Vihtavuori’s Versatile N350 Powder!

RIFLE'S:
HANDLOADER
AMMUNITION RELoADING JOURNAL

GOING TO EXTREMES!
- .223 Remington
- .338 Winchester Magnum

Cast Bullet Tips for Sixguns

Classic Loads:
- 7x57 Mauser
- .250 Savage

Super Redhawk!
Ruger’s Durable Double Action

From the High Priest of Handloading:
KEN WATERS’ NOTEBOOK
Cast Bullets
Reloader’s Press - Dave Scovill

RCBS 45-270-SAA
From the Hip - Brian Pearce

Brass Management
Mike’s Shootin’ Shack - Mike Venturino

.416 Remington Magnum
Cartridge Board - Gil Sengel

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Classic Strength and Durability - Stan Trzoniec

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The Original 7mm - John Barsness

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Use a heavy bullet and hunt with confidence - John Haviland

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Tips for Success - Brian Pearce

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Mike revisits modern varmint rifles - Mike Venturino

.250 Savage
Newton’s Original .25 - Steve Gash

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On the cover . . .
The Super Redhawk (left) is fitted with a Leupold 2x 20mm scope in Ruger rings. The Target Grey Super Redhawk is chambered for the .454 Casull and .45 Colt. Photo by Stan Trzoniec.

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In past issues of Handloader, I have provided much data in conjunction with .45 Colt cast bullets from RCBS mould 45-270-SAA. The loads have been presented in a variety of guns, which have given a fair variance in velocities and pressures. The point being that different loads shot in a Ruger New Vaquero, U.S. Fire Arms Rodeo, Ruger Blackhawks and others with varying internal dimensions, barrel/cylinder gaps, barrel lengths, etc. have given a variety of velocities and results.

So it seems prudent to select one gun and many powders that are likely to give the best results and help establish a better picture of how each performs. Furthermore the data will include different levels of pressures, suitable for a variety of modern revolvers. (More on that in a moment.)

For those not familiar with this bullet, it was designed by Editor Dave Scovill specifically for the Colt Single Action Army revolver, thus its name. It is patterned after the original Keith/Ideal/Lyman design with three driving bands and a single grease groove, although drastically improved.

For instance the front driving band has been widened to near .100 inch, which helps hold the bullet true in the throat and in alignment with the bore. This band also serves to immediately engage the rifling and reduce skidding, which is especially important when used in the comparatively shallow rifling of the Colt SAA. On game, the driving band will cut a full-caliber hole and leave a substantial wound channel. The crimp groove is beveled and deep, which allows a heavy crimp and assists in reliable powder ignition but also prevents bullets from jumping due to heavy recoil.

The nose measures around .375 inch for an overall loaded cartridge length of around 1.65 to 1.66 inches, which is about maximum in the Colt SAA cylinder yet leaves enough room that bullets won’t threaten to “walk” out of the cylinder during recoil (assuming a proper crimp is applied). With a substantial portion of the bullet being outside the case, powder capacity is increased, effectively reducing pressure.

The RCBS mould 45-270-SAA was designed to maximize performance in the Colt Single Action Army revolver.

A Ruger stainless steel New Model Blackhawk Bisley fitted with a 5 1/2-inch barrel was used to develop accompanying load data.

Brian used a variety of powders to establish data.
Due to today’s improved bullet lubes, the grease groove is less generous than the Keith bullet, but nonetheless retains the square-bottom design that holds plenty of lube to help prevent leading. Naturally it is a plain-base design, which keeps costs down, gives minimal barrel wear and speeds the production process. A plain base also allows obturation or upsetting to fill throats (especially important with oversized throats) and create a proper gas seal, as long as bullets are not cast too hard. The plain base also creates less pressure than a comparable bullet with a gas check. The ogive is somewhat curved (to help prevent tumbling after impact), and the meplat runs more or less .310 inch, which also aids in straight penetration and delivers shock.

When cast from wheelweight metal, bullets usually weigh 284 to 285 grains. One of the drawbacks with heavy-for-caliber bullets in sixguns is that many shoot high and won’t sight-in properly without changing or adding height to the front sight. The RCBS cast bullet will allow most revolvers, even Colt SAAs, to shoot close to the point of aim.

