


# .357 Magnum

.357 Magnum			
			
.357 Magnum ammunition			
<b>Type</b>	Handgun / Carbine		
<b>Place of origin</b>	USA		
Production history			
<b>Designer</b>	Elmer Keith, Phillip B. Sharpe		
<b>Designed</b>	1934		
Specifications			
<b>Parent case</b>	.38 Special		
<b>Case type</b>	Rimmed, straight		
<b>Bullet diameter</b>	.357 in (9.1 mm)		
<b>Neck diameter</b>	.379 in (9.6 mm)		
<b>Base diameter</b>	.379 in (9.6 mm)		
<b>Rim diameter</b>	.440 in (11.2 mm)		
<b>Rim thickness</b>	.060 in (1.5 mm)		
<b>Case length</b>	1.29 in (33 mm)		
<b>Overall length</b>	1.59 in (40 mm)		
<b>Primer type</b>	Small pistol, magnum		
<b>Maximum pressure</b>	35,000 psi (241 MPa) <sup>[1][2]</sup>		
Ballistic performance			
Bullet weight/type	Velocity	Energy	
125 gr (8 g) Bonded Defense JHP	1,600 ft/s (490 m/s)	710 ft·lbf (960 J)	
130 gr (8 g) JHP	1,410 ft/s (430 m/s)	574 ft·lbf (778 J)	
158 gr (10 g) Buffalo Bore Heavy	1,485 ft/s (453 m/s)	774 ft·lbf (1,049 J)	
180 gr (12 g) WFNGC Hard Cast	1,300 ft/s (400 m/s)	676 ft·lbf (917 J)	
200 gr (13 g) WFNGC Hard Cast	1,200 ft/s (370 m/s)	640 ft·lbf (870 J)	

<p><i>Test barrel length: 4 in (102 mm) (vented)</i> <i>Source(s): Federal,<sup>[3]</sup> DoubleTap Ammunition<sup>[4]</sup></i></p>	
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The **.357 S&W Magnum** (9x33mmR), or simply **.357 Magnum**, is a revolver cartridge created by Elmer Keith, Phillip B. Sharpe,<sup>[1]</sup> and Colonel D. B. Wesson<sup>[1]</sup> of firearms manufacturer Smith & Wesson, and Winchester.<sup>[1][5]</sup> It is based upon Smith & Wesson's earlier .38 Special cartridge.



Marlin Model 1894C—a carbine in .357 Magnum that is a companion to revolvers.

The .357 Magnum cartridge was introduced in 1934, and its use has since become widespread. This cartridge started the "Magnum" era of handgun ammunition.<sup>[1]</sup> The .357 Magnum cartridge has a positive reputation for stopping power.<sup>[6]</sup>

## Design

The .357 Magnum was collaboratively developed over a period in the early to mid-1930s by a group of individuals in a direct response to Colt's .38 Super Automatic. At the time, the .38 Super was the only American pistol cartridge capable of defeating automobile cover and the early ballistic vests that were just beginning to emerge in the post-World War I "Gangster Era."<sup>[1]</sup> Tests at the time revealed that those vests defeated any handgun cartridge traveling at less than about 1000 ft/s. Colt's .38 Super Automatic just edged over that velocity and was able to penetrate car doors and vests that bootleggers and gangsters were employing as cover.<sup>[7]</sup>

Though .38 and .357 would seem to be different diameter chamberings, they are in fact identical. 0.357 inch is the true bullet diameter of the .38 Special cartridge. The .38 Special nomenclature relates to the previous use of heeled bullets (such as the .38 Short Colt), which were the same diameter as the case. Thus, the only external difference in the two cartridges is a slight difference in length, solely for safety purposes as explained below.

Much credit for the .357's early development is given to hunter and experimenter Elmer Keith. Keith's early work in loading the .38 Special to increasingly higher pressure levels was made possible by the availability of heavy, target shooting-oriented revolvers like the Smith & Wesson .38-44 "Heavy Duty" and "Outdoorsman", .38-caliber revolvers built on .44-caliber frames. The .38-44 HV load used the .38 Special cartridge loaded to a much higher velocity than standard .38 Special ammunition. The .38-44 revolvers were made by using a .44 Special size gun with the barrel and cylinder bored to .357 caliber (the true bullet diameter of the .38 Special). Since the frame, cylinder, and barrel were much stronger than the standard .38 Special components, it was capable of withstanding much higher pressures. The .38-44 HV round, while no longer available, was in most cases the equal of the later .357 Magnum, which works at more than double the pressure of standard .38 Special. The .357 Magnum addresses the safety issues earlier cartridges had by stretching the case by approximately 1/8 of an inch, preventing the high pressure .357 cartridge from chambering in a firearm designed for the shorter, lower pressure .38.<sup>[8]</sup> Elmer Keith also contributed the Keith-style bullet, which increased the mass of bullet located outside of the cartridge, while leaving more room inside the cartridge for powder. The Keith bullet also employed a large, flat meplat, thus enabling rapid energy transfer for greater wounding properties. At the same time, this bullet design does not deform like a hollow point, and as a result achieves greater penetration. These characteristics of the Keith bullet make it very suitable for hunting applications as well as target shooting.

