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## Terminal Ballistics as Viewed in a Morgue

[HOME](#)

[contents](#)

Comments by Deadmeat2 (and a few others) found on the SW Forum Archived on Mouseguns.com July 13, 2006

[classes](#)

Original Post is [Here](#)

[firearms](#)

One of the benefits of working in a morgue is that I get to see what works and what doesn't. Ballistic gelatin is good as far as it goes, but there's nothing like seeing what a bullet actually does once it strikes bone, flesh, and organs. Suffice it to say, it doesn't always mimic ballistic gelatin.

[ammo](#)

[holsters](#)

[accessories](#)

The other is that I get to hear some great CCW stories. Here's one of them: A recently-married couple living in one of the less desirable sections of Atlanta decided that for safety purposes they should get a handgun and learn how to shoot it. They bought a Glock 27 in .40, CCW permits, and made regular trips to an indoor range.

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One evening, having just come back from the range, they cleaned and loaded the Glock and had left it on the coffee table in the living room, intending to put it up later. Shortly thereafter they heard a knock at the door and, expecting company, opened it without looking through the peephole.

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A crazed male entered the apartment brandishing a handgun yelling, "Give it up, give it up!" The husband said that it was obvious the individual was high on drugs and there was absolutely no question in his mind that both he and his wife were going to die. Knowing this, he decided that his only option was to go down fighting.

Gunthorp

Volume

The BG forced them both down a narrow hallway into the living room, screaming all the while. The husband was in the lead, followed by his wife, and then the BG, whose view of the living room was being blocked by the husband and wife.

I

The husband reached down, grabbed the Glock, pushed his wife aside, and fired one shot at the BG, striking him dead center in the middle of the chest. Although knocked to the floor, the BG still made a feeble attempt to retrieve his own gun. At this point, the husband let him hold another one to the chest. That ended that little problem.

Upon talking to the still-shaken husband, the police said he could remember little of what all the BG had said. As he recalled it, "All I can remember is that his first words were 'Give it up!' and his last words just as he saw the Glock were 'Oh, (fill in the blank)!'"

I see an average of 8.2 autopsies per day/365 days per year, and I can tell you that when the chips are down, there's nothing that beats a 12-gauge. As for handguns, the name of the game is not only shot placement but how a properly-placed bullet acts

once it gets there. I've seen folks killed by a bb to the eye and others survive after being hit by several well-placed rounds with a 9mm.

As for me, I'll take a slow-moving .45 to a gun fight any day. I absolutely despise a 9mm for defensive situations (yes, they will eventually kill but often not quickly enough to prevent the BG from doing you in first) and a .380 as well. These are probably the two calibers I see most often on the autopsy table.

But then, I've seen most everything. I've seen a guy killed by a .416 Rigby, as well as a suicide to the head with a .44 Mag that didn't penetrate the skull on the other side.

The long and short of it is that you just don't know how ANY bullet will react to tissue and bone until you open them up and take a look. I've seen hardball fragment and hollowpoints act just like hardball. That said, shoot what you're comfortable with and place your shots well whatever caliber you use.

The .357 is gloriously effective. It's just that semi-autos are much more common than they used to be, so we see far more 9mm and .380 rounds on the autopsy table than we do the .38 and .357. Particularly among the gangbangers, the 9mm and .380 are the weapons of choice. The .357 is a wonderfully effective round for self-defense from what I've seen, but it's rare that we get them in anymore.

Again, this is from experience that I've made my calls on what works and what doesn't. I have no use for mouse guns like the .32, although it's a lot better to have a mouse gun than nothing at all. Personally, I'll never carry anything smaller than a .40 and prefer the .45. Day in and day out, results from the autopsy table show me that the .45 is the gun to have in a gun fight, provided you can shoot it well. If not, it's better to have something you can shoot well, even if it's a mouse gun, than something you can't.

Yeah, tell me about it, Smitty. I spent most of my life in Knoxville, TN and absolutely loved it. But then, my job is working in the Medical Examiner's Office, and, as you said, this is a target-rich environment. Having a job in an Atlanta morgue is job security at its best.

KRL, I'll take slow and heavy to light and fast any day. What I want is a round that plows through bone and tissue and expends ALL of its energy in the body. That said, the 125-grain .357 is marvelously effective.

S/W-Lifer, You're correct in what you're thinking. Yes, the 9mm and .380 are the rounds I most often see on the autopsy table, but they're also the rounds that usually require multiple hits to make the kill. The standing joke in the morgue is to guess the caliber by looking at the x-rays. If multiple rounds show up on the x-rays more often than not it's a 9mm or .380 (or .32 or .25 or some mouse gun caliber). If only one round shows up, it could be an inordinately good hit with a .380 or 9mm, but more likely it's a .40 or .45.

Yes, the .380 and 9mm will do the job, but usually multiple hits are required as opposed to single hits with a .40 or .45.

Instead of individual replies to each of these questions, let me see if I can narrow some observations down into one long one. Forgive me if some of these have been in other posts, but they bear repeating.

First, ballistic gelatin, being all that's available for most bullet testing, is good as far as it goes but it's often far different from what we see in the morgue. A far more realistic scenario would be to dress up ballistic gelatin with a heavy coat of denim to mimic blue jeans, embed some bones obtained from a butcher shop, and throw in a few objects of varying densities to mimic organs. Try it again, and I think you'll see that this impressive wound cavity that's so often seen in ballistic gelatin goes down the tubes. The human body isn't just composed of one density as ballistic gelatin is, and the bullet does various things to various parts of the body as it passes through.

And that's why I think observations from a morgue are so important. Day in and day out, I get to see what works and what doesn't. More than that, I get to see what the same caliber does with various bullets weights and designs and how it reacts to different parts of the body. The best of all are when the gangbangers use the mix and match technique and shoot a variety of bullets in the same magazine and these bullets wind up in the same victim shot from the same gun. Hardball and hollowpoints in the same body from the same gun give a great comparison on the effectiveness of each.