Although the 45-270-SAA was designed primarily for the Colt SAA revolver, it works equally well in others, including Ruger, Smith & Wesson, Freedom Arms, etc. I have used it regularly on small game and pests and have even employed it on big game. And if one will take care to cast and size uniform bullets, select a proper powder and scrutinize handloading tools and processes, the bullet will be accurate.

Regarding data presented in the accompanying tables, it is imperative to use loads intended specifically for your gun. For example, Table I lists pressures at 14,000 psi and is suitable for any post-World War II gun in good working condition and with a cylinder long enough to accommodate loads measuring 1.66...
Many prewar Colt Single Actions – above serial number 192,000 and designed for smokeless powders – have been tampered with, cylinders and barrels changed and now have black-powder parts. In such cases they should not be fired with any smokeless powder load. Even the ones that haven’t been fooled with and are completely original are old with comparatively soft steels that can be strained with a steady diet of heavy loads. These guns are simply too valuable to risk damage. Although occasional use of loads in the 14,000 psi range are safe, I would suggest sticking with loads that more or less duplicate the smokeless factory loads with 250- to 255-grain bullets driven 850 to 900 fps, which are substantially below the SAAMI suggested maximum of 14,000 psi with correct powders.

### Table I

<table>
<thead>
<tr>
<th>bullet (grains)</th>
<th>powder</th>
<th>charge (grains)</th>
<th>primer</th>
<th>velocity (fps)</th>
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<tr>
<td>Power-Pistol</td>
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<td>915</td>
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<tr>
<td>TiteGroup</td>
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<td>986</td>
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<td>959</td>
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<td>Red Dot</td>
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<td>782</td>
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<td>VV-N110</td>
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<td>947</td>
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</tbody>
</table>

Be Alert – Publisher cannot accept responsibility for errors in published load data.
Many loads grouped under one inch at 25 yards.

Loads in the 20,000 psi range will prove useful for U.S. Fire Arms revolvers that are 100 percent American made (after the year 2000), Colt New Service, Ruger New Vaquero and Smith & Wesson post-World War II N-Frames, including Models 25 and 625 Mountain Guns. Loads in the 32,000 CUP range should be limited to Ruger Blackhawk, Vaquero, Colt Anaconda or other modern revolvers designed to stand up to this pressure level. The Freedom Arms Model 83, Ruger Redhawk and Super Redhawk are capable of handling much greater pressure than will be presented here but are safe with all loads listed.

Data contained in Table I (14,000 psi) was developed with bullets cast from wheelweight metal, then sized to .4525 inch using a Lyman No. 450 Sizer with H&I sizing dies (a tool that has given proper alignment during sizing). Bullets used in Tables II and III were obtained from Mt. Baldy (PO Box 835, Cody WY 82414) that weighed 280 grains and were ordered without being sized or lubed. These were likewise sized to .4525 inch, and all bullets were lubed with NRA formula Alox as offered from Lyman.

As a vehicle to shoot all the data, a Ruger stainless steel New Model Blackhawk Bisley with a 5½-inch barrel was selected. Other than much needed trigger work and a set of after-market stocks, the handgun was completely original. The throats measured .450 inch, and the barrel/cylinder gap ran .004 inch.

Most of the loads had an extreme spread of 10 to 25 fps for a five-shot string, but a few ran 40 to 50 fps. Accuracy was generally up to par with a number of loads easily grouping under one inch at 25 yards. Starline cases were used for all loads, with an overall cartridge length of 1.650 inches. Bullet diameter was .4525 inch. Temperature during testing was 40 degrees Fahrenheit.

If you haven’t had a chance to try this bullet, you should, as I believe you will be impressed with its performance.

