

This Year's Picks



for Big(ger) Game Bullets



Traditional bullets made for deer hunting don't always cut it when shooting bigger game.

By Bryce M. Towsley, Field Editor

There is a trio of old outdoor articles I like to dig up and re-read every couple of years. The first is Lt. Townsend Whelen's "Red Letter Days in British Columbia." I love this article for the sheer adventure, and each time I read it I mourn a world that's moved on. Another is Corey Ford's "Road to Tinkhamtown." Many say it's the best outdoor story ever written and I would not argue. The third article was written by Jack O'Connor and is called simply, "Shooting Editor."

It is not his best work and it doesn't begin to rise to the level of writing exhibited by the other two. In fact, it probably wouldn't be of lasting interest to me if it hadn't helped me aspire to the profession that has paid my bills and defined my life for decades.

In one section O'Connor wrote: "I once told an aspiring outdoor writer that I had told all I knew in my first four or five articles as a gun columnist and have been repeating myself ever since."

It's the lead to the section called "The Hardy Perennials," and he follows by explaining how any gun writer will be called upon to write about the same subject multiple times. Doing it right requires that we become creative and fresh with each incarnation. O'Connor

did it well. I live in fear that I might not.

I am a bullet junky. I spend hours at the range testing accuracy or digging bullets out of expansion medium. I'm the bloody guy with a flashlight pawing through carcasses in camp to check bullet performance while the rest of the hunters sit around the campfire with drinks in their hands. My ideal campfire conversation is with a bullet engineer about how the latest technology works. It tends to bore the other hunters to the point of hostility (the same effect football has on me), but I never tire of it.

So, I think it's probably obvious that one of my "Hardy Perennials" is about big-game bullets. With any hunting trip, from a few hours chasing whitetails in the back 40 to a full-blown African safari, you have one physical connection with the game—one thing all the rest rides on, one thing that determines the outcome, good or bad. This is the bullet. So, why then, do so many hunters use the wrong bullet?

Sure, it's all about shot placement. But in the real world shot placement is not guaranteed. The best bullets add insurance for when things go wrong.

While I don't recommend it, we hunters can often get away with poor bullets for deer hunting. Whitetails are not particularly big or tough and we tend to use cartridges that are on the large size for the game, so it all works. But don't make the mistake of thinking your deer bullet is just fine for that elk

hunt you have been working to pay for with all that overtime. Or for moose, bears or any other bigger game for that matter. If you are going to hunt the big stuff, either domestically or abroad, it might be time for a bullet upgrade.

Trophy Bonded Tip

The Trophy Bonded Bear Claw was developed by Jack Carter in 1985 and Federal began loading it in factory ammo in 1992.

With a bonded core of lead in the nose and a solid shank of copper for the back section, this bullet was unique. The bonded core would expand until it hit the border with the solid back, which stopped further expansion. Because the lead core was bonded to the copper jacket, it tended to stay together for excellent weight retention.

In 2007, Federal engineers upgraded it to the "Trophy Bonded Tip." This distinctive looking bullet has a neon orange polymer tip and a bright silver coating. The one-piece jacket and solid base is made of 95 percent copper and 5 percent zinc gilding metal. There is a series of concentric grooves cut around the bullet's shank to aid in accuracy when dealing with factory bore diameters that can vary even among the same caliber. It works, as my testing with it in multiple rifles has shown it to be very accurate.

Of course, the pure lead core is bonded to the jacket; this is a "Trophy Bonded" bullet after all. But Federal learned a lot



about controlling bullet expansion when they designed the Fusion line of bullets and they have applied that knowledge to the Trophy Tip by “programming” the expansion. More control ensures positive expansion and a predictable diameter for the expanded bullet.

With a boattail base, enhanced ogive profile and the addition of the polymer tip, Federal has picked up, on average, 30 percent more ballistic coefficient over the older design TBBC bullets. That means higher retained velocity, more energy downrange and, of course, a flatter trajectory.

I used an engineering sample 180-grain Trophy Bonded Tip in .300 Win. Mag. to take a mountain goat in British Columbia in 2007—one shot, one goat. Since then I have hunted with the bullet quite a bit. Last fall I managed to find some time to hunt whitetails near home and by myself, something my busy travel schedule often does not allow. With no obligations to anybody, I could pick any ammo I wanted. My custom Remington 760 .30-06 was loaded with 165-grain Trophy Bonded Tips. I think that says something about my confidence in the bullet.