So let me give a few thoughts here. First, as you've pretty well guessed by now, I'm a big fan of the .40 and .45 for personal defense, and for the same reasons. They're both big, slow-moving bullets. Of the two, I think big is more important. As I've said before, I want something that will plow through bone and keep going, not skip off of it. I can't tell you how many times I've seen a .380 or 9mm strike bone on a well-placed shot and skip off in a non-vital direction, leaving the BG free to return fire. With the .40 and .45, this seldom happens. Bone is in the body for basically two reasons--to give support as with the legs and spinal column and to protect major organs, such as the ribs protecting the heart or the skull protecting the brain. Skip a bullet off a support bone, such as the leg, and the BG will keep shooting. Break it, like you generally do with a .40 or .45, and the BG is going to hit the pavement and your chances of survival increase dramatically. It's the same with a shot to the chest. Skip a 9mm off the sternum (breastbone) and the fight continues; plow through the sternum with a .45 and, trust me, the fight is over. I'm just convinced that all things being equal, bigger is better when it comes to bullet size.

I also like bullets to expend all their energy in the body, not only for the protection of nearby civilians, but because I think it imparts more damage. I'm a bit less certain of this one, however, than I am about bullet size. Whether a bullet remains in the body is often as much a result of WHERE in the body it hit as what it was hit with. If hit solely in tissue, more often than not the bullet exits the body, regardless of what caliber it was; bone, on the other hand, can slow the bullet dramatically and leave it lodged in the body. As I said before, I once saw a .44 Magnum enter the skull point blank between the eyes and flatten and not exit on the inside of the skull on the back of the head. Amazing!

As for the .357 being a well-documented man-stopper, I'm guessing that you guys are right in assuming that it's mainly a function of velocity, but if someone wants to disagree I'll have no issue with it because it's a caliber we almost NEVER see

anymore. When I was a cop in Atlanta it was the caliber of choice for law enforcement. Unfortunately, I only rarely got to see autopsies back then so I can't speak from vast experience. With the increasing use of semi-autos, the prevalence of revolver rounds such as the .38 and .357 has dropped dramatically, and although we still see the .38 with some frequency, we almost never get to see the .357 at autopsy. Still, in its most lethal form, it's a 125-grain bullet, the same as a 9mm in many cases, and the 9mm has a horrible reputation as a reliable man-stopper. Again, I'm only guessing that it's a function of the higher velocity of the .357. The .41 Magnum, for all its hype about being the next great law enforcement caliber, never came into widespread use and I can't remember ever digging one out at autopsy, so I'll leave this one alone. And almost without exception, the bullet weight I see most often with the .44 is the commercially-available 240 grains so I can't speak to anything besides that.

Remember, folks, that what I see on the autopsy table is most often BGs shooting BGs (sniff, sniff. Forgive me, my eyes are welling up with tears and I might have to continue this thread later. Ok, better now, so I'll continue) or, worse, BGs shooting good guys. In either case, BGs usually aren't students of ballistics, they aren't NRA members, they don't read Guns and Ammo, and they don't sit down at the Dillon 550 at night cranking out some new handload they've read about. They buy commercially-available ammo and, occasionally, add some personal touches they've read about in the latest issue of Gangbanger Magazine, such as filling the cavity of the hollowpoint with mercury (Yes, I've seen it. Worked just like hardball.) or deeply scoring the nose of the bullet (worked just like frangible except that it came apart on the outside of the other BGs clothing, which is why we had this one on the autopsy table (sniff). That said, if we want to evaluate various bullet weights and designs that aren't available commercially, we're once again left with ballistic gelatin, and the more I see on the autopsy table, the less confidence I have in the results.

Finally, just a couple of answers to questions: First, Houston is mostly right in assuming that multiple rounds seen from the 9mm and .380 are from the higher magazine capacity and controllability of the two calibers. Again, however, much of it is due to the fact that these two calibers just aren't getting the job done before the other BG returns fire and sends our BG to gangbanger heaven. Yes, the shots were eventually lethal, but many times not immediately so. And, yes, they CAN BE an effective weapon IF placed in a lethal area and IF the bullet gets the job done once it gets there instead of skipping off in a non-lethal direction. My advice, however, is to get a larger caliber such as a .40 or .45, practice until you're comfortable with it, and use it as your carry gun, not the 9mm or .380. Practice will greatly reduce the first IF mentioned above, and a larger caliber will greatly reduce the other.

Please forgive the long-winded reply, but I guess it was still shorter than responding individually to each of you. As always, take what you can use, and if your opinion differs, well, that's what opinions are all about, isn't it? My guess is that this will generate other questions, such as which bullet I like and other questions about caliber, etc. If so, let me know and I'll try to get to them as soon as I can.

Jeez, this thing has taken on a life of its own and I'm wondering where to take it. Do you guys think we should continue the bullet end of things on the Ammunition forum? It seems like it might be a bit more appropriate there since this thing kind of morphed out of a CCW story.

spine, it turned the viscera in the chest cavity into mush. No matter what rifle or bullet you use on the BG, it will usually be more effective than your handgun.

A { In short, my first choice in almost all situations will be a shotgun, followed by a rifle, followed by a handgun.

After re-reading some of my previous posts on wound ballistics and how bullet weight and velocity affect wound characteristics, I'm not sure I did as good of a job of explaining it as I might have. Let me see if I can rephrase some of this stuff and reduce it to something useful (I hope). I'll try to keep the scientific end of things to a minimum, but some of it is necessary to get the gist of it. Anyway, the kinetic energy imparted by a bullet as it enters the body depends on two things--the weight of the bullet and the velocity at which it is traveling. Of the two, velocity is more important. Doubling the velocity quadruples the kinetic energy; doubling the bullet weight only doubles it.