### Table III

<table>
<thead>
<tr>
<th>.45 Colt Load Data – 32,000 CUP</th>
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<tr>
<td></td>
</tr>
<tr>
<td>Enforcer</td>
</tr>
<tr>
<td>AAC-9</td>
</tr>
</tbody>
</table>

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**.338 Winches**

Truths have emerged in the years since – in particular, and shooting one, the .338 is a powerful all that muscle is no insur-sloppy shooting. The .338 is also an accurate cartridge, but that accuracy results only after frequent shooting to learn how to roll with the punch of such a hard-kicking rifle. When those two traits work together, the .338 provides a hunter with the confidence that everything will work out when all his desires ride on one bullet.

**A Short History**

In 1958 Winchester necked its .458 Winchester Magnum case down to hold a .338-inch bullet and chambered the new cartridge in its Model 70 bolt action. The cartridge was initially offered with bullets weighing up to 300 grains that produced power not far behind the .375 H&H. The cartridge has never set the world on fire in the sales department, but it took up the space between .30 calibers and the .375 H&H and has kept a lock on that position ever since.

Ammunition for the .338 was initially available from Winchester with 200- and 250-grain bullets, and a 300-grain bullet was added later. By the mid-1980s, however, Winchester offered only a 200-grain
load and Federal, the Nosler 210-grain Partition. Remington stepped up in 1987 and chambered its limited edition Model 700 Classic in .338 and came out with loads with 225- and 250-grain bullets.

The popularity of the .338 has increased in the years since, if the number of factory loads is an indication. Federal sells one 210- and three 225-grain loads, Hornady has its 225-grain offering, Remington three 225- and one 250-grain loads and Winchester two 200-, one 225-, one 230- and one 250-grain loads.

The trend toward relatively lightweight bullets is an indication hunters don’t like the .338’s recoil.

Learning to Shoot the .338

The Ruger Model 77 .338 Winchester Magnum beat me every way from Sunday the first time I shot it off the bench. Accuracy at 100 yards with Winchester 200-grain factory loads was comparable to throwing rocks. Reloads with Hornady 225- and Sierra 250-grain bullets shot just as poorly, with groups running 3 to 4 inches at the best.

Still, I hunted black bears that spring. I came upon a honey-colored bear on a steep hillside below. At about 70 yards, the Hornady 225-grain bullet hit the bear too high and just back of the lungs with about...
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3,600 foot-pounds of energy. The bear was not greatly impressed. In fact, the bear was the only one I had ever seen that didn’t fall from any sort of a hit. The bear staggered a bit, then turned up the hill toward me. It went out of sight below the curve of the hill but came back into view at about 30 yards. Another 225-grainer finished that disgraceful exhibition.

So much for a heavy bullet atoning for poor shooting.

My records indicate the guy shooting the rifle was the cause of that poor shooting. The notes show I only took shooting the rifle seriously after a couple of years when the late Iver Henricksen replaced the thin buttpad on the Ruger stock with a one-inch Pachmayr recoil pad. Iver suggested shooting from the sitting position would allow my shoulder to give with the recoil. When I did go back to the bench, the rifle should be positioned to the side and back more, so my shoulder didn't lean into the rifle and transfer all the recoil down my spine. “Don’t hold it so tight, either,” he said.

To start all over again, I made up a batch of reduced velocity loads with the Hornady 225s and 58 grains of IMR-4350. I shot sitting and kneeling and held the rifle just firmly enough to let the rifle’s recoil push me back. In time I increased the powder charge until the 225-grain slugs were loaded with 70 grains of 4350. The same drill applied to 250-grain bullets.

My shooting improved immensely. The Ruger shot groups with Hornady 225-grainers and 70 grains of IMR-4350 of slightly

Clockwise from top left, the .338 is a bit of overkill on black bear, but many hunters like its ability to anchor one on the spot. A .338 shooting 200-grain bullets isn’t out of line for hunting mule deer. A .338 Winchester Magnum with a Speer 250-grain Grand Slam is dwarfed by the grizzly’s paw. The day John shot this grizzly in Canada he was happy to have a .338. The .338 Winchester Magnum is quite popular for elk hunting.

.338 Winchester Magnum

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under and over one inch at 100 yards. Even from the prone position, the rifle grouped the load right at 2 inches at 200 yards. The recoil was even bearable from the Speer 275-grain bullet and 63 grains of IMR-4350. That load grouped five bullets in 1.5 inches at 100 yards.

