

Chairman and Board Members
Alaska Board of Game.

January 07, 2022

My Name is David Lorrington and I reside in Fairbanks, Alaska. I have been active in the Board of Game process for over 40 years in an Agency Support Staff position, representing an organization, and as a private person. I thank you for allowing my written testimony on proposals # 24, and #81. For the southcentral Board meeting

Proposal # 24: I support ADFG's request to add season, bag limit, and use requirements for the harvest of Alaska Hare in GMU 17.

This proposal deals with protections for the Alaska Hare in GMU 17. I work closely with ADFG researchers on other non-game issues and have had discussions with them on the status and population concerns of the Alaska Hare in the Dillingham Area and other parts of the State where this specie occurs. These researchers have a valid concern that the hare population numbers are considerably lower than they have been in past years. Both their research observations, and anecdotal information from local residents and subsistence hunters have shown that there has been a sharp decline in hare numbers throughout their range in Alaska.

Alaska Hare hunting success is considerably enhanced by positioning them for harvest using snow machines.

Although I do not personally have information on hare numbers in GMU 17, I do have anecdotal information in several areas that I frequent on the Seward Peninsula in GMU 22 and the North Slope in GMU 26A. Where I have seen Alaska Hare in the past, I have not seen one in the past 5 Years.

Proposal # 81: I support the proposers request to add "muzzle loading" firearms to the list of legal weapons for moose hunting in GMU's 14A & 14B. The Board must determine that "muzzle loading" firearms fit "safety" and other requirements that the Board intended when designing the current regulation's restrictions for hunting moose in a highly human populated area of the Matanuska Valley. Modern Muzzle-Loading rifles are highly accurate out to 100 yards and their projectiles travel considerably further than that a rifled slug from a shotgun.

I am completely opposed the use of "black powder cartridge" firearms for the use in any **primitive use** hunting opportunity. The Board has already made a decision at a prior Board meeting that the "bow and arrow" and "muzzle-loading" firearms are considered primitive weapons for special bow and arrow and muzzle loading only hunts that require hunter certifications for these weapons. Black powder cartridge firearms have been completely eliminated from these hunts and have been only allowed during the general seasons.

Specifically, to this proposal, firearms that utilize black powder cartridges, even those built in the late 1800's, are proven to be highly accurate over a long range. Literature published show

that the effective range for black powder cartridge firearms is 500 yards and they are capable of 1000-yard shots.

Black powder firearms that use cartridges, use modern components including "large rifle" primers, modern brass cases, and factory manufactured or cast lead bullets. The only difference between a black powder cartridge and a factory off the shelf round is the type of powder employed.

Modern rifles such as the Marlin lever action and Thompson Contender along with other models, are chambered in 45-70 and would shoot commonly used black powder cartridges. Lever action rifles are that are capable of rapid fire, long range, and high accuracy, completely fly in the face of the concept of primitive weapon hunts in Alaska and the intent of the Board of Game when they first authorized these permit hunts.

There is also a law enforcement issue with the use of metallic cartridges being used in a black powder muzzle loader hunts. The only way for an enforcement officer to tell if a cartridge is made with black powder is to disassemble the cartridge and analyze the powder. This process would require a laboratory to determine if in fact the powder is actually black powder or a black powder substitute.

In this proposal, black powder cartridge firearms are capable of long-range travel and accuracy and defeat the purpose for the need of close-range methods in GMU 14A and 14B ad determined by the Board of Game.

I would urge the Board of Game to continue to classify black powder cartridges firearms the same as smokeless cartridge firearms and continue to ban them from muzzle-loader only hunts throughout the state.