When a bullet strikes tissue the kinetic energy begins to create a temporary cavity behind it, sort of like the videos you've seen of space capsules re-entering the atmosphere. Maximum expansion occurs some time after passage of the bullet (measured in milliseconds) and the diameter of the expansion depends largely on velocity (as well as tissue density and cohesiveness, but we've already touched on that), with higher velocities producing larger temporary cavities. The temporary cavity is extremely important in that it is largely responsible for producing injuries to arteries, veins, organs, and nerves that are not directly struck by the bullet or its fragments. In fact, it's possible for the bullet to strike nothing vital at all but still produce incapacitation or death by the temporary cavity that does.

Because of the relatively low velocity of most handgun projectiles, the temporary cavity produced is generally quite small, extending only a short distance into the surrounding tissues. With high velocity bullets, such as with rifles, the picture changes dramatically. Because of the quadrupling of kinetic energy, this temporary cavity is GREATLY enlarged and subsequent damage to surrounding nerves, tissues, blood vessels, and organs is GREATLY enhanced, and fractures to bones incidental to the temporary cavity can occur even without the bullet directly striking them.

So at what velocity does this increased (hence, more effective) temporary cavity occur? From what I've read (and confirmed on the autopsy table) this is around 2600-2900 fps. At these velocities the characteristics of the wound change from one with a minimal temporary cavity to one in which the temporary cavity increases dramatically.

As for the bullet exiting the body versus staying in the body, I read just yesterday that most ballistic experts now agree that my suspicions all along are correct. Although kinetic energy is determined by the weight and velocity of the bullet, wound damage is determined by the kinetic energy lost in the tissue. In other words, kinetic energy lost when the bullet exits is not imparted to the body; conversely, when a bullet remains in the body, all of its kinetic energy is spent doing damage to the tissue. So I guess that finding a bullet that is less likely to exit is bad for the BG who gets hit and good for the civilian standing behind him.

Along these same lines, let me give a thought or two on pellet guns and bb guns. I can remember a number of deaths caused by these two weapons, one quite recently. In every case I can remember, the death was caused by a pellet or bb to the eye. The bone in the back of the eye is extremely thin and little is required to push a pellet or bb through it. Even worse, in the back of the orbit there's a small area where there's no bone at all and there's a direct path to the brain. For those of you with kids, be aware of this and, as always, preach safety to them.

I hope the previous post was taken in the spirit in which it was intended. For many, there seems to be a feeling of comfort imparted by carrying a defensive weapon regardless of how incompetent they are in using it. Unfortunately, these folks seem to have a habit of seeking out an autopsy table.

Someone poses a question:

DeadMeat, I have a question for you that has come up in some discussions. Due to the laws of some states not allowing the transportation and/or possession of a handgun or in some places any "firearm". The idea has been kicked around of carrying a flare gun. For the limited range that it most likely be used (1'-6'). And since it is not recognized by the law as a "firearm", but as a signaling device it relieves the stress of legal problems. Have you ever seen a victim of or read a report medical or morgue of a person shot with a 12ga. flare pistol?

Someone else chimes in:

There was a pretty well known case among cruising sailors in the Bahamas. It made several of the magazines at the time back in the late '80s. A man and his wife in a remote anchorage where attacked by a group of three local problems. They announced what they were going to do to his wife after they killed him with their machetes. He responded to the first guy over the rail with a 25mm white phosphorus round to his face at a range of about three feet. Perp ended back in his own boat doing alot of screaming. White phosphorus can't be extinguished once it starts. 25 mm white markers burn for around 20 seconds and are very, very hot. His fleeing buddies dumped him on the beach where he expired after screaming for about 30 minutes. The couple had their property seized and where deported if I remember correctly.

Deadmeat2 replies:

No, I've never seen someone hit by a flare gun so I'm out of my element here. I did have a guy hit in the chest by a 'tater fired out of a potato gun, though. Seems he and his buddies were having an alcohol-fueled softball game when one of the guys produced a potato gun and bet the batter he couldn't hit a 'tater fired from it. Believe me, if you've ever seen how fast a spud comes out of one of these things you wouldn't have taken that bet! Anyway, batter up! Our batter was ready to do his best imitation of Babe Ruth, but, unfortunately the pitcher's aim was a bit inside and hit our batter squarely in the chest with one of Idaho's finest. It broke about half the ribs on the left side and severed a few major blood vessels around the heart. Needless to say, he didn't get the walk to first.

POTATO  
GUN

"attack umbrella"? Hey, stick that pellet gun in your belt and be on your way? Perhaps, like me, you think it much more likely you'll be set upon by 6' 12" 325LB Louie Packaloud who just got paroled from the state pen (assault on a police officer and possession of a big fat bag of crack) and who comes equipped with a big knife and a fresh load of heroine, PCP, or meth (or some combination of the three with a few shots of Jack Daniels thrown in) pumped into his arm. Uh oh, did I bring the .380 or the .44 mag? Maybe its winter time and Louie is well dressed with a heavy leather jacket, a sweater, and a heavy flannel shirt. Now, whatta YOU want to be pack'n? Hey, shoot me with a 9mm +P+ and I'm on my ass in a heartbeat. Shoot Louie with the same load and you've got one pissed off ex-con to deal with. Friends, I'm a big believer in safety margins and there isn't much of a bigger margin with a handgun) than a 200-240 gr. JHP clipping along at 1200+ fps and to hell with "overpenetration" I wanna win and I wanna stay alive. You pays yer money and you makes yer choices.

Well, you're both right. All things considered I'd rather have a head shot regardless of caliber than a body shot with a hand cannon. But I, for one, just don't consider myself good enough to do it consistently so I'm directing my bullets toward the chest. For those of you who can consistently hit the head under combat conditions, more power to you.

And Dusty Miller is exactly right. It isn't going to be a Michael Jackson or Pee Wee Herman look-alike who holds you up at gunpoint. More than likely it's going to be some drugged-ridden, bulked up, 5-time ex-con who makes Arnold Schwarzenegger look like the runt of the litter. And for him I want the absolute biggest caliber and bullet I can control and fire effectively and quickly. And there's no such thing as a margin of safety too large as long as I can handle it.