In order to reassert itself as the leading law enforcement armament provider, Smith & Wesson developed the .357 Magnum, with Colonel D. B. Wesson leading the effort within Smith & Wesson, along with considerable technical assistance from Phillip B. Sharpe, a member of the Technical Division Staff of the National Rifle Association. The new round was developed from Smith & Wesson's existing .38 Special round. It used a different powder load, and ultimately the case was extended by 1/8 of an inch (0.125 in, 3.18 mm). The case extension was more a matter of

safety than of necessity. Because the .38 Special and the early experimental .357 Magnum cartridges loaded by Keith were identical in physical attributes, it was possible to load an experimental .357 Magnum cartridge in a .38 Special revolver, with potentially disastrous results. Smith & Wesson's solution, of extending the case slightly, made it impossible to chamber the magnum-power round in a gun not designed for the additional pressure.<sup>[1]</sup> However, both .38 Special and .357 Magnum will chamber in Colt New Army revolvers in .38 Long Colt, due to the straight walled chambers, but this should not be done under any circumstances, due to dangerous pressure levels, up to three times what the New Army is designed for.

The choice of bullet for the .357 Magnum cartridge varied during its development. During the development at Smith & Wesson, the original Keith bullet was modified slightly, to the form of the Sharpe bullet, which itself was based upon the Keith bullet, but which had 5/6 of the bearing surface of the Keith bullet, Keith bullets typically being made oversized and sized down. Winchester, however, upon experimenting further during the cartridge development, modified the Sharpe bullet shape slightly, while keeping the Sharpe contour of the bullet. The final choice of bullet was hence based upon the earlier Keith and Sharpe bullets, while additionally having slight differences from both.<sup>[1]</sup>

## Performance

This cartridge is regarded by many as an excellent self-defense round. The hollow point version enjoys a reputation of being the gold standard of stopping power among handgun cartridges and an "extremely reliable one shot stopper."<sup>[9]</sup> For big game, such as ungulates and bears, which have a substantially sturdier build than humans, it is inferior to the .500 Smith & Wesson, .50 Action Express, .44 Magnum, .454 Casull, .41 Magnum and other larger magnum rounds. Still, it is a fine small and medium game round and will kill deer very reliably at reasonable ranges if the right loads (140 grain and heavier hollow-point bullets, and solid semiwadcuter bullets) are carefully used by a competent marksman. For further comparison, the .357 Magnum has a higher velocity at 100 yards than its parent .38 special has at the muzzle.<sup>[10]</sup> Its stopping power on game is similar to the .45 Colt and it has a flatter trajectory. It is a very versatile cartridge, and can be used with success for self-defense, plinking, hunting, or target shooting.<sup>[11]</sup>

Revolvers in .357 Magnum caliber have the significant advantage of also being able to fire .38 Special ammunition, with its lower cost, recoil, noise, and muzzle flash. This trait makes .357 revolvers ideal for novice shooters who are not yet used to firing full-strength .357 loads but do not want the expense of buying a second lower-powered gun to train with. However, a .38 Special should not generally be used with any .357 *automatic* handgun or rifle, such as the Magnum Research Desert Eagle, since such firearms require the larger recoil produced by firing a .357 Magnum round to cycle properly.

It has also become popular as a "dual use" cartridge in short, light rifles like the American Old West lever-actions. In a rifle, the bullet will exit the barrel at about 1,800 feet per second (550 m/s),<sup>[12]</sup> making it far more versatile than the .30 Carbine or the .32-20 Winchester. In the 1930s, it was found to be very effective against steel ballistic vests, and metal-penetrating rounds were once popular in the United States among highway patrol and other police organizations. The .357 revolver has been largely replaced by modern, high-capacity semi-automatic pistols for police use, but is still very popular for backup gun use, and among outdoorsmen, security guards, and civilians for self-defense and hunting.

Some common performance parameters are shown in the table below for several .357 Magnum loads. Bullet weights ranging from 110 to 180 grains are common. The 125-grain JHP loads are popular for self-defense, whereas the heavier loads are usually used for hunting.<sup>[citation needed]</sup> Loads are available with energies from about 400 (ft·lbf) to over 700 (ft·lbf), and penetration depths from 9 inches to over 27 inches are available for various applications and risk assessments.

