

BY J. C. MUNNELL

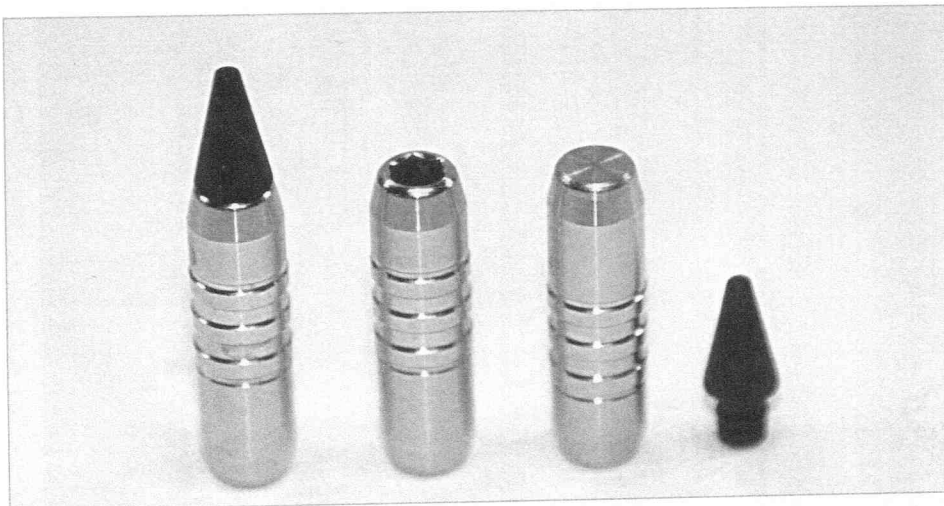
A year or so ago an article of mine entitled “Non-Lead Bullets For Hunting (and Match Shooting?)” appeared in these pages in which I detailed accuracy testing and reloading techniques necessary for several of the various solid copper, brass or gilding-metal bullets then available for hunting. In this, I dwelt (somewhat) on what, if any, special reloading considerations should be taken into account with these bullets and I mentioned a few of my admittedly limited experi-

ences hunting with non-lead bullets. Just as I was finishing up the shooting for this article, I became aware of a rather new company located in the North Central part of my home state of Pennsylvania – Cutting Edge Bullets – and mentioned that these good folks were making solid copper bullets not only for hunting, but for match shooting as well.

Due mainly to time constraints, I was able to only briefly test a few of their .30 caliber bullets in the same full-stocked FN .30-06 rifle with which all other testing for this

article had been done. Although this particular rifle has never produced gilt-edge accuracy, its capabilities were quite well established, and therefore it provided a good test platform in order to be able to “compare apples to apples,” vis a vis loading parameters, as well as being able to tell how the accuracy of the various bullets tested compared not only to others of similar construction, but also to more conventional cup & core bullets which I had previously tested in the same gun. Based upon this limited testing I was rather impressed with the accuracy of the Cutting Edge bullets I tried.

In recent months, I have been able to try some more of these offerings, and this coupled with the fact that their bullets are beginning to appear in the listings of winners of some benchrest matches, has caught my attention. Now the Cutting Edge folks have come out with a new bullet designed purely for hunting which may very well be truly “revolutionary” in design. That these also happen to be very accurate in a couple of my rifles does not hurt either. Thus, I felt the readers may want to learn more about this new company and their various products.



The Cutting Edge ESP Raptor in its many guises. These bullets can be used either with or without the Talon Tip, and if the tip is not used, the bullet can be used either with the flat point out as a “solid,” or with the hollow point out for rapid expansion as well as deep penetration.

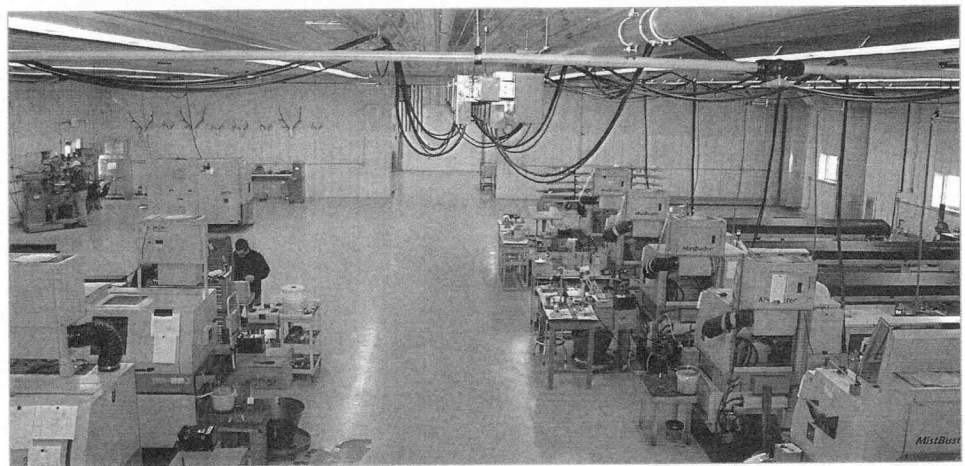
Cutting Edge Machining Solutions/Cutting Edge Bullets is located in the tiny hamlet of Drifting, PA, just off I-80 in our infamous "snow belt." Having been raised a few miles West (ok, maybe more than a few), I can readily understand how great ideas could emanate from this area of the state. After all, roughly between Halloween and Easter (at least if Easter is late in the year), there are only three things to be done in this area: hunting, surviving, and the third serves to produce more hunters and survivors. Other than these three worthy activities, thinking is probably the best way to take up the spare time. When you can think and have access to a fully equipped machine shop, it's only to be expected that good things should be devised.

