A Quantum Leap in PERFORMANCE

Swift and Nosler Have Revolutionized Jacketed Handgun Bullets for Big Game.

By Ross Seyfried


Photo by Jim Brown

Until very recently, handgunners who wanted extreme performance on game used cast bullets. The average jacketed handgun bullet was simply outclassed when it was matched against heavy muscles, big bones and the requirements for deep penetration. Now, things have changed. Makers of two of the world's best rifle bullets have applied their technology to handgun projectiles. Swift A-Frame and Nosler Partitions are here, and handgun hunting will never be the same.


Photo by Ross Seyfried

The author has been a longtime proponent of cast bullets, particularly for game bigger and tougher than this nice mule deer.

HANDGUN BULLET REALITY

Making a great handgun bullet is not as easy as it would seem. To begin with, the toughest mental jump—for bullet makers and hunters alike—is to accept the fact that handguns are different from rifles. Rifles have two things handguns do not—velocity and sectional density. Most rifle bullets are designed to function in a velocity envelope from perhaps 3,500 fps down to about 2,000 fps. A good, hot .44 Magnum load starts at about 1,500 fps, and even a very long, heavy 300-grain .44 bullet is relatively short and stubby by rifle standards.

With its low velocity, a handgun bullet's expansion is marginal at best, and when we expand a handgun bullet, getting it to push a big "mushroom" very deep is out of the question. The handgun bullet simply lacks the momentum and energy to do the work. This is why the great, high-performance handgun bullets of the past have been cast bullets—bullets that in most cases were designed to perform without expanding at all. Handgun hunters depended on a flat nose—a meplat—to do the work. That flat surface displaced tissue, created a temporary wound channel, broke bones and caused the critter to quit. Also, cast bullets retained a high percentage of their weight, which helped them retain the momentum necessary for deep penetration.

Some time ago, Swift sent me some .44 bullets to try. By my criteria, they did not work. Swift's Lee Reed asked me how to cure the problem. My reply was simple: "First, make the bullets so they will kill, even if they don't expand. Then design them so when they do expand, the actual diameter is kept to a minimum."

I gave a similar speech to a friend who is a bullet engineer at Winchester. Winchester is involved with Nosler bullets because the company is offering loaded ammunition featuring Partition Gold bullets under the Supreme label. This high-end Winchester ammo makes high performance available to the non-handloading handgun hunter. Some of my comments found receptive ears at both companies, and the design basics now translate into the realities of hunting.

At present, the Nosler Partitions are available in two calibers, .357 (180 grains) and .44 (250 grains). The Swift A-Frame is currently available only in .44 , but in three different weights: 240, 280 and 300 grains. (Colt shooters, take heart, .45 bullets are just around the corner!)

A TELLING PAPER TRAIL

To begin with, I did very little accuracy testing. Swift and Nosler handgun-bullet accuracy is pretty much of a given, and I was more interested in terminal effect. Beginning with wet paper—with and without bones—things began to get interesting.

I started with the 240-grain Swift and 250-grain Nosler bullets side by side. My box is large enough to catch four bullets at a time. This not only saves time and material, but gives a very accurate comparison under exactly the same impact conditions. I loaded the bullets on 23 grains of H-110 to give them just less than 1,500 fps from my seven-inch revolver. I began at 10 yards and examined expanded diameters, penetration and wound channels. I also checked to see if this maximum impact velocity would damage their integrity.

For game animals as tenacious as a wild hog, the new jacketed bullets should be ideal.

As I leafed through the layers of paper, it was impossible to tell I had fired two different brands of bullets. Both were fully expanded in the first two inches. The wound channels at that depth were about 1.5 inches in diameter and rapidly fell to about ¾ inch after four to five inches. Both bullets continued on, leaving that ¾-inch channel through the paper until they stopped at 11 inches. Both came to a halt nose-forward. Both had held a perfectly straight course.

SURVEYING THE SWIFT

Only after I pulled the bullets out of the paper were the design differences apparent. The Swift handgun bullet, like its rifle counterpart, begins with a pure copper jacket, and the front of the lead core is bonded to that jacket. Also, like the company's rifle bullet, there is an A-frame of copper separating the lead core, front and aft, to positively stop expansion. Where the handgun bullet differs from its higher-velocity counterparts is in the placement of a copper divider stop and in the thinness of the front jacket. Swift has placed the divider well forward on the bullet, just behind the beginning of the ogive. The whole purpose is to limit the bullet's expan-

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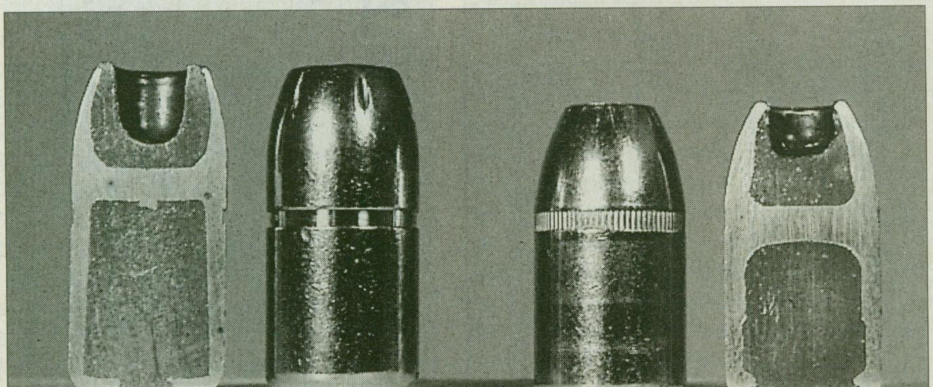

Both brands, Swift (left) and Nosler (right) show similar construction. The Nosler uses a heavier jacket, cut to aid expansion, with a mechanical lock on the front core, while the Swift uses a thinner jacket and a solder bond.