Thank You

David Lorring

.45-70

From Wikipedia, the free encyclopedia

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.45-70 Government



From left, [.30-06](#), [.45-70](#), and [.50-90 Sharps](#)

Type [Rifle](#)

Place of origin [United States](#)

Service history

Used by [United States](#)

Wars [Indian Wars](#), [Spanish–American War](#), [Philippine–American War](#)

Production history

Designer [US government](#)

Designed 1873

Specifications

Case type Rimmed, straight^[1]

Bullet diameter .458 in (11.6 mm)

Neck diameter .480 in (12.2 mm)

Base diameter .505 in (12.8 mm)

Rim diameter .608 in (15.4 mm)

Rim thickness .070 in (1.8 mm)

Case length 2.105 in (53.5 mm)

Rifling twist 1-20"

Primer type Large rifle

Ballistic performance

Bullet mass/type	Velocity	Energy
300 gr (Trapdoor) lead	1,597 ft/s	1,699 ft·lbf
PB	(487 m/s)	(2,304 J)
405 gr (Trapdoor) lead	1,394 ft/s	1,748 ft·lbf
FN	(425 m/s)	(2,370 J)
300 gr (standard) JHP	2,009 ft/s (631 m/s)	2,852 ft·lbf (3,867 J)
300 gr (strong) JHP	2,213 ft/s (693 m/s)	3,449 ft·lbf (4,676 J)

Test barrel length: 24"

Source(s): Accurate Powder^{[2][3][4]}

The **.45-70 rifle cartridge**, also known as **.45-70 Government**, was developed at the [U.S. Army's Springfield Armory](#) for use in the [Springfield Model 1873](#), which is known to collectors as the "Trapdoor Springfield." The new cartridge was a replacement for the stop-gap [.50-70 Government](#) cartridge, which had been adopted in 1866, one year after the end of the [American Civil War](#).

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Nomenclature[\[edit\]](#)

The new cartridge was completely identified as the *.45-70-405*, but was also referred to as the ".45 Government" cartridge in commercial catalogs. The nomenclature of the time was based on three properties of the cartridge:

- .45: nominal diameter of bullet, measured in decimal inches, i.e., 0.458 inches (11.63 mm);
- 70: weight of [black powder](#), measured in grains, i.e., 70 grains (4.56 g);
- 405: weight of lead bullet, measured in grains, i.e., 405 grains (26.2 g).

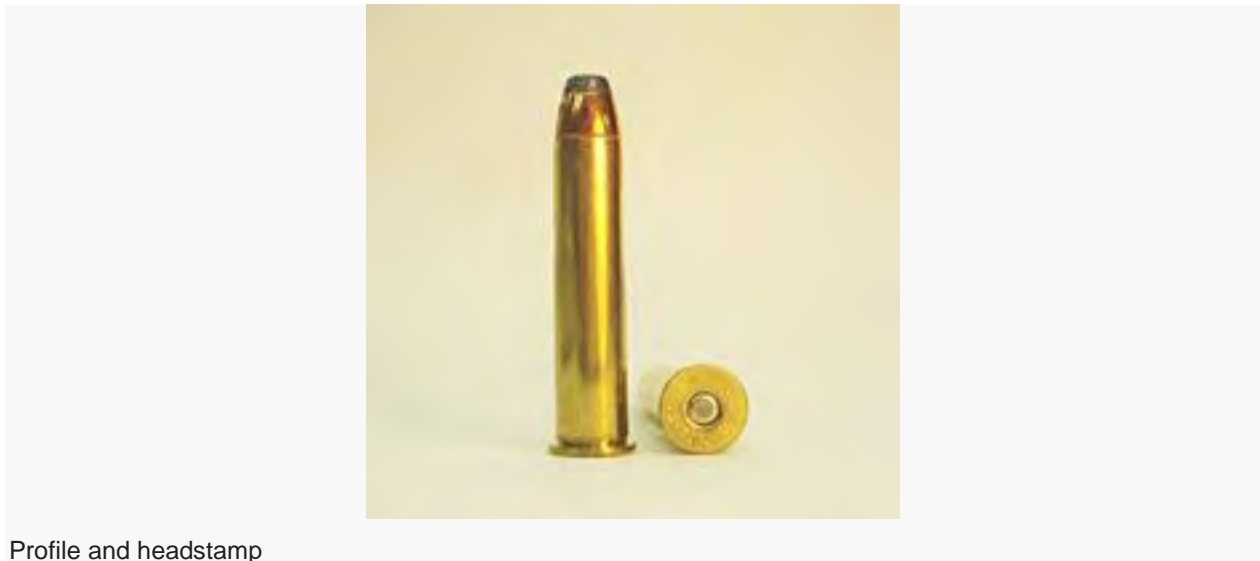
The minimum acceptable accuracy of the .45-70 from the 1873 Springfield was approximately 4 inches (100 mm) at 100 yards (91 m), however, the heavy, slow-moving bullet had a "rainbow" trajectory, the bullet dropping multiple yards (meters) at ranges greater than a few hundred yards (meters). A skilled shooter, firing at known range, could consistently hit targets that were 6 × 6 feet (1.8 m) at 600 yards (550 m)—the Army standard target. It was a skill valuable mainly in mass or volley fire, since accurate aimed fire on a man-sized target was effective only to about 200–300 yards (180–270 m).