Trophy Bonded Bear Claw Family

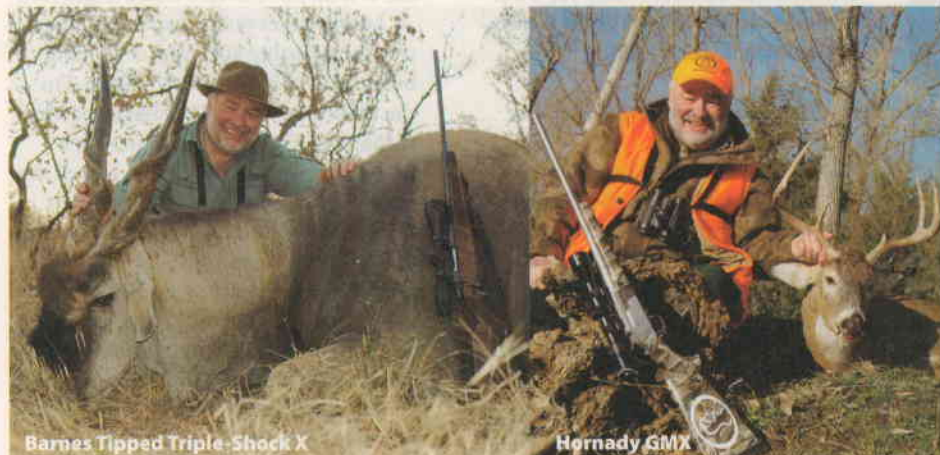
In dangerous-game cartridges the Trophy Bonded Bear Claw has received all the updates of the Trophy Bonded Tip, except the tip and the boattail. The reason is because these big cartridges typically need all the magazine capacity they can get. A polymer tip (and, to a lesser extent, a boattail) creates a longer bullet. This will rob magazine capacity by making the cartridge longer or rob powder capacity because the bullet must be seated deeper. They are not needed with the big, dangerous-game cartridges, as they typically are not used at long range.

I tested the new version of the 300-grain TBBC in .375 H&H in Zimbabwe last year. I shot nine animals, including a leopard and a couple of tough zebras.

This bullet worked extremely well. In fact, my professional hunter, a guy who is impressed by nothing and who believes that only solids should be used for hunting, raved about it. The penetration was amazing on zebra and kudu, yet the bullet expanded well on small animals like the impala and bushbuck. It killed the leopard so fast the PH insisted I missed, because he didn't hear the death cough. He later told me that in more than 40 years of big-game hunting it was one of the most impressive leopard kills he has witnessed.

of those, and it has become the most imitated big-game bullet on the market. It was introduced in 1989, and ever since the Barnes X has been a favorite of serious big game hunters wherever men take rifles into wild places.

Making it work so well is complex, but explaining it is not. Simply put, it's a solid copper bullet with a small, deep, hollow point in the tip. When the bullet contacts game this tip expands, splitting into four distinct petals forming an “X,” which is how it got its name. Under



The traditional Trophy Bonded Bear Claw (TBBC) is still loaded in several cartridges by Federal and is available for handloading. In my Mark Bansner custom Model 70 chambered for the wildcat .358-300 WSM, the 225-grain will shoot sub-MOA groups. My handloads push it at 2950 fps. The bullet has shot through both shoulders of a bull elk at 250 yards, yet it expands quickly enough to work well on antelope and whitetails.

Federal loads the Trophy Bonded bullets in factory rifle ammo. They also offer them as components for handloading.

The Barnes X-Bullet Family

Every now and then a new bullet comes along that redefines what we think we know about hunting projectiles. The Barnes all-copper X-Bullet was one

normal conditions it retains 100 percent of its weight and its penetration abilities are legendary.

In 2003, Barnes advanced the technology of the X-Bullet to new levels with the introduction of the Triple-Shock X (TSX). This bullet used rings cut in the shank to allow it to work better with various rifle-bore diameters. It also incorporated some changes in the nose design for even more positive expansion. The result was less bore fouling and accuracy that often rivals target bullets, as well as improved terminal performance.

In 2006, Barnes added the Maximum Range X (MRX) to the line. This was the first Barnes bullet to use a polymer tip. It also featured a tungsten core in the back section. The heavy tungsten core reduces the length of the bullet in any



Barnes MRX



Barnes Tipped Triple-Shock X



Norma Oryx

Photos: Author

given weight. Because all-copper bullets tend to be long, this created a big advantage with some cartridges. The shorter bullets do not intrude as much into the powder space and allow the cartridge to reach its velocity potential. I tested the bullet in South Africa and Zimbabwe in 2005 and after that I wrote: "The MRX might well be the best hunting bullet on the market." Nothing has changed my mind. They are expensive, but I think they are worth the price.