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sion, keeping the expanded diameter to a minimum. Also, the nose portion of the Swift jacket is paper thin, tapering back along the A-frame. This not only aids expansion at low velocity, but also allows the jacket to bend and flow back along the shank—another piece of puzzle that contributes to the "fully-expanded-but-minimal-diameter mushroom." The recovered Swift bullets, incidentally, averaged 235 grains. Their greatest diameter was .690 inch.

Swift currently makes only .44-caliber bullets, but makes them in three different weights. The production of .45-caliber projectiles is imminent.

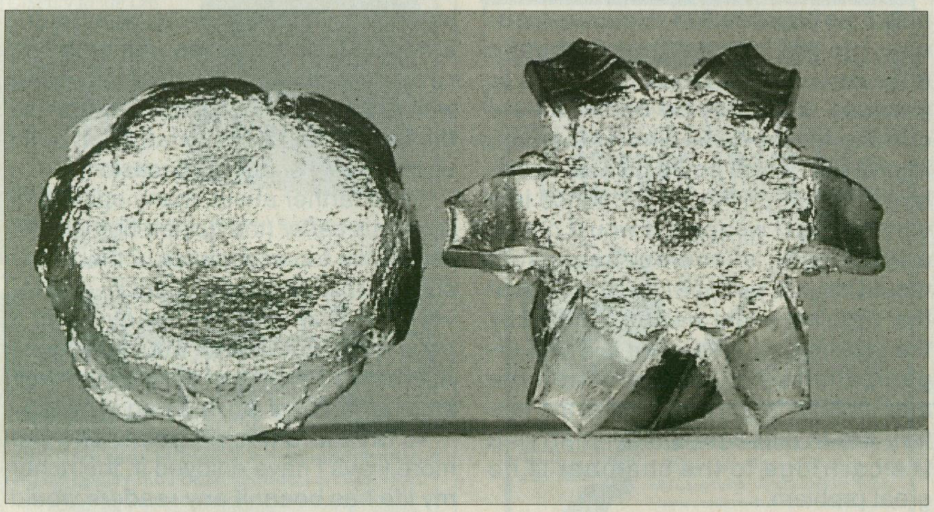
NOSLER POST-MORTEM

The Nosler bullets, while doing exactly the same thing, go about it in a slightly different manner. Again, the partition is well forward, but instead of being bonded, the front core is held in place mechanically. The entire jacket—especially the front—is much heavier than the Swift's. The Nosler bullet relies on cuts in the jacket to allow expansion. These cuts result in a "fan-blade" appearance of the expanded bullet. The thicker, harder jacket also supports the expanded blades in a more horizontal position, keeping them extended radially rather than folding them back against the shank. The result is a large mushroom, averaging .790 inch in diameter. The Nosler's penetration was equal to the Swift's, probably due to the air space between the blades. These gaps create a leak, reducing frontal resistance, which allows for greater penetration than could be had if a solid mushroom of that diameter had occurred. The final weight of the Noslers averaged 239 grains, for an inconsequential weight loss of 11 grains.

During my testing, both bullets were able to crash through deer-sized bones with ease. The Swift showed some cutting and bending of the mushroom, while the Nosler's fan blades would be bent more or less depending on the severity and angle of impact. In short, both bullets were able to do things almost never seen at handgun velocities. They expanded violently, yet remained intact, with a diameter that remained small enough so the momentum could push them to reasonable penetration. What this means is that you can pop a whitetail or mule deer through the lungs or right on the point of the shoulder and be able to absolutely count on classic mushrooming bullet-wound channels. But now you can have that expansion without the risk of classic bullet blow-up.

TO THE HEAVY STUFF

After achieving satisfying results from the two brands, I wanted to move on, testing the heavier Swifts. They once again proved you can get bored looking at recovered Swift bullets—they're all exactly the same. My handgun specimens were no exception. That increased weight simply added more penetration. When I fired the 280-grain bullets at 1,400 fps and the 300-grain ones at 1,300 fps, the nose performance and wound channels were virtually identical to the 240s. However, the 280-grain bullets penetrated 13 inches, and the 300-grainers went a full 15 inches in my test media. The added momentum of the big bullet increased penetration by almost 50 percent! With these heavier bullets, a hunter after bear, elk or moose now has an expanding, jacketed bullet that is as up to the task as is possible.