In 2001, Dan Smitchko opened Cutting Edge Machining Solutions to produce precision metal parts for the medical, aerospace and electronic industries, among others. Realizing that his company was dependent upon outside orders, he determined that it would be advisable to produce his own product completely in house. Accordingly, he soon coupled this concept with his passion for long-range shooting/hunting by developing his own projectiles produced on the same CNC Swiss-style lathes that allowed him to machine other items to extremely close tolerances. After 47 bullet revisions, he hit upon a bullet with a high Ballistic Coefficient for great down-range ballistics, utilizing a hollow point design that holds together if something fairly solid such as bone is struck, yet will expand rapidly if soft tissue is struck. (As strange as this concept appears, I am assured by physicists and engineers that there are sound principles which do permit such dual-purpose terminal effects.) A few years later, they are projected to sell close to one million bullets and are growing rapidly.

As reported last year, their MTH (Match/Tactical/Hunting) bullets are also suitable for match shooting. In addition, Cutting Edge makes a somewhat more limited line of MTAC or Match/Tactical bullets which are solid copper, similar in profile to the MTH bullets but without any hollow point. These are not designed for hunting

any animal of any appreciable size, although they certainly do kill predators without doing any damage to the hide. Within the MTH line are both low drag and very low drag configurations, often of the same weight in a given caliber. For

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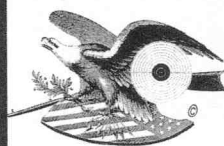


The Cutting Edge Machining Solutions/Cutting Edge Bullets in their Drifting, PA plant from the outside and from the inside. There is lots of room in which to manufacture lots of good bullets. (Cutting Edge photo)

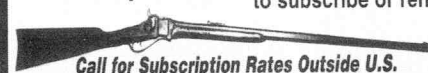
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Cutting Edge Bullets

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instance, in .30 caliber there are no less than ten specific bullets in weights from 140 to 200 grains. Both the MTH and MTAC lines are all solid copper. There is also an FBH or flat based hunting bullet available, so far only in .30 caliber, which is also made from solid copper. Various bullets in these series are available in no less than 12 diameters from .224" to .510".

A feature of the MTH, etc., lines, and perhaps the one that gives these bullets the capability of outstanding

accuracy is the patent-pending Seal Tight Band, or STB. This is a special narrow band designed to be located at the case mouth when the bullet is seated in the case (although it can be seated deeper if necessary). It is some .0005" to .0015" larger in groove diameter and serves to "seal" the bullet in the rifling so no gas blow-by can occur, thus eliminating fliers caused by a bullet being released while other than perfectly centered in the bore. Since the band is slightly beveled, it "squashes" rather than shearing off as the bullet engages the rifling. Grooves in the bullet both in front and behind the STB allow for mate-

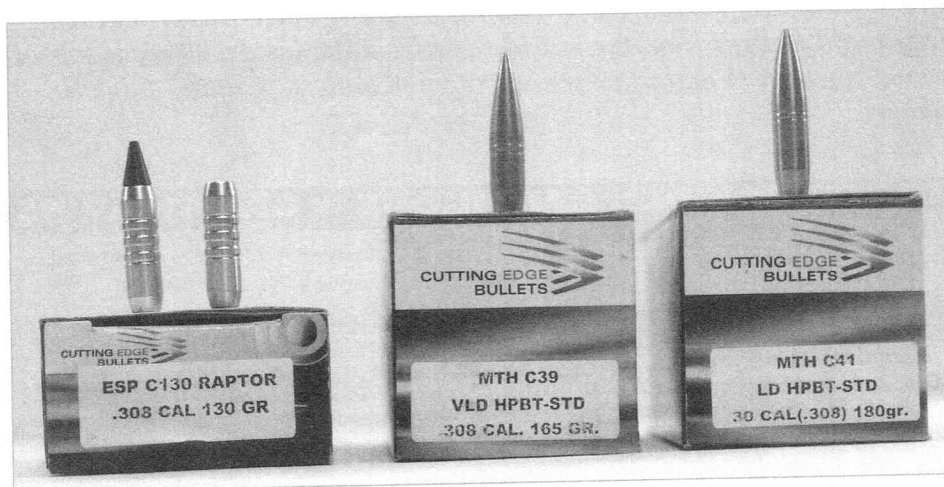
rial displacement as the STB is formed to groove diameter. This prevents any pressure spike. The remainder of the bullet shank is slightly undersized to also prevent high pressure and to prevent fouling. In fact, recovered bullets prove that the grooves of the barrel do not even touch the bullet during firing; only the STB!

