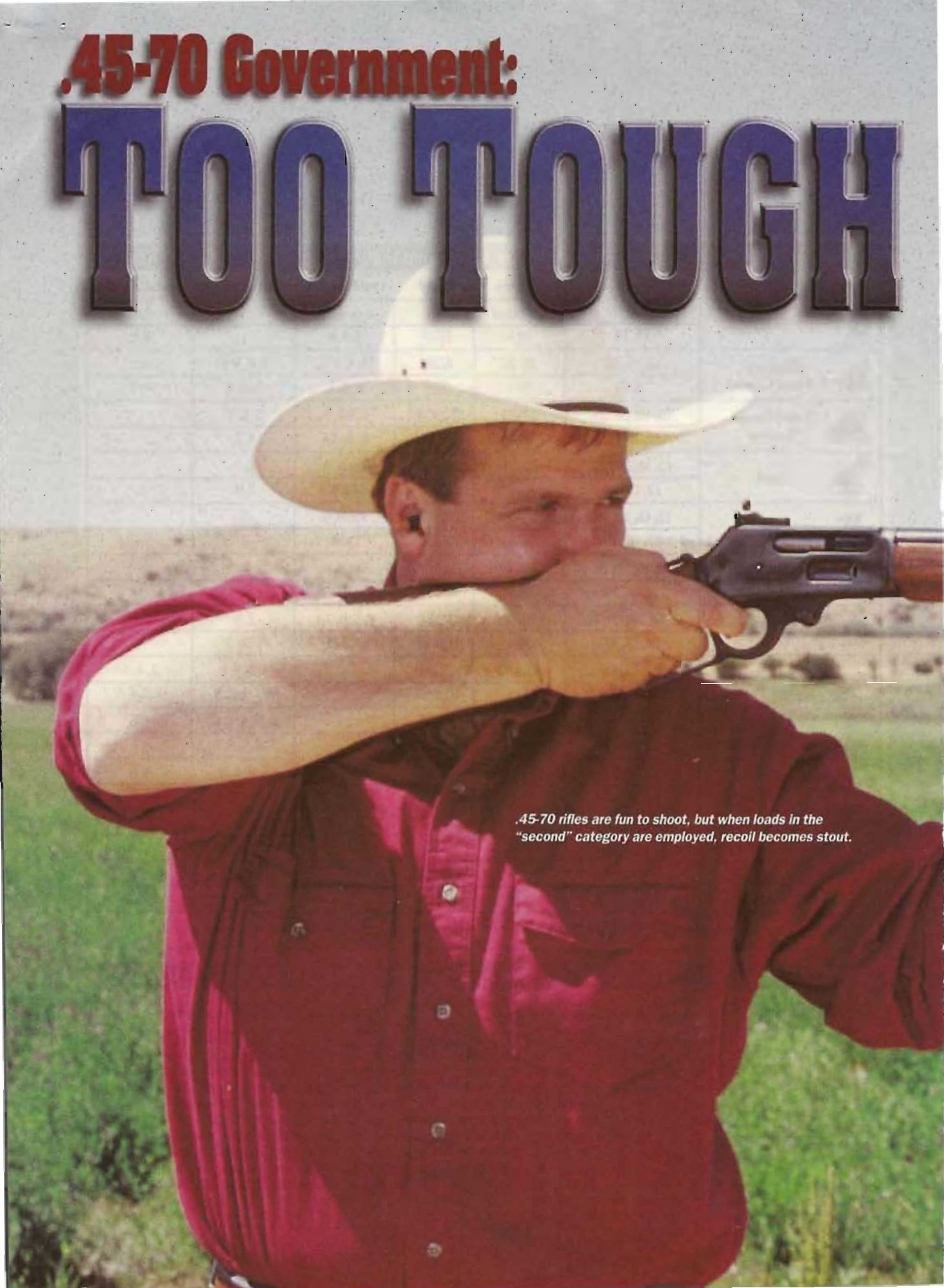


.45-70 Government:

TOO TOUGH

A man wearing a light-colored cowboy hat and a red long-sleeved shirt is shown from the chest up, aiming a .45-70 Government rifle. He is looking intently through the sights of the rifle. The background is a blurred outdoor setting with green grass and a light-colored wall or fence.