The two brands of jacketed handgun bullets achieve almost identical results, but they go about it in different ways. The Nosler (right) uses the fan-blade approach, while the Swift has a classic, but smaller diameter mushroom.

A REEVALUATION

I have always maintained that expansion is marginal at best with jacketed handgun bullets. That is, at low handgun velocities anything tougher than pure lead can be unreliable. With that in mind, I wanted to look at the Swifts and Noslers to see just how well they would behave as their speed fell off. With a 1,500 fps muzzle velocity, a 240-grain .44 bullet will be down to about 1,200 fps at 100 yards and will have slowed to about 1,150 fps at 150 yards. (While 150 yards is pushing things, 100 yards is certainly within the range limits of a skilled pistol shot.)

I again used wet paper as a test media, knowing that it is more likely to cause expansion than lung tissue. Wet paper is

The Nosler Partition bullets are made in two calibers, one weight each (above). They also are loaded by Winchester (right) in its Supreme line.

closer to actual muscle tissue. While I have never been able to simulate lung tissue, I can more or less predict the threshold where bullets will begin to fail on muscle. If they are marginal there, they will fail to expand on lungs. Because both bullet brands relied on large hollow points to enhance their expansion, I added a real-world obstacle to my test. I put a deer hide in front of the wet paper.

Deer hide—or more accurately, deer hair—is a real nemesis to hollow points. Why? Hollow points work because of hydraulics. Something fluid (water, muscle, blood, fat, etc.) gets in the hollow and forces its weakest points apart, creating bullet expansion. This is why many bullet makers test their bullets in vats of water or against gelatin (which is mostly water). The fluid is more apt (than any other substance) to cause perfect expansion. But what happens when the target has a thick coat of hair?

When a hollow point hits a deer, the first thing it touches is that brittle coat, and like a cookie cutter, the bullet chops hair. The hair then fills the hollow point, and the bullet becomes less likely to expand perfectly—or expand at all.

I began the low-end expansion test at 800 fps. At this speed, neither brand expanded. Both penetrated about eight inches, turning somewhat sideways in the process. At 1,000 fps, the Nosler—with its smaller front surface and tougher jacket—again did not expand, while the Swift opened to almost a full caliber diameter. At 1,100 fps, the Nosler showed only the slightest crack in the expansion cuts in the nose, but still did not expand. At the same 1,100 fps impact velocity, the Swift's nose came fully open. These results were somewhat predictable, based on the Swift's much larger cavity and frontal area, combined with its very thin, soft-nose-jacket construction. If a hunter is concerned about minimum-velocity expansion, he can help ensure performance by filling the hollow point with beeswax or bullet lube. Either of these is a fluid that will have taken up the space. That will increase the bullet's ability to expand on game.

A FINAL EXPERIMENT

As I completed my shooting, I came away with a different outlook toward jacketed handgun bullets. In the past, I have been a cast-bullet hunter, especially if the game had any real size. Now, new technology has added a new dimension to jacketed bullets, one of reliability and predictable penetration. But, I was still having difficulty looking at penetration numbers that were almost 50 percent less than I am accustomed to. Thinking about my absolute favorite handgun bullet for thin-skinned game, the cast soft-nose, I wondered if I could cause the jacketed bullets to duplicate that same awesome performance—to expand violently, discard the expanded mushroom and to continue with relatively high velocity and deep penetration. And, hopefully, to exit.

I began with the bullet most likely to succeed, the 300-grain Swift. To make it work my way, I needed to defeat some of its design criteria. I needed to wreck a lot of engineering and hard work that had gone into making a bullet that would retain nearly every grain of its weight and still exhibit a pleasing mushroom shape when recovered. The cast soft-nose works because the very soft, pure lead nose is backed up by an almost invincibly hard rear core. The lead expands, then the rear shank literally drives right through the mushroom, throwing it away like a spent booster rocket. The Swift has a very soft front and a very hard rear shank behind its A-frame. All I needed to do was make them come apart instead of stay together.

To that end, I chucked a bullet in my lathe and—with a .050-inch-wide grooving tool—cut almost through the jacket just in front of the solid copper frame. This created a sharp stress riser and a weak point in an otherwise very tough, flexible jacket. I fired the bullet into my test media and voila! It hit and expanded violently, making an identical wound channel to the unaltered bullets for the first five inches. Then I found parts of the frontal mushroom and a nice clean ¾-inch wound channel. I followed it to the original 15-inch stopping point, then followed and followed—all the way to the 23-inch mark. There I found a perfect "wadcutter," point forward, weighing 250 grains. Was this a jacketed superbullet? Perhaps. It had just penetrated 50 percent more than the unaltered 300-grain bullet and more than twice as deep as either lightweight. The initial wound channel was identical to any of the other bullets and stayed as large—or larger—than that made by the mushrooms.

Next, I cut the 250-grain Nosler in a similar manner and achieved very similar results. While ultimate penetration was only 20 inches (due to the lesser weight), the remainder of the performance was very similar.

As a handgun hunter I have always—in a small way—felt like a second-class citizen. While bullet makers went to great lengths to make great rifle bullets and trick bullets for self-defense handguns, no one seemed to care about us hunters. Now we're right up there with the big boys.