Running with the market's demand

subtle differences, but for the most part they all expand very quickly to form the trademark "X"-shaped nose. Then the expansion is arrested by the solid shank, leaving the fully expanded bullet to penetrate. The X-shape of the nose aids in penetration because the spaces between the petals act like "relief valves" to allow tissue to flow through. At the same time the petals cut and crush tissue, which aids in fast, humane kills.

I have lost count of the game I have taken with Barnes X-Bullets in various

Norma Oryx

In the past Norma ammunition has experienced some distribution problems here in the United States, which is unfortunate. With luck, that's history, as Norma just might make the best hunting ammo you have never tried.

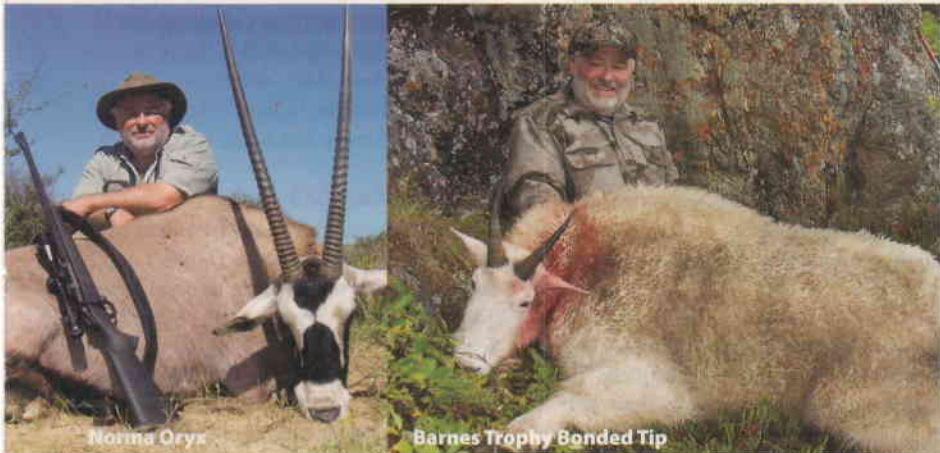
Its bonded-core bullet is called the Oryx, named for the tough African antelope. It uses a tapered gilding metal jacket with a bonded lead core for controlled expansion, deep penetration and excellent weight retention.

One of the first things I killed with it was indeed an oryx. It was a long shot made from high up on a *kopje* in Namibia. I had a very accurate Blaser R-93 rifle with a high-power Zeiss scope. My equipment worked fine, but the nut behind the trigger got cross-threaded. I forgot to allow for the steep angle resulting from my high perch and hit the old bull too high. Oryx are notorious for being tough, and dangerous when wounded. We watched him quickly lie down in the shade along a dry riverbed, and we were able to climb down and close the distance to clean up the mess. I attribute the outstanding performance of the Oryx bullet in making that happen fast. I think with a lesser bullet the old bull might have traveled farther before bedding and been harder to find.

It was one of those "worst-case scenarios" that I mentioned. I tried for perfect bullet placement, but it didn't work. A good bullet made all the difference.

I also used the Oryx to take a mountain zebra and a blue wildebeest. Most recently I used the 250-grain Oryx in a .358 Norma to take a moose in Sweden.

During a formal range test of the Blaser R-93 rifle in .300 Win. Mag., the 200-grain Oryx Norma load was the most accurate tested. It averaged .78-inch for five, five-shot, 100-yard groups. In my E.R. Shaw Mark VII rifle in .358 Norma, the 250-grain Oryx load averaged 1.10-inch groups, by far the most accurate bullet tested.



Norma Oryx

Barnes Trophy Bonded Tip

that every new rifle bullet must have a plastic tip, Barnes added the Tipped Triple-Shock in 2008. This is pretty much the Triple Shock with a plastic tip, except it has a slightly larger hollow point so it expands a bit easier. Of course, it has a higher ballistic coefficient too, which means it retains velocity better and shoots flatter.

The TRSX started out with light-for-caliber bullets, but the line has grown to include most bullet weights. The most recent I have worked with is a .30-caliber, 200-grain tipped bullet that is anything but light for caliber. It's a big, long bullet with an incredible BC of .546. It's a good match for the big magnum cases like the .300 RUM.

All three of these bullets have similar terminal ballistics. There are some

configurations. It started 16 years ago with a Wyoming elk shot with a .338 225-grain original X-Bullet. The latest was an Alaska brown bear taken with a pre-production 350-grain .375 Triple-Shock. That one was introduced at the 2010 SHOT show. In between is a very long list of big game, including just about everything from pronghorns to Cape buffalo.