The second major types of bullet in the Cutting Edge line are what they call their brass bullets for the simple reason that instead of being made out of pure copper, these bullets are comprised of "360 brass." Brass is used in these applications because it is more brittle and shears better and is therefore more suitable for the following applications. These bullets are for their Dangerous Game Brass and Dangerous Game Brass Hollow Point bullets (DGBR and DGBR-HP). These bullets have a "three and one band configuration" in which all bands are groove diameter except the rear band which is .001" smaller for better neck tension. This rear band is only there for alignment purposes. The rest of the bullet is very slightly under bore diameter so as to reduce pressure and strain on the barrel. This is done specifically to make these bullets safe for double rifles, although, of course, they are perfectly suitable for bolt actions as well.

The Dangerous Game bullets are flat-based and have a very broad meplat, whether hollow point or solid. This has come to be recognized as the best shape for both tissue destruction and deep, straight-line penetration. The hollow point bullets are called "Non Cons" (Non-Conventional) because they are designed to fragment instead of mushroom. The hollows are six-sided and are internally skived so as to cause six petals to break off after entering the body cavity, thus creating in effect additional, secondary, projectiles. The solid portion of the



Some of the .30 caliber Cutting Edge bullets the author has tested in various rifles. All have shot well.



On left is the new .30 caliber 130 grain ESP Raptor with and without the Talon Tip. In the center is an example of the MTH (Match/Tactical/Hunting) VLD bullet, in this instance a 165 grain .30 caliber, and on the right is an LD 150 grain MTH. All these and many more are offered by Cutting Edge Bullets of Drifting, PA.

bullet, of course, continues in a straight line for extremely deep penetration. Although the hollow point is of a different shape and the internal skiving is not present in the MTH bullets, the MTH bullets still combine the tissue destruction of the expanding nose portion with the deep penetration — usually through and through — of the solid bullet. The MTH bullets are not designed to separate.

There also is a line of “Dangerous Game Nitro Express” brass bullets, which differ only in the location of the bands. The bands on these bullets are slightly under groove diameter, again to reduce barrel strain. There is no STB on any Cutting Edge brass bullet.

Now we come to the bullets I find particularly intriguing and which I think are truly innovative; the ESP (Enhanced System Projectile) Raptor. To describe this bullet, I will quote loosely from the Cutting Edge web site (www.cuttingedgebullets.com) “The ESP Raptor bullets are the latest addition to the Cutting Edge Bullets line of bullets. The Enhanced System Projectile or ESP is a complete system bullet and incorporates a double-ended nose profile. One end is a solid that when loaded in a cartridge with it sticking out, provides extremely deep penetration that can be used on animals where the absolute deepest penetration is desired. The other end is our hollow point design used in our Dangerous Game brass bullets that provides superb terminal performance, along with penetration greater than any conventional jacketed bullet available. To top it all off, there is an add-on tip that will be supplied that increases the BC by two to three times over the flat-nose profile for excellent long-range performance.” What we have here literally is a

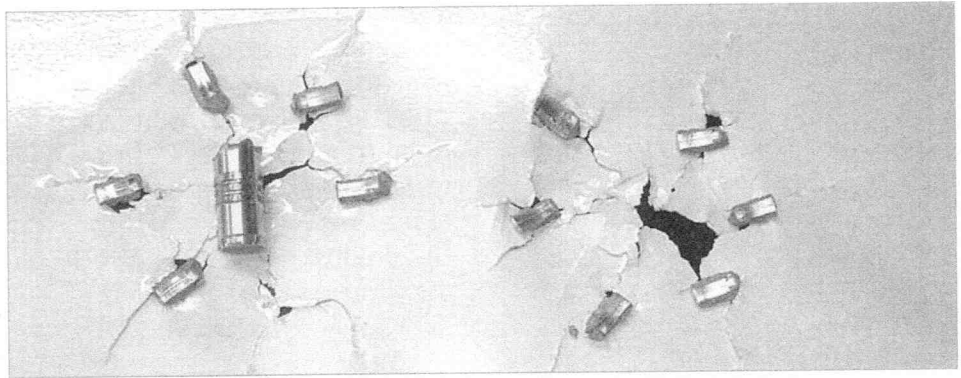


Photo of a “witness card,” placed four inches in some very dense ballistic media, showing how the six “petals” separate from a 130 grain .30 caliber Raptor bullet. The base continues to penetrate much further (usually “through and through”). The DGBR-HP bullets perform similarly. (Cutting Edge photo)