Manufacturer	Load	Mass (grains)	Velocity (ft/s)	Energy (ft•lbf)	Expansion (inches)	Penetration (inches)	PC <sup>[13]</sup> (in <sup>3</sup> )	TSC <sup>[13]</sup> (in <sup>3</sup> )
American	Quik-Shok JHP	125	1409	551	fragment	9.0	2.7	47.5
ATOMIC Ammunition	Bonded Match Hollow Point	158	1350	640	0.71	15	X	X
Double Tap	Gold Dot JHP	125	1600	711	0.69	12.75	4.8	69.3 (est)
Federal	Classic JHP	125	1450	584	0.65	12.0	4.0	79.8
Remington	Golden Saber JHP	125	1220	413	0.60	13.0	3.7	30.4
Remington	Semiwadcutter	158	1235	535	0.36	27.5	2.8	12.9
Winchester	Silvertip JHP	145	1290	536	0.65	14.3	4.7	33.7

**Key:** **Expansion** – expanded bullet diameter (ballistic gelatin). **Penetration** – penetration depth (ballistic gelatin). **PC** – permanent cavity volume (ballistic gelatin, FBI method). **TSC** – temporary stretch cavity volume (ballistic gelatin).

## Comparison

The .357 Magnum was a direct competitor with the .38 Super, which was designed for semi-automatic pistols. Ballistic performance for the two rounds is very similar. However since the .357 is usually chambered in revolvers, it can be shot in barrels longer than one would normally find in automatics, giving it an increase in performance.

In terms of accuracy, the .357 Magnum has at least the same potential for precision shooting as the benchmark .38 Special wadcutter round—indeed, a good .357 Magnum revolver will happily shoot .38 Special wadcutter ammunition with good results. It is this accuracy and power, and the versatility of also being capable of using less-expensive, milder .38 Special ammunition, that makes a .357 Magnum revolver an excellent gun for many different disciplines, from 20 yard (18.28 m) precision shooting to long range falling-plate events. It is an excellent round for those considering handloading ammunition, as it is economical and consistently performs well.

As mentioned above, the .357 Magnum was developed from the earlier .38 Special. This was possible because the .38 Special was originally designed to use black powder, which requires two to five times as much powder by weight to produce the same velocity with the same bullet as does the much more efficient smokeless powder. Thus the .38 Special has a relatively large case. The 9mm Parabellum was introduced the same year (1902) but was originally designed for smokeless powder, and for higher pressures (~39,200 psi)<sup>[citation needed]</sup>. It therefore produces considerably more energy than the .38, despite its case having less than 1/2 the powder capacity. Most 9 mm powder charges fill the case to the base of the bullet, and some are heavily compressed<sup>[citation needed]</sup>. Many .38 Special loads use the same powders, in similar charge weights, but because the case is so much larger, those charges only fill the case about half full. Light target loads with fast burning powders may only fill the case perhaps 1/8 full. Filling the case with slower-burning powders produces much more power, but also much more pressure; far too much pressure for older, smaller-frame revolvers chambered in .38 Special. It was



Colt Pythons in 8" and 6" barrels



1956 made Colt ".357" Magnum

to accommodate these high-pressure, high-power loads that the longer .357 Magnum, together with the stronger revolvers designed to handle it, were developed.

The .357 SIG that was developed in 1994 was named "357" to highlight its purpose: to duplicate the performance of 125-grain (8.1 g) .357 Magnum loads fired from 4-inch (100 mm) barreled revolvers, in a cartridge designed to be used in a semi-automatic pistol. Performance is similar to the 9x23mm Winchester. The .357 SIG provided a self-defense cartridge close in performance to a 125 gr .357 Magnum, but from a semi-automatic pistol with greater ammunition capacity.

## Synonyms

- .357 Mag
- .357 S&W Magnum
- 9x33mmR (Europe)

## References

### Notes

- [1] Handloads.com SAAMI pressure specs (<http://www.handloads.com/misc/saami.htm>)
- [2] Leverguns.com SAAMI pressures ([http://www.leverguns.com/articles/saami\\_pressures.htm](http://www.leverguns.com/articles/saami_pressures.htm))
- [3] Federal Cartridge Co. ballistics page (<http://www.federalcartridge.com/ballistics/>)
- [6] Marshall EP and Sanow EJ: Stopping Power. Paladin, Boulder, CO, 2001. ISBN 978-1-58160-128-2
- [11] "The Versatile .357 Magnum" by Chuck Hawks (subscription required) ([http://www.chuckhawks.com/subscribers/handgun\\_cartridge\\_page/357magnum.htm](http://www.chuckhawks.com/subscribers/handgun_cartridge_page/357magnum.htm))
- [12] Ballistics By The Inch .357 magnum results (<http://www.ballisticsbytheinch.com/357mag.html>)
- [13] Marshall and Sanow, Street Stoppers, Appendix A, Paladin 2006 ISBN 0-87364-872-2

## External links

- .357 Magnum Videos ([http://stoppingpower.info/index.php?title=.357\\_Magnum](http://stoppingpower.info/index.php?title=.357_Magnum))
- Ballistics By The Inch .357magnum results. (<http://www.ballisticsbytheinch.com/357mag.html>)

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