Yes, the 127-grain Ranger +P might do the job effectively. Or it might not. As Dusty Miller says, the margin of safety is just way too small for comfort for me. If you can learn to shoot the 9mm effectively, how much harder would it be to learn to shoot the .40 or .45? Probably not much, and believe me they're both effective with any load.

I guess the bottom line for me is that I've NEVER failed to see a .40 or .45 get the job done. I can't say the same about the 9mm.

By now you've probably figured out that I don't like the 9mm for self-defense with any bullet. I'm a big fan of the .45 followed by the .40. I'm not intentionally avoiding your questions but the answer to them will become clear after the next post or two if I can stay in town long enough to get it cranked out.

Someone else posted:

This is getting ridiculous. Being shot 12 times in the chest with 9mm ammo and feeling "tired" is very interesting. Not knowing you are shot means neural pain pathways are not working and he needs treatment because he probably has an autoimmune disorder. The 45 is in no way vastly superior to the 9mm. Just look at the physics and biology of a man. Plus, the blood loss from 12 9mm holes would cause death in a matter of minutes. All I am saying is if the 9mm is so poor, the 45 is not going to be much better. If you think it is so much better, what about it makes it so vastly superior to the 9mm? Let me say, that I have no love for the 9mm, I just think it

As I've said in an earlier post, there are two main components to ending a fight. One is shot placement, i.e., what part of the body does the bullet strike to begin with, and, two, what does the bullet do once it gets there? A perfectly placed shot to the chest will often be ineffective if it doesn't penetrate. Conversely, a poorly placed shot may end the fight if it does. It's penetration that I think is the principal component in ending a fight and everything else is secondary.

\* \* \*

From empirical observation of what comes across the autopsy table, I've noticed MANY times that the 9mm or .380 strikes bone and is deflected into a non-vital area, never reaching vital organs. And I've seen it with multiple shots on occasion. Other times the 9mm or .380 will fragment before reaching the vitals or just plain haul up short. Whatever the reason, often times adequate penetration needed to reach vital organs is not achieved and the fight continues. Much of this, I think, is related primarily to bullet weight with the 9mm typically weighing about half of the .45. Yes, I've already said the .357 is a proven man-stopper with the 125-grain bullet, so it's not entirely a function of bullet weight.

AD

As I think I've said before, I don't think I've ever seen a .45 fail to penetrate adequately, and it's for that reason that it's my carry weapon. Time and time again I've seen the venerable .45 just keep plowing along, busting up bone instead of skipping off of it or being stopped by it. If it's headed in the direction of the vital organs, there isn't much that's going to deter it from its intended target.

All things being equal, I suspect that a hit to the vitals with a 9mm ends the fight as quickly as an identical hit with a .45. At least in the autopsies I've seen I've never had any indication to the contrary. But that's not the point. Let me say it clearly here. In my humble opinion, the 9mm and .380 are more likely to fragment or be deflected into a non-vital area or to simply stop short of reaching the vital organs than a similarly-placed shot with a .45. It's all due to penetration.

For me, I want a large bullet from a large caliber in a weapon that I can control effectively and get off multiple shots from effectively. I want that bullet to be able to CONSISTENTLY PENETRATE the thoracic area even with heavy clothing, and I want a margin of safety built in to the extent that I'm still confident of the effects of the weapon under less than optimal conditions. For me, at least, it's that simple.

Someone else posts:

I certainly hope my comments were not considered defamatory, and if everyone agreed and there were no questions or debate this would be kind of boring, wouldn't it?

So the answer is that you believe penetration to be critical and believe the .45 offers more consistent penetration than does the 9mm.

Well, I agree on the penetration issue (combined with some measure of expansion, and the manner of expansion) and agree that the best .45 bullets probably offer more consistent performance than their 9mm counterparts. But I also believe that the .45 performs best in longer (4-5" barrels) and can actually be less effective than a 9mm when you try to push it out of a 3.25-3.5" barrel. It just starts slowing down too much

4"  
BARREL



autopsy table that has had a few holes poked in him with a 9mm or .45 and we can continue the discussion while prodding the innards. Looking forward to hearing from you.

DM2, I have enjoyed your posts and most of the others in this thread.

As for some information backing up some of what DM2 has posted, there was an article a few years ago documenting the Texas Dept. of Public Safety's search for a new pistol. They had gone from .357 mag revolvers to .45 and 9mms. They studied all of their shootings and found that often officers were required to fire into cars, so ability to penetrate windshields and car doors was a consideration. I am going from memory here but here as some of the highlights:

.357 mag worked quite well but they were going with a semi-auto pistol. This was the round that all others were judged by.

9mm penetrated windshields and car doors BUT the bullet tended to fragment, meaning Bad Guy was hit with only fragments which did not penetrate heavy clothing.

.45 would penetrate windshields and car doors and stay intact. The problem was that going thru the windshields or car doors slowed the round down enough that it would not penetrate heavy clothing.

.40 caliber was considered but viewed as a cross between 9mm and .45, meaning you get the best and worst of both calibers.

.357 SIG is what they ended up getting. It had similar ballistics with .357 mag, would penetrate windshields and car doors and still have velocity and bullet weight to penetrate a bad guy.

I am not advocating .357 SIG, just pointing out that some of DM2's observations are correct. I have shot the .357 SIG but don't really care for it. Another agency I know of considered the recoil and size of their officers and ended up with 9mms and have done quite well with them. I believe they are/were using Cor Bon ammo.

As far as shot placement goes, you could have two different bullets hit a body in the same area and both bullets could and probably will take wildly different tracks on their journey thru the human body. Gang bangers and Thugs are not known for using thing like sights; they advocate the spray and pray method or the up close and personal shooting (gun to back of head).

Right now, my duty weapon is a .40 (Speer Gold Dot), my back-up weapon is a S&W 360 PD (357 mag. Glaser), my off duty weapons are a 1911 .45 (Speer Gold Dot) and a 9mm (Federal EFMJ).