The author’s most recent platform for testing some of Cutting Edge’s products: A Kimber M-8400 Classic Select in .300 WSM. This rifle was used to test the new ESP Raptors, both with and without the Talon Tip. Note the spectacular grain in the buttstock. Attractive butts have always appealed to the author!

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Cutting Edge Bullets

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“triple threat bullet.” Used one way, it is a solid, giving deep penetration. Turned around, it is a hollow point that opens quickly, breaks into six petals, with the remainder continuing to penetrate as a solid. Used with the “Talon Tip,” the BC increases two to three times over the non-tipped bullet. In addition to expanding and producing the six petals, it offers the added advantage of long-range trajectory. Not mentioned on the web site is the added fact that when used as a hollow point, it is also suitable for tubular magazine use. There are no oversized driving bands on the Raptor, so that it can be used equally well with either end pointing forward.

“These bullets are truly on the cutting edge and so easy to develop a load for that you will be amazed. Handloaders will be able to pick a speed they want to shoot a bullet at, pick a powder that provides that speed, load the bullet with one band

sticking out of the case and shoot a group at 100 yards almost guaranteed to be under one inch on the first load. This may sound too good to be true, but every rifle we have tested has produced these results.” Hmm! I had to see this for myself, so I ordered some 130 grain .30 caliber Raptors to try in a Kimber .300 WSM rifle I happened to be wringing out at the time. This rifle is one of their Classic Select grades and is as it came from the factory. It is, with most bullets, a 1-1 $\frac{1}{2}$ " gun. (In truth, I bought it because, first of all, I really like Kimber rifles and second, because it has a particularly good looking buttstock.) The first 4-shot group fired with the Raptors (without the tip) was 3/4". Hmm indeed! In all, I fired 100 Raptors through this gun, 50 with and 50 without the tips, all at 100 yards. Good accuracy with the tips in place was realized, but believe it or not, I got even better accuracy when the bullets did not wear the tips. For some unfathomable reason, I did not shoot any “upside down,” but I have no reason to think that as solids these bullets would be any less accurate than as hollow points. I also did not have the opportunity to shoot at longer ranges, but I am informed that at least to 250 yards, the hollow point configuration is still as accurate as with the polymer tip. Incidentally, do not be concerned – if you are as metallurgically challenged as I – that when fired with the hollow point inside the case that the base of the Raptor will obdurate and possibly throw the bullet off balance. The folks in Drifting, PA have literally fired the “solid version” into test media, then reversed it and fired it again as a hollow point without any degradation in accuracy.

The final four Raptors I shot were two with and two without the tips at 100 yards. Using a healthy and proven accurate charge of IMR 4064, all four bullets went into

slightly over 1/2" with no indication of any “two and two” effect at all.

I have not had the chance to shoot an animal with these bullets as yet, but I hope to remedy that situation come fall. By the results of Cutting Edge’s testing in a ballistic media, I have no doubt at all that if I do my part, no game animal will survive a well-placed Raptor. Incidentally, unlike some other non-lead bullets on the market, the various Cutting Edge ones are designed to be loaded the same as standard cup and core bullets; that is, the same powder and charges can, by and large, be used. This statement represents my own testing only; Cutting Edge recommends reducing starting loads by five percent and increasing powder charges slowly and carefully – good advice for all loading procedure, especially with a new component.

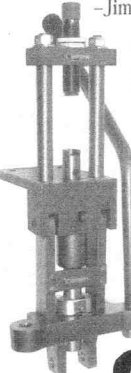
Cutting Edge’s bullets are all CNC produced; they use Swiss-style sliding headstock lathe machines for all bullet production, which allows for adherence to extremely close tolerances. They also are open to suggestions from customers for additional diameters, weights and shapes for any bullet in their various lines. (Obviously you can not expect them to custom-make your bullets without a significant start-up and development cost, as well as a sizeable order.) While not all bullets are made – yet – in all diameters, many are already available. For example, I count no less than 13 .30 caliber bullets presently available for hunting and match shooting. Other diameters are becoming available in a wide variety of styles. I am really enthusiastic about these bullets and I think you would be too if you gave them a try.



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