

Killing Deer With Bullets

By Randy Wakeman

This article like should likely have been entitled “Penetrate, Rip, Smash, Crush, Tear, Destroy: the Delicate Art of Deer Hunting,” which is a bit more descriptive of the matter at hand. Wounding ballistics as applied to muzzleloaders, slug guns, handguns and centerfire rifles has lived in the dark ages for centuries. Part of the problem is just human nature: we want simple, cozy, mindlessly quick answers to complex questions. We ask what a good gun, a good bullet and a good cartridge are, with loose, open-ended questions. Is the .323 “Super-Snorter” any good? Hey, is the Remchester Model 007 any good? Is the Lasermaster Extreme a quality bullet? Words like quality and good are so vague as to be meaningless. Yet, we keep asking, although not much is learned from this type of non thought-provoking discussion.

There are, of course, interesting pictures of bullets in ballistic gelatin primarily designed to show pretty bullets. Penetration in calibrated ballistic gelatin is a useful gauge of penetration in soft tissue, finally. The “finally” part is credited to Dr. Fackler, who insisted that ballistic gelatin be calibrated to be meaningful. Prior to the 1980s, it wasn't.

What we should all keep in mind is what ballistic gelatin lacks. There is no airway, breathing, or circulation. Ballistic gelatin has no spine, no rib cage, no shoulder bones. Ballistic gelatin does not bleed, has no individuality, no will to live and does not instinctively run. There is no particular health of ballistic gelatin, no adrenaline, it leaves no blood trail and it behaves the same whether you shoot it from the front, back, sides, above, or below. While game animals are not clones, the whole idea of calibrated ballistic gelatin is to measure it as a clone, as a test medium and tissue simulant. This does not invalidate ballistic gelatin for what it is; it does however illuminate what it is not.

Hunters generally have no formal training in understanding wounds, wound dynamics, or incapacitation resulting from wound trauma. As a result, the fanciful tales and remembrances of folks like ivory poacher

John Taylor and the colorful (if a bit wacky) notions of Elmer Keith are parroted and regurgitated to present day. Jack O'Connor, a far more thoughtful, perceptive and self-critical man, gave us far more practical, well-reasoned information from the sportsman's perspective.

It was Jack O'Connor who denounced the sloppy type of hunting that left more game in the field than was recovered. Hunters are no better or worse than they were in Jack O'Connor's day. The lost animal is blamed on the bullet, the gun, the scope, everything but the hunter. It was wrong then and it is generally wrong today.

Darrin Bradley performed a recent study on deer hunting. Over 1792 hunts with 34 hunters, only 16% of those hunters who got a shot at a trophy whitetail buck killed the animal. For any hunter with a conscience, numbers like these should be very troubling.

It is numbers like these that make the argument of "ruining too much" meat more than laughable. Ruining meat can hardly be considered an issue compared to wasting the entire animal. Destroying internal organs is not exactly a concern, for few hunters actually eat internal organs and in many areas it isn't a healthy practice. No one I know looks forward to fried lung for breakfast.

In the words of two of the participants in the 1987 Wound Ballistics Workshop, "too little penetration will get you killed." More to the point here is that too little penetration may not kill, meaning a lost animal. Every year, there are lost animals that need not be.

There will never be a handy guide to deer hunting projectiles of any great, absolute meaning, as all deer are individuals and no two wound profiles are exactly alike. However, there are some things that we can do to minimize the potential problems. I've conducted my own, informal survey over the last ten years as to the circumstances surrounding lost animals. There are some trends supported by fundamental wounding ballistics to watch out for. The reason for lost animals is hard to measure with exactitude, as the animals are lost and only the recollection of where they thought they were hit and at what range exists. For animals that are recovered the next day, or go 400 yards, though medical autopsies are generally not done, there is a

better idea of what took place. Here are some of the more common issues.