.45-70 rifles are fun to shoot, but when loads in the "second" category are employed, recoil becomes stout.

TO DIE


**It's 126
Years Old and
Still Growing.**

By Brian Pearce

Born in 1873 and one of 1999's hottest-selling cartridges, the .45-70 Government has been a popular choice among hunters, collectors and shooters of both modern and traditional

firearms for 126 years.

Beginning life as a military cartridge for the U.S. Government in the Model 1873 "Trapdoor" Springfield single-shot rifle, the original rifle load was a 405-grain lead bullet over 70 grains of



*Accuracy with most loads was excellent.
This 50-yard, four-shot group measures just
over one inch.*

TOO TOUGH TO DIE

2fg black powder and a carbine load consisting of a 405-grain lead bullet over 55 grains of 2fg black powder. In 1881, the army went to a 500-grain lead bullet over 70 grains 2fg to extend the range of the infantry rifle, yet retained the lighter carbine load for the cavalry.

In 1879 and 1880, the military conducted some very interesting tests at extreme ranges at Springfield Armory and on the beaches of Sandy Hook, New Jersey. The objective was to determine just how effective the 405 and 500-grain loads would be against enemies in a barrage of fire at various ranges from 1,500 to 3,680 yards. Keep in mind, a mile is 1,760 yards. The targets were spaced layers of one-inch hardwood boards. At 2,500-yards (over 1.42 miles), the bullet's descent to the target was at 50 degrees and the boards were angled accordingly for maximum penetration. The 405-grain loads would almost completely penetrate the entire 6-inch thick target, but the heavy 500-grain bullets, with a humble muzzle velocity of less than 1,300 fps, always penetrated the wooden target and were buried another 6 inches into the sand.

It didn't take long for hunters and frontiersmen to discover just how effective the big cartridge was on large game or nearly anything else that needed stopping! It even achieved a certain level of popularity among African hunters on heavy game, such as Cape buffalo. And 19th-century long-range target shooters put the new round to work on 1,000-yard ranges.

By 1892, the .45-70 was replaced by the .30-40 Krag as our official military service cartridge. However, the .45-70 remained popular with hunters and shooters for the next 25 years. Unfortunately, by the 1930s, America's rifle makers had dropped it from production as modern bottleneck rounds, such as the .270 W.C.F. and .30-06, were easily outselling the old-timer. However, the post-World War II era brought on a new generation of shooters and hunters who formed an interest in traditional big-bore rifles, particularly lever guns. In 1972, Marlin announced a modern Model

1895 lever gun chambered in .45-70 Gov't, which was and continues to be a huge success. This officially resurrected the old round and within a few years several other companies began producing a variety of rifles to meet the continually growing consumer demand.

VERSATILITY

The .45-70 is unique in that it can be applied to a variety of shooting and hunting situations. It has become one of the favorite cartridges for use in long-range side matches held at Cowboy Action Shooting events loaded to its original ballistics. When housed in a strong action firing today's hot new ammo, Marlin's new Guide Gun or a Ruger Number 1 becomes a top choice for hunting dangerous game at close range. However, to fully understand the cartridge's potential, we must look at it as though it were three separate cartridges with three separate power levels depending on the strength of the rifle's action. Most modern reloading manuals reflect this in their data.

For example, the breeching strength of many 19th-century rifles is weak, and they are only safe when fired with black powder loads or smokeless loads that develop very modest pressures. The most common rifle that fits into this "first" category is the 1873 Trapdoor Springfield. Because of these early rifles, SAAMI maximum average pressure is 28,000 c.u.p. However, independent lab reports indicate that the actual pressure level of today's ammo from Federal, Remington and Winchester is between 18,000 and 20,000 c.u.p.



To realize the full potential of the .45-70, the author feels we must consider it as three separate cartridges grouped by action strength. Most reloading manuals categorize the data accordingly.



The author's Ruger Number 1 produced exceptional 50-yard accuracy using the Buffalo Bore 420-grain cast bullet at 2,000 fps.