Deadmeat2 says:

The reason so many folks wind up on the autopsy table with 9mm and .380 holes poked in 'em is because these two calibers are the ones most commonly carried by the BGs. It stands to reason that the more BGs that are carrying them, the more BGs that will wind up on the autopsy table with these rounds in them. And in most cases they

While most of us agree a 12ga. is a pretty good stopper, disagreement starts after that... some claim the .223 round is wonderful for self defense others say it is junk.

If you look at enough shooting you can find failures to stop with about anything. The real issue is what works well and FAST most of the time. This is what Marshall and Sandow tried to do in their books a few years ago. The result of those books was serious controversy over the usefulness of those statistics. You can decide for yourself if you think they are useful, but they were an attempt to predict what would work and what would not.

Earlier Major General Hatcher did extensive studies for the War Dept. on the effectiveness of various rounds. He concluded that among pistol cartridges, the .45 was hard to beat... and his conclusion was generally agreed to by those who had actually used various pistols in combat.

While we may argue the reasons, the fact is combat soldiers preferred the .45 acp to the 9mm and the troops today want to get rid of the 9mm for a .45... based on their experiences. Special units that have the ability to buy weapons commercially have already bought .45 acp pistols. These units express great satisfaction with the .45 and very little with the 9mm. This may be related to the fact they are required to use ball ammo... and because they are limited to ball for political reasons, the .45 is all the better.

All that said, I know of few if any who have carried the .45 in real "elephant viewing" situations who would choose the 9mm over the .45.

Another person posts:

Bottom line is this: I respect your conclusions, your background and your experience. You have more experience in this area than do I, and your opinions are worth knowing, but I would rather have data and facts so I can reach my own conclusions. Just saying "I'm a cop...trust me, the .45 is no good" or "I work in an ER and I would never carry a 9mm" or "my son was in Iraq and hated his M4" doesn't give me much. Telling me how calibers and bullets work when they hit bone, muscle, intermediate barriers, etc., can be very helpful. In other words, I would like to hear more about what you have seen than how you feel. No offense.....

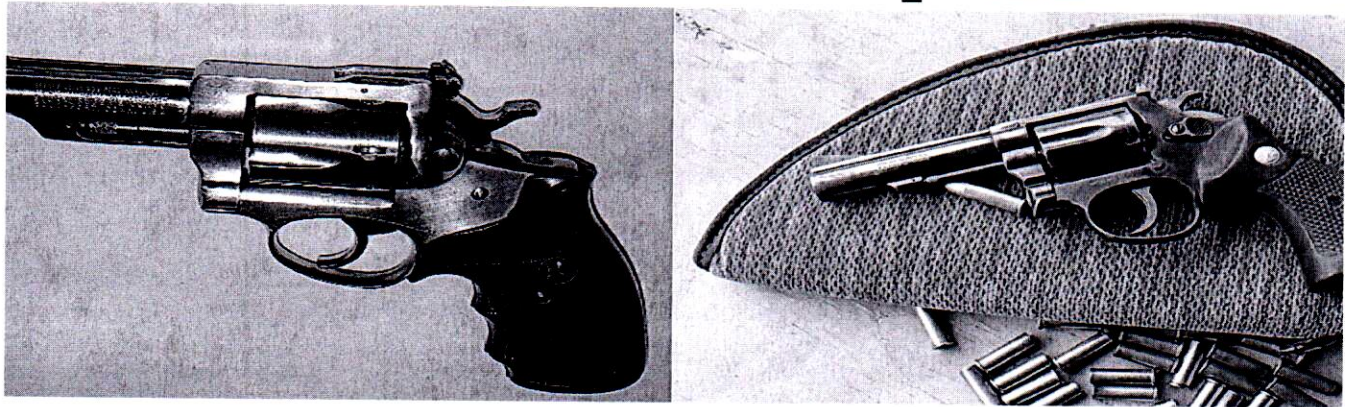
Deadmeat2 posts again:

I'm going to answer this last question and then back out of here for good. I've got other things more pressing and this thread has taken up an inordinate amount of my time.

As for the .223 and the 7.62x39, yes, I've seen a few but not enough that I'd feel comfortable expounding on them. I wouldn't doubt the rifle instructor's description of the shredding of the organs a bit because I've seen it myself. Because the velocity of almost any rifle caliber is usually greater than with handguns, the temporary cavity caused by most rifle bullets is ALMOST always going to be bigger and cause more damage. In their military configurations, both calibers are FMJs, and most authorities (of which I'm not one) believe that yaw, a major factor in wound dynamics, begins in a shorter distance with the .223 than the 7.62x39 and thus imparts more damage, all else



# .357 Magnum vs .38 Special



Diffen » Weapons » Guns » Cartridges

The **.38 Special** and **.357 Magnum** are both rimmed, center fire cartridges commonly used in revolvers. Except for case length, the .38 and .357 are virtually identical. .38 cartridges can be fired from revolvers chambered for the .357, but the converse is not true; .357 cartridges cannot be used in revolvers designed for the .38.

