRN Dia: .308" Col: 1.680"							
US 869	103.0	3172	56,600 PSI	106.0	3270	61,100 PSI	H4227	13.0	1826	30,100 CUP	14.5C	2003	38,800 CUP
H50BMG	101.0	3100	53,800 PSI	107.0C	3319	63,600 PSI	296	14.0	2006	32,000 CUP	15.0	2106	36,500 CUP
Returnbo	93.0	3159	52,800 PSI	99.0	3388	63,400 PSI	H110	14.0	2006	32,000 CUP	15.0	2106	36,500 CUP
H1000	91.0	3157	55,300 PSI	97.0	3331	63,300 PSI	Li'l'Gun	14.0	1998	28,000 CUP	15.0	2064	29,800 CUP
IMR 7828 SSC	81.0	3022	49,600 PSI	88.6	3341	63,800 PSI	NEVER EXCEED MAXIMUM LOADS						
H4831	83.0	3125	55,400 PSI	88.0	3302	63,400 PSI	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.						
Hybrid 100V	74.0	3045	50,500 PSI	80.7	3303	62,800 PSI	113						

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
300 AAC BLACKOUT													
Case: Remington						Twist: 1:8"							
Barrel: 16" Trim: 1.363" Primer: Remington 7 1/2, Small Rifle						Magnum							
Bullet: 110 GR. HDY V-MAX Dia: .308" Col: 2.050"													
CFE BLK	22.5C	2168	28,500 PSI	23.7C	2303	35,900 PSI	CFE BLK	16.4	1516	26,900 PSI	19.3	1799	51,200 PSI
IMR 4227	17.6	1942	36,500 CUP	19.5C	2130	46,700 CUP	H4198	15.9	1464	23,500 CUP	16.9C	1578	29,200 CUP
296	18.8	2259	40,600 CUP	20.0	2382	50,600 CUP	IMR 4227	15.0	1497	34,900 CUP	16.4	1662	47,700 CUP
H110	18.8	2259	40,600 CUP	20.0	2382	50,600 CUP	296	13.5	1511	38,600 CUP	14.5	1631	49,400 CUP
Li'l'Gun	18.9	2248	31,000 CUP	20.0	2388	37,600 CUP	H110	13.5	1511	38,600 CUP	14.5	1631	49,400 CUP
Trail Boss	4.5	880	21,900 CUP	6.3	1046	20,200 CUP	Li'l'Gun	13.0	1619	42,400 CUP	14.0	1693	46,300 CUP
Bullet: 208 GR. HDY A-MAX Dia: .308" Col: 2.260"													
IMR 4198							IMR 4198				11.0	1052	20,200 CUP
CFE BLK							CFE BLK				11.6	1041	13,400 PSI
H4198							H4198				11.2	1042	18,800 CUP
IMR 4227							IMR 4227				10.3	1073	24,500 CUP
296							296				9.4	1066	20,100 CUP
H110							H110				9.4	1066	20,100 CUP
Li'l'Gun							Li'l'Gun				8.3	1047	19,400 CUP
Bullet: 220 GR. SIE HPBT Dia: .308" Col: 2.260"													
IMR 4198							IMR 4198				11.5	1036	25,300 CUP
CFE BLK							CFE BLK				12.1	1060	18,200 PSI
H4198							H4198				11.5	1068	25,600 CUP
IMR 4227							IMR 4227				10.5	1044	28,800 CUP
296							296				9.9	1050	29,700 CUP
H110							H110				9.9	1050	29,700 CUP
Li'l'Gun							Li'l'Gun				9.0	1077	31,100 CUP
Bullet: 230 GR. BER TACT Dia: .306" Col: 2.260"													
CFE BLK							CFE BLK				11.3	1045	20,000 PSI
IMR 4227							IMR 4227				10.2	1065	37,100 CUP
296							296				9.5	1085	34,500 CUP
H110							H110				9.5	1085	34,500 CUP
Li'l'Gun							Li'l'Gun				8.7	1077	28,900 CUP
30-30 WINCHESTER													
Case: Winchester						Twist: 1:12"							
Barrel: 24" Trim: 2.030" Primer: Winchester LR, Large Rifle													
Bullet: 110 GR. SPR FP Dia: .308" Col: 2.415"													
Varget	34.5	2365	27,200 CUP	38.0C	2572	31,900 CUP	Varget	34.5	2365	27,200 CUP	38.0C	2572	31,900 CUP
IMR 4320	34.3	2322	31,300 CUP	36.5	2435	36,100 CUP	IMR 4320	34.3	2322	31,300 CUP	36.5	2435	36,100 CUP
IMR 4064	33.3	2342	31,800 CUP	35.5C	2506	36,100 CUP	IMR 4064	33.3	2342	31,800 CUP	35.5C	2506	36,100 CUP
748				36.8	2595	33,000 CUP	748				36.8	2595	33,000 CUP
BL-C(2)	36.0	2351	24,500 CUP	39.0	2526	25,400 CUP	BL-C(2)	36.0	2351	24,500 CUP	39.0	2526	25,400 CUP
IMR 4895	33.8	2290	30,500 CUP	36.0C	2459	35,400 CUP	IMR 4895	33.8	2290	30,500 CUP	36.0C	2459	35,400 CUP
H335	35.0	2487	28,800 CUP	38.0	2684	34,300 CUP	H335	35.0	2487	28,800 CUP	38.0	2684	34,300 CUP
H4895	34.0	2417	28,600 CUP	37.0	2605	31,100 CUP	H4895	34.0	2417	28,600 CUP	37.0	2605	31,100 CUP
IMR 3031	30.5	2281	22,400 CUP	32.5C	2445	33,700 CUP	IMR 3031	30.5	2281	22,400 CUP	32.5C	2445	33,700 CUP
Benchmark	30.5	2406	36,400 CUP	32.5	2507	37,800 CUP	Benchmark	30.5	2406	36,400 CUP	32.5	2507	37,800 CUP
IMR 4198	22.5	2168	27,800 CUP	24.0	2302	35,400 CUP	IMR 4198	22.5	2168	27,800 CUP	24.0	2302	35,400 CUP
H4198	23.0	2174	27,100 CUP	25.5	2409	35,900 CUP	H4198	23.0	2174	27,100 CUP	25.5	2409	35,900 CUP
Bullet: 130 GR. SPR FP Dia: .308" Col: 2.540"													
CFE 223	32.8	2378	31,500 PSI	35.7	2533	37,000 PSI	CFE 223	32.8	2378	31,500 PSI	35.7	2533	37,000 PSI
Varget	32.5	2312	30,200 CUP	36.0C	2496	35,700 CUP	Varget	32.5	2312	30,200 CUP	36.0C	2496	35,700 CUP
IMR 4320	34.0	2201	33,700 CUP	36.3	2384	37,200 CUP	IMR 4320	34.0	2201	33,700 CUP	36.3	2384	37,200 CUP
IMR 4064	33.3	2196	27,200 CUP	35.5C	2424	37,300 CUP	IMR 4064	33.3	2196	27,200 CUP	35.5C	2424	37,300 CUP
BL-C(2)	34.0	2305	28,500 CUP	37.5	2473	32,800 CUP	BL-C(2)	34.0	2305	28,500 CUP	37.5	2473	32,800 CUP
H335	30.5	2173	27,600 CUP	34.0	2423	34,700 CUP	H335	30.5	2173	27,600 CUP	34.0	2423	34,700 CUP
H4895	31.5	2248	27,600 CUP	35.0	2482	35,300 CUP	H4895	31.5	2248	27,600 CUP	35.0	2482	35,300 CUP
IMR 3031	29.6	2159	27,400 CUP	31.5	2323	33,500 CUP	IMR 3031	29.6	2159	27,400 CUP	31.5	2323	33,500 CUP
Benchmark	27.7	2165	33,700 CUP	29.7	2295	37,100 CUP	Benchmark	27.7	2165	33,700 CUP	29.7	2295	37,100 CUP
IMR 4198	22.0	2025	28,700 CUP	23.5	2187	36,200 CUP	IMR 4198	22.0	2025	28,700 CUP	23.5	2187	36,200 CUP
H4198	22.5	2082	29,200 CUP	24.5	2234	36,400 CUP	H4198	22.5	2082	29,200 CUP	24.5	2234	36,400 CUP
Bullet: 140 GR. HDY MFTX Dia: .308" Col: 2.550"													
LVR	29.0	2175	32,400 PSI	34.0C	2436	39,700 PSI	LVR	29.0	2175	32,400 PSI	34.0C	2436	39,700 PSI
Varget	27.0	1986	31,600 PSI	30.5C	2225	39,900 PSI	Varget	27.0	1986	31,600 PSI	30.5C	2225	39,900 PSI
IMR 4320	26.0	1814	29,900 PSI	30.0C	2094	39,500 PSI	IMR 4320	26.0	1814	29,900 PSI	30.0C	2094	39,500 PSI
IMR 4064	26.0	1909	30,600 PSI	30.0C	2209	41,000 PSI	IMR 4064	26.0	1909	30,600 PSI	30.0C	2209	41,000 PSI
IMR 4166	26.0	1826	30,300 PSI	30.0C	2134	41,100 PSI	IMR 4166	26.0	1826	30,300 PSI	30.0C	2134	41,100 PSI
BL-C(2)	29.0	2030	31,600 PSI	32.7	2239	39,900 PSI	BL-C(2)	29.0	2030	31,600 PSI	32.7	2239	39,900 PSI

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads				
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		
H335	25.0	1977	31,200 PSI	28.8	2224	40,600 PSI	BL-C(2)	42.0	2677	44.0	2894				
H4895	26.0	2077	36,800 PSI	29.7	2273	40,300 PSI	H335	42.0	2669	44.0	2881				
IMR 3031	25.0	1963	32,300 PSI	28.5	2216	41,600 PSI	H4895	42.0	2707	44.0	2835				
Benchmark	24.0	1839	26,400 PSI	28.0	2160	38,800 PSI	H322	39.0	2542	43.0	2898				
Bullet: 150 GR. SIE FN Dia: .308" Col: 2.550"							Bullet: 110 GR. SIE HP Dia: .308" Col: 2.875"								
760				35.9	2090	30,000 CUP	H414	46.0	2552	50.0	2773				
LVR	35.0	2314	28,700 CUP	38.5C	2512	34,800 CUP	H335	41.0	2464	43.0	2806				
CFE 223	33.9	2274	31,700 PSI	36.8	2409	36,700 PSI	H322	39.0	2497	43.0	2841				
Varget	31.0	2172	31,100 CUP	34.5	2349	36,200 CUP	H4198	30.0	2417	34.0	2807				
IMR 4320	30.5	2062	32,500 CUP	32.5	2127	36,500 CUP	Bullet: 130 GR. SPR HP Dia: .308" Col: 2.865"								
IMR 4064	31.0	2106	33,300 CUP	33.3	2236	36,200 CUP	H4350	48.0	2330	51.0	2535				
IMR 4166	29.7	2114	35,700 PSI	32.6	2262	41,300 PSI	H414	45.0	2507	49.0	2746				
748				34.5	2310	36,000 CUP	H335	40.0	2414	42.0	2717				
BL-C(2)	33.0	2021	21,800 CUP	37.0	2358	33,900 CUP	H322	38.0	2458	42.0	2698				
IMR 4895	31.5	2071	32,200 CUP	33.5	2213	34,300 CUP	H4198	29.0	2224	33.0	2565				
H335	29.7	2098	28,700 CUP	33.0	2308	36,200 CUP	Bullet: 150 GR. NOS PART Dia: .308" Col: 3.090"								
H4895	30.5	2138	27,900 CUP	34.0	2390	36,700 CUP	H4831	45.0	2129	49.0	2306				
IMR 8208 XBR	30.0	2213	35,000 CUP	32.0	2316	36,700 CUP	H4350	46.0	2198	49.0	2388				
IMR 3031	28.7	2085	28,700 CUP	30.5	2192	36,000 CUP	H414	42.0	2403	47.0	2531				
Benchmark	27.0	2042	32,100 CUP	29.0	2183	37,200 CUP	IMR 4350			48.5C	2615	36,300 CUP			
IMR 4198	21.5	1888	27,800 CUP	23.0	2055	35,500 CUP	H380	40.5	2311	44.0	2489				
H4198	21.6	1924	26,900 CUP	24.0	2110	36,800 CUP	IMR 4320			37.0	2420	39,700 CUP			
Bullet: 160 GR. CAST LFN Dia: .308" Col: 2.485"							IMR 4064			44.0	2695	39,000 CUP			
H4895	17.5	1351	15,200 CUP	21.0	1562	23,100 CUP	BL-C(2)	35.0	2351	37.0	2491				
H4198	15.0	1420	15,000 CUP	17.0	1616	20,600 CUP	IMR 4895			36.0	2435	39,700 CUP			
Trail Boss	6.5	997	20,500 CUP	9.0	1195	29,100 CUP	H335	35.0	2349	37.0	2508				
Bullet: 160 GR. HDY FTX Dia: .308" Col: 2.550"							H4895	38.5	2410	42.0	2575				
LVR	32.0	2221	31,200 CUP	35.5C	2389	37,500 CUP	IMR 3031			42.0	2695	39,600 CUP			
CFE 223	31.6	2170	30,700 PSI	34.0	2302	36,700 PSI	H322	36.0	2369	40.0	2518				
Varget	29.8	2081	31,700 CUP	32.4	2235	35,900 CUP	H4198	28.0	2220	32.0	2366				
IMR 4320	28.7	1900	30,900 CUP	31.2	2056	36,400 CUP	Bullet: 165 GR. HDY BTSP Dia: .308" Col: 3.105"								
IMR 4064	28.7	2000	33,700 CUP	30.5	2095	36,200 CUP	H4831	44.0	1967	48.0	2176				
IMR 4166	27.8	2002	35,600 PSI	29.6	2126	41,400 PSI	H4350	45.0	2115	48.0	2242				
748	29.8	1994	31,500 CUP	31.7	2112	36,400 CUP	H335	35.0	2242	36.0	2364				
BL-C(2)	29.1	1863	27,400 CUP	31.0	2035	35,600 CUP	H322	35.0	2228	39.0	2402				
IMR 4895	28.2	1912	31,700 CUP	30.0	2065	36,900 CUP	Bullet: 180 GR. SPR GS SP Dia: .308" Col: 3.090"								
H335	28.2	2005	31,600 CUP	30.0	2131	37,100 CUP	IMR 4831			49.0C	2425	35,900 CUP			
H4895	27.8	2045	31,100 CUP	30.0	2200	35,500 CUP	H4350	43.0	2006	46.0	2110				
IMR 8208 XBR	27.0	2045	33,900 CUP	30.0	2207	37,000 CUP	H414	39.5	2225	43.0	2276				
IMR 3031	26.8	1992	34,300 CUP	28.5	2094	36,800 CUP	IMR 4350			46.0C	2445	38,700 CUP			
Benchmark	26.1	1933	31,000 CUP	27.8	2045	35,400 CUP	H380	37.0	2057	40.0	2182				
Bullet: 170 GR. SIE FP Dia: .308" Col: 2.550"							IMR 4320			35.5	2210	38,100 CUP			
760				33.6	1975	30,000 CUP	IMR 4064			41.0	2435	39,000 CUP			
LVR	33.0	2145	28,900 CUP	36.3C	2332	35,400 CUP	BL-C(2)	30.5	1951	33.0	2006				
CFE 223	32.2	2115	30,600 PSI	35.0	2258	36,800 PSI	IMR 4895			35.5	2270	38,800 CUP			
Varget	29.5	1976	30,200 CUP	33.0	2168	36,500 CUP	H335	31.0	1969	34.0	2049				
IMR 4320	30.0	1976	35,400 CUP	32.5	2068	36,300 CUP	H4895	35.0	2171	38.0	2265				
IMR 4064	29.8	1991	30,700 CUP	31.7	2090	35,300 CUP	IMR 3031			38.0	2375	39,300 CUP			
IMR 4166	28.8	1977	36,400 PSI	30.7	2087	40,600 PSI	H322	33.0	2111	37.0	2250				
748				32.0	2145	36,000 CUP	Bullet: 200 GR. SIE SPBT Dia: .308" Col: 3.090"								
BL-C(2)	32.5	2048	27,900 CUP	36.0	2227	34,700 CUP	H4350	42.0	1929	44.0	2018				
IMR 4895	29.8	1938	30,500 CUP	31.7	2068	35,300 CUP	H414	37.0	2013	40.0	2151				
H335	27.5	1934	29,000 CUP	30.5	2086	36,300 CUP	H335	30.0	1894	33.0	2106				
H4895	27.5	1947	28,200 CUP	30.5	2138	35,200 CUP	H322	32.0	1915	35.0	2075				
IMR 8208 XBR	27.8	2052	36,400 CUP	30.9	2181	37,500 CUP	Bullet: 220 GR. HDY RN Dia: .308" Col: 3.080"								
IMR 3031	27.5	1959	27,500 CUP	29.2	2085	35,800 CUP	H4350	40.0	1874	42.0	1947				
Benchmark	25.3	1894	32,200 CUP	27.0	2001	36,100 CUP	H335	30.0	1836	33.0	1974				
IMR 4198	21.0	1800	27,400 CUP	22.3	1896	32,100 CUP	H322	30.0	1852	33.0	1969				
H4198	20.5	1764	27,300 CUP	22.5	1918	32,600 CUP	7.62 x 54R								
30-40 Krag							Case: Norma Twist: 1:10"								
Case: Winchester Twist: 1:10"							Barrel: 24" Trim: 2.104" Primer: Federal 210M, Large Rifle								
Barrel: 24" Trim: 2.304" Primer: CCI 200, Large Rifle							Case: Norma Twist: 1:10"								
Bullet: 100 GR. HDY SP Dia: .308" Col: 2.880"							Barrel: 24" Trim: 2.104" Primer: Federal 210M, Large Rifle								
H4350	48.0	2300		51.0	2492										

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads						
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure				
Match																	
Bullet: 110 GR. HDY SP Dia: .308" Col: 2.715"						308 MARLIN EXPRESS						Case: Hornady Twist: 1:12"					
Varget 51.0 3016 34,700 CUP 55.0C 3200 39,900 CUP						Barrel: 24" Trim: 1.910" Primer: Winchester LR, Large Rifle						Bullet: 125 GR. SIE HP FN Dia: .308" Col: 2.300"					
BL-C(2) 56.0 3141 34,200 CUP 60.0 3376 42,300 CUP												LVR 41.7 2715 34,100 PSI 45.3 2966 44,500 PSI					
H335 51.0 3126 36,300 CUP 54.5 3332 45,200 CUP												CFE 223 43.4 2741 33,300 PSI 47.7 3027 45,800 PSI					
H4895 51.0 3150 35,500 CUP 55.0C 3345 43,400 CUP												Varget 39.0 2525 37,500 PSI 42.3C 2700 42,800 PSI					
Benchmark 47.0 3060 39,700 CUP 50.5 3213 44,900 CUP												IMR 4320 39.0 2476 36,900 PSI 42.0 2682 44,900 PSI					
Bullet: 125 GR. SIE SP Dia: .308" Col: 2.715"												IMR 4064 38.5 2481 36,500 PSI 41.5C 2684 43,000 PSI					
Varget 51.0 2967 37,400 CUP 55.0C 3139 45,700 CUP												IMR 4166 38.5 2557 38,500 PSI 41.9 2761 45,900 PSI					
IMR 4166 48.8 2922 38,600 CUP 52.5 3126 46,200 CUP												748 39.0 2420 29,800 PSI 44.0 2751 42,100 PSI					
BL-C(2) 56.0 3094 37,500 CUP 60.0 3298 45,100 CUP												BL-C(2) 42.0 2543 34,900 PSI 46.0 2808 46,200 PSI					
H335 50.0 2997 36,500 CUP 53.0 3193 45,100 CUP												IMR 4895 38.0 2428 34,800 PSI 42.0 2717 45,600 PSI					
H4895 50.0 3036 36,700 CUP 54.0C 3236 45,700 CUP												H335 39.0 2647 38,700 PSI 42.4 2820 45,400 PSI					
Bullet: 150 GR. NOS BT Dia: .308" Col: 2.875"												H4895 38.0 2527 35,900 PSI 42.0 2788 45,000 PSI					
Varget 47.0 2721 38,000 CUP 50.5 2985 46,400 CUP												IMR 8208 XBR 37.0 2682 39,200 PSI 41.0 2868 44,900 PSI					
IMR 4166 45.1 2708 40,900 CUP 48.6 2881 46,500 CUP												IMR 3031 35.0 2446 34,600 PSI 38.8 2725 45,700 PSI					
BL-C(2) 52.0 2878 40,200 CUP 55.5 3027 46,300 CUP												Benchmark 34.0 2504 39,500 PSI 37.6 2680 45,200 PSI					
H335 46.0 2751 38,800 CUP 49.5 2918 45,900 CUP												H322 34.0 2555 41,400 PSI 37.0 2704 46,200 PSI					
H4895 46.0 2769 38,000 CUP 49.5C 2938 46,300 CUP												Bullet: 130 GR. SPR FP Dia: .308" Col: 2.420"					
Bullet: 165 GR. BAR XBTC Dia: .308" Col: 2.950"												LVR 41.7 2727 36,600 PSI 45.3 2936 45,000 PSI					
H4350 52.0 2608 36,300 CUP 55.0C 2740 41,500 CUP												CFE 223 43.3 2730 36,600 PSI 47.0 2961 45,900 PSI					
H414 49.0 2521 33,600 CUP 52.0 2669 41,400 CUP												Varget 39.0 2502 37,500 PSI 42.5 2730 46,400 PSI					
H380 47.0 2499 35,900 CUP 50.0 2629 40,800 CUP												IMR 4320 38.0 2487 40,400 PSI 42.8 2670 45,900 PSI					
Varget 45.0 2581 39,800 CUP 48.3 2727 46,000 CUP												IMR 4064 38.0 2441 36,400 PSI 41.5C 2686 45,400 PSI					
H4895 44.0 2633 40,200 CUP 47.0 2761 45,800 CUP												IMR 4166 37.7 2509 39,000 PSI 41.0 2707 46,200 PSI					
Bullet: 180 GR. SFT SCIR Dia: .308" Col: 2.975"												BL-C(2) 42.0 2589 37,900 PSI 46.0 2799 45,600 PSI					
H4831 51.0 2281 31,900 CUP 55.0C 2484 39,200 CUP												IMR 4895 38.0 2414 35,700 PSI 41.7 2700 46,500 PSI					
H4350 51.0 2493 37,600 CUP 55.0C 2692 44,700 CUP												H335 38.0 2569 37,800 PSI 41.5 2772 45,700 PSI					
IMR 4451 48.9 2415 39,500 CUP 52.6C 2631 46,500 CUP												H4895 38.0 2551 38,600 PSI 41.7 2762 46,000 PSI					
H414 49.0 2478 38,600 CUP 52.0 2622 45,600 CUP												IMR 8208 XBR 36.0 2627 40,700 PSI 40.0 2808 45,700 PSI					
H380 47.0 2430 38,200 CUP 50.0 2542 42,000 CUP												IMR 3031 35.0 2433 35,000 PSI 38.5 2700 45,800 PSI					
CFE 223 44.7 2472 40,200 CUP 48.1 2638 46,400 CUP												Benchmark 33.0 2428 38,800 PSI 36.5 2635 46,300 PSI					
Varget 43.0 2409 38,400 CUP 46.5C 2575 45,900 CUP												H322 32.0 2388 36,500 PSI 35.3 2617 45,800 PSI					
IMR 4064 42.5 2432 38,800 CUP 45.9 2617 44,700 CUP												Bullet: 150 GR. BARTSX FN Dia: .308" Col: 2.350"					
IMR 4895 42.5 2433 39,200 CUP 45.7 2602 46,100 CUP												LVR 39.5 2500 39,100 PSI 42.0 2632 44,400 PSI					
H4895 42.0 2482 40,900 CUP 45.4C 2618 45,800 CUP												Varget 36.0 2268 39,500 PSI 39.5C 2458 46,500 PSI					
IMR 8208 XBR 39.8 2412 39,800 CUP 42.8 2550 45,800 CUP												IMR 4320 36.0 2266 40,000 PSI 39.3 2433 45,900 PSI					
IMR 3031 39.8 2375 38,600 CUP 42.8 2545 46,200 CUP												IMR 4064 36.0 2291 39,900 PSI 39.0C 2404 42,500 PSI					
Bullet: 200 GR. SPR SP Dia: .308" Col: 2.950"												IMR 4166 34.7 2328 42,500 PSI 37.7 2451 45,900 PSI					
H4831 52.0 2348 41,100 CUP 55.0C 2468 45,700 CUP												748 36.0 2245 35,300 PSI 40.0 2471 43,600 PSI					
H4350 48.0 2329 37,400 CUP 52.0 2529 46,500 CUP												BL-C(2) 38.0 2282 36,600 PSI 41.0 2479 45,300 PSI					
IMR 4451 47.0 2344 43,000 CUP 50.6C 2518 46,900 CUP												IMR 4895 36.0 2140 35,400 PSI 39.0C 2452 45,600 PSI					
H414 48.0 2396 40,500 CUP 51.0 2526 45,500 CUP												H335 35.0 2303 36,900 PSI 38.0 2490 44,400 PSI					
H380 46.0 2337 41,200 CUP 49.0 2432 46,600 CUP												H4895 35.0 2279 38,800 PSI 38.3C 2498 46,800 PSI					
CFE 223 39.2 2266 41,200 CUP 42.3 2394 46,700 CUP												IMR 8208 XBR 34.0 2403 40,700 PSI 37.4C 2558 46,100 PSI					
Varget 41.0 2304 41,500 CUP 44.0 2412 46,000 CUP												IMR 3031 33.0 2238 37,600 PSI 36.0C 2437 46,100 PSI					
IMR 4064 40.3 2286 40,400 CUP 43.4 2412 46,000 CUP												Bullet: 150 GR. HDY RN Dia: .308" Col: 2.430"					
IMR 4895 40.0 2264 39,200 CUP 43.1 2402 46,600 CUP												Varget 38.0 2405 39,100 PSI 41.5C 2572 46,100 PSI					
H4895 39.0 2271 41,400 CUP 42.2 2411 46,400 CUP												IMR 4320 37.0 2300 37,200 PSI 41.0C 2533 46,400 PSI					
IMR 8208 XBR 36.0 2173 38,200 CUP 38.5 2308 45,800 CUP												IMR 4064 37.0 2328 36,100 PSI 41.0C 2574 45,700 PSI					
IMR 3031 37.9 2369 38,800 CUP 40.8 2369 45,900 CUP												IMR 4166 36.3 2376 39,300 PSI 39.5 2553 46,200 PSI					
Bullet: 220 GR. HDY JRN Dia: .308" Col: 2.830"												748 39.0 2368 34,700 PSI 42.0 2560 42,100 PSI					
H4831 50.0 2209 39,100 CUP 54.0C 2381 46,000 CUP												BL-C(2) 40.0 2373 34,000 PSI 43.0 2544 41,200 PSI					
H4350 47.0 2227 37,600 CUP 50.5C 2396 45,900 CUP												IMR 4895 37.0 2301 35,400 PSI 41.0C 2575 46,500 PSI					
IMR 4451 45.0 2182 38,900 CUP 48.4 2350 45,800 CUP												H335 37.0 2430 38,500 PSI 40.0C 2611 46,800 PSI					
H414 47.0 2296 40,200 CUP 49.5 2401 44,500 CUP												H4895 37.0 2443 40,000 PSI 40.5 2607 45,900 PSI					
H380 43.0 2145 39,400 CUP 46.0 2274 45,900 CUP												IMR 8208 XBR 36.0 2537 42,600 PSI 39.5 2665 46,300 PSI					
CFE 223 42.2 2198 38,600 CUP 45.4 2363 45,700 CUP												IMR 3031 34.0 2320 36,000 PSI 37.3C 2545 46,200 PSI					
Varget 40.0 2178 42,300 CUP 42.5 2269 46,000 CUP												Bullet: 160 GR. HDY FTX ME Dia: .308" Col: 2.590"					
IMR 4064 39.7 2170 38,200 CUP 42.7 2309 45,900 CUP												LVR 39.0 2495 38,400 PSI 41.5 2658 47,000 PSI					
IMR 4895 39.2 2161 38,400 CUP 42.2 2306 45,700 CUP												CFE 223 39.1 2450 35,200 PSI 42.5 2680 46,600 PSI					
H4895 38.0 2143 41,200 CUP 41.0 2263 46,600 CUP												Varget 36.4 2361 38,900 PSI 39.6C 2547 46,800 PSI					
IMR 8208 XBR 36.6 2135 40,600 CUP 39.3 2243 45,800 CUP												IMR 4320 35.7 2322 39,100 PSI 38.0 2465 45,400 PSI					
IMR 3031 37.4 2132 39,000 CUP 40.2 2273 46,400 CUP																	

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
IMR 4064	35.7	2280	34,400 PSI	38.0	2475	44,000 PSI	IMR 4064	45.0	2809	43,600 PSI	49.5C	3036	52,300 PSI						
IMR 4166	34.3	2279	39,000 PSI	37.3	2448	46,000 PSI	IMR 4166	44.9	2796	43,200 PSI	50.0C	3059	54,800 PSI						
748	37.6	2356	34,400 PSI	40.0	2550	44,700 PSI	BL-C(2)	48.0	2897	42,400 CUP	51.5	3089	49,700 CUP						
BL-C(2)	38.5	2386	36,100 PSI	41.0	2555	44,700 PSI	IMR 4895	45.9	2867	44,500 PSI	51.0C	3153	57,800 PSI						
IMR 4895	36.3	2345	37,700 PSI	38.6	2521	46,000 PSI	H335	43.0	2805	40,400 CUP	46.0	2980	49,700 CUP						
H335	35.3	2387	36,200 PSI	37.5	2545	45,200 PSI	H4895	45.0	2903	41,800 CUP	49.0C	3099	50,100 CUP						
H4895	34.8	2442	40,900 PSI	37.0	2555	46,800 PSI	IMR 8208 XBR	43.0	2834	46,900 PSI	48.0C	3110	62,100 PSI						
IMR 8208 XBR	35.0	2456	42,500 PSI	37.8	2570	46,700 PSI	IMR 3031	42.0	2827	42,600 PSI	46.7C	3130	59,800 PSI						
IMR 3031	32.9	2334	37,800 PSI	35.0	2459	44,300 PSI	Benchmark	41.0	2704	38,800 CUP	46.0	2985	50,100 CUP						
Bullet: 170 GR. HDY FP Dia: .308" Col: 2.400"							Bullet: 150 GR. NOS BT Dia: .308" Col: 2.800"												
LVR	39.0	2392	37,400 PSI	41.4	2565	46,800 PSI	CFE 223	48.4	2764	44,500 PSI	51.5	2974	57,000 PSI						
CFE 223	39.0	2354	34,500 PSI	42.4	2585	46,700 PSI	Varget	44.0	2788	43,300 CUP	47.0C	2937	50,300 CUP						
Varget	36.0	2255	40,500 PSI	39.3C	2394	46,300 PSI	IMR 4320	44.1	2658	44,600 PSI	49.0C	2936	59,800 PSI						
IMR 4320	36.0	2169	36,600 PSI	39.4	2383	45,800 PSI	IMR 4064	43.0	2663	44,700 PSI	47.7C	2903	57,100 PSI						
IMR 4064	36.0	2202	36,400 PSI	39.3C	2416	46,100 PSI	IMR 4166	43.0	2677	47,800 PSI	48.0C	2934	60,300 PSI						
IMR 4166	34.4	2227	39,800 PSI	37.4	2384	45,800 PSI	748				48.5	2865	48,000 CUP						
748	37.0	2228	35,100 PSI	40.0	2432	45,400 PSI	BL-C(2)	45.0	2661	40,200 CUP	48.0	2839	50,000 CUP						
BL-C(2)	37.0	2200	34,300 PSI	40.6	2420	44,800 PSI	IMR 4895	42.6	2631	42,300 PSI	47.3C	2920	57,700 PSI						
IMR 4895	35.0	2170	36,200 PSI	39.0C	2409	46,300 PSI	H335	41.0	2619	42,600 CUP	44.0	2787	51,200 CUP						
H335	34.5	2219	36,200 PSI	37.5	2409	46,300 PSI	H4895	43.0	2742	43,200 CUP	45.5	2870	51,000 CUP						
H4895	35.0	2289	41,000 PSI	38.6C	2439	46,300 PSI	IMR 8208 XBR	40.0	2604	45,500 PSI	44.5C	2870	60,800 PSI						
IMR 8208 XBR	33.0	2288	38,300 PSI	37.0	2473	46,600 PSI	IMR 3031	40.2	2658	44,300 PSI	43.5C	2881	59,200 PSI						
IMR 3031	32.0	2157	36,100 PSI	35.6C	2372	45,800 PSI	Benchmark	39.0	2521	38,800 CUP	43.0	2752	49,900 CUP						
308 WINCHESTER							Bullet: 150 GR. NOS E-TIP Dia: .308" Col: 2.800"												
Case: Winchester Twist: 1:12"							CFE 223 49.0 2865 52,300 PSI 51.1 2990 60,400 PSI												
Barrel: 24" Trim: 2.005" Primer: Federal 210M, Large Rifle Match							Varget 42.3 2670 46,700 PSI 46.5C 2914 60,400 PSI												
Bullet: 110 GR. BARTSX FB Dia: .308" Col: 2.690"							IMR 4320 43.7 2637 48,100 PSI 47.6 2876 60,100 PSI												
IMR 4895	45.0	2831	36,100 PSI	50.0C	3128	46,600 PSI	IMR 4064	42.9	2659	47,500 PSI	46.7C	2883	59,800 PSI						
H335	47.3	3078	40,800 PSI	52.5	3358	53,900 PSI	IMR 4166	41.5	2570	48,800 PSI	45.7C	2839	61,400 PSI						
H4895	46.1	3055	40,300 PSI	49.0C	3212	46,200 PSI	748	43.9	2762	50,800 PSI	47.3	2923	59,600 PSI						
IMR 8208 XBR	45.5	2975	37,700 PSI	50.0C	3266	50,000 PSI	BL-C(2)	43.7	2654	47,800 PSI	47.0	2868	60,100 PSI						
IMR 3031	43.2	2913	37,700 PSI	47.0C	3170	47,700 PSI	IMR 4895	42.7	2684	48,800 PSI	46.5C	2899	60,100 PSI						
Benchmark	45.2	3005	39,700 PSI	50.2C	3316	54,200 PSI	H335	40.4	2551	46,500 PSI	43.4	2790	59,100 PSI						
H322	46.1	3139	48,100 PSI	49.0C	3334	59,000 PSI	H4895	41.5	2677	48,700 PSI	45.6	2893	60,500 PSI						
IMR 4198	39.1	3064	46,200 PSI	41.6	3251	57,600 PSI	IMR 8208 XBR	40.8	2659	45,900 PSI	44.3	2889	60,000 PSI						
H4198	39.9	3124	48,800 PSI	42.5	3278	58,700 PSI	IMR 3031	39.3	2628	48,500 PSI	42.8	2839	60,100 PSI						
Bullet: 125 GR. SFIRE Dia: .308" Col: 2.700"							Bullet: 155 GR. SIE HPBT Dia: .308" Col: 2.775"												
IMR 4895	43.0	2772	42,100 PSI	48.0	3068	55,000 PSI	H414	48.0	2625	40,500 CUP	51.0	2793	50,200 CUP						
H335	42.0	2840	42,100 PSI	46.5	3075	52,300 PSI	760	48.0	2625	40,500 CUP	51.0	2793	50,200 CUP						
H4895	42.0	2796	39,500 PSI	46.0C	3034	49,600 PSI	CFE 223	49.5	2846	50,900 PSI	51.0	2966	60,500 PSI						
IMR 8208 XBR	42.0	2830	41,200 PSI	46.5C	3110	54,100 PSI	Varget	44.0	2759	41,300 CUP	47.0C	2909	49,400 CUP						
IMR 3031	39.0	2741	40,600 PSI	43.5C	3007	51,400 PSI	IMR 4320	44.0	2622	44,800 PSI	48.5C	2875	58,400 PSI						
Benchmark	40.0	2736	38,200 PSI	44.5C	3019	52,000 PSI	IMR 4064	43.0	2602	42,900 PSI	47.5C	2871	56,500 PSI						
H322	38.0	2760	43,500 PSI	42.5C	2985	52,800 PSI	IMR 4166	43.0	2688	52,500 PSI	46.2C	2856	60,900 PSI						
Bullet: 125 GR. SIE SP Dia: .308" Col: 2.700"							Bullet: 165 GR. HDY SP Dia: .308" Col: 2.750"												
Varget	48.0	3049	42,400 CUP	50.0C	3135	45,700 CUP	H414	48.0	2537	43,500 CUP	52.0	2704	49,200 CUP						
IMR 4320	48.7	2952	46,400 PSI	53.0C	3167	55,200 PSI	760	48.0	2537	43,500 CUP	52.0	2704	49,200 CUP						
IMR 4064	46.0	2891	42,500 PSI	50.1C	3119	52,100 PSI	CFE 223	45.4	2649	46,700 PSI	48.3	2839	61,500 PSI						
IMR 4166	45.6	2860	42,800 PSI	50.7C	3113	53,700 PSI	Varget	42.0	2582	40,800 CUP	46.0C	2773	50,500 CUP						
748				52.0	3175	50,000 CUP	IMR 4320	43.0	2536	46,900 PSI	46.5C	2730	58,400 PSI						
BL-C(2)	48.0	2876	35,900 CUP	52.0	3069	42,600 CUP	IMR 4064	42.0	2554	47,700 PSI	46.3C	2767	59,700 PSI						
IMR 4895	48.0	2969	45,600 PSI	51.8C	3185	55,200 PSI	IMR 4166	40.2	2487	49,500 PSI	44.9C	2739	61,300 PSI						
H335	44.0	2840	37,500 CUP	48.0	3080	48,200 CUP	Bullet: 130 GR. SPR HP Dia: .308" Col: 2.615"												
H4895	45.0	2891	36,800 CUP	49.0C	3127	48,400 CUP	CFE 223	52.0	3054	49,600 PSI	54.0	3202	59,500 PSI						
IMR 8208 XBR	46.0	3000	50,200 PSI	49.2C	3174	60,100 PSI	Varget	47.0	2975	42,900 CUP	50.0C	3130	50,400 CUP						
IMR 3031	43.2	2866	40,200 PSI	48.0C	3194	58,100 PSI	IMR 4320	46.8	2819	44,100 PSI	52.0C	3140	59,600 PSI						
Benchmark	43.0	2821	40,600 CUP	47.5	3070	50,700 CUP	NEVER EXCEED MAXIMUM LOADS												
H322	42.0	2888	43,400 CUP	45.0	3052	51,400 CUP	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.												
H4198	36.0	2841	46,600 CUP	39.5	2988	49,800 CUP	117												

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
BL-C(2)	44.0	2528	37,700 CUP	47.5	2738	49,700 CUP	IMR 3031	37.0	2372	43,300 PSI	40.6	2594	58,000 PSI
IMR 4895	42.7	2584	49,200 PSI	45.5C	2745	58,800 PSI	Benchmark	38.0	2363	40,700 CUP	41.3	2542	50,800 CUP
H335	39.0	2432	44,500 CUP	42.0	2608	49,100 CUP	Bullet: 190 GR. HDY BTSP Dia: .308" Col: 2.740"						
H4895	41.0	2525	38,600 CUP	43.5	2694	50,000 CUP	H414	45.0	2368	42,100 CUP	48.0	2504	48,700 CUP
IMR 8208 XBR	38.5	2491	49,100 PSI	42.8	2691	60,200 PSI	760	45.0	2386	42,100 CUP	48.0	2504	48,700 CUP
IMR 3031	39.1	2537	49,600 PSI	41.6	2697	59,800 PSI	CFE 223	41.4	2388	46,500 PSI	45.0	2589	60,200 PSI
Benchmark	38.5	2438	40,200 CUP	42.5	2647	50,500 CUP	Varget	41.0	2452	46,100 CUP	44.0C	2536	49,100 CUP
Bullet: 168 GR. BAR TTSX BT Dia: .308" Col: 2.800"						IMR 4320	41.0	2430	50,700 PSI	43.7C	2566	58,800 PSI	
CFE 223	41.0	2444	39,600 PSI	45.0C	2664	49,800 PSI	IMR 4064	39.4	2365	47,800 PSI	43.7C	2569	59,100 PSI
Varget	41.0	2514	46,100 PSI	45.0C	2737	60,000 PSI	IMR 4166	38.7	2354	48,500 PSI	43.1	2562	59,200 PSI
IMR 4320	42.0	2490	47,200 PSI	45.5C	2715	60,700 PSI	748				42.0	2445	49,000 CUP
IMR 4064	43.0	2539	47,400 PSI	45.0C	2743	58,900 PSI	BL-C(2)	42.0	2396	41,300 CUP	44.5	2543	48,700 CUP
IMR 4166	40.5	2464	46,700 PSI	45.0C	2710	59,300 PSI	IMR 4895	40.0	2363	46,000 PSI	43.9C	2571	59,100 PSI
BL-C(2)	43.0	2532	46,000 PSI	46.0	2697	55,000 PSI	H335	37.0	2246	39,200 CUP	40.0	2449	49,800 CUP
IMR 4895	41.0	2514	47,400 PSI	44.0C	2692	57,800 PSI	H4895	39.0	2359	40,400 CUP	42.0	2514	49,500 CUP
H335	39.0	2500	46,800 PSI	42.0	2661	56,100 PSI	IMR 8208 XBR	36.0	2303	51,700 PSI	40.0	2459	59,800 PSI
H4895	39.0	2497	45,100 PSI	43.0C	2727	59,900 PSI	IMR 3031	36.0	2273	43,800 PSI	39.6C	2483	57,700 PSI
IMR 8208 XBR	39.0	2505	46,500 PSI	43.0C	2724	60,700 PSI	Benchmark	37.0	2288	41,100 CUP	39.5	2418	48,500 CUP
IMR 3031	38.0	2493	46,600 PSI	41.5C	2693	58,600 PSI	Bullet: 200 GR. SFT SP Dia: .308" Col: 2.700"						
Benchmark	38.0	2458	44,500 PSI	42.0C	2686	59,500 PSI	760				45.7	2430	46,500 CUP
Bullet: 168 GR. SIE HPBT Dia: .308" Col: 2.800"						CFE 223	41.7	2362	48,600 PSI	45.3	2582	60,600 PSI	
CFE 223	46.6	2662	48,200 PSI	49.0	2828	60,400 PSI	Varget	39.0	2288	43,100 CUP	42.0C	2441	50,100 CUP
Varget	42.0	2520	41,200 CUP	46.0C	2731	50,600 CUP	IMR 4320	38.3	2222	44,900 PSI	42.5C	2427	56,600 PSI
IMR 4320	41.5	2463	43,800 PSI	46.0	2733	59,300 PSI	IMR 4064	39.0	2268	46,100 PSI	42.5C	2466	58,400 PSI
IMR 4064	41.5	2518	43,800 PSI	45.9C	2766	58,800 PSI	IMR 4166	38.9	2305	48,900 PSI	42.7	2494	59,700 PSI
IMR 4166	38.5	2418	46,400 PSI	43.5C	2704	60,900 PSI	748				43.0	2435	50,000 CUP
BL-C(2)	44.0	2569	39,400 CUP	47.0	2754	50,200 CUP	BL-C(2)	41.0	2213	40,200 CUP	43.5	2514	49,800 CUP
IMR 4895	41.0	2447	39,700 PSI	45.4C	2758	58,000 PSI	IMR 4895	40.0	2302	47,500 PSI	43.2C	2476	59,000 PSI
H335	39.0	2451	37,700 CUP	42.0	2631	49,300 CUP	H335	37.0	2217	41,600 CUP	39.5	2400	50,400 CUP
H4895	41.0	2551	38,300 CUP	43.5	2703	49,500 CUP	H4895	38.0	2256	42,400 CUP	41.0C	2403	49,400 CUP
IMR 8208 XBR	39.0	2493	49,000 PSI	43.3	2707	61,500 PSI	IMR 8208 XBR	35.5	2250	51,900 PSI	39.5	2400	59,900 PSI
IMR 3031	39.0	2507	43,900 PSI	42.0	2710	58,900 PSI	IMR 3031	36.0	2219	46,100 PSI	39.5C	2410	59,200 PSI
Benchmark	38.0	2416	38,100 CUP	42.0	2630	49,300 CUP	Benchmark	37.5	2227	43,000 CUP	40.0	2355	50,100 CUP
Titegroup				8.0	1080	25,000 CUP	Bullet: 208 GR. HDY A-MAX Dia: .308" Col: 2.820"						
Clays				8.0	1060	26,800 CUP	CFE 223	40.6	2274	46,600 PSI	43.7	2474	57,500 PSI
Bullet: 175 GR. SIE HPBT Dia: .308" Col: 2.800"						Varget	38.1	2260	49,400 PSI	41.5C	2420	59,500 PSI	
H414	46.0	2484	40,300 CUP	49.0	2629	50,100 CUP	IMR 4320	38.1	2220	47,900 PSI	41.5C	2416	59,600 PSI
760	46.0	2484	40,300 CUP	49.0	2629	50,100 CUP	IMR 4064	37.7	2207	45,100 PSI	41.0C	2391	56,700 PSI
CFE 223	45.5	2612	49,600 PSI	47.5	2752	60,400 PSI	IMR 4166	35.8	2217	51,700 PSI	40.2C	2418	61,200 PSI
Varget	42.0	2583	42,600 CUP	45.0C	2690	48,600 CUP	748	39.8	2279	47,000 PSI	42.8	2453	57,300 PSI
IMR 4320	42.0	2471	44,000 PSI	45.7C	2687	57,600 PSI	BL-C(2)	40.7	2273	48,300 PSI	43.8	2455	58,900 PSI
IMR 4064	41.5	2500	45,200 PSI	45.6C	2728	59,500 PSI	IMR 4895	37.7	2229	47,200 PSI	41.0C	2425	59,400 PSI
IMR 4166	38.9	2416	48,100 PSI	43.1C	2652	60,100	H335	37.5	2264	52,600 PSI	39.5	2381	59,700 PSI
BL-C(2)	43.0	2517	39,200 CUP	46.0	2706	50,300 CUP	H4895	35.6	2218	49,900 PSI	38.8C	2359	58,600 PSI
IMR 4895	41.0	2463	42,800 PSI	45.0C	2704	57,800 PSI	IMR 8208 XBR	36.4	2219	48,100 PSI	39.2	2373	59,300 PSI
H335	38.0	2390	38,800 CUP	41.3	2592	50,100 CUP	IMR 3031	35.2	2214	48,600 PSI	38.1	2363	58,700 PSI
H4895	40.0	2489	39,100 CUP	42.7	2647	49,000 CUP	Benchmark	35.2	2207	51,000 PSI	38.3	2346	59,300 PSI
IMR 8208 XBR	39.0	2511	52,200 PSI	42.5	2664	61,800 PSI	30-06						
IMR 3031	38.0	2427	42,000 PSI	41.3	2653	59,100 PSI	Case: Winchester	Twist: 1:10"					
Benchmark	38.0	2400	40,100 CUP	41.5	2590	50,800 CUP	Barrel: 24"	Trim: 2.484"	Primer: Winchester LR, Large Rifle				
Bullet: 180 GR. SPR SP Dia: .308" Col: 2.800"						Bullet: 110 GR. HDY SP Dia: .308" Col: 3.170"							
H414	46.0	2433	39,800 CUP	49.0	2573	47,500 CUP	H414	57.0	3044	39,200 CUP	62.5	3268	46,900 CUP
760	46.0	2433	39,800 CUP	49.0	2573	47,500 CUP	760	57.0	3044	39,200 CUP	62.5	3268	46,900 CUP
CFE 223	42.9	2502	52,500 PSI	45.1	2615	61,100 PSI	CFE 223	55.6	3224	50,600 PSI	59.0	3370	56,400 PSI
Varget	41.0	2470	41,200 CUP	45.0C	2661	49,600 CUP	Varget	55.0	3308	44,400 CUP	59.0	3452	48,500 CUP
IMR 4320	41.0	2407	43,500 PSI	45.4C	2665	57,900 PSI	IMR 4320	57.0	3285	49,400 PSI	60.5	3470	58,100 PSI
IMR 4064	40.7	2445	44,100 PSI	45.2C	2683	58,200 PSI	IMR 4064	55.0	3263	47,900 PSI	58.5	3453	56,400 PSI
IMR 4166	41.0	2459	49,300 PSI	45.1C	2663	60,500 PSI	748				52.7	3320	47,000 CUP
748				46.5	2610	48,500 CUP	BL-C(2)	54.0	3108	36,200 CUP	60.0	3396	45,000 CUP
BL-C(2)	42.0	2460	40,300 CUP	46.0	2660	50,100 CUP	IMR 4895	56.0	3303	48,200 PSI	59.8	3505	57,300 PSI
IMR 4895	40.5	2439	43,800 PSI	44.7C	2674	58,700 PSI	H335	50.0	3168	43,500 CUP	55.5	3367	48,100 CUP
H335	38.0	2374	41,100 CUP	41.0	2528	49,500 CUP	H4895	51.0	3155	39,000 CUP	57.0	3431	49,300 CUP
H4895	40.0	2454	41,200 CUP	42.5	2595	49,700 CUP	IMR 8208 XBR	52.6	3223	46,200 PSI	56.0	3415	57,500 PSI
IMR 8208 XBR	36.0	2340	51,600 PSI	40.0	2497	60,100 PSI	IMR 3031	51.0	3252	47,200 PSI	54.9	3471	57,800 PSI

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Benchmark	51.5	3242	45,600 CUP	55.0	3396	49,800 CUP	748	48.0	2704	48,000 PSI	51.5	2859	55,400 PSI
Bullet: 125 GR. SIE SP Dia: .308" Col: 3.150"													
H414	57.0	2952	40,300 CUP	62.5	3181	46,700 CUP	BL-C(2)	50.0	2777	51,300 PSI	53.5	2915	57,900 PSI
760	57.0	2952	40,300 CUP	62.5	3181	46,700 CUP	IMR 4895	47.0	2717	50,000 PSI	50.8	2900	58,700 PSI
CFE 223	54.5	3081	53,000 PSI	58.0	3212	58,900 PSI	H335	44.0	2671	51,600 PSI	48.0	2842	59,200 PSI
Varget	54.0	3159	45,500 CUP	57.2	3267	49,500 CUP	H4895	43.0	2658	49,000 PSI	47.5	2863	59,700 PSI
IMR 4320	54.0	3125	49,100 PSI	57.5	3307	57,900 PSI	IMR 8208 XBR	44.0	2677	50,100 PSI	47.7	2838	58,500 PSI
IMR 4064	53.0	3129	47,400 PSI	56.5	3334	58,000 PSI	IMR 3031	43.0	2644	47,600 PSI	46.0	2811	56,600 PSI
IMR 4166	53.0	3109	51,200 PSI	56.8	3286	59,000 PSI	Benchmark	44.0	2631	46,400 PSI	48.0	2850	58,600 PSI
748				51.0	3060	46,000 CUP	Bullet: 155 GR. SIE HPBT Dia: .308" Col: 3.225"						
BL-C(2)	53.0	3117	38,000 CUP	58.7	3273	48,700 CUP	Suprform	59.0	2843	43,400 PSI	65.2C	3125	58,800 PSI
IMR 4895	53.0	3137	47,800 PSI	57.2	3331	56,800 PSI	H4350	56.0	2757	36,000 CUP	62.0C	3038	47,500 CUP
H335	49.0	3046	43,000 CUP	54.0	3228	49,300 CUP	IMR 4451	55.0	2748	48,500 PSI	59.2C	2988	59,600 PSI
H4895	48.0	2977	41,400 CUP	53.7	3229	49,300 CUP	H414	54.0	2732	39,600 CUP	60.0	2956	46,200 CUP
IMR 8208 XBR	51.5	3100	50,400 PSI	54.7	3243	57,400 PSI	IMR 4350	56.0	2784	45,800 PSI	60.0C	2959	53,800 PSI
IMR 3031	49.0	3091	47,100 PSI	52.8	3298	58,400 PSI	H380	53.0	2789	40,100 CUP	59.0	3009	47,800 CUP
Benchmark	49.0	2996	40,700 CUP	52.0	3178	48,700 CUP	CFE 223	49.2	2744	52,200 PSI	52.3	2879	59,500 PSI
							Varget	48.0	2822	44,600 CUP	50.7	2958	48,800 CUP
							IMR 4320	49.0	2823	50,800 PSI	53.0	2976	57,900 PSI
							IMR 4064	49.0	2811	46,800 PSI	53.0	3005	58,800 PSI
							IMR 4166	47.4	2743	47,800 PSI	51.5	2959	58,900 PSI
							BL-C(2)	49.0	2723	38,800 CUP	54.0	2912	46,300 CUP
							IMR 4895	50.0	2851	49,800 PSI	53.8	3010	58,000 PSI
							H335	47.0	2776	42,200 CUP	51.5	2943	48,800 CUP
							H4895	46.0	2752	41,200 CUP	51.0	2925	45,600 CUP
							IMR 8208 XBR	46.1	2747	50,400 PSI	49.0	2869	57,500 PSI
							IMR 3031	46.0	2779	47,600 PSI	49.0	2944	58,600 PSI
							Benchmark	46.5	2779	40,500 CUP	49.5	2916	49,400 CUP
							Bullet: 165 GR. HDY GMX Dia: .308" Col: 3.225"						
							Hybrid 100V	52.5	2653	48,600 PSI	56.7C	2818	56,700 PSI
							H4350	51.0	2587	48,600 PSI	55.4	2781	59,200 PSI
							IMR 4451	50.4	2532	48,200 PSI	54.3C	2751	58,300 PSI
							H414	50.0	2656	52,400 PSI	53.1	2773	58,500 PSI
							IMR 4350	52.0	2546	46,700 PSI	56.6	2770	58,200 PSI
							760	50.0	2656	52,400 PSI	53.1	2773	58,500 PSI
							H380	52.0	2652	52,700 PSI	56.0	2788	57,300 PSI
							CFE 223	43.9	2531	51,200 PSI	46.7	2672	57,500 PSI
							Varget	44.5	2526	46,600 PSI	48.3	2724	59,000 PSI
							IMR 4320	45.6	2515	45,800 PSI	49.6	2731	58,700 PSI
							IMR 4064	44.4	2510	44,900 PSI	48.2	2729	58,600 PSI
							IMR 4166	45.0	2607	49,700 PSI	48.2	2788	59,500 PSI
							BL-C(2)	43.9	2511	49,200 PSI	47.5	2706	58,800 PSI
							IMR 4895	44.4	2535	45,100 PSI	47.8	2757	58,400 PSI
							H4895	43.4	2595	50,300 PSI	46.7	2712	57,100 PSI
							IMR 8208 XBR	43.2	2572	50,800 PSI	47.0	2717	58,300 PSI
							IMR 3031	41.0	2510	46,400 PSI	44.1	2685	58,100 PSI
							Bullet: 165 GR. SIE SPBT Dia: .308" Col: 3.300"						
							Suprform	55.0	2724	45,100 PSI	61.0	2972	58,800 PSI
							Hybrid 100V	53.0	2648	46,000 PSI	57.0C	2801	52,800 PSI
							H4350	53.0	2678	38,400 CUP	59.0	2938	49,400 CUP
							IMR 4451	53.3	2658	49,100 PSI	57.4	2858	59,200 PSI
							H414	51.0	2678	41,900 CUP	56.5	2877	49,700 CUP
							IMR 4350	56.0	2746	48,100 PSI	60.0C	2934	57,600 PSI
							760	51.0	2678	38,400 CUP	56.5	2877	49,700 CUP
							H380	51.0	2669	41,700 CUP	56.5	2892	50,000 CUP
							CFE 223	46.5	2612	52,900 PSI	49.5	2731	58,700 PSI
							Varget	47.0	2726	44,500 CUP	50.5	2873	49,700 CUP
							IMR 4320	48.0	2727	50,700 PSI	51.2	2869	58,600 PSI
							IMR 4064	49.0	2752	50,400 PSI	52.5	2901	58,900 PSI
							IMR 4166	45.1	2625	47,800 PSI	49.1	2832	58,900 PSI
							BL-C(2)	46.0	2608	41,200 CUP	51.0	2805	49,800 CUP
							IMR 4895	49.0	2768	50,500 PSI	52.0	2888	57,200 PSI
							H335	42.0	2515	38,500 CUP	47.0	2749	49,300 CUP
							H4895	43.0	2607	41,100 CUP	47.5	2782	49,000 CUP
							IMR 8208 XBR	44.6	2667	55,100 PSI	46.5	2728	58,000 PSI
							IMR 3031	45.0	2707	51,000 PSI	48.0	2825	57,500 PSI
							Benchmark	45.0	2686	45,600 CUP	47.7	2795	49,300 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Bullet: 168 GR. HDY HPBT Dia: .308" Col: 3.230"													
Hybrid 100V	52.0	2645	50,400 PSI	57.0C	2817	57,100 PSI	IMR 4831	51.0	2445	46,300 PSI	55.0C	2639	57,000 PSI
H4350	55.0	2695	40,400 CUP	59.0	2897	48,100 CUP	H4350	51.0	2451	39,500 CUP	56.5	2692	49,200 CUP
IMR 4451	52.7	2646	50,200 PSI	56.7	2837	59,300 PSI	IMR 4451	49.9	2453	51,500 PSI	53.7	2615	59,400 PSI
H414	53.0	2686	40,300 CUP	56.5	2839	49,700 CUP	H414	48.0	2398	39,000 CUP	53.0	2640	49,500 CUP
IMR 4350	54.0	2720	48,500 PSI	58.0C	2903	57,800 PSI	IMR 4350	51.0	2466	47,200 PSI	54.5	2647	58,500 PSI
760	53.0	2686	40,300 CUP	56.5	2839	49,700 CUP	760	48.0	2398	49,000 CUP	53.0	2640	49,500 CUP
H380	51.0	2648	42,800 CUP	56.5	2859	49,700 CUP	H380	47.0	2369	40,900 CUP	51.5	2555	48,700 CUP
Varget	47.0	2710	42,700 CUP	50.5	2859	49,200 CUP	Varget	43.5	2450	41,800 CUP	46.5	2608	49,700 CUP
IMR 4320	46.0	2646	48,900 PSI	49.7	2816	58,400 PSI	IMR 4064	45.0	2485	50,900 PSI	47.7	2593	57,600 PSI
IMR 4064	47.0	2660	46,800 PSI	50.8	2850	57,900 PSI	IMR 4166	43.9	2431	48,900 PSI	47.0	2608	59,200 PSI
IMR 4166	44.7	2610	49,200 PSI	48.6	2794	59,200 PSI	BL-C(2)	43.0	2312	39,200 CUP	47.0	2510	48,600 CUP
BL-C(2)	46.0	2555	39,100 CUP	51.0	2767	49,200 CUP	H335	40.0	2271	40,200 CUP	44.0	2465	48,400 CUP
IMR 4895	48.0	2719	49,900 PSI	51.2	2859	58,200 PSI	H4895	41.0	2380	41,400 CUP	45.5	2525	48,000 CUP
H335	42.0	2459	39,900 CUP	46.5	2656	49,500 CUP	Bullet: 200 GR. NOS AB Dia: .308" Col: 3.300"						
H4895	43.0	2574	41,200 CUP	47.5	2789	50,000 CUP	H1000	57.0	2329	35,800 CUP	61.0C	2487	42,200 CUP
IMR 8208 XBR	45.1	2661	54,800 PSI	48.0	2748	58,700 PSI	IMR 7977	56.4	2343	48,600 PSI	60.0C	2504	57,300 PSI
Benchmark	44.0	2614	42,900 CUP	47.2	2760	49,400 CUP	IMR 7828	53.0	2323	45,000 PSI	58.0C*	2559	58,100 PSI
Bullet: 175 GR. SIE HPBT Dia: .308" Col: 3.300"													
IMR 4955	56.7	2650	49,400 PSI	61.0C	2845	59,200 PSI	IMR 4955	53.1	2412	49,100 PSI	57.2C	2590	59,100 PSI
Suprform	53.0	2609	42,600 PSI	58.7	2881	59,400 PSI	H4831	55.0	2427	42,100 CUP	59.0C	2586	49,300 CUP
H4831	57.0	2535	38,300 CUP	61.5C	2719	44,400 CUP	Hybrid 100V	48.0	2384	50,000 PSI	52.0C	2542	57,900 PSI
Hybrid 100V	50.0	2543	47,400 PSI	55.0C	2757	57,600 PSI	IMR 4831	51.0	2375	46,600 PSI	54.2C	2550	56,800 PSI
IMR 4831	54.0	2615	48,100 PSI	57.5C	2781	56,900 PSI	H4350	50.0	2412	40,400 CUP	53.7	2580	48,400 CUP
H4350	55.0	2661	42,100 CUP	59.0	2842	48,700 CUP	IMR 4451	49.0	2348	49,300 PSI	52.7	2533	59,900 PSI
IMR 4451	52.0	2548	47,500 PSI	56.0	2762	58,900 PSI	H414	48.0	2413	42,900 CUP	51.5	2579	49,400 CUP
H414	52.5	2622	40,700 CUP	56.2	2794	49,200 CUP	IMR 4350	50.0	2364	45,900 PSI	53.5C	2550	57,200 PSI
IMR 4350	52.0	2546	45,000 PSI	57.0C	2780	57,100 PSI	760	48.0	2413	42,900 CUP	51.5	2579	49,400 CUP
760	52.5	2622	40,700 CUP	56.2	2794	49,200 CUP	H380	45.5	2325	42,300 CUP	48.5	2463	48,800 CUP
H380	49.5	2564	43,400 CUP	53.0	2704	48,400 CUP	Varget	42.0	2337	41,900 CUP	47.0	2505	49,100 CUP
Varget	45.0	2551	41,700 CUP	48.0	2694	49,000 CUP	IMR 4064	43.0	2292	44,600 PSI	46.0	2469	57,400 PSI
IMR 4320	45.5	2533	48,000 PSI	48.5	2697	58,200 PSI	IMR 4166	43.2	2361	50,300 PSI	46.2	2517	59,200 PSI
IMR 4064	46.5	2626	52,000 PSI	49.5	2741	58,000 PSI	H4895	41.0	2355	43,700 CUP	44.0	2474	49,500 CUP
IMR 4166	44.4	2605	48,600 PSI	48.3	2782	56,800 PSI	Bullet: 200 GR. SPR SP Dia: .308" Col: 3.230"						
BL-C(2)	48.5	2644	44,100 CUP	51.5	2765	48,700 CUP	H1000	55.0	2267	33,600 CUP	61.0C	2510	44,400 CUP
IMR 4895	46.0	2619	51,600 PSI	49.0	2741	58,100 PSI	IMR 7977	54.5	2321	48,600 PSI	58.0C	2484	58,100 PSI
H335	43.0	2566	46,600 CUP	45.7	2667	49,400 CUP	IMR 4955	51.8	2372	49,100 PSI	55.7C	2559	59,400 PSI
H4895	43.8	2584	44,100 CUP	46.7	2700	49,000 CUP	H4831	54.0	2436	43,200 CUP	57.5C	2577	49,400 CUP
Bullet: 180 GR. SIE SPBT Dia: .308" Col: 3.300"													
IMR 7977	58.3	2513	47,700 PSI	62.0C	2686	56,600 PSI	Hybrid 100V	47.0	2335	48,100 PSI	51.5C	2532	58,600 PSI
IMR 4955	56.7	2635	50,200 PSI	61.0C	2828	60,000 PSI	H4350	50.0	2431	44,500 CUP	53.0	2544	49,100 CUP
Suprform	54.0	2628	46,200 PSI	59.7	2840	57,600 PSI	IMR 4451	47.2	2294	49,600 PSI	50.7	2470	59,400 PSI
H4831	54.0	2447	34,700 CUP	60.0C	2710	44,300 CUP	H414	47.0	2351	40,700 CUP	52.0	2551	49,100 CUP
Hybrid 100V	53.0	2585	47,000 PSI	57.0C	2742	55,200 PSI	H380	44.0	2231	41,700 CUP	48.0	2395	49,600 CUP
IMR 4831	53.0	2563	47,300 PSI	56.8C	2749	57,100 PSI	Varget	42.5	2373	44,700 CUP	45.5	2501	49,600 CUP
H4350	52.0	2543	37,800 CUP	57.5	2798	49,300 CUP	IMR 4166	42.0	2327	49,800 PSI	45.2	2476	58,900 PSI
IMR 4451	51.7	2574	50,900 PSI	55.6	2752	59,600 PSI	H4895	39.0	2246	40,700 CUP	43.5	2421	49,200 CUP
H414	50.0	2528	39,200 CUP	55.5	2743	48,700 CUP	Bullet: 208 GR. HDY A-MAX Dia: .308" Col: 3.285"						
IMR 4350	53.0	2586	48,300 PSI	56.5C	2752	57,200 PSI	IMR 7977	57.3	2364	48,200 PSI	61.0C	2521	57,200 PSI
760	50.0	2528	39,200 CUP	55.5	2743	48,700 CUP	IMR 7828	52.2	2239	43,600 PSI	57.0C	2442	53,100 PSI
H380	48.0	2490	39,900 CUP	53.0	2682	48,700 CUP	IMR 4955	53.6	2414	49,400 PSI	57.7C	2604	59,100 PSI
Varget	44.0	2533	41,900 CUP	47.0	2668	50,000 CUP	H4831	52.1	2301	47,100 PSI	58.0C	2511	58,700 PSI
IMR 4320	45.0	2525	49,900 PSI	47.8	2661	58,000 PSI	Hybrid 100V	47.3	2292	45,100 PSI	52.0C	2519	58,300 PSI
IMR 4064	45.5	2550	48,900 PSI	48.7	2700	58,200 PSI	IMR 4831	49.9	2291	46,100 PSI	54.9C	2538	59,500 PSI
IMR 4166	45.5	2575	50,800 PSI	48.8	2724	58,800 PSI	H4350	47.6	2303	47,600 PSI	52.4	2499	59,600 PSI
BL-C(2)	44.0	2456	39,200 CUP	48.5	2634	48,100 CUP	H414	46.1	2307	49,300 PSI	49.6	2467	58,300 PSI
IMR 4895	45.0	2555	49,500 PSI	48.0	2680	56,800 PSI	IMR 4350	47.9	2259	45,000 PSI	52.7C	2503	58,600 PSI
H335	42.0	2455	41,900 CUP	46.0	2621	49,200 CUP	760	46.1	2307	49,300 PSI	49.6	2467	58,300 PSI
H4895	41.0	2427	38,100 CUP	46.0	2638	48,800 CUP	H380	45.5	2231	45,600 PSI	49.5	2427	57,300 PSI
Benchmark	43.0	2550	45,600 CUP	46.0	2660	49,000 CUP	Varget	40.9	2226	47,900 PSI	45.0	2415	59,200 PSI
Bullet: 190 GR. HDY BTSP Dia: .308" Col: 3.220"													
IMR 7977	57.5	2432	49,600 PSI	61.2C	2591	57,700 PSI	IMR 4064	42.5	2250	47,400 PSI	45.5	2404	57,000 PSI
IMR 7828	55.0	2429	46,200 PSI	59.8C*	2646	58,700 PSI	IMR 4166	42.4	2341	48,500 PSI	45.4	2495	59,200 PSI
IMR 4955	54.4	2476	47,600 PSI	58.5C	2703	59,800 PSI	H4895	38.9	2203	48,700 PSI	43.2	2362	57,400 PSI
H4831	57.0	2514	44,100 CUP	61.0C	2668	50,000 CUP	Bullet: 220 GR. HDY JRN Dia: .308" Col: 3.230"						
Hybrid 100V	49.0	2456	49,300 PSI	53.5C	2639	58,300 PSI	H1000	58.0	2293	36,500 CUP	61.0C	2412	43,600 CUP
NEVER EXCEED MAXIMUM LOADS													
*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
H4831	54.0	2342	43,300 CUP	57.5C	2458	48,600 CUP	H414	63.0	3023	53,300 PSI	66.5	3206	63,100 PSI
Hybrid 100V	47.0	2258	48,100 PSI	52.0C	2448	58,600 PSI	760	63.0	3023	53,300 PSI	66.5	3206	63,100 PSI
IMR 4831	50.0	2275	47,300 PSI	54.0	2438	57,200 PSI	H380	60.0	2956	54,500 PSI	64.0	3117	63,100 PSI
H4350	50.0	2318	43,400 CUP	53.0	2435	49,200 CUP	Varget	55.0	2963	54,800 PSI	58.5	3110	63,600 PSI
H414	47.0	2215	39,000 CUP	52.0	2408	49,500 CUP	IMR 4166	54.7	2974	52,900 PSI	58.9	3165	63,200 PSI
IMR 4350	49.0	2287	49,500 PSI	52.5	2425	57,300 PSI	H4895	52.0	2935	55,800 PSI	55.0	3061	63,600 PSI
760	47.0	2215	39,000 CUP	52.0	2408	49,500 CUP	IMR 8208 XBR	53.0	2990	56,800 PSI	56.4	3110	63,400 PSI
Varget	42.0	2279	44,000 CUP	45.0	2382	49,400 CUP	Bullet: 165 GR. HDY GMX Dia: .308" Col: 2.840"						
IMR 4064	43.0	2241	52,200 PSI	45.5	2325	56,700 PSI	Suprform	64.0	2952	51,600 PSI	69.0C	3169	62,700 PSI
IMR 4166	42.2	2235	49,300 PSI	45.2	2380	58,800 PSI	Hybrid 100V	58.0	2867	51,600 PSI	63.0C	3099	63,300 PSI
300 WINCHESTER SHORT MAGNUM							H4350	58.0	2821	52,400 PSI	62.0C	2986	61,300 PSI
Case: Winchester			Twist: 1:10"				IMR 4451	59.6	2927	56,000 PSI	63.5	3088	63,200 PSI
Barrel: 24" Trim: 2.090"			Primer: Winchester LRM, Large Rifle Magnum				H414	58.0	2860	53,400 PSI	62.5	3043	62,900 PSI
Bullet: 110 GR. SPR SP Dia: .308" Col: 2.650"							760	58.0	2860	53,400 PSI	62.5	3043	62,900 PSI
H4350	70.0	3437	53,500 PSI	74.5C	3646	63,300 PSI	H380	57.0	2800	52,500 PSI	61.8	2993	62,300 PSI
H414	70.0	3538	55,800 PSI	73.5	3692	62,900 PSI	Varget	51.0	2810	56,700 PSI	54.5	2948	63,600 PSI
760	70.0	3538	55,800 PSI	73.5	3692	62,900 PSI	IMR 4166	50.4	2785	50,900 PSI	54.5	2996	62,700 PSI
H380	68.0	3456	52,500 PSI	71.0	3600	60,200 PSI	H4895	47.0	2700	51,900 PSI	51.0	2887	63,300 PSI
Varget	62.0	3454	54,300 PSI	66.0	3631	63,200 PSI	IMR 8208 XBR	48.0	2743	55,600 PSI	52.0	2887	63,300 PSI
IMR 4166	61.0	3439	54,300 PSI	65.6	3651	2.650"	Bullet: 165 GR. NOS PART Dia: .308" Col: 2.860"						
H4895	60.0	3495	56,800 PSI	63.5	3647	63,600 PSI	Suprform	65.0	2987	47,800 PSI	72.0	3273	63,500 PSI
IMR 8208 XBR	60.3	3555	54,400 PSI	63.5	3697	62,400 PSI	Hybrid 100V	62.0	2957	51,600 PSI	68.0C	3175	63,100 PSI
Bullet: 125 GR. NOS BT Dia: .308" Col: 2.810"							H4350	61.0	2898	54,800 PSI	65.5	3047	63,600 PSI
H4350	69.0	3332	55,800 PSI	73.0	3481	63,000 PSI	IMR 4451	60.6	2856	50,200 PSI	65.2C	3108	63,300 PSI
H414	68.0	3318	51,300 PSI	72.0	3540	63,300 PSI	H414	61.0	2915	54,200 PSI	65.0	3069	63,200 PSI
760	68.0	3318	51,300 PSI	72.0	3540	63,300 PSI	760	61.0	2915	54,200 PSI	65.0	3069	63,200 PSI
H380	68.0	3346	55,100 PSI	71.0	3493	62,600 PSI	H380	59.0	2854	55,100 PSI	63.0	3012	63,600 PSI
Varget	61.0	3312	54,700 PSI	65.0	3478	63,100 PSI	Varget	54.0	2859	56,400 PSI	57.5	2987	63,700 PSI
IMR 4166	59.0	3293	54,400 PSI	63.5	3493	63,600 PSI	IMR 4166	53.2	2849	52,400 PSI	57.6	3053	63,400 PSI
H4895	58.0	3314	56,600 PSI	61.0	3431	63,000 PSI	H4895	51.0	2810	55,700 PSI	54.0	2929	63,200 PSI
IMR 8208 XBR	58.3	3350	53,600 PSI	62.0	3496	61,700 PSI	IMR 8208 XBR	51.1	2849	55,600 PSI	54.4	2963	61,700 PSI
Bullet: 130 GR. HDY SP Dia: .308" Col: 2.720"							Bullet: 168 GR. SIE HPBT Dia: .308" Col: 2.840"						
Suprform	69.0	3256	42,900 PSI	77.0C	3645	62,600 PSI	IMR 4955	66.8	2906	53,100 PSI	71.2C	3112	63,900 PSI
H4350	67.0	3237	54,900 PSI	71.0	3393	63,200 PSI	H4831	65.0	2848	53,400 PSI	69.5C	3015	63,200 PSI
H414	66.0	3267	54,500 PSI	70.0	3437	63,700 PSI	Hybrid 100V	62.0	2921	49,800 PSI	67.7C	3144	61,100 PSI
760	66.0	3267	54,500 PSI	70.0	3437	63,700 PSI	H4350	61.0	2908	56,000 PSI	64.5	3034	63,700 PSI
H380	66.0	3244	55,700 PSI	69.5	3497	63,300 PSI	IMR 4451	60.7	2862	50,900 PSI	65.0C	3078	62,600 PSI
Varget	60.0	3269	58,100 PSI	63.5	3388	63,500 PSI	H414	61.0	2919	54,600 PSI	65.0	3074	63,200 PSI
IMR 4166	57.5	3168	53,500 PSI	62.0	3388	63,600 PSI	760	61.0	2919	54,600 PSI	65.0	3074	63,200 PSI
H4895	56.0	3213	55,700 PSI	58.5	3318	63,000 PSI	H380	59.0	2865	56,000 PSI	62.0	2985	63,300 PSI
IMR 8208 XBR	56.4	3272	56,600 PSI	60.0	3391	61,900 PSI	IMR 4166	53.0	2834	51,600 PSI	57.4	3033	62,300 PSI
Bullet: 150 GR. SPR GSSP Dia: .308" Col: 2.780"							IMR 8208 XBR	51.5	2853	56,400 PSI	54.8	2970	63,400 PSI
Suprform	67.0	3129	50,000 PSI	74.0	3410	63,500 PSI	Bullet: 175 GR. SIE HPBT Dia: .308" Col: 2.860"						
Hybrid 100V	63.0	2948	49,400 PSI	67.0C	3127	57,700 PSI	IMR 4955	65.8	2862	54,100 PSI	70.1C	3051	63,700 PSI
H4350	63.0	3040	55,700 PSI	67.0	3187	63,200 PSI	H4831	66.0	2848	55,300 PSI	70.0C	2980	63,100 PSI
IMR 4451	63.6	3033	52,900 PSI	67.7	3248	63,300 PSI	Hybrid 100V	61.0	2878	51,000 PSI	66.5C	3085	61,700 PSI
H414	62.0	3025	53,400 PSI	66.0	3204	63,300 PSI	H4350	61.0	2839	53,300 PSI	65.0	3009	63,400 PSI
IMR 4350	64.0	3006	50,200 PSI	68.0	3221	62,100 PSI	IMR 4451	59.4	2816	51,700 PSI	63.9	3031	63,600 PSI
760	62.0	3025	53,400 PSI	66.0	3204	63,300 PSI	H414	61.0	2868	53,900 PSI	65.0	3032	63,200 PSI
H380	60.0	2987	54,900 PSI	64.0	3141	63,600 PSI	760	61.0	2868	53,900 PSI	65.0	3032	63,200 PSI
Varget	55.0	3008	56,800 PSI	58.5	3140	63,800 PSI	H380	60.0	2859	57,600 PSI	63.0	2954	63,200 PSI
IMR 4320	57.0	3004	54,000 PSI	61.0	3172	63,900 PSI	IMR 4166	52.1	2773	52,000 PSI	56.4	2970	63,100 PSI
IMR 4064	57.0	3012	52,100 PSI	61.0	3198	63,300 PSI	Bullet: 180 GR. NOS E-TIP Dia: .308" Col: 2.860"						
IMR 4166	55.9	3033	54,000 PSI	59.5	3200	62,800 PSI	IMR 4955	63.4	2782	55,300 PSI	67.5C	2945	63,500 PSI
IMR 4895	56.0	2980	50,800 PSI	60.5	3176	62,300 PSI	H4350	59.0	2751	54,900 PSI	63.7C	2925	63,800 PSI
H4895	51.0	2919	53,400 PSI	54.5	3078	63,100 PSI	IMR 4451	57.8	2759	55,000 PSI	62.2	2947	63,500 PSI
IMR 8208 XBR	52.6	2992	55,800 PSI	56.0	3115	62,300 PSI	H414	56.0	2693	52,800 PSI	60.0	2865	62,100 PSI
Trail Boss	16.3	1473	26,400 PSI	23.3	1758	31,600 PSI	IMR 4350	60.0	2748	52,600 PSI	64.0C	2963	62,400 PSI
Bullet: 155 GR. HDY A-MAX Dia: .308" Col: 2.860"							H380	57.0	2648	51,700 PSI	61.5	2809	59,700 PSI
Suprform	66.0	3065	45,700 PSI	73.5C	3405	63,500 PSI	Bullet: 180 GR. SFT SCIR Dia: .308" Col: 2.860"						
Hybrid 100V	63.0	3060	51,800 PSI	68.5C	3269	62,300 PSI	IMR 7828	65.0	2783	54,400 PSI	69.5C*	2943	62,600 PSI
H4350	63.0	3014	55,300 PSI	66.5	3156	63,200 PSI	IMR 4955	63.9	2797	55,800 PSI	68.0C	2957	63,500 PSI
IMR 4451	62.5	3005	52,300 PSI	66.5	3210	63,300 PSI	H4831	65.5	2775	52,000 PSI	70.0C	2929	64,000 PSI
NEVER EXCEED MAXIMUM LOADS							Hybrid 100V	59.0	2728	50,200 PSI	64.0C	2918	59,800 PSI