With the many old rifles out there, I believe this shows great wisdom on the part of ammo companies. In spite of the low pressures of today's factory ammo, the old .45-70 still drives a 300-grain jacketed bullet at 1,850 to 1,900 fps or a traditional 405-grain soft point at 1,330 fps. This is still more powerful than a factory-loaded .454 Casull, which drives a 300-grain bullet at 1,625 fps and has taken Africa's Big Five.

This brings us to rifles in the "second" category. These are stronger and can handle significantly higher levels of pressure than the 1873 Springfield rifle. Suitable guns include modern Marlin Model 1895s (only rifles manufactured since 1972), current production Model



Here are few of the author's favorite .45-70 rifles. They include (left to right) Marlin 1895G Guide Gun, Marlin 1895 circa 1972, Ruger Number 1-S, Browning 1886 Carbine and an original Winchester Model 1886.

FACTORY AMMO ACCURACY RESULTS

Marlin Model 1895G

Sights: Ashley Outdoor—Peep Large Aperture

Factory Load	Bullet/Weight	Velocity*	Group Size	Comments
Winchester	300-grain JHP	1,880 fps	.70	100 yard groups 1.1 inches
Winchester	300-grain Part	1,880 fps	.90	Excellent big game load
Cor-Bon	405-grain FP	1,650 fps	1.10	Solid jacket penetrates well
Garrett's	415-grain Cast	1,850 fps	1.05	Great game load
Buffalo Bore	420-grain Cast	2,000 fps	.85	My personal favorite FL

Browning 1886 Carbine

Sights: Factory Original

Factory Load	Bullet/Weight	Velocity*	Group Size	Comments
Winchester	300-grain JHP	1,880 fps	2.10	
Black Hills	405-grain Cast	1,250 fps	1.90	Great load for old rifles
Remington	405-grain SP	1,330 fps	2.40	
Cor-Bon	350-grain FP	1,800 fps	1.60	Accurate hunting load
Buffalo Bore	350-grain JFN	2,100 fps	1.30	Modern Class 2 Rifles Only!

Ruger Number 1-S

Sights: Custom Peep

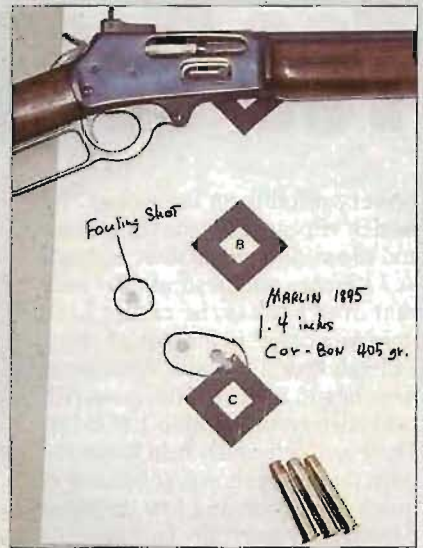
Factory Load	Bullet Weight	Velocity*	Group Size	Comments
Remington	405-grain SP	1,330 fps	.95	
Black Hills	405-grain Cast	1,250 fps	1.30	
Cor-Bon	350-grain FP	1,800 fps	.70	Very consistent in Ruger
Garrett's	415-grain Cast	1,850 fps	.65	Best of three groups
Buffalo Bore	400-grain JFN	1,800 fps	1.10	

Marlin 1895 (1972 vintage)

Sights: Ashley Outdoor—Peep Large Aperture

Factory Load	Bullet Weight	Velocity*	Group Size	Comments
Winchester	300-grain Part.	1,880 fps	.50	Mild recoil-deep penetration
Black Hills	405-grain Cast	1,250 fps	.80	
Remington	405-grain Cast	1,330 fps	.65	Consistently accurate
Garrett's	415-grain Cast	1,850 fps	.75	
Cor-Bon	405-grain FP	1,650 fps	1.40	
Buffalo Bore	420-grain Cast	2,000 fps	.65	Great gun and load combo

* Advertised. All Groups were fired at 50 yards from a sandbag rest.