I managed to shoot a few elk, deer and black bears with the Ruger .338 in the next years. The 225- and 250-grain bullets quickly rolled them over too. My capability to shoot it well and then confidence in the rifle quickly made it my lucky rifle.

One November morning I jumped four bull elk coming out of a park where they had fed during the night. The elk ran and kept running. Not until three that afternoon did I catch up with them. A six-point stood up from its bed on a knoll about 100 yards away, across a swale in the ground. The .338 came up, the crosshairs tight on the shoulder. The rifle fired and the elk fell back into its bed.

Another time, after an empty-handed day chasing elk, a coyote took off on the run across the open foothills. As if on its own, the .338 came up and the crosshairs swung past and in front of the coyote. The rifle fired and the hide from the coyote paid for the gas for my trip.

The .338’s Uses

A variety of bullet weights from 180 to 275 grains certainly make the .338 useful for hunting a variety of big game.

Few if any hunters choose a .338 for hunting deer, but on many hunts deer are on the same menu as larger game like elk. A .338 bullet, like a Combined Technology 200-grain Ballistic Silvertip and on up to a Nosler 250-grain Partition, just pokes a neat hole through whitetail and mule deer without creating any bloodshot meat. Still, the deer make only a short run.

Elk are why most hunters choose a .338. They further justify their pur-

Right, a Sisk Rifles .338 Winchester Magnum was outfitted with a Leupold 1.75-6x scope in Talley rings. Below, these bullets were used in the Sisk .338.

These powders were used for the .338 loads listed in the table.

chase, though, with the thought of some day hunting moose and grizzly bear in Canada or Alaska.

The .338 certainly has a margin of power for elk. That margin means a bullet that will hit an elk in the flank and exit the front of the chest or break both shoulder bones. A friend says he likes the .338 because elk immediately show they have been hit. “It makes them go rubber-legged right now,” he says.

A .338 in hand is a comfort hunting in grizzly bear country. I took my Ruger .338 when I hunted grizzly and moose in northern Canada. The moose and grizzly where taken with broadside shots, and the Speer Grand Slam 250-grain bullets zipped through them. It was reassuring to know the big bullet would plow through those animals.

My guide, Dennis Smith, carries
a .338 to back up his grizzly bear hunters. “If you miff the shot,” he says, “the .338 will hit them hard up close to my belt buckle. If the bear’s out there a ways and you still haven’t redeemed yourself after another shot or two, the .338 will still get the job done.”

The .338 needs a heavy bullet to do that sort of job on large game with more distinction than a .300 magnum. That’s not to suggest a .338, 200-grain bullet won’t kill an elk, but a long line of .300 magnums shoot 200-grain bullets at about the same velocity and with a greater sectional density and ballistic coefficient, which retain more energy at longer range. The .30-caliber cartridges also have the added versatility of lighter weight bullets for smaller big game. The reason to choose a .338 is its 250-grain or heavier bullets provide stopping power thought necessary on large game.

**Handloading**

A Sisk Rifles, Inc. rifle was used to shoot the results in the accompanying load table. The rifle is based on a Winchester Model 70 controlled-round feed action with the factory trigger replaced with a Timney and a 24-inch Lilja No. 5 contour stainless steel barrel. Talley Quick Detachable rings were used to hold a Leupold 1.75-6x scope. Over a couple of weeks, I shot several hundred rounds through the rifle, and the mounts and the Leupold scope never even blinked. A few twists of the lever locks on the rings, allowing removal of the scope so the backup XS open sights can be used. The whole outfit weighed 9 pounds, 6 ounces.

As the load table shows, the Sisk rifle shot well with a variety of bullets and powders. I used a Caldwell Lead Sled, with one 25-pound sack of lead shot in its pan, to hold the rifle the days I shot off the bench to record velocities and group sizes. Some say a rifle fails to shoot its best fired from a Lead Sled because the sled’s rigid fixture puts undue stress on a rifle so it can’t slide back fully in recoil. I believe the repeated pounding from the recoil of a .338 on the shoulder and head leads to slurred speech, twitching eyes and, eventually, the bane of many outdoor writers, dementia. Take your pick.