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 4831	62.0	2797	52,700 PSI	66.3C	2980	62,900 PSI	IMR 4064	65.0	3424	50,600 PSI	70.0	3669	62,100 PSI
H4350	60.0	2799	55,700 PSI	64.0	2950	63,900 PSI	IMR 4166	65.8	3514	55,100 PSI	70.81	3709	63,000 PSI
IMR 4451	59.2	2727	52,900 PSI	63.7C	2935	62,700 PSI	IMR 4895	65.0	3440	52,000 PSI	69.5	3684	63,300 PSI
H414	59.0	2801	54,100 PSI	62.5	2959	63,000 PSI	H4895	60.0	3381	43,300 CUP	67.0	3665	51,400 CUP
IMR 4350	61.0	2808	52,800 PSI	65.0C	2991	63,700 PSI	Bullet: 125 GR. BAR XFB Dia: .308" Col: 3.275"						
760	59.0	2801	54,100 PSI	62.5	2959	63,000 PSI	H1000	80.0	3260	44,200 CUP	85.0C	3418	48,700 CUP
H380	57.0	2718	53,700 PSI	61.0	2884	63,400 PSI	H4831	75.0	3286	47,300 CUP	80.0	3450	52,000 CUP
Bullet: 190 GR. SIE HPBT Dia: .308" Col: 2.860"						IMR 4831	74.0	3149	49,000 PSI	79.0C	3515	63,300 PSI	
IMR 7828	64.0	2703	52,100 PSI	69.0C*	2891	63,300 PSI	H4350	68.0	3250	46,100 CUP	73.0	3424	51,600 CUP
IMR 4955	62.8	2724	53,300 PSI	66.9C	2904	63,400 PSI	H414	65.0	3219	36,000 CUP	70.0	3392	51,700 CUP
H4831	62.0	2704	53,800 PSI	66.5C	2858	63,400 PSI	IMR 4350	72.0	3230	51,800 PSI	77.2C	3497	62,900 PSI
Hybrid 100V	60.0	2790	52,000 PSI	64.5C	2951	61,000 PSI	760	65.0	3219	36,000 CUP	70.0	3392	51,700 CUP
IMR 4831	60.0	2679	49,300 PSI	64.0C	2867	61,700 PSI	H380	62.0	3056	43,500 CUP	68.5	3293	51,800 CUP
H4350	57.5	2736	56,200 PSI	61.0	2853	63,400 PSI	Varget	65.0	3281	45,400 CUP	70.0	3462	52,700 CUP
IMR 4451	57.1	2707	53,500 PSI	61.4	2873	62,500 PSI	IMR 4064	63.0	3217	51,500 PSI	67.6	3464	63,500 PSI
H414	59.0	2765	55,600 PSI	62.5	2896	63,800 PSI	IMR 4895	63.0	3212	52,400 PSI	67.3	3424	61,900 PSI
IMR 4350	60.0	2755	53,200 PSI	64.0C	2920	63,700 PSI	H4895	57.0	3140	44,200 CUP	62.0	3347	51,100 CUP
760	59.0	2765	55,600 PSI	62.5	2896	63,800 PSI	Bullet: 130 GR. HDY SP Dia: .308" Col: 3.300"						
Bullet: 200 GR. SFT SP Dia: .308" Col: 2.790"						H1000	80.0	3125	38,900 CUP	85.0C	3289	45,000 CUP	
H1000	70.0	2660	51,600 PSI	72.0C	2737	57,200 PSI	IMR 4955	76.5	3247	52,800 PSI	81.4	3471	62,900 PSI
IMR 7977	67.4	2604	50,900 PSI	71.0C	2776	61,100 PSI	H4831	77.0	3116	44,900 CUP	82.0C	3383	51,300 CUP
IMR 7828	63.0	2580	50,000 PSI	67.5C*	2793	63,100 PSI	IMR 4831	75.0	3167	50,300 PSI	80.0C	3436	61,800 PSI
IMR 4955	62.7	2656	54,700 PSI	66.8C	2825	63,600 PSI	H4350	70.0	3219	45,800 CUP	74.0	3375	51,600 CUP
H4831	63.0	2678	56,000 PSI	66.5C	2802	63,700 PSI	H414	67.0	3219	47,000 CUP	71.0	3360	52,300 CUP
IMR 4831	59.0	2565	49,200 PSI	63.7C	2780	62,200 PSI	IMR 4350	73.0	3214	50,700 PSI	78.0	3466	62,300 PSI
H4350	58.0	2666	55,000 PSI	62.0	2792	63,200 PSI	760	67.0	3219	47,000 CUP	71.0	3360	52,300 CUP
H414	58.0	2678	55,700 PSI	61.0	2803	63,200 PSI	H380	64.0	3111	46,700 CUP	68.5	3283	52,600 CUP
IMR 4350	59.0	2643	52,900 PSI	63.5C	2827	63,700 PSI	Varget	64.0	3218	45,600 CUP	68.5	3398	52,100 CUP
760	58.0	2678	55,700 PSI	61.0	2803	63,200 PSI	IMR 4064	64.0	3217	51,600 PSI	68.3	3427	62,900 PSI
Bullet: 208 GR. HDY A-MAX Dia: .308" Col: 2.900"						IMR 4166	61.8	3249	53,600 PSI	66.5	3439	62,100 PSI	
H1000	62.0	2420	42,900 PSI	69.0C	2670	55,900 PSI	IMR 4895	64.0	3198	51,600 PSI	69.0	3442	63,000 PSI
IMR 7977	65.0	2537	49,200 PSI	68.5C	2681	56,800 PSI	H4895	58.0	3187	46,900 CUP	62.0	3331	52,500 CUP
IMR 7828	62.0	2556	48,000 PSI	66.8C	2761	58,400 PSI	IMR 8208 XBR	60.0	3202	52,200 PSI	65.0	3386	62,200 PSI
IMR 4955	62.3	2636	54,900 PSI	66.3C	2797	63,500 PSI	Bullet: 150 GR. BAR TTSX BT Dia: .308" Col: 3.325"						
H4831	61.8	2624	54,800 PSI	66.5C	2761	62,500 PSI	IMR 7977	76.5	2992	48,200 PSI	80.0C	3127	53,700 PSI
IMR 4831	59.0	2594	51,500 PSI	63.5C	2785	62,600 PSI	IMR 7828 SSC	78.0	3120	51,100 PSI	83.0C*	3321	60,000 PSI
H4350	56.4	2612	55,400 PSI	60.7	2748	62,800 PSI	IMR 4955	74.2	3076	52,900 PSI	79.0C	3279	62,600 PSI
H414	55.6	2567	52,500 PSI	59.8	2732	62,100 PSI	H4831	75.0	2985	46,300 PSI	80.0C	3182	50,100 PSI
IMR 4350	57.7	2593	52,000 PSI	62.0C	2773	62,900 PSI	Hybrid 100V	68.0	3140	50,700 PSI	73.0C	3340	59,900 PSI
760	55.6	2567	52,500 PSI	59.8	2732	62,100 PSI	IMR 4831	71.0	3027	47,700 PSI	76.0C	3278	58,800 PSI
Bullet: 220 GR. HDY RN Dia: .308" Col: 2.830"						H4350	69.0	3062	49,600 PSI	74.0C	3289	60,600 PSI	
H1000	69.0	2597	57,200 PSI	72.5C	2689	63,000 PSI	IMR 4451	67.1	3019	51,900 PSI	72.2	3264	62,500 PSI
IMR 7977	65.2	2517	53,200 PSI	70.2	2704	63,600 PSI	H414	65.0	3053	51,200 PSI	69.7	3231	59,600 PSI
IMR 4955	60.7	2511	54,000 PSI	64.6C	2672	63,600 PSI	IMR 4350	70.0	3078	49,000 PSI	75.0C	3347	61,300 PSI
H4831	60.0	2520	55,600 PSI	64.3C	2646	63,500 PSI	760	65.0	3053	51,200 PSI	69.7	3231	59,600 PSI
Hybrid 100V	57.0	2522	49,300 PSI	62.0C	2711	61,400 PSI	H380	65.0	3030	51,600 PSI	69.0	3166	57,400 PSI
H4350	54.0	2476	54,100 PSI	58.0	2602	63,300 PSI	IMR 4064	60.0	2969	47,300 PSI	65.5	3239	60,500 PSI
H414	55.0	2484	54,000 PSI	59.0	2624	63,600 PSI	IMR 4166	58.2	2972	52,600 PSI	62.0	3138	60,900 PSI
760	55.0	2484	54,000 PSI	59.0	2624	63,600 PSI	IMR 4895	61.0	3018	49,600 PSI	66.3	3249	60,800 PSI
300 WINCHESTER MAGNUM						H4895	57.0	3006	52,000 PSI	63.0	3186	59,900 PSI	
Case: Winchester Twist: 1:10"						IMR 8208 XBR	57.0	2925	47,900 PSI	64.0	3183	61,100 PSI	
Barrel: 24" Trim: 2.610" Primer: Winchester LRM, Large Rifle Magnum						Bullet: 150 GR. SIE SP Dia: .308" Col: 3.340"							
Bullet: 110 GR. SPR SP Dia: .308" Col: 3.215"						H1000	80.0	3004	46,500 CUP	85.0C	3255	52,200 CUP	
H1000	80.0	3189	34,700 CUP	85.0C	3392	42,000 CUP	IMR 7977	76.4	3035	49,900 PSI	82.2C	3269	59,300 PSI
IMR 4955	79.3	3394	49,800 PSI	84.5C	3609	58,200 PSI	IMR 7828	75.0	2913	46,200 PSI	80.0C	3148	55,600 PSI
H4831	79.0	3355	41,500 CUP	84.0C	3540	48,400 CUP	IMR 4955	73.7	3008	50,200 PSI	78.5	3242	61,400 PSI
IMR 4831	76.0	3410	50,900 PSI	81.0C	3656	60,700 PSI	H4831	73.0	3025	45,700 CUP	78.0	3207	52,700 CUP
H4350	72.0	3337	39,300 CUP	80.0	3648	49,400 CUP	Hybrid 100V	67.0	3026	49,800 PSI	73.5	3289	62,700 PSI
H414	66.0	3330	40,900 CUP	73.0	3570	49,700 CUP	IMR 4831	73.0	3037	51,300 PSI	78.0C	3289	63,300 PSI
IMR 4350	74.0	3354	49,100 PSI	79.5C	3655	61,500 PSI	H4350	68.0	3052	47,100 CUP	72.0	3205	52,500 CUP
760	66.0	3330	40,900 CUP	73.0	3570	49,700 CUP	IMR 4451	67.9	3046	52,700 PSI	73.1	3261	61,900 PSI
H380	66.0	3282	41,100 CUP	73.0	3544	49,000 CUP	H414	62.0	2973	47,400 CUP	68.0	3145	52,500 CUP
Varget	67.0	3424	42,900 CUP	72.5	3660	51,700 CUP	IMR 4350	69.0	3003	50,100 PSI	74.0	3254	61,500 PSI
							760	62.0	2973	47,400 CUP	68.0	3145	52,500 CUP

122

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
H380	62.0	2903	46,000 CUP	65.0	3031	52,200 CUP	IMR 7828 SSC	71.1	2703	42,700 PSI	79.0C	3051	58,900 PSI
Varget	56.0	2952	43,300 CUP	60.0	3108	51,400 CUP	IMR 4955	70.3	2841	52,300 PSI	75.2	3051	62,900 PSI
IMR 4064	61.0	3028	52,900 PSI	65.5	3205	62,200 PSI	H4831	72.0	2843	46,600 CUP	76.5	3006	53,100 CUP
IMR 4166	57.5	2914	48,200 PSI	62.5	3178	62,300 PSI	Hybrid 100V	65.0	2837	49,900 PSI	70.5	3068	62,300 PSI
IMR 4895	61.0	2980	50,700 PSI	65.5	3196	62,300 PSI	IMR 4831	69.5	2889	49,600 PSI	75.5C	3150	63,200 PSI
H4895	57.0	2991	47,300 CUP	61.0	3124	52,500 CUP	H4350	66.0	2832	45,800 CUP	71.0	2992	52,700 CUP
IMR 8208 XBR	57.0	2987	52,600 PSI	61.5	3156	60,800 PSI	IMR 4451	64.2	2830	51,300 PSI	69.8	3061	62,500 PSI
Trail Boss	18.0	1302	18,400 PSI	25.5	1687	28,600 PSI	H414	63.0	2830	48,200 CUP	67.5	2972	53,300 CUP
Bullet: 155 GR. SIE HPBT Dia: .308" Col: 3.340"													
H1000	80.0	2992	41,300 CUP	85.0C	3160	47,400 CUP	Bullet: 180 GR. NOS E-TIP Dia: .308" Col: 3.340"						
IMR 7977	76.0	3006	48,800 PSI	81.8C	3273	60,700 PSI	H1000	74.6	2821	53,300 PSI	79.4C	2984	62,400 PSI
IMR 7828	75.0	2943	47,500 PSI	80.0C	3188	58,100 PSI	IMR 7977	70.4	2768	51,000 PSI	75.8C	2981	61,900 PSI
IMR 4955	73.2	3001	50,600 PSI	77.9	3239	62,500 PSI	IMR 7828	68.4	2811	52,700 PSI	73.5C	2995	61,600 PSI
H4831	74.0	2964	43,600 CUP	79.0C	3166	51,500 CUP	IMR 4955	67.9	2749	53,700 PSI	72.7C	2945	62,600 PSI
Hybrid 100V	68.0	3049	51,900 PSI	74.0	3274	63,200 PSI	H4831	66.8	2770	53,300 PSI	71.8C	2938	61,900 PSI
IMR 4831	71.0	2963	48,100 PSI	76.5C	3226	61,600 PSI	Hybrid 100V	58.9	2679	47,700 PSI	66.0	2941	60,800 PSI
H4350	69.0	3013	45,100 CUP	74.0	3215	52,400 CUP	IMR 4831	67.3	2817	54,500 PSI	70.2C	2916	59,700 PSI
IMR 4451	67.4	3017	50,200 PSI	73.3	3290	63,000 PSI	H4350	62.1	2730	52,300 PSI	66.8	2916	62,600 PSI
H414	67.0	2986	44,500 CUP	71.5	3157	51,300 CUP	IMR 4451	60.2	2670	51,800 PSI	65.5	2915	62,500 PSI
IMR 4350	70.0	3064	51,600 PSI	74.5	3273	63,300 CUP	H414	60.0	2760	56,000 PSI	62.8	2849	60,600 PSI
760	67.0	2986	44,500 CUP	71.5	3157	51,300 CUP	IMR 4350	64.7	2797	53,200 PSI	68.1	2932	60,500 PSI
H380	61.0	2869	44,300 CUP	65.0	3025	51,900 CUP	760	60.0	2760	56,000 PSI	62.8	2849	60,600 PSI
Varget	55.0	2897	42,400 CUP	59.7	3090	52,000 CUP	Bullet: 180 GR. SPR MT-SP Dia: .308" Col: 3.285"						
IMR 4064	61.0	3014	52,000 PSI	65.0	3195	61,900 PSI	US 869	86.0	2824	52,500 PSI	88.0	2892	56,800 PSI
IMR 4166	57.3	2938	50,100 PSI	62.3	3161	63,100 PSI	H1000	76.0	2883	46,800 CUP	81.0C	3042	52,900 CUP
IMR 4895	61.0	3002	50,900 PSI	65.5	3210	63,100 PSI	IMR 7977	70.1	2757	50,400 PSI	75.4	2969	60,400 PSI
H4895	55.0	2919	43,700 CUP	59.0	3078	52,200 CUP	IMR 7828	73.0	2770	49,700 PSI	78.5C	3034	62,000 PSI
IMR 8208 XBR	58.0	2997	55,000 PSI	61.5	3117	60,700 PSI	IMR 4955	67.8	2744	50,900 PSI	73.7	2984	62,900 PSI
Bullet: 165 GR. SPR SP Dia: .308" Col: 3.340"													
H1000	79.0	2957	44,600 CUP	84.0	3117	51,300 CUP	H4831	69.0	2851	48,500 CUP	73.0C	2966	53,200 CUP
IMR 7977	75.5	2908	48,600 PSI	81.2C	3192	62,200 PSI	Hybrid 100V	62.0	2775	50,200 PSI	67.7	2998	62,400 PSI
IMR 7828	74.0	2884	49,500 PSI	79.5C	3127	60,600 PSI	IMR 4831	69.0	2766	50,100 PSI	74.0C	3025	63,200 PSI
IMR 4955	71.5	2906	52,600 PSI	76.5C	3122	62,900 PSI	H4350	63.0	2787	46,400 CUP	67.0	2918	53,100 CUP
H4831	72.0	2934	47,600 CUP	75.5	3055	52,200 CUP	IMR 4451	61.3	2739	52,400 PSI	66.7	2944	62,500 PSI
Hybrid 100V	66.0	2905	50,700 PSI	72.0	3144	62,500 PSI	H414	58.0	2722	48,200 CUP	62.0	2845	52,300 CUP
IMR 4831	70.0	2878	49,800 PSI	75.2C	3142	62,900 PSI	IMR 4350	66.0	2746	50,100 PSI	71.0	2974	61,200 PSI
H4350	66.0	2910	46,900 CUP	70.0	3042	51,900 CUP	760	58.0	2722	48,200 CUP	62.0	2845	52,300 CUP
IMR 4451	65.0	2882	51,700 PSI	70.7	3115	62,000 PSI	Bullet: 190 GR. HDY BTSP Dia: .308" Col: 3.340"						
H414	61.0	2853	48,500 CUP	65.0	2968	52,900 CUP	H1000	76.0	2822	44,900 CUP	81.0C	2990	52,800 CUP
IMR 4350	68.0	2875	50,000 PSI	73.3	3142	63,100 PSI	IMR 7977	71.0	2748	50,500 PSI	76.4C	2963	61,400 PSI
760	61.0	2853	48,500 CUP	65.0	2968	52,900 CUP	IMR 7828	71.0	2676	46,700 PSI	76.5C	2975	61,000 PSI
H380	59.0	2754	44,500 CUP	63.0	2909	52,400 CUP	IMR 4955	67.5	2689	50,900 PSI	73.4	2937	63,100 PSI
Varget	54.0	2799	43,900 CUP	58.5	2975	52,900 CUP	H4831	69.0	2795	48,400 CUP	73.0C	2923	53,600 CUP
IMR 4166	57.0	2878	54,500 PSI	61.9	3054	62,500 PSI	Hybrid 100V	63.5	2811	56,200 PSI	67.5	2933	62,800 PSI
H4895	55.0	2839	46,700 CUP	59.0	2977	52,500 CUP	IMR 4831	68.0	2741	51,000 PSI	72.5	2951	61,200 PSI
Bullet: 168 GR. HDY BTHP Dia: .308" Col: 3.340"													
H1000	79.0	2938	44,900 CUP	84.0	3110	51,000 CUP	H4350	63.0	2735	46,600 CUP	67.0	2863	53,400 CUP
IMR 7977	75.1	2948	51,400 PSI	80.8C	3186	63,200 PSI	IMR 4451	62.0	2727	52,800 PSI	67.4	2933	62,500 PSI
IMR 7828	75.0	2888	50,900 PSI	80.0C	3129	62,300 PSI	IMR 4350	65.0	2739	49,900 PSI	69.7	2959	61,500 PSI
IMR 4955	71.1	2872	51,300 PSI	75.8	3091	62,400 PSI	Bullet: 200 GR. NOS AB Dia: .308" Col: 3.340"						
H4831	72.0	2876	45,100 CUP	75.5	3023	51,400 CUP	Retumbo	73.0	2703	44,600 CUP	78.0C	2872	52,100 CUP
Hybrid 100V	65.0	2884	50,100 PSI	71.0	3128	62,900 PSI	H1000	72.0	2662	44,500 CUP	77.0C	2826	52,600 CUP
IMR 4831	70.0	2854	50,500 PSI	75.5C	3115	62,700 PSI	IMR 7977	70.4	2681	52,300 PSI	75.8C	2861	61,000 PSI
H4350	66.0	2900	45,500 CUP	70.0	3034	51,000 CUP	IMR 4955	66.2	2620	52,300 PSI	72.0C	2832	62,400 PSI
IMR 4451	64.8	2892	52,000 PSI	70.5	3114	62,500 PSI	H4831	67.0	2686	49,500 CUP	71.5C	2785	52,800 CUP
H414	64.0	2873	45,400 CUP	68.0	3014	51,700 CUP	Hybrid 100V	61.0	2561	47,200 PSI	67.0C	2821	61,400 PSI
IMR 4350	68.0	2883	50,900 PSI	72.5	3089	61,300 PSI	H4350	60.0	2576	44,400 CUP	64.4	2723	51,600 CUP
760	64.0	2873	45,400 CUP	68.0	3014	51,700 CUP	IMR 4451	58.6	2571	51,000 PSI	63.8	2791	62,900 PSI
H380	59.0	2738	44,200 CUP	63.0	2903	52,700 CUP	Bullet: 200 GR. NOS PART Dia: .308" Col: 3.340"						
Varget	54.0	2795	44,300 CUP	58.2	2964	52,900 CUP	US 869	83.0	2657	49,200 PSI	85.0	2712	51,800 PSI
IMR 4166	55.2	2808	52,300 PSI	60.0	3008	61,800 PSI	Retumbo	79.0	2798	45,700 CUP	84.0C	2962	52,300 CUP
H4895	55.0	2843	47,800 CUP	59.0	2977	52,900 CUP	H1000	74.0	2725	45,500 CUP	79.0C	2883	52,800 CUP
Bullet: 175 GR. SIE HPBT Dia: .308" Col: 3.300"							IMR 7977	71.3	2727	53,800 PSI	76.7C	2910	62,500 PSI
H1000	77.0	2820	43,100 CUP	82.0C	3008	51,800 CUP	IMR 7828	71.0	2645	48,200 PSI	76.0C	2851	58,400 PSI
IMR 7977	74.4	2914	51,100 PSI	80.0C	3131	62,900 PSI	IMR 4955	67.1	2630	51,700 PSI	73.0C	2850	63,500 PSI
NEVER EXCEED MAXIMUM LOADS							H4831	67.0	2686	47,000 CUP	72.0C	2825	53,100 CUP

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads				
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		
Hybrid 100V	61.0	2636	49,400 PSI	66.0	2820	59,400 PSI	Bullet: 168 GR. NOS E-TIP	Dia: .308" Col: 3.340"							
IMR 4831	69.0	2694	51,900 PSI	72.5C	2859	60,900 PSI	US 869	86.1	2850	50,100 PSI	94.6C	3156	63,500 PSI		
H4350	63.0	2646	47,800 CUP	66.0	2753	51,700 CUP	Returnbo	74.6	2859	48,200 PSI	82.0	3160	63,800 PSI		
IMR 4451	61.3	2648	53,700 PSI	66.7	2839	63,000 PSI	H1000	75.3	2926	53,000 PSI	82.8	3142	63,200 PSI		
IMR 4350	65.0	2700	53,900 PSI	69.5	2860	62,600 PSI	IMR 7977	70.8	2799	50,000 PSI	77.8	3074	63,000 PSI		
							IMR 7828	66.4	2770	47,400 PSI	73.0	3099	62,400 PSI		
							IMR 4955	67.3	2842	51,800 PSI	74.0	3093	63,200 PSI		
							H4831	68.3	2827	51,900 PSI	75.0	3070	63,400 PSI		
Bullet: 208 GR. HDY A-MAX	Dia: .308" Col: 3.420"						Bullet: 180 GR. SIE SPBT	Dia: .308" Col: 3.340"							
Returnbo	74.5	2717	50,300 PSI	81.0C	2915	61,300 PSI	US 869	86.0	2825	49,400 PSI	94.5C	3105	62,800 PSI		
H1000	71.7	2650	47,800 PSI	78.0C	2869	60,200 PSI	Returnbo	76.0	2853	49,200 PSI	83.0	3099	62,800 PSI		
IMR 7977	69.9	2645	50,600 PSI	75.2C	2852	61,700 PSI	H1000	75.0	2842	49,900 PSI	82.5	3090	63,000 PSI		
IMR 7828	68.0	2635	47,400 PSI	74.0C	2899	62,000 PSI	IMR 7977	74.0	2840	51,400 PSI	81.0	3077	63,700 PSI		
IMR 4955	67.1	2621	48,700 PSI	73.0C	2857	62,300 PSI	IMR 7828	71.5	2886	52,000 PSI	78.5	3112	63,000 PSI		
H4831	66.5	2671	53,200 PSI	72.3	2838	62,000 PSI	IMR 4955	69.0	2820	50,200 PSI	76.0	3069	63,300 PSI		
Hybrid 100V	61.4	2620	50,100 PSI	66.7	2831	62,400 PSI	H4831	71.1	2854	52,400 PSI	78.1	3059	62,400 PSI		
IMR 4831	63.7	2613	48,600 PSI	69.2	2832	60,500 PSI									
H4350	60.4	2655	53,600 PSI	65.7	2813	62,000 PSI									
Bullet: 220 GR. SIE RN	Dia: .308" Col: 3.340"						Bullet: 200 GR. BAR LRX BT	Dia: .308" Col: 3.340"							
US 869	82.0	2578	49,500 PSI	84.9	2661	54,400 PSI	US 869	81.4	2686	50,800 PSI	89.5	2943	63,600 PSI		
Returnbo	76.0	2646	44,400 CUP	81.0C	2810	52,400 CUP	Returnbo	69.8	2735	54,600 PSI	76.8	2906	63,000 PSI		
H1000	73.0	2588	44,500 CUP	78.0	2750	52,000 CUP	H1000	69.5	2686	52,700 PSI	76.4	2890	63,200 PSI		
IMR 7977	69.2	2526	49,100 PSI	74.5C	2751	62,000 PSI	IMR 7977	65.8	2569	50,700 PSI	72.4	2819	63,000 PSI		
IMR 7828	70.0	2541	49,600 PSI	75.0C	2760	61,700 PSI	IMR 7828	66.1	2680	52,800 PSI	72.7	2896	63,700 PSI		
IMR 4955	67.0	2546	49,100 PSI	72.9C	2738	61,600 PSI	IMR 4955	63.5	2629	53,000 PSI	68.5	2807	63,300 PSI		
H4831	66.0	2533	44,900 CUP	71.0	2685	53,100 CUP	H4831	66.0	2685	55,300 PSI	71.0	2833	63,300 PSI		
Hybrid 100V	61.0	2474	48,800 PSI	67.0C	2694	62,300 PSI									
IMR 4831	66.0	2531	51,000 PSI	71.0	2718	61,600 PSI									
H4350	61.0	2501	46,100 CUP	65.0	2622	52,300 CUP									
Bullet: 230 GR. BERTACT	Dia: .308" Col: 3.395"						Bullet: 210 GR. NOS ABLR	Dia: .308" Col: 3.340"							
US 869	77.7	2423	41,700 PSI	83.5C	2610	50,200 PSI	US 869	83.4	2621	47,400 PSI	91.7C	2885	60,100 PSI		
Returnbo	71.6	2520	44,700 PSI	77.0C	2714	55,200 PSI	Returnbo	73.1	2685	51,700 PSI	80.3	2909	63,500 PSI		
H1000	69.1	2471	44,200 PSI	76.0C	2721	58,200 PSI	H1000	66.2	2479	42,900 PSI	78.7	2864	62,500 PSI		
IMR 7977	68.2	2543	53,400 PSI	73.4C	2724	62,900 PSI	IMR 7977	71.3	2614	49,800 PSI	76.7	2852	62,700 PSI		
IMR 7828	66.7	2507	46,200 PSI	72.6C	2774	61,300 PSI	IMR 7828	67.9	2645	50,900 PSI	74.6	2883	63,400 PSI		
IMR 4955	64.2	2495	50,000 PSI	69.8C	2701	62,900 PSI									
H4831	64.1	2527	50,800 PSI	70.3	2710	61,200 PSI									
Hybrid 100V	69.6	2467	44,800 PSI	75.0C	2661	55,200 PSI									
IMR 4831	62.9	2553	51,500 PSI	68.7	2739	61,600 PSI									
30 NOSLER															
Case: Nosler				Twist: 1:10"											
Barrel: 24"	Trim: 2.556"		Primer: Winchester LRM, Large Rifle Magnum												
Bullet: 130 GR. BAR TSX BT	Dia: .308" Col: 3.340"						Bullet: 220 GR. HDY ELD-X	Dia: .308" Col: 3.340"							
Returnbo	83.7	3246	48,400 PSI	93.0C	3565	63,500 PSI	US 869	82.3	2596	49,200 PSI	90.5	2855	62,600 PSI		
H1000	84.7	3232	47,300 PSI	94.1C	3559	62,700 PSI	Returnbo	70.7	2618	52,600 PSI	77.7C	2809	62,900 PSI		
IMR 7977	80.9	3204	47,500 PSI	89.9C	3576	63,700 PSI	H1000	70.1	2618	54,000 PSI	77.1	2795	63,800 PSI		
IMR 7828	79.2	3277	49,900 PSI	87.0	3582	63,200 PSI	IMR 7977	69.2	2573	52,700 PSI	76.0	2784	63,800 PSI		
IMR 4955	77.6	3263	49,000 PSI	85.3	3567	63,400 PSI	IMR 7828	65.8	2582	52,100 PSI	72.3	2788	63,900 PSI		
H4831	78.9	3234	49,300 PSI	87.7	3527	63,500 PSI									
Bullet: 150 GR. SIE SPBT	Dia: .308" Col: 3.340"						Bullet: 230 GR. BERTACT	Dia: .308" Col: 3.340"							
Returnbo	80.3	3054	47,800 PSI	88.2	3336	62,000 PSI	US 869	82.8	2581	48,600 PSI	90.0C	2812	60,800 PSI		
H1000	80.4	3102	51,600 PSI	88.2	3343	63,500 PSI	Returnbo	71.5	2508	45,400 PSI	78.6	2784	62,300 PSI		
IMR 7977	77.2	3035	50,300 PSI	84.7	3322	63,000 PSI	H1000	70.1	2539	49,900 PSI	77.0	2748	62,500 PSI		
IMR 7828	75.0	3092	51,000 PSI	82.4	3370	63,500 PSI	IMR 7977	68.8	2481	48,400 PSI	75.7	2746	63,600 PSI		
IMR 4955	73.5	3045	49,700 PSI	80.8	3329	63,000 PSI	IMR 7828	66.4	2552	50,900 PSI	73.0	2761	63,200 PSI		
H4831	75.5	3046	50,400 PSI	83.0	3307	63,600 PSI									
Bullet: 165 GR. SFT SP	Dia: .308" Col: 3.340"						300 WEATHERBY MAGNUM								
US 869	87.8	2851	46,700 PSI	96.5C	3203	63,300 PSI	Case: Remington				Twist: 1:10"				
Returnbo	79.1	2927	47,200 PSI	86.9C	3236	63,500 PSI	Barrel: 24"	Trim: 2.810"		Primer: Federal 215M, Large Rifle Magnum Match					
H1000	79.0	2925	48,800 PSI	86.8	3216	63,300 PSI	Bullet: 125 GR. SIE SP	Dia: .308" Col: 3.475"							
IMR 7977	76.2	2890	48,600 PSI	83.4	3189	63,100 PSI	IMR 7828	83.0	3333	45,600 CUP	89.0C*	3550	53,200 CUP		
IMR 7828	74.0	2955	50,300 PSI	81.0	3243	63,600 PSI	IMR 4955	82.2	3372	46,700 CUP	88.4	3611	54,000 CUP		
IMR 4955	72.5	2970	52,800 PSI	79.1	3185	63,600 PSI	H4831	84.0	3322	46,000 CUP	90.0C	3527	53,100 CUP		
H4831	73.0	2912	50,900 PSI	80.3	3160	63,100 PSI	IMR 4831	79.0	3366	47,000 CUP	85.0C	3573	53,500 CUP		
							H4350	77.0	3347	46,300 CUP	82.5	3547	53,200 CUP		
							H414	73.0	3321	46,600 CUP	78.5	3518	53,900 CUP		
							IMR 4350	77.0	3397	46,100 CUP	82.5	3590	53,300 CUP		
							760	73.0	3321	46,600 CUP	78.5	3518	53,900 CUP		
							H380	70.0	3215	46,900 CUP	75.5	3428	53,300 CUP		
							Varget	65.0	3386	49,500 CUP	69.0	3492	53,700 CUP		
							IMR 4064	65.0	3311	48,800 CUP	69.4	3471	53,700 CUP		
							Bullet: 130 GR. BAR XLC BT	Dia: .308" Col: 3.500"							
							H4831	84.0	3306	46,200 CUP	89.5C	3467	53,000 CUP		
							H4350	78.0	3287	46,300 CUP	83.0	3485	52,800 CUP		
							H414	75.0	3238	45,300 CUP	80.0	3446	53,100 CUP		

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads									
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure							
760	75.0	3238	45,300 CUP	80.0	3446	53,100 CUP	H380	61.0	2640	46,500 CUP	66.5	2826	53,800 CUP							
H380	71.0	2331	46,700 CUP	76.0	3410	54,100 CUP	Bullet: 180 GR. SPR BTSP Dia: .308" Col: 3.560"													
Bullet: 150 GR. BARTSX Dia: .308" Col: 3.570"							H1000	83.0	2971	43,800 CUP	88.5C	3151	53,500 CUP							
H1000	83.0	3056	43,500 CUP	88.0C	3220	49,900 CUP	IMR 7977	80.9	2866	44,300 CUP	87.0C	3098	53,200 CUP							
IMR 7977	83.6	3064	44,400 CUP	89.9C	3302	52,200 CUP	IMR 7828	75.0	2583	47,000 CUP	80.5	3064	53,400 CUP							
IMR 7828 SSC	79.0	3146	45,600 CUP	86.5C*	3400	54,200 CUP	IMR 4955	74.4	2915	45,700 CUP	80.9	3149	54,500 CUP							
IMR 4955	77.0	3131	46,600 CUP	82.9	3368	54,400 CUP	H4831	76.0	2910	45,300 CUP	81.5	3096	54,000 CUP							
H4831	77.0	3031	45,200 CUP	84.0C	3275	52,900 CUP	Hybrid 100V	70.0	2954	46,100 CUP	77.0	3171	54,600 CUP							
Hybrid 100V	70.0	3103	42,500 CUP	76.5	3310	49,100 CUP	IMR 4831	70.0	2835	47,100 CUP	75.5	2997	53,500 CUP							
IMR 4831	76.0	3154	46,400 CUP	82.7C	3437	54,100 CUP	H4350	69.0	2876	44,600 CUP	73.5	3022	54,000 CUP							
H4350	70.0	3084	44,700 CUP	76.5	3310	53,800 CUP	IMR 4451	69.0	2831	46,500 CUP	75.0	3041	53,900 CUP							
IMR 4451	71.3	3035	44,400 CUP	77.6	3298	53,400 CUP	H414	67.0	2825	45,600 CUP	71.5	2984	53,000 CUP							
H414	67.0	3007	44,400 CUP	72.5	3201	53,000 CUP	IMR 4350	68.0	2865	46,200 CUP	72.6	3018	53,000 CUP							
IMR 4350	73.0	3151	45,400 CUP	79.5	3396	54,300 CUP	760	67.0	2825	45,600 CUP	71.5	2984	53,000 CUP							
H380	63.0	2908	44,200 CUP	69.5	3142	53,800 CUP	H380	62.0	2734	45,000 CUP	67.0	2896	54,000 CUP							
Varget	59.0	2935	42,200 CUP	64.5	3155	54,000 CUP	Bullet: 180 GR. WIN FS Dia: .308" Col: 3.560"													
IMR 4064	62.0	3045	44,200 CUP	67.0	3244	51,900 CUP	H1000	78.0	2921	47,800 CUP	83.0C	3111	54,600 CUP							
IMR 4895	61.0	3011	44,000 CUP	66.0	3214	53,100 CUP	H4831	74.0	2892	50,200 CUP	79.0	3013	54,600 CUP							
H4895	57.0	2926	42,200 CUP	61.5	3112	54,100 CUP	H4350	67.0	2813	46,500 CUP	72.0	2974	54,600 CUP							
Trail Boss	19.0	1334	20,300 CUP	27.5	1656	28,900 CUP	Bullet: 200 GR. NOS AB Dia: .308" Col: 3.590													
Bullet: 165 GR. NOS BT Dia: .308" Col: 3.560"							Returnbo	79.0	2753	45,800 CUP	84.5C	2942	53,100 CUP							
H1000	84.0	3014	45,600 CUP	89.7C	3216	54,200 CUP	H1000	77.0	2709	45,800 CUP	83.0C	2884	53,700 CUP							
IMR 7977	81.8	2908	43,600 CUP	88.0C	3153	52,800 CUP	IMR 7977	78.1	2720	44,900 CUP	84.0C	2939	53,600 CUP							
IMR 7828	77.0	2957	46,800 CUP	82.0	3145	53,400 CUP	IMR 4955	70.4	2734	46,900 CUP	75.8	2904	53,800 CUP							
IMR 4955	74.7	2983	45,800 CUP	80.3	3188	53,600 CUP	H4831	70.0	2702	49,300 CUP	75.0	2839	54,400 CUP							
H4831	75.0	2934	46,400 CUP	80.2	3113	54,000 CUP	Hybrid 100V	68.0	2737	45,900 CUP	73.5	2940	54,000 CUP							
Hybrid 100V	71.0	2995	45,400 CUP	78.0	3236	53,800 CUP	IMR 4451	66.5	2634	46,700 CUP	72.3	2857	54,200 CUP							
IMR 4831	73.0	2981	46,600 CUP	78.0	3175	54,100 CUP	Bullet: 200 GR. SFT Dia: .308" Col: 3.510"													
H4350	69.0	2908	45,400 CUP	74.0	3074	54,100 CUP	Returnbo	80.0	2764	46,100 CUP	85.5C	2981	54,400 CUP							
IMR 4451	69.9	2866	44,200 CUP	76.0	3148	54,000 CUP	H1000	79.0	2766	43,200 CUP	85.0C	2963	53,400 CUP							
H414	65.0	2892	48,200 CUP	70.0	3034	53,700 CUP	IMR 7977	80.2	2707	43,700 CUP	85.8C	2961	54,000 CUP							
IMR 4350	70.0	2973	46,900 CUP	75.0	3143	53,400 CUP	IMR 7828	73.0	2693	48,100 CUP	78.3	2872	53,800 CUP							
760	65.0	2892	48,200 CUP	70.0	3034	53,700 CUP	IMR 4955	71.8	2732	45,600 CUP	77.3	2929	54,100 CUP							
H380	63.0	2787	46,300 CUP	67.5	2950	53,700 CUP	H4831	72.0	2708	44,700 CUP	77.5	2869	52,900 CUP							
Varget	58.0	2873	46,300 CUP	62.0	3033	54,200 CUP	Hybrid 100V	67.0	2699	44,900 CUP	73.0	2906	53,200 CUP							
H4895	58.0	2871	48,000 CUP	62.5	3028	54,200 CUP	IMR 4831	68.0	2641	45,800 CUP	73.0	2806	53,400 CUP							
Bullet: 168 GR. NOS E-TIP Dia: .308" Col: 3.590"							H4350	66.0	2706	45,800 CUP	71.0	2866	54,300 CUP							
H1000	82.0	2959	44,100 CUP	88.0C	3197	53,700 CUP	IMR 4451	67.6	2642	45,700 CUP	73.5	2860	54,100 CUP							
IMR 7977	81.3	2924	45,800 CUP	86.5C	3135	53,700 CUP	IMR 4350	66.0	2680	46,000 CUP	70.5	2807	52,800 CUP							
IMR 7828 SSC	78.0	2956	46,700 CUP	84.0C*	3205	54,200 CUP	Bullet: 220 GR. HDY RN Dia: .308" Col: 3.565"													
IMR 4955	74.2	2940	46,400 CUP	79.8	3188	54,200 CUP	Returnbo	79.0	2679	45,900 CUP	84.0C	2853	54,000 CUP							
H4831	74.0	2865	43,700 CUP	81.0C	3107	54,200 CUP	H1000	77.0	2670	45,100 CUP	82.5	2833	53,400 CUP							
Hybrid 100V	68.0	2923	45,000 CUP	74.0	3150	53,700 CUP	IMR 7977	77.6	2601	42,800 CUP	83.0C	2815	53,900 CUP							
IMR 4831	71.0	2907	45,800 CUP	77.5	3158	54,000 CUP	IMR 7828	70.0	2569	47,200 CUP	75.3	2739	54,100 CUP							
H4350	66.0	2898	46,900 CUP	72.5	3099	53,800 CUP	IMR 4955	66.8	2539	44,500 CUP	74.0	2757	54,100 CUP							
IMR 4451	70.2	2879	47,200 CUP	75.5	3118	54,600 CUP	H4831	71.0	2630	47,200 CUP	75.7	2766	54,500 CUP							
H414	62.0	2750	44,300 CUP	69.0	2994	53,900 CUP	Hybrid 100V	65.0	2579	45,100 CUP	71.0	2762	53,900 CUP							
IMR 4350	70.0	2911	45,300 CUP	76.0	3164	54,300 CUP	IMR 4831	65.0	2529	46,000 CUP	70.0	2657	53,600 CUP							
760	62.0	2750	44,300 CUP	69.0	2994	53,900 CUP	H4350	66.0	2599	45,900 CUP	70.0	2725	53,800 CUP							
H380	63.0	2752	45,700 CUP	68.0	2929	53,800 CUP	IMR 4451	64.3	2501	46,200 CUP	70.7	2710	54,500 CUP							
Varget	59.0	2854	48,000 CUP	63.5	2999	53,800 CUP	IMR 4350	63.0	2517	46,300 CUP	67.7	2700	53,500 CUP							
H4895	55.0	2773	47,000 CUP	60.0	2968	54,500 CUP	300 REMINGTON ULTRA MAG													
Bullet: 180 GR. NOS E-TIP Dia: .308" Col: 3.590"							Case: Remington Twist: 1:10"													
H1000	79.0	2861	46,300 CUP	85.0C	3054	53,900 CUP	Barrel: 24" Trim: 2.840" Primer: Remington 9 1/2M, Large Rifle Magnum													
IMR 7977	79.7	2832	45,900 CUP	85.8C	3035	53,800 CUP	Bullet: 130 GR. BAR XLC BT Dia: .308" Col: 3.550"													
IMR 7828 SSC	75.0	2851	46,700 CUP	81.0	3076	53,900 CUP	H1000	100.0	3349	50,900 PSI	107.0C	3615	63,500 PSI							
IMR 4955	71.8	2826	46,600 CUP	77.3	3023	53,600 CUP	H4831	93.0	3330	51,200 PSI	99.5	3579	62,800 PSI							
H4831	71.0	2772	46,700 CUP	78.0	2977	53,300 CUP	H4350	87.0	3436	54,000 PSI	93.0	3638	63,000 PSI							
Hybrid 100V	66.0	2802	44,600 CUP	72.5	3046	53,700 CUP	Bullet: 140 GR. BAR XBT Dia: .308" Col: 3.555"													
IMR 4831	69.0	2804	46,300 CUP	75.0	3021	53,700 CUP	Returnbo	97.0	3282	52,100 PSI	103.5C	3493	61,400 PSI							
H4350	64.0	2783	47,100 CUP	70.0	2968	54,100 CUP	H1000	95.0	3326	56,900 PSI	101.0	3470	63,100 PSI							
IMR 4451	67.7	2751	46,900 CUP	73.6	2985	54,100 CUP	H4831	87.0	3258	55,100 PSI	93.0	3447	63,600 PSI							
H414	61.0	2691	48,500 CUP	67.0	2893	54,600 CUP	NEVER EXCEED MAXIMUM LOADS													
IMR 4350	67.0	2781	44,800 CUP	73.0	3008	53,300 CUP	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.													
760	61.0	2691	48,500 CUP	67.0	2893	54,600 CUP	125													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Bullet: 150 GR. SIE SPBT Dia: .308" Col: 3.530"													
Returnbo	100.0	3343	52,600 PSI	106.0C	3531	60,800 PSI	H1000	83.0	2704	54,500 PSI	89.0	2863	63,500 PSI
H1000	98.0	3258	53,100 PSI	102.0	3457	62,900 PSI	IMR 7977	81.6	2689	54,200 PSI	87.2	2824	60,700 PSI
IMR 7977	95.5	3238	51,100 PSI	101.7	3515	63,700 PSI	IMR 7828	77.5	2600	53,400 PSI	82.5	2774	63,200 PSI
IMR 7828	86.5	3105	52,100 PSI	92.0	3319	63,000 PSI	30-378 WEATHERBY						
H4831	90.0	3243	55,100 PSI	94.0	3408	62,900 PSI	Case: Weatherby			Twist: 1:10"			
IMR 4831	85.0	3207	50,600 PSI	90.5	3380	63,700 PSI	Barrel: 26" Trim: 2.903" Primer: Federal 215 M, Large Rifle			Magnum Match			
IMR 4350	81.5	3147	53,200 PSI	86.7	3362	63,500 PSI	Bullet: 150 GR. SIE SPBT Dia: .308" Col: 3.600"						
Returnbo	97.0	3241	54,200 PSI	103.0C	3414	62,300 PSI	Returnbo	113.0	3490	44,900 CUP	119.0C	3690	52,400 CUP
H1000	94.0	3135	53,300 PSI	98.0	3321	62,500 PSI	H1000	110.0	3464	46,000 CUP	114.0	3598	52,400 CUP
IMR 7977	92.3	3074	49,600 PSI	98.8	3360	63,600 PSI	IMR 7977	105.9	3362	46,200 CUP	111.5	3606	54,700 CUP
IMR 7828	84.5	2985	54,300 PSI	90.0	3178	63,200 PSI	IMR 7828	97.0	3373	46,100 CUP	103.0	3573	52,700 CUP
H4831	85.0	3057	52,300 PSI	90.0	3255	62,100 PSI	H4831	100.0	3449	49,100 CUP	104.0	3555	53,900 CUP
IMR 4831	80.0	2951	51,100 PSI	87.0	3215	62,900 PSI	IMR 4831	94.0	3342	44,300 CUP	99.5	3558	53,500 CUP
IMR 4350	78.0	2985	52,800 PSI	83.0	3181	63,100 PSI	Bullet: 165 GR. SFT SP Dia: .308" Col: 3.600"						
Bullet: 180 GR. BAR TTSX BT Col: 3.600" Dia: .308"													
US 869	98.0	2861	47,000 PSI	107.0	3155	58,700 PSI	US 869	121.0	3325	41,100 CUP	123.5	3423	47,800 CUP
H50BMG	97.0	2977	55,800 PSI	103.5C	3101	62,000 PSI	Returnbo	109.0	3305	42,800 CUP	116.0C	3559	53,400 CUP
Returnbo	86.0	2973	53,200 PSI	92.0	3159	62,600 PSI	H1000	106.0	3285	45,500 CUP	112.0	3495	55,000 CUP
H1000	81.5	2890	53,900 PSI	89.0	3083	60,600 PSI	IMR 7977	103.0	3169	44,900 CUP	109.0	3451	54,300 CUP
IMR 7977	88.5	3022	56,400 PSI	94.3	3193	63,600 PSI	IMR 7828	95.0	3244	47,600 CUP	101.0	3412	53,000 CUP
IMR 7828 SSC	78.0	2938	55,800 PSI	84.0	3110	63,600 PSI	H4831	95.0	3202	46,600 CUP	100.5	3391	53,800 CUP
H4831	77.0	2956	57,400 PSI	83.0	3098	63,300 PSI	IMR 4831	92.5	3232	47,200 CUP	98.0	3417	53,400 CUP
IMR 4831	75.0	2906	54,500 PSI	80.5	3081	63,000 PSI	Bullet: 168 GR. NOS E-TIP Dia: .308" Col: 3.740"						
IMR 4350	73.5	2915	55,200 PSI	78.5	3084	63,600 PSI	US 869	109.8	3027	38,000 CUP	122.0	3416	50,400 CUP
Bullet: 180 GR. SPR SPBT Dia: .308" Col: 3.530"													
US 869	104.0	2994	53,800 PSI	107.0	3070	57,300 PSI	Returnbo	98.0	3127	43,500 CUP	109.0C	3444	51,600 CUP
H50BMG	103.0	3005	53,700 PSI	108.0C	3159	62,100 PSI	H1000	97.5	3094	43,800 CUP	106.0	3341	53,400 CUP
Returnbo	94.0	3182	58,400 PSI	100.5C	3300	62,400 PSI	IMR 7977	102.0	3139	45,900 CUP	107.8	3384	53,900 CUP
H1000	91.0	3018	52,300 PSI	96.0	3218	62,800 PSI	IMR 7828 SSC	94.8	3111	43,100 CUP	103.0	3410	53,700 CUP
IMR 7977	91.0	3007	51,100 PSI	96.4	3224	62,800 PSI	H4831	93.0	3152	46,400 CUP	101.0	3341	52,400 CUP
IMR 7828	81.0	2869	52,000 PSI	86.5	3069	63,200 PSI	IMR 4831	91.2	3201	47,400 CUP	97.0	3395	54,400 CUP
H4831	84.0	2997	54,000 PSI	89.0	3167	62,500 PSI	Bullet: 180 GR. NOS E-TIP Dia: .308" Col: 3.740"						
IMR 4831	78.0	2907	53,700 PSI	83.0	3075	63,200 PSI	US 869	106.0	2964	40,300 CUP	118.0	3305	50,200 CUP
IMR 4350	76.0	2869	51,800 PSI	81.0	3071	63,200 PSI	H50BMG	105.3	2958	41,700 CUP	117.0	3237	50,400 CUP
Bullet: 190 GR. HDY SPBT Dia: .308" Col: 3.555"													
US 869	100.0	2905	52,600 PSI	104.0	3035	59,200 PSI	Returnbo	96.5	3087	46,000 CUP	106.0C	3336	53,900 CUP
H50BMG	100.0	2938	54,900 PSI	105.0C	3085	63,000 PSI	H1000	95.7	3033	45,100 CUP	104.0	3282	52,600 CUP
Returnbo	90.0	3069	56,500 PSI	96.0	3204	62,500 PSI	IMR 7977	100.0	3063	47,600 CUP	105.5	3282	54,900 CUP
H1000	88.0	2971	54,900 PSI	93.0	3130	63,500 PSI	IMR 7828 SSC	92.1	3026	43,900 CUP	98.0	3222	50,700 CUP
IMR 7977	87.6	2898	51,700 PSI	93.2	3119	62,600 PSI	H4831	92.1	3092	46,700 CUP	98.0	3222	52,600 CUP
IMR 7828	80.5	2802	51,700 PSI	85.5	2985	62,000 PSI	IMR 4831	89.3	3133	50,600 CUP	95.0	3282	54,200 CUP
H4831	80.0	2892	53,000 PSI	85.0	3069	62,500 PSI	Bullet: 180 GR. SPR SPBT Dia: .308" Col: 3.600"						
IMR 4831	77.0	2849	54,300 PSI	82.5	3013	63,900 PSI	US 869	115.0	3101	40,800 CUP	120.0	3302	47,100 CUP
IMR 4350	75.0	2804	51,800 PSI	80.0	3001	63,100 PSI	H50BMG	116.0	3089	40,400 CUP	120.0C	3229	47,100 CUP
Bullet: 200 GR. BAR XFB Dia: .308" Col: 3.555"													
US 869	96.0	2834	58,000 PSI	100.0	2919	61,800 PSI	Returnbo	107.0	3228	43,200 CUP	113.0C	3460	54,700 CUP
H50BMG	92.0	2767	56,100 PSI	98.0C	2910	63,100 PSI	H1000	105.0	3213	45,200 CUP	111.0	3412	54,300 CUP
Returnbo	81.0	2852	56,200 PSI	86.0	2988	62,800 PSI	IMR 7977	102.0	3145	46,900 CUP	107.5	3357	55,000 CUP
H1000	80.0	2767	57,400 PSI	83.0	2850	62,800 PSI	IMR 7828	92.5	3156	48,300 CUP	98.0	3284	52,400 CUP
Bullet: 200 GR. NOS AB Dia: .308" Col: 3.600"													
H50BMG	96.0	2762	49,700 PSI	102.0C	2950	58,900 PSI	H4831	94.0	3134	46,600 CUP	100.0	3301	54,500 CUP
Returnbo	89.0	2904	56,400 PSI	95.5C	3048	62,400 PSI	IMR 4831	90.5	3120	44,400 CUP	96.0	3292	53,800 CUP
H1000	87.0	2839	56,000 PSI	92.5	2975	62,800 PSI	Bullet: 190 GR. HDY SPBT Dia: .308" Col: 3.625"						
IMR 7977	84.5	2800	51,700 PSI	90.9	3022	62,800 PSI	US 869	115.0	3146	44,100 CUP	120.0	3331	49,800 CUP
IMR 7828	77.0	2670	51,200 PSI	82.0	2857	61,800 PSI	H50BMG	115.0	3113	45,700 CUP	120.0C	3243	50,900 CUP
H4831	79.0	2787	54,700 PSI	85.0	2953	63,600 PSI	Returnbo	105.0	3154	43,600 CUP	111.5C	3374	54,500 CUP
Bullet: 220 GR. NOS PART Dia: .308" Col: 3.530"													
US 869	97.0	2758	49,500 PSI	101.0	2875	55,200 PSI	H1000	102.0	3154	46,500 CUP	108.0	3316	54,800 CUP
H50BMG	95.0	2699	54,000 PSI	100.5C	2850	62,500 PSI	IMR 7977	99.0	3014	44,900 CUP	104.5	3258	53,800 CUP
Returnbo	84.0	2800	56,600 PSI	89.0	2905	61,900 PSI	IMR 7828	92.0	3104	49,600 CUP	97.5	3220	52,800 CUP
Bullet: 200 GR. BAR XFB Dia: .308" Col: 3.645"													
US 869	115.0	3134	49,800 CUP	118.0	3206	52,500 CUP	Bullet: 200 GR. NOS AB Dia: .308" Col: 3.650"						
H50BMG	111.0	3134	52,300 CUP	117.0C	3227	54,800 CUP	H50BMG	106.0	2958	43,700 CUP	113.0C	3142	49,600 CUP
IMR 7828	89.0	2935	52,000 CUP	94.5	3053	55,000 CUP	Returnbo	98.0	2992	44,900 CUP	105.0C	3209	52,600 CUP