After the [Sandy Hook](#) tests of 1879, a new variation of the .45-70 cartridge was produced: the .45-70-500, which fired a heavier, 500 grain, (32.5 g) bullet. The heavier bullet produced significantly superior ballistics, and could reach ranges of 3,350 yards (3,120 m), which were beyond the maximum range of the .45-70-405. While the effective range of the .45-70 on individual targets was limited to about 1,000 yards (915 m) with either load, the heavier bullet produced lethal injuries at 3,500 yards (3,200 m). At those ranges, the bullets struck point-first at a roughly 30 degree angle, penetrating three 1-inch (2.5 cm) thick oak boards, and then travelled to a depth of eight inches (20 cm) into the sand of the beach. It was hoped the longer range of the .45-70-500 would allow effective volley fire at ranges beyond those normally expected of [infantry](#) fire.^[s]

Bullet diameter[\[edit\]](#)

While the nominal bore diameter was .450 inches (11.4 mm), the groove diameter was actually closer to .458 inches (11.6 mm). As was standard practice with many early commercially-produced U.S. cartridges, specially-constructed bullets were often "paper patched", or wrapped in a couple of layers of thin paper. This patch served to seal the bore and keep the soft lead bullet from coming in contact with the bore, preventing leading (see [internal ballistics](#)). Like the cloth or paper patches used in [muzzle-loading](#) firearms, the paper patch fell off soon after the bullet left the bore. Paper-patched bullets were made of soft lead, .450 inches (11.4 mm) in diameter. When wrapped in two layers of thin cotton paper, this produced a final size of .458 inches (11.6 mm) to match the bore. Paper patched bullets are still available, and some black-powder shooters still "roll their own" paper-patched bullets for hunting and competitive shooting.^{[6][7]} Arsenal loadings for the .45-70-405 and .45-70-500 government cartridges generally used groove diameter grease groove bullets of .458 inches (11.6 mm) diameter.^[8]

History^[edit]



Profile and headstamp

The predecessor to the .45-70 was the .50-70-450 cartridge, adopted in 1866 and used until 1873 in a variety of rifles, many of them were percussion rifled muskets converted to trapdoor action breechloaders. The conversion consisted of milling out the rear of the barrel for the tilting breechblock, and placing a .50 caliber "liner" barrel inside the .58 caliber barrel. The .50-70 was popular among hunters, as the bullet was larger than the .44 caliber and also hit harder (see [terminal ballistics](#)), but the military decided as early as 1866 that a .45 caliber bullet would provide increased range, penetration and accuracy. The .50-70 was nevertheless adopted as a temporary solution until a significantly improved rifle and cartridge could be developed.