The author tested several new factory loads tailored for hunters. This Marlin Model 1895 produced good accuracy with Cor-Bon's 405-grain FP at 1,650 fps.

1886 Winchesters, Browning 1886 reproductions and Shiloh Sharps (never original Sharps). It is suggested that handloads or +P factory ammo be kept to less than 40,000 c.u.p. (This is based on the fact that the same actions have been chambered for cartridges that produce pressures to this level. For example, the .444 Marlin has a maximum average SAAMI pressure of 44,000 c.u.p. and is

built on the same 336 action as Marlin's Model 1895.) When the .45-70 is loaded to this pressure level, its personality completely changes. Suddenly a 400-grain hard-cast bullet can be driven to exceed 2,000 fps from a 22-inch barrel! This load becomes serious big-game medicine and is capable of cleanly taking the largest game on earth. A properly constructed 400-grain cast bullet at this velocity will penetrate nearly twice as deep as a factory W-W 510-grain .458 Winchester Magnum soft-point load. I consider handloads or factory +P ammo in this "second" category as the most useful of all .45-70s, as they are a good blend of power with tolerable recoil. (I did say *tolerable*, not pleasant.) These loads also help to flatten the rather high trajectory curve usually associated with the .45-70.



When a rifle is manufactured, its action type determines the power of loads it can safely handle. Rifles are generally divided into three categories. Most pre-war guns such as 1873 Springfields and early 1886 Winchesters (top) are only suitable for ammo in the "first" category. Any post-war lever actions, such as this Marlin 1895 (middle), are plenty strong for any ammunition in the "second" category. Rifles in the "third" category include the very strong Ruger Number 1 (bottom).

By the way, some will notice that I have intentionally left out original 1886 Winchesters and 1895 Marlins from this category. Many of these early guns were produced during the black powder era with soft steels, which will stretch and develop excessive headspace

with heavy loads. They are certainly stronger than 1873 Springfields and should be safe with loads that develop pressure up to 28,000 c.u.p. This is still a healthy load, as it can potentially drive a 405-grain bullet at 1,800 fps! When smokeless powder evolved, the steels were improved. The very last Winchester 1886s, those manufactured after 1919, were strong enough to handle any loads in the "second" category.

Finally we come to the very strong rifles in the "third" category, such as the Ruger Number 1 and 3, Browning 1885 and Siamese Mauser. These rifles can easily handle loads that generate 50,000 c.u.p., which rival the mighty .458 Winchester in sheer power. This is a handloading proposition only, as there is no factory ammo loaded to this pressure level. Recoil becomes stout, particularly in a lightweight rifle such as the Ruger.

TODAY'S BEST FACTORY AMMO

For the vast majority of the .45-70's life, the most popular factory load has been the 405-grain JSP bullet at approximately 1,350 fps from a 24-inch barrel. It has given good service and is the load largely responsible for establishing the .45-70's excellent reputation on big game. When I was in my early teens, one of Idaho's finest houndsmen told me that he used his Winchester Model 86 on dozens of black bear at close range. He said that if he hit them anywhere near the vitals, particularly the shoulders, he never had to shoot one twice using the 405-grain factory loads. Currently, Remington is the only American company still offering this traditional load.

I have found factory 405-grain loads to

TOO TOUGH TO DIE

be very reliable on big game. The modest velocity keeps the bullet intact and allows deep penetration, as much as 32 inches and beyond! The only real drawback is the rather high trajectory curve. In the past 20 years, Federal, Remington and Winchester have begun offering 300-grain JHP loads driven to 1,850 to 1,900 fps. These loads obviously help flatten the trajectory curve, however because of quick expansion and low sectional density they generally lack suitable penetration for game much larger than deer. Winchester Ammunition has recently addressed this problem and has begun loading the new 300-grain Nosler Partition bullet. I have yet to test this load on game, but in wet newsprint it easily penetrates in excess of 2 feet. I believe it will make a good load for larger game such as elk.