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
H1000	95.0	2966	46,100 CUP	101.5	3130	53,800 CUP	IMR 4451	45.6	2397	36,800 CUP	49.6C	2590	43,300 CUP
IMR 7977	97.8	2921	45,100 CUP	104.0	3176	54,400 CUP	H414	43.0	2302	35,200 CUP	46.0	2447	41,000 CUP
IMR 7828	90.0	2968	45,400 CUP	96.0	3156	54,400 CUP	760	43.0	2302	35,200 CUP	46.0	2447	41,000 CUP
Bullet: 220 GR. NOS PART Dia: .308" Col: 3.600"													
US 869	114.5	3068	49,500 CUP	117.0	3134	51,400 CUP	CFE 223	37.5	2345	40,500 PSI	40.4	2470	46,500 PSI
H50BMG	115.0	3047	48,300 CUP	118.5C	3145	53,700 CUP	Varget	38.0	2345	38,800 CUP	42.0	2509	43,800 CUP
Retumbo	101.0	2954	44,700 CUP	107.5	3155	55,000 CUP	IMR 4166	39.1	2391	38,600 CUP	42.6	2554	43,100 CUP
H1000	99.0	2965	47,800 CUP	104.0	3084	53,700 CUP	BL-C(2)	43.0	2442	36,400 CUP	46.5	2616	42,900 CUP
IMR 7977	96.0	2802	47,200 CUP	101.5	2988	53,800 CUP	H335	36.0	2340	38,600 CUP	39.5	2503	43,400 CUP
IMR 7828	85.5	2788	46,400 CUP	91.0	2930	52,600 CUP	H4895	34.0	2262	38,800 CUP	38.0	2446	43,600 CUP
Bullet: 180 GR. SIE SP Dia: .311" Col: 3.075"													
Hybrid 100V	42.0	2232	36,200 CUP	46.0C	2384	41,700 CUP	IMR 4451	45.2	2361	37,300 CUP	49.2C	2556	43,900 CUP
H4350	44.0	2295	35,700 CUP	48.0C	2500	43,800 CUP	H414	42.0	2231	35,400 CUP	46.0	2435	42,500 CUP
IMR 4451	45.2	2361	37,300 CUP	49.2C	2556	43,900 CUP	760	42.0	2231	35,400 CUP	46.0	2435	42,500 CUP
H414	42.0	2231	35,400 CUP	46.0	2435	42,500 CUP	CFE 223	37.5	2262	39,600 PSI	40.4	2394	45,200 PSI
760	42.0	2231	35,400 CUP	46.0	2435	42,500 CUP	Varget	37.0	2282	38,200 CUP	41.0	2440	43,400 CUP
CFE 223	37.5	2262	39,600 PSI	40.4	2394	45,200 PSI	IMR 4064				41.1	2400	45,700 PSI
Varget	37.0	2282	38,200 CUP	41.0	2440	43,400 CUP	IMR 4166	37.5	2265	34,900 CUP	40.8	2453	42,300 CUP
IMR 4064				41.1	2400	45,700 PSI	BL-C(2)	41.0	2395	37,100 CUP	45.0	2563	43,000 CUP
IMR 4166	37.5	2265	34,900 CUP	40.8	2453	42,300 CUP	IMR 4895				41.0	2399	46,100 PSI
BL-C(2)	41.0	2395	37,100 CUP	45.0	2563	43,000 CUP	H335	36.0	2286	36,400 CUP	39.0	2449	42,700 CUP
IMR 4895				41.0	2399	46,100 PSI	H4895	34.0	2178	35,200 CUP	38.0	2400	43,500 CUP
H335	36.0	2286	36,400 CUP	39.0	2449	42,700 CUP	IMR 8208 XBR	31.0	2108	34,900 CUP	35.0	2325	43,300 CUP
H4895	34.0	2178	35,200 CUP	38.0	2400	43,500 CUP	IMR 3031				38.3	2341	46,500 PSI
IMR 8208 XBR	31.0	2108	34,900 CUP	35.0	2325	43,300 CUP							
IMR 3031				38.3	2341	46,500 PSI							
32 WINCHESTER SPECIAL													
Case: Winchester						Twist: 1:16"							
Barrel: 20"						Trim: 2.030" Primer: CCI 200, Large Rifle							
Bullet: 165 GR. HDY FTX Dia: .321" Col: 2.565"													
CFE 223	34.4	2140	28,900 CUP	37.4	2330	36,300 CUP	CFE 223	34.4	2140	28,900 CUP	37.4	2330	36,300 CUP
Varget	31.8	2084	29,700 CUP	34.6	2290	35,500 CUP	Varget	31.8	2084	29,700 CUP	34.6	2290	35,500 CUP
IMR 4320	31.1	1968	30,400 CUP	33.9	2161	36,700 CUP	IMR 4320	31.1	1968	30,400 CUP	33.9	2161	36,700 CUP
IMR 4064	30.8	2017	28,600 CUP	33.5	2209	35,800 CUP	IMR 4064	30.8	2017	28,600 CUP	33.5	2209	35,800 CUP
748	32.8	2080	30,400 CUP	35.7	2243	36,300 CUP	748	32.8	2080	30,400 CUP	35.7	2243	36,300 CUP
BL-C(2)	33.8	2024	28,100 CUP	36.9	2212	36,400 CUP	BL-C(2)	33.8	2024	28,100 CUP	36.9	2212	36,400 CUP
IMR 4895	30.7	2030	31,900 CUP	33.4	2198	36,400 CUP	IMR 4895	30.7	2030	31,900 CUP	33.4	2198	36,400 CUP
H335	29.3	1976	32,500 CUP	32.0	2141	36,600 CUP	H335	29.3	1976	32,500 CUP	32.0	2141	36,600 CUP
H4895	30.6	2147	31,300 CUP	33.3	2315	36,200 CUP	H4895	30.6	2147	31,300 CUP	33.3	2315	36,200 CUP
IMR 8208 XBR	30.2	2118	32,500 CUP	32.8	2290	36,500 CUP	IMR 8208 XBR	30.2	2118	32,500 CUP	32.8	2290	36,500 CUP
IMR 3031	27.8	1954	29,400 CUP	30.3	2153	36,600 CUP	IMR 3031	27.8	1954	29,400 CUP	30.3	2153	36,600 CUP
Benchmark	27.2	2020	31,100 CUP	29.6	2162	36,800 CUP	Benchmark	27.2	2020	31,100 CUP	29.6	2162	36,800 CUP
Bullet: 170 GR. HDY JFP Dia: .321" Col: 2.565"													
CFE 223	35.4	2209	31,700 CUP	38.5	2359	36,600 CUP	CFE 223	35.4	2209	31,700 CUP	38.5	2359	36,600 CUP
Varget	34.0	2096	30,800 CUP	37.0C	2271	36,400 CUP	Varget	34.0	2096	30,800 CUP	37.0C	2271	36,400 CUP
IMR 4320	31.8	2021	31,500 CUP	34.6	2182	35,900 CUP	IMR 4320	31.8	2021	31,500 CUP	34.6	2182	35,900 CUP
IMR 4064	32.3	2087	30,200 CUP	35.1	2267	36,100 CUP	IMR 4064	32.3	2087	30,200 CUP	35.1	2267	36,100 CUP
748				36.2	2240	32,500 CUP	748				36.2	2240	32,500 CUP
BL-C(2)	35.0	2152	31,300 CUP	37.0	2226	35,300 CUP	BL-C(2)	35.0	2152	31,300 CUP	37.0	2226	35,300 CUP
IMR 4895	31.3	2041	30,800 CUP	34.1	2217	35,800 CUP	IMR 4895	31.3	2041	30,800 CUP	34.1	2217	35,800 CUP
H335	30.0	2021	29,700 CUP	32.0	2144	36,200 CUP	H335	30.0	2021	29,700 CUP	32.0	2144	36,200 CUP
H4895	32.0	2122	30,800 CUP	34.5	2283	36,100 CUP	H4895	32.0	2122	30,800 CUP	34.5	2283	36,100 CUP
IMR 8208 XBR	30.7	2126	30,400 CUP	33.4	2307	36,200 CUP	IMR 8208 XBR	30.7	2126	30,400 CUP	33.4	2307	36,200 CUP
IMR 3031	29.0	2000	29,000 CUP	31.6	2220	35,700 CUP	IMR 3031	29.0	2000	29,000 CUP	31.6	2220	35,700 CUP
Benchmark	30.0	2005	29,900 CUP	32.5	2175	36,600 CUP	Benchmark	30.0	2005	29,900 CUP	32.5	2175	36,600 CUP
H322	30.0	2111	32,100 CUP	32.3	2263	36,800 CUP	H322	30.0	2111	32,100 CUP	32.3	2263	36,800 CUP
32-40 WINCHESTER													
Case: Winchester						Twist: 1:16"							
Barrel: 24"						Trim: 2.120" Primer: Remington 2 1/2, Large Pistol							
Bullet: 196 GR. HOCH Dia: .324" Col: 2.555"													
H4227				13.0	1367	18,000 CUP	H4227				13.0	1367	18,000 CUP
H110				12.0	1376	19,200 CUP	H110				12.0	1376	19,200 CUP
Li'l'Gun				9.3	1237	19,600 CUP	Li'l'Gun				9.3	1237	19,600 CUP
Trail Boss	5.0	833	12,500 CUP	6.0	935	25,300 CUP	Trail Boss	5.0	833	12,500 CUP	6.0	935	25,300 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads			
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure	
Bullet: 202 GR. POPE				Dia: .324"		Col: 2.555"		Benchmark	41.0	2397	37,100 CUP	46.6	2679	49,100 CUP
H4227				14.0	1376	15,900 CUP								
H110				13.0	1386	17,900 CUP								
Lil'Gun				9.5	1264	20,100 CUP								
Bullet: 204 GR. MILLER				Dia: .324"		Col: 2.555"								
H4227				13.5	1367	16,300 CUP								
H110				13.0	1369	17,900 CUP								
Lil'Gun				10.8	1310	20,100 CUP								
8 x 57MM MAUSER														
Case: Remington				Twist: 1:9.5"										
Barrel: 24" Trim: 2.230" Primer: Remington 9 1/2, Large Rifle														
Bullet: 125 GR. HDY SP				Dia: .323"		Col: 2.880"								
CFE 223	55.0	2798	31,400 CUP	57.0	2964	34,400 CUP								
Varget	47.0	2730	36,600 CUP	54.0	3092	48,100 CUP								
IMR 4320	45.5	2621	36,400 CUP	52.5	2979	48,100 CUP								
IMR 4064	46.0	2736	34,300 CUP	50.0C	2927	41,700 CUP								
IMR 4166	47.1	1761	43,100 CUP	51.3	2977	48,400 CUP								
748	50.0	2742	33,100 CUP	55.0	2974	37,200 CUP								
BL-C(2)	53.0	2916	36,300 CUP	55.0	3026	40,600 CUP								
IMR 4895	47.0	2717	37,000 CUP	52.0	2945	43,700 CUP								
H335	47.0	2846	37,300 CUP	53.0	3155	48,800 CUP								
H4895	47.0	2843	37,300 CUP	53.5	3208	49,400 CUP								
IMR 8208 XBR	48.0	2907	41,500 CUP	52.2	3139	48,700 CUP								
IMR 3031	44.0	2736	34,800 CUP	48.0	2987	43,300 CUP								
Benchmark	43.5	2728	36,400 CUP	49.8	3068	49,700 CUP								
Bullet: 150 GR. HDY SP				Dia: .323"		Col: 2.950"								
CFE 223	54.0	2848	37,600 CUP	57.0	3054	46,900 CUP								
Varget	45.5	2561	37,500 CUP	52.4C	2896	49,000 CUP								
IMR 4320	41.0	2377	35,400 CUP	50.5	2818	48,800 CUP								
IMR 4064	42.0	2486	34,800 CUP	49.5	2839	46,200 CUP								
IMR 4166	43.4	2528	40,400 CUP	49.9	2869	49,700 CUP								
BL-C(2)	50.0	2690	36,600 CUP	55.0	2962	48,400 CUP								
IMR 4895	42.0	2482	36,700 CUP	49.5	2847	48,000 CUP								
H335	44.0	2631	37,400 CUP	50.8	2942	48,800 CUP								
H4895	44.0	2619	37,200 CUP	51.0	2987	49,500 CUP								
IMR 8208 XBR	44.1	2648	40,600 CUP	48.0	2861	48,300 CUP								
IMR 3031	41.5	2534	35,200 CUP	46.5	2815	47,300 CUP								
Benchmark	42.5	2577	36,900 CUP	47.5	2860	48,800 CUP								
Bullet: 160 GR. BAR TTSX BT				Dia: .323"		Col: 3.010"								
CFE 223	49.7	2726	42,100 CUP	54.0	2919	48,500 CUP								
Varget	45.0	2503	36,100 CUP	49.0C	2727	43,600 CUP								
IMR 4064	43.0	2438	38,500 CUP	47.0C	2664	45,100 CUP								
IMR 4166	40.1	2314	38,400 CUP	46.6	2670	47,100 CUP								
BL-C(2)	47.0	2559	40,300 CUP	51.0	2772	48,300 CUP								
IMR 4895	44.0	2485	40,100 CUP	48.0C	2696	47,500 CUP								
H335	42.0	2500	40,100 CUP	46.0	2720	47,900 CUP								
H4895	44.0	2603	39,200 CUP	48.5C	2821	47,700 CUP								
IMR 8208 XBR	42.0	2486	37,200 CUP	46.5C	2758	48,300 CUP								
IMR 3031	42.6	2483	42,900 CUP	46.1	2712	48,600 CUP								
Benchmark	43.1	2558	42,500 CUP	46.6	2726	49,300 CUP								
Bullet: 170 GR. HDY RN				Dia: .323"		Col: 2.825"								
CFE 223	53.0	2686	37,900 CUP	56.0	2854	44,200 CUP								
Varget	43.0	2362	36,700 CUP	50.5	2700	48,700 CUP								
IMR 4320	39.0	2195	34,400 CUP	49.8	2680	49,200 CUP								
IMR 4064	41.5	2345	35,700 CUP	48.7	2706	49,300 CUP								
IMR 4166	40.5	2312	38,900 CUP	47.7	2667	49,300 CUP								
748	46.0	2467	35,600 CUP	54.0	2832	48,500 CUP								
BL-C(2)	48.8	2560	36,800 CUP	53.5	2839	48,800 CUP								
IMR 4895	40.0	2284	36,600 CUP	48.0	2647	47,900 CUP								
H335	42.5	2421	37,400 CUP	49.2	2738	48,800 CUP								
H4895	40.0	2306	37,400 CUP	49.0	2769	48,700 CUP								
IMR 8208 XBR	44.2	2575	41,400 CUP	47.0	2696	48,000 CUP								
IMR 3031	40.0	2355	35,000 CUP	45.5	2640	47,500 CUP								
Bullet: 175 GR. SIE SP				Dia: .323"		Col: 3.100"								
Benchmark	41.0	2397	37,100 CUP	46.6	2679	49,100 CUP								
CFE 223	52.0	2615	36,500 CUP	55.0	2837	47,800 CUP								
Varget	43.0	2418	37,200 CUP	50.5	2716	48,500 CUP								
IMR 4320	39.0	2209	36,100 CUP	48.5	2619	49,800 CUP								
IMR 4064	41.0	2340	36,600 CUP	48.0C	2687	49,100 CUP								
IMR 4166	40.2	2307	38,300 CUP	47.3	2656	49,600 CUP								
748	48.0	2524	37,500 CUP	53.0	2748	46,600 CUP								
BL-C(2)	48.8	2595	36,800 CUP	53.5	2818	46,700 CUP								
IMR 4895	39.5	2246	35,900 CUP	48.0	2642	48,400 CUP								
H335	42.5	2446	37,100 CUP	48.0	2722	48,400 CUP								
H4895	40.0	2387	36,800 CUP	49.4	2762	48,300 CUP								
IMR 8208 XBR	43.7	2537	41,400 CUP	46.5	2667	46,600 CUP								
IMR 3031	39.0	2341	37,300 CUP	45.0	2625	48,900 CUP								
Benchmark	41.0	2414	37,100 CUP	46.2	2657	48,400 CUP								
Bullet: 180 GR. BAR TSX				Dia: .323"		Col: 2.960"								
CFE 223	47.0	2584	43,700 CUP	50.0	2712	49,200 CUP								
Varget	41.0	2256	35,800 CUP	47.8C	2570	48,400 CUP								
IMR 4320	38.0	2087	34,700 CUP	46.3	2481	48,700 CUP								
IMR 4064	39.5	2251	36,300 CUP	45.0C	2529	48,400 CUP								
IMR 4166	38.3	2161	38,200 CUP	44.5	2508	48,900 CUP								
748	39.0	2219	36,200 CUP	45.5	2542	49,000 CUP								
BL-C(2)	39.0	2153	34,200 CUP	45.5	2487	48,500 CUP								
IMR 4895	40.0	2235	36,400 CUP	46.0C	2525	47,900 CUP								
H335	36.5	2163	35,500 CUP	43.0	2483	48,900 CUP								
H4895	39.0	2259	36,800 CUP	46.0C	2565	48,700 CUP								
IMR 8208 XBR	41.8	2459	43,300 CUP	44.5	2572	48,300 CUP								
Benchmark	34.0	2104	37,200 CUP	42.0	2466	48,800 CUP								
Bullet: 180 GR. NOS BT				Dia: .323"		Col: 3.020"								
CFE 223	49.0	2635	42,100 CUP	52.0	2758	47,500 CUP								
Varget	42.0	2309	36,600 CUP	48.8	2641	49,400 CUP								
IMR 4320	38.0	2140	35,800 CUP	47.3	2533	48,500 CUP								
IMR 4064	40.0	2259	35,400 CUP	45.0C	2538	47,800 CUP								
IMR 4166	39.4	2224	38,200 CUP	45.8	2572	49,600 CUP								
748	42.0	2295	35,700 CUP	47.0	2587	49,400 CUP								
BL-C(2)	44.5	2439	36,700 CUP	48.5	2669	48,500 CUP								
IMR 4895	41.5	2291	36,900 CUP	46.8	2562	48,300 CUP								
H335	38.0	2267	36,100 CUP	43.7	2557	48,100 CUP								

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
Magnum																			
Bullet: 150 GR. HDY SP						Dia: 0.323" Col: 2.810"													
H4831	71.0	2945	44,100 PSI	75.0C	3115	52,800 PSI	IMR 4895	53.8	2623	53,700 PSI	57.2	2768	61,100 PSI						
IMR 4831	69.0	2960	49,300 PSI	73.0C	3162	59,700 PSI	H4895	53.0	2648	55,000 PSI	56.0	2763	62,500 PSI						
H4350	69.0	3138	51,600 PSI	73.5C	3345	63,700 PSI	IMR 8208 XBR	50.3	2617	55,900 PSI	53.5	2728	62,600 PSI						
H414	70.0	3217	54,600 PSI	73.2	3360	63,100 PSI	Bullet: 200 GR. BAR TSX						Dia: 0.323" Col: 2.820"						
IMR 4350	68.0	3008	50,100 PSI	70.5	3198	61,500 PSI	Hybrid 100V	56.0	2472	45,300 PSI	61.0C	2669	53,800 PSI						
760	70.0	3217	54,600 PSI	73.2	3360	63,100 PSI	Bullet: 200 GR. BAR XLC						Dia: 0.323" Col: 2.860"						
H380	67.5	3174	53,600 PSI	71.5	3336	62,500 PSI	IMR 7828	66.7	2614	52,600 PSI	71.0C*	2784	61,600 PSI						
Varget	61.0	3137	54,200 PSI	65.0	3305	63,600 PSI	IMR 4831	65.0	2614	48,300 PSI	69.5C	2788	58,200 PSI						
IMR 4320	61.0	3012	52,200 PSI	63.5	3171	61,500 PSI	H4350	63.0	2689	52,500 PSI	67.0	2843	62,900 PSI						
IMR 4064	59.0	3076	53,600 PSI	62.0	3207	61,100 PSI	H414	61.0	2686	54,600 PSI	65.0	2827	63,400 PSI						
BL-C(2)	64.0	3190	53,500 PSI	68.0	3362	63,300 PSI	IMR 4350	63.5	2650	51,400 PSI	67.5C	2818	62,100 PSI						
IMR 4895	60.0	3075	53,900 PSI	63.2	3245	63,100 PSI	760	61.0	2686	54,600 PSI	65.0	2827	63,400 PSI						
H4895	60.0	3156	53,600 PSI	63.5	3313	63,300 PSI	H380	61.0	2629	50,700 PSI	64.8	2777	60,000 PSI						
IMR 8208 XBR	56.1	3059	55,400 PSI	59.7	3171	61,000 PSI	Varget	55.5	2642	55,100 PSI	59.0	2762	62,300 PSI						
IMR 3031	56.0	3027	52,600 PSI	58.7	3184	62,200 PSI	IMR 4320	56.0	2590	51,000 PSI	60.0	2771	62,700 PSI						
Benchmark	57.0	3074	50,200 PSI	60.5	3253	62,400 PSI	IMR 4064	54.0	2592	51,100 PSI	57.7	2759	62,500 PSI						
Bullet: 175 GR. SIE SP						Dia: 0.323" Col: 2.855"													
H4831	70.0	2819	51,400 PSI	73.0C	2960	61,400 PSI	BL-C(2)	57.0	2668	54,700 PSI	60.5	2799	63,600 PSI						
IMR 4831	66.0	2798	50,300 PSI	70.0C	2996	61,900 PSI	IMR 4895	55.0	2596	51,500 PSI	58.7	2759	61,400 PSI						
H4350	64.5	2835	51,100 PSI	68.0C	3024	63,400 PSI	H4895	54.0	2662	58,400 PSI	57.3	2739	62,200 PSI						
H414	64.0	2874	53,600 PSI	68.0	3025	62,000 PSI	Bullet: 220 GR. SFT SP						Dia: 0.323" Col: 2.845"						
IMR 4350	64.3	2820	51,100 PSI	68.4C	3011	62,000 PSI	IMR 7828	62.5	2469	52,200 PSI	66.5C*	2643	61,500 PSI						
760	64.0	2874	53,600 PSI	68.0	3025	62,000 PSI	H4831	63.0	2491	52,200 PSI	67.0C	2638	61,300 PSI						
H380	62.5	2857	54,100 PSI	66.3	2994	61,800 PSI	Hybrid 100V	56.0	2446	49,400 PSI	61.0C	2644	60,000 PSI						
Varget	58.0	2862	55,400 PSI	61.0	2975	62,300 PSI	H4350	58.3	2518	52,700 PSI	62.0	2649	62,400 PSI						
IMR 4320	58.0	2801	52,200 PSI	61.7	2960	61,500 PSI	H414	58.0	2557	57,100 PSI	61.5	2669	63,200 PSI						
IMR 4064	56.5	2812	51,900 PSI	59.8	2976	61,800 PSI	IMR 4350	59.7	2467	50,400 PSI	63.5C	2647	60,600 PSI						
BL-C(2)	60.0	2870	54,100 PSI	64.0	3030	62,800 PSI	760	58.0	2557	57,100 PSI	61.5	2669	63,200 PSI						
IMR 4895	57.5	2848	53,000 PSI	61.0	3002	62,400 PSI	H380	56.0	2468	52,100 PSI	60.0	2627	63,600 PSI						
H4895	57.5	2858	54,100 PSI	61.0	3000	62,900 PSI	Varget	50.8	2448	55,800 PSI	54.0	2569	62,400 PSI						
IMR 8208 XBR	52.6	2793	54,300 PSI	56.0	2923	62,800 PSI	IMR 4320	51.7	2469	56,500 PSI	55.0	2564	61,900 PSI						
IMR 3031	53.0	2791	53,200 PSI	56.0	2923	62,300 PSI	IMR 4064	51.0	2458	54,900 PSI	54.0	2585	63,000 PSI						
Benchmark	51.0	2743	54,000 PSI	53.7	2863	62,700 PSI	BL-C(2)	54.0	2505	56,600 PSI	57.3	2622	62,100 PSI						
Bullet: 180 GR. NOS BT						Dia: 0.323" Col: 2.840"													
H4831	62.0	2776	52,900 PSI	65.8C	2930	62,800 PSI	IMR 4895	51.0	2446	52,700 PSI	54.3	2578	61,700 PSI						
Hybrid 100V	61.0	2768	51,700 PSI	66.0C	2936	59,200 PSI	H4895	49.5	2438	54,800 PSI	52.5	2556	63,100 PSI						
IMR 4831	64.0	2727	51,400 PSI	68.5C	2927	61,100 PSI	8MM REMINGTON MAGNUM												
H4350	61.8	2794	52,500 PSI	65.5	2957	62,200 PSI	Case: Remington	Twist: 1:10"											
H414	62.0	2808	54,400 PSI	65.5	2946	62,000 PSI	Barrel: 24"	Trim: 2.840"		Primer: Remington 9 1/2 M, Large Rifle Magnum									
IMR 4350	62.0	2726	52,500 PSI	67.0C	2954	62,500 PSI	Bullet: 150 GR. SPR SP						Dia: .323" Col: 3.550"						
760	62.0	2808	54,400 PSI	65.5	2946	62,000 PSI	H4831	88.0	3268	47,200 CUP	92.0C	3378	51,500 CUP						
H380	60.5	2782	54,800 PSI	64.0	2925	63,100 PSI	Hybrid 100V	80.0	3366	46,100 CUP	84.5C	3462	49,400 CUP						
Varget	55.0	2770	56,500 PSI	58.0	2873	62,700 PSI	H4350	79.0	3242	45,700 CUP	83.5	3401	52,500 CUP						
IMR 4320	55.0	2702	51,900 PSI	59.5	2896	62,900 PSI	H414	76.0	3270	48,000 CUP	81.0	3385	52,300 CUP						
IMR 4064	54.0	2689	50,100 PSI	58.0	2865	60,100 PSI	H380	71.0	3110	47,400 CUP	75.5	3245	52,300 CUP						
BL-C(2)	57.5	2792	55,400 PSI	61.0	2936	62,300 PSI	Varget	71.0	3253	46,100 CUP	75.0	3403	52,600 CUP						
IMR 4895	55.5	2781	55,500 PSI	58.7	2906	62,700 PSI	Bullet: 175 GR. SIE SP						Dia: .323" Col: 3.600"						
H4895	52.5	2732	55,100 PSI	54.6	2820	60,300 PSI	H4831	81.0	3031	47,300 CUP	86.5	3162	52,800 CUP						
IMR 8208 XBR	51.5	2743	54,900 PSI	54.8	2855	60,800 PSI	Hybrid 100V	72.0	3016	43,700 CUP	80.0	3251	52,200 CUP						
Bullet: 195 GR. HDY SP						Dia: 0.323" Col: 2.855"													
IMR 7828	66.5	2681	53,500 PSI	71.0C	2860	63,800 PSI	H4350	72.0	2930	45,300 CUP	77.0	3141	52,300 CUP						
H4831	66.3	2704	54,600 PSI	70.5C	2835	63,000 PSI	H414	70.0	2987	47,700 CUP	74.0	3113	52,300 CUP						
Hybrid 100V	61.0	2693	51,600 PSI	66.0C	2857	59,300 PSI	Bullet: 180 GR. BAR TSX						Dia: .323" Col: 3.600"						
IMR 4831	66.0	2726	53,400 PSI	70.0C	2905	63,100 PSI	H1000	81.0	2912	46,100 CUP	89.0C	3099	52,400 CUP						
H4350	61.0	2712	54,400 PSI	64.5	2837	62,300 PSI	H4831	73.0	2858	47,400 CUP	79.5	3035	52,000 CUP						
H414	61.0	2722	54,500 PSI	64.5	2847	61,800 PSI	Hybrid 100V	68.0	2875	43,000 CUP	73.5	3075	51,200 CUP						
IMR 4350	62.0	2678	52,200 PSI	66.0	2866	62,300 PSI	Bullet: 185 GR. REM PSPCL						Dia: .323" Col: 3.560"						
760	61.0	2722	54,500 PSI	64.5	2847	61,800 PSI	IMR 4831			79.5	3095	52,900 CUP							
H380	59.0	2668	54,800 PSI	62.2	2796	63,300 PSI	IMR 4350			77.5	3090	53,100 CUP							
Varget	54.0	2661	55,500 PSI	57.3	2782	62,800 PSI	IMR 4064			66.5	2975	54,000 CUP							
IMR 4320	55.5	2654	52,800 PSI	59.0	2795	62,200 PSI	Bullet: 200 GR. NOS PART						Dia: .323" Col: 3.600"						
IMR 4064	54.0	2658	54,700 PSI	57.5	2789	63,100 PSI	H1000	86.0	2825	45,300 CUP	89.0C	2920	48,100 CUP						
BL-C(2)	57.0	2707	55,900 PSI	60.5	2840	63,700 PSI	H4831	77.0	2819	47,400 CUP	81.5	2944	52,000 CUP						
							Hybrid 100V	67.0	2793	43,000 CUP	72.5	2976	51,200 CUP						

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Starting Loads				Maximum Loads				Starting Loads				Maximum Loads						
Powder	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure	Powder	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		
338 MARLIN EXPRESS																		
Case: Hornady		Twist: 1:12"																
Barrel: 24"		Trim: 1.910"		Primer: Winchester LRM, Large Rifle Magnum														
Bullet: 220 GR. HDY SP Dia: .323" Col: 3.600"																		
H4350	70.0	2820	47,300 CUP	74.0	2950	52,200 CUP	CFE 223	45.8	2326	33,600 PSI	50.0	2545	44,900 PSI					
H1000	85.0	2726	46,700 CUP	88.0C	2817	49,300 CUP	Varget	42.0	2264	40,400 PSI	47.0C	2510	52,100 PSI					
H4831	76.0	2685	46,700 CUP	80.5	2816	52,100 CUP	IMR 4064	40.0	2224	37,500 PSI	45.0C	2486	48,600 PSI					
Hybrid 100V	67.0	2673	44,100 CUP	72.5	2849	51,300 CUP	IMR 4166	41.8	2323	47,800 PSI	46.0C	2543	58,800 PSI					
IMR 4831				76.0	2845	53,800 CUP	748	44.0	2322	37,300 PSI	50.0	2584	49,500 PSI					
H4350	70.0	2690	48,200 CUP	74.0	2824	52,100 CUP	BL-C(2)	45.0	2289	36,900 PSI	49.0	2442	43,300 PSI					
IMR 4350				72.0	2795	53,000 CUP	IMR 4895	42.0	2296	41,400 PSI	47.0C	2535	52,100 PSI					
338 MARLIN EXPRESS																		
Bullet: 200 GR. HDY FTX Dia: .338" Col: 2.590"																		
H414	46.4	2205	36,300 PSI	49.3	2364	44,200 PSI	LVR	45.0	2468	48,800 PSI	49.0C	2622	56,400 PSI					
760	46.4	2205	36,300 PSI	49.3	2364	44,200 PSI	CFE 223	43.8	2381	45,900 PSI	47.6	2549	57,100 PSI					
H380	44.2	2173	34,300 PSI	47.0	2339	41,600 PSI	Varget	41.0	2248	42,000 PSI	46.0C	2503	56,500 PSI					
LVR	44.6	2313	37,100 PSI	47.5	2493	46,000 PSI	IMR 4064	40.0	2254	42,200 PSI	43.0C	2394	48,800 PSI					
Varget	40.0	2224	41,600 PSI	42.5	2326	44,600 PSI	IMR 4166	39.9	2270	50,500 PSI	43.9C	2466	60,900 PSI					
IMR 4064	39.5	2169	39,300 PSI	42.0	2294	43,400 PSI	748	41.0	2289	42,200 PSI	45.7	2534	56,300 PSI					
748	43.4	2237	35,700 PSI	45.9	2392	44,300 PSI	BL-C(2)	42.0	2270	52,000 PSI	47.0	2548	59,100 PSI					
BL-C(2)	42.3	2137	33,800 PSI	46.7	2393	45,400 PSI	IMR 4895	40.0	2195	39,500 PSI	45.0C	2482	53,900 PSI					
IMR 4895	38.0	2137	40,400 PSI	41.3	2263	43,000 PSI	H335	38.0	2267	45,300 PSI	41.7	2469	57,400 PSI					
H4895	35.7	2170	38,900 PSI	38.0	2309	45,400 PSI	H4895	40.0	2281	41,600 PSI	45.0C	2551	58,100 PSI					
IMR 8208 XBR	37.8	2228	40,700 PSI	40.2	2322	44,000 PSI	IMR 8208 XBR	40.7	2402	52,000 PSI	43.3C	2508	59,400 PSI					
IMR 3031	36.2	2191	41,700 PSI	38.5	2259	43,000 PSI	IMR 3031	38.0	2267	43,700 PSI	42.5C	2499	57,000 PSI					
Benchmark	36.0	2198	42,200 PSI	38.2	2281	44,800 PSI	Benchmark	38.0	2277	45,900 PSI	43.0C	2514	60,800 PSI					
338 FEDERAL																		
Case: Federal		Twist: 1:10"																
Barrel: 24"		Trim: 2.005"		Primer: Federal 210M, Large Rifle Match														
Bullet: 160 GR. BAR TTSX Dia: .338" Col: 2.840"																		
H335	43.8	2579	39,900 PSI	48.7	2814	49,700 PSI	LVR	47.0	2509	50,900 PSI	52.0C	2668	57,900 PSI					
IMR 8208 XBR	46.0	2733	46,500 PSI	50.0C	2910	54,700 PSI	CFE 223	44.5	2330	40,800 PSI	48.4	2494	49,800 PSI					
IMR 3031	41.9	2559	41,000 PSI	45.5C	2763	50,400 PSI	Varget	41.0	2216	41,000 PSI	46.0C	2452	53,100 PSI					
Benchmark	45.1	2725	47,900 PSI	49.0C	2894	56,200 PSI	IMR 4064	41.0	2267	43,800 PSI	45.0C	2468	54,400 PSI					
H322	44.6	2761	52,400 PSI	48.5C	2937	61,800 PSI	IMR 4166	40.2	2264	50,400 PSI	44.2C	2447	59,100 PSI					
IMR 4198	38.5	2706	52,900 PSI	41.0	2850	62,400 PSI	748	41.0	2218	38,000 PSI	46.0	2445	48,900 PSI					
H4198	40.2	2756	53,600 PSI	42.8	2884	61,500 PSI	BL-C(2)	43.0	2242	39,000 PSI	47.0	2428	47,900 PSI					
Bullet: 180 GR. NOS AB Dia: .338" Col: 2.810"																		
CFE 223	46.0	2408	32,700 PSI	50.0	2620	42,100 PSI	IMR 4895	41.0	2234	42,400 PSI	45.0C	2448	53,200 PSI					
748	45.0	2486	40,300 PSI	51.0	2746	51,100 PSI	H335	40.0	2312	46,100 PSI	44.0	2512	58,300 PSI					
BL-C(2)	44.0	2338	34,700 PSI	50.0	2648	47,500 PSI	H4895	41.0	2297	43,500 PSI	46.0C	2539	57,600 PSI					
IMR 4895	42.0	2373	40,700 PSI	47.0C	2624	50,900 PSI	IMR 8208 XBR	41.9	2396	50,500 PSI	44.6	2519	59,400 PSI					
H335	42.0	2483	43,000 PSI	47.0	2712	53,900 PSI	IMR 3031	38.0	2227	42,500 PSI	43.0C	2469	56,300 PSI					
H4895	43.0	2486	42,400 PSI	47.0C	2682	50,800 PSI	Benchmark	39.0	2286	47,200 PSI	43.3	2487	60,000 PSI					
IMR 8208 XBR	44.6	2641	49,600 PSI	48.5C	2811	59,900 PSI	H322	38.0	2305	50,400 PSI	43.0	2504	60,300 PSI					
IMR 3031	40.0	2438	42,500 PSI	45.0C	2705	55,200 PSI	Bullet: 225 GR. SFT SP Dia: .338" Col: 2.750"											
Benchmark	42.0	2532	47,900 PSI	47.0C	2768	61,300 PSI	LVR	43.0	2293	46,500 PSI	48.0C	2518	61,800 PSI					
H322	41.0	2514	46,000 PSI	45.5C	2743	59,700 PSI	CFE 223	43.2	2278	47,700 PSI	46.0	2423	57,900 PSI					
Bullet: 185 GR. BAR TTX Dia: .338" Col: 2.800"																		
CFE 223	47.5	2488	39,800 PSI	50.5	2624	46,200 PSI	Varget	41.0	2149	43,100 PSI	46.0C	2410	57,900 PSI					
Varget	42.0	2364	43,000 PSI	47.0C	2607	54,700 PSI	IMR 4064	39.0	2148	43,800 PSI	43.8C	2386	58,400 PSI					
IMR 4064	41.0	2388	45,100 PSI	45.0C	2584	53,400 PSI	IMR 4166	39.4	2141	48,100 PSI	43.4C	2351	60,100 PSI					
IMR 4166	41.4	2363	47,000 PSI	45.5C	2581	56,700 PSI	748	41.0	2199	42,000 PSI	46.0	2453	57,400 PSI					
748	44.0	2477	45,200 PSI	49.0	2665	53,100 PSI	BL-C(2)	42.0	2178	41,800 PSI	47.0	2436	57,800 PSI					
BL-C(2)	44.0	2386	41,600 PSI	49.0	2597	51,100 PSI	IMR 4895	40.0	2151	45,300 PSI	44.5C	2383	58,200 PSI					
IMR 4895	41.0	2342	43,500 PSI	45.0C	2541	51,400 PSI	H335	38.0	2166	46,100 PSI	42.0	2378	59,200 PSI					
H335	41.0	2460	46,300 PSI	46.0	2679	56,700 PSI	H4895	40.0	2167	42,900 PSI	45.3C	2445	60,000 PSI					
H4895	42.0	2456	45,400 PSI	46.5C	2690	58,200 PSI	IMR 8208 XBR	40.5	2283	52,400 PSI	43.1	2394	60,500 PSI					
IMR 8208 XBR	44.2	2601	51,800 PSI	47.0C	2721	59,500 PSI	IMR 3031	37.0	2149	45,800 PSI	41.0C	2361	59,500 PSI					
IMR 3031	39.0	2410	47,200 PSI	44.0C	2666	60,000 PSI	Benchmark	38.0	2150	46,600 PSI	42.8	2365	59,500 PSI					
Benchmark	39.0	2416	48,000 PSI	44.0C	2637	60,100 PSI	H322	37.0	2204	52,700 PSI	41.0	2357	60,000 PSI					
H322	39.0	2447	49,400 PSI	43.3C	2645	59,700 PSI	338-06											
Case: Winchester		Twist: 1:10"																
Barrel: 24"		Trim: 2.484"		Primer: CCI 200, Large Rifle														
Bullet: 160 GR. BAR X Dia: .338" Col: 3.150"																		
Varget	56.0	2924	51,200 PSI	60.0C	3063	57,900 PSI												

130

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
BL-C(2)	59.0	2975	51,700 PSI	65.0	3134	57,300 PSI	BL-C(2)	53.0	2647	56,000 PSI	56.5	2749	62,500 PSI						
H335	53.0	2919	53,500 PSI	57.0	3057	59,800 PSI	IMR 4895	47.0	2454	50,600 PSI	50.7	2635	62,500 PSI						
H4895	53.0	2901	50,600 PSI	58.0C	3112	62,200 PSI	H335	44.0	2458	54,000 PSI	48.7	2620	63,300 PSI						
Benchmark	51.0	2859	50,300 PSI	56.8	3103	63,600 PSI	H4895	47.0	2480	49,900 PSI	51.7	2685	62,900 PSI						
H322	50.0	2870	55,200 PSI	55.0	3074	62,800 PSI	IMR 8208 XBR	45.0	2457	54,300 PSI	48.5	2598	61,500 PSI						
Bullet: 175 GR. BAR X Dia: .338" Col: 3.130"						Bullet: 215 GR. SIE SBT Dia: .338" Col: 3.240"													
Varget	55.0	2841	55,100 PSI	59.0C	2982	63,000 PSI	H4350	58.0	2573	50,600 PSI	62.0C	2727	59,900 PSI						
BL-C(2)	59.0	2905	54,100 PSI	63.0	3011	57,900 PSI	IMR 4451	56.9	2538	50,900 PSI	61.9C	2743	62,600 PSI						
H335	50.0	2756	54,200 PSI	55.0	2962	63,100 PSI	H414	57.0	2588	50,500 PSI	61.0	2708	56,100 PSI						
H4895	51.0	2774	51,200 PSI	56.0	2981	63,300 PSI	760	57.0	2588	50,500 PSI	61.0	2708	56,100 PSI						
Benchmark	49.0	2731	51,700 PSI	53.7	2921	63,100 PSI	H380	57.0	2636	55,000 PSI	61.0	2717	56,800 PSI						
H322	48.0	2717	49,700 PSI	52.2	2902	62,000 PSI	Varget	50.0	2510	50,200 PSI	54.5	2700	62,400 PSI						
Bullet: 180 GR. NOS BT Dia: .338" Col: 3.250"						Bullet: 225 GR. SPR SPBT Dia: .338" Col: 3.240"													
Varget	54.0	2782	51,000 PSI	58.5C	2961	62,000 PSI	IMR 4320	48.0	2431	49,100 PSI	52.0	2630	61,900 PSI						
IMR 4320	52.0	2708	51,800 PSI	56.5	2895	61,700 PSI	IMR 4064	47.5	2457	48,100 PSI	51.6	2655	62,200 PSI						
IMR 4064	51.0	2718	50,500 PSI	55.5C	2920	61,600 PSI	IMR 4166	50.00	2519	51,000 PSI	54.3	2710	62,500 PSI						
IMR 4166	53.5	2774	52,400 PSI	58.2C	2971	62,500 PSI	BL-C(2)	54.0	2642	55,000 PSI	57.5	2772	63,000 PSI						
BL-C(2)	58.0	2892	53,900 PSI	62.0	3012	59,400 PSI	IMR 4895	48.0	2500	51,700 PSI	51.8	2663	62,100 PSI						
IMR 4895	51.0	2706	49,900 PSI	56.0	2931	62,800 PSI	H4895	48.0	2503	51,200 PSI	51.9	2675	62,600 PSI						
H335	51.0	2802	56,300 PSI	55.0	2930	61,900 PSI	IMR 8208 XBR	46.0	2459	52,500 PSI	50.5	2641	63,400 PSI						
H4895	51.0	2735	49,600 PSI	55.0	2933	62,700 PSI	Bullet: 250 GR. HDY SP Dia: .338" Col: 3.300"												
IMR 8208 XBR	48.0	2681	50,000 PSI	53.3	2897	63,000 PSI	Hybrid 100V	55.5	2515	53,200 PSI	58.5C	2610	57,900 PSI						
Benchmark	50.0	2763	53,700 PSI	54.2	2925	63,400 PSI	H4350	55.0	2481	52,100 PSI	59.5C	2649	62,700 PSI						
H322	49.0	2738	52,000 PSI	53.0	2916	63,000 PSI	IMR 4451	56.0	2500	52,400 PSI	60.9C	2683	62,800 PSI						
Bullet: 185 GR. BAR X BT Dia: .338" Col: 3.130"						Bullet: 250 GR. HDY SP Dia: .338" Col: 3.300"													
Varget	52.0	2723	54,000 PSI	56.0	2867	62,300 PSI	H414	56.0	2547	52,800 PSI	60.0	2675	59,900 PSI						
IMR 4166	52.8	2673	49,400 PSI	54.4C	2752	53,800 PSI	760	56.0	2547	52,800 PSI	60.0	2675	59,900 PSI						
BL-C(2)	55.0	2824	56,600 PSI	59.0	2943	62,400 PSI	H380	55.0	2545	55,300 PSI	59.0	2668	61,600 PSI						
H335	47.0	2632	52,300 PSI	50.5	2809	61,900 PSI	Varget	48.0	2441	52,100 PSI	52.0	2599	62,700 PSI						
H4895	49.0	2671	51,000 PSI	53.5	2865	62,900 PSI	IMR 4320	47.0	2386	51,000 PSI	51.2	2571	62,900 PSI						
Benchmark	47.0	2629	50,400 PSI	51.3	2826	62,700 PSI	IMR 4064	47.0	2409	50,800 PSI	50.5	2574	61,500 PSI						
H322	47.0	2669	52,900 PSI	50.5	2823	62,400 PSI	IMR 4166	48.9	2471	53,900 PSI	53.2	2639	63,100 PSI						
Bullet: 185 GR. BAR TSX Dia: .338" Col: 3.250"						Bullet: 250 GR. HDY SP Dia: .338" Col: 3.300"													
IMR 4320	51.0	2637	51,700 PSI	55.2	2819	61,900 PSI	BL-C(2)	51.0	2529	54,300 PSI	55.0	2671	62,900 PSI						
IMR 4064	49.0	2601	50,200 PSI	53.3C	2815	63,200 PSI	IMR 4895	47.0	2407	50,500 PSI	51.0	2594	63,000 PSI						
IMR 4895	49.5	2634	51,900 PSI	53.8	2826	62,700 PSI	H4895	46.0	2410	51,200 PSI	49.8	2577	63,000 PSI						
IMR 8208 XBR	47.0	2596	50,800 PSI	52.0	2797	62,000 PSI	IMR 8208 XBR	44.0	2362	52,700 PSI	48.3	2532	62,500 PSI						
Bullet: 200 GR. HDY SP Dia: .338" Col: 3.310"						Bullet: 250 GR. HDY SP Dia: .338" Col: 3.300"													
H4350	58.0	2593	47,800 PSI	62.0C	2729	54,300 PSI	Hybrid 100V	54.0	2344	50,500 PSI	57.0C	2459	57,600 PSI						
IMR 4451	59.6	2612	49,400 PSI	62.8C	2762	57,300 PSI	H4350	55.0	2366	51,700 PSI	59.8	2540	63,400 PSI						
H414	58.0	2631	47,500 PSI	61.0	2725	52,200 PSI	IMR 4451	54.2	2304	49,500 PSI	59.0C	2519	63,100 PSI						
760	58.0	2631	47,500 PSI	61.0	2725	52,200 PSI	H414	53.0	2384	53,900 PSI	57.8	2539	62,200 PSI						
H380	58.0	2677	51,800 PSI	61.0	2770	55,600 PSI	760	53.0	2384	53,900 PSI	57.8	2539	62,200 PSI						
Varget	52.0	2622	51,500 PSI	56.5	2807	63,100 PSI	H380	51.0	2321	53,500 PSI	55.8	2462	61,100 PSI						
IMR 4320	51.0	2612	55,000 PSI	55.2	2760	62,100 PSI	Varget	46.0	2248	51,300 PSI	50.0	2405	62,100 PSI						
IMR 4064	49.0	2549	49,100 PSI	53.7	2765	61,800 PSI	IMR 4320	47.0	2293	54,400 PSI	50.5	2413	61,500 PSI						
IMR 4166	52.5	2651	52,700 PSI	57.1C	2834	62,300 PSI	IMR 4064	46.0	2270	52,700 PSI	50.0	2426	63,300 PSI						
BL-C(2)	55.0	2700	52,500 PSI	59.5	2856	62,300 PSI	IMR 4166	48.1	2325	54,000 PSI	52.6C	2488	63,100 PSI						
IMR 4895	50.0	2593	50,800 PSI	53.9	2770	62,400 PSI	BL-C(2)	48.0	2330	53,700 PSI	52.0	2482	63,200 PSI						
H335	48.0	2599	55,400 PSI	52.0	2745	63,000 PSI	IMR 4895	45.0	2219	48,400 PSI	49.3	2421	62,400 PSI						
H4895	50.0	2628	52,900 PSI	54.0	2787	63,300 PSI	338 WINCHESTER MAGNUM												
IMR 8208 XBR	49.0	2624	55,200 PSI	52.8	2751	62,000 PSI	Case: Winchester	Twist: 1:10"											
Benchmark	48.0	2569	52,400 PSI	52.2	2725	61,000 PSI	Barrel: 24"	Trim: 2.490" Primer: Winchester LRM, Large Rifle Magnum											
H322	47.0	2583	53,600 PSI	50.9	2724	61,900 PSI	Bullet: 160 GR. BAR TTSX Dia: .338" Col: 3.325"												
Bullet: 210 GR. NOS PART Dia: .338" Col: 3.240"						Bullet: 180 GR. NOS BT Dia: .338" Col: 3.340"													
H4350	58.0	2598	52,200 PSI	62.0C	2753	61,800 PSI	IMR 4955	71.5	2861	51,100 PSI	77.0C	3100	62,800 PSI						
IMR 4451	55.9	2530	53,200 PSI	60.8C	2717	63,200 PSI	H4831	70.0	2776	35,200 CUP	78.0C	3067	49,100 CUP						
H414	57.0	2621	52,500 PSI	61.0	2747	59,700 PSI	IMR 4831	70.0	2822	39,000 CUP	75.0C	3034	47,500 CUP						
760	57.0	2621	52,500 PSI	61.0	2747	59,700 PSI	H4350	69.0	2928	41,200 CUP	74.5	3157	52,200 CUP						
H380	57.0	2603	49,600 PSI	61.0	2725	56,000 PSI	NEVER EXCEED MAXIMUM LOADS												
Varget	50.0	2545	52,400 PSI	53.9	2701	62,400 PSI	*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.												
IMR 4320	47.0	2410	49,300 PSI	51.0	2605	62,000 PSI	131												
IMR 4064	46.5	2426	48,900 PSI	50.5	2629	62,600 PSI													
IMR 4166	49.7	2569	55,100 PSI	54.0	2718	62,700 PSI													

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads									
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure							
IMR 4451	67.2	2841	48,500 PSI	72.7	3094	61,900 PSI	Bullet: 225 GR. HDY SP Dia: .338" Col: 3.340"						IMR 7828	72.0	2605	44,100 CUP	77.0C*	2777	49,400 CUP	
H414	66.0	2914	43,200 CUP	72.0	3107	51,800 CUP	IMR 4955	67.4	2562	50,300 PSI	72.5C	2779	62,300 PSI	H4831	67.0	2542	40,200 CUP	74.5C	2792	52,000 CUP
IMR 4350	70.5	2848	40,800 CUP	75.0C	3038	48,300 CUP	Hybrid 100V	67.0	2693	46,200 CUP	71.0C	2815	49,400 CUP	IMR 4831	69.0	2637	44,900 CUP	73.5C	2805	50,200 CUP
760	66.0	2914	43,200 CUP	72.0	3107	51,800 CUP	IMR 4831	69.0	2637	44,900 CUP	73.5C	2805	50,200 CUP	H4350	63.0	2571	41,100 CUP	69.5	2785	51,700 CUP
H380	65.0	2886	44,200 CUP	72.5	3111	51,100 CUP	IMR 4451	64.2	2570	50,000 PSI	69.4	2777	61,900 PSI	IMR 4064	60.6	2885	43,300 CUP	64.5	3041	51,600 CUP
Varget	57.0	2871	45,500 CUP	63.5	3087	53,200 CUP	H414	62.0	2611	43,200 CUP	69.0	2811	51,700 CUP	IMR 4895	62.5	2896	43,000 CUP	66.5	3059	51,200 CUP
IMR 4320	60.6	2808	42,500 CUP	64.5	2972	49,800 CUP	IMR 4350	67.0	2657	43,600 CUP	72.0C	2832	52,000 CUP	H4895	58.0	2893	45,100 CUP	64.0	3066	52,300 CUP
IMR 4064	60.6	2885	43,300 CUP	64.5	3041	51,600 CUP	760	62.0	2611	43,200 CUP	69.0	2811	51,700 CUP	Bullet: 185 GR. BAR TSX Dia: .338" Col: 3.290"						
IMR 4895	62.5	2896	43,000 CUP	66.5	3059	51,200 CUP	H380	58.0	2490	43,700 CUP	65.0	2708	52,600 CUP	IMR 4955	70.5	2847	53,200 PSI	75.8C	3040	62,700 PSI
H4895	58.0	2893	45,100 CUP	64.0	3066	52,300 CUP	Varget	52.0	2481	41,500 CUP	57.5	2680	52,700 CUP	Hybrid 100V	65.0	2774	40,600 CUP	70.0C	2947	45,800 CUP
Bullet: 185 GR. BAR TSX Dia: .338" Col: 3.290"						IMR 4320	55.5	2540	48,300 CUP	59.0	2642	51,000 CUP	IMR 4831	70.5	2749	39,500 CUP	75.0C	3031	49,800 CUP	
IMR 4955	70.5	2847	53,200 PSI	75.8C	3040	62,700 PSI	IMR 4064	57.0	2583	43,200 CUP	61.7	2764	52,800 CUP	H4350	69.6	2896	47,500 CUP	74.0C	3048	52,800 CUP
Hybrid 100V	65.0	2774	40,600 CUP	70.0C	2947	45,800 CUP	IMR 4895	58.0	2605	44,400 CUP	62.0	2761	52,600 CUP	IMR 4451	66.7	2822	50,000 PSI	72.2	3048	61,500 PSI
IMR 4831	70.5	2749	39,500 CUP	75.0C	3031	49,800 CUP	H4895	53.0	2505	43,000 CUP	59.0	2688	52,400 CUP	H414	66.0	2889	48,400 CUP	70.0	3002	52,000 CUP
H4350	69.6	2896	47,500 CUP	74.0C	3048	52,800 CUP	Bullet: 250 GR. HDY SP Dia: .338" Col: 3.340"						IMR 4350	67.0	2792	41,000 CUP	74.0C	3072	51,900 CUP	
IMR 4451	66.7	2822	50,000 PSI	72.2	3048	61,500 PSI	H1000	72.0	2512	41,500 CUP	76.0 C	2622	46,500 CUP	760	66.0	2889	48,400 CUP	70.0	3002	52,000 CUP
H414	66.0	2889	48,400 CUP	70.0	3002	52,000 CUP	IMR 7977	69.5	2346	44,300 PSI	75.5C	2592	57,700 PSI	H380	65.8	2870	48,000 CUP	70.0	3007	52,800 CUP
IMR 4350	67.0	2792	41,000 CUP	74.0C	3072	51,900 CUP	IMR 7828	70.0	2423	44,000 CUP	75.0C*	2628	51,800 CUP	Varget	60.0	2831	47,200 CUP	65.0	3013	52,900 CUP
760	66.0	2889	48,400 CUP	70.0	3002	52,000 CUP	IMR 4955	64.8	2440	50,500 PSI	69.7	2641	62,200 PSI	IMR 4320	59.7	2822	48,900 CUP	63.5	2942	51,800 CUP
H380	65.8	2870	48,000 CUP	70.0	3007	52,800 CUP	H4831	64.0	2424	41,900 CUP	71.5C	2655	52,300 CUP	IMR 4064	59.2	2831	45,400 CUP	63.0	2981	51,600 CUP
Varget	60.0	2831	47,200 CUP	65.0	3013	52,900 CUP	Hybrid 100V	63.0	2475	34,700 CUP	68.0C	2643	50,500 CUP	IMR 4895	60.2	2837	43,900 CUP	64.0	2990	51,400 CUP
IMR 4320	59.7	2822	48,900 CUP	63.5	2942	51,800 CUP	IMR 4831	67.0	2474	45,300 CUP	71.6C	2632	52,400 CUP	H4895	56.0	2764	46,600 CUP	59.5	2901	52,300 CUP
IMR 4064	59.2	2831	45,400 CUP	63.0	2981	51,600 CUP	H4350	61.0	2448	42,000 CUP	67.5	2657	51,900 CUP	Bullet: 200 GR. SPR SP Dia: .338" Col: 3.300"						
IMR 4895	60.2	2837	43,900 CUP	64.0	2990	51,400 CUP	IMR 4451	61.7	2419	49,300 PSI	66.8	2631	62,400 PSI	IMR 4955	68.3	2707	50,800 PSI	73.5	2916	62,400 PSI
H4895	56.0	2764	46,600 CUP	59.5	2901	52,300 CUP	H414	59.0	2426	44,100 CUP	65.0	2622	52,900 CUP	H4831	70.0	2703	41,300 CUP	77.5C	2965	52,400 CUP
Bullet: 200 GR. SPR SP Dia: .338" Col: 3.300"						IMR 4350	65.0	2468	45,800 CUP	69.5C	2634	52,400 CUP	Hybrid 100V	65.0	2684	40,600 CUP	70.0C	2870	46,100 CUP	
IMR 4955	68.3	2707	50,800 PSI	73.5	2916	62,400 PSI	760	59.0	2426	44,100 CUP	65.0	2622	52,900 CUP	IMR 4831	70.0	2751	43,500 CUP	74.5C	2934	50,200 CUP
H4831	70.0	2703	41,300 CUP	77.5C	2965	52,400 CUP	IMR 4064	54.0	2339	43,300 CUP	58.5	2518	52,700 CUP	H4350	65.0	2695	39,900 CUP	72.5	2969	52,200 CUP
Hybrid 100V	65.0	2684	40,600 CUP	70.0C	2870	46,100 CUP	IMR 4895	55.0	2392	45,700 CUP	59.0	2529	53,200 CUP	H414	63.0	2730	43,000 CUP	69.5	2942	52,400 CUP
IMR 4831	70.0	2751	43,500 CUP	74.5C	2934	50,200 CUP	Bullet: 265 GR. BAR TTSX BT Dia: .338" Col: 3.450"						IMR 4350	69.6	2837	46,700 CUP	74.0C	2979	52,900 CUP	
H4350	69.6	2896	47,500 CUP	74.0C	3048	52,800 CUP	IMR 7977	63.7	2251	49,200 PSI	69.3C	2426	58,100 PSI	760	63.0	2730	43,000 CUP	69.5	2942	52,400 CUP
H414	66.0	2889	48,400 CUP	70.0	3002	52,000 CUP	IMR 7828 SSC	61.2	2239	42,400 CUP	68.0C*	2443	50,000 CUP	H380	62.0	2685	44,900 CUP	69.0	2921	52,800 CUP
IMR 4350	67.0	2792	41,000 CUP	74.0C	3072	51,900 CUP	IMR 4955	57.8	2299	54,700 PSI	62.2	2440	62,200 PSI	Varget	53.0	2597	39,100 CUP	58.5	2805	51,100 CUP
760	66.0	2889	48,400 CUP	70.0	3002	52,000 CUP	H4831	60.3	2236	44,000 CUP	67.0C	2434	52,500 CUP	IMR 4320	57.0	2678	46,200 CUP	60.5	2784	51,300 CUP
H380	65.8	2870	48,000 CUP	70.0	3007	52,800 CUP	Hybrid 100V	58.0	2324	44,600 CUP	63.0C	2496	52,000 CUP	IMR 4064	60.2	2793	47,100 CUP	64.0	2918	52,700 CUP
Varget	60.0	2831	47,200 CUP	65.0	3013	52,900 CUP	IMR 4831	58.0	2287	43,100 CUP	62.5C	2426	49,600 CUP	IMR 4895	62.3	2830	47,700 CUP	66.3	2958	52,900 CUP
IMR 4320	59.7	2822	48,900 CUP	63.5	2942	51,800 CUP	H4350	55.8	2287	48,400 CUP	59.4	2409	52,200 CUP	H4895	56.0	2702	44,700 CUP	62.0	2877	52,600 CUP
IMR 4064	59.2	2831	45,400 CUP	63.0	2981	51,600 CUP	IMR 4451	55.1	2267	53,500 PSI	59.6	2430	62,500 PSI	Bullet: 210 GR. NOS PART Dia: .338" Col: 3.280"						
IMR 4895	60.2	2837	43,900 CUP	64.0	2990	51,400 CUP	H414	52.2	2223	45,200 CUP	55.5	2329	50,200 CUP	IMR 7828	72.0	2676	43,900 CUP	78.0C*	2895	52,600 CUP
H4895	56.0	2764	46,600 CUP	59.5	2901	52,300 CUP	IMR 4350	57.0	2304	44,100 CUP	62.0C	2468	49,900 CUP	IMR 4955	66.5	2662	52,800 PSI	71.5	2844	62,700 PSI
Bullet: 210 GR. NOS PART Dia: .338" Col: 3.280"						760	52.2	2223	45,200 CUP	55.5	2329	50,200 CUP	H4831	68.0	2648	42,600 CUP	75.5C	2888	52,300 CUP	
IMR 4955	68.3	2707	50,800 PSI	73.5	2916	62,400 PSI	Bullet: 275 GR. SPR SP Dia: .338" Col: 3.340"						Hybrid 100V	68.0	2759	45,200 CUP	72.0C	2887	48,400 CUP	
H4831	70.0	2703	41,300 CUP	77.5C	2965	52,400 CUP	H1000	70.0	2402	43,400 CUP	76.0 C	2564	51,100 CUP	IMR 4831	68.0	2677	41,000 CUP	73.0C	2877	50,600 CUP
Hybrid 100V	65.0	2684	40,600 CUP	70.0C	2870	46,100 CUP	IMR 7977	67.7	2334	51,200 PSI	73.6C	2505	61,000 PSI	H4350	63.0	2618	41,500 CUP	70.0	2855	51,800 CUP
IMR 4831	70.0	2751	43,500 CUP	74.5C	2934	50,200 CUP	IMR 7828	63.0	2263	42,000 CUP	68.0C	2454	52,700 CUP	IMR 4451	63.7	2647	50,500 PSI	68.9	2857	61,900 PSI
H4350	69.6	2896	47,500 CUP	74.0C	3048	52,800 CUP	IMR 4955	60.2	2286	51,100 PSI	65.2	2461	62,400 PSI	H414	60.0	2617	42,300 CUP	67.0	2848	51,800 CUP
H414	66.0	2889	48,400 CUP	70.0	3002	52,000 CUP	H4831	62.0	2304	42,600 CUP	69.0	2502	52,300 CUP	IMR 4350	67.0	2711	44,200 CUP	71.5C	2894	52,800 CUP
IMR 4350	67.0	2792	41,000 CUP	74.0C	3072	51,900 CUP	Hybrid 100V	60.0	2327	43,800 CUP	65.0C	2472	50,900 CUP	760	60.0	2617	42,300 CUP	67.0	2848	51,800 CUP
760	66.0	2889	48,400 CUP	70.0	3002	52,000 CUP	IMR 4831	61.0	2304	47,000 CUP	65.5C	2465	53,100 CUP	H380	59.0	2555	42,400 CUP	66.0	2797	53,000 CUP
H380	65.8	2870	48,000 CUP	70.0	3007	52,800 CUP	H4350	57.0	2259	41,100 CUP	63.5	2447	52,100 CUP	Varget	53.0	2577	41,800 CUP	58.5	2784	52,500 CUP
Varget	60.0	2831	47,200 CUP	65.0	3013	52,900 CUP	IMR 4451	58.5	2280	51,400 PSI	63.3	2449	62,400 PSI	IMR 4064	57.0	2651	44,200 CUP	62.0	2843	53,300 CUP
IMR 4320	59.7																			