The result of the quest for a more accurate, flatter shooting .45 caliber cartridge and firearm was the Springfield Trapdoor rifle. Like the .50-70, the .45-70 used a copper [center-fire](#) case design. A reduced power loading was also adopted for use in the Trapdoor [carbine](#). This had a 55 grain (3.6 g) powder charge.

Also issued was the .45-70 "Forager" round, which contained a thin wooden bullet filled with [birdshot](#), intended for hunting [small game](#) to supplement the soldiers' rations.^[9] This round in effect made the .45-70 rifle into a [49 gauge shotgun](#).^{*[citation needed]*}

The .45-caliber Springfield underwent a number of modifications over the years, the principal one being a strengthened [breach](#) starting in 1884. A new, 500 grain (32 g) bullet was adopted in that year for use in the stronger arm. The M1873 and M1884 Springfield rifles were the principal small arms of the U.S. Army until 1893.

The .45-70 round was also used in several [Gatling gun](#) models from 1873 until it was superseded by the [.30 Army](#) round beginning with the M1893 Gatling gun.^[10] Some .45-70 Gatling guns were used on U.S. Navy warships launched in the 1880s and 1890s.^[11]

The Navy used the .45-70 caliber in several rifles: the M1873 and M1884 Springfield, the [Model 1879 Lee Magazine Navy contract rifle](#), and the Remington-Lee, the last two being magazine-fed turnbolt repeating rifles. The Marine Corps used the M1873 and M1884 Springfield in .45-70 until 1897, when supplies of the new [M1895 Lee Navy](#) rifle in [6mm Lee Navy](#), adopted two years before by the Navy, were finally made available.

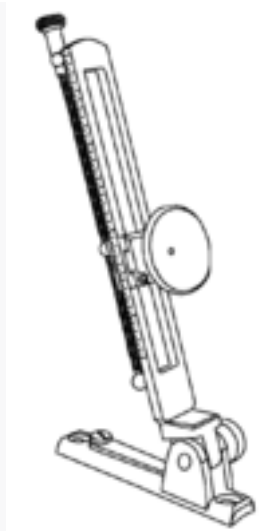
Realizing that single-shot black-powder rifles were rapidly becoming obsolete, the U.S. Army adopted the Norwegian-designed [.30 Army](#) caliber as the [Springfield Model 1892](#) in 1893. However, the .45-70 continued in service with the National Guard, Navy, and Marine Corps until 1897. The .45-70 was last used in quantity during the [Spanish–American War](#), and was not completely purged from the inventory until well into the 20th century. Many surplus rifles were given to reservation Indians as subsistence hunting rifles and now carry Indian markings.

The .45-70 cartridge is still used by the U.S. military today, in the form of the "cartridge, caliber .45, line throwing, M32," a [blank cartridge](#) which is used in a number of models of [line throwing guns](#) used by the Navy and [Coast Guard](#). Early models of these line throwing guns were made from modified Trapdoor and Sharps rifles, while later models are built on break-open [single-shot](#) rifle actions.^[12]

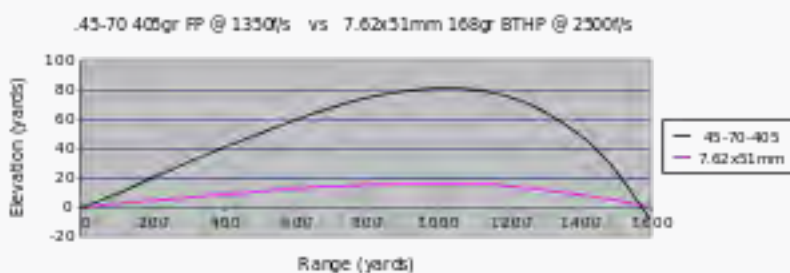
Sporting use^[edit]



[Magnum Research BFR](#) in .45/70 Govt



A long-range tang sight, commonly used on black-powder cartridge rifles



A graph showing the relative trajectories of the .45-70-405 and the [7.62x51mm/.308 Winchester](#) out to 1,600 yards