Randy Garrett of Garrett's Cartridges Inc. (Dept. GA, P.O. Box 178, Chehalis, WA 98532), has been a leader in producing +P .45-70 ammunition, designed for rifles in the "second" category. His original load drove a 415-grain flatnose hard-cast bullet at 1,730 fps from a 22-inch barrel. It has been used on many head of big game with terrific results, as it penetrates like there is no tomorrow while breaking heavy bones. A later offering drives a 415-grain Hammerhead—also a hard cast, flatnose design—at 1,850 fps. This is an ideal hunting load for big game at ranges out to 200 yards—well within the distance at which the majority of game are shot. Recently I tested this load in a Marlin 1895 and a Ruger Number 1. Both rifles were equipped with peep sights and produced three-shot groups of less than three-fourths of an inch at 50 yards.

Buffalo Bore, a newcomer to the ammo business, (Dept. GA, P.O. Box 78, Carmen, ID 83642, 208-756-8085) has gained special recognition for its line of big-bore sixgun cartridges with heavyweight bullets. Now they are out with three custom +P loads for .45-70 shooters and particularly hunters. The first one, my favorite, drives a 420-grain hard-



Choosing the right bullet is critical for high performance handloads in the .45-70. The author has had excellent results using the 350-grain Kodiak bonded bullet and Speer's 400-grain Flat Nose.

cast LBT gas-check design at 2,000 fps. The second load consists of a 400-grain Speer Jacketed FN at 1,800 fps, and the last load pushes a 350-grain Jacketed FN at 2,100 fps. Obviously it is intended for modern rifles in "second" or "third" categories. Additionally, this brass is made from a thicker cup, making it ideal for higher pressures. If one chooses to reload it, I would suggest cutting the established powder charges at least 10 percent, then work up very carefully, as pressures will be higher with the reduced case capacity and thicker brass. A powder charge reduced 5 percent should provide similar pressures and velocities as other commercially available brass.

As can be seen in the accompanying accuracy charts, BBA loads performed very well in our four test rifles. As I

RELOADING TIPS AND BULLET SELECTION

The .45-70 is easy to reload. Here are some tips that will help produce top-notch ammo the first time. Reloading manuals are a great benefit and should always be consulted before handloading, and cross-referencing several manuals is always better!

After selecting the load, begin by using cases that are all of one lot number and are of uniform length. If cases are not of same length, trimming will help produce a uniform crimp, which is especially critical for ammo that will be used in a lever action with a tubular magazine. If your cases are not uniform, the longer cases will buckle or bulge during the seat and crimp operation. And be certain to expand case mouths enough to allow the bullet to seat without catching and crumpling the brass when seated. The die's expander ball should not measure over .453 or .454 maximum!

For reliable feeding through most lever actions, overall cartridge length should be kept to 2.550 inch. If the ammo is to be used in a single shot, overall cartridge length is not limited, and bullets can be seated out close to the rifling with no crimp applied. This is particularly beneficial when loading ammo for rifles in the "third" category, as it will allow for more powder capacity.

One problem occasionally occurs when loading +P loads for rifles in the "second" or "third" category. The case becomes too full of powder to allow the bullet to seat to its proper crimp groove. One may wonder how the individuals that wrote the manual ever succeeded in getting that much of a given powder in the case. Unfortunately, not all lot numbers of powder have the same density. A 24-inch drop tube can help settle the powder, usually solving this problem. If this fails to give enough room, try a different powder. Incidentally, some manuals will list the powders that were "compressed" during their load development.

When handloading ammo for any rifle with a tubular magazine, be certain that bullets with a flat point are used, as a pointed bullet can ignite the cartridge in front of it during heavy recoil.

I have had best results using "Standard" Large Rifle Primers rather than "Magnums." However, when using Ball Powders, such as Winchester's 748, a "Magnum" primer seems to give more uniform ignition.