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
H4350	56.0	2202	44,000 CUP	61.5	2362	52,600 CUP	H4831	80.0	2735	44,600 CUP	89.0	3006	53,000 CUP
IMR 4451	55.5	2185	51,500 PSI	60.0	2336	61,300 PSI	Hybrid 100V	77.0	2760	45,200 CUP	84.0	2948	52,500 CUP
H414	53.0	2147	43,000 CUP	59.5	2348	52,600 CUP	IMR 4831	83.0	2920	47,900 CUP	88.5	3076	53,500 CUP
IMR 4350	60.0	2263	47,100 CUP	64.0C	2420	52,300 CUP	H4350	76.0	2834	47,000 CUP	82.0	3005	52,200 CUP
340 WEATHERBY MAGNUM							Bullet: 215 GR. SIE SPBT Dia: .338" Col: 3.550"						
Case: Weatherby				Twist: 1:10"			Returnbo						
Barrel: 26" Trim: 2.815" Primer: Federal 215, Large Rifle Magnum							H1000						
Bullet: 200 GR. SPR SP Dia: .338" Col: 3.560"							IMR 7828						
H4831				85.0 2837			IMR 4955						
H4350				77.0 2777			H4831						
Bullet: 225 GR. HDY SP Dia: .338" Col: 3.655"							H4350						
H4831				81.0 2620			IMR 4350						
H4350				75.0 2707									
Bullet: 250 GR. SIE SPBT Dia: .338" Col: 3.560"							Bullet: 225 GR. NOS PART Dia: .338" Col: 3.550"						
H4831				78.0 2487			Returnbo						
H4350				73.0 2570			H1000						
Bullet: 275 GR. SPR SP Dia: .338" Col: 3.560"							IMR 7828						
H4831				75.0 2377			IMR 4955						
H4350				71.0 2460			H4831						
338 LAPUA MAGNUM							Hybrid 100V						
Case: Norma				Twist: 1:9"			IMR 4831						
Barrel: 24" Trim: 2.714" Primer: Federal 215M, Large Rifle Magnum Match							H4350						
Bullet: 160 GR. BAR TTSX Dia: .338" Col: 3.565"							H414						
IMR 7828				98.7 3330			IMR 4350						
IMR 4955				94.5 3303			760						
H4831				98.5 3290									
Hybrid 100V				90.0 3413									
IMR 4831				93.0 3346									
H4350				89.3 3348									
H414				87.4 3341									
IMR 4350				90.2 3350									
760				87.4 3341									
Bullet: 185 GR. BAR TSX Dia: .338" Col: 3.530"							Bullet: 250 GR. HDY SP Dia: .338" Col: 3.550"						
H1000				100.0 3051			US 869						
IMR 7828				94.0 3133			Returnbo						
IMR 4955				89.0 3100			H1000						
H4831				93.7 3085			IMR 7977						
Hybrid 100V				85.2 3198			IMR 7828						
IMR 4831				89.0 3176			IMR 4955						
H4350				85.0 3120			H4831						
H414				81.8 3124			Hybrid 100V						
IMR 4350				85.4 3122			IMR 4831						
760				81.8 3124			H4350						
Bullet: 200 GR. SPR SP Dia: .338" Col: 3.525"							Bullet: 265 GR. BAR TTSX BT Dia: .338" Col: 3.685"						
Returnbo				96.0 2928			US 869						
H1000				92.0 2854			Returnbo						
IMR 7828				89.0 2965			H1000						
IMR 4955				86.5 2968			IMR 7977						
H4831				83.0 2855			IMR 7828						
Hybrid 100V				81.0 2975			IMR 4955						
IMR 4831				85.5 2970			H4831						
H4350				79.0 2925			IMR 7828						
H414				74.0 2840			IMR 4955						
IMR 4350				83.0 3001			H4831						
Bullet: 210 GR. NOS PART Dia: .338" Col: 3.525"							Bullet: 275 GR. SFT SP Dia: .338" Col: 3.460"						
Returnbo				92.0 2846			US 869						
H1000				90.0 2800			Returnbo						
IMR 7828				88.0 2920			H1000						
IMR 4955				84.0 2898			IMR 7977						
NEVER EXCEED MAXIMUM LOADS							Bullet: 300 GR. SIE HPBT Dia: .338" Col: 3.600"						
*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.							US 869						
							Returnbo						
							H1000						
							IMR 7977						
							IMR 7828						
							IMR 4955						
							H4831						
							IMR 4831						

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
338 REMINGTON ULTRA MAG													
Case: Remington						Twist: 1:10"							
Barrel: 24" Trim: 2.750" Primer: Remington 9 1/2M, Large Rifle Magnum													
Bullet: 185 GR. BARTSX Dia: .338" Col: 3.550"													
H1000	96.0	3068	52,300 PSI	102.0C	3241	61,500 PSI	H1000	86.0	2602	54,800 PSI	91.0C	2729	62,700 PSI
IMR 7828	88.0	2986	49,800 PSI	95.7	3267	63,400 PSI	IMR 7977	81.1	2551	53,900 PSI	89.0C	2733	62,500 PSI
H4831	91.0	3040	52,000 PSI	97.0	3232	62,100 PSI	IMR 7828	79.0	2545	54,700 PSI	86.0	2731	64,100 PSI
Hybrid 100V	80.0	3040	53,800 PSI	87.0	3238	62,700 PSI	H4831	81.0	2570	55,000 PSI	86.0	2693	62,500 PSI
IMR 4831	86.0	3075	50,300 PSI	92.5	3313	61,800 PSI	Hybrid 100V	70.0	2436	55,200 PSI	75.5	2578	62,600 PSI
H4350	82.0	3037	51,400 PSI	89.0	3274	63,800 PSI	IMR 4831	72.0	2463	51,500 PSI	78.0	2641	61,200 PSI
H414	82.0	3108	59,100 PSI	85.0	3188	61,300 PSI	H4350	73.0	2507	54,800 PSI	78.0	2650	62,900 PSI
IMR 4350	84.0	3075	52,500 PSI	90.5	3299	63,100 PSI	Bullet: 300 GR. SIE HPBT Dia: .338" Col: 3.580"						
Bullet: 200 GR. SPR SP Dia: .338" Col: 3.590"													
H1000	96.0	2944	48,300 PSI	102.0C	3127	58,600 PSI	US 869	96.0	2455	49,500 PSI	101.0	2595	57,000 PSI
IMR 7828	87.0	2930	52,900 PSI	93.7	3136	62,500 PSI	Returnbo	84.0	2501	53,900 PSI	90.5C	2662	62,200 PSI
H4831	91.0	2979	54,500 PSI	96.5	3138	63,000 PSI	H1000	82.0	2443	51,900 PSI	88.5C	2619	62,500 PSI
Hybrid 100V	79.0	2914	52,600 PSI	86.0	3126	63,100 PSI	IMR 7977	82.1	2396	46,800 PSI	90.3C	2666	61,300 PSI
IMR 4831	84.0	2971	52,200 PSI	90.5	3186	62,200 PSI	Hybrid 100V	69.0	2364	52,500 PSI	74.7	2537	64,300 PSI
H4350	84.0	3011	55,400 PSI	89.5	3156	63,000 PSI	348 WINCHESTER						
H414	79.0	2956	56,500 PSI	84.0	3089	63,100 PSI	Case: Winchester						
IMR 4350	82.0	2940	52,200 PSI	88.0	3149	62,100 PSI	Twist: 1:12"						
Bullet: 210 GR. NOS PART Dia: .338" Col: 3.540"						Barrel: 24" Trim: 2.245" Primer: CCI 200, Large Rifle							
H1000	96.0	2952	51,200 PSI	102.0C	3153	62,900 PSI	Bullet: 200 GR. HDY JFP Dia: .348" Col: 2.810"						
IMR 7828	86.0	2867	52,500 PSI	93.0	3095	63,400 PSI	H4831	65.0	2316	26,500 CUP	68.5C	2467	31,600 CUP
H4831	89.0	2913	54,600 PSI	94.5	3084	63,100 PSI	Hybrid 100V	57.0	2353	29,700 CUP	62.0	2541	35,800 CUP
Hybrid 100V	78.0	2900	55,900 PSI	84.5	3062	63,400 PSI	H4350	61.0	2382	27,500 CUP	66.0	2630	35,900 CUP
IMR 4831	83.0	2907	51,600 PSI	89.7	3119	62,300 PSI	IMR 4451	59.5	2425	31,200 CUP	64.5C	2627	36,400 CUP
H4350	82.0	2941	53,700 PSI	87.0	3107	62,900 PSI	H414	56.0	2384	28,600 CUP	62.0	2568	33,600 CUP
IMR 4350	80.0	2873	51,400 PSI	87.0	3097	62,400 PSI	760	56.0	2384	28,600 CUP	62.0	2568	33,600 CUP
Bullet: 215 GR. SIE SPBT Dia: .338" Col: 3.590"													
H1000	96.0	2947	51,800 PSI	102.0C	3127	62,800 PSI	Varget	53.0	2389	29,300 CUP	58.0	2605	35,800 CUP
IMR 7977	94.6	2961	51,100 PSI	101.8C	3215	64,300 PSI	IMR 4320	49.0	2229	28,800 CUP	55.0	2491	35,900 CUP
IMR 7828	86.0	2810	50,300 PSI	93.0	3059	62,400 PSI	IMR 4064	50.0	2294	28,500 CUP	55.0	2551	36,000 CUP
H4831	89.0	2881	51,800 PSI	94.5	3057	62,800 PSI	IMR 4166	49.1	2356	31,000 CUP	54.0	2564	36,100 CUP
Hybrid 100V	77.0	2825	52,700 PSI	84.0	3031	63,300 PSI	IMR 4895	50.0	2331	29,500 CUP	55.0	2545	35,900 CUP
IMR 4831	83.0	2875	50,500 PSI	90.3	3124	63,400 PSI	H4895	51.0	2419	29,700 CUP	55.0	2591	35,500 CUP
H4350	83.0	2940	54,100 PSI	88.0	3088	62,700 PSI	IMR 8208 XBR	48.0	2418	30,900 CUP	53.0	2579	36,500 CUP
IMR 4350	80.0	2826	50,300 PSI	87.0	3067	62,600 PSI	IMR 3031	47.0	2317	28,300 CUP	52.0	2560	36,200 CUP
Bullet: 225 GR. NOS PART Dia: .338" Col: 3.550"													
Returnbo	97.0	2662	52,800 PSI	103.0C	3055	61,100 PSI	Benchmark	48.0	2402	30,700 CUP	52.0	2552	36,200 CUP
H1000	94.0	2860	51,400 PSI	100.0C	3058	63,000 PSI	Bullet: 250 GR. BAR FN Dia: .348" Col: 2.760"						
IMR 7977	93.1	2886	50,700 PSI	100.2C	3127	63,600 PSI	H4831	60.0	2117	29,800 CUP	65.0C	2299	35,800 CUP
IMR 7828	85.0	2768	51,100 PSI	92.0	2986	62,600 PSI	Hybrid 100V	51.0	2125	30,600 CUP	56.5	2311	36,600 CUP
H4831	88.0	2825	54,400 PSI	93.5	2977	63,000 PSI	H4350	55.0	2157	31,000 CUP	59.5	2328	35,700 CUP
Hybrid 100V	76.0	2760	53,600 PSI	82.0	2953	63,900 PSI	IMR 4451	53.5	2109	29,700 CUP	58.4	2307	36,700 CUP
IMR 4831	81.0	2824	50,500 PSI	88.5	3071	63,400 PSI	H414	51.0	2110	28,300 CUP	56.0	2266	35,000 CUP
H4350	81.0	2832	54,200 PSI	86.0	2976	62,600 PSI	760	51.0	2110	28,300 CUP	56.0	2266	35,000 CUP
IMR 4350	79.0	2800	50,800 PSI	85.7	3030	62,700 PSI	Varget	47.0	2086	28,800 CUP	52.0	2283	36,100 CUP
Bullet: 250 GR. HDY SP Dia: .338" Col: 3.580"													
US 869	100.0	2658	51,300 PSI	104.0	2751	56,200 PSI	IMR 4320	45.0	2045	30,400 CUP	50.0	2239	37,000 CUP
Returnbo	95.0	2798	54,600 PSI	101.0C	2964	64,500 PSI	IMR 4064	45.0	2058	30,000 CUP	49.7	2251	36,700 CUP
H1000	92.0	2756	52,400 PSI	98.0C	2923	62,400 PSI	IMR 4166	43.9	2048	30,500 CUP	48.3	2222	36,400 CUP
IMR 7977	90.2	2746	50,800 PSI	97.0	2966	63,100 PSI	IMR 4895	45.0	2055	29,900 CUP	49.7	2250	36,900 CUP
IMR 7828	83.0	2674	51,000 PSI	90.0	2896	63,500 PSI	H4895	45.0	2074	29,200 CUP	50.0	2278	36,500 CUP
H4831	84.0	2662	50,000 PSI	90.0	2858	62,500 PSI	IMR 3031	41.0	2009	28,800 CUP	46.0	2207	37,000 CUP
Hybrid 100V	73.0	2579	51,100 PSI	79.2	2785	63,900 PSI	Benchmark	44.0	2087	31,300 CUP	47.5	2221	35,800 CUP
IMR 4831	79.0	2703	51,800 PSI	86.0	2914	63,300 PSI	357 MAGNUM						
H4350	78.0	2698	55,700 PSI	83.0	2820	63,000 PSI	Case: Winchester						
IMR 4350	77.0	2668	50,800 PSI	84.0	2890	63,700 PSI	Twist: 1:18.75"						
Bullet: 275 GR. SFT SP Dia: .338" Col: 3.490"						Barrel: 18.5" Trim: 1.285" Primer: Winchester SPM, Small Pistol Magnum							
US 869	96.0	2525	50,700 PSI	102.0	2698	60,600 PSI	Bullet: 110 GR. HDY XTP Dia: .357" Col: 1.590"						
Returnbo	88.0	2649	57,900 PSI	94.0C	2764	63,100 PSI	H4227	18.9	2072	29,600 CUP	21.0	2233	35,500 CUP
134 NEVER EXCEED MAXIMUM LOADS													

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
HP-38	7.3	1454	33,800 CUP	8.5	1622	42,700 CUP	Bullet: 200 GR. HDY RN Dia: .358" Col: 2.510"						LVR	42.0	2040	25,600 CUP	45.0C	2235	31,200 CUP
Titegroup	6.8	1461	36,500 CUP	7.5	1586	41,200 CUP	Varget	36.0	1966	28,800 CUP	39.5	2139	33,300 CUP						
700-X	4.5	1173	18,300 PSI	6.4	1479	30,400 PSI	IMR 4320				38.5	2020	35,000 CUP						
Bullet: 140 GR. HDY XTP Dia: .357" Col: 1.590"							IMR 4064			39.5C	2080	34,200 CUP							
H4227	16.2	1798	33,100 CUP	18.0	1930	42,600 CUP	748			39.0	2130	33,000 CUP							
H110	17.1	1836	28,400 CUP	19.0	1997	40,900 CUP	BL-C(2)	38.0	1877	23,200 CUP	41.5	2011	31,700 CUP						
HS-6	9.5	1497	35,800 CUP	10.5	1613	43,000 CUP	IMR 4895			36.5	2030	33,900 CUP							
Universal	6.5	1282	34,800 CUP	7.0	1356	40,200 CUP	H335	33.0	1855	27,100 CUP	37.0	2048	33,200 CUP						
HP-38	6.5	1324	30,800 CUP	7.7	1447	41,900 CUP	H4895	35.0	1920	26,100 CUP	38.5	2110	32,300 CUP						
Titegroup	6.3	1325	35,600 CUP	7.0	1425	41,900 CUP	IMR 8208 XBR	33.0	1872	31,000 CUP	36.6	1997	33,600 CUP						
Bullet: 150 GR. NOS JFP Dia: .357" Col: 1.590"							IMR 3031			37.5	2110	34,700 CUP							
H4227	15.0	1663	33,100 CUP	16.5	1775	36,700 CUP	Benchmark	32.5	1847	29,400 CUP	35.5	1984	32,600 CUP						
H110	16.0	1766	23,600 CUP	17.0	1807	28,900 CUP	H322	31.0	1866	28,500 CUP	33.8	1987	33,100 CUP						
HS-6	9.0	1449	31,500 CUP	9.7	1503	39,900 CUP	IMR 4198			27.0	1915	33,500 CUP							
Universal	6.2	1096	32,800 CUP	6.7	1323	39,900 CUP	H4198	27.0	1816	26,700 CUP	30.5	1999	31,700 CUP						
HP-38	6.5	1261	35,800 CUP	7.0	1356	39,700 CUP	Bullet: 220 GR. SPR FN Dia: .358" Col: 2.470"												
Titegroup	6.1	1291	33,800 CUP	6.8	1429	40,900 CUP	Varget	34.0	1803	27,800 CUP	38.0	1998	33,300 CUP						
Bullet: 158 GR. HDY XTP Dia: .357" Col: 1.580"							BL-C(2)	36.0	1824	26,900 CUP	39.5	1917	31,000 CUP						
IMR 4227	14.5	1578	34,600 CUP	16.0	1668	42,600 CUP	H335	30.0	1633	29,100 CUP	33.5	1821	33,400 CUP						
H4227	14.5	1578	34,600 CUP	16.0	1668	42,600 CUP	H4895	33.0	1848	29,000 CUP	36.3	2010	33,600 CUP						
H110	15.0	1619	28,600 CUP	16.7	1757	40,700 CUP	IMR 8208 XBR	31.0	1679	30,500 CUP	34.8	1932	34,500 CUP						
HS-6	8.0	1181	28,000 CUP	9.5	1427	41,900 CUP	Benchmark	31.0	1725	30,600 CUP	34.0	1865	33,300 CUP						
Universal	5.8	1059	32,100 CUP	6.3	1147	39,300 CUP	H322	29.0	1692	26,100 CUP	32.5	1870	32,600 CUP						
HP-38	6.2	1095	33,700 CUP	6.9	1214	40,000 CUP	H4198	26.0	1744	30,400 CUP	29.0	1867	33,400 CUP						
Titegroup	5.4	1035	32,600 CUP	6.1	1184	41,900 CUP	358 WINCHESTER												
700-X	4.5	1019	21,900 PSI	5.7	1219	31,200 PSI	Case: Winchester				Twist: 1:12"								
Bullet: 158 GR. LSWC Dia: .358" Col: 1.610"							Barrel: 26"	Trim: 2.005"	Primer: Winchester LR, Large Rifle										
H4227	10.5	1288	15,400 CUP	11.5	1382	17,800 CUP	Bullet: 180 GR. BAR X Dia: .358" Col: 2.700"												
HS-6	6.0	1083	12,900 CUP	7.0	1224	15,500 CUP	Varget	47.0	2442	42,500 CUP	51.0C	2594	48,200 CUP						
Universal	5.5	1214	23,300 CUP	6.7	1380	34,600 CUP	BL-C(2)	49.0	2450	42,600 CUP	52.0	2555	46,500 CUP						
HP-38	3.5	901	8,400 CUP	4.5	1059	16,200 CUP	H335	44.0	2338	42,700 CUP	47.5	2504	48,900 CUP						
Titegroup	4.5	1157	19,300 CUP	5.0	1220	24,900 CUP	H4895	44.0	2408	41,500 CUP	48.0C	2603	49,900 CUP						
Bullet: 170 GR. SIE JHC Dia: .357" Col: 1.580"							Benchmark	43.0	2419	44,900 CUP	47.0	2574	50,300 CUP						
H4227	13.0	1442	32,300 CUP	14.5	1535	41,200 CUP	H322	40.0	2380	46,900 CUP	44.0	2522	49,700 CUP						
H110	14.0	1537	25,900 CUP	15.5	1662	40,800 CUP	Bullet: 200 GR. HDY SP Dia: .358" Col: 2.650"												
HS-6	8.0	1243	30,900 CUP	9.2	1424	42,900 CUP	Varget	47.0	2376	41,100 CUP	51.0C	2527	47,900 CUP						
Titegroup	5.4	1177	34,700 CUP	6.0	1270	41,800 CUP	IMR 4320			51.0C	2545	51,700 CUP							
Bullet: 180 GR. NOS PART Dia: .357" Col: 1.575"							IMR 4064			49.0C	2525	46,200 CUP							
H4227	12.7	1185	36,900 CUP	13.7	1325	40,900 CUP	748			50.6	2500	50,000 CUP							
H110	13.0	1324	36,800 CUP	13.5	1381	39,100 CUP	BL-C(2)	49.0	2329	31,500 CUP	52.0	2464	41,800 CUP						
35 REMINGTON							IMR 4895			49.0C	2565	50,800 CUP							
Case: Remington				Twist: 1:16"			H335	44.0	2300	40,000 CUP	48.5	2484	48,400 CUP						
Barrel: 24"	Trim: 1.910"	Primer: Remington 9 1/2, Large Rifle										H4895	44.0	2316	40,200 CUP	48.0C	2519	49,800 CUP	
Bullet: 180 GR. SPR FN Dia: .358" Col: 2.470"							IMR 3031			49.0C	2630	51,800 CUP							
LVR	40.0	2044	26,700 CUP	45.0C	2302	33,900 CUP	Benchmark	42.0	2319	42,700 CUP	46.2	2494	50,000 CUP						
Varget	37.0	1972	27,200 CUP	40.5	2196	32,500 CUP	H322	40.0	2306	45,400 CUP	44.8	2491	49,400 CUP						
BL-C(2)	39.0	2014	29,300 CUP	43.0	2147	32,300 CUP	Bullet: 220 GR. SPR FN SP Dia: .358" Col: 2.560"												
H335	34.0	1953	29,900 CUP	37.5	2111	33,600 CUP	Varget	46.0	2226	42,800 CUP	50.0C	2445	50,300 CUP						
H4895	35.0	1991	27,500 CUP	39.0	2232	33,100 CUP	BL-C(2)	48.0	2238	37,600 CUP	51.0	2355	43,900 CUP						
IMR 8208 XBR	33.0	1915	30,900 CUP	37.0	2074	33,900 CUP	H335	42.0	2181	42,200 CUP	46.0	2352	49,400 CUP						
Benchmark	32.5	1865	29,300 CUP	35.5	2034	32,300 CUP	H4895	43.0	2227	41,500 CUP	47.5C	2421	50,200 CUP						
H322	31.0	1901	28,200 CUP	35.0	2104	33,100 CUP	Benchmark	41.0	2184	39,400 CUP	45.0	2361	49,500 CUP						
H4198	28.0	1971	28,600 CUP	32.0	2172	33,000 CUP	H322	40.0	2243	45,700 CUP	44.0	2371	49,300 CUP						
Bullet: 200 GR. HDY FTX Dia: .358" Col: 2.540"							Bullet: 225 GR. SIE BTSP Dia: .358" Col: 2.770"												
LVR	37.0	1897	26,500 CUP	41.4C	2116	34,700 CUP	Varget	45.0	2254	40,700 CUP	49.0	2451	50,600 CUP						
Varget	36.0	1845	29,800 CUP	38.3C	1963	32,000 CUP	BL-C(2)	48.0	2324	39,900 CUP	51.0	2431	45,400 CUP						
IMR 4064	34.1	1741	30,400 CUP	36.3C	1861	32,200 CUP	H335	42.0	2231	43,500 CUP	46.0	2390	48,500 CUP						
748	35.7	1815	28,600 CUP	38.0	1913	31,300 CUP	H4895	42.0	2223	41,700 CUP	46.5	2422	50,300 CUP						
H4895	33.8	1839	30,000 CUP	36.0C	1959	31,900 CUP	Benchmark	40.0	2211	44,200 CUP	44.0	2354	50,600 CUP						
IMR 8208 XBR	33.2	1799	28,800 CUP	35.3	1932	32,000 CUP	H322	41.0	2275	46,000 CUP	43.0	2372	50,300 CUP						
NEVER EXCEED MAXIMUM LOADS							Bullet: 250 GR. NOS PART Dia: .358" Col: 2.760"												
							Varget	43.0	2119	39,500 CUP	47.0C	2278	48,600 CUP						

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder		Starting Loads			Maximum Loads			Powder		Starting Loads			Maximum Loads				
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure
IMR 4320				44.5	2210	51,400 CUP											
IMR 4064				44.0C	2270	52,000 CUP											
748				46.2	2250	50,500 CUP											
BL-C(2)	44.0	2121	39,900 CUP	47.0	2240	47,200 CUP											
IMR 4895				43.0	2235	51,200 CUP											
H335	39.0	1987	39,200 CUP	43.0	2184	50,500 CUP											
H4895	40.0	2057	40,400 CUP	44.5C	2257	50,500 CUP											
IMR 3031				42.0	2260	50,800 CUP											
Benchmark	38.0	2030	39,800 CUP	42.0	2176	49,400 CUP											
H322	38.0	2095	43,500 CUP	42.5	2260	49,900 CUP											
35 WHELEN																	
Case: Remington									Twist: 1:16"								
Barrel: 24"									Trim: 2.484" Primer: Remington 9 1/2, Large Rifle								
Bullet: 180 GR. SPR FP						Dia: .358"			Col: 3.045"								
Varget	54.0	2609	39,900 CUP	60.0C	2764	42,500 CUP											
IMR 4064	56.0	2544	39,700 CUP	60.0C	2708	44,700 CUP											
BL-C(2)	62.0	2644	38,100 CUP	65.0	2860	48,500 CUP											
IMR 4895	56.0	2636	43,600 CUP	60.0C	2780	46,800 CUP											
H335	56.0	2741	45,600 CUP	60.0	2870	50,000 CUP											
H4895	56.0	2649	40,000 CUP	60.0	2798	46,800 CUP											
IMR 8208 XBR	56.0	2736	42,600 CUP	60.0C	2891	47,500 CUP											
H322	55.0	2707	44,000 CUP	58.0	2829	48,500 CUP											
Bullet: 200 GR. SIE RN						Dia: .358"			Col: 3.050"								
H380	59.0	2511	41,500 CUP	61.0	2602	45,000 CUP											
Varget	52.0	2508	40,400 CUP	57.0	2653	42,300 CUP											
IMR 4320	53.0	2436	41,400 CUP	59.0C	2669	49,300 CUP											
IMR 4064	54.0	2460	40,800 CUP	59.0C	2637	46,400 CUP											
BL-C(2)	60.0	2636	43,000 CUP	63.0	2807	49,000 CUP											
IMR 4895	54.0	2512	42,800 CUP	59.0C	2696	48,800 CUP											
H335	52.0	2588	44,900 CUP	55.0	2684	50,000 CUP											
H4895	54.0	2544	43,500 CUP	57.0	2689	49,000 CUP											
IMR 8208 XBR	53.0	2579	41,300 CUP	59.0C	2802	48,900 CUP											
IMR 3031	50.0	2467	40,900 CUP	55.5	2711	48,900 CUP											
H322	52.0	2540	42,600 CUP	56.0	2691	48,500 CUP											
Bullet: 220 GR. SPR FP						Dia: .358"			Col: 3.045"								
H380	58.0	2389	41,500 CUP	60.0	2490	44,800 CUP											
IMR 4320	49.5	2290	43,400 CUP	55.0	2510	49,600 CUP											
IMR 4064	49.5	2248	41,000 CUP	55.5C	2499	48,000 CUP											
BL-C(2)	58.0	2492	44,000 CUP	61.0	2636	49,000 CUP											
IMR 4895	50.0	2332	42,200 CUP	56.0C	2569	50,300 CUP											
H335	50.0	2429	44,500 CUP	53.0	2519	49,500 CUP											
H4895	51.0	2461	44,000 CUP	55.0	2588	50,000 CUP											
IMR 8208 XBR	49.5	2397	42,600 CUP	55.0	2623	50,200 CUP											
IMR 3031	46.0	2270	41,300 CUP	51.5	2516	49,100 CUP											
H322	50.0	2392	43,500 CUP	54.0	2566	49,500 CUP											
Bullet: 225 GR. SIE SBT						Dia: .358"			Col: 3.175"								
Varget	51.0	2442	43,500 CUP	56.0	2588	46,400 CUP											
IMR 4064	51.0	2321	42,400 CUP	56.0C	2547	49,200 CUP											
IMR 4895	49.5	2315	41,300 CUP	55.0C	2553	50,000 CUP											
H4895	49.5	2404	40,900 CUP	55.0C	2611	49,200 CUP											
IMR 8208 XBR	49.5	2409	40,500 CUP	55.0C	2618	49,600 CUP											
Bullet: 250 GR. HDY SP						Dia: .358"			Col: 3.290"								
H380	57.0	2304	41,000 CUP	59.0	2416	44,500 CUP											
Varget	50.0	2348	44,900 CUP	55.0	2486	49,900 CUP											
IMR 4320	49.0	2170	43,400 CUP	53.8	2387	50,100 CUP											
IMR 4064	49.0	2200	41,700 CUP	54.8C	2449	50,200 CUP											
BL-C(2)	56.0	2382	43,000 CUP	59.0	2503	48,900 CUP											
IMR 4895	48.0	2178	41,400 CUP	53.5	2421	50,300 CUP											
H335	49.0	2288	44,200 CUP	52.0	2404	50,000 CUP											
H4895	49.0	2330	43,700 CUP	53.0	2455	50,000 CUP											
IMR 8208 XBR	49.0	2311	44,000 CUP	54.3C	2515	50,300 CUP											
H322	48.0	2249	44,000 CUP	52.0	2398	48,500 CUP											
9.3 x 62																	
Case: Norma									Twist: 1:10"								
Barrel: 24"									Trim: 2.431" Primer: CCI 200, Large Rifle								
Bullet: 250 GR. BARTSX						Dia: .366"			Col: 3.200"								
Varget	52.0	2199	33,900 CUP	58.0C	2436	47,200 CUP											
IMR 4895	52.0	2185	39,200 CUP	58.0C	2438	48,700 CUP											
H335	49.5	2188	38,800 CUP	56.0	2435	48,800 CUP											
H4895	51.0	2221	37,000 CUP	57.0C	2484	48,700 CUP											
IMR 3031	49.0	2182	36,500 CUP	54.5C	2423	47,700 CUP											
Bullet: 270 GR. SPR SP						Dia: .366"			Col: 3.280"								
H4350	63.0	2322	38,500 CUP	67.0C	2438	44,600 CUP											
IMR 4350	58.0	2117	38,400 CUP	64.0C	2347	47,600 CUP											
Varget	55.0	2290	40,100 CUP	59.5	2440	48,100 CUP											
IMR 4320	51.0	2151	39,200 CUP	56.0	2328	47,900 CUP											
IMR 4064	50.0	2139	40,200 CUP	54.5	2317	48,300 CUP											
BL-C(2)	60.0	2338	39,600 CUP	66.0	2548	47,400 CUP											
IMR 4895	50.0	2092	37,200 CUP	56.0	2328	48,300 CUP											
H335	54.0	2283	40,700 CUP	58.0	2411	47,600 CUP											
H4895	52.0	2244	39,800 CUP	56.5	2406	48,000 CUP											
IMR 3031	48.0	2154	36,900 CUP	53.5	2380	48,800 CUP											
Bullet: 286 GR. NOS PART						Dia: .366"			Col: 3.225"								
H4350	64.0	2321	40,800 CUP	67.0C	2407	46,300 CUP											
H414	60.0	2205	40,700 CUP	63.0C	2305	47,800 CUP											
760	60.0	2205	40,700 CUP	63.0C	2305	47,800 CUP											
Varget	55.0	2242	39,800 CUP	59.0C	2350	47,500 CUP											
IMR 4064	49.0	2015	35,700 CUP	54.5C	2218	46,100 CUP											
748	52.0	2056	34,300 CUP	57.0	2241	43,200 CUP											
IMR 4895	51.0	2108	38,200 CUP	56.0C	2279	48,000 CUP											
H335	51.0	2178	41,300 CUP	55.0	2323	48,100 CUP											
H4895	51.0	2131	39,000 CUP	55.5	2331	47,800 CUP											
IMR 3031	47.0	2058	35,700 CUP	51.5C	2219	46,900 CUP											
Bullet: 300 GR. SFT SP						Dia: .366"			Col: 3.150"								
Hybrid 100V	56.0	2041	39,300 CUP	60.0C	2158	42,600 CUP											
H4350	60.0	2142	40,000 CUP	64.0C	2288	48,100 CUP											
H414	59.0	2136	41,500 CUP	62.0C	2242	46,200 CUP											
760	59.0	2136	41,500 CUP	62.0C	2242	46,200 CUP											
Varget	52.0	2083	42,000 CUP	56.0	2194	47,800 CUP											
IMR 4320	50.0	2039	38,700 CUP	54.0C	2184	47,900 CUP											
IMR 4064	49.0	2002	38,600 CUP	54.5C	2205	48,900 CUP											
748	52.0	2096	36,700 CUP	56.5	2234	44,500 CUP											
BL-C(2)	54.0	2140	42,900 CUP	57.5	2211	47,900 CUP											
IMR 4895	49.0	2020	38,800 CUP	54.7C	2224	48,500 CUP											
H4895	47.0	1979	40,200 CUP	52.0	2133	48,200 CUP											
IMR 3031	46.0	2002	37,200 CUP	52.0C	2230</												

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 4166	44.3	1981	38,300 CUP	48.4	2121	42,400 CUP	IMR 4895	60.0	2527	45,400 CUP	66.5	2683	49,600 CUP
Bullet: 286 GR. NOS PART Dia: .366" Col: 3.700"							H335	69.0	2694	43,600 CUP	74.0	2853	50,000 CUP
H4831	66.0	2119	33,400 CUP	70.0C	2232	36,800 CUP	H4895	69.0	2743	44,300 CUP	74.0	2895	50,400 CUP
H4350	61.5	2211	36,800 CUP	65.5C	2323	41,500 CUP	IMR 8208 XBR	61.0	2632	45,400 CUP	67.0	2793	50,900 CUP
H414	64.0	2206	34,200 CUP	68.0	2351	40,200 CUP	IMR 3031	56.0	2505	45,200 CUP	62.5	2669	50,700 CUP
IMR 4350	58.0	2084	33,700 CUP	64.0C	2241	41,000 CUP	Trail Boss	19.0	1091		26.3	1144	
760	64.0	2206	34,200 CUP	68.0	2351	40,200 CUP	Bullet: 250 GR. SFT SP Dia: .375" Col: 3.555"						
H380	58.0	2146	36,000 CUP	62.0	2266	41,700 CUP	H4350	78.0	2620	41,500 CUP	83.0 C	2733	44,900 CUP
Varget	51.0	2125	38,200 CUP	54.0	2200	41,800 CUP	H414	77.0	2586	41,100 CUP	82.5	2746	46,300 CUP
Bullet: 300 GR. SFT SP Dia: .366" Col: 3.640"							IMR 4350	71.0	2422	44,000 CUP	79.0C	2604	48,600 CUP
H4831	61.0	1939	31,900 CUP	67.0C	2128	40,400 CUP	760	77.0	2586	41,100 CUP	82.5	2746	46,300 CUP
H4350	58.0	2111	38,900 CUP	62.0C	2210	42,100 CUP	H380	74.0	2635	43,300 CUP	79.0	2753	47,300 CUP
H414	60.0	2100	34,500 CUP	64.0	2228	41,100 CUP	CFE 223	75.7	2754	46,900 CUP	79.7	2827	48,200 CUP
IMR 4350	56.0	2010	34,900 CUP	62.2C	2199	41,900 CUP	Varget	62.0	2531	43,900 CUP	66.5	2642	49,700 CUP
760	60.0	2100	34,500 CUP	64.0	2228	41,100 CUP	IMR 4064	60.0	2394	42,400 CUP	67.0	2586	49,200 CUP
H380	53.0	1993	36,900 CUP	57.0	2120	42,200 CUP	BL-C(2)	75.0	2711	43,900 CUP	80.0	2835	49,300 CUP
38-55 WINCHESTER							IMR 4895	57.0	2323	41,700 CUP	63.0	2515	49,300 CUP
Case: Winchester			Twist: 1:18"				H335	64.0	2496	41,400 CUP	68.0	2659	50,600 CUP
Barrel: 24"			Trim: 2.075"		Primer: CCI 200, Large Rifle		H4895	64.0	2574	44,800 CUP	69.0	2696	49,700 CUP
Bullet: 250 GR. LYMAN CAST Dia: .376" Col: 2.500"							IMR 8208 XBR	58.0	2500	45,600 CUP	62.2	2609	49,900 CUP
H4895	21.0	1197	18,200 CUP	26.0	1600	26,500 CUP	Bullet: 260 GR. NOS PART Dia: .375" Col: 3.580"						
H322	24.0	1534	22,500 CUP	27.0	1692	27,600 CUP	H4831	76.0	2470	43,700 CUP	83.0C	2622	47,800 CUP
H4198	18.5	1408	17,100 CUP	24.0	1740	26,200 CUP	Hybrid 100V	73.0	2533	44,100 CUP	77.0C	2667	47,900 CUP
Trail Boss	6.0	842	20,300 CUP	7.0	911	25,600 CUP	H4350	70.0	2551	47,300 CUP	78.0	2702	51,700 CUP
Bullet: 255 GR. BAR JFP Dia: .375" Col: 2.620"							H414	74.0	2509	40,600 CUP	79.5	2651	44,800 CUP
H322	27.0	1603	25,500 CUP	33.0	1830	28,200 CUP	IMR 4350	70.0	2416	42,600 CUP	78.6C	2624	50,600 CUP
H4198	24.0	1554	21,400 CUP	28.0	1788	26,700 CUP	760	74.0	2509	40,600 CUP	79.5	2651	44,800 CUP
375 WINCHESTER							H380	72.0	2617	46,200 CUP	77.0	2726	49,800 CUP
Case: Winchester			Twist: 1:12"				IMR 4064	60.0	2450	46,700 CUP	67.0	2605	51,200 CUP
Barrel: 24"			Trim: 2.010"		Primer: Winchester LR, Large Rifle		Bullet: 270 GR. BARTSX Dia: .375" Col: 3.550"						
Bullet: 200 GR. SIE JFP Dia: .375" Col: 2.530"							Hybrid 100V	69.0	2274	39,200 CUP	75.0C	2588	46,100 CUP
H322	39.0	2223	35,300 CUP	42.0C	2419	46,900 CUP	H4350	69.0	2263	38,300 CUP	75.0C	2465	42,800 CUP
H4198	35.0	2288	36,900 CUP	38.0C	2480	50,600 CUP	H414	72.0	2394	39,200 CUP	79.0	2529	43,200 CUP
Bullet: 220 GR. HDY JFP Dia: .375" Col: 2.500"							IMR 4350	69.0	2237	40,300 CUP	76.0C	2464	46,700 CUP
H322	35.0	2029	35,700 CUP	38.5C	2236	48,900 CUP	H380	70.0	2413	42,400 CUP	78.0	2632	50,100 CUP
H4198	31.0	2067	33,700 CUP	34.0	2233	49,300 CUP	Varget	58.0	2369	46,400 CUP	65.0	2521	50,000 CUP
375 H & H MAGNUM							IMR 4064	61.0	2334	43,300 CUP	68.0C	2530	49,700 CUP
Case: Winchester			Twist: 1:12"				IMR 4895	59.0	2322	44,100 CUP	66.0	2474	49,500 CUP
Barrel: 24"			Trim: 2.840"		Primer: Federal 215 M, Large Rifle Magnum Match		Bullet: 300 GR. SIE SPBT Dia: .375" Col: 3.600"						
Bullet: 200 GR. SIE JFP Dia: .375" Col: 3.350"							Hybrid 100V	66.0	2277	45,200 CUP	72.0C	2400	47,400 CUP
H380	78.0	2898	42,100 CUP	83.0	2999	43,600 CUP	H4350	77.0	2539	45,400 CUP	81.5 C	2645	49,500 CUP
CFE 223	79.6	2736	38,600 CUP	86.5	3056	45,700 CUP	H414	75.0	2502	45,200 CUP	78.0	2548	46,800 CUP
Varget	65.0	2839	41,900 CUP	76.0	3121	50,300 CUP	IMR 4350	68.0	2246	41,700 CUP	76.0C	2478	50,300 CUP
IMR 4064	68.0	2740	42,400 CUP	75.5C	2948	50,000 CUP	760	75.0	2502	45,200 CUP	78.0	2548	46,800 CUP
BL-C(2)	78.0	2874	37,700 CUP	87.0	3195	46,800 CUP	Varget	58.0	2345	45,200 CUP	62.0	2454	49,300 CUP
IMR 4895	67.0	2752	45,300 CUP	74.0	2918	50,700 CUP	IMR 4064	58.0	2289	46,300 CUP	65.0	2449	51,100 CUP
H335	68.0	2800	41,400 CUP	80.0	3153	49,800 CUP	IMR 4895	57.0	2287	47,400 CUP	63.3	2427	50,600 CUP
H4895	67.0	2828	42,300 CUP	78.5	3116	48,700 CUP	H4895	61.0	2411	46,800 CUP	65.0	2505	50,400 CUP
IMR 8208 XBR	69.0	2910	47,700 CUP	75.5	3079	50,200 CUP	375 RUGER						
IMR 3031	63.0	2688	41,600 CUP	69.0	2916	50,000 CUP	Case: Hornady			Twist: 1:12"			
Bullet: 235 GR. SPR SP Dia: .375" Col: 3.600"							Barrel: 24"			Trim: 2.580"		Primer: Winchester LRM, Large Rifle Magnum	
H414	80.0	2693	40,700 CUP	83.0	2749	42,600 CUP	Bullet: 225 GR. HDY SP Dia: .375" Col: 3.320"						
760	80.0	2693	40,700 CUP	83.0	2749	42,600 CUP	H414	82.0	2967	49,800 PSI	87.4	3125	59,600 PSI
H380	76.0	2786	40,400 CUP	81.0	2835	46,800 CUP	760	82.0	2967	49,800 PSI	87.4	3125	59,600 PSI
CFE 223	77.9	2790	43,300 CUP	84.7	3006	50,300 CUP	H380	79.3	2925	49,200 PSI	83.2	3065	57,800 PSI
Varget	65.0	2684	46,700 CUP	70.0	2819	51,200 CUP	CFE 223	74.6	2936	52,200 PSI	80.0	3083	60,000 PSI
IMR 4064	63.0	2593	44,400 CUP	70.0	2749	50,300 CUP	Varget	74.1	2934	50,300 PSI	78.0	3085	60,400 PSI
BL-C(2)	80.0	2858	44,300 CUP	85.0	2964	47,100 CUP	IMR 4320	72.8	2878	50,300 PSI	78.5	3053	59,100 PSI
							IMR 4064	73.9	2918	49,200 PSI	78.1	3089	60,700 PSI
							IMR 4166	73.1	2886	51,400 PSI	77.8	3054	60,500 PSI
							748	75.6	2947	50,400 PSI	81.7	3129	60,400 PSI
							BL-C(2)	76.3	2933	51,500 PSI	81.2	3068	58,400 PSI
							IMR 4895	72.5	2886	47,600 PSI	77.9	3104	60,200 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Bullet: 235 GR. BAR TSX Dia: .375" Col: 3.280"							375 REMINGTON ULTRA MAG						
H414	76.4	2782	51,700 PSI	81.3	2922	59,400 PSI	Case: Remington		Twist: 1:12"				
760	76.4	2782	51,700 PSI	81.3	2922	59,400 PSI	Barrel: 24" Trim: 2.840"		Primer: Remington 9 1/2M, Large Rifle Magnum				
H380	74.7	2752	52,000 PSI	79.5	2907	58,900 PSI	Bullet: 210 GR. BAR XFB Dia: .375" Col: 3.600"						
CFE 223	70.9	2793	53,500 PSI	75.4	2932	61,100 PSI	H4350	96.0	3078	52,100 PSI	102.5	3293	63,300 PSI
Varget	69.1	2709	48,600 PSI	73.5	2885	59,600 PSI	H414	98.0	3177	55,600 PSI	104.0	3321	63,200 PSI
IMR 4320	70.0	2776	53,100 PSI	73.4	2877	59,100 PSI	760	98.0	3177	55,600 PSI	104.0	3321	63,200 PSI
IMR 4064	68.2	2764	50,700 PSI	72.5	2905	60,100 PSI	Varget	85.0	3110	54,700 PSI	91.0	3271	63,100 PSI
IMR 4166	69.8	2786	52,100 PSI	74.3	2935	60,100 PSI	Bullet: 225 GR. HDY SP Dia: .375" Col: 3.560"						
748	68.6	2752	52,100 PSI	73.0	2887	59,200 PSI	H4831	105.0	3062	56,200 PSI	108.0C	3137	60,600 PSI
BL-C(2)	70.5	2791	53,700 PSI	75.0	2908	60,200 PSI	H4350	95.0	3027	52,200 PSI	101.0	3214	62,800 PSI
IMR 4895	68.3	2757	50,400 PSI	72.7	2907	59,600 PSI	H414	96.0	3109	55,600 PSI	101.0	3236	63,400 PSI
H4895	66.7	2768	52,800 PSI	71.0	2882	58,500 PSI	760	96.0	3109	55,600 PSI	101.0	3236	63,400 PSI
IMR 3031	63.0	2696	51,900 PSI	67.0	2831	60,400 PSI	Bullet: 235 GR. SPR SP Dia: .375" Col: 3.550"						
Bullet: 250 GR. SFT SP Dia: .375" Col: 3.270"							Bullet: 250 GR. BAR XFB Dia: .375" Col: 3.600"						
Hybrid 100V	78.0	2760	50,600 PSI	83.0C	2896	57,200 PSI	H4831	102.0	2957	53,800 PSI	108.0C	3111	62,800 PSI
IMR 4831	79.4	2627	49,000 PSI	84.5C	2829	58,700 PSI	H4350	94.0	3000	54,600 PSI	100.0	3163	63,500 PSI
H4350	77.5	2675	51,400 PSI	82.5	2834	59,000 PSI	H414	95.0	3027	54,900 PSI	100.5	3184	62,700 PSI
IMR 4451	75.3	2602	47,000 PSI	81.0	2933	59,500 PSI	760	95.0	3027	54,900 PSI	100.5	3184	62,700 PSI
H414	75.5	2710	52,100 PSI	80.3	2838	59,400 PSI	Bullet: 260 GR. NOS AB Dia: .375" Col: 3.320"						
IMR 4350	77.1	2615	49,500 PSI	82.0	2811	59,200 PSI	Hybrid 100V	77.0	2675	49,300 PSI	82.0C	2795	55,800 PSI
760	75.5	2710	52,500 PSI	80.3	2838	59,400 PSI	H4350	78.0	2681	50,800 PSI	83.5C	2837	60,100 PSI
H380	73.8	2665	50,000 PSI	78.5	2812	59,400 PSI	IMR 4451	78.3	2659	50,200 PSI	84.2C	2845	60,100 PSI
CFE 223	69.6	2704	54,900 PSI	74.0	2791	59,700 PSI	H414	74.7	2659	51,000 PSI	79.5	2808	60,400 PSI
Varget	67.7	2657	53,200 PSI	72.0	2773	59,000 PSI	IMR 4350	77.5	2638	50,500 PSI	82.5	2803	59,700 PSI
IMR 4064	66.7	2600	48,700 PSI	71.0	2763	58,900 PSI	760	74.7	2659	51,000 PSI	79.5	2808	60,400 PSI
IMR 4166	67.4	2656	51,600 PSI	71.8	2801	59,800 PSI	H380	74.0	2671	53,600 PSI	78.6	2795	59,700 PSI
Bullet: 260 GR. NOS PART Dia: .375" Col: 3.570"							Bullet: 270 GR. HDY SP Dia: .375" Col: 3.310"						
H4831	95.0	2767	54,100 PSI	101.0	2923	62,900 PSI	Hybrid 100V	77.1	2622	48,700 PSI	82.0C	2759	55,900 PSI
H4350	88.0	2819	56,300 PSI	92.5	2935	62,900 PSI	IMR 4831	79.9	2565	46,600 PSI	85.0C	2724	54,800 PSI
H414	87.0	2850	59,100 PSI	91.5	2933	62,900 PSI	H4350	78.5	2614	47,800 PSI	83.5C	2783	58,400 PSI
760	87.0	2850	59,100 PSI	91.5	2933	62,900 PSI	IMR 4451	78.1	2613	49,000 PSI	84.0	2802	59,600 PSI
Bullet: 270 GR. HDY SP Dia: .375" Col: 3.550"						Bullet: 285 GR. SPR GSSP Dia: .375" Col: 3.570"							
H4831	99.0	2779	54,200 PSI	104.0C	2922	62,900 PSI	H4831	96.0	2706	55,500 PSI	101.0	2830	62,900 PSI
H4350	90.0	2767	52,400 PSI	95.0	2932	62,600 PSI	H4350	88.0	2724	57,500 PSI	92.5	2836	62,600 PSI
H414	89.0	2789	54,400 PSI	93.0	2924	63,000 PSI	H414	86.0	2720	57,800 PSI	91.0	2838	63,700 PSI
760	89.0	2789	54,400 PSI	93.0	2924	63,000 PSI	760	86.0	2720	57,800 PSI	91.0	2838	63,700 PSI
Bullet: 300 SFT SP Dia: .375" Col: 3.550"						Bullet: 300 GR. HDY RN Dia: .375" Col: 3.280"							
H1000	103.0	2628	54,000 PSI	105.0C	2678	57,600 PSI	IMR 4955	78.9	2429	47,100 PSI	85.8C	2653	60,200 PSI
H4831	92.0	2593	54,600 PSI	97.0	2719	62,500 PSI	H4831	82.7	2457	48,100 PSI	88.0C	2611	57,800 PSI
H4350	85.0	2598	54,400 PSI	90.0	2733	62,700 PSI	Hybrid 100V	73.8	2486	49,400 PSI	78.5	2645	59,100 PSI
Bullet: 285 GR. SPR GSSP Dia: .375" Col: 3.570"						Bullet: 350 GR. BAR TSX FB Dia: .375" Col: 3.295"							
H4831	96.0	2706	55,500 PSI	101.0	2830	62,900 PSI	IMR 4955	67.4C	2129	49,300 PSI	73.3C	2302	59,300 PSI
H4350	88.0	2724	57,500 PSI	92.5	2836	62,600 PSI	Hybrid 100V	65.0	2230	51,600 PSI	71.0C	2396	60,600 PSI
H414	86.0	2720	57,800 PSI	91.0	2838	63,700 PSI	H4350	62.1	2142	50,900 PSI	66.9C	2281	59,200 PSI
760	86.0	2720	57,800 PSI	91.0	2838	63,700 PSI	IMR 4451	63.0	2119	51,200 PSI	68.2C	2274	59,800 PSI
Bullet: 300 GR. HDY SP Dia: .375" Col: 3.645"						Bullet: 300 GR. NOS PART Dia: .375" Col: 3.680"							
H4831	107.0	2972	117.0	3202			H4831	102.0	2624	112.0	2926		
H4350	102.0	3003	109.0	3224			H4350	95.0	2595	100.0	2940		

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
40-65 WINCHESTER													
Case: Winchester							Twist: 1:16"						
Barrel: 24"							Trim: 2.095" Primer: Winchester LR, Large Rifle						
Bullet: 400 GR. LRNFP Dia: .409" Col: 2.780"													
Varget	35.0	1438	20,100 CUP	38.0	1558	24,800 CUP	BL-C(2)	84.0	2475	40,600 CUP	87.0	2580	44,700 CUP
H4895	33.0	1423	19,700 CUP	36.0	1554	24,200 CUP	IMR 4895				77.0	2425	53,700 CUP
IMR 8208 XBR	30.8	1409	24,300 CUP	32.4	1462	25,100 CUP	H335	78.0	2464	45,400 CUP	82.0	2572	50,900 CUP
Benchmark	29.0	1321	18,800 CUP	32.5	1491	25,000 CUP	H4895	75.0	2476	45,000 CUP	80.0	2601	52,200 CUP
H322	30.5	1398	19,200 CUP	33.0	1520	23,900 CUP	IMR 8208 XBR	71.0	2409	44,600 CUP	77.0	2551	52,700 CUP
IMR 4198	25.2	1373	22,000 CUP	26.5	1446	25,200 CUP	IMR 3031				76.5	2450	53,000 CUP
H4198	28.0	1441	21,200 CUP	31.0	1572	24,700 CUP	Trail Boss	20.0	913	19,700 CUP	29.0	1143	29,900 CUP
H4227	20.0	1277	18,900 CUP	23.0	1410	24,900 CUP	Bullet: 400 GR. HDY JRN Dia: .416" Col: 3.560"						
Trail Boss	11.0	889	20,000 CUP	12.0	915	21,200 CUP	H4350	85.0	2305	41,400 CUP	88.0 C	2395	46,400 CUP
405 WINCHESTER													
Case: Hornady							Twist: 1:14"						
Barrel: 24"							Trim: 2.573" Primer: Winchester LR, Large Rifle						
Bullet: 300 GR. BAR TSX FB Dia: .411" Col: 3.200"													
Varget	50.0	1899	35,200 PSI	55.0C	2083	42,500 PSI	IMR 4451	82.6	2306	45,500 CUP	87.0	2429	51,300 CUP
IMR 4320	48.0	1798	34,400 PSI	53.0	2002	42,300 PSI	H380	78.0	2234	42,900 CUP	84.0	2367	48,500 CUP
IMR 4064	48.0	1849	35,500 PSI	53.5C	2057	43,900 PSI	Varget	72.0	2276	46,300 CUP	77.0	2407	53,000 CUP
IMR 4166	45.2	1807	35,600 PSI	50.8	2024	44,100 PSI	IMR 4064				78.0	2335	52,000 CUP
IMR 4895	48.0	1847	35,600 PSI	53.5	2055	43,800 PSI	IMR 4166	70.2	2238	45,100 CUP	75.6	2397	53,000 CUP
H4895	48.0	1945	35,500 PSI	53.5C	2157	44,500 PSI	BL-C(2)	78.0	2290	45,900 CUP	83.0	2420	50,500 CUP
IMR 8208 XBR	46.0	1915	36,700 PSI	51.2	2101	43,500 PSI	IMR 4895				76.5	2325	53,800 CUP
IMR 3031	43.0	1818	35,000 PSI	47.5	2019	43,200 PSI	H4895	71.0	2268	46,100 CUP	76.0	2391	53,300 CUP
Benchmark	45.0	1879	34,400 PSI	50.0	2077	43,000 PSI	IMR 8208 XBR	68.0	2233	46,100 CUP	73.0	2348	52,800 CUP
Bullet: 300 GR. HDY FP Dia: .411" Col: 3.085"													
Varget	55.0	2079	32,600 PSI	61.0	2275	41,200 PSI	IMR 3031				75.0	2315	52,100 CUP
IMR 4064	52.0	2022	35,800 PSI	57.7C	2226	43,900 PSI	416 RIGBY						
IMR 4166	48.6	1976	35,700 PSI	54.7	2192	44,700 PSI	Case: Norma						
IMR 4895	52.0	2031	36,700 PSI	58.6C	2233	44,100 PSI	Twist: 1:16.5"						
H4895	53.0	2114	33,200 PSI	59.0	2300	40,000 PSI	Barrel: 24"						
IMR 8208 XBR	50.0	2086	36,500 PSI	56.0	2260	42,900 PSI	Trim: 2.890" Primer: Federal 215M, Large Rifle						
IMR 3031	47.0	1952	31,700 PSI	53.0	2216	44,300 PSI	Magnum Match						
Benchmark	53.0	2206	34,100 PSI	59.0	2404	42,200 PSI	Bullet: 300 GR. BAR TSX Dia: .416" Col: 3.630"						
H322	44.0	1996	34,800 PSI	49.0	2150	41,200 PSI	IMR 7828 SSC	97.0	2285	33,400 CUP	108.0	2617	43,900 CUP
H4198	37.5	1925	32,300 PSI	41.5	2091	43,000 PSI	IMR 4955	96.5	2488	34,700 CUP	105.0	2717	43,400 CUP
Bullet: 400 GR. WDLGH RNSN Dia: .411" Col: 3.230"													
Varget	48.0	1790	37,000 PSI	52.0	1928	44,300 PSI	H4831	102.0	2555	34,900 CUP	109.5	2725	40,600 CUP
IMR 4064	44.0	1684	35,900 PSI	49.4	1856	43,800 PSI	Hybrid 100V	90.2	2497	37,600 CUP	96.0	2641	43,000 CUP
IMR 4895	44.0	1717	38,800 PSI	49.5	1860	44,100 PSI	IMR 4831	95.0	2476	35,800 CUP	102.0	2694	43,000 CUP
H4895	45.5	1801	37,100 PSI	50.5	1945	44,900 PSI	H4350	92.0	2577	35,700 CUP	99.0	2776	42,900 CUP
IMR 8208 XBR	39.0	1652	36,700 PSI	43.0	1784	42,900 PSI	IMR 4451	91.8	2479	36,200 CUP	96.7	2644	42,500 CUP
H4198	33.0	1582	33,600 PSI	36.5	1718	43,400 PSI	H414	94.7	2594	35,900 CUP	103.0	2805	42,500 CUP
416 REMINGTON MAGNUM													
Case: Remington							Twist: 1:14"						
Barrel: 24"							Trim: 2.840" Primer: Remington 9 1/2 M, Large Rifle Magnum						
Bullet: 300 GR. BAR TSX Dia: .416" Col: 3.600"													
Varget	79.0	2610	42,900 CUP	84.0C	2745	48,600 CUP	IMR 4350	92.9	2445	31,800 CUP	101.0	2725	42,600 CUP
IMR 4064	79.0	2640	42,800 CUP	84.0C	2743	47,000 CUP	Bullet: 325 GR. BAR XFB Dia: .416" Col: 3.660"						
IMR 4166	77.2	2597	43,100 CUP	83.0	2783	51,000 CUP	H4831	102.0	2522	37,700 CUP	107.0	2631	43,700 CUP
BL-C(2)	86.0	2556	37,900 CUP	90.0	2681	42,600 CUP	H4350	94.0	2549	37,600 CUP	99.0	2660	43,600 CUP
IMR 4895	79.0	2649	43,100 CUP	84.5C	2781	48,400 CUP	H414	94.0	2596	38,300 CUP	99.0	2702	43,400 CUP
H335	79.0	2618	44,300 CUP	84.5	2778	50,300 CUP	760	94.0	2596	38,300 CUP	99.0	2702	43,400 CUP
H4895	75.0	2631	43,700 CUP	80.5	2779	50,300 CUP	Bullet: 350 GR. SPR SP Dia: .416 Col: 3.640"						
IMR 8208 XBR	74.0	2600	44,200 CUP	78.5	2725	52,700 CUP	H1000	112.0	2479	37,400 CUP	116.0C	2551	39,900 CUP
Bullet: 350 GR. SPR SP Dia: .416" Col: 3.590"													
IMR 4451	74.7	2446	43,500 CUP	80.4	2597	50,300 CUP	IMR 7977	109.3	2461	37,500 CUP	115.0C	2578	41,300 CUP
Varget	77.0	2519	46,900 CUP	82.0	2622	52,400 CUP	IMR 7828 SSC	97.5	2286	32,000 CUP	106.0	2535	43,300 CUP
IMR 4064				81.0	2485	51,600 CUP	IMR 4955	95.5	2359	33,700 CUP	104.0	2630	43,200 CUP
NEVER EXCEED MAXIMUM LOADS													
*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.													