As is usual with military ammunition, the .45-70 was an immediate hit among sportsmen, and the .45-70 has survived to the present day. Today, the traditional 405-grain (26.2 g) load is considered adequate for any North American [big game](#) within its range limitations, including the great bears, and it does not destroy edible meat on smaller animals such as deer due to the bullet's low velocity. It is very good for [big-game hunting](#) in brush or heavy timber where the range is usually short. The .45-70, when loaded with the proper bullets at appropriate velocities, has been used to hunt the African "[big-five](#)".^[13] The .45-70 has been loaded and used to hunt everything from birds to elephants^[citation needed] and the cartridge is still undergoing new development work.

The trajectory of the bullets is very steep, which makes for a very short [point-blank range](#). This was not a significant problem at the time of introduction, as the .45-70 was a fairly flat-shooting cartridge for its time. Shooters of these early cartridges had to be keen judges of distance, wind and trajectory to make long shots; the [Sharps rifle](#), in larger calibers such as [.50-110](#), was used at ranges of 1,000 yards (910 m).^[14] Most modern shooters use much higher velocity cartridges, relying on the long point-blank range, and rarely using [telescopic sights](#)' elevation adjustments, calibrated [iron sights](#), or hold-overs. Sights found on early cartridge hunting rifles were quite sophisticated, with a long sighting radius, wide range of elevation, and [vernier](#) adjustments to allow precise calibration of the sights for a given range.^[15] Even the military "creedmoor"-type

rifle sights were calibrated and designed to handle extended ranges, flipping up to provide several degrees of elevation adjustment if needed.^[16] The .45-70 is a popular choice for black-powder cartridge shooting events, and replicas of most of the early rifles, including Trapdoor, Sharps, and Remington single-shot rifles, are often available.

The .45-70 is a long-range caliber, and accurate use requires knowledge of windage and elevation by [minute of angle](#) and a sense for estimating distance in these calculations. The .45-70 retains great popularity among American hunters, and is still offered by several commercial ammunition manufacturers. Even when loaded with modern smokeless powders, pressures are usually kept low for safety in antique rifles and their replicas. Various modern sporting rifles are [chambered](#) for the .45-70, and some of these benefit from judicious [handloading](#) of homemade ammunition with markedly higher pressure and [ballistic performance](#). Others, which reproduce the original designs still take the original load, but are not strong enough for anything with higher pressures. In a rifle such as the [Siamese Mauser](#) (commonly converted to fire .45-70 due to it being the only [Mauser 98 derivative](#) designed to feed rimmed cartridges, and the limited availability of ammunition for its original 8x50mmR chambering) or a [Ruger No. 1 single-shot rifle](#), it can be handloaded to deliver good performance even on big African game. The .45-70 has also been used in [double rifles](#) since the development of the [Colt 1878 rifle](#) and the more modern replicas, like the [Kodiak Mark IV](#).

In addition to its traditional use in rifles, [Thompson Center Arms](#) has offered a .45-70 barrel in both pistol and rifle lengths for their "[Contender](#)" single-shot pistol, one of the most potent calibers offered in the Contender frame. Even the shortest barrel, 14 inches, is capable of producing well over 2,500 [ft·lbf](#) (2,700 [J](#)) of energy, double the power of most [.44 Magnum](#) loadings, and a [Taylor KO Factor](#) as high as 40 with some loads. Recent .45-70 barrels are available with efficient [muzzle brakes](#) that significantly reduce muzzle rise and also help attenuate the [recoil](#). The [Magnum Research BFR](#) is a heavier gun at approximately 4.5 pounds, helping it have much more manageable recoil.^[17]

Only with the recent introduction of ultra-magnum revolver cartridges, such as the [.500 S&W Magnum](#), have production handguns begun to eclipse the .45-70 [Contender](#) in the field of [big-game](#)-capable handguns.