Ammunition for the .338 was initially available from Winchester with 200- and 250-grain bullets.

One of the last times shooting the Ruger .338, I shot 4.10-inch groups at 300 yards with Winchester Supreme 200-grain Ballistic Silvertips (2,840 fps), 3.06 inches with Speer 225-grain boattails (2,577 fps) and 2.91 inches with Speer 250-grain Grand Slams (2,559 fps). The convenient thing about those three loads is they all dropped between 4 and 5 inches at that distance and formed a 6-inch horizontal by 4-inch vertical oval. So I can shoot any of these three loads without having to adjust the scope.

The Sisk .338 showed the same tendency to group bullets of dif-
ferent weights closely together. With the same scope setting, at 100 yards, 210-grain bullets hit about one inch above point of aim; 225s, right on; 250s, 1.25 inches low; and 275s, 1.75 inches low. So with the rifle sighted in 3 inches high at 100 yards with Nosler 210-grain Partitions (2,928 fps), Nosler 225-grain AccuBonds (2,836 fps) would hit 2 inches high, Nosler 250-grain Partitions (2,669 fps) 1.75 inches high and Swift 275-grain A-Frames (2,605 fps) 1.25 inches high. All four loads would hit an elk in the lungs at 300 yards with the same hold, although the 275-grain bullet is starting a downward plunge. At 400 yards the 210- and 225-grain bullets would hit an elk with a hold on top of the shoulder. The 250- and 275-grainers would require about 8 more inches of elevation. But still, that’s pretty good utility from the same sight setting.

The only handloading problem I encountered with the .338 was with new brass. The shoulder length of new Winchester brass measured .040 inch shorter than once-fired cases from the Ruger .338. That is a big stretch on the first firing and could pull the cases apart at the web.

To fix the problem with new brass, I now expand the necks by running them over a larger expander ball, like a .35 caliber. A bit at a time, the necks are sized back down so the cases just fit in my rifle. The cases are loaded with a minimum amount of powder (listed in a handloading manual) and a bullet and fired. The remaining portion of the expanded neck keeps the case tightly in the chamber at the shoulder and against the bolt face and on firing fireforms the cases to match the chamber.

**Competition**

Attempts have been made with other cartridges over the years to take some of the .338’s market-share. The 8mm Remington Mag-
A whole gang of .338 cartridges based on cases larger than the .338 Winchester has appeared in the last few years. The .330 Dakota, .338 Lapua Magnum, .338 Remington Ultra Mag and .338-378 Weatherby Magnum move bullets 100 to 300 fps faster than the Winchester cartridge. A friend bought a .338 Ultra and likes it for hunting elk. He did say the recoil is rather stiff from touching off 90-plus grains of powder. All in all, though, the woods are not full of hunters carrying rifles for these new magnums.

From gun counter and Internet chat, the new .325 Winchester Short Magnum is giving the .338 a run. Winchester factory loads with 200-grain bullets clocked 2,865 fps from a .325 and 2,840 fps from the .338. The Winchester factory .325 load with 220-grain Power-Points went 2,712 fps, while the Winchester factory .338 load with 225-grain AccuBond bullets reached 2,842 fps. That's where the .325 tops out in bullet weight.

The .338, however, keeps going with 225-, 230-, 250- and 275-grain bullets. That increased bullet weight is what cartridges larger than .30 caliber are all about. As the load table shows, the .338 gives them a decent velocity too.

With one of these heavier bullets, a hunter is well served with a .338 for large big game. A hunter who takes the time to shoot his .338 well will also develop the confidence to make the .338 all that much better.

---

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### Loads for the .338 Winchester Magnum

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<th>bullet (grains)</th>
<th>powder</th>
<th>charge (grains)</th>
<th>velocity (fps)</th>
<th>group (inches)</th>
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<td>200 Winchester Supreme BST</td>
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Notes: All loads were fired at 100 yards. Winchester cases and WLRM primers used throughout. Velocities were recorded 5 feet from the muzzle. A Sisk Rifles rifle with a 24-inch barrel was used; the Leupold 1.75-6x scope was set on 6x. 