## Comparison chart

*Differences* — *Similarities* —

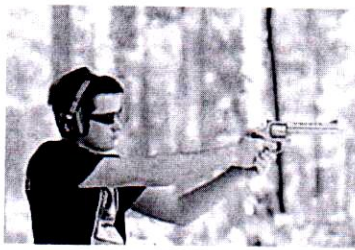
	<b>.357 Magnum</b> User Rating (30):	<b>.38 Special</b> User Rating (39):
<b>Bullet diameter</b>	.357 in (9.1 mm)	.357 in (9.1 mm)
<b>Neck diameter</b>	.379 in (9.6 mm)	0.379 in (9.6mm)
<b>Case type</b>	Rimmed, straight	Rimmed, Straight
<b>Place of origin</b>	United States	United States
<b>Base diameter</b>	.379 in (9.6 mm)	0.379 in (9.6mm)
<b>Designer</b>	Elmer Keith, Phillip B. Sharpe	Smith and Wesson
<b>Rim diameter</b>	.440 in (11.2 mm)	0.44 in (11mm)
<b>Designed</b>	1934	1898
<b>Case length</b>	1.29 in (33 mm)	1.155 in (29.3mm)
<b>Overall length</b>	1.59 in (40 mm)	1.55 in (39mm)
<b>Full Name</b>	.357 Smith & Wesson Magnum	.38 Smith & Wesson Special
<b>Maximum pressure</b>	35,000 PSI (241 MPa)	17,000 PSI
<b>Uses</b>	Target shooting, personal defense, hunting small game.	Target shooting, personal defense, hunting small game.
<b>Primer type</b>	Small pistol, magnum	Small Pistol
<b>Muzzle velocity</b>	1090 ft/s	940 ft/s

## Contents

- 1 History and Evolution
- 2 Performance and Accuracy
- 3 Uses
- 4 Cost
- 5 References

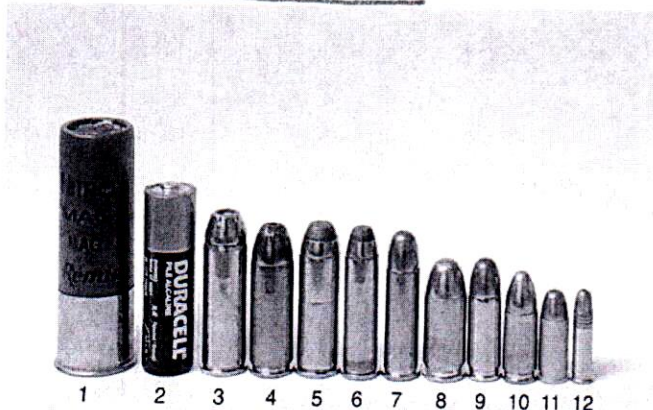
### History and Evolution

The .38 Special was introduced in 1898 as a military service cartridge because the .38 Long Colt had insufficient stopping power against the wooden shields of Moros during the Philippine-American War. With its rising popularity, the .38 Special began to be manufactured with smokeless powder loadings.



A man shooting with a .357 Magnum

The .357 was a collaborative development in the early 1930s based on the .38. It was designed by Elmer Keith, Phillip B. Sharpe, and Colonel D. B. Wesson from Smith & Wesson, and its use has become widespread since its introduction in 1934. The .357 Magnum was best known for its stopping power. 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.



Side-by-side comparison of many common pistol rounds. L-R: (1) 3 in 12 ga magnum shotgun shell (for comparison), (2) size "AA" battery (for comparison), (3) .454 Casull, (4) .45 Winchester Magnum, (5) .44 Remington Magnum, (6) .357 Magnum, (7) .38 Special, (8) .45 ACP, (9) .38 Super, (10) 9 mm Luger, (11) .32 ACP, (12) .22 LR

### Performance and Accuracy

The .38 is considered to be highly accurate with manageable recoil. It has a bullet weight of 10.2g, a relatively slow muzzle velocity of 940 ft/s and a maximum pressure of 17,000 PSI.

The .357 is known for its stopping power. It has a muzzle velocity of 1090 ft/s and a maximum pressure of 35,000 PSI.



Accuracy of shooting is dependent more on the skill of the shooter than the cartridge or gun. However, the .38 Special is especially renowned for its accuracy.

### Uses

.38 cartridges are most commonly used in revolvers, although they can also be used in some semi-automatic pistols and carbines. They are the most popular revolver cartridge in the world and are used for target shooting, personal defense and hunting small game. They were the standard cartridge used by police departments in the United States from the 1920s to the 1990s. They were also used during World War I.

.357 cartridges are used for self-defense, as they have strong stopping power. They are also used to hunt small game including deer, and for target shooting.

**Cost**

.38 cartridges are cheaper than .357 cartridges, causing many gun owners to buy guns designed for the .357 and then frequently use them with the more affordable .38 cartridges.

**References**

- [Wikipedia:.357 Magnum](#)
- [Wikipedia:.38 Special](#)
- [GunNuts.net](#)

**Related Comparisons**



AK-47 vs M16 Rifle



Double Action vs Single Action



.38 Special vs 9mm



AK-47 vs AR-15




Glock 17 vs Glock 19



.40 S&W vs .45 ACP

**Comments: .357 Magnum vs .38 Special**



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.357 ALWAYS and HANDS DOWN! Ballistics and stopping/knockdown power are MUCH better than the .38, which is okay ... But cant hang with the .357 cartridge in any way. Most .357's can be found in the same barrel length of a .38... So you still have your choice from a 2-inch Snub- Nose all the way to the Big daddy 6-inch. A BIG PLUS of a .357 is that



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## Most Versatile Handgun: The .38 Special, .38 Special +P and .357 Magnum Revolver

By Chuck Hawks

The .38 Special, .38 Special +P and .357 Magnum represent three distinct power levels using the same bullets and all three cartridges can be fired from any .357 Magnum revolver. The cases are dimensionally identical, except that the Magnum case is 0.135" longer than the Special case. This prevents .357 Magnum cartridges from entering a .38 Special chamber, but not the reverse.

The point of this article is to illustrate the three basic ammunition power levels available to anyone who owns a .357 Magnum revolver. You gain in performance as you move up the power (and recoil!) scale. You gain in shooting fun as you move back down. Choosing the right power level for the job increases your effectiveness and your shooting pleasure.

These are very accurate cartridges, capable of shooting clover leaf groups at 25 yards from a top quality revolver, so make sure your .357 is a top quality revolver. Do not settle for merely adequate. Good choices would include a Colt Python in a double action revolver or Ruger Blackhawk in a single action revolver.

While we are at it, permit me to recommend a 6" (or longer) barrel for any .357 Magnum revolver, particular if you are seeking to maximize versatility. While a 2"-3" barrel is fine for shooting .38 Special loads at short range and convenient for concealed carry, it is an abomination for a cartridge that must burn the volume of powder in a .357 Magnum case.

