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North Fork's Cup Nosed Solids

by Doctari

The sporting pursuit of Syncerus cafer cafer, the Cape or Southern buffalo has long been my passion along with the study of the calibers, cartridges and bullets best suited for such activities. Over the past three decades, I have seen many buffalo shot with a wide variety of ballistic combinations, from the .303 British and 174 grain FMJ's (which were not at all impressive) all the way up to the various .500s with quality soft points and solids (which are). I have recovered bullets by the coffee can-full from buffalo, and my veterinary background has allowed me the opportunity to look at 'wounds' (terminal bullet performance), for want of a better word, from a somewhat different perspective.

What makes this so interesting is there exists in Africa two different scenarios when it comes to buffalo and the sport hunting thereof. The first is the perennial question of what is the best caliber, cartridge and bullet combination for safari clients. The second is what is best for the professional hunters (PH) who guide and protect them.

For clients by far the most important criteria is to shoot sufficiently well with their chosen combination. Many hunters are misinformed into thinking that bigger, more powerful and more impressive ballistically is best for these formidable black bovines, which is essentially true. If truth be told, better performing combinations are often too much for most inexperienced hunters to shoot well, which gives rise to all sorts of problems. Poor initial shot placement is the greatest cause of 'things going wrong' on a buffalo hunt, but many hunters refuse to realize this.

The simple reason why the .375 H&H remains the best choice for relatively inexperienced safari clients is because it is manageable, shooting wise. With the correct choice of bullet and good initial shot placement, this 100-year old cartridge remains adequately effective and a good choice.

The second scenario is equally interesting. PHs need 'a big stick' (usually a .458 or .470 and 500 grainers is recommended). If a PH cannot handle this combination, he should look elsewhere for employment! More recently, it appears that the various .500s are gaining in popularity with dangerous game PHs. I fully support this motion because they are truly effective and surprisingly manageable when such rifles are sufficiently heavy and well fitted. Usually PHs only use such rifles for either 'backing' or 'stopping.' Because of this, solids are invariably their bullets of choice. It is my experience, however that the terminal performance of solid, non-expanding type bullets can vary tremendously, especially when it comes to the size of permanent wound channels they create and the distance they penetrate. Both of these factors influence such a combination's effectiveness and, which makes them important from a PH's perspective. For the dangerous species, usually buffalo or elephant, PHs need the most effective combination. The challenge comes in determining precisely what this combination actually is.

Thanks to the elasticity of all soft body tissue (skin, fat, muscle, and internal organs) Kynoch (or Woodleigh) shaped solids that have lots of give, create permanent wound channels (PWCs) only about one third of caliber in size. Hemispherically round nosed solids are better, especially when they have a cutting shoulder. Despite this, the permanent wound channels they create will still be less than caliber in size usually by as much as a half! Flat-nosed solids are by far the best. They create the largest wound channels but still less than caliber in size, and thanks to what is the 'vapor bubble theory,' they penetrate the deepest and straightest.

From a PH's perspective, I have long wondered if there isn't a better bullet out there for the buffalo 'back-

ing' shots they are often required to take. Something that will penetrate better than a quality soft point on awkward angled, going away shots (in other words get through the intestines or rumen from the rear end and into the chest cavity), while at the same time creating bigger and better permanent wound channels than even flat nosed solids. In terminal ballistic terms, I wanted a bullet that will still penetrate the full body length of a buffalo while at the same time creating a suitably large PWC. In terminal ballistic terms, I wanted a bullet that will bridge the gap between good soft points and equally as good solids, and by gosh, I have just found them. They are called Cup Nosed Solids (CNS) and North Fork Technologies makes them.

What makes these bullets unique is the shallow 'cup' that is milled into the meplat of what must be North Fork's regular flat nosed solids. This allows the nose section of the bullet to flatten out and open up slightly, sort of like a rivet when some form of fairly solid resistance is encountered. When this happens, the nose section increases quite significantly in diameter (from .505 on the bullets I used, to between .600 and .750). It is well documented that the permanent wound channels created by expanding bullets are significantly larger (by a factor of three times their final expanded diameter) than those created by non-expanding ones. This is what makes CNSs so effective. (photo 2)

On a recent Zambezi Valley hunt, I got the opportunity to thoroughly test 600-grain North Fork Cup Nosed Solids in my new Kilimanjaro Doctari model .505 Gibbs. I personally hand loaded these bullets so they attained a muzzle velocity of 2150 fps from the rifles 25.5-inch barrel. Accuracy was superb. With the aid of the new Aimpoint Hunter H30L sight, I also tested that it was not too difficult to place shots off a set of shooting sticks into virtually the same hole at 50 paces.