Today, there is a great selection of bullets for reloading the .45-70, however they are each designed with a specific purpose in mind. For example, the Speer 400-grain Flat S, is designed to expand at standard .45-70 velocities of 1,300 to 1,400 fps. I have pushed this bullet at 1,800 fps, and it still performs well on game, however at higher velocities a tougher bullet should be selected. For deer-sized game, the Hornady 300-grain JHP performs very well at 1,600 to 2,200 fps. If one wants to use a lighter bullet on larger game, the new Nosler 300-grain Partition is the best choice. As previously mentioned, a properly alloyed and lubed cast bullet can perform very well at 1,000 to 2,000 fps. If cast hard—but not brittle—a 400-grain cast bullet can easily penetrate any game animal up to 2,000 pounds. Lyman and RCBS both offer excellent designs in a variety of bullet weights and styles. For an accurate general-purpose and hunting bullet for lever guns, I am fond of the RCBS .45-405-FN.

Recently I have been testing two bonded core bullets from Alaska Bullet Works (Dept. GA, 9978 Crazy Horse Drive Juneau, AK 99801, 907-789-3834), a 350-grain and 400-grain JSP. Both are tough—even when driven to high velocities—and offer picture perfect mushrooming, while still retaining near 100 percent of their original weight. I have yet to shoot any critters with these bullets, but I have fired them in test mediums and achieved impressive results. Accuracy has been good from my Ruger Number 1 and my Marlin 1895G.



Buffalo Bore produces some of the most interesting .45-70 ammo to date. It is designed for rifles in the "second" and "third" categories only and features three great hunting bullets. The company's brass is headstamped "LEVER GUN .45-70 MAG" to help keep the loads out of old guns.

mentioned earlier, my favorite load is the 420-grain LBT-style cast bullet at 2,000 fps. This load can penetrate more than 4 feet on big or dangerous game, while opening a large wound channel.

Cor-Bon Ammunition offers several unique loads intended for hunters and black powder shooters. The two modern loads develop a maximum average pressure of 28,000 c.u.p. These are suitable for any modern rifle, and even though it is within SAAMI pressure limits, I do not recommend them for use in 1873 Trapdoor Springfields as the results could be disastrous. The first load drives a 350-grain bonded core flat-point bullet at 1,800 fps. This bullet is stout and should be suitable for game up to 1,000 pounds. The next load is very interesting, as it features a 405-grain full metal jacket FP bullet at 1,650 fps. It is intended to provide maximum penetration on tough game and should easily break through heavy muscle and bone.

For shooters who enjoy 19th-century arms or the Cowboy Action competitor, Cor-Bon is also offering a 405-grain cast bullet backed by a full case of black powder. These cartridges are housed in authentic-styled boxes similar to those used by our cavalry in the late 1870s.

For those wanting a traditional cast bullet load without the mess of black powder, Black Hills Ammo offers a 405-grain plain-base cast bullet at about 1,250 fps.

TODAY'S RIFLES

There are literally dozens of various .45-70 rifles available today. Marlin Firearms was the first major American manufacturer to offer a .45-70 after World War II, its Model 1895 Lever Action Rifle. Early versions featured a 22-inch barrel, a straight grip lever and were based on the extremely reliable 336 action. With only minor changes, today's 1895SS is the same rifle, however it now features a

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TOO TOUGH TO DIE



The author tested the new wave of .45-70 ammo from a sandbag rest in his Ruger Number 1-S.

curved lever loop, pistol grip and hammer block safety. There is an additional Model, the 1895G Guide Gun, which has become one of the hottest-selling guns today and was named "Gun of the Year" by *Guns & Ammo* readers! It features a straight grip and loop lever, four-shot tubular magazine, an 18½-inch ported barrel and weighs just 6¼ pounds. The rifling had been changed to a Ballard style, rather than the Micro-Groove previously used. My test rifle was impressive—consistently delivering four-shot groups measuring just over one inch at 100 yards with factory Winchester ammo!

I am happy to see the Model 1886 Winchester alive and well. This model was the first lever action created by the genius designer, John M. Browning and was a major asset to Winchester in its early years. Today's Model 86 is imported from Japan on a limited basis and bears the Winchester name. The latest version is a takedown rifle, with a 26-inch octagon barrel and crescent buttplate. With its twin vertical locking lugs, the new Model 86 offers plenty of strength for factory or handloads in the second category.