The practical minimum barrel length for any .357 revolver is 4". A 4" magnum is compact and often chosen by uniformed police officers who must wear their gun and holster rig all day. Loaded with deep penetrating, heavy bullets it is handy to carry for protection in the field from potentially dangerous predators, such as cougar and black bear. (Works on dangerous two-legged predators, too!) I carry my 4" Python for that purpose when I am not carrying a centerfire rifle. A 4" barrel is also a good choice for a dedicated home defense revolver, as it points well and is harder for an opponent to grab than a longer barrel. The 4" barrel is easily carried in a service type belt holster and you should get something akin to the advertised muzzle velocity (MV), as factory ammunition is tested in a 4" vented barrel.

General purpose .357 Magnum revolvers should have 6" or 6.5" barrels. Of course, a 4" barrel is intrinsically as accurate as a longer barrel and a bit easier to carry, but the longer sight radius provided by a 6" barrel is definitely advantageous for precise sight alignment. The 6" barrel allows a more complete powder burn and thus higher muzzle velocity, more energy on target and a flatter trajectory. Its greater weight also reduces muzzle flip and moves the muzzle blast a bit farther from your face. A Magnum with a 6" barrel is the jack of all trades, equally useful for self-defense, hunting and target shooting. Since factory ammunition is tested in a 4" barrel, a longer barrel should equal or exceed catalog velocities. It is nice to get a little more than you paid for at today's high ammo prices!

An 8" barrel is very nice on a hunting revolver, offering more of the same advantages, but the long holster required to carry an 8" revolver can get in the way if you need to sit down, drive a car and so forth. For walking in the field, it is fine. I have a red dot sight on my 8" Python and it makes a very nice hunting rig. Such a sight seems less ungainly on a big revolver.

### .38 Special

This is where our cartridge choices start. The Special was designed as a more powerful alternative to the .38 Long Colt, which had been found inadequate by the U.S. military. It was originally loaded with black powder (158 grain lead bullet at 800 fps), which explains its large case and rather low SAAMI maximum average pressure (MAP) of 17,000 psi. The transition to smokeless powder was rapid and the Special quickly built a reputation as an exceptionally accurate cartridge. It was soon dominating centerfire pistol matches and was widely adopted by police agencies. Not until the 1980's did service autoloaders seriously challenge the popularity of the .38 revolver for police use in the U.S.

For match shooting, a 148 grain lead wadcutter bullet at about 700 fps became the load of choice. Factory loaded match ammunition is offered by Remington, Winchester and Federal, among others. Reloaders typically use a very light charge of an extremely fast burning powder for target loads, such as 2.8 grains of Bullseye, behind a hollow base wadcutter bullet. These are the minimum power .38 loads that

most shooters find useful. They are a mild and exceptionally accurate choice for target shooting and plinking.

Standard .38 Special service loads represent a step up in power and versatility and there are many from which to choose. Bullet weights range from about 125-200 grains, with 125-130 grain jacketed bullets (MV about 850 fps) and 158 grain lead bullets (MV about 800 fps) being the most popular choices. These loads are used for practice, plinking and hunting small game. Reloaders typically use a medium burning rate pistol powder, such as Unique, for such loads. According to the *Speer Reloading Manual #14*, 4.7 grains of Unique gives a 158 grain lead bullet a MV of 815 fps.

For civilian personal protection, the Winchester 110 grain Silvertip JHP bullet at 945 fps (ME 218 ft. lbs.) or Remington 110 grain SJHP bullet at 950 fps (ME 220 ft. lbs.) from a 4" barrel are popular choices. These are the successors to the famous Super Vel high velocity .38 Spec. factory loads of the early 1970's that ushered in the modern era of self defense ammunition. For concealed carry in 2" snub-nosed .38's, Federal's Premium Personal Defense load uses a 125 grain Nyclad LHP bullet at 830 fps and 190 ft. lbs. from a 2" revolver barrel. This is their famous and highly effective "Chief's Special" load.

For apartment dwellers and others concerned with over penetration in densely populated areas, Cor-Bon/Glaser offers a standard pressure Glaser Blue pre-fragmented 80 grain bullet at 1200 fps and 256 ft. lbs. Pre-fragmented loads are reputed to be very effective in the short range, frontal shootings typical of home invasion situations.

No matter what standard pressure Special load you choose, it will provide the least muzzle blast and recoil among our three cartridge options. For new handgun shooters, standard velocity .38 Special loads are a logical step up from the .22 rimfire that should be everyone's first handgun.

### **.38 Special +P**

Before the advent of the .38 +P, there was the .38 Special High Speed (.38/44), intended for use only in large frame revolvers originally designed for .44 caliber cartridges, principally the Colt New Service and S&W "N" frame models. This left plenty of steel in the cylinder to contain the increased pressure. In 1974, the SAAMI established standards for today's .38 Special +P loads, which replaced the .38 High Speed and are suitable for use in most medium frame revolvers, including the Colt Diamondback and S&W "K" frame models of that time. .38 Special +P loads have a MAP limit of 20,000 psi. This allows a significant, but not huge, increase in performance over the standard .38 Special.

Recoil in full size revolvers, although noticeably greater than standard pressure loads, is moderate and easy for reasonably experienced handgunners to control. Effectiveness is good. Muzzle blast is louder than standard pressure .38 loads, but far less than .357 Magnum loads. For many years the standard FBI service load was the .38 Special +P cartridge using a 158 grain lead SWC-HP bullet at a MV of 890 fps. This remains a popular service load and is available from both Remington and Winchester.