Be Alert – Publisher cannot accept responsibility for errors in published load data.
Every serious handloader needs a good caliper. Calipers allow you to see when cases need trimming. They let you check inside and outside case mouth diameters and monitor base expansion after firing. A caliper comes in handy for determining true bore size, verifying bullet diameter and taking the 101 other measurements every handloader and shooter eventually needs.

I’ve used a succession of calipers over the years, beginning with an inexpensive plastic model that gave accurate measurements until the plastic teeth on its measuring beam wore out. Until recently I’ve been using an excellent, stainless steel model from MidwayUSA. This precisely calibrated caliper is shockproof and provides analog readings on a large, easy-to-read dial. The only problem with this instrument is the need to check both the dial (which reads to .001 inch) and the number displayed on the beam, or measuring track. A 1.12-inch reading would be indicated by the 1.1 marking on the side of the beam, and 20 on the dial. Not rocket science, but it always takes a second or two to figure out the reading.

The new Frankfort Arsenal electronic digital caliper I recently obtained from Battenfeld Technologies eliminates this admittedly minor inconvenience and offers a couple of other neat features as a bonus. The caliper uses what the literature calls a “linear capacitive measuring system,” with measurements appearing on an easy-to-read LCD display.

In addition to an on-off button, there’s a button that recalibrates the unit to zero when you’re ready for a new measurement. Another button switches readings between inches and millimeters. Accuracy is ±0.001 inch, or 0.02mm. Measurement repeatability is ±0.0005 inch or 0.01mm.

For engineering-minded handloaders, Metric-ISO and Whitworth tables are displayed on the back of the caliper. I minored in physics in college, but I haven’t got a clue about how to use these tables. I’m sure they’ll come in handy for those with more extensive technical knowledge.

While the LCD display housing (slider) is plastic, the beam, measuring jaws and other hardware are stainless steel. In addition to two sets of jaws for measuring inside and outside diameters, a blade emerges from the rear of the beam for determining inside case depth and other interior measurements.

Acceptable working temperatures are from 41 to 104 degrees Fahrenheit. Relative humidity isn’t a factor below 80 percent, but direct contact with liquid can damage the electronic slider. This is an exceptionally helpful, well-thought-out instrument. Better yet, it retails for just $35. A plastic clamshell case is included.

For more information, or to order your own Frankfort Arsenal Electronic Caliper, you can visit the company’s website at www.battenfeldtechnologies.com.
Speer Offers Trophy Bonded Sledgehammer® Solid Safari Bullets

Designed by Jack Carter, this bonded-bronze big game bullet has a reputation for reliable stopping power. Now Speer is making this premium bullet available to handloaders.

The bullet’s flat nose is designed to minimize deflection and produce a straight, deep wound channel in large, dangerous game. The following calibers and weights are available:

- .375, 300-grain Trophy Bonded Sledgehammer Solid
- .416, 400-grain Trophy Bonded Sledgehammer Solid
- .458, 500-grain Trophy Bonded Sledgehammer Solid
- .474, 500-grain Trophy Bonded Sledgehammer Solid

For more information, contact Speer, Dept. HL, 2299 Snake River Avenue, Lewiston ID 83501; or you can visit the site online at: www.speer-bullets.com.

W. Square Enterprises has recently released version 5.0 of Load From A Disk internal/external ballistics software. This program calculates the optimum powder type, powder charge, chamber pressure and muzzle velocity for any rifle cartridge – present or future – from .17 through .70 caliber.

“Rifle loads are easy to create by just selecting a rifle, cartridge case and a bullet from the database and putting them together,” the company says. “It’s like having your own virtual reloading workbench. Flexible databases allow you to enter your own custom bullets and cartridge cases. There’s no limit to what you can create.”

A new “Field Results” page allows you to log range data for comparison or reference to your rifle load results calculated by the program. You can also print out ammunition box labels for your reloaded ammunition.

For more information, contact W. Square Enterprises, Dept. HL, 9826 Sagedale Dr., Houston TX 77089; or visit the company’s web page at: www.loadammo.com for details or to download a free demo.

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