1) I shot him in the shoulder. The scapula, or shoulder blade, is not a vital organ. A fractured or broken shoulder is hardly a good wound, a wound that will leave a blood trail with certainty, or a wound that means instant incapacitation. Bullets deflect easily, particularly with deformed noses, at different angles. Both water and the ground cause ricochets, much less something as unpredictable as a shoulder blade. Bone fragments may cause ancillary damage, but that is also unpredictable. Intentionally hitting the shoulder is risky business and a poor target. It may or may not work. Staying off the shoulder is really good advice. Vital organs are engorged with blood. No matter what bullet you are using, no animal can live very long with no lungs or no heart, and they don't. A deer can live a very long time with a smashed shoulder, though, and a three-legged deer may be almost as fast as a four-legged deer. A deer (and many other mammals) can live a long time with one lung, as well.

2) Sectional density. The sectional density of a bullet isn't hard to measure. It is just the mass of the bullet divided by the diameter squared. Bullets of the same design with better sectional densities penetrate better. A low section-density bullet can spell trouble where a high sectional bullet will not. An old saying, "the further the range the heavier the bullet" has a lot of merit.

3) Beware of bullet over-drive. Sure, you are no doubt familiar with the saying, "Speed Kills." In deer hunting, speed may have the effect of killing your bullet performance as much as it kills the animal. Bullets have design parameters and velocity limits. The same bullet with adequate integrity at moderate velocities may turn into a varmint bullet if the impact velocity is high enough. The better 75 yard bullet and the better 250 yard bullet doesn't always come in the same box.

4) Pretty bullets don't mean pretty terminal performance. We tend to like pretty, sexy looking bullets. We also like pretty fishing lures in eye-catching packaging. The problem with eye-catching fishing lures is they are designed to do just that, catch the angler's

eye and not the fish. We have the same issue with bullets.

Buckwhacker Elite Blaster Magnum Plus bullets sure sound deadly, don't they? Problem is, they are often more deadly to your wallet than to a game animal. The most common example of this today is likely the "Premium" polymer-tipped bullet.

5) Fear of heavy for caliber bullets. We don't like heavy bullets for reasons not involved in terminal performance. We like flyweight bullets that mean less recoil at a given velocity. As a result, we stay away from some of the better terminal performers by choice. A 300 grain .44 Mag (.429 in.) bullet has a SD of .233. Some think that is a heavy bullet. Yet, a 130 grain .270 Winchester (.277 in.) bullet has a superior SD of .242.

With slug guns and muzzleloaders, our idea of a comfortable bullet to shoot again ignores sectional density, for a .452 diameter 250 grain bullet (normally fired from a sabot) has an extremely poor SD of just .175. Yet, we wonder why we lose an animal if we hit bone? It isn't all that mysterious. The .45-70 Government, the standard U.S. Military round, drove the American Bison and the grizzly bear to extinction in a few short years. The common bullet was a .458 diameter bullet weighing 405 grains, for a SD of .276, making most deer rounds used today look very weak in the sectional density department. We shouldn't wonder why the .45-70 did so very well for so very long and still does.

Even back then, the U.S. Military was looking for more. They found it based on the Sandy Hook Proving Ground tests of 1879, the .45-70-500 grain round that could produce lethal wounds at distances of 3,500 yards. At 3,500 yards, the .45-70-500 penetrated three one-inch thick oak boards. After smashing through the three oak planks, it then drove eight inches into the sand of Sandy Hook beach. While the .45-70-500 is capable of more shoulder-smashing devastation than today's deer hunter seeks, we seem to have forgotten what we discovered 130 years ago.

CONCLUSION

While hunting terminal performance remains in its infancy from a scientific point of view, at least in the way it is commonly understood, marketed and practiced, there are several components we can consider to make better bullet choices and shot placement choices. There are few absolutes, few cleverly quick answers, and perhaps even less detailed information, despite the untold millions of deer we have harvested.

Matching the bullet to impact velocity, shot placement and what biology tells us is a vital organ can make us more effective in the field, which is the whole idea. Some of it remains the same as when Jack O'Connor wrote about it. The mature, seasoned hunter shows the wisdom and restraint to pass up a high risk shot, while the beginner rarely does. It is one of the many reasons it is called hunting, not just shooting.