RIFLE DATA

Starting Loads				Maximum Loads			Starting Loads				Maximum Loads		
Powder	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure	Powder	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
44-40 WINCHESTER							H110	19.5	1502	29,300 CUP	21.5	1637	37,700 CUP
Case: Winchester Twist: 1:36"							Bullet: 280 GR. SFT JHP Dia: .430" Col: 1.700"						
Barrel: 20" Trim: 1.295" Primer: Winchester LP, Large Pistol							H4227	20.0	1354	27,600 CUP	22.0	1544	37,800 CUP
Bullet: 200 GR. LEAD RNFP Dia: .428" Col: 1.600"							H110	18.5	1358	27,000 CUP	20.5	1510	36,100 CUP
Universal	6.6	950	10,000 PSI	7.3	1069	11,100 PSI	Bullet: 300 GR. HDY XTP Dia: .430" Col: 1.600"						
231	5.5	901	9,800 PSI	6.5	1020	12,400 PSI	H4227	18.0	1318	30,600 CUP	20.0	1452	38,600 CUP
HP-38	5.5	901	9,800 PSI	6.5	1020	12,400 PSI	H110	18.0	1393	35,100 CUP	19.0	1473	38,800 CUP
Titegroup	5.0	956	8,400 PSI	6.2	1117	12,900 PSI	444 MARLIN						
Clays	4.2	845	8,200 PSI	5.0	924	11,700 PSI	Case: Remington Twist: 1:38"						
44 MAGNUM							Barrel: 24" Trim: 2.215" Primer: Remington 9 1/2, Large Rifle						
Case: Winchester Twist: 1:38"							Bullet: 200 GR. BAR XFB Dia: .429" Col: 2.550"						
Barrel: 20" Trim: 1.280" Primer: Remington 2 1/2, Large Pistol							H335	53.0	2080	27,800 CUP	56.0	2215	33,800 CUP
Bullet: 165 GR. LRNFP CAST Dia: .430" Col: 1.500"							Benchmark	50.0	2040	27,600 CUP	54.0	2212	35,800 CUP
Universal	6.5	1009	7,700 CUP	7.2	1138	11,500 CUP	H322	50.0	2139	30,200 CUP	52.0C	2206	33,600 CUP
HP-38	6.0	1078	10,100 CUP	7.0	1225	13,900 CUP	IMR 4198	42.6	2171	31,800 CUP	47.3C	2396	40,300 CUP
Titegroup	5.3	1127	11,800 CUP	6.5	1280	16,400 CUP	H4198	46.0	2309	34,400 CUP	51.2C	2566	42,900 CUP
Clays	4.4	949	8,500 CUP	5.5	1147	15,500 CUP	Bullet: 225 GR. BAR XFB Dia: .429" Col: 2.550"						
Bullet: 180 GR. HDY XTP Dia: .430" Col: 1.600"							H335	49.0	1891	25,500 CUP	52.0	2031	34,500 CUP
H4227	27.5	2005	24,000 CUP	29.0	2114	31,200 CUP	Benchmark	49.0	2028	34,500 CUP	52.0C	2127	38,100 CUP
H110	29.0	2170	21,800 CUP	31.5	2286	29,900 CUP	H322	47.0	2029	33,400 CUP	50.0C	2144	37,000 CUP
Bullet: 185 GR. LRNFP CAST Dia: .430" Col: 1.540"							IMR 4198	41.6	2137	36,900 CUP	46.2C	2324	43,200 CUP
Universal	6.4	993	8,400 CUP	7.4	1180	12,600 CUP	H4198	42.2	2107	32,300 CUP	46.9	2361	42,300 CUP
HP-38	5.9	1035	9,400 CUP	7.2	1207	14,700 CUP	Bullet: 240 GR. SIE JHP Dia: .430" Col: 2.535"						
Titegroup	5.3	1072	9,500 CUP	6.6	1248	16,500 CUP	H335	52.5	2049	29,200 CUP	56.0	2222	38,900 CUP
Clays	4.2	859	8,900 CUP	6.0	1162	18,400 CUP	H4895	51.0	1999	29,600 CUP	53.0C	2069	33,100 CUP
Bullet: 200 GR. LRNFP CAST Dia: .430" Col: 1.570"							Benchmark	51.0	2042	31,600 CUP	55.0C	2234	40,600 CUP
Universal	6.8	1065	10,500 CUP	7.8	1209	15,400 CUP	H322	49.5	2049	31,400 CUP	52.0C	2185	35,900 CUP
HP-38	5.8	1004	10,800 CUP	7.4	1197	16,700 CUP	IMR 4198	42.0	2112	36,000 CUP	45.6	2276	42,600 CUP
Titegroup	5.0	1004	11,000 CUP	6.6	1217	17,300 CUP	H4198	44.0	2206	36,100 CUP	49.2C	2499	42,100 CUP
Clays	4.2	874	8,500 CUP	6.4	1172	20,200 CUP	Bullet: 260 GR. FA JFP Dia: .430" Col: 2.550"						
Bullet: 200 GR. NOS JHP Dia: .429" Col: 1.600"							H335	52.5	2034	31,600 CUP	56.0	2200	41,400 CUP
H4227	25.0	1840	29,800 CUP	27.0	1982	37,800 CUP	H4895	50.0	1913	32,700 CUP	53.0C	2057	36,800 CUP
H110	27.5	2064	29,000 CUP	28.5	2106	37,800 CUP	H322	47.0	1944	33,400 CUP	52.0C	2159	41,400 CUP
Bullet: 210 GR. SIE JHC Dia: .430" Col: 1.600"							H4198	41.0	2016	35,600 CUP	45.5	2194	40,900 CUP
H4227	25.0	1843	29,200 CUP	27.0	1970	37,600 CUP	Bullet: 265 GR. HDY JFP Dia: .430" Col: 2.550"						
H110	26.0	1969	29,900 CUP	27.0	2030	31,100 CUP	H335	52.5	2032	32,100 CUP	56.0	2187	39,700 CUP
Bullet: 225 GR. HDY FTX Dia: .430" Col: 1.665"							H4895	50.0	1944	29,300 CUP	53.0C	2080	34,800 CUP
IMR 4227	19.8	1330	26,800 PSI	22.0	1484	34,500 PSI	IMR 8208 XBR	51.0	2030	34,700 CUP	53.5C	2135	39,100 CUP
296	19.4	1480	26,700 PSI	21.5	1669	33,400 PSI	Benchmark	49.0	1911	31,000 CUP	53.0C	2139	40,700 CUP
H110	19.4	1480	26,700 PSI	21.5	1669	33,400 PSI	H322	47.0	1991	33,200 CUP	52.0C	2164	38,300 CUP
Lil'Gun	18.6	1595	26,600 PSI	20.7	1749	34,300 PSI	IMR 4198	42.6	2105	39,800 CUP	44.4	2187	42,100 CUP
Bullet: 225 GR. SPR JHP Dia: .429" Col: 1.575"							H4198	42.0	2034	31,100 CUP	47.0	2273	41,100 CUP
H4227	23.0	1721	27,400 CUP	25.5	1897	35,700 CUP	Bullet: 270 GR. SPR JFP Dia: .429" Col: 2.540"						
H110	23.0	1778	25,600 CUP	25.0	1924	36,300 CUP	H335	51.0	1992	31,800 CUP	55.8	2200	42,100 CUP
Bullet: 240 GR. LSWC CAST Dia: .430" Col: 1.620"							H4895	50.0	1950	29,300 CUP	53.0C	2080	33,400 CUP
Universal	6.5	927	11,700 CUP	10.2	1374	37,500 CUP	IMR 8208 XBR	51.0	2019	34,300 CUP	53.5C	2107	38,300 CUP
HP-38	5.5	907	12,000 CUP	11.0	1437	38,100 CUP	Benchmark	50.0	1978	33,500 CUP	54.0C	2166	41,700 CUP
Titegroup	4.7	908	11,100 CUP	10.0	1423	38,400 CUP	H322	47.0	1973	31,700 CUP	52.0C	2169	38,100 CUP
Clays	4.3	839	14,000 CUP	6.2	1062	21,800 CUP	IMR 4198	41.4	2050	37,300 CUP	44.0	2169	43,100 CUP
Bullet: 240 GR. NOS JHP Dia: .429" Col: 1.600"							H4198	42.0	2092	34,900 CUP	46.5	2261	41,400 CUP
IMR 4227	22.0	1624	28,400 CUP	24.0	1778	36,100 CUP	Bullet: 275 GR. BAR FP Dia: .430" Col: 2.520"						
H4227	22.0	1624	28,400 CUP	24.0	1778	36,100 CUP	H335	50.0	1984	35,400 CUP	53.5	2120	41,100 CUP
H110	23.0	1750	25,200 CUP	24.0	1817	36,200 CUP	H4895	47.0	1780	27,100 CUP	52.0C	2021	36,200 CUP
Bullet: 270 GR. SPR GDSP Dia: .429" Col: 1.600"							Benchmark	48.0	1930	35,900 CUP	51.0C	2069	42,300 CUP
H4227	20.5	1476	28,400 CUP	22.5	1638	37,400 CUP	H322	46.0	1930	33,800 CUP	51.0C	2146	43,100 CUP
NEVER EXCEED MAXIMUM LOADS							H4198	40.0	1973	33,500 CUP	44.5	2172	41,800 CUP
140							Bullet: 280 GR. SFT HP Dia: .430" Col: 2.620"						
*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.							Varget	49.0	1914	33,000 CUP	52.0C	2025	36,800 CUP
							H335	49.5	1983	36,100 CUP	52.8	2109	42,000 CUP
							H4895	47.0	1875	30,300 CUP	52.0C	2089	37,600 CUP
							IMR 8208 XBR	48.0	1942	35,900 CUP	52.0	2099	41,600 CUP

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Benchmark	46.0	1935	38,300 CUP	49.5C	2070	42,600 CUP	Bullet: 385 GR. CAST LFP	Dia: .458"	Col: 2.505"				
H322	44.5	1901	33,400 CUP	49.5	2120	42,400 CUP	Varget	42.5	1537	15,400 CUP	52.5	1805	21,800 CUP
IMR 4198	38.7	1907	36,500 CUP	42.0	2050	42,500 CUP	IMR 4064	47.0	1545	18,800 CUP	50.0	1661	24,000 CUP
H4198	38.0	1938	37,300 CUP	42.5	2108	42,300 CUP	IMR 4895	44.2	1412	16,200 CUP	47.0	1486	18,100 CUP
Bullet: 300 GR. SFT HP Dia: .430" Col: 2.620"							H4895	35.0	1280	11,900 CUP	42.0	1526	23,100 CUP
Varget	47.0	1784	30,700 CUP	50.0C	1914	35,700 CUP	IMR 3031	49.0	1684	22,300 CUP	52.0	1819	25,900 CUP
IMR 4064	47.2	1738	30,900 CUP	51.3C	1908	38,000 CUP	Benchmark	50.0	1621	16,300 CUP	53.0	1779	21,300 CUP
IMR 4895	46.6	1762	33,300 CUP	50.6C	1915	38,300 CUP	IMR 4198	31.0	1405	15,000 CUP	33.0	1491	17,400 CUP
H335	49.0	1935	37,600 CUP	52.0	2023	42,300 CUP	H4198	28.0	1302	13,300 CUP	32.0	1483	14,700 CUP
H4895	47.0	1839	33,600 CUP	50.0C	1931	35,600 CUP	Trail Boss	14.0	1075	19,400 CUP	16.0	1142	23,200 CUP
IMR 8208 XBR	46.0	1829	35,700 CUP	49.0	2029	41,600 CUP	Bullet: 405 GR. CAST LFP Dia: .458" Col: 2.540"						
IMR 3031	44.9	1859	35,600 CUP	48.8C	2004	40,100 CUP	Varget	40.0	1392	15,600 CUP	50.0	1718	20,900 CUP
Benchmark	46.0	1899	36,200 CUP	48.5	1993	41,900 CUP	IMR 4064	46.0	1534	17,900 CUP	49.5	1660	23,200 CUP
H322	43.0	1776	30,600 CUP	48.0	2038	42,600 CUP	IMR 4166	43.6	1530	21,000 PSI	49.0	1700	27,400 PSI
IMR 4198	36.8	1796	37,700 CUP	39.2	1911	42,100 CUP	IMR 4895	45.6	1496	18,900 CUP	48.5	1598	23,000 CUP
H4198	38.5	1917	36,200 CUP	42.5	2082	42,500 CUP	H4895	40.0	1424	14,900 CUP	48.0	1645	18,900 CUP
45-70 GOVERNMENT (TRAPDOOR RIFLES)*							IMR 8208 XBR	47.9	1637	21,800 CUP	51.0	1727	23,600 CUP
When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.							IMR 3031	45.5	1597	17,300 CUP	48.5	1706	21,100 CUP
Case: Winchester Twist: 1:20"							Benchmark	47.0	1564	17,100 CUP	50.0	1695	22,600 CUP
Barrel: 24" Trim: 2.100" Primer: CCI 200, Large Rifle							IMR 4198	30.0	1370	17,000 CUP	32.0	1462	19,000 CUP
Bullet: 250 GR. BAR TSX FN Dia: .458" Col: 2.525"							H4198	27.0	1251	14,200 CUP	31.0	1459	17,100 CUP
Varget	56.3	1846	19,200 PSI	62.5C	2102	26,100 PSI	Trail Boss	12.0	971	24,500 CUP	13.0	1007	25,600 CUP
IMR 4064	55.0	1832	20,400 PSI	60.0C	2012	25,500 PSI	Bullet: 485 GR. CAST LFP Dia: .458" Col: 2.540"						
IMR 4895	53.2	1745	19,200 PSI	57.9	1940	24,600 PSI	IMR 4064	38.5	1280	17,400 CUP	41.0	1372	21,300 CUP
H335	55.2	1979	22,500 PSI	60.1	2107	26,800 PSI	IMR 4895	40.0	1294	19,700 CUP	43.0	1435	25,300 CUP
H4895	53.8	1925	22,000 PSI	60.0C	2112	26,600 PSI	IMR 3031	39.5	1406	20,500 CUP	42.0	1488	22,600 CUP
IMR 8208 XBR	52.1	1801	18,000 PSI	57.8	2106	27,000 PSI	Benchmark	38.0	1290	15,600 CUP	43.0	1503	23,400 CUP
IMR 3031	51.9	1756	18,000 PSI	58.0C	2048	27,000 PSI	IMR 4198	30.5	1364	17,500 CUP	32.5	1439	21,600 CUP
Benchmark	51.5	1852	19,800 PSI	56.2	2085	27,300 PSI	H4198	28.0	1279	16,400 CUP	32.0	1434	20,400 CUP
H322	48.3	1849	19,900 PSI	53.3	2080	26,100 PSI	Trail Boss	8.0	699	17,100 CUP	10.0	804	23,300 CUP
IMR 4198	39.8	1781	18,900 PSI	47.4	2067	26,300 PSI	45-70 GOVERNMENT (LEVER ACTIONS)*						
H4198	45.9	1994	21,600 PSI	48.3	2118	26,200 PSI	When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.						
Bullet: 300 GR. CAST LFP Dia: .458" Col: 2.465"							Case: Winchester Twist: 1:20"						
Varget	45.0	1599	17,800 CUP	55.0	1880	20,600 CUP	Barrel: 24" Trim: 2.100" Primer: CCI 200, Large Rifle						
IMR 4064	49.8	1685	19,400 CUP	53.0	1813	21,800 CUP	Bullet: 250 GR. BAR TSX FN Dia: .458" Col: 2.525"						
IMR 4895	47.5	1590	16,500 CUP	50.5	1703	20,400 CUP	H335	60.2	2131	27,900 PSI	67.5	2371	38,300 PSI
H4895	45.0	1572	14,400 CUP	51.0	1703	15,500 CUP	IMR 8208 XBR	54.3	1897	20,600 PSI	64.1C	2308	32,700 PSI
IMR 8208 XBR	51.2	1723	19,500 CUP	55.0	1924	24,700 CUP	Benchmark	56.2	2085	27,300 PSI	62.5C	2298	34,000 PSI
IMR 3031	51.7	1839	18,700 CUP	55.0	1995	24,900 CUP	H322	53.3	2080	26,100 PSI	61.9C	2423	38,100 PSI
Benchmark	54.0	1788	18,300 CUP	58.0	1940	21,900 CUP	IMR 4198	47.0	2079	25,700 PSI	55.3	2432	38,600 PSI
IMR 4198	33.8	1649	15,500 CUP	36.0	1752	20,200 CUP	H4198	49.4	2152	26,400 PSI	56.5C	2487	38,700 PSI
H4198	30.0	1390	14,400 CUP	35.5	1641	16,100 CUP	Bullet: 300 GR. SIE HP Dia: .458" Col: 2.525"						
Trail Boss	14.0	1199	19,400 CUP	16.5	1285	20,900 CUP	IMR 4064	59.0	1858	20,300 CUP	65.5C	2125	28,700 CUP
Bullet: 300 GR. SIE HP Dia: .458" Col: 2.525"							IMR 4166	56.2	1957	26,700 PSI	64.0	2230	37,200 PSI
Varget	57.0	1770	16,300 CUP	63.0C	2020	23,800 CUP	IMR 4895	58.5	1800	19,900 CUP	65.0C	2087	30,000 CUP
IMR 4064	57.0	1865	22,500 CUP	60.5C	1992	25,100 CUP	H335	61.0	2073	22,500 CUP	68.0	2326	38,800 CUP
IMR 4166	51.0	1804	22,000 PSI	56.2	1957	26,700 PSI	IMR 8208 XBR	60.0	2023	25,400 CUP	65.0C	2240	32,900 CUP
IMR 4895	57.0	1826	21,700 CUP	61.0C	1968	23,900 CUP	IMR 3031	58.0	1971	21,900 CUP	64.0C	2196	29,500 CUP
H335	57.0	1901	17,500 CUP	63.5	2143	27,400 CUP	H322	57.0	2002	21,400 CUP	63.0C	2252	32,600 CUP
H4895	58.0	1805	16,500 CUP	62.0C	1974	21,000 CUP	IMR 4198	53.7	2293	33,100 CUP	57.2	2407	39,100 CUP
IMR 8208 XBR	54.0	1728	18,800 CUP	60.0	2023	25,400 CUP	H4198	55.0	2221	27,600 CUP	60.0	2424	40,000 CUP
IMR 3031	56.0	1884	21,100 CUP	59.5C	2021	22,000 CUP	Bullet: 325 GR. HDY FTX Dia: .458" Col: 2.590"						
Benchmark	59.5	1907	19,400 CUP	63.5C	2113	27,400 CUP	H322	51.5	1951	26,000 CUP	59.4C	2250	37,600 CUP
H322	54.0	1850	18,100 CUP	60.0	2142	28,000 CUP	Bullet: 350 GR. HDY JRN Dia: .458" Col: 2.540"						
IMR 4198	45.0	2008	23,500 CUP	48.0	2138	27,800 CUP	Varget	54.0	1786	21,800 CUP	60.0C	2013	29,500 CUP
H4198	45.0	1807	16,700 CUP	55.0	2221	27,600 CUP	IMR 4064	58.0	1967	32,700 CUP	62.0C	2085	36,700 CUP
Bullet: 325 GR. HDY FTX Dia: .458" Col: 2.590"							IMR 4166	52.2	1775	26,800 PSI	58.7C	2022	37,600 PSI
H335	48.8	1688	17,800 CUP	56.8	1958	26,300 CUP	IMR 4895	57.5	1891	29,200 CUP	61.0C	2026	37,200 CUP
H4895	41.8	1327	13,700 CUP	53.3C	1834	23,500 CUP	H335	54.0	1903	26,000 CUP	60.0	2094	38,800 CUP
IMR 8208 XBR	48.5	1618	18,400 CUP	56.8C	1936	25,800 CUP	H4895	53.0	1784	21,700 CUP	59.0C	2045	32,900 CUP
IMR 3031	46.3	1491	16,600 CUP	54.3	1862	24,700 CUP	IMR 8208 XBR	55.0	1930	26,800 CUP	61.0C	2152	36,200 CUP
H322	36.5	1401	17,100 CUP	51.5	1951	26,000 CUP	IMR 3031	56.5	2022	31,400 CUP	60.0C	2135	37,100 CUP

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Benchmark	56.0	1886	26,900 CUP	60.0C	2092	39,300 CUP	H4895	58.0	1849	26,000 CUP	64.0	2012	28,300 CUP
IMR 4198	47.0	2032	32,500 CUP	50.0	2131	36,600 CUP	IMR 3031	51.0	1648	17,500 CUP	55.3	1837	23,500 CUP
H4198	48.5	2036	32,200 CUP	54.0	2191	39,300 CUP	Benchmark	53.0	1805	26,500 CUP	58.0	1917	27,200 CUP
Bullet: 400 GR. SPR JFP Dia: .458" Col: 2.540"						Bullet: 500 GR. LY #457125 Dia: .458" Col: 3.920"							
Varget	50.0	1655	18,600 CUP	55.0C	1845	25,000 CUP	Varget	56.0	1618	24,200 CUP	61.0	1737	27,900 CUP
IMR 4064	53.5	1808	29,700 CUP	57.0C	1918	36,400 CUP	IMR 4064	53.0	1567	19,500 CUP	57.0	1716	25,400 CUP
IMR 4166	49.0	1645	28,000 PSI	56.0C	1873	38,100 PSI	IMR 4895	52.0	1535	19,600 CUP	56.0	1676	24,800 CUP
IMR 4895	54.0	1785	30,500 CUP	58.0C	1930	38,600 CUP	H4895	54.0	1641	24,400 CUP	60.0	1809	28,500 CUP
H335	52.0	1798	25,400 CUP	58.0	1995	40,000 CUP	H4895	54.0	1641	24,400 CUP	60.0	1809	28,500 CUP
H4895	50.0	1614	19,200 CUP	55.0C	1859	26,500 CUP	IMR 3031	48.0	1533	18,600 CUP	52.0	1636	23,400 CUP
IMR 3031	51.0	1809	26,900 CUP	55.0C	1971	37,300 CUP	Benchmark	50.0	1607	26,600 CUP	54.5	1747	28,200 CUP
Benchmark	55.0	1856	29,600 CUP	58.5C	1986	40,000 CUP	H322	48.0	1568	25,400 CUP	52.0	1695	28,300 CUP
H322	50.0	1767	23,700 CUP	55.0C	1984	39,200 CUP	H4198	42.0	1523	25,200 CUP	46.5	1650	28,300 CUP
IMR 4198	43.0	1868	31,600 CUP	46.0	1960	37,600 CUP	Trail Boss	26.0	1050	20,100 CUP	29.0	1105	24,300 CUP
H4198	46.0	1854	29,500 CUP	50.5	2002	39,400 CUP							

45-70 GOVERNMENT (MODERN RIFLES)*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Winchester Twist: 1:20"
Barrel: 24" Trim: 2.100" Primer: CCI 200, Large Rifle

Bullet: 250 GR. BAR TSX FN Dia: .458" Col: 2.525"

IMR 4198	50.0	2188	31,100 PSI	57.5C	2513	43,100 PSI
H4198	51.9	2260	29,500 PSI	60.0C	2607	44,600 PSI

Bullet: 300 GR. BAR TTSX Dia: .458" Col: 2.775"

IMR 4198	50.0	2207	37,700 CUP	53.0C	2323	45,000 CUP
H4198	53.0	2346	39,800 CUP	56.0C	2445	46,700 CUP

Bullet: 300 GR. SIE HP Dia: .458" Col: 2.525"

IMR 4198	54.0	2253	31,800 CUP	58.5C	2450	43,000 CUP
H4198	59.5	2394	37,300 CUP	63.0	2532	50,000 CUP

Bullet: 325 GR. HDY FTX Dia: .458" Col: 2.650"

H335	63.0	2170	37,000 CUP	66.0C	2272	44,000 CUP
H322	59.4	2250	37,600 CUP	63.0C	2375	45,900 CUP
IMR 4198	50.0	2149	37,000 CUP	54.0C	2292	44,100 CUP
H4198	52.0	2242	37,700 CUP	56.0C	2378	46,500 CUP

Bullet: 350 GR. HDY JRN Dia: .458" Col: 2.540"

H335	57.0	2016	32,200 CUP	63.0	2174	47,300 CUP
H322	52.0	1898	25,800 CUP	57.0C	2143	41,100 CUP
IMR 4198	49.0	2118	37,700 CUP	52.0	2212	43,900 CUP
H4198	50.5	2104	35,100 CUP	56.0	2300	50,000 CUP

Bullet: 400 GR. SPR JFP Dia: .458" Col: 2.540"

H335	54.0	1883	31,900 CUP	60.0	2057	49,800 CUP
IMR 4198	47.0	1954	35,400 CUP	50.0	2089	47,100 CUP
H4198	48.0	1915	31,800 CUP	53.0	2108	49,100 CUP

45-120 SHARPS

Case: Bell Twist: 1:18"
Barrel: 24" Trim: 3.240" Primer: Federal 210M, Large Rifle Match

Bullet: 350 GR. LY #457122 Dia: .458" Col: 3.700"

IMR 4064	58.0	1827	19,300 CUP	63.0	1965	23,400 CUP
IMR 4895	56.0	1737	17,000 CUP	60.0	1923	24,000 CUP
H4895	59.0	1875	24,800 CUP	64.0	2031	26,900 CUP
IMR 3031	54.0	1847	20,600 CUP	58.0	1968	24,000 CUP
Benchmark	53.0	1809	24,700 CUP	57.0	1922	26,800 CUP
H322	50.0	1717	21,000 CUP	53.0	1874	27,700 CUP
H4198	46.0	1783	22,500 CUP	49.0	1903	27,500 CUP
Trail Boss	29.0	1320	20,500 CUP	32.0	1371	24,400 CUP

Bullet: 405 GR. LY #457193 Dia: .458" Col: 3.730"

Varget	59.0	1763	24,200 CUP	63.0	1858	28,200 CUP
IMR 4064	55.0	1676	18,300 CUP	59.0	1822	23,900 CUP
IMR 4895	54.0	1641	19,400 CUP	58.3	1815	25,600 CUP

458 WINCHESTER MAGNUM

Case: Winchester Twist: 1:14"
Barrel: 24" Trim: 2.490" Primer: CCI 250, Large Rifle Magnum

Bullet: 250 GR. BAR TSX FN Dia: .458" Col: 2.950"

H322	75.0	2707	40,600 CUP	81.0C	2876	51,000 CUP
IMR 4198	66.5	2658	39,800 CUP	74.0C	2899	50,900 CUP
H4198	68.0	2683	36,100 CUP	76.0C	2952	50,600 CUP

Bullet: 300 GR. BAR TSX Dia: .458" Col: 3.200"

Benchmark	74.0	2355	30,600 CUP	80.0C	2507	32,600 CUP
H322	77.0	2584	41,300 CUP	83.0C	2753	50,500 CUP
IMR 4198	67.0	2508	37,500 CUP	74.0C	2730	48,100 CUP
H4198	68.0	2565	40,300 CUP	76.0C	2793	51,300 CUP

Bullet: 300 GR. BAR TTSX BT Dia: .458" Col: 3.300"

H322	71.0	2447	36,900 CUP	75.0C	2561	41,200 CUP
IMR 4198	68.0	2559	39,000 CUP	70.0C	2617	44,600 CUP
H4198	68.0	2591	40,900 CUP	72.5C	2720	49,100 CUP

Bullet: 300 GR. MEI LFP Dia: .458" Col: 2.885"

Trail Boss	19.0	1187	10,800 CUP	23.0	1282	13,200 CUP
------------	------	------	------------	------	------	------------

Bullet: 350 GR. SPR SP Dia: .458" Col: 3.105"

IMR 4895	75.0	2220	31,000 CUP	79.0C	2353	34,900 CUP
H4895	77.0	2419	34,600 CUP	80.0C	2496	38,700 CUP
IMR 8208 XBR	74.0	2365	35,800 CUP	77.0C	2452	37,700 CUP
IMR 3031	71.0	2279	31,000 CUP	74.0C	2354	32,900 CUP
Benchmark	71.0	2250	33,500 CUP	79.0C	2468	42,400 CUP
H322	75.0	2469	40,900 CUP	80.0C	2589	49,400 CUP
IMR 4198	65.0	2378	39,100 CUP	72.0C	2563	49,800 CUP
H4198	67.0	2426	44,700 CUP	72.0C	2548	51,600 CUP

Bullet: 385 GR. CAST LRN Dia: .459" Col: 3.000"

Trail Boss	16.0	1020	12,100 CUP	19.0	1123	16,100 CUP
------------	------	------	------------	------	------	------------

Bullet: 400 GR. SFT SP Dia: .458" Col: 3.220"

Varget	74.0	2246	34,500 CUP	77.0C	2310	38,800 CUP
IMR 4895	75.0	2217	37,400 CUP	79.0C	2321	42,700 CUP
H4895	72.0	2214	33,100 CUP	77.0C	2349	42,500 CUP
IMR 8208 XBR	73.0	2269	37,100 CUP	77.0C	2362	44,300 CUP
IMR 3031	70.0	2214	37,700 CUP	74.0C	2308	42,400 CUP
Benchmark	70.0	2138	33,500 CUP	78.0C	2343	46,600 CUP
H322	68.5	2211	36,500 CUP	76.0C	2407	51,100 CUP
IMR 4198	60.0	2151	40,500 CUP	66.7	2311	51,400 CUP
H4198	61.0	2197	44,000 CUP	67.0	2323	51,000 CUP

Bullet: 405 GR. CAST LFP Dia: .458" Col: 2.910"

Trail Boss	18.0	1040	14,500 CUP	21.0	1082	17,100 CUP
------------	------	------	------------	------	------	------------

Bullet: 450 GR. SFT SP Dia: .458" Col: 3.340"

Varget	70.0	2083	34,200 CUP	74.0C	2195	41,600 CUP
--------	------	------	------------	-------	------	------------

RIFLE DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
IMR 4895	69.0	1989	34,000 CUP	73.0C	2097	38,500 CUP	Hybrid 100V	105.4	2118	35,100 PSI	112.2	2246	40,500 PSI
H335	71.5	2056	36,000 CUP	76.0	2172	44,800 CUP	IMR 4831	106.0	1971	33,400 PSI	114.0C	2137	40,700 PSI
H4895	70.0	2108	36,100 CUP	74.0C	2205	43,000 CUP	H4350	98.8	2001	33,800 PSI	106.3	2188	42,700 PSI
IMR 8208 XBR	71.0	2146	40,800 CUP	75.0C	2235	48,300 CUP	IMR 4451	98.5	1941	35,200 PSI	106.0C	2100	42,000 PSI
IMR 3031	67.0	2077	37,200 CUP	71.0C	2160	41,400 CUP	IMR 4350	97.3	1960	34,900 PSI	104.7	2075	38,600 PSI
Benchmark	70.0	2090	41,600 CUP	75.0C	2220	48,200 CUP	50 BROWNING MACHINE GUN						
H322	67.0	2139	43,700 CUP	71.0C	2220	51,000 CUP	Case: FNB	Twist: 1:16.5"					
IMR 4198	57.0	1990	40,600 CUP	61.5C	2100	48,300 CUP	Barrel: 45"	Trim: 3.900"	Primer: CCI 35, 50 BMG				
H4198	56.5	2001	44,700 CUP	60.0	2092	50,800 CUP							

Bullet: 485 GR. MEI LFP Dia: .458" Col: 2.925"
 Trail Boss 13.0 860 15,500 CUP 19.0 962 22,700 CUP

Bullet: 500 GR. HDY JRN Dia: .458" Col: 3.310"
 Varget 70.0 2056 39,400 CUP 74.0C 2152 48,100 CUP
 748 73.0 2040 39,000 CUP
 H335 71.0 2058 39,700 CUP 75.5 2163 50,300 CUP
 H4895 70.0 2068 42,000 CUP 74.0C 2161 50,300 CUP
 IMR 8208 XBR 67.0 1993 39,400 CUP 73.5C 2140 49,700 CUP
 Benchmark 68.0 2017 42,300 CUP 73.0C 2123 50,300 CUP
 H322 62.5 1935 39,400 CUP 69.5C 2109 52,000 CUP
 H4198 53.0 1887 48,700 CUP 58.5 1987 51,100 CUP

Bullet: 510 GR. WIN SP Dia: .457" Col: 3.340"
 IMR 4320 74.0C 2070 51,500 CUP
 IMR 4064 71.0C 2020 41,300 CUP
 748 75.0 2065 41,000 CUP
 IMR 4895 72.5 2100 53,000 CUP
 IMR 3031 69.0C 2030 43,900 CUP
 IMR 4198 58.0 1925 52,500 CUP

470 NITRO EXPRESS

Case: Hornady Twist: 1:20"
 Barrel: 24" Trim: 3.240" Primer: Federal 215M, Large Rifle
 Magnum Match

Bullet: 500 GR. WDLGH RN Dia: .475" Col: 3.875"
 Retumbo 118.0 2088 30,600 PSI 125.0C 2202 34,800 PSI
 H1000 118.0 2172 33,900 PSI 124.0C 2300 40,500 PSI
 IMR 7977 114.3 2011 29,600 PSI 123.0C 2205 37,200 PSI
 IMR 7828 113.0 2172 37,000 PSI 117.0 2252 40,500 PSI
 H4831 108.0 2184 38,000 PSI 112.0 2247 40,800 PSI
 IMR 4831 104.0 2157 36,200 PSI 108.0 2248 40,800 PSI
 H4350 95.0 2134 36,900 PSI 100.0 2234 41,700 PSI
 IMR 4451 96.5 2158 37,500 PSI 102.7 2240 40,200 PSI
 IMR 4350 99.0 2111 35,700 PSI 105.0 2229 40,800 PSI
 Trail Boss 45.5 1257 26,500 PSI

50-140 SHARPS

Case: Bell Twist: 1:22"
 Barrel: 24" Trim: 3.230" Primer: Federal 210M, Large Rifle
 Match

Bullet: 425 GR. LY #515141 Dia: .512" Col: 3.800"
 H4831 118.0 2079 22,800 CUP 125.0 2209 26,300 CUP
 H4350 105.0 2033 21,600 CUP 114.0 2242 26,700 CUP
 Varget 95.0 2127 23,600 CUP 102.5 2294 28,100 CUP

Bullet: 515 GR. LY #515142 Dia: .512" Col: 3.750"
 H4831 112.0 1956 23,200 CUP 118.0 2085 27,500 CUP
 H4350 101.0 1916 22,000 CUP 108.0 2091 27,200 CUP
 Varget 87.0 1958 24,000 CUP 95.0 2088 27,900 CUP

500 NITRO EXPRESS 3"

Case: Hornady Twist: 1:15"
 Barrel: 24" Trim: 2.990" Primer: Federal 215M, Large Rifle
 Magnum Match

Bullet: 570 GR. HDY DGX Dia: .510" Col: 3.740"
 IMR 7828 108.1 1902 31,400 PSI 115.0C 2041 37,000 PSI
 IMR 4955 108.0 1975 34,900 PSI 115.0C 2107 40,500 PSI
 H4831 106.0 1989 34,000 PSI 114.0C 2145 40,900 PSI

NEVER EXCEED MAXIMUM LOADS

*Max loads that show an asterisk following the "C" for compressed load will not fit with standard IMR 7828. Reduce by 4%.

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads						
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure				
22 HORNET																	
Case: Winchester			Twist: 1:16"			Bullet: 50 GR. SIE BK			Dia: .224"			Col: 1.900"					
Barrel: 15" Trim: 1.393"			Primer: Winchester SR, Small Rifle			H4198			11.5 2201 30,100 CUP			12.5C 2386 38,700 CUP					
H4227			10.0 2375 40,200 CUP			H4227			11.0 2520 45,700 CUP			H110			10.4 2416 37,900 CUP		
Li'l'Gun			12.0 2542 34,300 CUP			Li'l'Gun			13.0 2751 40,700 CUP			H4198			11.5 2153 30,200 CUP		
H4227			10.5 2579 35,600 CUP			H4227			11.6C 2770 42,500 CUP			H4227			9.5 2240 39,000 CUP		
296			11.0 2616 32,700 CUP			296			12.3 2861 41,400 CUP			H4227			10.5 2357 45,900 CUP		
H110			11.0 2616 32,700 CUP			H110			12.3 2861 41,400 CUP			H110			9.5 2247 40,300 CUP		
Li'l'Gun			12.0 2641 22,000 CUP			Li'l'Gun			13.0 2770 24,000 CUP			Li'l'Gun			11.5 2446 38,700 CUP		
H4227			9.0 2403 39,900 CUP			H4227			10.2 2458 43,000 CUP			H4227			11.5 2167 31,100 CUP		
296			10.0 2484 32,400 CUP			296			11.2 2652 41,800 CUP			H4227			11.0 2443 46,100 CUP		
H110			10.0 2484 32,400 CUP			H110			11.2 2652 41,800 CUP			H4227			10.0 2313 43,400 CUP		
Li'l'Gun			12.0 2646 24,900 CUP			Li'l'Gun			13.0 2793 28,400 CUP			H4227			10.0 2313 43,400 CUP		
H4198			10.5 2010 31,500 CUP			H4198			11.5C 2261 36,900 CUP			221 FIREBALL			Case: Remington		
H4227			8.5 2189 37,000 CUP			H4227			9.8 2339 42,700 CUP			Case: Remington			Twist: 1:12"		
296			9.0 2279 35,200 CUP			296			9.9 2403 40,400 CUP			Barrel: 10 3/4" Trim: 1.390"			Primer: Remington 7 1/2, Small Rifle Magnum		
H110			9.0 2279 35,200 CUP			H110			9.9 2403 40,400 CUP			H4227			15.5 2925 17.0 3033		
Li'l'Gun			12.0 2642 35,700 CUP			Li'l'Gun			13.0 2803 38,500 CUP			H110			13.0 2714 14.0 2933		
H4198			10.5 2002 28,000 CUP			H4198			11.5C 2200 32,000 CUP			Bullet: 40 GR. SPR SP			Dia: .224" Col: 1.830"		
H4227			8.5 2202 39,900 CUP			H4227			9.8 2349 42,000 CUP			H4227			15.5 2925 17.0 3033		
296			9.0 2134 33,500 CUP			296			10.4 2382 43,000 CUP			H110			13.0 2714 14.0 2933		
H110			9.0 2134 33,500 CUP			H110			10.4 2382 43,000 CUP			Bullet: 45 GR. HDY SP			Dia: .224" Col: 1.830"		
Li'l'Gun			12.0 2532 26,500 CUP			Li'l'Gun			13.0 2637 31,600 CUP			IMR 4198			17.7C 2575 44,500 CUP		
H4198			10.5 2007 28,200 CUP			H4198			11.5C 2203 34,100 CUP			H4198			16.0 2451 17.0 2632		
H4227			8.4 2120 39,700 CUP			H4227			9.4 2270 41,800 CUP			IMR 4227			15.0 2451 16.0 2697		
296			9.0 2147 37,500 CUP			296			10.0 2292 42,300 CUP			H4227			15.0 2592 16.0 2697		
H110			9.0 2147 37,500 CUP			H110			10.0 2292 42,300 CUP			H110			13.0 2553 14.0 2714		
Li'l'Gun			12.0 2501 31,600 CUP			Li'l'Gun			13.0 2659 35,300 CUP			Bullet: 50 GR. NOS BT			Dia: .224" Col: 1.850"		
H4198			10.5 2007 28,200 CUP			H4198			11.5C 2203 34,100 CUP			IMR 4198			16.7C 2380 44,000 CUP		
H4227			8.4 2120 39,700 CUP			H4227			9.4 2270 41,800 CUP			H4198			15.5 2412 16.5 2539		
296			9.0 2147 37,500 CUP			296			10.0 2292 42,300 CUP			IMR 4227			15.0 2449 16.0 2672		
H110			9.0 2147 37,500 CUP			H110			10.0 2292 42,300 CUP			H4227			15.0 2582 16.0 2672		
Li'l'Gun			12.0 2501 31,600 CUP			Li'l'Gun			13.0 2659 35,300 CUP			H110			12.5 2520 13.5 2637		
H4198			10.0 1846 30,000 CUP			H4198			11.5 2182 41,000 CUP			Bullet: 50 GR. HDY SP			Dia: .224" Col: 1.850"		
H4227			8.0 1987 41,800 CUP			H4227			9.0 2151 43,000 CUP			IMR 4198			16.4C 2315 51,700 CUP		
Li'l'Gun			12.0 2528 39,400 CUP			Li'l'Gun			13.0 2681 42,900 CUP			H4198			15.0 2261 16.0 2441		
H4198			10.0 1846 30,000 CUP			H4198			11.5 2182 41,000 CUP			IMR 4227			14.5 2418 15.5 2503		
H4227			8.0 1987 41,800 CUP			H4227			9.0 2151 43,000 CUP			H4227			14.5 2418 15.5 2503		
Li'l'Gun			12.0 2528 39,400 CUP			Li'l'Gun			13.0 2681 42,900 CUP			H4227			14.5 2418 15.5 2503		
22 K HORNET																	
Case: Winchester			Twist: 1:14"			Bullet: 50 GR. SPR SP			Dia: .224" Col: 1.830"			IMR 4198			16.4C 2315 51,700 CUP		
Barrel: 15" Trim: 1.393"			Primer: Winchester SR, Small Rifle			H4198			15.0 2251 16.0 2399			H4198			15.0 2261 16.0 2441		
H4227			11.0 2747 39,500 CUP			H4227			12.3 2924 46,000 CUP			H4227			14.5 2418 15.5 2503		
H110			11.5 2779 35,100 CUP			H110			12.8 3009 45,500 CUP			H4227			14.5 2418 15.5 2503		
Li'l'Gun			12.5 2858 29,900 CUP			Li'l'Gun			13.5 2935 35,300 CUP			H4227			14.5 2418 15.5 2503		
H4227			11.0 2644 37,500 CUP			H4227			12.2C 2822 45,500 CUP			Bullet: 60 GR. HDY SP			Dia: .224" Col: 1.840"		
H110			11.5 2636 33,100 CUP			H110			12.9 2940 45,600 CUP			H4198			15.0 2251 16.0 2399		
Li'l'Gun			12.5 2695 29,400 CUP			Li'l'Gun			13.5 2817 33,800 CUP			H4227			14.0 2328 15.0 2414		
H4227			10.5 2502 40,900 CUP			H4227			11.3 2619 45,300 CUP			222 REMINGTON			Case: Remington		
H110			10.5 2524 38,700 CUP			H110			11.2 2640 45,300 CUP			Case: Remington			Twist: 1:14"		
Li'l'Gun			12.0 2672 36,700 CUP			Li'l'Gun			13.0 2859 40,200 CUP			Barrel: 10" Trim: 1.690"			Primer: Remington 7 1/2, Small Rifle Magnum		
H4227			10.7 2520 40,700 CUP			H4227			11.7 2669 45,500 CUP			Bullet: 45 GR. SIE SP			Dia: .224" Col: 2.130"		
H110			11.5 2658 37,000 CUP			H110			12.4 2761 45,500 CUP			IMR 4895			24.2C 2380 37,400 CUP		
Li'l'Gun			12.0 2568 28,100 CUP			Li'l'Gun			13.2 2744 35,800 CUP			IMR 4198			21.1 2640 45,800 CUP		
H4227			10.7 2520 40,700 CUP			H4227			11.7 2669 45,500 CUP			IMR 4227			17.1 2500 45,200 CUP		
H110			11.5 2658 37,000 CUP			H110			12.4 2761 45,500 CUP			Bullet: 50 GR. REM PSP			Dia: .224" Col: 2.130"		
Li'l'Gun			12.0 2568 28,100 CUP			Li'l'Gun			13.2 2744 35,800 CUP			IMR 4895			24.2C 2365 39,300 CUP		
H4227			10.7 2520 40,700 CUP			H4227			11.7 2669 45,500 CUP			IMR 4198			20.0 2510 45,600 CUP		
H110			11.5 2658 37,000 CUP			H110			12.4 2761 45,500 CUP			IMR 4227			16.1 2365 45,800 CUP		
Li'l'Gun			12.0 2568 28,100 CUP			Li'l'Gun			13.2 2744 35,800 CUP			Bullet: 52 GR. SIE HPBT			Dia: .224" Col: 2.190"		
H4227			10.7 2520 40,700 CUP			H4227			11.7 2669 45,500 CUP			IMR 4895			23.8C 2325 40,500 CUP		
H110			11.5 2658 37,000 CUP			H110			12.4 2761 45,500 CUP			IMR 4198			19.8 2455 45,800 CUP		
Li'l'Gun			12.0 2568 28,100 CUP			Li'l'Gun			13.2 2744 35,800 CUP			IMR 4198			19.8 2455 45,800 CUP		

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
IMR 4227				15.8	2300	45,600 CUP	H4895	25.0	2660	37,400 CUP	27.0C	2965	48,600 CUP						
Bullet: 55 GR. SPR FMJ				Dia: .224"		Col: 2.085"		IMR 8208 XBR	23.0	2382	41,400 PSI	25.4	2789	53,400 PSI					
IMR 4895				23.0C	2275	41,200 CUP	IMR 3031	22.0	2401	40,700 PSI	24.5C	2869	53,300 PSI						
IMR 3031				21.5C	2225	37,800 CUP	Benchmark	24.0	2652	39,900 CUP	26.0	2932	49,800 CUP						
IMR 4198				19.0	2375	45,200 CUP	H322	21.5	2527	39,200 CUP	23.5	2707	48,900 CUP						
Bullet: 60 GR. HDY HP				Dia: .224"		Col: 2.245"		IMR 4198	19.0	2680	43,800 PSI	21.4	2886	48,200 PSI					
IMR 4895				23.0C	2235	42,400 CUP	H4198	19.5	2650	34,200 CUP	21.5	2846	46,700 CUP						
IMR 4198				19.1	2330	45,800 CUP	Bullet: 55 GR. SPR SP						Dia: .224"		Col: 2.200"				
IMR 4227				14.7	2105	45,000 CUP	Varget	25.5	2697	41,300 CUP	27.5C	2972	49,700 CUP						
223 REMINGTON													IMR 4320	23.5	2254	41,300 PSI	26.1C	2652	50,700 PSI
Case: Winchester			Twist: 1:12"										IMR 4064	23.0	2268	40,300 PSI	25.7C	2672	52,600 PSI
Barrel: 15"			Trim: 1.750"			Primer: Winchester SR, Small Rifle			BL-C(2)	25.5	2558	37,200 CUP	27.5	2816	48,500 CUP				
Bullet: 36 GR. BAR VG FB				Dia: .224"		Col: 2.200"		IMR 4895	23.0	2251	39,500 PSI	26.2C	2757	53,200 PSI					
IMR 4320	25.2	2758	39,700 PSI	28.0C	3120	52,200 PSI	H335	23.0	2463	40,800 CUP	25.3	2799	49,300 CUP						
IMR 4895	24.8	2725	39,700 PSI	27.0C	3014	50,100 PSI	H4895	25.0	2721	39,700 CUP	26.0	2880	49,000 CUP						
IMR 8208 XBR	25.4	2829	44,500 PSI	27.0C	3057	50,600 PSI	IMR 8208 XBR	23.0	2390	42,100 PSI	25.3	2715	53,100 PSI						
IMR 3031	23.3	2839	41,600 PSI	24.8C	3068	48,200 PSI	IMR 3031	21.6	2300	41,100 PSI	24.6C	2874	52,500 PSI						
IMR 4198	21.2	2995	43,500 PSI	22.5	3247	52,500 PSI	Benchmark	24.0	2625	42,600 CUP	25.6	2840	50,000 CUP						
Bullet: 40 GR. NOS BT				Dia: .224"		Col: 2.280"		H322	21.0	2439	38,600 CUP	23.0	2638	48,900 CUP					
Varget	25.0	2609	34,400 CUP	28.0C	3069	47,200 CUP	IMR 4198	18.8	2599	41,600 PSI	20.4	2789	53,600 PSI						
IMR 4320	26.0	2781	43,500 PSI	27.7C	3049	48,900 PSI	H4198	19.0	2400	34,800 CUP	21.0	2719	47,600 CUP						
BL-C(2)	26.5	2696	35,400 CUP	28.5	2910	45,400 CUP	Bullet: 60 GR. HDY V-MAX						Dia: .224"		Col: 2.250"				
IMR 4895	24.9	2653	35,200 PSI	26.5C	2907	44,200 PSI	Varget	25.0	2544	40,400 CUP	27.0C	2825	51,900 CUP						
H335	26.0	2931	34,400 CUP	28.0	3231	44,600 CUP	IMR 4320	23.7	2309	45,400 PSI	25.3C	2529	52,100 PSI						
H4895	25.0	2628	32,100 CUP	27.5C	3060	44,500 CUP	IMR 4064	23.0	2312	42,500 PSI	24.7C	2517	52,600 PSI						
IMR 8208 XBR	25.0	2755	41,500 PSI	26.7C	2985	50,400 PSI	BL-C(2)	25.0	2482	44,900 CUP	27.0	2791	51,900 CUP						
IMR 3031	23.5	2746	42,600 PSI	25.2C	3066	46,200 PSI	IMR 4895	23.7	2386	45,000 PSI	25.2	2619	52,700 PSI						
Benchmark	25.3	2900	39,600 CUP	27.3	3174	51,000 CUP	H335	22.5	2401	43,700 CUP	24.0	2643	50,600 CUP						
H322	23.5	2783	34,600 CUP	25.5	3087	48,000 CUP	H4895	24.0	2514	37,600 CUP	26.0C	2804	50,100 CUP						
IMR 4198	19.5	2901	42,500 PSI	22.2	3129	53,400 PSI	IMR 8208 XBR	21.5	2179	43,500 PSI	23.6	2488	51,700 PSI						
H4198	20.5	2755	29,400 CUP	22.5	3014	49,600 CUP	IMR 3031	21.0	2281	42,500 PSI	22.5	2514	51,700 PSI						
Bullet: 45 GR. SIE SP				Dia: .224"		Col: 2.240"		Benchmark	23.0	2515	42,500 CUP	24.6	2744	49,900 CUP					
Varget	25.0	2550	30,200 CUP	28.0C	3010	43,700 CUP	H322	22.0	2526	40,300 CUP	23.5	2657	49,800 CUP						
IMR 4320	25.5	2601	40,300 PSI	27.8C	2982	46,300 PSI	IMR 4198	18.3	2488	42,500 PSI	19.5	2570	52,000 PSI						
BL-C(2)	26.5	2644	36,000 CUP	28.5	2915	48,000 CUP	H4198	18.0	2450	42,500 CUP	20.0	2647	47,600 CUP						
H335	24.0	2667	41,500 CUP	26.2	2877	51,000 CUP	Bullet: 63 GR. SIE SP						Dia: .224"		Col: 2.200"				
H4895	25.0	2603	33,800 CUP	27.5C	3017	43,400 CUP	Varget	24.5	2566	42,400 CUP	26.4	2809	50,700 CUP						
IMR 8208 XBR	24.5	2617	41,700 PSI	26.8	3022	52,000 PSI	IMR 4320	23.0	2206	42,500 PSI	25.5	2533	52,900 PSI						
IMR 3031	22.7	2506	37,700 PSI	25.2C	2980	45,800 PSI	IMR 4064	22.5	2203	44,400 PSI	24.8	2566	52,600 PSI						
Benchmark	25.3	2815	41,400 CUP	27.3	3089	51,100 CUP	BL-C(2)	24.0	2347	36,600 CUP	26.0	2630	46,300 CUP						
H322	23.0	2635	36,000 CUP	25.0	2926	47,400 CUP	IMR 4895	22.9	2308	42,700 PSI	25.3	2638	53,500 PSI						
IMR 4198	19.5	2731	44,600 PSI	22.1	3005	52,000 PSI	H335	22.5	2390	41,000 CUP	25.0	2724	50,000 CUP						
H4198	20.0	2617	28,800 CUP	22.0	2847	49,100 CUP	H4895	23.5	2434	43,300 CUP	25.5	2800	50,000 CUP						
Bullet: 50 GR. SPR SP				Dia: .224"		Col: 2.210"		IMR 8208 XBR	21.0	2158	43,000 PSI	23.1	2409	52,400 PSI					
Varget	26.5	2842	40,800 CUP	27.5C	2959	44,800 CUP	IMR 3031	21.0	2247	42,900 PSI	23.3	2674	53,000 PSI						
IMR 4320	24.8	2461	39,400 PSI	27.5C	2852	48,900 PSI	Benchmark	22.0	2318	41,800 CUP	24.2	2601	50,500 CUP						
BL-C(2)	26.0	2569	34,200 CUP	28.0	2851	47,100 CUP	H322	20.0	2240	38,100 CUP	22.0	2482	48,400 CUP						
IMR 4895	25.2	2646	43,300 PSI	26.7C	2892	45,200 PSI	IMR 4198	18.5	2473	48,100 PSI	20.0	2608	53,500 PSI						
H335	24.0	2538	43,000 CUP	26.0	2834	51,700 CUP	H4198	18.0	2294	33,600 CUP	20.0	2572	44,600 CUP						
H4895	25.0	2658	38,300 CUP	27.5C	3024	51,300 CUP	Bullet: 69 GR. SIE HPBT						Dia: .224"		Col: 2.235"				
IMR 8208 XBR	23.5	2525	40,500 PSI	25.8	2849	53,300 PSI	IMR 4320	23.0	2218	43,500 PSI	24.8	2471	53,100 PSI						
IMR 3031	23.5	2698	44,600 PSI	25.8C	3002	46,900 PSI	IMR 4064	22.5	2227	42,200 PSI	24.0C	2435	50,900 PSI						
Benchmark	24.0	2639	38,600 CUP	26.5	2953	50,400 CUP	IMR 4895	23.3	2393	44,600 PSI	24.8C	2608	53,600 PSI						
H322	22.0	2460	36,500 CUP	24.0	2740	49,300 CUP	IMR 8208 XBR	21.0	2168	42,200 PSI	23.8	2515	52,900 PSI						
IMR 4198	19.8	2769	42,800 PSI	21.9	3012	52,100 PSI	IMR 3031	21.0	2277	42,900 PSI	22.5	2476	52,800 PSI						
H4198	19.5	2429	32,400 CUP	21.5	2824	45,900 CUP	IMR 4198	18.3	2389	46,300 PSI	19.5	2489	52,300 PSI						
Bullet: 53 GR. SIE HP				Dia: .224"		Col: 2.200"		Bullet: 70 GR. SPR SP						Dia: .224"		Col: 2.140"			
Varget	24.0	2449	38,400 CUP	27.0C	2833	47,900 CUP	IMR 4320	20.3	1891	38,200 PSI	24.3	2337	52,900 PSI						
IMR 4320	24.0	2365	40,400 PSI	27.5C	2851	52,300 PSI	IMR 4064	19.5	1861	42,000 PSI	23.5C	2325	53,300 PSI						
IMR 4064	24.0	2483	41,600 PSI	25.7C	2765	45,600 PSI	IMR 4895	20.2	1943	45,700 PSI	24.5C	2495	52,300 PSI						
BL-C(2)	26.0	2562	36,600 CUP	28.0	2914	47,600 CUP	IMR 8208 XBR	20.0	2051	44,100 PSI	21.8	2201	52,800 PSI						
IMR 4895	24.5	2568	43,900 PSI	26.4C	2856	52,300 PSI	IMR 3031	19.0	2029	47,200 PSI	21.2	2270	50,900 PSI						
H335	24.0	2539	44,100 CUP	26.0	2880	52,000 CUP													

NEVER EXCEED MAXIMUM LOADS

PISTOL DATA

Starting Loads				Maximum Loads				Starting Loads				Maximum Loads				
Powder	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure	Powder	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
6MM-204 RR								Bullet: 75 GR. SPR HP Dia: .243" Col: 2.115"								
Case: Hornady (Ref)				Twist: 1:10"				Varget				30.5 2709 42,200 CUP 32.5 2867 50,000 CUP				
Barrel: 15"		Trim: 1.840"		Primer: Federal 205M, Small Rifle Match				BL-C(2)				31.0 2623 38,200 CUP 33.0 2822 46,000 CUP				
Bullet: 70 GR. NOS BT Dia: .243" Col: 2.480"				H335				28.0 2703 43,000 CUP 30.0 2851 47,000 CUP								
H335				27.6 2955				H4895				28.5 2662 40,000 CUP 30.5 2860 47,000 CUP				
IMR 8208 XBR				29.6 3020				Benchmark				29.0 2787 41,700 CUP 31.0 2978 49,600 CUP				
Benchmark				29.0 2980				H322				26.0 2656 47,100 CUP 28.0 2802 47,000 CUP				
H322				27.5 2970				Bullet: 80 GR. SPR SP Dia: .243" Col: 2.115"								
Bullet: 75 GR. HDY V-MAX Dia: .243" Col: 2.480"								Varget								
BL-C(2)				29.5 2830				BL-C(2)				31.0 2618 42,500 CUP 33.0 2791 47,500 CUP				
IMR 8208 XBR				28.9 2935				H335				28.0 2654 42,000 CUP 30.0 2801 48,000 CUP				
Benchmark				28.2 2865				H4895				28.0 2611 40,400 CUP 30.0 2766 47,000 CUP				
Bullet: 80 GR. BAR TTSX BT Dia: .243" Col: 2.500"								Benchmark								
BL-C(2)				30.0 2745				H322				26.0 2628 39,300 CUP 28.0 2771 47,000 CUP				
IMR 8208 XBR				28.4 2855				Bullet: 85 GR. SPR SP Dia: .243" Col: 2.115"								
Benchmark				27.6 2805				Varget								
6MM BR REMINGTON								BL-C(2)								
Case: Remington				Twist: 1:9"				BL-C(2)				29.0 2523 43,000 CUP 31.0 2678 48,500 CUP				
Barrel: 15"		Trim: 1.550"		Primer: Remington 7 1/2, Small Rifle Magnum				H335				24.5 2406 41,000 CUP 26.5 2562 49,000 CUP				
Bullet: 55 GR. NOS BT Dia: .243" Col: 2.080"								H4895								
Varget				31.0 2723 31,600 CUP 34.0C 3014 41,800 CUP				Benchmark				27.7 2670 42,100 CUP 29.7 2826 49,800 CUP				
BL-C(2)				34.0 2886 40,400 CUP 36.0 3063 46,400 CUP				H322				22.0 2302 40,400 CUP 24.0 2457 47,000 CUP				
H335				30.0 2790 37,900 CUP 32.5 3055 50,600 CUP				Bullet: 90 GR. SPR SP Dia: .243" Col: 2.115"								
H4895				31.0 2910 37,300 CUP 33.0C 3084 45,300 CUP				Varget				27.5 2488 39,500 CUP 30.2 2694 47,500 CUP				
Benchmark				31.0 2991 41,200 CUP 33.5C 3229 50,300 CUP				BL-C(2)				29.0 2506 44,000 CUP 31.0 2653 48,800 CUP				
H322				30.0 3029 38,800 CUP 32.5 3275 51,100 CUP				H335				24.0 2338 38,200 CUP 26.0 2471 49,000 CUP				
H4198				26.0 2963 37,600 CUP 28.8 3228 51,000 CUP				H4895				24.5 2323 40,400 CUP 27.0 2546 48,000 CUP				
Bullet: 58 GR. HDY V-MAX Dia: .243" Col: 2.140"								Benchmark								
Varget				31.0 2849 34,300 CUP 34.0 3115 46,100 CUP				H322				22.0 2275 40,600 CUP 24.0 2437 48,000 CUP				
BL-C(2)				33.0 2919 41,900 CUP 35.0 3099 48,600 CUP				Bullet: 100 GR. HDY SP Dia: .243" Col: 2.150"								
H335				30.0 2919 41,500 CUP 32.2 3108 51,200 CUP				Varget				26.0 2292 43,000 CUP 28.0 2453 48,900 CUP				
H4895				31.5 3021 38,000 CUP 33.5 3204 45,100 CUP				BL-C(2)				27.0 2289 41,500 CUP 29.0 2456 47,000 CUP				
Benchmark				30.0 3013 42,000 CUP 32.0 3201 50,600 CUP				H335				24.0 2253 43,000 CUP 26.0 2403 50,000 CUP				
H322				29.5 2984 40,100 CUP 31.3 3179 48,400 CUP				H4895				24.5 2273 42,500 CUP 27.0 2472 49,000 CUP				
H4198				26.0 2995 38,000 CUP 28.5 3235 49,900 CUP				Benchmark				26.0 2447 43,100 CUP 28.0 2611 49,500 CUP				
Bullet: 60 GR. SIE HP Dia: .243" Col: 2.080"								H322								
Varget				31.0 2753 36,000 CUP 34.0C 3056 48,500 CUP				H322				22.0 2212 42,000 CUP 23.5 2328 50,000 CUP				
BL-C(2)				34.0 2931 38,700 CUP 36.0 3131 47,500 CUP				Bullet: 107 GR. SIE HPBT Dia: .243" Col: 2.250"								
H335				30.0 2927 41,500 CUP 32.0 3130 49,000 CUP				Varget				26.0 2255 39,800 CUP 29.0C 2497 50,100 CUP				
H4895				31.0 2927 42,000 CUP 33.0C 3131 47,000 CUP				BL-C(2)				28.0 2333 38,100 CUP 30.0 2490 44,200 CUP				
Benchmark				30.0 2945 41,400 CUP 32.0 3141 49,900 CUP				H335				26.0 2365 43,200 CUP 28.0 2524 50,400 CUP				
H322				30.0 3066 42,000 CUP 32.0 3265 49,500 CUP				H4895				24.5 2264 37,900 CUP 27.5 2480 49,800 CUP				
H4198				25.0 2889 39,600 CUP 27.5 3121 50,700 CUP				Benchmark				26.0 2407 42,000 CUP 28.0 2575 49,800 CUP				
Bullet: 65 GR. HDY V-MAX Dia: .243" Col: 2.140"								H322								
Varget				31.0 2840 42,200 CUP 33.0C 3028 49,900 CUP				H322				23.0 2272 40,800 CUP 25.5 2437 49,200 CUP				
BL-C(2)				31.5 2755 38,200 CUP 34.0 2974 48,800 CUP				25 ACP								
H335				27.5 2678 36,800 CUP 30.5 2942 48,100 CUP				Case: Winchester				Twist: 1:16"				
H4895				30.0 2820 37,700 CUP 33.0C 3145 49,300 CUP				Barrel: 2"				Trim: .610"				
Benchmark				27.0 2678 36,000 CUP 30.5 2987 46,400 CUP				Primer: Federal 100M, Small Pistol Match								
H322				27.0 2761 36,800 CUP 30.5 3075 49,600 CUP				Bullet: 35 GR. HDY XTP Dia: .251" Col: .860"								
H4198				25.0 2848 42,200 CUP 27.0 3023 49,100 CUP				572				1.7 822 14,500 PSI 2.0 926 17,200 PSI				
Bullet: 70 GR. NOS BT Dia: .243" Col: 2.100"								CFE Pistol								
Varget				31.0 2754 38,900 CUP 34.0 2986 49,400 CUP				Universal				1.5 823 14,500 CUP 1.7 922 16,200 CUP				
BL-C(2)				33.0 2796 42,500 CUP 35.0 3023 48,000 CUP				HP-38				1.6 890 15,700 CUP 1.8 963 17,900 CUP				
H335				29.0 2743 43,000 CUP 31.0 2938 47,000 CUP				Titegroup				1.5 888 15,900 CUP 1.7 970 17,300 CUP				
H4895				29.0 2657 38,200 CUP 31.0 2894 47,000 CUP				Bullet: 50 GR. SIE FMJ Dia: .251" Col: .900"								
Benchmark				29.7 2817 39,900 CUP 31.6 3053 49,000 CUP				572				1.4 647 14,500 PSI 1.7 767 17,900 PSI				
H322				28.0 2764 38,700 CUP 30.0 2979 47,000 CUP				800-X				1.8 815 17,800 CUP				
								CFE Pistol				1.2 584 13,400 CUP 1.5 727 17,600 CUP				
								Universal				1.2 620 12,000 CUP 1.4 751 16,600 CUP				
								HP-38				1.3 704 15,600 CUP 1.5 788 17,900 CUP				
								Titegroup				1.1 657 14,500 CUP 1.3 752 17,200 CUP				
								700-X				1.1 740 14,400 CUP				