This brings us to the various single-shot rifles—both modern and traditional. The

Ruger Number 1 needs no introduction as it is likely the best-selling centerfire single-shot rifle today. The Model 1-S, when chambered in .45-70, features a lightweight 22-inch barrel with iron sights.

Browning offers several versions of

John Browning's classic Model 1885 single shot. I am particularly fond of the 1885 High Wall Traditional Hunter. It features a 28-inch octagon barrel, tang-mounted peep sight, and a traditional bead front and semi-buckhorn rear.

Over the years I have shot several 1885s in a variety of calibers, and each has been a reasonably accurate arm. This year at the Shootist Holiday in Raton, New Mexico, I had the opportunity to informally test a High Wall Traditional Hunter in .45-70. While the NRA Whittington center features several terrific ranges, for fun I enjoy informal shooting at rocks and such. We located a suitable rock about 20 inches in diameter and which, according to the laser range finder, was just a few steps short of 600 yards. With a 400-grain cast bullet at 2,000 fps, several members were able to break chunks and draw white smoke from the rock with regularity

shooting from the offhand position.

The legendary Sharps rifle was possibly the most celebrated single-shot cartridge arm of the 19th century. Many stories and legends attest to its reliability, long-range accuracy and power. Today, originals are scarce and expensive, making reproductions a good alternative. There are two American manufactured rifles, the Shiloh Rifle Mfg. Company Inc. and C. Sharps Arms Co. The most popular versions are based on the Model 1874 and are available with a variety of barrels and stock options. I have owned several Shiloh Sharps rifles, and with carefully tailored handloads, these rifles can deliver better than MOA groups.

Another great single shot from the frontier era is Remington's No. 1 Rolling Block Mid-Range Sporter. This is a special order item from the Custom Shop and can be built with many options, including special stocks in fancy walnut, half-round half-octagon barrel, single-set trigger and Vernier tang sights. This rifle has become very popular in NRA long-range black powder matches and Cowboy Action side events.



The Winchester Model 1886 .45-70 is alive and well, with current rifles being imported from Japan. The author found that his test rifle is accurate and, being made of modern steels, suitable for any ammunition in the "second" category.



One of the author's favorite rifles is this 1972 vintage Marlin Model 1895. It is very accurate, reliable, ideal in weight and will handle any heavy loads in the "second" category. The excellent ghost-ring sights are from Ashley Outdoors Inc.



The author's experience with various 300-grain JHP factory loads indicates that they offer reliable expansion on deer-sized game. However, a tougher bullet, such as Winchester's new 300-grain load with Nosler Partition, should be selected when hunting larger game.

CONCLUSION

For me the .45-70 is full of fond memories. Back in the 1970s, my older brother and I purchased a pair of Marlin 1895s with the straight-grip stocks. Upon our arrival home, we sighted them in, then used a horse-shoeing rasp (we were pretty handy with them) to thin the fat forearms so that they would easily slide into our saddle scabbards. We then sanded and refinished the forearms. They felt better and, believe it or not, looked really good! I cast a few hundred 410-grain bullets and loaded some "second" category handloads using a healthy charge of Reloder #7. Groups at 100 yards were consistently around 2 inches. A few days later we rode a couple of rambunctious, young cow ponies up the mountain behind our ranch house with our new 1895s nestled safely in scabbards. When we reached our destination, the horses were too tired to buck, so we hobbled them to graze and settled under a shade tree near a spring. There was a large family of rockchucks about 250 to 300 yards away. We took the extra ammo from our saddle bags and commenced thinning them out. With a modern "varmint" rifle these chucks would have been little challenge, however we were "practicing" with our new elk rifles and once we had the range figured out, we were hitting them with reasonable regularity.

The .45-70 may not shoot as flat as today's popular magnums, but for many hunting situations involving large or dangerous game at modest ranges or elk in the dark timber, it may be the very best choice.



One of the finest peep sights for modern .45-70 lever guns is available from Ashley Outdoors Inc., Dept. GA, 2401 Ludelle Street, Fort Worth, TX 76105, (888) 744-4880. It is fully adjustable, comes with a wide variety of apertures and is easy to install. It provides an excellent sight picture for target or game shooting and works well under poor light conditions.



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