For civilian concealed carry and home defense, the Remington and Winchester +P factory loads using 125 grain JHP bullets at 945 fps / 248 ft. lbs. at the muzzle (Winchester figures) are popular choices. Similar is Federal's 129 grain Hydra-Shok JHP at a MV of 950 fps and ME of 260 ft. lbs. These are good personal protection loads for revolvers strong enough to handle them. According to the survey of police shootings conducted by Marshall and Sanow and published in their seminal book *Handgun Stopping Power*, the various 125 grain JHP +P loads from the major manufacturers achieved "one shot stop" percentages of about 63%-69% from 4" barrels. Their lower recoil and muzzle blast make them faster for repeat shots than full power .357 Magnum loads. They are also less blinding and deafening when fired indoors at night. Reloaders can duplicate such loads by using 5.7-6.0 grains of Unique behind a 125 grain JHP bullet. (Source: *Speer Reloading Manual #14*.)

Cor-Bon offers two high velocity loads for .38 +P snub-nosed revolvers. These use a 110 JHP at 1050 fps / 269 ft. lbs. and a 125 grain JHP at 950 fps / 251 ft. lbs. For apartment dwellers and others concerned with over penetration in densely populated areas, Cor-Bon / Glaser offers a Glaser Blue +P load with a pre-fragmented 80 grain bullet at 1250 fps and 278 ft. lbs. from a 4" barrel.

### **.357 Magnum**

The .357 Magnum was the first magnum handgun cartridge and for many years it was generally understood by shooters that the term "the Magnum" referred to the .357. Remington ballistics called for a 158 grain bullet at a MV of 1550 fps from an 8-3/8" barrel. Years ago I chronographed some Remington 158 grain JHP factory loads made in the 1960's in a 10" T/C Contender pistol and got an average instrumental velocity of 1580 fps. (Screens placed 10' from the muzzle and 10' apart.) Those were hot .357 loads!

Full power .357 Magnum loads are currently loaded to a MAP of 35,000 psi, which is similar to some medium range rifle cartridges. In fact, rifles for the .357 Magnum

cartridge have been made by Marlin, Winchester, Henry, Ruger, Uberti, H&R, NEF and others.

.357 revolvers are a handful for most shooters, especially those not used to magnum handguns. The recoil from full power loads is sharp and the muzzle blast definitely gets your attention. Fire a full power magnum load at night and the flash looks like the gun exploded. Actually, the cartridge's bark is worse than its bite. Experienced shooters can generally learn to control the .357 in magnum size revolvers, such as the Colt Python, S&W Model 27 and Ruger Blackhawk. With practice, very fast and accurate shooting can be accomplished with full power .357 loads in such revolvers.

The .357 Magnum is the lightest recoiling of the traditional magnum revolver cartridges (.357, .41 and .44). Trajectory and penetration are essentially the same, given bullets of the same sectional density, from all three magnums. For self defense, whether in the field or in the city, there is surprisingly little difference in the effectiveness of the magnum cartridges, which makes the .357 a reasonable all-around choice for most shooters.

The .357 Magnum has adequate power for hunting CXP2 game (deer, for example) at short range (50 yards maximum), providing the shooter has the skill to get a suitable hunting bullet into the vitals with the first shot. It also has a sufficiently flat trajectory to engage a rifle toting criminal at 100 yards or more, something to keep in mind for protection in the field or during an urban insurrection. Only a magnum handgun shoots flat enough to realistically oppose even a short range rifle.

.357 field and hunting loads typically use bullets weighting 140-180 grains in front of maximum powder charges. A 158 grain jacketed bullet at a MV of 1235 fps would be typical and such factory loads are available from most ammo manufacturers. Reloaders can produce similar hunting loads using maximum charges of slow burning pistol powders, such as H110, W296 and 2400. According to the *Speer Reloading Manual #14*, a maximum charge of 14.8 grains of 2400 can drive one of their 158 grain jacketed bullets at a MV of 1265 fps from a 6" revolver.

For bear and cougar protection, I prefer a 180 grain bullet. Winchester, Federal and Remington load 180 grain bullets at a MV of about 1130 fps. The Cor-Bon version is loaded with a 180 grain bonded-core soft point bullet designed for deep penetration at a MV of 1200 fps and ME of 576 ft. lbs.

For personal protection, the full power .357 Magnum is the most effective of all handgun calibers. According to the police shooting results research conducted by Marshall and Sanow and published in their seminal book *Handgun Stopping Power*, the various 125 grain JHP Magnum loads from the major manufacturers achieved "one shot stop" percentages of about 93%-97%. It just doesn't get any get any better than this. These loads drive a 125 grain bullet at a MV around 1450 fps and ME of 583 ft. lbs. (Remington figures from a 4" vented test barrel.) Federal's 130 grain Hydra-Shok JHP at 1410 fps is in the same general category, despite the "Low Recoil" legend printed on the box. Cor-Bon's High Velocity 110 grain JHP departs the muzzle at 1500 fps and 549 ft. lbs. and their 140 grain JHP achieves 1300 fps and 525 ft. lbs. These are all violent loads with ear splitting and blinding muzzle blast, especially if fired indoors at night.

Somewhat lower in recoil are the loads from Remington, Winchester and others that drive a 110 grain JHP at about 1295 fps MV and 410 ft. lbs. ME (Winchester figures). These achieve one shot stops in the 83%-87% range. For apartment dwellers and others concerned with over penetration in densely populated areas, Cor-Bon/Glaser offers an 80 grain Glaser Blue pre-fragmented 80 bullet at 1600 fps and 455 ft. lbs. from a 4" barrel.

#### Summary and Conclusion

As we have seen, a .38 Special / .357 Magnum revolver can be extremely versatile. The factory loaded ammunition options range from very mild 148 grain lead wadcutter bullets at around 700 fps to bear stopping 180 grain bullets at 1200 fps and the reloader has even greater load flexibility. No other single handgun offers such a wide power range of loads or the versatility to serve as a credible target revolver, service pistol, handgun for hunting CXP2 game and revolver for protection in the field. A .357 Magnum revolver with a 6" barrel really is the most versatile handgun of them all. If I could have only one centerfire handgun (and in hard times that is exactly what I've owned), it would certainly be a .357 Magnum.