PISTOL DATA

Starting Loads			Maximum Loads			Starting Loads			Maximum Loads											
Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure	Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure							
25-35 WINCHESTER																				
Case: Winchester			Twist: 1:8"			H4895			23.0 1750			25.0 2001								
Barrel: 10" Trim: 2.033"			Primer: Federal 210, Large Rifle			H322			22.0 1747			24.0 1938								
						H4198			19.0 1717			21.0 1904								
						H4227			14.5 1441			16.5 1635								
Bullet: 60 GR. SPR SP			Dia: .257" Col: 2.390"			Bullet: 150 GR. SIE HPBT			Dia: .284" Col: 2.630"											
IMR 4064			30.5C 2285 36,000 CUP			BL-C(2)			24.0 1691			26.0 1899								
IMR 3031			28.3 2325 36,900 CUP			H335			23.0 1680			25.0 1885								
Bullet: 87 GR. HDY SP			Dia: .257" Col: 2.690"			H4895			22.0 1688			24.0 1874								
IMR 4064			25.7 1960 36,500 CUP			H322			21.5 1674			23.5 1859								
IMR 3031			23.4 1965 36,800 CUP			H4198			18.5 1640			20.5 1835								
Bullet: 100 GR. SPR SP			Dia: .257" Col: 2.700"			H4227			14.0 1404			16.0 1597								
IMR 4350			31.0C 1900 36,400 CUP			Bullet: 162 GR. HDY SPBT			Dia: .284" Col: 2.675"											
IMR 4064			25.2 1875 37,000 CUP			BL-C(2)			22.0 1570			24.0 1749								
IMR 3031			22.1 1845 36,500 CUP			H335			22.0 1592			24.0 1776								
Bullet: 117 GR. SIE SPBT			Dia: .257" Col: 2.700"			H4895			21.0 1628			23.0 1795								
IMR 4350			28.3C 1760 35,900 CUP			H322			20.0 1611			22.0 1792								
IMR 4895			22.2 1750 37,000 CUP			H4198			17.5 1519			19.5 1729								
IMR 3031			21.5 1760 36,700 CUP			H4227			13.0 1314			15.0 1474								
6.5MM JDJ																				
Case: Winchester (REF)			Twist: 1:9"			Case: Remington			Twist: 1:11"											
Barrel: 14" Trim: 1.920"			Primer: Winchester LR, Large Rifle			Barrel: 4" Trim: .845"			Primer: Remington 1 1/2, Small Pistol											
Bullet: 85 GR. SIE HP			Dia: .264" Col: 2.700"			Bullet: 93 GR. CAST LRN			Dia: .309" Col: 1.150"											
H414 36.0 2245			40.0 2537			HP-38 3.4 960			3.9 1070											
Bullet: 100 GR. HDY SP			Dia: .264" Col: 2.700"			Bullet: 93 GR. FMJ			Dia: .309" Col: 1.175"											
H414 36.0 2119			40.0 2479			231			4.2 1085 25,500 CUP											
Bullet: 120 GR. SPR SP			Dia: .264" Col: 2.700"			30 CARBINE														
H4350 35.0 2122			40.0 2414			Case: Winchester			Twist: 1:20"											
H414 34.0 2055			38.0 2329			Barrel: 7" Trim: 1.286"			Primer: CCI 400, Small Rifle											
Bullet: 129 GR. HDY SP			Dia: .264" Col: 2.750"			Bullet: 85 GR. SIE RN			Dia: .308" Col: 1.625"											
H4831 35.0 1973			39.0 2194			H4227 14.5 1643 25,200 CUP			15.5C 1745 30,700 CUP											
Bullet: 140 GR. SPR SP			Dia: .264" Col: 2.700"			H110 16.5 1834 26,000 CUP			17.5 1966 34,800 CUP											
H4831 33.0 1651			37.0 1968			Bullet: 100 GR. SPR SP			Dia: .308" Col: 1.625"											
7MM TCU			Case: Federal (REF)			Twist: 1:10"			H4227 13.0 1503 28,900 CUP			14.5C 1621 33,600 CUP								
Barrel: 14" Trim: 1.740"			Primer: Federal 205, Small Rifle			H110 14.5 1660 28,200 CUP			15.5 1762 36,100 CUP											
Bullet: 100 GR. SIE HP			Dia: .284" Col: 2.475"			Bullet: 110 GR. HDY JRN			Dia: .308" Col: 1.680"											
BL-C(2) 27.0 2009			28.0 2098			H4227 13.0 1461 30,100 CUP			14.5C 1602 38,800 CUP											
H335 26.0 1983			27.0 2077			H110 14.0 1605 32,000 CUP			15.0 1685 36,500 CUP											
H4895 25.0 1913			26.0 2071			30 HERRETT														
H322 25.0 2029			26.0 2169			Case: Federal (REF)			Twist: 1:14"											
H4198 22.0 2007			24.0 2176			Barrel: 10" Trim: 1.595"			Primer: Federal 210, Large Rifle											
H4227 17.0 1749			19.0 2011			Bullet: 110 GR. HDY SP			Dia: .308" Col: 2.320"											
Bullet: 120 GR. SPR SP			Dia: .284" Col: 2.410"			IMR 3031			28.0C 2070 36,000 CUP											
BL-C(2) 26.0 1862			28.0 2047			IMR 4198			24.3 2210 44,600 CUP											
H335 25.0 1839			27.0 2035			IMR 4227			18.8 2035 44,600 CUP											
H4895 24.0 1818			26.0 2020			H110 20.0 2155			22.0 2344											
H322 24.0 1898			26.0 2117			Bullet: 125 GR. NOS BT			Dia: .308" Col: 2.320"											
H4198 21.0 1880			23.0 2075			H110 17.0 1749			19.0 1976											
H4227 16.0 1662			18.0 1914			Bullet: 130 GR. SPR HP			Dia: .308" Col: 2.320"											
Bullet: 130 GR. SPR SP			Dia: .284" Col: 2.465"			IMR 3031			26.0C 1875 36,300 CUP											
BL-C(2) 25.0 1771			27.0 1972			IMR 4198			22.5 2015 44,400 CUP											
H335 24.0 1774			26.0 1964			IMR 4227			18.0 1885 44,800 CUP											
H4895 24.0 1797			26.0 2007			H110 17.0 1749			19.0 1976											
H322 23.0 1724			25.0 1988			Bullet: 150 GR. HDY SPBT			Dia: .308" Col: 2.320"											
H4198 20.0 1745			22.0 1935			IMR 4895			27.0C 1845 40,700 CUP											
H4227 15.0 1490			17.0 1675			IMR 3031			25.2 1785 36,700 CUP											
Bullet: 139 GR. HDY SP			Dia: .284" Col: 2.625"			H322 23.0 1609			24.0 1654											
BL-C(2) 25.0 1724			27.0 1979			IMR 4198			21.3 1870 44,200 CUP											
H335 24.0 1702			26.0 1946																	

NEVER EXCEED MAXIMUM LOADS

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads									
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure							
H4198	19.0	1623		22.0	1797		Bullet: 90 GR. SIE JHC	Dia: .312" Col: 1.170"												
H110	16.0	1503		18.0	1804		Universal	2.6	676	7,500 CUP	2.9	838	11,200 CUP							
30-30 WINCHESTER																				
Case: Winchester			Twist: 1:12"						Bullet: 98 GR. SPR LHBWC			Dia: .314" Col: .920"								
Barrel: 14"			Trim: 2.029"			Primer: Winchester LR, Large Rifle			Universal	1.9	675	6,100 CUP	2.2	830	11,000 CUP					
Bullet: 130 GR. SPR FP Dia: .308" Col: 2.540"																				
Varget	32.5	1988	30,200 CUP	36.0C	2238	35,700 CUP	HP-38	1.9	718	9,200 CUP	2.3	861	11,600 CUP							
IMR 4064				36.5C	2110	36,500 CUP	Titegroup	1.8	780	9,000 CUP	2.0	860	11,500 CUP							
BL-C(2)	34.0	1937	28,500 CUP	37.5	2101	32,800 CUP	32 H&R MAGNUM													
H4895	31.5	1984	27,600 CUP	35.0	2194	35,300 CUP	Case: Federal			Twist: 1:16"										
IMR 3031				36.0C	2175	37,000 CUP	Barrel: 5"			Trim: 1.070" Primer: Federal 100, Small Pistol										
Benchmark	27.7	1905	33,700 CUP	29.7	2020	37,100 CUP	Bullet: 77 GR. CAST LFP Dia: .314" Col: 1.335"													
Bullet: 150 GR. SIE FN Dia: .308" Col: 2.550"																				
Varget	31.0	1907	31,100 CUP	34.5	2119	36,200 CUP	572	3.4	828	8,400 PSI	4.0	1013	13,000 CUP							
IMR 4064				34.4	1995	37,400 CUP	800-X	3.3	792	7,400 CUP	4.1	985	11,400 CUP							
BL-C(2)	33.0	1868	21,800 CUP	37.0	2060	33,900 CUP	CFE Pistol	3.4	864	9,300 CUP	4.0	1003	13,500 CUP							
H4895	30.5	1899	27,900 CUP	34.0	2116	36,700 CUP	AutoComp	3.0	773	6,700 CUP	4.0	1016	12,800 CUP							
IMR 3031				33.0	2035	37,500 CUP	WSF	3.4	831	8,800 CUP	3.8	926	11,100 CUP							
Benchmark	27.0	1817	32,100 CUP	29.0	1944	37,200 CUP	231	2.4	797	6,700 CUP	3.4	998	12,300 CUP							
Bullet: 170 GR. SIE FP Dia: .308" Col: 2.550"																				
Varget	29.5	1806	30,200 CUP	33.0	2023	36,500 CUP	HP-38	2.4	797	6,700 CUP	3.4	998	12,300 CUP							
IMR 4064				32.8	1875	37,900 CUP	Titegroup	2.0	745	5,300 CUP	3.0	993	11,300 CUP							
BL-C(2)	32.5	1802	27,900 CUP	36.0	1974	34,700 CUP	700-X	2.3	832	9,900 CUP	2.7	913	11,500 CUP							
H4895	27.5	1704	28,200 CUP	30.5	1896	35,200 CUP	Bullet: 83 GR. BERB HBWC Dia: .314" Col: 1.095"													
IMR 3031				27.4	1780	37,600 CUP	IMR 4227	8.3	1024	16,800 CUP	9.3	1133	19,900 CUP							
Benchmark	25.3	1686	32,200 CUP	27.0	1782	36,100 CUP	Longshot	3.6	887	13,600 CUP	4.4	1099	20,500 CUP							
32 ACP																				
Case: Winchester			Twist: 1:16"						572	3.7	971	15,100 PSI	4.3	1130	20,400 CUP					
Barrel: 4"			Trim: .675"			Primer: Federal 100M, Small Pistol Match			800-X	3.5	911	12,800 CUP	4.5	1153	18,500 CUP					
Bullet: 71 GR. SIE FMJ Dia: .312" Col: .978"																				
AutoComp	2.7	879	13,900 CUP	3.0	937	14,800 CUP	HS-6	4.5	959	16,000 CUP	5.2	1104	20,400 CUP							
Universal	2.2	781	11,600 CUP	2.4	881	14,900 CUP	CFE Pistol	3.7	941	14,900 CUP	4.3	1125	19,900 CUP							
231	2.1	805	12,400 CUP	2.3	871	14,400 CUP	AutoComp	3.3	856	12,500 CUP	4.3	1138	20,700 CUP							
HP-38	2.1	805	12,400 CUP	2.3	871	14,400 CUP	Universal	2.9	911	14,600 CUP	3.4	1043	20,000 CUP							
Titegroup	2.0	824	12,600 CUP	2.2	910	14,800 CUP	WSF	3.3	879	14,000 CUP	4.2	1091	20,200 CUP							
Clays	1.5	745	11,700 CUP	1.7	830	15,000 CUP	231	2.9	870	13,500 CUP	3.8	1120	20,000 CUP							
32 S&W																				
Case: Winchester			Twist: 1:18.75"						HP-38	2.9	870	13,500 CUP	3.8	1120	20,000 CUP					
Barrel: 3"			Trim: .600"			Primer: Winchester SP, Small Pistol			Titegroup	2.6	917	14,200 CUP	3.3	1081	20,100 CUP					
Bullet: 85 GR. LEAD Dia: .314" Col: .930"																				
HP-38				1.4	595	9,500 CUP	Bullet: 85 GR. HDY HP Dia: .312" Col: 1.290"													
231				1.4	595	9,500 CUP	H4227	8.5	989	19,300 CUP	9.5	1151	21,000 CUP							
32 S&W LONG																				
Case: Remington			Twist: 1:18.75"						Lil'Gun	10.5	1163	13,700 CUP	12.0	1263	16,800 CUP					
Barrel: 5.32"			Trim: .915"			Primer: CCI 500, Small Pistol			Longshot	4.0	948	11,500 CUP	5.0	1167	20,200 CUP					
Bullet: 83 GR. BERB HBWC Dia: .314" Col: .920"																				
Universal	2.2	592	7,000 CUP	2.7	798	10,500 CUP	572	4.3	1058	17,200 PSI	4.8	1145	20,700 CUP							
HP-38	2.1	679	7,600 CUP	2.4	800	10,800 CUP	800-X	4.7	1067	16,600 CUP	5.3	1156	19,900 CUP							
Titegroup	1.7	633	6,800 CUP	2.0	754	10,000 CUP	HS-6	5.2	902	17,100 CUP	5.6	1146	20,200 CUP							
Bullet: 85 GR. HDY JHP Dia: .312" Col: 1.160"																				
Universal	2.7	705	8,000 CUP	3.0	865	12,000 CUP	CFE Pistol	4.2	1014	16,400 CUP	4.7	1147	21,000 CUP							
HP-38	2.4	707	8,500 CUP	2.7	810	11,500 CUP	AutoComp	4.2	1037	15,500 CUP	4.6	1114	19,200 CUP							
Titegroup	2.1	723	7,800 CUP	2.4	819	11,300 CUP	Universal	4.0	1090	18,400 CUP	4.3	1123	19,000 CUP							
Bullet: 90 GR. HDY LSWC Dia: .314" Col: 1.185"																				
Universal	2.4	777	8,800 CUP	2.7	844	10,200 CUP	WSF	4.2	1030	15,900 CUP	4.8	1147	20,400 CUP							
HP-38	2.1	744	9,100 CUP	2.4	831	11,300 CUP	231	3.2	785	15,200 CUP	3.8	1003	20,700 CUP							
Trail Boss	1.5	599	5,900 CUP	2.0	730	8,100 CUP	HP-38	3.2	785	15,200 CUP	3.8	1003	20,700 CUP							
Titegroup	1.9	765	10,200 CUP	2.1	818	10,900 CUP	Titegroup	3.0	929	14,000 CUP	3.7	1110	20,900 CUP							
Bullet: 90 GR. HDY LSWC Dia: .314" Col: 1.350"																				
800-X	3.2	830	9,800 CUP	4.0	987	13,400 CUP	Bullet: 90 GR. SIE JHP Dia: .312" Col: 1.340"													
HS-6	4.6	845	10,900 CUP	5.0	963	14,800 CUP	H4227	9.5	1042	15,000 CUP	10.0	1079	17,000 CUP							
AutoComp	3.4	874	10,400 CUP	3.9	997	14,500 CUP														
Universal	3.0	819	8,400 CUP	3.2	908	11,500 CUP														
WSF	3.2	821	10,500 CUP	3.8	967	15,000 CUP														
231	2.8	828	9,600 CUP	3.2	919	12,500 CUP														
HP-38	2.8	828	9,600 CUP	3.2	919	12,500 CUP														
Trail Boss	2.4	751	10,700 CUP	2.8	785	11,300 CUP														
Titegroup	2.4	819	10,500 CUP	2.8	911	13,300 CUP														
700-X	2.6	901	11,300 CUP	3.0	973	15,500 CUP														

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads							
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure					
Lil'Gun	10.0	1156	14,900 CUP	11.5	1227	18,000 CUP	HP-38	5.1	1273	20,700 PSI	5.8	1380	25,000 PSI					
Longshot	4.0	945	12,100 CUP	5.0	1139	19,500 CUP	Trail Boss	3.0	919	12,300 PSI	3.5	1024	18,700 PSI					
572	4.0	920	14,000 PSI	4.7	1098	20,600 CUP	Titegroup	4.5	1225	17,200 PSI	5.3	1391	24,700 PSI					
800-X	4.2	973	14,900 CUP	5.0	1130	21,000 CUP	700-X	4.5	1236	17,500 PSI	5.3	1388	24,600 PSI					
HS-6	5.4	1026	16,400 CUP	6.0	1140	20,200 CUP	Clays	3.7	1121	18,000 PSI	4.5	1297	30,900 PSI					
CFE Pistol	3.8	927	14,500 CUP	4.5	1076	20,200 CUP	Bullet: 83 GR. BERB HBWC Dia: .312" Col: 1.200"											
AutoComp	4.0	957	15,700 CUP	4.5	1082	20,300 CUP	CFE Pistol	4.1	1064	15,900 PSI	5.0	1250	23,700 PSI					
Universal	3.7	1008	16,900 CUP	4.0	1072	20,000 CUP	AutoComp	3.8	970	13,200 PSI	5.0	1232	24,800 PSI					
WSF	4.0	966	15,900 CUP	4.5	1065	19,500 CUP	Universal	3.4	958	13,400 PSI	4.4	1221	27,000 PSI					
231	3.5	930	16,200 CUP	4.0	1033	20,300 CUP	WSF	3.8	958	14,100 PSI	4.8	1199	26,300 PSI					
HP-38	3.5	930	16,200 CUP	4.0	1033	20,300 CUP	231	3.6	1006	17,200 PSI	4.6	1217	26,600 PSI					
Titegroup	3.1	932	15,300 CUP	3.6	1060	20,600 CUP	HP-38	3.6	1006	17,200 PSI	4.6	1217	26,600 PSI					
700-X	3.0	914	14,500 CUP	3.5	1036	19,400 CUP	Titegroup	3.2	1020	18,500 PSI	4.2	1234	27,800 PSI					
Bullet: 100 GR. SPR JHP Dia: .312" Col: 1.345"						700-X	3.4	1023	17,200 PSI	4.4	1236	25,700 PSI						
H4227	9.0	980	15,700 CUP	10.0	1060	19,300 CUP	Clays	2.8	979	23,900 PSI	3.5	1108	36,900 PSI					
Lil'Gun	10.0	1151	17,900 CUP	11.0	1208	19,900 CUP	Bullet: 85 GR. HDY XTP Dia: .312" Col: 1.450"											
Longshot	4.0	903	13,900 CUP	4.7	1056	19,300 CUP	Longshot	6.5	1404	32,700 PSI	7.2	1549	41,800 PSI					
572	3.9	892	14,700 PSI	4.4	1018	20,700 CUP	572	6.4	1403	32,000 PSI	7.3	1564	42,000 PSI					
800-X	4.2	900	14,600 CUP	4.7	1035	20,200 CUP	800-X	6.7	1376	25,300 PSI	7.5	1548	36,700 PSI					
HS-6	4.8	885	15,800 CUP	5.4	1023	20,200 CUP	HS-6	7.6	1402	30,800 PSI	8.5	1561	41,600 PSI					
AutoComp	3.7	867	15,200 CUP	4.2	964	18,900 CUP	CFE Pistol	6.7	1474	33,400 PSI	7.5	1600	41,200 PSI					
Universal	3.3	847	14,300 CUP	3.7	973	19,900 CUP	AutoComp	6.3	1387	32,700 PSI	7.0	1518	42,100 PSI					
WSF	3.8	858	15,100 CUP	4.3	1000	20,300 CUP	Universal	5.3	1253	32,100 PSI	6.0	1378	38,700 PSI					
231	3.3	860	15,600 CUP	3.7	947	19,400 CUP	WSF	6.4	1359	31,900 PSI	7.0	1475	38,200 PSI					
HP-38	3.3	860	15,600 CUP	3.7	947	19,400 CUP	231	5.5	1299	34,000 PSI	6.0	1416	39,800 PSI					
Titegroup	2.8	833	15,000 CUP	3.3	956	19,900 CUP	HP-38	5.5	1299	34,000 PSI	6.0	1416	39,800 PSI					
700-X	3.1	857	15,900 CUP	3.5	976	20,200 CUP	Titegroup	5.0	1294	27,000 PSI	5.8	1438	37,600 PSI					
32-20 WINCHESTER																		
Case: Remington			Twist: 1:20"															
Barrel: 5.5" Trim: 1.305"			Primer: Winchester SP, Small Pistol															
Bullet: 77 GR. LFP Dia: .314" Col: 1.555"																		
231	3.4	957	11,000 CUP	3.8	1031	12,700 CUP												
HP-38	3.4	957	11,000 CUP	3.8	1031	12,700 CUP												
Titegroup	2.9	945	10,300 CUP	3.2	1020	11,700 CUP												
Bullet: 85 GR. HDY JHP Dia: .312" Col: 1.550"																		
Lil'Gun	7.5	1048	13,200 CUP	8.0	1102	15,700 CUP												
Titegroup	3.1	866	11,600 CUP	3.5	961	15,900 CUP												
Bullet: 90 GR. CAST LRNFP Dia: .314" Col: 1.490"																		
231	3.2	833	11,900 CUP	3.5	969	16,000 CUP												
HP-38	3.2	833	11,900 CUP	3.5	969	16,000 CUP												
Trail Boss	2.5	785	11,400 CUP	2.8	830	13,900 CUP												
Titegroup	3.0	937	12,300 CUP	3.4	1012	15,800 CUP												
Bullet: 100 GR. REM JFP Dia: .312" Col: 1.580"																		
Lil'Gun	7.0	947	12,200 CUP	7.5	1018	15,700 CUP												
Titegroup	3.0	839	14,100 CUP	3.5	908	16,000 CUP												
Bullet: 115 GR. CAST LRNFP Dia: .314" Col: 1.580"																		
Universal	3.0	808	14,200 CUP	3.2	869	16,000 CUP												
231	3.2	839	11,100 CUP	3.5	915	15,600 CUP												
HP-38	3.2	839	11,100 CUP	3.5	915	15,600 CUP												
Trail Boss	2.2	642	11,300 CUP	2.5	707	15,300 CUP												
Titegroup	2.7	815	12,900 CUP	3.0	857	15,300 CUP												
327 FEDERAL MAGNUM																		
Case: Federal			Twist: 1:16"															
Barrel: 5" Trim: 1.200"			Primer: Federal 200, Small Pistol			Magnum												
Bullet: 77 GR. CAST LFP Dia: .314" Col: 1.460"																		
572	5.5	1233	18,500 PSI	6.2	1381	24,300 PSI												
CFE Pistol	5.1	1254	18,600 PSI	5.8	1382	23,100 PSI												
AutoComp	5.9	1251	17,700 PSI	6.7	1393	21,900 PSI												
Universal	4.9	1190	15,700 PSI	5.5	1357	22,800 PSI												
231	5.1	1273	20,700 PSI	5.8	1380	25,000 PSI												
						Bullet: 100 GR. HDY XTP Dia: .312" Col: 1.450"												
						IMR 4227	11.5	1239	27,100 PSI	12.5C	1318	30,000 PSI						
						296	12.2	1419	31,400 PSI	13.2	1525	38,500 PSI						
						H110	12.2	1419	31,400 PSI	13.2	1525	38,500 PSI						
						Lil'Gun	12.7	1347	25,600 PSI	14.0	1431	27,900 PSI						
						Longshot	6.0	1287	35,400 PSI	6.7	1400	43,500 PSI						
						572	6.0	1299	33,500 PSI	6.8	1413	42,800 PSI						
						800-X	6.0	1252	28,900 PSI	6.9	1434	39,400 PSI						
						HS-6	7.0	1289	34,100 PSI	7.7	1384	42,000 PSI						
						CFE Pistol	5.9	1298	31,800 PSI	7.0	1451	42,300 PSI						

NEVER EXCEED MAXIMUM LOADS

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads						
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure				
AutoComp	5.5	1190	32,500 PSI	6.2	1328	41,400 PSI	38 SHORT COLT										
Universal	4.5	1087	28,000 PSI	5.4	1250	40,800 PSI	Case: Starline			Twist: 1:16"							
HP-38	4.8	1146	31,100 PSI	5.4	1261	39,800 PSI	Barrel: 7 1/2"	Trim: .755"	Primer: Federal 100M, Small Pistol		Match						
Titegroup	4.3	1102	33,300 PSI	5.2	1261	42,800 PSI											
Bullet: 115 GR. MEI LRNFP Dia: .312" Col: 1.460"						Bullet: 93 GR. AA206 LRN Dia: .359" Col: 1.005"											
572	4.6	1068	23,500 PSI	5.4	1222	33,800 PSI	Universal	2.9	634		3.4	775					
AutoComp	4.7	1062	22,100 PSI	5.5	1194	33,500 PSI	HP-38	2.4	609	6,500 CUP	2.8	749	7,100 CUP				
Universal	4.2	1059	25,200 PSI	5.0	1184	40,200 PSI	Trail Boss	1.7	575		2.0	674					
231	4.3	1053	27,400 PSI	5.3	1218	41,200 PSI	Titegroup	2.3	639		2.7	791					
HP-38	4.3	1053	27,400 PSI	5.3	1218	41,200 PSI	Clays	1.8	634	7,000 CUP	2.1	778	7,300 CUP				
Trail Boss	2.5	733	15,200 PSI	3.0	804	19,600 PSI	Bullet: 135 GR. AA202 LFP Dia: .358" Col: 1.135"										
Titegroup	3.6	1012	23,900 PSI	4.6	1173	40,600 PSI	Universal	2.4	624		2.8	771					
700-X	3.8	1024	26,400 PSI	4.6	1158	35,300 PSI	HP-38	2.4	657		2.8	777					
Clays	3.0	913	26,600 PSI	3.7	1017	39,500 PSI	Trail Boss	1.5	490		1.7	526					
380 Auto																	
Case: Remington						Twist: 1:16"											
Barrel: 3.75"						Trim: .675"						Primer: CCI 500, Small Pistol					
Bullet: 80 GR. BAR TAC XP Dia: .355" Col: .980"						Bullet: 125 GR. LRN Dia: .358" Col: 1.400"											
572	3.3	901	16,100 PSI	3.8	1043	19,700 PSI	Universal	3.2	626		3.7	772					
CFE Pistol	2.9	814	12,600 PSI	3.7	1036	20,300 PSI	HP-38	2.6	636		3.2	766					
AutoComp	3.3	911	16,100 PSI	3.8	1024	20,200 PSI	Trail Boss	2.0	622		2.4	705					
Universal	2.8	889	16,100 PSI	3.0	964	17,900 PSI	Titegroup	2.3	657		2.7	752					
231	2.4	817	15,000 PSI	2.7	936	20,300 PSI	Clays	2.0	631		2.5	765					
HP-38	2.4	817	15,000 PSI	2.7	936	20,300 PSI	Bullet: 150 GR. LRN Dia: .358" Col: 1.390"										
Titegroup	2.3	865	15,700 PSI	2.6	970	19,300 PSI	Universal	3.0	631		3.5	769					
700-X	2.3	846	15,900 PSI	2.6	960	19,700 PSI	HP-38	2.6	631		3.3	777					
Bullet: 90 GR. HDY JHP Dia: .355" Col: .955"						Bullet: 80 GR. BAR TAC-XP Dia: .355" Col: 1.025"											
572	3.9	919	15,600 PSI	4.4	1053	19,900 PSI	Longshot	5.7	1239	31,100 PSI	6.6	1327	33,500 PSI				
800-X				4.1	870	15,500 CUP	572	5.4	1311	27,400 PSI	6.2	1424	31,200 PSI				
CFE Pistol	3.7	880	11,900 PSI	4.2	1010	19,500 PSI	HS-6	5.4	1102	28,000 PSI	5.7	1167	32,100 PSI				
AutoComp	4.1	893	11,200 CUP	4.5	1012	15,000 CUP	CFE Pistol	5.0	1221	26,100 PSI	5.9	1420	33,500 PSI				
Universal	3.2	815	10,700 CUP	3.6	955	15,700 CUP	AutoComp	4.4	1101	27,700 PSI	4.8	1207	31,800 PSI				
231	3.2	917	13,900 CUP	3.5	957	15,400 CUP	Universal	3.7	1156	31,400 PSI	3.9	1166	31,500 PSI				
HP-38	3.2	917	13,900 CUP	3.5	957	15,400 CUP	231	3.3	1021	26,300 PSI	3.8	1125	32,000 PSI				
Titegroup	2.7	826	10,800 CUP	3.2	970	15,600 CUP	HP-38	3.3	1021	26,300 PSI	3.8	1125	32,000 PSI				
700-X				2.9	895	15,900 CUP	Titegroup	3.0	1015	25,700 PSI	3.6	1174	32,900 PSI				
Bullet: 95 GR. SPR FMJ Dia: .355" Col: .970"						Bullet: 90 GR. SPR GDHP Dia: .355" Col: 1.010"											
572	3.5	785	13,700 PSI	4.2	982	19,900 PSI	Longshot	6.0	1278	29,400 PSI	7.0	1378	32,300 PSI				
CFE Pistol	3.7	822	12,000 PSI	4.2	986	19,900 PSI	572	5.5	1239	25,000 PSI	6.4	1419	33,500 PSI				
AutoComp	3.9	816	10,600 CUP	4.3	937	14,100 CUP	HS-6	7.9	1361	27,400 CUP	8.2	1413	30,900 CUP				
Universal	3.1	814	12,500 CUP	3.5	901	15,500 CUP	CFE Pistol	6.0	1310	27,200 PSI	6.4	1404	32,900 PSI				
231	2.9	802	13,100 CUP	3.2	884	15,400 CUP	AutoComp	6.1	1255	27,700 PSI	6.5	1332	32,100 PSI				
HP-38	2.9	802	13,100 CUP	3.2	884	15,400 CUP	Universal	5.0	1170	25,700 CUP	5.5	1266	30,100 CUP				
Titegroup	2.7	796	10,600 CUP	3.2	953	15,600 CUP	231	5.5	1312	25,400 CUP	5.8	1349	30,100 CUP				
Bullet: 100 GR. HDY FMJ Dia: .355" Col: .980"						Bullet: 95 GR. SIE FMJ Dia: .355" Col: 1.020"											
572	3.4	816	15,300 PSI	4.1	965	19,800 PSI	Longshot	5.8	1192	25,800 PSI	6.8	1356	33,300 PSI				
800-X				4.0	840	14,700 CUP	572	5.4	1233	25,900 PSI	6.3	1379	33,400 PSI				
CFE Pistol	3.3	794	12,400 PSI	4.0	955	19,800 PSI	HS-6	7.3	1232	26,500 CUP	7.8	1339	31,300 CUP				
AutoComp	3.8	822	11,000 CUP	4.2	934	14,400 CUP	CFE Pistol	5.9	1207	27,900 PSI	6.4	1362	32,200 PSI				
Universal	3.0	721	11,400 CUP	3.4	889	16,100 CUP	38 S&W										
231	2.9	819	13,800 CUP	3.1	843	15,400 CUP	Case: Winchester										
HP-38	2.9	819	13,800 CUP	3.1	843	15,400 CUP	Barrel: 4"										
Titegroup	2.6	793	11,400 CUP	3.0	912	14,700 CUP	Trim: .765"										
700-X				2.7	840	15,200 CUP	Primer: Winchester SP, Small Pistol										
Bullet: 145 GR. CAST Dia: .359" Col: 1.200"						Bullet: 145 GR. LEAD Dia: .358" Col: 1.180"											
HP-38	2.2	595		2.5	630		231	2.6	675	11,500 CUP							

150

NEVER EXCEED MAXIMUM LOADS

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
AutoComp	5.6	1216	27,300 PSI	6.1	1306	32,600 PSI	Titewad	2.9	847	28,700 PSI	3.4	942	32,200 PSI
Universal	4.6	1182	26,800 CUP	5.2	1292	31,700 CUP	Bullet: 124 GR. FMJ Dia: .355" Col: 1.169"						
231	4.8	1189	26,300 CUP	5.3	1273	31,400 CUP	WSF	4.7	1015	27,700 PSI	5.3	1115	32,700 PSI
HP-38	4.8	1189	26,300 CUP	5.3	1273	31,400 CUP	Bullet: 124 GR. LEAD RN Dia: .355" Col: 1.169"						
Titegroup	4.7	1241	28,500 CUP	5.0	1298	32,000 CUP	WSF	4.0	945	22,200 PSI	4.7	1055	27,300 PSI
700-X	4.1	1137	26,300 PSI	4.5	1224	31,500 PSI	Bullet: 100 GR. SFIRE Dia: .355" Col: 1.140"						
572	5.0	1176	27,800 PSI	6.1	1319	33,300 PSI	Longshot	3.9	901	24,700 PSI	4.4	998	32,600 PSI
CFE Pistol	5.0	1048	28,900 PSI	5.5	1211	33,200 PSI	572	4.0	961	26,400 PSI	4.6	1074	32,800 PSI
Universal	3.8	1057	21,700 PSI	4.2	1169	30,700 PSI	HS-6	4.5	865	25,700 PSI	5.1	971	33,100 PSI
231	3.9	1062	26,500 PSI	4.4	1149	31,000 PSI	CFE Pistol	4.2	956	25,600 PSI	4.8	1096	33,400 PSI
HP-38	3.9	1062	26,500 PSI	4.4	1149	31,000 PSI	AutoComp	3.6	842	25,000 PSI	4.1	954	31,600 PSI
Titegroup	3.6	1097	24,700 PSI	4.0	1174	31,400 PSI	Universal	3.0	803	26,800 PSI	3.3	892	32,200 PSI
700-X	3.5	1015	22,600 PSI	4.0	1122	26,700 PSI	231	2.8	753	25,300 PSI	3.3	876	33,600 PSI
Bullet: 100 GR. SPR FMJ Dia: .355" Col: 1.050"							HP-38	2.8	753	25,300 PSI	3.3	876	33,600 PSI
Longshot	5.5	1158	26,500 PSI	6.5	1315	33,300 PSI	Titegroup	2.8	816	27,100 PSI	3.2	930	33,700 PSI
HS-6	7.2	1270	23,900 CUP	7.5	1313	28,600 CUP	700-X	2.9	843	27,000 PSI	3.4	938	33,500 PSI
Universal	4.8	1119	27,200 CUP	5.3	1212	31,500 CUP	Bullet: 125 GR. HDY HAP Dia: .356" Col: 1.069"						
231	5.1	1218	25,200 CUP	5.5	1282	28,400 CUP	Longshot	5.0	1052	24,700 CUP	5.7	1115	28,300 CUP
HP-38	5.1	1218	25,200 CUP	5.5	1282	28,400 CUP	800-X	4.5	1015	24,900 PSI	5.0	1051	26,200 PSI
Titegroup	4.7	1234	28,300 CUP	5.0	1289	30,300 CUP	HS-6	5.9	1023	24,400 CUP	6.6	1124	30,700 CUP
Bullet: 115 GR. FMJ Dia: .355" Col: 1.169"							CFE Pistol	4.4	1041	27,200 PSI	5.0	1156	33,000 PSI
WSF	4.9	1060	24,200 PSI	5.7	1195	31,900 PSI	AutoComp	4.3	1012	26,700 PSI	4.8	1101	32,800 PSI
Bullet: 115 GR. JHP Dia: .355" Col: 1.169"							Universal	3.8	993	24,400 CUP	4.3	1096	31,300 CUP
WSF	5.2	1095	28,700 PSI	5.7	1165	32,100 PSI	231	3.9	1009	25,700 CUP	4.4	1086	31,200 CUP
Bullet: 115 GR. LRN Dia: .356" Col: 1.100"							HP-38	3.9	1009	25,700 CUP	4.4	1086	31,200 CUP
Longshot	5.0	1032	20,200 CUP	6.0	1166	27,300 CUP	Titegroup	3.6	1002	22,900 CUP	4.0	1096	30,400 CUP
572	4.6	1118	26,300 PSI	5.1	1200	31,900 PSI	700-X	2.9	899	23,700 PSI	3.4	1003	31,600 PSI
800-X	4.5	1004	24,000 PSI	5.3	1128	28,200 PSI	Clays	2.9	899	22,700 CUP	3.3	993	30,900 CUP
HS-6	6.4	1117	27,900 CUP	6.9	1170	32,200 CUP	Bullet: 125 GR. SIE FMJ Dia: .355" Col: 1.090"						
CFE Pistol	4.9	1124	28,800 PSI	5.4	1209	33,800 PSI	Longshot	4.7	1022	28,100 PSI	5.7	1162	33,400 PSI
AutoComp	4.4	1002	24,800 PSI	5.1	1145	31,500 PSI	572	4.3	1001	25,600 PSI	4.9	1119	31,600 PSI
Universal	4.0	1034	24,400 CUP	4.5	1124	31,300 CUP	HS-6	6.4	1131	25,600 CUP	6.8	1169	27,100 CUP
231	4.3	1079	28,400 CUP	4.8	1135	32,000 CUP	CFE Pistol	4.6	1009	26,900 PSI	5.1	1118	33,000 PSI
HP-38	4.3	1079	28,400 CUP	4.8	1135	32,000 CUP	AutoComp	4.7	1055	28,900 PSI	5.2	1120	33,300 PSI
Titegroup	3.9	1075	25,800 CUP	4.3	1151	30,500 CUP	Universal	4.3	1031	26,900 CUP	4.9	1118	30,600 CUP
700-X	3.3	986	25,200 PSI	3.7	1082	31,900 PSI	231	4.4	1009	24,600 CUP	4.8	1088	28,800 CUP
Clays	3.0	954	25,300 CUP	3.4	1039	31,000 CUP	HP-38	4.4	1009	24,600 CUP	4.8	1088	28,800 CUP
Bullet: 115 GR. SPR GDHP Dia: .355" Col: 1.125"							Titegroup	4.1	1069	27,300 CUP	4.4	1136	30,600 CUP
Longshot	5.0	1127	29,000 PSI	6.0	1203	32,300 PSI	700-X	3.0	845	21,600 PSI	3.6	1007	31,000 PSI
572	5.3	1137	26,400 PSI	5.7	1221	33,000 PSI	Clays	3.5	1010	28,000 CUP	3.7	1056	32,500 CUP
HS-6	6.7	1171	26,700 CUP	7.0	1234	29,400 CUP	Bullet: 130 GR. BERB RN Dia: .356" Col: 1.150"						
CFE Pistol	5.3	1059	23,200 PSI	5.9	1185	31,800 PSI	Longshot	5.2	970	27,500 PSI	5.8	1115	33,900 PSI
AutoComp	5.1	1078	28,200 PSI	5.6	1161	32,500 PSI	572	4.6	990	25,600 PSI	5.2	1131	33,500 PSI
Universal	4.5	1029	27,400 CUP	5.0	1149	31,200 CUP	800-X	5.3	1032	28,700 PSI	5.8	1104	31,000 PSI
231	4.7	1075	25,300 CUP	5.1	1167	28,100 CUP	HS-6	5.9	970	28,300 PSI	6.5	1097	31,800 PSI
HP-38	4.7	1075	25,300 CUP	5.1	1167	28,100 CUP	AutoComp	4.8	990	27,500 PSI	5.3	1093	33,500 PSI
Titegroup	4.5	1135	29,500 CUP	4.8	1158	30,500 CUP	Universal	3.8	857	26,600 PSI	4.2	978	31,500 PSI
700-X	3.9	991	26,000 PSI	4.2	1091	31,900 PSI	231	3.9	903	27,600 PSI	4.3	1005	33,000 PSI
Clays	3.7	1066	30,900 CUP	3.9	1095	32,600 CUP	HP-38	3.9	903	27,600 PSI	4.3	1005	33,100 PSI
Bullet: 124 GR. BERB HBRN TP Col: 1.150" Dia: .356"							Titegroup	3.5	895	27,400 PSI	3.9	1006	32,100 PSI
Longshot	4.8	958	23,000 PSI	5.8	1135	32,300 PSI	700-X	3.5	904	26,300 PSI	3.9	998	31,100 PSI
572	5.3	1131	27,200 PSI	5.8	1212	32,600 PSI	Clays	2.7	755	27,400 PSI	3.0	853	31,700 PSI
800-X	5.2	1060	27,700 PSI	5.7	1114	30,400 PSI	Bullet: 147 GR. FMJ Dia: .355" Col: 1.169"						
HS-6	6.0	1016	28,200 PSI	6.6	1116	32,400 PSI	WSF	3.9	895	28,400 PSI	4.3	950	32,300 PSI
CFE Pistol	4.9	1006	27,300 PSI	5.5	1120	33,800 PSI	Bullet: 147 GR. HDY XTP Dia: .355" Col: 1.100"						
AutoComp	4.8	1020	28,400 PSI	5.4	1120	32,900 PSI	Longshot	3.8	851	25,700 PSI	4.7	1004	33,800 PSI
Universal	3.8	904	26,300 PSI	4.4	1045	33,500 PSI	572	3.5	855	25,600 PSI	4.1	957	32,200 PSI
231	3.9	920	27,700 PSI	4.4	1037	31,900 PSI	800-X	3.5	808	25,600 PSI	4.0	883	28,900 PSI
HP-38	3.9	920	27,400 PSI	4.4	1037	31,900 PSI	HS-6	4.3	773	20,200 CUP	5.0	885	27,900 CUP
Titegroup	3.6	957	27,700 PSI	4.1	1057	32,700 PSI	CFE Pistol	3.7	864	26,700 PSI	4.2	963	33,000 PSI
700-X	3.7	894	24,700 PSI	4.2	1068	33,400 PSI	AutoComp	3.6	827	27,900 PSI	4.0	916	32,800 PSI
Clays	2.7	791	27,900 PSI	3.0	857	31,200 PSI	Universal	3.0	803	24,100 CUP	3.3	869	31,000 CUP
							Titegroup	3.2	855	22,500 CUP	3.6	929	27,500 CUP

NEVER EXCEED MAXIMUM LOADS

151

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads												
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure										
700-X	2.6	764	27,300 PSI	2.9	838	32,000 PSI	Bullet: 124 GR. BERB HBRN TP						Dia: .356"										
Bullet: 147 GR. JHP						Dia: .355" Col: 1.169"			Col: 1.250"														
WSF	4.0	900	30,100 PSI	4.3	935	32,300 PSI	Lil'Gun	12.5	1271	23,100 CUP	13.0	1315	26,600 CUP										
Bullet: 147 GR. LEAD CFP						Dia: .355" Col: 1.169"			Longshot	5.9	1140	22,400 CUP	6.8	1286	31,300 CUP								
WSF	3.7	905	28,500 PSI	4.1	965	32,800 PSI	572	5.8	1160	26,100 PSI	6.7	1297	35,300 PSI										
38 SUPER AUTO																							
Case: Remington						Twist: 1:16"			HS-6						7.1	1160	26,100 CUP	8.0	1280	32,500 CUP			
Barrel: 5"		Trim: .895"		Primer: Remington 1 1/2, Small		Pistol		CFE Pistol						5.8	1170	26,100 CUP	6.4	1260	32,200 CUP				
Bullet: 90 GR. SIE JHP						Dia: .355" Col: 1.180"			AutoComp						5.7	1126	25,100 CUP	6.3	1222	32,100 CUP			
Longshot	7.8	1448	27,600 CUP	8.4	1526	32,100 CUP	Universal						4.8	1088	24,300 CUP	5.2	1182	32,100 CUP					
HS-6	8.5	1298	24,300 CUP	9.5	1392	32,000 CUP	231						4.7	1062	26,100 CUP	5.4	1200	32,400 CUP					
CFE Pistol	7.0	1391	24,600 CUP	7.6	1482	31,800 CUP	HP-38						4.7	1062	26,100 CUP	5.4	1200	32,400 CUP					
AutoComp	6.6	1311	27,100 CUP	7.2	1388	32,500 CUP	Titegroup						4.3	1086	25,100 CUP	4.9	1181	31,000 PSI					
Universal	5.7	1312	26,200 CUP	6.3	1352	31,600 CUP	Clays						3.8	1000	26,700 CUP	4.4	1126	31,900 CUP					
231	6.0	1253	26,700 CUP	6.7	1345	32,000 CUP	Titewad						4.0	1068	28,600 CUP	4.6	1140	32,000 CUP					
HP-38	6.0	1253	26,700 CUP	6.7	1345	32,000 CUP	Bullet: 125 GR. CAST LCN						Dia: .356" Col: 1.230"										
Titegroup	5.3	1288	23,200 CUP	6.0	1384	31,200 CUP	Lil'Gun	12.6	1288	25,900 CUP	14.0C	1379	30,500 CUP										
Bullet: 95 GR. BAR TAC-XP						Dia: .355" Col: 1.255"			Longshot						6.0	1157	25,100 CUP	6.8	1243	31,200 CUP			
Longshot	6.6	1339	25,800 CUP	7.3	1454	32,000 CUP	572						5.8	1191	26,600 PSI	6.6	1303	34,500 PSI					
572	6.1	1273	24,500 PSI	7.0	1450	34,300 PSI	HS-6						7.2	1151	24,300 CUP	8.1	1264	31,300 CUP					
HS-6	7.3	1269	24,500 CUP	8.3	1434	32,000 CUP	CFE Pistol						5.0	1195	26,100 CUP	6.3	1271	31,800 CUP					
CFE Pistol	6.0	1286	26,100 CUP	6.8	1434	32,700 CUP	AutoComp						5.5	1109	26,300 CUP	6.1	1174	31,700 CUP					
AutoComp	5.9	1279	26,900 CUP	6.6	1398	31,700 CUP	Universal						4.7	1110	25,200 CUP	5.3	1171	32,300 CUP					
Universal	5.0	1232	26,400 CUP	5.4	1323	31,500 CUP	231						5.1	1129	27,900 CUP	5.7	1214	32,600 CUP					
231	5.0	1186	25,700 CUP	5.6	1341	32,500 CUP	HP-38						5.1	1129	27,900 CUP	5.7	1214	32,600 CUP					
HP-38	5.0	1186	25,700 CUP	5.6	1341	32,500 CUP	Titegroup						4.5	1114	23,400 CUP	5.1	1199	32,200 CUP					
Titegroup	4.6	1334	25,900 CUP	5.1	1334	31,400 CUP	Clays						3.9	1014	27,300 CUP	4.4	1063	31,600 CUP					
Clays	3.5	1072	27,100 CUP	4.6	1287	32,200 CUP	Bullet: 125 GR. HDY HAP						Dia: .356" Col: 1.210"										
Titewad	4.2	1184	27,900 CUP	4.6	1247	31,400 CUP	Lil'Gun	12.2	1285	23,900 CUP	13.6C	1399	29,700 CUP										
Bullet: 100 GR. SPR JHP						Dia: .355" Col: 1.215"			Longshot						5.8	1170	25,500 CUP	6.6	1294	32,400 CUP			
Longshot	7.2	1343	26,100 CUP	7.9	1446	32,100 CUP	572						5.5	1135	26,000 PSI	6.3	1266	34,800 PSI					
HS-6	8.5	1284	25,500 CUP	9.4	1347	32,500 CUP	HS-6						6.9	1175	25,700 CUP	7.7	1300	32,300 CUP					
Universal	5.4	1233	25,200 CUP	6.0	1327	32,500 CUP	CFE Pistol						5.5	1166	26,500 CUP	6.1	1259	32,300 CUP					
231	5.7	1206	26,300 CUP	6.4	1272	31,500 CUP	AutoComp						5.5	1148	24,800 CUP	6.0	1240	31,200 CUP					
HP-38	5.7	1206	26,300 CUP	6.4	1272	31,500 CUP	Universal						4.5	1105	25,500 CUP	5.1	1202	31,700 CUP					
Titegroup	5.1	1204	25,300 CUP	5.8	1292	31,400 CUP	231						4.8	1113	27,100 CUP	5.4	1237	31,900 CUP					
Bullet: 115 GR. HDY XTP						Dia: .355" Col: 1.245"			HP-38						4.8	1113	27,100 CUP	5.4	1237	31,900 CUP			
Longshot	6.5	1214	25,500 CUP	7.1	1301	31,600 CUP	Titegroup						4.2	1082	25,400 CUP	4.8	1200	31,600 CUP					
572	6.2	1212	26,900 PSI	7.1	1355	34,400 PSI	Clays						3.6	1034	25,900 CUP	4.2	1132	32,100 CUP					
800-X				5.9	1015	21,900 CUP	Titewad						3.8	1050	26,300 CUP	4.4	1136	31,200 CUP					
HS-6	7.8	1212	25,500 CUP	8.5	1314	31,500 CUP	Bullet: 125 GR. SIE FMJ						Dia: .355" Col: 1.275"										
CFE Pistol	6.3	1246	27,700 CUP	6.9	1340	32,600 CUP	Lil'Gun	13.5	1317	27,600 CUP	14.0	1353	29,800 CUP										
AutoComp	5.7	1152	27,400 CUP	6.2	1238	32,000 CUP	Longshot						6.0	1109	24,600 CUP	6.9	1247	32,600 CUP					
Universal	4.9	1141	25,300 CUP	5.5	1225	32,300 CUP	572						5.9	1171	27,700 PSI	6.7	1287	34,400 PSI					
231	5.7	1198	29,000 CUP	6.1	1261	32,700 CUP	HS-6						7.5	1158	24,600 CUP	8.3	1271	32,100 CUP					
HP-38	5.7	1198	29,000 CUP	6.1	1261	32,700 CUP	CFE Pistol						5.9	1162	25,500 CUP	6.4	1240	32,500 CUP					
Titegroup	4.7	1107	25,000 CUP	5.3	1208	31,800 CUP	AutoComp						5.7	1067	26,200 CUP	6.2	1173	31,400 CUP					
700-X				4.0	955	22,900 CUP	Universal						4.9	1069	27,600 CUP	5.5	1179	32,300 CUP					
Bullet: 115 GR. LRN						Dia: .356" Col: 1.250"			231						5.1	1098	26,500 CUP	5.7	1159	31,200 CUP			
Longshot	6.5	1180	20,400 CUP	7.3	1289	30,900 CUP	HP-38						5.1	1098	26,500 CUP	5.7	1159	31,200 CUP					
572	5.8	1212	25,700 PSI	6.7	1355	34,500 PSI	Titegroup						4.4	1020	23,800 CUP	5.0	1124	31,800 CUP					
HS-6	7.8	1204	24,700 CUP	8.7	1307	31,100 CUP	Bullet: 130 GR. BERB RN						Dia: .355" Col: 1.270"										
CFE Pistol	6.0	1200	20,300 CUP	6.5	1310	30,900 CUP	Lil'Gun	10.5	1119	25,400 CUP	12.0C	1204	28,300 CUP										
AutoComp	6.0	1178	26,400 CUP	6.5	1246	32,000 CUP	Longshot						5.5	1058	27,400 CUP	6.5	1166	32,300 CUP					
Universal	5.0	1115	21,900 CUP	5.7	1216	31,900 CUP	572						6.5	1010	26,000 CUP	7.5	1127	31,100 CUP					
231	4.9	1059	19,700 CUP	5.7	1191	30,700 CUP	HS-6						5.3	1035	25,800 CUP	5.8	1109	31,100 CUP					
HP-38	4.9	1059	19,700 CUP	5.7	1191	30,700 CUP	AutoComp						4.4	984	23,000 CUP	4.9	1073	30,500 CUP					
Titegroup	4.8	1156	26,700 CUP	5.4	1213	31,900 CUP	Universal						4.4	984	23,000 CUP	4.9	1073	30,500 CUP					
Clays	4.0	1046	28,600 CUP	4.6	1104	31,600 CUP	Bullet: 135 GR. LRN						Dia: .356" Col: 1.275"										
Bullet: 115 GR. LRN						Dia: .356" Col: 1.250"			Lil'Gun						11.7	1203	26,400 CUP	13.0C	1314	31,500 CUP			
Longshot	6.5	1180	20,400 CUP	7.3	1289	30,900 CUP	Longshot						5.8	1087	26,600 CUP	6.5	1178	32,200 CUP					
572	5.8	1212	25,700 PSI	6.7	1355	34,500 PSI	572						5.4	1133	26,300 PSI	6.1	1236	34,600 PSI					
HS-6	7.8	1204	24,700 CUP	8.7	1307	31,100 CUP	HS-6						7.2	1123	27,200 CUP	8.0	1190	32,000 CUP					
CFE Pistol	6.0	1200	20,300 CUP	6.5	1310	30,900 CUP	CFE Pistol						5.1	1068	25,600 CUP	5.7	1160	32,000 CUP					
AutoComp	6.0	1178	26,400 CUP	6.5	1246	32,000 CUP	AutoComp						5.3	1065	25,400 CUP	5.8	1139	31,400 CUP					
Universal	5.0	1115	21,900 CUP	5.7	1216	31,900 CUP	Universal						4.5	1011	22,800 CUP	5.1	1108	30,900 CUP					
231	4.9	1059	19,700 CUP	5.7	1191	30,700 CUP	231						4.8	1045	27,600 CUP	5.4	1120	31,900 CUP					
HP-38	4.9	1059	19,700 CUP	5.7	1191	30,700 CUP	Bullet: 135 GR. LRN						Dia: .356" Col: 1.275"										
Titegroup	4.8	1156	26,700 CUP	5.4	1213	31,900 CUP	Lil'Gun						11.7	1203	26,400 CUP	13.0C	1314	31,500 CUP					
Clays	4.0	1046	28,600 CUP	4.6	1104	31,600 CUP	Longshot						5.8	1087	26,600 CUP	6.5	1178	32,200 CUP					

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
HP-38	4.8	1045	27,600 CUP	5.4	1120	31,900 CUP	Universal	5.0	968	11,800 CUP	5.6	1143	16,700 CUP
Titegroup	4.1	1011	23,700 CUP	4.9	1123	31,700 CUP	231	4.6	948	12,600 CUP	5.5	1096	16,300 CUP
Clays	3.5	928	25,600 CUP	4.2	998	32,500 CUP	HP-38	4.6	948	12,600 CUP	5.5	1096	16,300 CUP
Bullet: 147 GR. HDY XTP Dia: .355" Col: 1.260"							Titegroup	4.3	1011	12,100 CUP	4.8	1109	16,000 CUP
Lil'Gun	10.0	1111	22,200 CUP	11.0	1207	28,100 CUP	700-X	4.0	986	14,500 PSI	4.6	1078	16,500 PSI
Longshot	5.4	1042	25,300 CUP	6.0	1119	30,900 CUP	Clays	4.0	1002	14,400 CUP	4.2	1073	17,000 CUP
572	5.2	1052	29,400 PSI	5.9	1147	34,700 PSI	Bullet: 125 GR. CAST LRNFP Dia: .358"						
HS-6	6.3	997	24,500 CUP	7.0	1106	31,900 CUP	Col: 1.445"						
CFE Pistol	5.0	1000	23,600 CUP	5.5	1105	31,200 CUP	572	5.0	972	13,300 PSI	5.8	1112	16,000 PSI
AutoComp	5.0	943	25,300 CUP	5.5	1056	32,900 CUP	CFE Pistol	5.2	1044	13,500 PSI	6.2	1201	16,100 PSI
Universal	4.3	960	26,900 CUP	4.8	1017	32,500 CUP	AutoComp	5.7	1048	7,300 PSI	6.2	1139	10,800 PSI
231	4.4	965	24,300 CUP	4.9	1032	31,800 CUP	Universal	4.3	872	8,700 CUP	4.7	1036	16,800 CUP
HP-38	4.4	965	24,300 CUP	4.9	1032	31,800 CUP	231	3.8	876	10,300 CUP	4.8	1071	16,900 CUP
Titegroup	3.9	976	25,600 CUP	4.4	1066	31,700 CUP	HP-38	3.8	876	10,300 CUP	4.8	1071	16,900 CUP
Bullet: 150 GR. CAST LRN Dia: .356" Col: 1.230"							Trail Boss	3.0	753	11,600 PSI	5.3	952	13,400 PSI
Longshot	5.0	1076	27,200 CUP	6.2	1162	32,200 CUP	Titegroup	3.2	856	8,400 CUP	3.8	985	12,000 CUP
HS-6	6.4	1078	25,400 CUP	7.1	1175	30,900 CUP	700-X	3.7	982	14,500 PSI	4.2	1076	16,200 PSI
Universal	4.5	1038	27,600 CUP	5.0	1111	32,000 CUP	Clays	2.5	810	8,400 CUP	3.5	978	16,900 CUP
231	4.5	1026	26,000 CUP	5.1	1135	31,400 CUP	Bullet: 125 GR. HDY XTP Dia: .357" Col: 1.455"						
HP-38	4.5	1026	26,000 CUP	5.1	1135	31,400 CUP	572	5.4	960	14,300 PSI	5.9	1069	16,800 PSI
Titegroup	4.3	1066	27,400 CUP	4.8	1131	31,800 CUP	HS-6	6.5	931	13,100 CUP	7.2	1048	16,600 CUP
Bullet: 150 GR. SIE JFP Dia: .356" Col: 1.265"							CFE Pistol	5.4	995	12,600 PSI	6.3	1133	16,000 PSI
Lil'Gun	10.0	1106	23,500 CUP	11.0	1206	29,700 CUP	AutoComp	5.7	985	13,600 PSI	6.2	1068	16,500 PSI
Longshot	5.5	1040	26,900 CUP	6.0	1126	31,800 CUP	Universal	4.7	918	12,600 CUP	5.2	1019	17,000 CUP
HS-6	6.5	1029	26,000 CUP	7.2	1137	31,200 CUP	231	4.3	826	13,300 CUP	4.9	934	16,300 CUP
Universal	4.4	984	26,600 CUP	4.9	1059	32,100 CUP	HP-38	4.3	826	13,300 CUP	4.9	934	16,300 CUP
231	4.5	968	26,000 CUP	5.0	1066	32,100 CUP	Titegroup	4.3	953	12,800 CUP	4.6	1010	15,600 CUP
HP-38	4.5	968	26,000 CUP	5.0	1066	32,100 CUP	700-X	3.6	863	14,300 PSI	4.2	969	17,000 PSI
Titegroup	4.0	976	27,000 CUP	4.6	1063	32,100 CUP	Clays	3.5	843	12,400 CUP	3.9	937	16,100 CUP
38 SUPER AUTO +P													
Case: Winchester							Twist: 1:16"						
Barrel: 5"							Trim: .895" Primer: Winchester SP, Small Pistol						
Bullet: 115 GR. JHP Dia: .355" Col: 1.280"													
WSF	6.0	1185	28,100 PSI	7.1	1320	34,400 PSI							
Bullet: 124 GR. FMJ Dia: .355" Col: 1.280"													
WSF	5.2	1060	25,800 PSI	6.6	1245	34,600 PSI							
Bullet: 147 GR. JHP Dia: .355" Col: 1.280"													
WSF	4.8	960	27,300 PSI	5.6	1070	34,400 PSI							
Bullet: 160 GR. LEAD Dia: .355" Col: 1.280"													
WSF	3.8	875	25,300 PSI	4.9	1010	34,600 PSI							
9x23 MM WINCHESTER													
Case: Winchester							Twist: 1:16"						
Barrel: 4"							Trim: .895" Primer: Winchester SP, Small Pistol						
Bullet: 125 GR. JHP Dia: .355" Col: 1.300"													
231	5.3	1180	38,000 PSI	6.3	1300	46,000 PSI							
38 SPECIAL													
Case: Winchester							Twist: 1:18.75"						
Barrel: 7.7"							Trim: 1.145" Primer: Winchester SP, Small Pistol						
Bullet: 90 GR. CAST LRNFP Dia: .359" Col: 1.325"													
CFE Pistol	3.7	751	7,500 PSI	5.2	1077	10,800 PSI							
AutoComp	3.7	790	7,500 PSI	5.1	1089	10,800 PSI							
Trail Boss	3.0	740	7,800 PSI	5.0	904	8,100 PSI							
Titegroup	3.0	755	7,700 PSI	3.5	969	11,300 PSI							
Clays	2.5	705	7,900 PSI	3.0	938	11,400 PSI							
Bullet: 110 GR. HDY XTP Dia: .357" Col: 1.455"													
572	5.9	992	12,700 PSI	6.5	1163	16,300 PSI							
CFE Pistol	6.5	1195	13,900 PSI	6.8	1283	17,300 PSI							
HS-6	7.0	1071	14,500 CUP	7.8	1178	17,000 CUP							
AutoComp	5.8	860	11,700 PSI	6.4	1101	16,000 PSI							
Bullet: 130 GR. MEI CAST LRNFP Dia: .357" Col: 1.460"													
572	5.1	980	14,100 PSI	5.8	1103	17,000 PSI							
CFE Pistol	5.3	1053	13,200 PSI	6.1	1175	17,100 PSI							
AutoComp	5.5	981	13,600 PSI	6.0	1072	15,800 PSI							
Universal	4.7	957	13,500 PSI	5.2	1056	16,000 PSI							
HP-38	4.1	880	13,200 PSI	4.7	1008	16,100 PSI							
Titegroup	3.6	922	14,000 PSI	4.2	1018	15,900 PSI							
700-X	3.5	870	13,300 PSI	4.1	996	16,500 PSI							
Clays	3.0	828	12,500 PSI	3.5	924	16,100 PSI							
Bullet: 135 GR. CAST LRNFP Dia: .358" Col: 1.418"													
Universal	4.1	924	13,400 CUP	4.6	1025	16,900 CUP							
231	3.7	872	12,500 CUP	4.7	1024	17,000 CUP							
HP-38	3.7	872	12,500 CUP	4.7	1024	17,000 CUP							
Titegroup	3.1	824	9,600 CUP	3.6	927	12,900 CUP							
Clays	2.6	767	11,400 CUP	3.3	910	16,200 CUP							
Bullet: 140 GR. HDY XTP Dia: .357" Col: 1.455"													
572	4.8	816	13,900 PSI	5.5	958	16,900 PSI							
HS-6	5.8	808	11,000 CUP	6.5	933	16,000 CUP							
CFE Pistol	5.2	934	13,300 PSI	5.7	1008	16,300 PSI							
AutoComp	5.0	880	14,400 PSI	5.5	989	16,600 PSI							
Universal	4.3	832	12,400 CUP	4.8	939	15,400 CUP							
231	4.2	809	13,900 CUP	4.6	861	15,800 CUP							
HP-38	4.2	809	13,900 CUP	4.6	861	15,800 CUP							
Titegroup	3.9	864	13,100 CUP	4.2	919	15,800 CUP							
700-X	3.3	736	13,300 PSI	3.8	849	16,400 PSI							
Clays	3.0	703	13,400 CUP	3.7	869	16,700 CUP							
Bullet: 140 GR. HDY COWBOY Dia: .358" Col: 1.450"													
572	4.2	846	13,400 PSI	5.0	996	16,200 PSI							
HS-6	6.1	960	13,100 PSI	6.8	1091	16,300 PSI							
CFE Pistol	5.0	940	13,000 PSI	5.8	1107	16,200 PSI							
AutoComp	5.2	971	14,000 PSI	5.8	1055	16,100 PSI							
Universal	4.4	889	12,800 PSI	4.9	1009	15,600 PSI							