Of course, Barnes offers the entire line for handloaders. Currently several companies load Barnes bullets in factory ammo including Federal, Norma and Weatherby. Recently Barnes Bullets was purchased by Freedom Group, the company that also owns Remington and about half of the rest of the shooting industry. It's a safe bet that Big Green will be adding Barnes bullets to its ammo line in the future.



Hornady GMX

Hornady's version of a monolithic, solid metal, expanding bullet is called the GMX, which stands for Gilding Metal eXpanding. The boattail-style bullet has a polymer tip. There are two rings cut into the forward portion of the bearing surface of the shank. These allow the displaced metal to flow when engaging the rifling, which can improve accuracy and reduce metal fouling. The front ring also serves as a crimping groove, or cannelure.

The GMX is a sleek bullet with a high BC. It has proved to be accurate in the two rifles in which I tested it. This bullet is designed to expand into a round mushroom similar to conventional lead-core bullets, which increases the frontal area over some other expanding solid bullets.

A well designed monolithic bullet like the GMX or X-Bullet will expand very quickly, usually in the first inch or two, but once the expansion reaches the solid shank below the hollow cavity in the nose, it is stopped. They also exhibit very high weight retention, which aids in penetration. The metal used is much tougher and far less malleable than lead so the bullet tends to retain its expanded form better and resists further change. In comparison, traditional lead-core bullets will often continue to change shape as they penetrate, which robs energy used for moving the metal that otherwise would be used for penetration. Also, the changing shape can adversely affect the bullet path, penetration and wound channel.

Hornady claims 1.5-times expansion and 95 percent weight retention, with up to 30 inches of penetration in ballistic gelatin. To test that, I fired two .30-06 150-grain GMXs point-blank into Permagel. This is equivalent to impact at 100 yards with a .300 Win. Mag. The average penetration was 34.25 inches. The average retained weight was 149.35 grains, which when you account for the missing plastic tip is just about 100 percent. The average expanded diameter was .501 inch.

In 2008, I used a 150-grain GMX in a

.30-06 to take a nice Nebraska whitetail buck. The bullet started by smashing the near shoulder, passed through on an angle and exited behind the ribs on the far side. I expect an exit hole from any good big-game bullet the majority of the time, because I think leaving the bullet in the game and dumping all the energy is nonsense. Energy doesn't kill big game, broken body parts do. Big holes all the way through are one of the trademarks of a good bullet.

Expansion clearly started early on this buck and the wound channel grew large, creating massive damage to the lungs, which indicates a large frontal area with good energy transfer. One whitetail is not a conclusive test of any bullet, but it does give some indication of what to expect from a bullet.

Hornady offers both component bullets for reloading and a complete line of factory ammo, including the new higher-velocity Superformance ammo.

Nosler E-Tip

Nosler invented the premium bullet market back in 1948 with the Partition. That bullet was so far ahead of its time that it is still the standard of comparison for every new hunting bullet. But no company survives by being stagnant. Inspired by the social and political changes that

are crippling the use of lead, in '07 Nosler introduced its own monolithic, expanding bullet called the E-Tip.

This is a gilding metal boattail bullet with a deep hollow cavity in the nose and a polymer tip. My recovered bullets show a larger expanded diameter than other monolithics on the market. The nose is a traditional round mushroom, but due to the deep hollow point the expanded diameter tends to be larger, about .650 inch for .30-caliber slugs.

This will result in reduced penetration, but larger-diameter wound channels when compared to other bullets. Options are what keep this market working, and in the monolithic bullet market the Nosler E-Tip provides a clear option.

Nosler sells the bullets for reloading while Winchester has loaded ammo.

Winchester XP3

The Winchester Fail Safe was one of my favorite rifle bullets. If the X-Bullet and the Partition were allowed to breed, the Fail Safe might have been the result. It featured an X-Bullet-style nose with a Partition-type rear core. The rear core was reinforced with a steel jacket to prevent it from distorting after impact. But it had a few flaws, one being that it was expensive and tricky to manufacture. In 2006 it was replaced by the XP3. The



Nosler Accubond



Hornady InterBond

Swift Scirocco II

Remington Core-Lokt Ultra

Federal Trophy Bonded Sledgehammer

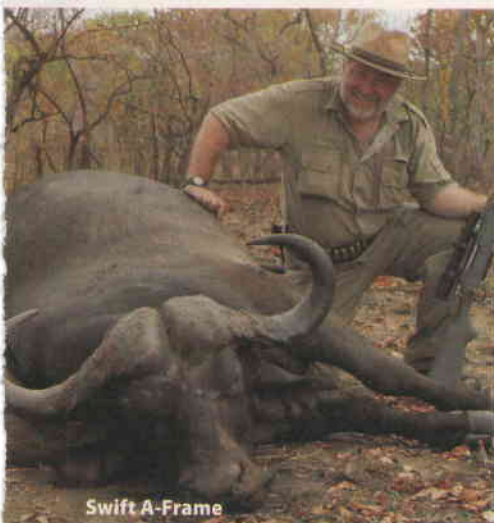
biggest changes were the removal of the steel cup in the rear and the addition of a polymer tip.