NEVER EXCEED MAXIMUM LOADS

153

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
231	4.1	861	12,400 PSI	4.6	980	16,100 PSI	Universal	3.8	744	14,100 CUP	4.2	823	16,100 CUP
HP-38	4.1	861	12,400 PSI	4.6	980	16,100 PSI	231	3.8	683	12,200 CUP	4.1	752	15,800 CUP
WST	3.5	825	12,600 PSI	3.9	903	15,900 PSI	HP-38	3.8	683	12,200 CUP	4.1	752	15,800 CUP
Trail Boss	3.0	697	11,200 PSI	3.7	806	13,400 PSI	Titegroup	3.0	635	11,100 CUP	3.6	764	16,000 CUP
Titegroup	2.5	675	9,400 PSI	4.4	1010	16,500 PSI	700-X	3.1	639	14,100 PSI	3.5	735	16,700 PSI
700-X	2.5	693	10,000 PSI	4.3	993	16,400 PSI							
Clays	2.5	706	10,700 PSI	3.4	862	16,200 PSI							
38 SPECIAL +P													
Bullet: 146 GR. SPR JHP Dia: .357" Col: 1.370"						Case: Winchester Twist: 1:18.75"							
H4227 9.6 908 12,600 CUP 10.7 979 15,700 CUP						Barrel: 7.7" Trim: 1.145" Primer: Winchester SP, Small Pistol							
HS-6 5.6 808 11,700 CUP 6.3 969 16,100 CUP						Bullet: 110 GR. HDY XTP Dia: .357" Col: 1.455"							
CFE Pistol 4.7 845 13,000 PSI 5.1 964 15,700 PSI						Longshot 7.6 1337 17,700 PSI							
AutoComp 4.6 796 13,100 PSI 5.0 881 14,700 PSI						572 6.6 1216 18,400 PSI							
Universal 4.0 788 11,100 CUP 4.5 933 16,100 CUP						HS-6 8.4 1268 19,600 CUP							
231 4.0 773 12,700 CUP 4.5 876 15,500 CUP						CFE Pistol 7.0 1303 18,400 PSI							
HP-38 4.0 773 12,700 CUP 4.5 876 15,500 CUP						AutoComp 7.0 1228 17,400 PSI							
Titegroup 3.5 808 12,800 CUP 4.0 914 16,000 CUP						Universal 6.0 1204 18,700 CUP							
700-X 3.2 724 13,800 PSI 3.6 815 16,000 PSI						HP-38 5.9 1155 18,700 CUP							
						Titegroup 5.2 1185 18,800 CUP							
						700-X 4.8 1140 17,700 PSI							
Bullet: 148 GR. HDY LHBWC Dia: .358" Col: 1.160"						Bullet: 125 GR. HDY XTP Dia: .357" Col: 1.455"							
572 2.6 668 13,400 PSI 3.3 799 16,100 PSI						Longshot 7.0 1228 18,300 PSI							
HS-6 4.5 816 9,200 CUP 5.2 943 14,300 CUP						572 6.1 1071 18,400 PSI							
CFE Pistol 3.5 849 14,000 PSI 3.9 914 15,700 PSI						HS-6 7.8 1138 19,500 CUP							
AutoComp 3.7 820 14,100 PSI 4.1 881 15,200 PSI						CFE Pistol 6.4 1199 18,600 PSI							
Universal 2.9 709 7,400 CUP 3.8 940 15,600 CUP						AutoComp 6.4 1073 17,600 PSI							
231 3.5 869 14,200 CUP 4.0 956 15,900 CUP						Universal 5.4 1072 18,900 CUP							
HP-38 3.5 869 14,200 CUP 4.0 956 15,900 CUP						HP-38 5.3 1018 19,800 CUP							
WST 2.5 680 13,000 PSI 2.8 735 16,000 PSI						Titegroup 5.0 1069 18,700 CUP							
Trail Boss 2.0 625 15,100 PSI 2.3 675 15,700 PSI						700-X 4.4 1023 18,100 PSI							
Titegroup 2.7 771 7,700 CUP 3.3 908 11,800 CUP													
700-X 2.0 686 11,600 PSI 2.5 804 16,000 PSI													
Clays 2.3 784 10,900 CUP 2.5 836 13,200 CUP													
Bullet: 158 GR. CAST LSWC Dia: .358" Col: 1.475"						Bullet: 140 GR. HDY XTP Dia: .357" Col: 1.455"							
H4227 9.0 887 12,100 CUP 10.0 983 15,700 CUP						H4227 12.4 1121 19,400 CUP							
572 3.7 776 13,400 PSI 4.5 926 16,400 PSI						Longshot 6.4 1126 17,700 PSI							
HS-6 5.7 928 13,700 CUP 6.3 1010 16,200 CUP						572 5.7 987 18,600 PSI							
CFE Pistol 4.8 960 13,900 PSI 5.3 1048 16,100 PSI						HS-6 7.0 992 18,300 CUP							
AutoComp 4.8 870 14,300 PSI 5.3 984 16,800 PSI						CFE Pistol 6.0 1097 18,600 PSI							
Universal 3.5 756 9,600 CUP 4.5 974 16,700 CUP						AutoComp 5.7 1031 18,000 PSI							
231 3.1 782 11,900 CUP 3.7 834 14,600 CUP						Universal 5.1 1022 19,100 CUP							
HP-38 3.1 782 11,900 CUP 3.7 834 14,600 CUP						HP-38 4.9 892 18,600 CUP							
WST 3.3 705 12,800 PSI 3.7 770 15,700 PSI						Titegroup 4.6 984 19,300 CUP							
Trail Boss 2.7 661 11,400 PSI 4.2 804 13,700 PSI						700-X 4.1 913 18,200 PSI							
Titegroup 3.2 815 11,500 CUP 3.8 920 15,400 CUP													
Clays 2.8 812 12,900 CUP 3.1 871 15,100 CUP													
Bullet: 158 GR. HDY XTP Dia: .357" Col: 1.455"						Bullet: 146 GR. SPR JHP Dia: .357" Col: 1.370"							
H4227 9.0 769 12,400 CUP 10.0 864 15,500 CUP						H4227 12.0 1085 18,400 CUP							
HS-6 5.6 761 13,400 CUP 6.2 862 16,300 CUP						Longshot 5.7 1036 17,400 PSI							
CFE Pistol 4.6 816 13,600 PSI 5.0 914 16,200 PSI						HS-6 6.7 1035 18,400 CUP							
AutoComp 4.5 751 14,000 PSI 4.9 865 16,800 PSI						CFE Pistol 5.5 1023 17,700 PSI							
Universal 4.0 678 12,600 CUP 4.4 778 16,200 CUP						AutoComp 5.2 957 17,500 PSI							
231 3.8 661 12,600 CUP 4.3 779 15,900 CUP						Universal 4.7 987 18,100 CUP							
HP-38 3.8 661 12,600 CUP 4.3 779 15,900 CUP						HP-38 4.9 975 17,700 CUP							
Titegroup 3.5 704 12,400 CUP 3.9 798 15,900 CUP						Titegroup 4.4 981 19,300 CUP							
700-X 3.2 688 13,000 PSI 3.7 798 15,900 PSI						700-X 3.8 854 17,400 PSI							
Clays 3.0 633 13,400 CUP 3.1 721 16,600 CUP													
Bullet: 158 GR. HDY XTP Dia: .357" Col: 1.455"						Bullet: 158 GR. HDY XTP Dia: .357" Col: 1.455"							
572 3.8 574 13,300 PSI 4.5 770 16,600 PSI						H4227 11.0 964 17,600 CUP							
						Longshot 5.5 965 17,000 PSI							
						572 5.0 872 18,400 PSI							
						HS-6 6.6 926 18,700 CUP							
						CFE Pistol 5.4 986 18,500 PSI							
						AutoComp 5.0 885 17,000 PSI							
						Universal 4.7 837 19,200 CUP							
						HP-38 4.6 807 18,100 CUP							
						Titegroup 4.3 905 19,300 CUP							
						700-X 4.0 866 18,500 PSI							
Bullet: 170 GR. SIE JHC Dia: .357" Col: 1.450"						Bullet: 170 GR. SIE JHC Dia: .357" Col: 1.450"							
H4227 8.8 762 12,900 CUP 9.8 888 15,900 CUP						H4227 10.6 950 17,600 CUP							
HS-6 5.3 710 12,200 CUP 5.9 832 16,100 CUP						Longshot 5.3 939 17,800 PSI							
AutoComp 4.3 736 14,300 PSI 4.8 820 16,000 PSI													

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
HS-6				6.3	897	18,600 CUP	Bullet: 125 GR. CAST LRNFP				Dia: .358"		
AutoComp				4.8	844	18,200 PSI	Col: 1.580"						
Universal				4.3	847	18,600 CUP	Universal	4.8	1046	11,000 CUP	6.8	1401	34,200 CUP
HP-38				4.4	819	18,100 CUP	231	4.6	1052	13,800 CUP	5.5	1185	18,800 CUP
Titegroup				4.0	846	19,000 CUP	HP-38	4.6	1052	13,800 CUP	5.5	1185	18,800 CUP
700-X				3.7	775	18,000 PSI	Trail Boss	3.5	874	14,900 CUP	5.3	1035	17,900 CUP
							Titegroup	4.0	1055	13,800 CUP	5.4	1274	22,800 CUP
							Clays	3.5	984	11,900 CUP	5.3	1260	33,000 CUP
357 SIG													
Case: Federal				Twist: 1:16"				Bullet: 125 GR. HDY XTP			Dia: .357" Col: 1.590"		
Barrel: 4"		Trim: .860"		Primer: Winchester SP, Small Pistol				H4227			20.0 1839 42,000 CUP		
Bullet: 90 GR. HDY XTP				Dia: .355" Col: 1.135"				296			22.0 1966 41,400 CUP		
572	8.8	1526	28,300 PSI	10.3	1696	38,900 PSI	H110			22.0 1966 41,400 CUP			
HS-6	9.8	1484	28,200 PSI	10.8	1634	38,700 PSI	Longshot			9.7 1647 42,000 CUP			
CFE Pistol	8.0	1401	27,600 PSI	9.5	1642	38,200 PSI	HS-6			10.9 1629 42,100 CUP			
Universal	7.2	1428	27,000 PSI	8.1	1578	36,900 PSI	CFE Pistol			8.0 1480 32,500 PSI			
HP-38	6.6	1404	29,000 PSI	7.3	1509	37,500 PSI	AutoComp			8.2 1455 31,700 PSI			
							Universal			7.6 1453 39,600 CUP			
							231			8.5 1514 42,700 CUP			
Bullet: 115 GR. HDY XTP				Dia: .355" Col: 1.135"				HP-38			8.5 1514 42,700 CUP		
Longshot	9.0	1339	35,200 PSI	10.0	1497	37,300 PSI	Titegroup			7.5 1497 41,200 CUP			
572	7.6	1327	29,200 PSI	8.8	1482	39,000 PSI	700-X			6.4 1399 30,400 PSI			
HS-6	8.7	1319	31,300 PSI	9.4	1412	38,800 PSI	Bullet: 125 GR. MEI CAST LRNFP			Dia: .358" Col: 1.580"			
CFE Pistol	7.2	1277	29,100 PSI	8.2	1431	38,400 PSI	CFE Pistol			6.6 1375 22,400 PSI			
Universal	6.5	1272	31,600 PSI	7.3	1375	39,200 PSI	AutoComp			6.5 1311 20,600 PSI			
							700-X			4.0 1069 13,500 PSI			
							Bullet: 130 GR. MEI CAST LRNFP			Dia: .358" Col: 1.580"			
Bullet: 124 GR. HDY XTP				Dia: .355" Col: 1.135"				CFE Pistol			6.3 1300 19,000 PSI		
Longshot	8.3	1344	33,500 PSI	9.3	1429	37,900 PSI	AutoComp			6.0 1216 18,700 PSI			
572	7.0	1228	28,300 PSI	8.2	1400	38,600 PSI	700-X			4.0 1059 15,000 PSI			
HS-6	8.0	1233	30,300 PSI	9.0	1339	38,700 PSI	Bullet: 135 GR. CAST LRNFP			Dia: .358" Col: 1.580"			
CFE Pistol	6.6	1181	27,400 PSI	7.6	1342	37,800 PSI	Universal			4.8 986 11,700 CUP			
Universal	5.2	1134	27,500 PSI	5.8	1235	38,500 PSI	231			4.1 946 11,700 CUP			
							HP-38			4.1 946 11,700 CUP			
							Titegroup			3.5 906 13,100 CUP			
							Clays			3.4 914 12,200 CUP			
							Bullet: 140 GR. HDY XTP			Dia: .357" Col: 1.590"			
Bullet: 125 GR. SPR GD-HP				Dia: .355" Col: 1.135"				H4227			16.2 1541 33,100 CUP		
572	7.2	1149	28,300 PSI	8.4	1399	38,000 PSI	296			17.1 1597 28,400 CUP			
800-X				10.0C	1438	36,100 PSI	H110			17.1 1597 28,400 CUP			
CFE Pistol	7.0	1222	29,700 PSI	8.0	1346	38,900 PSI	Longshot			8.0 1396 31,300 CUP			
							HS-6			9.5 1411 35,800 CUP			
							CFE Pistol			6.1 1149 22,600 PSI			
							AutoComp			6.5 1164 22,000 PSI			
							Universal			6.5 1218 34,800 CUP			
							231			6.5 1219 30,800 CUP			
							HP-38			6.5 1219 30,800 CUP			
							Titegroup			6.3 1262 35,600 CUP			
							700-X			4.0 927 17,000 PSI			
							Bullet: 140 GR. HDY CBOY			Dia: .358" Col: 1.550"			
Bullet: 147 GR. HDY XTP				Dia: .355" Col: 1.140"				CFE Pistol			3.4 711 9,100 PSI		
Longshot	6.5	1158	32,100 PSI	7.5	1254	38,700 PSI	AutoComp			3.6 793 8,800 PSI			
572	6.1	1113	29,000 PSI	7.1	1213	38,100 PSI	Universal			3.3 767 8,800 PSI			
HS-6	6.8	1069	27,800 PSI	7.6	1173	36,600 PSI	231			2.9 718 8,500 PSI			
800-X				9.0	1317	38,000 PSI	HP-38			2.9 718 8,500 PSI			
CFE Pistol	5.4	1029	27,600 PSI	6.3	1148	39,200 PSI	Titegroup			2.7 782 8,900 PSI			
Universal	5.0	1026	29,200 PSI	5.6	1110	38,600 PSI	700-X			2.6 769 8,800 PSI			
WSF				7.1	1260	33,800 PSI	Bullet: 140 GR. HDY FTX			Dia: .357" Col: 1.600"			
							IMR 4227			11.0 1176 29,900 PSI			
							H110			12.0 1405 27,800 PSI			
							Longshot			5.5 1091 22,000 PSI			

NEVER EXCEED MAXIMUM LOADS

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
HS-6	6.0	1046	22,500 PSI	7.7	1326	33,400 PSI	Bullet: 180 GR. NOS PART	Dia: .357"	Col: 1.575"				
CFE Pistol	5.4	1110	19,400 PSI	6.6	1328	32,200 PSI	H4227	12.7	1247	36,900 CUP	13.7	1308	40,900 CUP
AutoComp	5.0	1038	22,500 PSI	6.3	1279	33,200 PSI	296	13.0	1352	36,800 CUP	13.5	1396	39,100 CUP
Universal	4.0	922	19,700 PSI	5.3	1205	34,200 PSI	H110	13.0	1352	36,800 CUP	13.5	1396	39,100 CUP
Titegroup	3.5	895	20,700 PSI	5.0	1213	33,800 PSI	Lil'Gun	13.0	1279	27,500 CUP	15.0	1422	34,500 CUP
700-X	3.5	849	19,800 PSI	5.2	1205	31,900 PSI	Longshot	6.1	1025	32,700 CUP	7.2	1167	41,700 CUP
Bullet: 146 GR. SPR JHP Dia: .357" Col: 1.535"							CFE Pistol	5.2	903	27,200 PSI	5.8	1018	33,100 PSI
H4227	14.5	1440	34,300 CUP	16.0	1566	42,700 CUP	AutoComp	5.3	869	27,700 PSI	5.9	997	33,700 PSI
296	15.5	1512	29,200 CUP	17.2	1691	42,600 CUP	Titegroup	5.0	948	38,100 CUP	5.5	1020	40,300 CUP
H110	15.5	1512	29,200 CUP	17.2	1691	42,600 CUP	700-X	4.0	668	25,500 PSI	4.7	846	32,500 PSI
Longshot	7.5	1358	33,400 CUP	8.6	1483	42,600 CUP	357 REMINGTON MAXIMUM						
HS-6	8.5	1330	32,900 CUP	9.5	1461	41,800 CUP	Case: Remington	Twist: 1:18.75"					
CFE Pistol	6.0	1157	23,200 PSI	6.9	1338	32,600 PSI	Barrel: 10"	Trim: 1.600"	Primer: Remington 7 1/2, Small Rifle Magnum				
AutoComp	6.4	1193	26,000 PSI	7.1	1288	32,300 PSI	Bullet: 110 GR. HDY XTP	Dia: .357"	Col: 1.910"				
Universal	6.0	1160	33,500 CUP	6.5	1261	39,900 CUP	H4227	26.0	2120	28.0	2314		
231	6.0	1176	32,100 CUP	7.1	1330	42,200 CUP	H110	29.0	2101	30.0	2242		
HP-38	6.0	1176	32,100 CUP	7.1	1330	42,200 CUP	Bullet: 125 GR. SPR JSP	Dia: .357"	Col: 1.885"				
Titegroup	5.9	1223	34,600 CUP	6.6	1317	42,900 CUP	H4227	25.0	1968	27.0	2126		
700-X	4.5	1025	21,500 PSI	5.7	1233	30,300 PSI	H110	27.5	2014	28.5	2163		
Bullet: 148 GR. HDY LHBWC Dia: .358" Col: 1.290"							Bullet: 140 GR. SPR JHP	Dia: .357"	Col: 1.890"				
CFE Pistol	3.6	927	17,300 PSI	4.5	1085	23,000 PSI	H4227	22.0	1866	24.0	1985		
AutoComp	4.0	943	18,000 PSI	4.7	1064	24,300 PSI	H110	24.0	1836	26.0	2001		
Universal	3.5	880	13,700 CUP	4.0	989	17,700 CUP	Bullet: 150 GR. NOS SP	Dia: .357"	Col: 1.890"				
231	3.0	845	14,300 CUP	3.4	908	17,600 CUP	H4227	21.0	1788	23.0	1923		
HP-38	3.0	845	14,300 CUP	3.4	908	17,600 CUP	H110	23.0	1724	25.0	1947		
Titegroup	2.9	830	14,700 CUP	3.3	909	18,900 CUP	Bullet: 160 GR. HDY JTC SIL	Dia: .357"	Col: 1.890"				
700-X	3.0	892	17,600 PSI	3.5	989	22,300 PSI	H4227	20.5	1709	22.5	1814		
Bullet: 158 GR. CAST LSWC Dia: .358" Col: 1.610"							H110	22.0	1643	24.0	1886		
HS-6	6.0	990	12,900 CUP	7.0	1106	15,500 CUP	Bullet: 170 GR. SIE JHC	Dia: .357"	Col: 1.880"				
Universal	4.0	890	15,700 CUP	6.2	1247	33,400 CUP	H4227	19.0	1638	21.0	1748		
231	3.4	796	12,600 CUP	5.0	1109	23,900 CUP	H110	20.0	1690	22.0	1784		
HP-38	3.4	796	12,600 CUP	5.0	1109	23,900 CUP	Bullet: 180 GR. FMJ	Dia: .358"	Col: 1.990"				
Trail Boss	3.2	754	16,500 CUP	4.2	865	20,400 CUP	296	19.0	1670	46,900 CUP			
Titegroup	4.5	1028	19,300 CUP	5.0	1108	24,900 CUP	Bullet: 180 GR. SPR TMJ SIL	Dia: .357"	Col: 1.990"				
Clays	3.2	867	14,400 CUP	4.6	1079	33,600 CUP	H4227	18.0	1551	20.0	1645		
Bullet: 158 GR. HDY XTP Dia: .357" Col: 1.580"							H110	19.0	1544	21.0	1694		
H4227	14.5	1402	34,600 CUP	16.0	1520	42,600 CUP	Bullet: 200 GR. SPR TMJ SIL	Dia: .357"	Col: 1.990"				
296	15.0	1418	28,600 CUP	16.7	1591	40,700 CUP	H4227	16.0	1280	18.0	1440		
H110	15.0	1418	28,600 CUP	16.7	1591	40,700 CUP	H110	18.0	1411	20.0	1604		
Lil'Gun	16.0	1504	24,100 CUP	18.0	1577	25,800 CUP	357 HERRETT						
Longshot	7.3	1258	31,700 CUP	8.4	1394	43,200 CUP	Case: Winchester (Ref)	Twist: 1:14"					
HS-6	8.0	1182	28,000 CUP	9.5	1375	41,900 CUP	Barrel: 14"	Trim: 1.740"	Primer: Federal 210, Large Rifle				
CFE Pistol	6.1	1107	26,100 PSI	6.9	1233	33,700 PSI	Bullet: 110 GR. HDY JHP	Dia: .357"	Col: 2.080"				
AutoComp	6.2	1058	25,700 PSI	7.0	1181	33,200 PSI	IMR 4198	32.0C	2200	33,900 CUP			
Universal	5.8	1026	32,100 CUP	6.3	1133	39,300 CUP	IMR 4227	23.8	2225	44,500 CUP			
231	6.2	1108	33,700 CUP	6.9	1220	40,000 CUP	Bullet: 125 GR. HDY JHP	Dia: .357"	Col: 2.080"				
HP-38	6.2	1108	33,700 CUP	6.9	1220	40,000 CUP	IMR 4198	31.0C	2135	38,100 CUP			
Titegroup	5.4	1135	32,600 CUP	6.1	1229	41,900 CUP	IMR 4227	22.3	2070	44,900 CUP			
700-X	4.5	949	21,900 PSI	5.7	1149	31,200 PSI	Bullet: 158 GR. HDY JHP	Dia: .357"	Col: 2.150"				
Bullet: 158 GR. MEI CAST LSWC Dia: .358" Col: 1.620"							IMR 4198	29.9C	2045	44,900 CUP			
CFE Pistol	5.3	1123	18,100 PSI	6.6	1321	28,500 PSI	IMR 4227	20.2	1815	44,900 CUP			
AutoComp	5.0	1025	17,600 PSI	6.5	1237	27,000 PSI	Bullet: 170 GR. SIE FMJ	Dia: .357"	Col: 2.230"				
700-X	3.4	867	13,100 PSI	4.9	1137	24,400 PSI	IMR 4198	30.0C	1940	44,600 CUP			
Bullet: 170 GR. SIE JHC Dia: .357" Col: 1.580"							IMR 4227	20.1	1735	45,000 CUP			
H4227	13.0	1272	32,300 CUP	14.5	1395	41,200 CUP	NEVER EXCEED MAXIMUM LOADS						
296	14.0	1328	25,900 CUP	15.5	1497	40,800 CUP							
H110	14.0	1328	25,900 CUP	15.5	1497	40,800 CUP							
Lil'Gun	15.0	1422	25,100 CUP	17.0	1576	35,500 CUP							
Longshot	6.8	1182	32,700 CUP	7.9	1322	42,600 CUP							
HS-6	8.0	1181	30,900 CUP	9.2	1321	42,900 CUP							
Titegroup	5.4	1031	34,700 CUP	6.0	1156	41,800 CUP							
700-X	4.0	833	22,100 PSI	5.2	1107	32,200 PSI							

PISTOL DATA

Starting Loads				Maximum Loads			Starting Loads				Maximum Loads			
Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure	Powder	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure	
Bullet: 200 GR. HDY SP Dia: .358" Col: 2.540"							H4895	46.0	1966		51.0	2214		
IMR 4895				34.0C	1705	38,300 CUP	H4198	39.0	1904		44.0	2115		
IMR 3031				31.0C	1635	32,400 CUP	Bullet: 270 GR. HDY SP Dia: .375" Col: 2.975"							
IMR 4198				28.2	1820	45,000 CUP	H4895	43.0	1660		48.0	1954		
35 REMINGTON							H322	40.0	1612		45.0	1849		
Case: Remington			Twist: 1:16"				Bullet: 300 GR. HDY RN Dia: .375" Col: 2.970"							
Barrel: 14"		Trim: 1.910"	Primer: Remington 9 1/2, Large Rifle				H4895	41.0	1684		46.0	1951		
Bullet: 170 GR. SIE FMJ Dia: .357" Col: 2.405"							H322	37.0	1539		42.0	1773		
IMR 4064				38.1	1850	35,000 CUP	38-40 WINCHESTER							
IMR 4895				37.8	1920	34,100 CUP	Case: Winchester			Twist: 1:36"				
IMR 3031				38.5C	1985	33,700 CUP	Barrel: 5.5"		Trim: 1.295"	Primer: Winchester LP, Large Pistol				
Bullet: 180 GR. SPR FN Dia: .358" Col: 2.470"							Bullet: 140 GR. CAST LRNFP Dia: .401" Col: 1.600"							
Varget	37.0	1795	27,200 CUP	40.5	1998	32,500 CUP	Titegroup	5.0	912	7,200 PSI	5.9	983	13,000 PSI	
BL-C(2)	39.0	1833	29,300 CUP	43.0	1954	32,300 CUP	Clays	4.0	778	4,900 PSI	5.0	960	10,100 PSI	
H335	34.0	1777	29,900 CUP	37.5	1921	33,600 CUP	Bullet: 180 GR. CAST LRNFP Dia: .401" Col: 1.600"							
H4895	35.0	1812	27,500 CUP	39.0	2031	33,100 CUP	Universal	6.9	813	8,200 PSI	7.5	955	11,900 PSI	
Benchmark	32.5	1697	29,300 CUP	35.5	1932	32,300 CUP	HP-38	5.8	747	9,400 PSI	6.8	934	13,500 PSI	
H322	31.0	1730	28,200 CUP	35.0	1915	33,100 CUP	Trail Boss	4.5	694	7,300 PSI	5.5	800	9,900 PSI	
H4198	28.0	1794	28,600 CUP	32.0	1977	33,000 CUP	Titegroup	5.0	819	7,000 PSI	6.4	990	13,300 PSI	
Bullet: 200 GR. HDY RN Dia: .358" Col: 2.510"							40 S&W*							
Varget	36.0	1651	28,800 CUP	39.5	1797	33,300 CUP	When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.							
BL-C(2)	38.0	1577	23,200 CUP	41.5	1689	31,700 CUP	Case: Hornady			Twist: 1:16"				
H335	33.0	1558	27,100 CUP	37.0	1720	33,200 CUP	Barrel: 4"		Trim: .845"	Primer: Winchester SP, Small Pistol				
H4895	35.0	1613	26,100 CUP	38.5	1772	32,300 CUP	Bullet: 125 GR. SFIRE Dia: .400" Col: 1.120"							
Benchmark	32.5	1551	29,400 CUP	35.5	1766	32,600 CUP	572	5.8	1120	28,300 PSI	6.8	1229	33,200 PSI	
H322	31.0	1567	28,500 CUP	33.8	1670	33,100 CUP	CFE Pistol	5.6	1077	21,800 PSI	6.4	1237	32,800 PSI	
H4198	27.0	1525	26,700 CUP	30.5	1680	31,700 CUP	Universal	4.7	1059	23,500 PSI	5.3	1172	32,300 PSI	
Bullet: 220 GR. SPR FN Dia: .358" Col: 2.470"							Bullet: 135 GR. NOS JHP Dia: .400" Col: 1.125"							
Varget	34.0	1550	27,800 CUP	38.0	1718	33,300 CUP	Longshot	8.5	1241	25,100 PSI	11.5	1434	31,900 PSI	
BL-C(2)	36.0	1569	26,900 CUP	39.5	1649	31,000 CUP	572	7.3	1188	26,800 PSI	8.1	1302	33,200 PSI	
H335	30.0	1404	29,100 CUP	33.5	1566	33,400 CUP	HS-6	9.0	1180	27,400 PSI	10.2	1321	33,600 PSI	
H4895	33.0	1589	29,000 CUP	36.3	1729	33,600 CUP	CFE Pistol	8.0	1303	29,500 PSI	8.9	1392	33,800 PSI	
Benchmark	31.0	1484	30,600 CUP	34.0	1697	33,300 CUP	AutoComp	8.0	1236	26,600 PSI	8.8	1342	32,700 PSI	
H322	29.0	1455	26,100 CUP	32.5	1608	32,600 CUP	Universal	6.2	1109	22,000 PSI	6.8	1250	32,000 PSI	
H4198	26.0	1500	30,400 CUP	29.0	1606	33,400 CUP	WSF	7.1	1166	26,000 PSI	7.8	1273	32,200 PSI	
Bullet: 250 GR. SPR SP Dia: .358" Col: 2.800"							Bullet: 140 GR. BAR TAC-XP Dia: .400" Col: 1.135"							
IMR 4064				33.0	1610	34,800 CUP	Longshot	6.4	1090	25,800 PSI	7.0	1185	31,400 PSI	
IMR 3031				31.0	1620	35,000 CUP	572	5.5	1033	27,900 PSI	6.0	1117	33,900 PSI	
9 x 18MM MAKAROV							9 x 18MM MAKAROV							
Case: Winchester			Twist: 1:10"				Bullet: 90 GR. SPR FP Dia: .364" Col: .970"							
Barrel: 4"		Trim: .708"	Primer: Winchester SP, Small Pistol				Universal	3.5	885	17,900 PSI	3.9	1022	23,000 PSI	
Bullet: 95 GR. HDY XTP Dia: .364" Col: .965"							HP-38	3.6	948	21,300 PSI	4.0	1031	24,000 PSI	
Universal	3.5	885	17,900 PSI	3.9	1022	23,000 PSI	Titegroup	3.3	959	19,200 PSI	3.7	1053	22,900 PSI	
HP-38	3.6	948	21,300 PSI	4.0	1031	24,000 PSI	Bullet: 200 GR. SIE FP Dia: .375" Col: 2.750"							
Titegroup	3.3	959	19,200 PSI	3.7	1053	22,900 PSI	H4895	47.0	1971		52.0	2147		
Bullet: 95 GR. HDY XTP Dia: .364" Col: .965"							H322	45.0	1811		50.0	2077		
Universal	3.6	923	20,100 PSI	4.0	1030	23,800 PSI	Bullet: 220 GR. HDY FP Dia: .375" Col: 2.750"							
HP-38	3.4	900	20,500 PSI	3.8	990	24,000 PSI	BL-C(2)	46.0	1792		51.0	2036		
Titegroup	3.2	926	18,500 PSI	3.6	1022	22,500 PSI	H335	45.0	1830		50.0	2068		
375 JDJ							375 JDJ							
Case: Remington (REF)			Twist: 1:12"				Bullet: 200 GR. SIE FP Dia: .375" Col: 2.750"							
Barrel: 14"		Trim: 2.230"	Primer: Federal 210M, Large Rifle Match				H4895	47.0	1971		52.0	2147		
Bullet: 200 GR. SIE FP Dia: .375" Col: 2.750"							H322	45.0	1811		50.0	2077		
H4895	47.0	1971		52.0	2147		Bullet: 220 GR. HDY FP Dia: .375" Col: 2.750"							
H322	45.0	1811		50.0	2077		BL-C(2)	46.0	1792		51.0	2036		
Bullet: 220 GR. HDY FP Dia: .375" Col: 2.750"							H335	45.0	1830		50.0	2068		
BL-C(2)	46.0	1792		51.0	2036		NEVER EXCEED MAXIMUM LOADS							
H335	45.0	1830		50.0	2068		157							

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
700-X	3.3	820	26,900 PSI	3.9	933	32,900 PSI	231	4.8	946	28,100 PSI	5.3	1001	32,500 PSI
Clays	2.6	713	24,800 PSI	3.0	783	31,900 PSI	HP-38	4.8	946	28,100 PSI	5.3	1001	32,500 PSI
Bullet: 150 GR. NOS JHP Dia: .400" Col: 1.125"							WST	4.5	916	26,400 PSI	5.1	995	33,300 PSI
Longshot	7.5	1184	26,400 PSI	9.3	1320	33,600 PSI	Titegroup	4.6	961	27,000 PSI	5.1	1047	33,600 PSI
572	6.5	1117	26,700 PSI	7.3	1194	33,000 PSI	700-X	5.0	997	28,000 PSI	5.5	1066	32,900 PSI
HS-6	7.8	1076	25,700 PSI	8.7	1201	32,500 PSI	Clays	3.5	851	29,900 PSI	3.9	897	33,300 PSI
CFE Pistol	7.0	1141	25,000 PSI	7.8	1267	33,500 PSI	Bullet: 180 GR. BERB FP Dia: .400" Col: 1.125"						
AutoComp	6.6	1105	24,300 PSI	7.3	1220	32,100 PSI	Longshot	6.3	1013	26,200 PSI	7.5	1150	33,400 PSI
Universal	5.4	1066	25,700 PSI	5.9	1165	32,900 PSI	572	5.4	952	28,000 PSI	6.0	1033	32,900 PSI
WSF	6.6	1137	29,800 PSI	6.8	1185	33,300 PSI	HS-6	6.6	924	25,400 PSI	7.4	1041	31,800 PSI
231	5.2	1024	26,900 PSI	5.8	1116	33,500 PSI	CFE Pistol	5.9	1007	25,500 PSI	6.5	1092	32,600 PSI
HP-38	5.2	1024	26,900 PSI	5.8	1116	33,500 PSI	AutoComp	5.7	971	26,700 PSI	6.2	1060	33,000 PSI
WST	5.5	1047	29,400 PSI	5.8	1088	32,300 PSI	Universal	4.6	925	28,300 PSI	5.1	1002	33,100 PSI
Titegroup	5.1	1079	27,700 PSI	5.5	1147	32,600 PSI	WSF	5.5	952	27,600 PSI	6.0	1020	33,500 PSI
700-X	5.2	1080	27,100 PSI	5.5	1143	32,600 PSI	231	4.4	872	26,400 PSI	5.1	984	33,500 PSI
Clays	3.8	923	28,400 PSI	4.0	960	31,700 PSI	HP-38	4.4	872	26,400 PSI	5.1	984	33,500 PSI
Bullet: 155 GR. BERB FP Dia: .400" Col: 1.125"							WST	4.4	868	26,900 PSI	4.9	932	32,000 PSI
572	6.5	1087	25,900 PSI	7.2	1174	32,700 PSI	Titegroup	4.2	901	27,400 PSI	4.7	988	31,900 PSI
HS-6	7.8	1054	24,300 PSI	8.8	1200	32,600 PSI	700-X	4.2	900	25,800 PSI	4.7	986	33,500 PSI
CFE Pistol	7.2	1162	26,400 PSI	7.8	1232	31,900 PSI	Clays	3.0	732	25,400 PSI	3.4	809	32,100 PSI
AutoComp	6.7	1091	24,800 PSI	7.3	1200	31,600 PSI	Bullet: 180 GR. HDY XTP Dia: .400" Col: 1.125"						
Universal	5.5	1049	26,000 PSI	6.0	1145	33,500 PSI	Longshot	6.5	1009	25,000 PSI	8.0	1159	32,300 PSI
WSF	6.2	1030	23,500 PSI	7.1	1164	32,300 PSI	572	5.1	915	27,800 PSI	5.7	1002	33,100 PSI
231	5.1	979	24,100 PSI	6.0	1130	33,900 PSI	HS-6	6.1	876	25,900 PSI	6.9	976	32,500 PSI
HP-38	5.1	979	24,100 PSI	6.0	1130	33,900 PSI	CFE Pistol	5.4	949	25,800 PSI	6.0	1051	32,200 PSI
WST	5.1	996	27,400 PSI	5.9	1091	33,400 PSI	AutoComp	5.8	975	27,700 PSI	6.3	1053	33,200 PSI
Titegroup	5.1	1051	26,200 PSI	5.7	1151	33,600 PSI	Universal	5.0	973	26,500 PSI	5.8	1046	33,400 PSI
700-X	4.9	1010	23,300 PSI	5.5	1134	32,700 PSI	WSF	5.4	946	28,000 PSI	5.8	1013	32,900 PSI
Clays	3.7	879	23,500 PSI	4.1	959	31,300 PSI	231	4.1	797	23,800 PSI	5.0	947	32,900 PSI
Bullet: 155 GR. HDY XTP Dia: .400" Col: 1.125"							HP-38	4.1	797	23,800 PSI	5.0	947	32,900 PSI
Longshot	7.5	1129	24,900 PSI	9.3	1283	31,900 PSI	WST	3.9	830	28,300 PSI	4.3	888	32,400 PSI
572	6.0	1034	26,000 PSI	6.9	1161	33,000 PSI	Titegroup	4.2	877	26,500 PSI	4.7	978	33,300 PSI
HS-6	7.7	1035	26,500 PSI	8.5	1137	33,200 PSI	700-X	4.3	904	27,700 PSI	4.8	966	32,500 PSI
CFE Pistol	6.6	1103	25,800 PSI	7.4	1219	32,600 PSI	Clays	3.0	727	26,000 PSI	3.5	847	34,300 PSI
AutoComp	7.0	1109	25,800 PSI	7.8	1223	33,800 PSI	Bullet: 200 GR. HDY XTP Dia: .400" Col: 1.125"						
Universal	5.7	1056	23,900 PSI	6.2	1138	31,800 PSI	Longshot	5.0	836	23,900 PSI	6.0	954	32,500 PSI
WSF	6.2	1070	26,100 PSI	6.8	1159	32,500 PSI	572	4.0	765	27,300 PSI	4.6	871	33,800 PSI
231	5.0	937	22,900 PSI	6.0	1103	33,000 PSI	800-X	5.6	903	28,300 PSI	6.1	951	31,000 PSI
HP-38	5.0	937	22,900 PSI	6.0	1103	33,000 PSI	HS-6	5.5	810	27,000 PSI	6.3	900	32,800 PSI
WST	4.6	957	25,400 PSI	5.3	1039	32,500 PSI	CFE Pistol	4.4	833	27,800 PSI	4.8	897	33,500 PSI
Titegroup	5.4	1058	28,400 PSI	5.9	1139	31,700 PSI	AutoComp	4.8	838	27,900 PSI	5.2	894	32,100 PSI
700-X	5.2	1054	26,600 PSI	5.8	1138	33,700 PSI	Universal	4.0	824	25,000 PSI	4.7	903	33,600 PSI
Clays	3.6	854	23,300 PSI	4.0	942	30,900 PSI	WSF	4.4	786	27,300 PSI	4.8	867	33,100 PSI
Bullet: 165 GR. BERB FP Dia: .400" Col: 1.125"							231	3.9	737	25,900 PSI	4.7	857	33,400 PSI
Longshot	6.9	1091	24,500 PSI	7.8	1199	32,300 PSI	HP-38	3.9	737	25,900 PSI	4.7	857	33,400 PSI
572	6.0	1016	25,500 PSI	6.7	1124	33,100 PSI	WST	3.0	654	25,300 PSI	3.4	733	31,100 PSI
HS-6	7.4	1027	26,900 PSI	8.1	1108	31,300 PSI	Titegroup	3.4	744	27,200 PSI	3.8	822	31,700 PSI
CFE Pistol	6.9	1124	28,000 PSI	7.5	1205	33,900 PSI	700-X	3.5	744	27,000 PSI	3.9	810	30,700 PSI
AutoComp	6.3	1051	25,900 PSI	7.0	1171	33,300 PSI	10MM AUTO						
Universal	4.8	951	24,200 PSI	5.4	1051	30,500 PSI	Case: Winchester	Twist: 1:16"					
WSF	6.1	1034	27,600 PSI	6.5	1081	31,000 PSI	Barrel: 5"	Trim: .987"	Primer: Winchester LP, Large Pistol				
231	4.7	933	25,200 PSI	5.4	1049	33,400 PSI	Bullet: 135 GR. NOS JHP Dia: .400" Col: 1.250"						
HP-38	4.7	933	25,200 PSI	5.4	1049	33,400 PSI	HS-6	10.0	1318	31,300 PSI	11.2	1435	36,900 PSI
WST	4.8	944	27,600 PSI	5.5	1003	30,700 PSI	CFE Pistol	9.0	1404	26,900 PSI	10.2	1551	35,900 PSI
Titegroup	4.5	960	24,300 PSI	5.1	1060	31,800 PSI	AutoComp	8.7	1372	28,400 PSI	9.5	1476	34,500 PSI
700-X	4.6	994	28,100 PSI	5.0	1043	32,100 PSI	Universal	7.0	1284	30,200 PSI	8.0	1416	36,100 PSI
Clays	3.4	829	27,500 PSI	3.7	888	32,000 PSI	Titegroup	7.2	1362	28,300 PSI	8.0	1459	35,800 PSI
Bullet: 165 GR. SIE JHP Dia: .400" Col: 1.125"							Bullet: 140 GR. BAR TAC-XP Dia: .400" Col: 1.260"						
Longshot	7.3	1139	29,600 PSI	7.8	1185	33,400 PSI	HS-6	8.2	1191	27,800 PSI	9.3	1327	35,700 PSI
572	5.5	976	26,100 PSI	6.2	1111	32,900 PSI	CFE Pistol	6.6	1225	26,800 PSI	7.6	1339	34,100 PSI
HS-6	7.3	1013	28,700 PSI	8.0	1098	32,700 PSI	Universal	5.6	1171	29,500 PSI	6.1	1232	36,000 PSI
CFE Pistol	6.0	1038	25,500 PSI	6.8	1149	32,400 PSI	WSF	6.6	1162	27,800 PSI	7.5	1284	35,300 PSI
AutoComp	6.5	1037	25,600 PSI	7.1	1124	31,500 PSI	231	5.4	1074	26,400 PSI	6.2	1211	35,300 PSI
Universal	5.1	976	26,800 PSI	5.6	1061	32,900 PSI	HP-38	5.4	1074	26,400 PSI	6.2	1211	35,300 PSI
WSF	6.3	1055	28,100 PSI	6.7	1115	32,700 PSI							

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Titegroup	5.0	1114	26,400 PSI	6.0	1265	35,600 PSI	H110	19.8	1465	25,600 CUP	22.0	1631	36,400 CUP
Bullet: 155 GR. HDY XTP Dia: .400" Col: 1.260"							Bullet: 215 GR. CAST LFP Dia: .410" Col: 1.585"						
800-X				9.8	1350	30,000 PSI	CFE Pistol	7.1	1102	17,500 CUP	8.2	1229	23,200 CUP
HS-6	8.8	1095	22,400 PSI	11.0	1350	35,000 PSI	AutoComp	7.0	1052	18,100 CUP	8.0	1158	23,600 CUP
CFE Pistol	8.2	1269	26,300 PSI	9.2	1409	34,900 PSI	Trail Boss	4.5	752	13,000 CUP	6.5	910	17,100 CUP
AutoComp	8.0	1254	29,000 PSI	8.9	1362	35,700 PSI	Titegroup	4.5	882	12,800 CUP	5.5	1004	17,400 CUP
Universal	6.5	1135	22,600 PSI	7.5	1279	35,200 PSI	Clays	4.0	825	24,600 CUP	5.2	979	26,700 CUP
WSF	6.8	1100	23,000 PSI	8.4	1320	35,600 PSI	Bullet: 220 GR. SPR JSP Dia: .410" Col: 1.580"						
231	5.8	1030	23,000 PSI	7.3	1253	35,700 PSI	H4227	18.0	1296	29,700 CUP	20.0	1433	37,500 CUP
HP-38	5.8	1030	23,000 PSI	7.3	1253	35,700 PSI	296	18.0	1352	23,000 CUP	20.0	1529	34,000 CUP
Titegroup	6.4	1211	26,800 PSI	7.2	1315	35,700 PSI	H110	18.0	1352	23,000 CUP	20.0	1529	34,000 CUP
Bullet: 180 GR. SIE JHC Dia: .400" Col: 1.260"							Bullet: 220 GR. SPR JSP Dia: .410" Col: 1.580"						
Longshot	8.5	1221	31,000 PSI	9.5	1287	34,600 PSI	Lil'Gun	18.0	1431	24,300 CUP	20.5	1563	31,200 CUP
800-X				8.7	1210	30,000 PSI	Longshot	9.0	1208	29,300 CUP	10.1	1311	37,700 CUP
HS-6	7.4	940	22,000 PSI	9.4	1127	35,800 PSI	HS-6	10.0	1159	28,800 CUP	11.3	1271	36,700 CUP
CFE Pistol	6.7	1082	25,600 PSI	7.6	1208	34,000 PSI	CFE Pistol	8.4	1198	28,400 CUP	9.3	1272	36,600 CUP
AutoComp	7.0	1119	29,800 PSI	7.7	1199	36,000 PSI	AutoComp	8.3	1154	32,500 CUP	9.1	1221	38,300 CUP
Universal	5.4	965	22,300 PSI	6.4	1122	32,200 PSI	Universal	6.5	921	18,900 CUP	8.5	1178	38,600 CUP
WSF	5.7	950	25,000 PSI	7.1	1150	35,600 PSI	HP-38	7.2	1031	30,100 CUP	8.0	1125	36,700 CUP
231	5.2	944	29,700 PSI	5.8	1061	34,900 PSI	Titegroup	6.4	997	25,300 CUP	7.3	1127	33,700 CUP
HP-38	5.2	944	29,700 PSI	5.8	1061	34,900 PSI	Bullet: 245 GR. CAST LSWC Dia: .410" Col: 1.630"						
Titegroup	5.4	1051	27,400 PSI	6.0	1141	34,300 PSI	H4227	18.0	1272	27,000 CUP	20.0	1444	37,700 CUP
Bullet: 200 GR. HDY FMJ Dia: .400" Col: 1.260"							Bullet: 245 GR. CAST LSWC Dia: .410" Col: 1.630"						
Longshot	7.0	1034	23,900 PSI	8.2	1172	35,000 PSI	296	18.5	1372	22,800 CUP	21.0	1563	37,400 CUP
800-X				7.8	1130	32,500 PSI	H110	18.5	1372	22,800 CUP	21.0	1563	37,400 CUP
HS-6	7.5	957	26,000 PSI	8.6	1089	35,900 PSI	Longshot	9.0	1208	29,200 CUP	10.0	1293	37,900 CUP
CFE Pistol	6.1	1007	26,200 PSI	7.1	1123	35,600 PSI	AutoComp	8.3	1123	26,300 CUP	9.5	1232	36,200 CUP
AutoComp	6.0	959	25,900 PSI	7.0	1100	36,100 PSI	Universal	6.3	1001	21,200 CUP	8.0	1164	36,000 CUP
Universal	4.9	846	24,300 PSI	5.9	1015	36,900 PSI	Trail Boss	3.5	683	12,600 CUP	6.0	834	16,100 CUP
WSF	5.2	880	26,200 PSI	6.2	1020	35,600 PSI	Titegroup	6.5	1075	28,800 CUP	7.8	1202	39,500 CUP
231	4.6	827	24,200 PSI	5.6	1011	35,700 PSI	Bullet: 250 GR. WFNGC Dia: .410" Col: 1.540"						
HP-38	4.6	827	24,200 PSI	5.6	1011	35,700 PSI	H4227	17.0	1302	33,600 CUP	18.4	1398	39,700 CUP
Titegroup	4.8	946	28,900 PSI	5.3	1024	36,100 PSI	296	17.4	1391	29,400 CUP	18.5	1479	38,700 CUP
41 REMINGTON MAGNUM							Bullet: 250 GR. WFNGC Dia: .410" Col: 1.540"						
Case: Remington Twist: 1:18.75"							Bullet: 250 GR. WFNGC Dia: .410" Col: 1.540"						
Barrel: 10.125" Trim: 1.280" Primer: Winchester LP, Large Pistol							Bullet: 250 GR. WFNGC Dia: .410" Col: 1.540"						
Bullet: 170 GR. SIE JHC Dia: .410" Col: 1.575"							Bullet: 250 GR. WFNGC Dia: .410" Col: 1.540"						
H4227	22.5	1582	26,100 CUP	24.9	1745	35,600 CUP	H4227	17.0	1302	33,600 CUP	18.4	1398	39,700 CUP
296	23.5	1669	21,400 CUP	26.5	1887	37,400 CUP	296	17.4	1391	29,400 CUP	18.5	1479	38,700 CUP
H110	23.5	1669	21,400 CUP	26.5	1887	37,400 CUP	H110	17.4	1391	29,400 CUP	18.5	1479	38,700 CUP
Longshot	11.0	1504	29,400 CUP	12.5	1646	38,700 CUP	Lil'Gun	17.2	1399	30,300 CUP	18.3	1474	36,700 CUP
HS-6	12.2	1447	28,100 CUP	13.7	1597	37,200 CUP	CFE Pistol	7.6	1126	30,800 CUP	8.6	1222	38,700 CUP
Universal	8.0	1229	21,600 CUP	10.3	1488	38,700 CUP	AutoComp	7.5	1075	29,600 CUP	8.5	1163	37,600 CUP
HP-38	8.8	1326	29,500 CUP	9.8	1440	38,300 CUP	Trail Boss	3.7	611	14,600 CUP	5.0	748	20,300 CUP
Titegroup	8.2	1361	29,800 CUP	9.2	1470	37,700 CUP	Titegroup	6.0	1018	30,400 CUP	6.7	1083	38,600 CUP
700-X				8.4	1375	39,800 CUP	Bullet: 255 GR. WFNGC Dia: .410" Col: 1.660"						
Bullet: 180 GR. BAR XPB FB Dia: .410" Col: 1.590"							Bullet: 255 GR. WFNGC Dia: .410" Col: 1.660"						
IMR 4227	16.6	1141	26,300 CUP	18.5C	1364	37,800 CUP	H4227	18.8	1378	33,900 CUP	20.0	1446	38,800 CUP
296	17.0	1335	23,000 CUP	19.0	1543	39,400 CUP	296	18.0	1327	21,000 CUP	19.5	1491	37,200 CUP
H110	17.0	1335	23,000 CUP	19.0	1543	39,400 CUP	H110	18.0	1327	21,000 CUP	19.5	1491	37,200 CUP
Lil'Gun	17.2	1430	23,600 CUP	19.0	1591	30,600 CUP	Lil'Gun	18.8	1424	26,600 CUP	20.0	1500	32,800 CUP
Longshot	9.0	1247	30,100 CUP	10.4	1415	39,600 CUP	CFE Pistol	8.1	1123	26,900 CUP	9.1	1224	36,800 CUP
HS-6	10.1	1188	28,600 CUP	11.7	1410	39,100 CUP	AutoComp	7.7	1044	25,300 CUP	8.7	1141	36,000 CUP
CFE Pistol	8.2	1230	31,900 CUP	9.0	1319	39,800 CUP	Titegroup	7.0	1062	33,300 CUP	7.6	1124	38,600 CUP
Universal	6.9	873	29,800 CUP	8.0	1151	39,700 CUP	Bullet: 265 GR. WLNGC Dia: .410" Col: 1.710"						
Titegroup	6.8	1001	31,700 CUP	7.4	1207	39,200 CUP	H4227	18.6	1366	31,900 CUP	19.8	1429	35,700 CUP
Bullet: 200 GR. CAST LFP Dia: .410" Col: 1.550"							Bullet: 265 GR. WLNGC Dia: .410" Col: 1.710"						
Titegroup	4.5	897	11,400 CUP	5.5	1030	15,300 CUP	296	19.5	1410	24,400 CUP	20.8	1540	37,600 CUP
Clays	4.0	854	13,400 CUP	5.2	997	21,200 CUP	H110	19.5	1410	24,400 CUP	20.8	1540	37,600 CUP
Bullet: 210 GR. HDY XTP Dia: .410" Col: 1.580"							Bullet: 265 GR. WLNGC Dia: .410" Col: 1.710"						
H4227	19.3	1379	28,000 CUP	21.5	1518	38,000 CUP	Lil'Gun	20.0	1479	28,700 CUP	21.3	1558	35,400 CUP
296	19.8	1465	25,600 CUP	22.0	1631	36,400 CUP	CFE Pistol	8.2	1132	27,700 CUP	9.2	1220	35,800 CUP
							AutoComp	7.7	1040	26,300 CUP	8.7	1132	35,700 CUP
							Titegroup	7.0	1064	32,200 CUP	7.6	1116	37,900 CUP

NEVER EXCEED MAXIMUM LOADS

159

PISTOL DATA

Powder		Starting Loads			Maximum Loads			Powder		Starting Loads			Maximum Loads						
		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure			Gr.	Vel.	Pressure	Gr.	Vel.	Pressure				
44 COLT																			
Case: Starline				Twist: 1:20"															
Barrel: 8"		Trim: 1.09"		Primer: Federal 150M, Large Pistol Match															
Bullet: 185 GR. CAST LRNFP Dia: .430" Col: 1.400"																			
800-X		6.3	951	10,200 CUP		7.1	1031	12,700 CUP		Universal		5.4	823	7,700 CUP		6.4	1031	13,900 CUP	
HP-38		4.4	810	8,000 CUP		5.6	953	12,500 CUP		Trail Boss		4.5	791	10,400 CUP		6.6	944	12,600 CUP	
Titegroup		4.0	819	6,600 CUP		5.5	1025	11,600 CUP		700-X		4.8	929	11,800 CUP		5.4	1013	13,500 CUP	
Clays		3.0	705	6,600 CUP		4.2	944	9,000 CUP		Clays		3.5	810	7,800 CUP		4.2	930	13,200 CUP	
Bullet: 165 GR. LEAD RNFP Dia: .430" Col: 1.310"																			
HP-38		4.5	826	6,100 CUP		5.5	983	9,300 CUP		Trail Boss		3.3	698	5,400 CUP		4.5	844	9,700 CUP	
Titegroup		4.0	864	6,300 CUP		5.0	1020	9,300 CUP		Clays		3.0	705	6,600 CUP		4.2	944	9,000 CUP	
Bullet: 185 GR. LEAD RNFP Dia: .430" Col: 1.350"																			
HP-38		4.5	807	6,600 CUP		5.3	928	9,400 CUP		Trail Boss		3.2	643	5,600 CUP		4.0	751	9,600 CUP	
Titegroup		3.8	806	6,200 CUP		4.8	950	9,500 CUP		Clays		3.0	692	5,800 CUP		4.2	893	9,600 CUP	
Bullet: 200 GR. LEAD RNFP Dia: .430" Col: 1.370"																			
Universal		4.8	762	6,100 CUP		5.7	927	9,900 CUP		Trail Boss		3.0	595	4,800 CUP		3.9	711	9,300 CUP	
Titegroup		4.0	787	6,300 CUP		4.8	912	10,000 CUP		Clays		3.2	710	6,100 CUP		3.9	831	10,000 CUP	
Bullet: 240 GR. LEAD RNFP Dia: .430" Col: 1.380"																			
Universal		4.5	769	6,400 CUP		5.2	870	10,400 CUP		Trail Boss		3.0	563	6,800 CUP		3.4	625	9,000 CUP	
Titegroup		3.5	717	6,300 CUP		4.3	826	10,000 CUP		Clays		4.0	706	6,800 CUP		4.7	818	9,500 CUP	
44 RUSSIAN																			
Case: Starline				Twist: 1:20"															
Barrel: 5"		Trim: .960"		Primer: Winchester LP, Large Pistol															
Bullet: 165 GR. LRNFP Dia: .430" Col: 1.165"																			
HP-38		4.5	878	8,300 CUP		5.2	1002	10,400 CUP		Trail Boss		3.3	742	7,600 CUP		4.5	878	11,600 CUP	
Titegroup		4.0	884	6,100 CUP		5.3	1076	12,000 CUP		Clays		3.0	776	7,300 CUP		4.0	979	11,100 CUP	
Bullet: 200 GR. LRNFP Dia: .430" Col: 1.245"																			
Universal		4.8	816	8,100 CUP		5.7	970	11,500 CUP		Trail Boss		3.0	647	7,900 CUP		3.9	747	10,400 CUP	
Titegroup		3.5	738	5,100 CUP		4.8	963	11,400 CUP		Clays		3.2	747	8,000 CUP		3.7	837	11,100 CUP	
Bullet: 240 GR. LRNFP Dia: .430" Col: 1.275"																			
Universal		3.8	679	6,400 CUP		4.6	841	11,000 CUP		Trail Boss		3.0	604	8,800 CUP		3.5	661	10,000 CUP	
Titegroup		3.5	732	7,300 CUP		4.2	837	11,500 CUP		Clays		3.0	711	9,400 CUP		3.5	769	10,700 CUP	
44 S&W SPECIAL																			
Case: Starline				Twist: 1:20"															
Barrel: 8"		Trim: 1.155"		Primer: Winchester LP, Large Pistol															
Bullet: 165 GR. CAST LRNFP Dia: .430" Col: 1.365"																			
CFE Pistol		7.4	1046	10,800 CUP		8.0	1118	12,900 CUP		AutoComp		7.4	1028	8,800 CUP		8.0	1112	13,400 CUP	
Universal		5.5	851	5,700 CUP		6.3	1042	10,900 CUP		HP-38		4.9	893	8,200 CUP		6.0	1040	12,000 CUP	
Trail Boss		4.8	865	10,700 CUP		7.0	1005	12,100 CUP		Titegroup		4.5	865	7,100 CUP		5.8	1035	13,400 CUP	
Clays		3.6	836	6,000 CUP		4.6	1009	13,400 CUP		Clays		3.6	836	6,000 CUP		4.6	1009	13,400 CUP	
44-40 WINCHESTER																			
Case: Winchester				Twist: 1:36"															
Barrel: 6"		Trim: 1.295"		Primer: Winchester LP, Large Pistol															
Bullet: 160 GR. CAST LFP Dia: .430" Col: 1.600"																			
Titegroup		4.5	750	7,700 PSI		6.2	983	12,200 PSI		Clays		4.2	747	7,400 PSI		5.5	916	12,700 PSI	

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads							
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure					
Bullet: 200 GR. CAST LRNFP						Dia: .430"												
Col: 1.600"																		
800-X	8.0	870	9,400 CUP	8.8	965	12,600 CUP	572	11.7	1376	27,500 PSI	13.4	1498	33,400 PSI					
Universal	6.6	722	10,000 PSI	7.3	777	11,100 PSI	800-X				15.5	1600	39,800 CUP					
HP-38	5.5	711	9,800 PSI	6.5	820	12,400 PSI	HS-6	15.0	1440	30,300 CUP	16.7	1569	37,700 CUP					
Trail Boss	5.5	723	7,800 PSI	6.5	826	11,900 PSI	CFE Pistol	12.0	1343	26,500 PSI	13.4	1499	35,000 PSI					
Titegroup	5.0	758	8,400 PSI	6.2	901	12,900 PSI	AutoComp	12.0	1348	27,000 PSI	13.2	1429	32,500 PSI					
700-X	5.0	788	7,100 CUP	5.6	860	11,400 CUP	Universal	10.0	1303	30,700 CUP	11.1	1398	38,300 CUP					
Clays	4.2	648	8,200 PSI	5.0	765	11,700 PSI	231	10.0	1277	28,000 CUP	11.9	1444	37,400 CUP					
							HP-38	10.0	1277	28,000 CUP	11.9	1444	37,400 CUP					
							Titegroup	9.7	1331	31,300 CUP	10.8	1433	38,400 CUP					
							700-X				10.1	1300	40,000 CUP					
44 REMINGTON MAGNUM																		
Case: Winchester						Twist: 1:20"												
Barrel: 8.275" Trim: 1.280"						Primer: Remington 2 1/2, Large												
Pistol																		
Bullet: 165 GR. LRNFP CAST						Dia: .430"												
Col: 1.500"																		
CFE Pistol	8.4	1057	13,900 PSI	9.6	1221	18,400 PSI												
AutoComp	8.0	1072	13,100 PSI	9.0	1185	15,300 PSI												
Universal	6.5	918	7,700 CUP	7.2	1059	11,500 CUP												
231	6.0	963	10,100 CUP	7.0	1088	13,900 CUP												
HP-38	6.0	963	10,100 CUP	7.0	1088	13,900 CUP												
Trail Boss	6.0	960	17,200 PSI	8.0	1086	18,800 PSI												
Titegroup	5.3	949	11,800 CUP	6.5	1083	16,400 CUP												
Clays	4.4	910	8,500 CUP	5.5	1064	15,500 CUP												
Bullet: 180 GR. HDY XTP						Dia: .430" Col: 1.600"												
IMR 4227	27.5	1575	24,000 CUP	29.0	1708	31,200 CUP												
296	29.0	1714	21,800 CUP	31.5	1896	29,900 CUP												
H110	29.0	1714	21,800 CUP	31.5	1896	29,900 CUP												
Lil'Gun	29.0	1749	27,400 CUP	31.5	1859	32,300 CUP												
Longshot	13.5	1499	29,400 PSI	14.8	1604	34,600 PSI												
572	12.5	1474	27,800 PSI	13.8	1606	33,800 PSI												
HS-6	15.0	1463	26,400 CUP	17.0	1642	37,700 CUP												
CFE Pistol	12.6	1466	27,400 PSI	14.0	1595	34,300 PSI												
AutoComp	12.6	1419	26,800 PSI	13.8	1527	31,700 PSI												
Universal	9.0	1209	19,000 CUP	11.3	1463	36,900 CUP												
231	10.0	1327	26,500 CUP	12.0	1509	37,300 CUP												
HP-38	10.0	1327	26,500 CUP	12.0	1509	37,300 CUP												
Titegroup	10.3	1459	32,700 CUP	11.5	1544	38,400 CUP												
Bullet: 185 GR. LRNFP CAST						Dia: .430"												
Col: 1.540"																		
Universal	6.4	919	8,400 CUP	7.4	1070	12,600 CUP												
231	5.9	906	9,400 CUP	7.2	1058	14,700 CUP												
HP-38	5.9	906	9,400 CUP	7.2	1058	14,700 CUP												
Trail Boss	6.2	936	19,500 PSI	7.8	1050	21,100 PSI												
Titegroup	5.3	902	9,500 CUP	6.6	1082	16,500 CUP												
Clays	4.2	839	8,900 CUP	6.0	1043	18,400 CUP												
Bullet: 200 GR. LRNFP CAST						Dia: .430"												
Col: 1.570"																		
572	6.8	900	13,100 PSI	7.8	1031	15,700 PSI												
800-X				5.9	813	10,500 CUP												
CFE Pistol	7.1	914	14,000 PSI	8.2	1051	16,500 PSI												
AutoComp	7.0	939	13,200 PSI	8.0	1038	15,400 PSI												
Universal	6.8	897	10,500 CUP	7.8	1045	15,400 CUP												
231	5.8	875	10,800 CUP	7.4	1039	16,700 CUP												
HP-38	5.8	875	10,800 CUP	7.4	1039	16,700 CUP												
Trail Boss	6.1	890	17,900 PSI	7.7	988	20,700 PSI												
Titegroup	5.0	878	11,000 CUP	6.6	1061	17,300 CUP												
700-X				4.3	818	11,700 CUP												
Clays	4.2	785	8,500 CUP	6.4	1028	20,200 CUP												
Bullet: 200 GR. NOS JHP						Dia: .429" Col: 1.600"												
IMR 4227	25.0	1553	29,800 CUP	27.0	1686	37,800 CUP												
296	27.5	1708	29,000 CUP	28.5	1806	37,800 CUP												
H110	27.5	1708	29,000 CUP	28.5	1806	37,800 CUP												
Lil'Gun	27.5	1667	27,500 CUP	29.5	1794	36,200 CUP												
Longshot	13.0	1440	30,000 PSI	14.3	1534	34,600 PSI												
Bullet: 210 GR. SIE JHC						Dia: .430" Col: 1.600"												
IMR 4227	25.0	1458	29,200 CUP	27.0	1624	37,600 CUP												
296	26.0	1615	29,900 CUP	27.0	1665	31,100 CUP												
H110	26.0	1615	29,900 CUP	27.0	1665	31,100 CUP												
Lil'Gun	26.0	1660	35,500 CUP	27.7	1749	37,900 CUP												
Longshot	12.0	1358	28,500 PSI	13.3	1457	35,400 PSI												
572	11.4	1311	26,700 PSI	12.7	1434	35,000 PSI												
HS-6	13.0	1254	21,900 CUP	16.2	1538	37,900 CUP												
CFE Pistol	11.4	1331	29,200 PSI	12.5	1430	35,200 PSI												
AutoComp	11.5	1341	27,700 PSI	12.5	1414	34,600 PSI												
Universal	9.0	1190	26,000 CUP	11.0	1365	37,600 CUP												
231	7.5	985	17,300 CUP	11.7	1398	37,500 CUP												
HP-38	7.5	985	17,300 CUP	11.7	1398	37,500 CUP												
Titegroup	9.6	1309	33,500 CUP	10.7	1411	38,500 CUP												
Bullet: 220 GR. BERB FP						Dia: .430" Col: 1.610"												
Longshot	9.0	894	12,300 PSI	11.8	1189	20,300 PSI												
572	8.2	940	14,300 PSI	10.8	1205	23,200 PSI												
800-X	8.7	930	13,400 PSI	11.8	1231	20,300 PSI												
HS-6	10.2	925	12,900 PSI	13.5	1194	19,900 PSI												
CFE Pistol	8.5	948	16,700 PSI	10.9	1197	23,300 PSI												
AutoComp	8.3	878	12,700 PSI	10.6	1127	19,900 PSI												
Universal	7.3	839	12,200 PSI	9.0	1104	21,200 PSI												
231	6.8	811	12,600 PSI	9.4	1104	20,700 PSI												
HP-38	6.8	811	12,600 PSI	9.4	1104	20,700 PSI												
Titegroup	5.8	807	12,300 PSI	8.0	1066	20,600 PSI												
700-X	5.0	717	11,400 PSI	8.4	1085	20,700 PSI												
Bullet: 225 GR. HDY FTX						Dia: .430" Col: 1.665"												
IMR 4227	19.8	1130	26,800 PSI	22.0	1307	34,500 PSI												
296	19.4	1338	26,700 PSI	21.5	1482	33,400 PSI												
H110	19.4	1338	26,700 PSI	21.5	1482	33,400 PSI												
Lil'Gun	18.6	1358	26,600 PSI	20.7	1530	34,300 PSI												
Bullet: 225 GR. SPR JHP						Dia: .429" Col: 1.575"												
IMR 4227	23.0	1383	27,400 CUP	25.5	1537	35,700 CUP												
296	23.0	1468	25,600 CUP	25.0	1617	36,300 CUP												
H110	23.0	1468	25,600 CUP	25.0	1617	36,300 CUP												
Lil'Gun	22.5	1508	31,600 CUP	24.7	1623	37,700 CUP												
Longshot	11.2	1291	29,300 PSI	12.5	1402	35,200 PSI												
572	10.4	1254	28,700 PSI	11.6	1357	33,600 PSI												
800-X				15.4	1525	39,800 CUP												
HS-6	11.5	1103	20,100 CUP	15.5	1434	38,000 CUP												
CFE Pistol	10.5	1248	29,600 PSI	11.6	1333	34,800 PSI												
AutoComp	10.8	1266	28,300 PSI	11.8	1352	34,200 PSI												
Universal	8.0	1041	18,900 CUP	10.5	1291	37,300 CUP												
231	8.4	1101	23,900 CUP	11.0	1344	38,200 CUP												
HP-38	8.4	1101	23,900 CUP	11.0	1344	38,200 CUP												
Titegroup	9.3	1262	31,900 CUP	10.4	1360	38,100 CUP												
700-X				9.8	1235	40,000 CUP												
Bullet: 240 GR. LSWC CAST						Dia: .430" Col: 1.620"												
IMR 4227				22.0C	1310	33,300 CUP												
572	9.5	1168	23,500 PSI	11.4	1327	33,700 PSI												
800-X				13.4	1395	39,600 CUP												
CFE Pistol	9.9	1171	24,400 PSI	11.7	1299	33,900 PSI												
AutoComp	9.8	1162	24,500 PSI	11.6	1303	34,300 PSI												
Universal	6.5	852	11,700 CUP	10.2	1276	37,500 CUP												
231	5.5	800	12,000 CUP	11.0	1334	38,100 CUP												

NEVER EXCEED MAXIMUM LOADS

161

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads								
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure						
HP-38	5.5	800	12,000 CUP	11.0	1334	38,100 CUP	296	20.0	1264	30,800 CUP	22.0	1368	38,100 CUP						
Trail Boss	6.0	828	19,100 PSI	7.3	917	21,600 PSI	H110	20.0	1264	30,800 CUP	22.0	1368	38,100 CUP						
Titegroup	4.7	801	11,100 CUP	10.0	1288	38,400 CUP	Lil'Gun	17.0	1217	29,400 CUP	20.0	1360	38,600 CUP						
700-X				9.5	1185	40,000 CUP	Longshot	10.0	1069	28,500 CUP	11.8	1195	38,700 CUP						
Clays	4.3	759	14,000 CUP	6.2	940	21,800 CUP	HS-6	13.0	1155	33,200 CUP	14.0	1218	38,000 CUP						
Bullet: 240 GR. NOS JHP Dia: .429" Col: 1.600"																			
IMR 4227	22.0	1301	28,400 CUP	24.0	1458	36,100 CUP	CFE Pistol	9.0	997	27,500 PSI	10.2	1093	35,200 PSI						
296	23.0	1413	25,200 CUP	24.0	1522	36,200 CUP	AutoComp	9.0	1008	26,100 PSI	10.0	1075	30,900 PSI						
H110	23.0	1413	25,200 CUP	24.0	1522	36,200 CUP	Universal	8.0	942	27,700 CUP	10.0	1090	38,000 CUP						
Lil'Gun	22.5	1465	30,100 CUP	24.5	1582	38,100 CUP	231	9.0	1035	32,100 CUP	10.3	1125	38,700 CUP						
Longshot	11.0	1249	29,400 PSI	12.1	1331	34,500 PSI	HP-38	9.0	1035	32,100 CUP	10.3	1125	38,700 CUP						
572	10.0	1177	24,400 PSI	11.9	1331	34,900 PSI	Titegroup	8.0	1001	28,700 CUP	9.2	1091	38,300 CUP						
800-X				14.2	1415	39,600 CUP	Bullet: 330 GR. BTB LFN GC Dia: .430" Col: 1.730"												
HS-6	12.0	1144	22,800 CUP	15.1	1417	38,200 CUP	IMR 4227	18.0	1132	25,900 CUP	20.7C	1278	34,200 CUP						
CFE Pistol	10.2	1164	25,700 PSI	12.0	1304	35,000 PSI	296	19.0	1239	30,200 CUP	20.8	1350	38,800 CUP						
AutoComp	10.0	1129	26,000 PSI	11.5	1250	34,100 PSI	H110	19.0	1239	30,200 CUP	20.8	1350	38,800 CUP						
Universal	8.0	1018	21,900 CUP	10.2	1246	38,200 CUP	Lil'Gun	16.0	1186	29,800 CUP	19.0	1332	38,000 CUP						
231	8.0	1021	23,800 CUP	11.0	1272	37,800 CUP	Longshot	9.5	1026	27,600 CUP	11.3	1158	38,700 CUP						
HP-38	8.0	1021	23,800 CUP	11.0	1272	37,800 CUP	572	8.6	995	28,200 PSI	9.8	1087	35,200 PSI						
Titegroup	9.0	1219	33,500 CUP	10.0	1292	37,700 CUP	HS-6	12.0	1098	29,900 CUP	13.6	1202	39,000 CUP						
Bullet: 270 GR. SPR GDSP Dia: .429" Col: 1.600"																			
IMR 4227	20.5	1275	28,400 CUP	22.5	1425	37,400 CUP	CFE Pistol	8.6	978	28,500 PSI	9.7	1057	35,100 PSI						
296	19.5	1295	29,300 CUP	21.5	1421	37,700 CUP	AutoComp	8.8	976	25,200 PSI	9.8	1056	30,900 PSI						
H110	19.5	1295	29,300 CUP	21.5	1421	37,700 CUP	Universal	8.0	943	27,800 CUP	9.5	1058	37,000 CUP						
Lil'Gun	19.0	1305	31,800 CUP	21.5	1439	38,300 CUP	231	8.5	992	33,700 CUP	9.7	1081	38,700 CUP						
Longshot	9.8	1112	27,900 PSI	11.0	1213	34,100 PSI	HP-38	8.5	992	33,700 CUP	9.7	1081	38,700 CUP						
572	9.1	1075	27,400 PSI	10.3	1185	33,600 PSI	Titegroup	7.5	952	29,700 CUP	8.5	1035	38,000 CUP						
HS-6	11.0	1036	22,200 CUP	14.0	1305	36,900 CUP	Bullet: 355 GR. BTB LFN GC Dia: .430" Col: 1.710"												
CFE Pistol	9.4	1081	29,100 PSI	10.5	1181	35,300 PSI	IMR 4227	17.5	1125	28,100 CUP	19.0	1223	37,800 CUP						
AutoComp	9.7	1106	28,000 PSI	10.8	1199	34,600 PSI	296	17.5	1168	29,300 CUP	18.8	1245	38,000 CUP						
Universal	8.5	1049	32,100 CUP	9.5	1128	36,700 CUP	H110	17.5	1168	29,300 CUP	18.8	1245	38,000 CUP						
231	8.0	992	26,000 CUP	10.2	1194	37,400 CUP	Lil'Gun	16.0	1178	31,700 CUP	17.5	1247	37,900 CUP						
HP-38	8.0	992	26,000 CUP	10.2	1194	37,400 CUP	Longshot	9.0	987	28,400 CUP	10.5	1096	37,800 CUP						
Titegroup	8.6	1100	33,100 CUP	9.6	1175	37,700 CUP	572	7.6	909	28,400 PSI	8.7	1001	35,200 PSI						
Bullet: 280 GR. SFT JHP Dia: .430" Col: 1.700"																			
IMR 4227	20.0	1215	27,600 CUP	22.0	1373	37,800 CUP	HS-6	11.0	1019	26,800 CUP	12.0	1091	37,400 CUP						
296	18.5	1214	27,000 CUP	20.5	1342	36,100 CUP	CFE Pistol	7.6	896	29,000 PSI	8.3	953	34,000 PSI						
H110	18.5	1214	27,000 CUP	20.5	1342	36,100 CUP	AutoComp	7.8	906	25,600 PSI	8.5	959	29,900 PSI						
Lil'Gun	18.5	1278	34,300 CUP	20.8	1384	38,400 CUP	Universal	7.8	922	30,700 CUP	8.8	991	37,300 CUP						
Longshot	9.8	1076	28,400 CUP	11.0	1189	34,600 PSI	231	7.8	928	31,000 CUP	8.8	1001	38,700 CUP						
572	9.3	1034	27,200 PSI	10.6	1167	33,500 PSI	HP-38	7.8	928	31,000 CUP	8.8	1001	37,700 CUP						
HS-6	11.0	1006	23,800 CUP	14.0	1251	37,400 CUP	Titegroup	7.0	907	29,900 CUP	8.2	994	37,600 CUP						
CFE Pistol	8.7	981	28,600 PSI	9.9	1085	35,100 PSI	45 S&W (SCHOFIELD)												
AutoComp	9.0	1005	26,600 PSI	10.2	1115	32,500 PSI	Case: Starline						Twist: 1:16"						
Universal	8.0	917	27,400 CUP	9.7	1090	38,200 CUP	Barrel: 5"	Trim: 1.095"	Primer: Winchester LP, Large Pistol										
231	8.0	918	26,100 CUP	10.0	1115	37,300 CUP	Bullet: 200 GR. LRNFP Dia: .452" Col: 1.430"												
HP-38	8.0	918	26,100 CUP	10.0	1115	37,300 CUP	Universal	6.0	773	9,100 CUP	7.0	938	13,100 CUP						
Titegroup	8.6	1059	32,100 CUP	9.6	1152	37,000 CUP	231	5.2	745	8,800 CUP	6.2	877	13,000 CUP						
Bullet: 300 GR. HDY XTP Dia: .430" Col: 1.600"																			
IMR 4227	18.0	1180	30,600 CUP	20.0	1312	38,600 CUP	HP-38	5.2	745	8,800 CUP	6.2	877	13,000 CUP						
296	18.0	1266	35,100 CUP	19.0	1325	38,800 CUP	Trail Boss	4.0	684	9,000 CUP	5.0	791	13,200 CUP						
H110	18.0	1266	35,100 CUP	19.0	1325	38,800 CUP	Titegroup	4.5	715	6,700 CUP	6.0	925	12,100 CUP						
Lil'Gun	15.5	1168	29,600 CUP	17.7	1280	37,600 CUP	Clays	4.0	733	8,300 CUP	5.0	845	13,100 CUP						
Longshot	8.5	983	28,600 PSI	9.5	1071	34,700 PSI	Bullet: 230 GR. LRNFP Dia: .452" Col: 1.430"												
572	7.7	930	27,200 PSI	8.9	1042	34,300 PSI	Universal	5.5	738	9,400 CUP	6.0	816	11,400 CUP						
HS-6	11.0	1048	28,400 CUP	13.0	1214	37,900 CUP	231	5.0	719	9,900 CUP	5.7	816	12,700 CUP						
CFE Pistol	7.6	876	27,600 PSI	8.7	987	34,800 PSI	HP-38	5.0	719	9,900 CUP	5.7	816	12,700 CUP						
AutoComp	8.0	866	26,300 PSI	9.0	927	33,500 PSI	Trail Boss	4.0	649	9,000 CUP	5.0	739	13,000 CUP						
Universal	8.0	972	31,200 CUP	9.6	1113	38,200 CUP	Titegroup	4.5	702	7,800 CUP	5.8	866	12,300 CUP						
231	8.0	966	29,400 CUP	10.0	1149	38,100 CUP	Clays	4.0	697	9,400 CUP	4.7	783	13,600 CUP						
HP-38	8.0	966	29,400 CUP	10.0	1149	38,100 CUP	Bullet: 250 GR. LRNFP Dia: .452" Col: 1.430"												
Titegroup	8.6	1079	34,200 CUP	9.6	1186	38,400 CUP	Universal	6.0	724	9,900 CUP	6.3	830	13,800 CUP						
Bullet: 325 GR. BTB LFN GC Dia: .430" Col: 1.730"																			
IMR 4227	17.0	1041	19,200 CUP	21.0C	1278	34,200 CUP	231	4.5	664	10,100 CUP	5.2	741	12,100 CUP						
NEVER EXCEED MAXIMUM LOADS																			

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads									
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure							
Clays	4.0	674	11,000 CUP	4.2	710	12,500 CUP	Titegroup	5.0	974	13,600 CUP	5.5	1036	16,900 CUP							
							700-X	5.3	955	14,500 CUP	5.8	1045	16,200 CUP							
45 GAP (GLOCK AUTO)																				
Case: Speer Twist: 1:16"																				
Barrel: 5" Trim: .750" Primer: Winchester SP, Small Pistol																				
Bullet: 155 GR. LSWC CAST Dia: .452" Col: 1.110"																				
AutoComp	6.9	937	17,500 PSI	7.5	1089	21,200 PSI	572	6.2	929	15,400 PSI	7.2	1085	19,400 PSI							
Titegroup	4.7	1014	17,500 PSI	5.3	1152	21,300 PSI	800-X	7.2	1046	17,800 PSI	7.6	1078	18,800 PSI							
Clays	3.9	974	18,000 PSI	4.4	1047	22,300 PSI	HS-6	7.6	951	17,200 PSI	8.5	1048	20,000 PSI							
Bullet: 160 GR. BAR TAC-XP Dia: .451" Col: 1.110"																				
Longshot	6.5	986	18,800 PSI	7.2	1082	21,700 PSI	CFE Pistol	6.7	1034	16,900 PSI	7.6	1154	20,000 PSI							
572	5.9	938	18,200 PSI	6.5	1041	22,500 PSI	AutoComp	6.7	1036	18,400 PSI	7.2	1105	20,100 PSI							
HS-6	6.4	859	18,500 PSI	7.0	936	21,700 PSI	Universal	5.4	938	17,100 PSI	5.9	1047	19,500 PSI							
AutoComp	5.4	905	18,300 PSI	6.0	1006	21,600 PSI	WSF	6.2	972	17,400 PSI	6.8	1043	20,100 PSI							
Universal	4.3	798	16,600 PSI	4.9	974	22,000 PSI	231	5.0	940	17,900 PSI	5.4	992	20,100 PSI							
231	3.9	765	17,100 PSI	4.6	900	21,200 PSI	HP-38	5.0	940	17,900 PSI	5.4	992	20,100 PSI							
HP-38	3.9	765	17,100 PSI	4.6	900	21,200 PSI	WST	4.2	895	17,200 PSI	4.6	946	19,700 PSI							
Titegroup	4.1	888	16,500 PSI	4.6	1000	22,300 PSI	Titegroup	4.7	970	17,100 PSI	5.1	1040	19,900 PSI							
Clays	3.1	692	20,500 PSI	3.3	748	22,600 PSI	700-X	4.3	913	16,600 PSI	4.7	982	19,700 PSI							
Bullet: 185 GR. HDY XTP Dia: .451" Col: 1.060"																				
Longshot	6.5	923	16,400 PSI	7.5	1075	22,500 PSI	Clays	3.4	833	17,100 PSI	3.9	906	20,000 PSI							
HS-6	8.0	890	17,700 PSI	9.0	1017	22,500 PSI	Bullet: 180 GR. LFP Dia: .452" Col: 1.140"													
AutoComp	6.7	809	18,100 PSI	7.3	911	21,400 PSI	Longshot	6.5	788	9,800 CUP	8.0	1015	16,900 CUP							
Universal	5.5	864	17,700 PSI	6.3	1027	22,300 PSI	572	6.8	965	14,800 PSI	7.6	1076	18,800 PSI							
231	4.8	841	18,200 PSI	5.5	951	21,500 PSI	800-X	7.2	925	13,100 CUP	8.0	1031	16,800 CUP							
HP-38	4.8	841	18,200 PSI	5.5	951	21,500 PSI	HS-6	7.8	805	10,900 CUP	9.0	961	16,600 CUP							
Titegroup	4.3	875	18,200 PSI	4.9	974	21,300 PSI	CFE Pistol	7.1	1006	15,500 PSI	8.0	1114	19,500 PSI							
Clays	3.7	816	18,800 PSI	4.1	881	21,400 PSI	AutoComp	6.8	903	12,800 CUP	7.6	1008	16,500 CUP							
Bullet: 200 GR. SPR GDHP Dia: .451" Col: 1.080"																				
Longshot	6.0	892	19,100 PSI	6.8	1000	22,300 PSI	Universal	5.3	755	11,100 CUP	6.4	1019	17,600 CUP							
572	6.0	869	19,300 PSI	6.7	947	22,000 PSI	WSF	6.6	887	12,200 CUP	7.3	1003	16,500 CUP							
HS-6	7.0	795	17,100 PSI	8.0	921	21,200 PSI	231	5.0	778	11,300 CUP	6.0	950	16,800 CUP							
CFE Pistol	6.1	912	16,400 PSI	7.0	1032	20,900 PSI	HP-38	5.0	778	11,300 CUP	6.0	950	16,800 CUP							
AutoComp	6.3	727	17,400 PSI	6.9	814	21,100 PSI	WST	4.4	846	13,300 CUP	4.9	912	16,100 CUP							
Universal	5.2	838	18,500 PSI	5.7	924	20,900 PSI	Trail Boss	3.5	664	7,100 CUP	5.0	852	13,700 CUP							
231	4.5	796	18,400 PSI	4.9	860	20,700 PSI	Titegroup	4.2	771	10,200 CUP	5.2	946	16,600 CUP							
HP-38	4.5	796	18,400 PSI	4.9	860	20,700 PSI	700-X	5.0	903	13,300 CUP	5.6	982	16,000 CUP							
Titegroup	4.1	829	18,300 PSI	4.6	908	21,700 PSI	Clays	3.8	783	11,600 CUP	4.5	910	16,700 CUP							
Clays	3.3	718	17,300 PSI	3.7	796	20,400 PSI	Titewad	3.7	855	14,800 PSI	4.3	948	19,200 PSI							
Bullet: 185 GR. HDY JSWC Dia: .451" Col: 1.135"																				
Longshot	7.2	919	11,300 CUP	8.2	1044	17,000 CUP	Bullet: 200 GR. CAST LSWC Dia: .451" Col: 1.225"													
572	6.7	930	17,200 PSI	7.7	1036	20,000 PSI	572	6.4	897	15,900 PSI	7.2	1018	19,600 PSI							
800-X	7.1	883	13,600 CUP	7.9	991	16,700 CUP	800-X	6.9	861	12,200 CUP	7.7	958	15,700 CUP							
HS-6	8.6	888	12,200 CUP	9.5	996	16,800 CUP	HS-6	8.2	860	14,400 CUP	8.4	907	16,300 CUP							
CFE Pistol	7.1	1008	15,800 PSI	8.1	1139	19,700 PSI	CFE Pistol	7.4	1042	15,000 PSI	8.2	1142	19,600 PSI							
AutoComp	6.7	856	12,600 CUP	7.4	958	16,200 CUP	AutoComp	6.5	843	11,500 CUP	7.2	914	15,100 CUP							
Universal	6.0	908	13,100 CUP	6.4	977	16,800 CUP	Universal	5.8	889	13,900 CUP	6.3	962	16,800 CUP							
WSF	6.8	886	13,400 CUP	7.5	981	17,400 CUP	WSF	6.0	870	15,200 PSI	6.7	970	19,400 PSI							
231	5.0	762	12,000 CUP	5.9	906	15,800 CUP	231	4.4	771	11,000 CUP	5.6	914	16,900 CUP							
HP-38	5.0	762	12,000 CUP	5.9	906	15,800 CUP	HP-38	4.4	771	11,000 CUP	5.6	914	16,900 CUP							
WST	4.4	794	14,100 CUP	4.9	866	16,500 CUP	WST	4.4	830	15,400 PSI	5.1	910	19,900 PSI							
Titegroup	5.0	892	14,600 CUP	5.5	956	17,000 CUP	Trail Boss	3.5	652	9,200 CUP	5.5	816	16,100 CUP							
700-X	4.9	873	14,000 CUP	5.5	959	17,100 CUP	Titegroup	4.8	877	13,400 CUP	5.4	957	16,800 CUP							
Clays	4.5	855	14,500 CUP	4.9	981	17,400 CUP	700-X	4.6	821	12,100 CUP	5.3	921	16,300 CUP							
Titewad	3.5	754	14,900 PSI	4.2	887	19,400 PSI	Clays	3.6	759	11,800 CUP	4.3	888	17,000 CUP							
Bullet: 155 GR. SFIRE Dia: .451" Col: 1.220"																				
572	6.5	933	15,700 PSI	7.7	1130	19,700 PSI	Titewad	3.6	816	15,400 PSI	4.5	940	20,000 PSI							
CFE Pistol	6.3	890	15,200 PSI	7.1	1024	18,400 PSI	NEVER EXCEED MAXIMUM LOADS													
AutoComp	6.2	875	15,000 PSI	7.0	1000	18,600 PSI	163													
Universal	5.4	828	12,300 CUP	6.0	1050	16,900 CUP														
231	5.6	944	13,800 CUP	6.2	1057	16,700 CUP														
HP-38	5.6	944	13,800 CUP	6.2	1057	16,700 CUP														

NEVER EXCEED MAXIMUM LOADS

163

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Bullet: 200 GR. SPR JHP Dia: .451" Col: 1.155"						Bullet: 180 GR. CAST LRNFP Dia: .452"							
Longshot	7.0	918	13,300 CUP	7.8	1013	16,900 CUP	572	8.5	844	7,600 PSI	10.3	1157	13,400 PSI
572	6.4	859	16,500 PSI	7.4	992	20,200 PSI	800-X	7.5	905	9,400 PSI	9.6	1099	13,200 PSI
800-X	6.8	877	13,600 CUP	7.4	954	16,600 CUP	CFE Pistol	8.5	996	9,000 PSI	10.2	1200	13,700 PSI
HS-6	8.2	868	14,000 CUP	9.0	948	16,400 CUP	Universal	6.5	791	7,100 CUP	9.2	1161	13,900 CUP
CFE Pistol	6.3	877	14,900 PSI	7.2	1010	20,200 PSI	231	6.0	838	6,500 CUP	8.2	1087	13,900 CUP
AutoComp	6.4	856	12,600 CUP	7.0	930	16,000 CUP	HP-38	6.0	838	6,500 CUP	8.2	1087	13,900 CUP
Universal	5.8	889	15,100 CUP	6.2	949	17,200 CUP	Trail Boss	6.0	818	9,400 PSI	7.3	935	12,700 PSI
WSF	6.1	807	12,500 CUP	6.8	929	16,700 CUP	Titegroup	6.0	918	8,600 CUP	6.9	1020	10,900 CUP
231	5.2	794	12,700 CUP	5.9	906	16,700 CUP	700-X	5.0	850	9,100 PSI	6.5	1014	12,600 PSI
HP-38	5.2	794	12,700 CUP	5.9	906	16,700 CUP	Clays	4.8	840	7,900 CUP	6.0	1016	13,800 CUP
WST	4.6	789	15,900 CUP	5.1	898	17,500 CUP	Bullet: 200 GR. CAST LRNFP Dia: .452"						
Titegroup	4.7	812	13,700 CUP	5.2	884	16,900 CUP	Col: 1.600"						
700-X	4.8	844	14,400 CUP	5.3	911	16,700 CUP	572	8.3	886	9,200 PSI	9.8	1080	13,300 PSI
Clays	3.9	714	15,200 CUP	4.3	785	17,700 CUP	800-X	7.2	842	8,700 PSI	9.3	1042	13,500 PSI
Titewad	3.4	680	15,200 PSI	4.0	834	19,500 PSI	Universal	6.4	749	5,700 CUP	8.8	1067	13,600 CUP
Bullet: 230 GR. HDY FMJ FP Dia: .451" Col: 1.200"						Bullet: 200 GR. HDY XTP Dia: .452" Col: 1.600"							
Longshot	6.3	848	14,100 CUP	6.8	908	17,200 CUP	572	7.6	804	8,800 PSI	9.3	1021	13,700 PSI
572	6.0	775	16,500 PSI	6.8	875	19,700 PSI	800-X	6.5	808	10,200 PSI	8.8	996	13,400 PSI
800-X	6.3	817	13,300 CUP	7.0	900	16,900 CUP	HS-6	11.7	994	9,700 CUP	13.0	1111	13,900 CUP
HS-6	8.0	790	14,400 CUP	8.2	825	15,400 CUP	CFE Pistol	8.6	927	9,300 PSI	10.0	1065	13,300 PSI
CFE Pistol	6.0	815	16,000 PSI	6.8	934	19,800 PSI	Universal	8.0	915	9,600 CUP	9.0	1068	13,900 CUP
AutoComp	6.0	789	13,800 CUP	6.6	871	17,100 CUP	231	7.8	956	11,000 CUP	8.7	1048	14,000 CUP
Universal	5.1	716	11,800 CUP	5.6	844	16,800 CUP	HP-38	7.8	956	11,000 CUP	8.7	1048	14,000 CUP
WSF	5.7	766	12,100 CUP	6.4	851	15,700 CUP	Titegroup	6.7	899	9,600 CUP	7.5	989	12,700 CUP
231	4.2	751	13,800 CUP	5.3	832	16,800 CUP	700-X	5.0	795	10,500 PSI	6.3	940	13,400 PSI
HP-38	4.2	751	13,800 CUP	5.3	832	16,800 CUP	Bullet: 215 GR. CAST LRNFP Dia: .452"						
WST	4.1	733	13,900 CUP	4.9	848	16,100 CUP	Col: 1.650"						
Titegroup	4.4	744	15,000 CUP	4.8	818	16,700 CUP	572	7.8	854	9,400 PSI	9.1	1013	13,400 PSI
700-X	4.4	758	12,700 CUP	4.9	842	16,600 CUP	800-X	7.5	845	10,600 PSI	9.2	995	13,200 PSI
Clays	3.7	670	15,900 CUP	4.0	732	17,000 CUP	CFE Pistol	8.2	919	10,100 PSI	9.5	1037	12,400 PSI
Bullet: 230 GR. LRN Dia: .452" Col: 1.200"						Bullet: 225 GR. HDY FTX Dia: .452" Col: 1.600"							
Longshot	6.0	747	12,000 CUP	6.8	875	16,800 CUP	800-X	6.2	654	7800 PSI	8.9	937	12,800 PSI
572	5.6	846	16,200 PSI	6.4	935	20,100 PSI	HS-6	8.8	790	9200 PSI	10.8	987	13,200 PSI
800-X	6.5	867	15,100 CUP	7.0	939	17,300 CUP	AutoComp	7.1	750	8700 PSI	8.9	973	13,600 PSI
HS-6	7.0	751	12,900 CUP	8.0	859	16,600 CUP	Universal	6.4	684	7800 PSI	8.2	916	13,200 PSI
CFE Pistol	5.4	816	14,600 PSI	6.2	942	20,100 PSI	231	5.7	663	9000 PSI	7.5	897	13,200 PSI
AutoComp	6.1	832	13,700 CUP	6.6	896	16,400 CUP	HP-38	5.7	663	9000 PSI	7.5	897	13,200 PSI
Universal	4.5	703	11,400 CUP	5.4	857	16,800 CUP	Titegroup	5.1	670	9700 PSI	6.4	863	13,200 PSI
WSF	5.8	832	14,500 CUP	6.3	892	16,800 CUP	700-X	5.1	738	10,200 PSI	6.4	885	13,400 PSI
231	4.3	699	12,200 CUP	5.3	834	16,900 CUP	Clays	4.4	538	9400 PSI	5.5	761	13,600 PSI
HP-38	4.3	699	12,200 CUP	5.3	834	16,900 CUP	Bullet: 230 GR. CAST LRNFP Dia: .452"						
WST	4.0	776	14,300 CUP	4.3	812	16,400 CUP	Col: 1.580"						
Trail Boss	3.5	658	11,200 CUP	4.5	761	15,100 CUP	800-X	6.2	746	9,100 PSI	9.0	1003	13,200 PSI
Titegroup	4.0	751	12,500 CUP	4.8	855	17,000 CUP	Universal	6.5	761	7,600 CUP	8.1	975	13,800 CUP
700-X	4.5	831	14,500 CUP	5.0	893	17,700 CUP	231	5.8	738	7,300 CUP	7.3	941	13,700 CUP
Clays	3.5	716	13,700 CUP	4.0	793	16,800 CUP	HP-38	5.8	738	7,300 CUP	7.3	941	13,700 CUP
Titewad	2.8	684	14,700 PSI	3.3	767	19,400 PSI	Trail Boss	5.5	685	9,100 PSI	6.5	802	12,400 PSI
						Bullet: 230 GR. CAST LRNFP Dia: .452"							
						Col: 1.500"							
572	8.9	1021	9,900 PSI	10.5	1192	13,600 PSI	800-X	6.2	746	9,100 PSI	9.0	1003	13,200 PSI
800-X	7.0	865	7,700 PSI	10.0	1162	12,800 PSI	Universal	6.5	761	7,600 CUP	8.1	975	13,800 CUP
CFE Pistol	8.9	1040	8,500 PSI	10.5	1199	11,600 PSI	231	5.8	738	7,300 CUP	7.3	941	13,700 CUP
Universal	6.5	798	7,400 CUP	9.5	1197	12,900 CUP	HP-38	5.8	738	7,300 CUP	7.3	941	13,700 CUP
231	6.5	917	7,700 CUP	9.0	1177	13,800 CUP	Titegroup	5.8	857	10,300 CUP	6.5	934	13,000 CUP
HP-38	6.5	917	7,700 CUP	9.0	1177	13,800 CUP	700-X	4.7	771	10,100 PSI	6.0	904	13,500 PSI
Trail Boss	7.0	903	8,100 PSI	8.5	1018	10,800 PSI	Clays	4.4	734	7,600 CUP	5.4	865	13,900 CUP
Titegroup	6.0	932	6,000 CUP	7.0	1051	9,100 CUP							
700-X	4.8	857	8,000 PSI	7.0	1142	13,600 PSI							
Clays	5.0	907	7,500 CUP	6.4	1083	13,500 CUP							

45 COLT*

When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.

Case: Winchester Twist: 1:16"
 Barrel: 7.25" Trim: 1.280" Primer: Winchester LP, Large Pistol

Bullet: 160 GR. CAST LRNFP Dia: .452" Col: 1.500"

572	8.9	1021	9,900 PSI	10.5	1192	13,600 PSI
800-X	7.0	865	7,700 PSI	10.0	1162	12,800 PSI
CFE Pistol	8.9	1040	8,500 PSI	10.5	1199	11,600 PSI
Universal	6.5	798	7,400 CUP	9.5	1197	12,900 CUP
231	6.5	917	7,700 CUP	9.0	1177	13,800 CUP
HP-38	6.5	917	7,700 CUP	9.0	1177	13,800 CUP
Trail Boss	7.0	903	8,100 PSI	8.5	1018	10,800 PSI
Titegroup	6.0	932	6,000 CUP	7.0	1051	9,100 CUP
700-X	4.8	857	8,000 PSI	7.0	1142	13,600 PSI
Clays	5.0	907	7,500 CUP	6.4	1083	13,500 CUP

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Grs.	Vel.	Pressure	Grs.	Vel.	Pressure		Grs.	Vel.	Pressure	Grs.	Vel.	Pressure
Bullet: 250 GR. CAST LRNFP							Dia: .452"						
Col: 1.600"													
572	7.1	851	11,800 PSI	7.6	898	13,600 PSI	Longshot	12.3	1179	21,900 CUP	13.7	1292	29,200 CUP
800-X	6.5	778	9,100 PSI	8.0	911	13,300 PSI	Titegroup	8.0	1028	19,000 CUP	10.0	1157	29,100 CUP
HS-6	9.0	787	7,800 CUP	10.5	946	13,300 CUP	Bullet: 250 GR. HDY XTP Dia: .452" Col: 1.600"						
CFE Pistol	8.4	930	10,300 PSI	9.2	1014	13,000 PSI	H4227	20.0	1150	23,500 CUP	24.6	1343	30,300 CUP
AutoComp	7.8	867	12,600 PSI	8.5	923	13,200 PSI	H110	25.7	1398	27,000 CUP	26.5	1455	29,800 CUP
Universal	6.5	742	9,200 CUP	7.8	941	13,000 CUP	Li'l'Gun	23.5	1331	25,800 CUP	25.5	1410	29,800 CUP
231	5.8	785	9,100 CUP	7.1	916	13,900 CUP	Longshot	12.0	1129	22,100 CUP	13.4	1252	29,900 CUP
HP-38	5.8	785	9,100 CUP	7.1	916	13,900 CUP	Titegroup	8.0	983	21,100 CUP	9.5	1124	29,100 CUP
Trail Boss	4.5	606	8,800 PSI	5.8	727	12,700 PSI	Bullet: 260 GR. NOS PART Dia: .451" Col: 1.650"						
Titegroup	5.0	716	7,600 CUP	6.2	881	13,000 CUP	H110	23.5	1351	27,700 CUP	24.0	1374	30,100 CUP
700-X	4.8	765	11,300 PSI	5.7	856	13,200 PSI	Li'l'Gun	19.0	1196	24,500 CUP	21.0	1312	30,000 CUP
Clays	4.2	713	8,500 CUP	5.1	817	13,400 CUP	Longshot	11.5	1068	24,500 CUP	12.7	1188	30,000 CUP
Bullet: 250 GR. HDY XTP							Dia: .452" Col: 1.595"						
572	6.7	692	11,900 PSI	7.1	742	13,400 PSI	Bullet: 300 GR. SPR JFP Dia: .451" Col: 1.650"						
800-X	6.0	646	10,800 PSI	7.4	790	13,100 PSI	H4227	19.0	1051	23,600 CUP	22.3	1202	29,900 CUP
HS-6	9.7	743	9,700 CUP	10.8	862	13,500 CUP	H110	21.8	1191	26,700 CUP	22.2	1198	30,100 CUP
CFE Pistol	8.0	832	10,400 PSI	8.8	915	13,300 PSI	Li'l'Gun	18.0	1140	24,500 CUP	20.2	1203	29,800 CUP
AutoComp	7.7	757	12,200 PSI	8.4	839	13,500 PSI	Longshot	11.2	1005	21,100 CUP	12.5	1136	29,200 CUP
Universal	7.5	705	10,300 CUP	8.5	856	14,000 CUP	Titegroup	7.5	851	20,400 CUP	9.0	1004	28,500 CUP
231	6.5	692	10,500 CUP	7.3	797	14,000 CUP	Bullet: 325 GR. CPB LFN PBDia: .452" Col: 1.680"						
HP-38	6.5	692	10,500 CUP	7.3	797	14,000 CUP	H4227	20.0	1053	22,300 CUP	23.0	1189	28,000 CUP
Titegroup	5.5	739	9,700 CUP	6.3	830	12,700 CUP	H110	21.0	1109	18,100 CUP	24.0	1266	27,400 CUP
700-X	4.0	539	10,200 PSI	5.2	710	13,200 PSI	Li'l'Gun	17.0	1061	20,700 CUP	20.5	1235	29,700 CUP
Bullet: 260 GR. SPR JHP							Dia: .451" Col: 1.595"						
800-X	6.0	611	10,300 PSI	7.6	803	13,600 PSI	Bullet: 335 GR. CPB LFN GC Dia: .452" Col: 1.680"						
HS-6	9.7	759	10,600 CUP	10.7	865	14,000 CUP	H4227	20.0	1011	21,100 CUP	22.5C	1155	28,300 CUP
CFE Pistol	8.1	832	10,900 PSI	8.8	916	13,200 PSI	H110	20.5	1109	19,200 CUP	23.5	1240	28,000 CUP
AutoComp	7.4	728	11,800 PSI	8.0	770	13,500 PSI	Li'l'Gun	17.0	1052	20,100 CUP	20.0	1206	29,600 CUP
Universal	7.0	661	9,400 CUP	8.0	813	14,000 CUP	Bullet: 360 GR. CPB LFN GC Dia: .452" Col: 1.680"						
231	6.5	722	12,000 CUP	7.1	787	14,000 CUP	H4227	19.5	1004	21,100 CUP	22.0C	1167	29,800 CUP
HP-38	6.5	722	12,000 CUP	7.1	787	14,000 CUP	H110	18.0	1012	20,200 CUP	21.0	1151	28,300 CUP
Titegroup	5.5	661	8,300 CUP	6.3	797	12,500 CUP	Li'l'Gun	15.5	984	22,400 CUP	18.0	1131	29,700 CUP
700-X	4.0	523	10,000 PSI	5.2	714	12,500 PSI	454 CASULL						
Bullet: 300 GR. SIE JFP							Dia: .452" Col: 1.670"						
HS-6	9.0	616	9,600 CUP	10.0	730	13,700 CUP	Case: Freedom Arms Twist: 1:24"						
CFE Pistol	6.2	579	11,600 PSI	7.2	710	13,800 PSI	Barrel: 9.375" Trim: 1.380" Primer: Winchester SR, Small Rifle						
Universal	6.6	593	11,200 CUP	7.3	700	13,700 CUP	Bullet: 240 GR. FA JHP Dia: .452" Col: 1.765"						
Titegroup	5.2	578	11,300 CUP	5.8	682	12,900 CUP	H4227	29.0	1512	22,300 CUP	34.0C	1834	43,300 CUP
45 COLT (RUGER, FREEDOM ARMS & T/C ONLY)*													
When an asterisk (*) appears in the title of the cartridge, or in the data, refer to the warning page.													
Case: Winchester Twist: 1:16"													
Barrel: 7.25" Trim: 1.280" Primer: Winchester LP, Large Pistol													
Bullet: 225 GR. BAR XPB							Dia: .451" Col: 1.600"						
IMR 4227	20.9	1077	19,900 CUP	24.9	1312	29,800 CUP	Bullet: 240 GR. SIE JHC Dia: .452" Col: 1.680"						
296	23.1	1344	26,200 CUP	24.0	1410	29,300 CUP	Longshot	14.0	1375	23,800 CUP	16.0	1541	36,200 CUP
H110	23.1	1344	26,200 CUP	24.0	1410	29,300 CUP	HS-6	15.5	1360	27,100 CUP	17.5	1508	36,600 CUP
Li'l'Gun	22.3	1377	22,900 CUP	23.7	1476	30,200 CUP	Universal	10.2	1212	24,400 CUP	11.5	1325	37,500 CUP
Longshot	10.5	1140	21,800 CUP	12.2	1305	30,500 CUP	Titegroup	10.0	1214	24,500 CUP	11.0	1309	34,700 CUP
Titegroup	7.0	1011	19,400 CUP	9.0	1207	29,800 CUP	Bullet: 250 GR. BAR X Dia: .451" Col: 1.780"						
Bullet: 225 GR. HDY FTX							Dia: .452" Col: 1.700"						
IMR 4227	20.6	1146	20,200 PSI	25.7	1383	30,400 PSI	H4227	26.0	1580	40,800 CUP	28.5C	1685	50,000 CUP
296	26.2	1493	26,600 PSI	27.2	1542	29,900 PSI	296	27.5	1725	45,100 CUP	28.5	1785	52,300 CUP
H110	26.2	1493	26,600 PSI	27.2	1542	29,900 PSI	H110	27.5	1725	45,100 CUP	28.5	1785	52,300 CUP
Li'l'Gun	26.5	1551	28,500 PSI	27.5	1594	30,100 PSI	Li'l'Gun	26.0	1620	30,100 CUP	28.0	1738	41,700 CUP
Longshot	11.7	1221	21,400 PSI	13.2	1351	28,400 PSI	Bullet: 250 GR. MEI LRNFP Dia: .452" Col: 1.680"						
Titegroup	7.8	1058	19,700 PSI	9.8	1242	29,400 PSI	Trail Boss	6.7	862	14,800 CUP	9.0	1011	19,300 CUP
Bullet: 240 GR. SIE JHC							Dia: .452" Col: 1.600"						
H4227	20.0	1169	20,100 CUP	26.0	1413	30,000 CUP	Bullet: 250 GR. NOS JHP Dia: .451" Col: 1.700"						
H110	27.2	1483	27,900 CUP	28.0	1532	30,000 CUP	Longshot	14.5	1377	26,400 CUP	15.5	1492	36,100 CUP
Li'l'Gun	27.0	1431	23,800 CUP	27.8	1489	29,200 CUP	HS-6	15.0	1295	25,400 CUP	17.0	1428	34,600 CUP
Bullet: 260 GR. FA JFP							Dia: .452" Col: 1.765"						
H4227	28.0	1421	19,000 CUP	33.0C	1762	42,100 CUP	Universal	10.8	1221	25,700 CUP	12.0	1290	35,300 CUP
NEVER EXCEED MAXIMUM LOADS							165						

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
296	34.0	1817	37,100 CUP	36.0	1954	51,600 CUP	Bullet: 225 GR. BAR X Dia: .451" Col: 2.110"						
H110	34.0	1817	37,100 CUP	36.0	1954	51,600 CUP	H4227	37.0	2007	42,100 PSI	41.0C	2191	54,400 PSI
Lil'Gun	33.4	1744	28,800 CUP	35.5	1895	37,900 CUP	296	39.0	2045	39,400 PSI	42.0	2243	51,800 PSI
Bullet: 260 GR. SPR JHP Dia: .451" Col: 1.675"							H110	39.0	2045	39,400 PSI	42.0	2243	51,800 PSI
Longshot	14.0	1353	28,200 CUP	15.0	1443	36,600 CUP	Bullet: 240 GR. HDY XTP MAG. Dia: .452"						
HS-6	14.5	1252	25,000 CUP	16.8	1420	36,400 CUP	Col: 2.160"						
Universal	10.3	1157	25,500 CUP	11.5	1245	34,900 CUP	H4227	40.0	2018	43,200 PSI	45.0C	2198	51,800 PSI
Titegroup	9.5	1159	25,200 CUP	11.0	1270	35,900 CUP	296	45.0	2084	43,600 PSI	48.5	2254	52,100 PSI
Bullet: 265 GR. CPB LFP GC Dia: .452"							H110	45.0	2084	43,600 PSI	48.5	2254	52,100 PSI
Col: 1.700"							Bullet: 250 GR. BAR X Dia: .451" Col: 2.200"						
Trail Boss	7.0	836	18,800 CUP	9.0	984	27,100 CUP	H4227	36.0	1938	45,700 PSI	40.0C	2074	57,200 PSI
Bullet: 300 GR. CPB LFN GC Dia: .452"							296	39.0	1985	43,500 PSI	41.5	2133	56,800 PSI
Col: 1.800"							H110	39.0	1985	43,500 PSI	41.5	2133	56,800 PSI
Trail Boss	6.5	767	14,900 CUP	8.0	865	23,900 CUP	Lil'Gun	39.0	1945	41,400 PSI	42.0	2044	43,600 PSI
Bullet: 300 GR. FA JFP Dia: .452" Col: 1.775"							Bullet: 260 GR. NOS PART Dia: .451" Col: 2.175"						
H4227	27.0	1541	41,100 CUP	31.0C	1702	52,400 CUP	H4227	38.0	1939	45,000 PSI	43.0C	2098	51,300 PSI
296	28.5	1618	44,200 CUP	30.0	1716	53,700 CUP	296	41.0	1959	41,600 PSI	46.0	2178	54,000 PSI
H110	28.5	1618	44,200 CUP	30.0	1716	53,700 CUP	H110	41.0	1959	41,600 PSI	46.0	2178	54,000 PSI
Lil'Gun	29.0	1666	39,800 CUP	31.0	1746	45,000 CUP	Lil'Gun	43.0	1971	39,200 PSI	46.0	2080	43,400 PSI
Bullet: 325 GR. CPB LFN PBDia: .452" Col: 1.760"							Bullet: 265 GR. SFT HP Dia: .451" Col: 2.180"						
H4227	24.7	1389	30,300 CUP	25.5C	1452	36,900 CUP	H4227	38.0	1940	44,800 PSI	43.5C	2109	53,100 PSI
296	25.2	1345	19,700 CUP	26.0	1511	34,300 CUP	296	41.0	1932	43,300 PSI	46.5	2183	56,400 PSI
H110	25.2	1345	19,700 CUP	26.0	1511	34,300 CUP	H110	41.0	1932	43,300 PSI	46.5	2183	56,400 PSI
Lil'Gun	23.2	1468	33,200 CUP	24.0	1526	38,900 CUP	Lil'Gun	43.0	1988	40,800 PSI	46.5	2118	45,900 PSI
Trail Boss	5.0	636	13,600 CUP	7.0	798	23,700 CUP	Bullet: 300 GR. HDY XTP MAG. Dia: .452"						
Bullet: 325 GR. SFT HP Dia: .451" Col: 1.750"							Col: 2.160"						
H4227	23.0	1323	42,600 CUP	25.5	1460	52,600 CUP	CFE BLK	45.2	1682	30,600 PSI	50.0C	1874	40,900 PSI
296	23.0	1379	36,800 CUP	26.0	1545	52,600 CUP	H4227	36.0	1852	49,000 PSI	40.0C	1988	57,000 PSI
H110	23.0	1379	36,800 CUP	26.0	1545	52,600 CUP	296	38.0	1825	43,200 PSI	42.5	2034	56,100 PSI
Lil'Gun	21.0	1395	41,400 CUP	24.0	1558	52,600 CUP	H110	38.0	1825	43,200 PSI	42.5	2034	56,100 PSI
Bullet: 335 GR. CPB LFN GC Dia: .452"							Lil'Gun	40.0	1970	46,300 PSI	44.0	2067	53,600 PSI
Col: 1.770"							Bullet: 325 GR. CPB LFN PBDia: .452" Col: 2.200"						
H4227	23.0	1306	30,000 CUP	25.5	1460	42,800 CUP	CFE BLK	45.5	1716	30,200 PSI	50.0C	1912	38,600 PSI
296	23.0	1321	22,200 CUP	26.0	1531	41,600 CUP	H4227	34.0	1790	51,100 PSI	38.0	1897	56,400 PSI
H110	23.0	1321	22,200 CUP	26.0	1531	41,600 CUP	296	38.0	1810	45,300 PSI	42.0	1953	54,900 PSI
Lil'Gun	21.0	1377	34,000 CUP	24.0	1517	44,200 CUP	H110	38.0	1810	45,300 PSI	42.0	1953	54,900 PSI
Trail Boss	4.8	618	15,500 CUP	6.8	778	25,600 CUP	Lil'Gun	39.0	1843	43,700 PSI	42.0	1925	46,400 PSI
Bullet: 360 GR. CPB LFN GC Dia: .452"							Trail Boss	7.0	734	16,500 PSI	11.0	914	20,400 PSI
Col: 1.760"							Titegroup	15.0	1353	48,200 PSI	17.6	1470	55,100 PSI
H4227	21.0	1205	31,000 CUP	24.0	1406	48,300 CUP	Bullet: 325 GR. SFT HP Dia: .452" Col: 2.175"						
296	21.0	1265	24,000 CUP	24.0	1447	43,400 CUP	CFE BLK	42.8	1672	33,600 PSI	47.0C	1810	40,600 PSI
H110	21.0	1265	24,000 CUP	24.0	1447	43,400 CUP	H4198	37.0	1556	36,200 PSI	41.0C	1695	42,500 PSI
Lil'Gun	20.0	1330	38,000 CUP	23.0	1477	48,200 CUP	H4227	33.0	1716	46,700 PSI	37.0	1859	57,300 PSI
Trail Boss	5.0	615	18,000 CUP	6.0	699	27,300 CUP	296	35.0	1749	46,300 PSI	39.0	1907	56,800 PSI
Bullet: 395 GR. CPB LFN GC Dia: .452"							H110	35.0	1749	46,300 PSI	39.0	1907	56,800 PSI
Col: 1.770"							Lil'Gun	36.0	1769	44,500 PSI	41.0	1955	55,600 PSI
H4227	18.0	1076	29,600 CUP	21.0	1269	48,300 CUP	Bullet: 335 GR. CPB WLN GC Dia: .452"						
296	18.5	1169	27,200 CUP	21.0	1309	43,200 CUP	Col: 2.180"						
H110	18.5	1169	27,200 CUP	21.0	1309	43,200 CUP	CFE BLK	44.1	1673	30,300 PSI	49.0C	1883	39,800 PSI
Lil'Gun	17.5	1212	40,100 CUP	20.0	1331	47,100 CUP	H4227	33.0	1719	50,000 PSI	37.5	1849	55,700 PSI
Trail Boss	4.0	519	19,200 CUP	5.0	607	23,600 CUP	296	38.0	1790	46,100 PSI	41.0	1917	55,800 PSI
460 S&W MAGNUM							H110	38.0	1790	46,100 PSI	41.0	1917	55,800 PSI
Case: Starline Twist: 1:20"							Lil'Gun	39.0	1834	45,000 PSI	41.5	1919	49,300 PSI
Barrel: 10.743" Trim: 1.790" Primer: Winchester LRM, Large Rifle Magnum							Trail Boss	7.0	726	17,700 PSI	10.0	887	22,200 PSI
Bullet: 200 GR. BAR XPB Dia: .451" Col: 2.320"							Titegroup	15.0	1333	46,800 PSI	17.5	1446	55,800 PSI
H4227	41.0	2077	35,200 PSI	45.5C	2238	42,200 PSI	Bullet: 360 GR. CPB WLN GC Dia: .452"						
H110	45.0	2237	38,500 PSI	46.5	2315	42,900 PSI	Col: 2.190"						
Longshot	20.0	1752	30,300 PSI	27.0	2161	56,500 PSI	IMR 4198	34.0	1433	34,600 PSI	37.0C	1538	38,800 PSI
							CFE BLK	41.8	1599	30,000 PSI	46.0C	1803	39,600 PSI
							H4198	37.0	1531	38,200 PSI	40.0C	1644	43,200 PSI
							H4227	31.0	1632	49,500 PSI	35.5	1776	56,500 PSI
							296	35.0	1713	47,600 PSI	38.0	1836	56,900 PSI

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
H110	35.0	1713	47,600 PSI	38.0	1836	56,900 PSI	296	24.0	1348	33,400 PSI	26.0	1454	41,500 PSI
Lil'Gun	36.0	1752	45,100 PSI	40.0	1882	52,600 PSI	H110	24.0	1348	33,400 PSI	26.0	1454	41,500 PSI
Trail Boss	7.0	712	19,600 PSI	9.0	827	24,200 PSI	Lil'Gun	22.0	1354	34,300 PSI	26.0	1539	46,800 PSI
Titegroup	13.0	1208	40,300 PSI	15.6	1340	55,700 PSI	Longshot	12.0	1162	36,300 PSI	13.8	1272	45,800 PSI
Bullet: 395 GR. CPB WLN GC						Dia: .452"							
Col: 2.185"													
IMR 4198	32.0	1372	35,200 PSI	35.0C	1486	41,500 PSI	Bullet: 400 GR. HDY XTP						
CFE BLK	40.1	1631	35,700 PSI	44.0C	1747	42,200 PSI	Dia: .475" Col: 1.620"						
H4198	35.0	1484	40,000 PSI	38.0C	1596	46,600 PSI	H4227	18.0	1026	31,600 PSI	21.0	1211	46,100 PSI
H4227	28.0	1516	48,700 PSI	32.0	1647	56,600 PSI	296	18.0	1115	34,400 PSI	20.5	1258	46,600 PSI
296	30.0	1553	45,300 PSI	34.0	1693	55,700 PSI	H110	18.0	1115	34,400 PSI	20.5	1258	46,600 PSI
H110	30.0	1553	45,300 PSI	34.0	1693	55,700 PSI	Lil'Gun	15.0	1067	34,200 PSI	18.0	1229	45,600 PSI
Lil'Gun	33.0	1665	47,200 PSI	36.8	1796	56,400 PSI	Longshot	9.5	965	37,900 PSI	11.0	1082	46,900 PSI
Trail Boss	7.0	695	21,100 PSI	8.0	754	24,000 PSI	Titegroup	7.0	816	35,000 PSI	8.5	959	46,800 PSI
Titegroup	12.0	1138	41,000 PSI	14.6	1255	55,200 PSI	Bullet: 405 GR. CPB (w/GCK)						
45-70 GOVERNMENT						Dia: .475"							
Case: Winchester						Twist: 1:20"							
Barrel: 15" Trim: 2.100" Primer: CCI 200, Large Rifle													
Bullet: 300 GR. CAST LFP						Dia: .458" Col: 2.465"							
Varget	45.0	1276	17,800 CUP	55.0	1530	20,600 CUP	Bullet: 420 GR. BTB LFN GC						
H4895	45.0	1326	14,400 CUP	51.0	1464	15,500 CUP	Dia: .476"						
H4198	30.0	1175	14,400 CUP	35.5	1418	16,100 CUP	Col: 1.620"						
Bullet: 300 GR. SIE HP						Dia: .458" Col: 2.525"							
Varget	57.0	1512	16,300 CUP	63.0C	1821	23,800 CUP	H4227	19.5	1125	39,100 PSI	21.3C	1214	46,400 PSI
H335	57.0	1645	17,500 CUP	63.5	1926	27,400 CUP	296	19.0	1145	34,200 PSI	20.0	1203	38,700 PSI
H4895	58.0	1654	16,500 CUP	62.0C	1874	21,000 CUP	H110	19.0	1145	34,200 PSI	20.0	1203	38,700 PSI
H322	54.0	1699	18,100 CUP	60.0	1940	28,000 CUP	Lil'Gun	18.0	1157	37,000 PSI	20.0	1267	46,000 PSI
H4198	45.0	1774	16,700 CUP	55.0	2076	27,600 CUP	Longshot	9.8	994	37,500 PSI	11.0	1080	46,600 PSI
Bullet: 385 GR. CAST LFP						Dia: .458" Col: 2.505"							
Varget	42.5	1293	15,400 CUP	52.5	1537	21,800 CUP	Trail Boss	3.5	467	16,200 PSI	5.0	597	24,300 PSI
H4895	35.0	1101	11,900 CUP	42.0	1301	23,100 CUP	Titegroup	7.0	862	34,100 PSI	8.3	962	46,100 PSI
H4198	28.0	1077	13,300 CUP	32.0	1249	14,700 CUP	50 ACTION EXPRESS						
Bullet: 405 GR. CAST LFP						Dia: .458" Col: 2.540"							
Varget	40.0	1188	15,600 CUP	50.0	1445	20,900 CUP	Case: Speer						
H4895	40.0	1261	14,900 CUP	48.0	1453	18,900 CUP	Barrel: 6" Trim: 1.280" Primer: CCI 350, Large Pistol Mag-						
H4198	27.0	1057	14,200 CUP	31.0	1224	17,100 CUP	num						
Bullet: 485 GR. CAST LFP						Dia: .458" Col: 2.540"							
H4895	32.0	1010	15,600 CUP	39.0	1209	22,700 CUP	Bullet: 325 GR. SPR AE UCHP						
H4198	28.0	1065	16,400 CUP	32.0	1233	20,400 CUP	Dia: .500"						
480 RUGER						Col: 1.575"							
Case: Hornady						Twist: 1:18"							
Barrel: 7 1/2" Trim: 1.275" Primer: Winchester LP, Large Pistol													
Bullet: 325 GR. HDY XTP						Dia: .475" Col: 1.620"							
H4227	24.0	1295	32,600 PSI	27.2	1477	45,600 PSI	Bullet: 370 GR. CPB LGC						
296	25.0	1416	37,300 PSI	27.0	1518	44,900 PSI	Dia: .500" Col: 1.740"						
H110	25.0	1416	37,300 PSI	27.0	1518	44,900 PSI	H4227	31.0	1378	32,400 PSI	35.0C	1584	44,200 PSI
Lil'Gun	22.5	1416	39,300 PSI	25.1	1525	45,200 PSI	H110	32.0	1486	34,600 PSI	35.0	1629	43,100 PSI
Longshot	13.0	1217	38,800 PSI	14.5	1330	47,000 PSI	Lil'Gun	29.0	1463	34,500 PSI	32.0	1617	42,700 PSI
Titegroup	9.0	1016	34,900 PSI	10.7	1158	46,200 PSI	Longshot	17.0	1313	39,900 PSI	19.0	1423	47,200 PSI
Bullet: 355 GR. BTB LFN GC						Dia: .476"							
Col: 1.630"													
IMR 4227	25.0	1363	38,500 PSI	28.0C	1485	46,500 PSI	Bullet: 400 GR. CPB LGC						
296	26.0	1415	34,700 PSI	27.0	1464	38,400 PSI	Dia: .500" Col: 1.750"						
H110	26.0	1415	34,700 PSI	27.0	1464	38,400 PSI	H4227	30.0	1390	39,900 PSI	33.0	1509	46,700 PSI
Lil'Gun	24.0	1395	34,400 PSI	26.5	1531	44,300 PSI	H110	32.0	1497	39,800 PSI	34.5	1589	47,900 PSI
Longshot	13.0	1221	37,300 PSI	14.5	1313	45,400 PSI	Lil'Gun	28.0	1454	38,600 PSI	31.0	1565	45,700 PSI
Trail Boss	5.0	621	16,700 PSI	6.5	740	22,700 PSI	Longshot	15.0	1189	36,600 PSI	17.6	1310	48,600 PSI
Titegroup	9.7	1101	37,100 PSI	10.8	1172	45,000 PSI	Trail Boss	8.0	738	23,200 PSI	10.0	842	28,000 PSI
Bullet: 370 GR. CPB LFP						Dia: .475" Col: 1.640"							
H4227	22.5	1248	32,800 PSI	26.0C	1427	45,900 PSI	Titegroup	11.0	1064	35,700 PSI	13.7	1192	48,100 PSI

NEVER EXCEED MAXIMUM LOADS

167

PISTOL DATA

Powder	Starting Loads			Maximum Loads			Powder	Starting Loads			Maximum Loads		
	Gr.	Vel.	Pressure	Gr.	Vel.	Pressure		Gr.	Vel.	Pressure	Gr.	Vel.	Pressure
Bullet: 420 GR. BLT MTN PBDia: .500" Col: 1.765"						Bullet: 400 GR. SIE JSP Dia: .500" Col: 2.050"							
H4227	23.0	1038	28,700 PSI	27.0C	1274	31,600 PSI	CFE BLK	44.2	1481	27,500 PSI	52.0C	1759	40,900 PSI
H110	24.0	1175	29,700 PSI	27.5	1363	45,100 PSI	H4227	36.5	1585	42,000 PSI	39.5	1698	49,100 PSI
Lil'Gun	22.0	1198	34,300 PSI	25.5	1372	45,900 PSI	296	34.0	1514	38,000 PSI	40.0	1721	49,700 PSI
Bullet: 440 GR. CPB LGC Dia: .500" Col: 1.740"						Bullet: 440 GR. CPB LGC Dia: .500" Col: 2.025"							
H4227	26.0	1220	34,400 PSI	30.0C	1413	48,300 PSI	CFE BLK	41.6	1473	28,300 PSI	49.0C	1672	36,600 PSI
H110	27.0	1302	34,000 PSI	29.5	1415	44,200 PSI	H4227	34.0	1496	41,900 PSI	37.0	1609	49,400 PSI
Lil'Gun	26.0	1355	38,100 PSI	28.0	1450	46,300 PSI	296	34.0	1509	40,700 PSI	38.0	1654	49,900 PSI
Longshot	14.0	1119	36,600 PSI	16.5	1226	48,800 PSI	H110	34.0	1509	40,700 PSI	38.0	1654	49,900 PSI
Trail Boss	6.0	600	20,100 PSI	8.0	717	24,800 PSI	Lil'Gun	30.0	1483	40,200 PSI	35.0	1653	50,500 PSI
Titegroup	10.0	977	34,300 PSI	12.5	1097	47,500 PSI	Longshot	18.5	1300	41,900 PSI	20.7	1393	50,500 PSI
500 S&W MAGNUM						Bullet: 275 GR. BAR XPB Dia: .500" Col: 2.085"							
Case: Starline Twist: 1:18"						CFE BLK 46.0 1616 22,500 PSI 54.0C 1861 31,000 PSI							
Barrel: 10" Trim: 1.615" Primer: Winchester LRM, Large						H4227 40.0 1891 41,000 PSI 44.0 2047 48,400 PSI							
Rifle Magnum						296 42.0 1965 43,900 PSI 45.0 2082 49,300 PSI							
						H110 42.0 1965 43,900 PSI 45.0 2082 49,300 PSI							
						Lil'Gun 40.5 1977 41,100 PSI 44.0 2137 50,800 PSI							
						Longshot 20.0 1594 35,000 PSI 24.5 1824 48,900 PSI							
						Titegroup 11.0 1170 22,800 PSI 20.0 1707 50,300 PSI							
						Bullet: 325 GR. BAR XPB Dia: .500" Col: 2.290"							
						CFE BLK 46.9 1540 22,800 PSI 54.0C 1793 31,200 PSI							
						H4227 40.0 1788 40,700 PSI 43.0 1920 49,200 PSI							
						296 42.0 1813 40,000 PSI 45.3 1951 48,900 PSI							
						H110 42.0 1813 40,000 PSI 45.3 1951 48,900 PSI							
						Lil'Gun 40.0 1862 43,700 PSI 44.5 2002 49,100 PSI							
						Longshot 22.5 1599 43,300 PSI 24.5 1684 49,500 PSI							
						Titegroup 12.0 1144 25,600 PSI 20.0 1575 50,700 PSI							
						Bullet: 350 GR. HDY XTP Dia: .500" Col: 1.985"							
						CFE BLK 46.0 1528 24,600 PSI 54.0C 1836 35,700 PSI							
						H4227 38.0 1675 41,400 PSI 42.5 1863 49,900 PSI							
						296 39.0 1712 41,500 PSI 43.0 1877 50,600 PSI							
						H110 39.0 1712 41,500 PSI 43.0 1877 50,600 PSI							
						Lil'Gun 35.0 1697 41,500 PSI 42.0 1912 48,100 PSI							
						Longshot 21.0 1482 41,400 PSI 23.0 1602 50,000 PSI							
						Titegroup 11.0 1032 23,100 PSI 18.5 1461 50,000 PSI							
						Bullet: 370 GR. CPB LGC Dia: .500" Col: 2.020"							
						CFE BLK 46.0 1470 22,300 PSI 54.0C 1752 31,600 PSI							
						H4227 40.0 1688 38,700 PSI 42.0 1784 48,900 PSI							
						296 44.5 1801 42,800 PSI 47.0 1909 49,900 PSI							
						H110 44.5 1801 42,800 PSI 47.0 1909 49,900 PSI							
						Lil'Gun 41.0 1831 44,900 PSI 44.5 1949 50,400 PSI							
						Longshot 21.5 1476 42,000 PSI 23.3 1576 50,000 PSI							
						Trail Boss 8.0 746 13,500 PSI 12.0 926 19,000 PSI							
						Titegroup 16.0 1326 40,600 PSI 18.5 1431 49,600 PSI							
						Bullet: 375 GR. BAR XPB Dia: .500" Col: 2.290"							
						CFE BLK 41.6 1431 24,900 PSI 49.0C 1641 35,300 PSI							
						H4227 33.0 1550 38,000 PSI 36.8 1717 50,500 PSI							
						Lil'Gun 31.0 1605 39,700 PSI 34.0 1738 49,900 PSI							
						Longshot 18.0 1347 38,300 PSI 21.0 1487 49,600 PSI							
						Titegroup 14.0 1213 37,000 PSI 17.0 1375 50,500 PSI							
						Bullet: 385 GR. REM. HP Dia: .500" Col: 2.150"							
						H4227 37.0 1644 41,900 PSI 41.0 1788 51,800 PSI							
						296 39.0 1648 38,700 PSI 42.5 1794 47,300 PSI							
						H110 39.0 1648 38,700 PSI 42.5 1794 47,300 PSI							
						Lil'Gun 38.0 1727 42,700 PSI 41.0 1852 51,100 PSI							
						Longshot 20.0 1398 39,900 PSI 23.0 1523 49,300 PSI							
						Titegroup 15.5 1250 38,300 PSI 18.5 1396 49,500 PSI							

STARLINEBRASS.COM



Give a man some reloads, he can shoot for a day. **TEACH** a man to reload, and he can shoot for a lifetime. Teach someone you care about how to reload with Starline Brass. We'll prove to them what experienced reloaders have already learned. *A Great Shot Starts with Starline.*

ORDER FACTORY DIRECT
starlinebrass.com | 1(800)280-6660



© 2016 Starline Brass

ROCK SOLID

Historically, turret presses have been anything but rock solid. The T-7, however, establishes a new standard that will exceed your expectations. Modern CNC machinery has allowed us to design and build the press you've been waiting for – a seven station turret with the strength, power, and positioning accuracy of our single station presses. Owners say it's like having seven presses on their bench all at once. When you rotate the turret of a T-7, you will feel it snap into position with authority. Its powerful compound linkage, huge frame opening, and 3.8" of ram stroke will accommodate cartridges from the 380 Auto (ACP) up to the largest Magnums including the 338 Lapua.

To learn more about the Redding T-7 visit our website, request a full line catalog or better yet, ask anyone who owns one, they're our best salesmen.

T-7 Turret
Reloading
Press

Made in America by

REDDING

RELOADING EQUIPMENT

1089 Starr Road • Cortland, NY 13045 • (607) 753-3331 • www.redding-reloading.com