The XP3 features a solid, gilding metal nose with a deep hollow point. In the hollow point is, of course, a polymer tip. The one-piece bullet nose and jacket has a rear hollow core, which is filled with lead alloy and then bonded. On impact, the nose splits and expands similar to an X-Bullet while the rear section swells and expands in what Winchester terms "double expansion," which they claim is an advantage in terminal performance. Winchester offers the XP3 in a wide range of factory loads.

Solid Bullets

Solids are frowned on here in the States and are even banned for hunting in some locations. But if you go to Africa to hunt dangerous game, chances are you will need some solid bullets. For hippo and elephant they are required. When hunting buffalo most experienced hunters think they are a good idea. Traditional thinking says the first shot on a buff will be a "soft" or expanding bullet, followed by solids. Once you make your first shot, all bets are off. The rules change with wounded game and you put a bullet into it from any angle presented. Solids are the only bullets that will penetrate

Photos: Author



Swift A-Frame

from any angle and retain enough power to punch through bone on the exit side.

The Barnes Banded Solid is a flat-nose, solid brass-alloy bullet. It features rings cut into the shank, similar to the proven TSX design. I have used it on elephant and several buffalo with very good results. I have one I recovered from an elephant that smashed the spine and shoulder yet shows very little deformity other than the rifling marks.

The downside of the Barnes Banded Solid is that it's very long and must be seated deep in the case. This is a problem with some cartridges, like the .458 Win. Mag., as it already has too-little powder capacity.

The Trophy Bonded Sledgehammer Solid is a flat-nose design that uses a thick bronze jacket with a bonded lead core. Because lead has a high specific gravity this results in a slightly shorter bullet, one that does not intrude into the powder capacity as much as a Barnes Solid. I used it last year on a hippo hunt with good results.

Bonded Bullets

Bonded bullets were cutting-edge a decade ago when only a few companies cataloged one, but today they are common. The Trophy Bonded family and the Norma Oryx bonded bullet are well covered above, so here is a quick look at the other bonded bullets on the market.

Swift A-Frame

The A-Frame is similar to the Nosler Partition in that it has two lead cores separated by a wall of copper. The front core is bonded to the jacket. This bullet has excellent weight retention and good penetration. It tends to open up big and do a lot of damage. It's a good choice for any hunting, but really shines with big game and big cartridges. I have used it on several Cape buffalo as well as other African and North American game with excellent results.

Swift Scirocco II

The Scirocco was the first polymer-tipped, boattail, bonded-core bullet. The Scirocco II is the newest version. This secant ogive bullet features a high ballistic coefficient for good retained velocity. The thick jacket is copper and the core is pure lead. Weight retention is around 80 percent, which is good for this style bullet. Swift designed it for deer-size game. The first time I used it I shot one of my best whitetails ever, so I have a soft spot for it. Swift sells the bullets for handloading. Remington and Federal load Swift bullets in factory ammo.

Nosler Accubond

This bullet has a lead alloy core bonded to a gilding metal jacket. It features a polymer tip and a boattail base, so it's sleek and slippery for long-range shooting. It combines the external ballistics of the Ballistic Tip with terminal ballistics closer to the Partition. Expect about 60-70 percent weight retention. I have used this bullet on a bunch of game from deer to elk, all with good results. Nosler sells bullets and Winchester and Federal load ammo.

Hornady InterBond

This is another bonded lead core, gilding metal jacket, polymer tip boattail. Hornady designed it to expand a bit larger than the competition's bullets, so it works best with deer-size animals. My experience with it has been on whitetails. It has performed well on all deer I have shot. Hornady offers it for handloading as well as in loaded ammo.

Remington Core-Lokt Ultra

This bullet is Big Green's entry into the bonded-bullet world. I have used it in multiple cartridges and on a lot of game including whitetails, a bunch of African game and several red stag in Argentina. In my experience it is the softest of the bonded-core bullets. That means it works best on deer-size game. Remington offers it as a component for handloads as well as in a wide range of factory ammo. **ah**