(photo 3) The first animal to fall to this ballistic combination was an absolute brute of a zebra stallion. This was easily the biggest zebra I have ever seen. Shot on the point of the right shoulder as he quartered towards me, I eventually recovered the perfectly riveted CNS up against the femur of his left back leg. The bullet passed through the right side of his heart, leaving behind a permanent wound channel that was easily three times the CNS's final expanded diameter.

(photo 4) Next was a lovely 12 year old dagga boy. He was practically side-on at about 80 paces, facing to my

right with his head turned to look at me. This resulted in the curl of his right horn covering perfectly the 'vital triangle' area of his shoulder. I simply moved my point of aim rearwards a bit and gave him a 'high, behind the shoulder' lung shot. Dust flew up behind him as the CNS exited, but the bull did not go far. We found him 150 paces away, lying on his back with his legs in the air! No further shots were required. A single shot kill, the old bull was as dead as charity! (photo's 5, 6, 7, 8)

To test the CNS's penetration from the 'backing shot' position, I backed off 30 paces and shot him just above and slightly to the right of his tail. (photo's 9, 10) I later recovered his bullet at the thoracic inlet, right at the very front of his chest cavity. This was full body length penetration. Thanks to the .505 Gibb's voluminous case capacity, it would be easy to achieve an additional 100 fps of muzzle velocity with these bullets. Having witnessed this amount of penetration, I do not believe any additional velocity is necessary. Interestingly, there was rumen content in the bull's lungs. This indicated that the CNS had passed through some part of this large internal organ on its way to the front of the chest cavity. I have long believed penetrating bullets create a vacuum in their wake and this is what 'sucked' the rumen content into the lungs. (photo 11)

What is without a doubt my finest buffalo, a wonderful broken-horned, 15-year old dugga boy, also fell to a 600-grain CNS. My intention was to find and hunt the oldest buffalo in the Dande North Safari Area, and in this regard, I was eventually successful. I

had heard about this particular bull from the safari operator and it took a couple of days, lots of legwork and a whole bucket-load of luck to eventually find him but find him we did. (photo 12) He did not go far with a huge CNS-induced hole in his heart. (photo 13)

From a safari client's perspective, it is usually recommended that the first shot at a well-positioned buffalo be taken with a good quality expanding type bullet because they create significantly larger wound channels than solids and this is what makes them a lot more effective. Expanding bullets usually do not exit buffalo either even from side-on. This is an important consideration especially as it is often not possible to be sure of what is behind the target animal. Follow-up or 'backing' shots invariably involves awkward 'going away' angles. Such shots require deeper penetration. It's for

this reason why solids are recommended for all such shots. However, after seeing just how well North Fork's CNSs penetrate and perform, even from the rear, I am now of the impression they are the perfect bullets for all buffalo backing shots.

For PHs I believe these bullets also have enormous potential. For buffalo work, I do not believe there are currently any better. I unfortunately never got the opportunity to shoot one into an elephant cow. I have every confidence they will work well for both body and brain shots at cows. For big bodies bulls, I think I would stick to flat nosed solids, just in case. Cup nosed solids are now available in all the popular calibers, from .375 to the .500s. That there is a bright future for them in Africa, I have not the slightest doubt.



Photo 1

In bullet construction terms, North Fork's Cup Nosed Solids are unique because they successfully bridge the gap between solids and expanding type bullets. 'Semi-solids' probably describes

them best. For buffalo, 600-grain .505s (at 2150 fps) proved to be devastatingly effective.



Photo 2

All these 600 grain .505 North Fork Cup Nosed Solids were recovered from game during a recent Zambezi Valley safari. Final expanded diameter measures between .600 and .750". Because of this, soft tissue permanent wound channels were significantly larger than those created by similar caliber, non-expanding bullets.



Photo 3

This is how we found this enormous zebra stallion. He was the first animal to fall to a 600-grain CNS. The bullet entered

the point of the right shoulder, smashed it, travelled diagonally through the body and I recovered it up against the femur of the left back leg! Back at the skinning shed, this zebra's skin was at least 50 percent bigger than all the others hanging there. I estimated his weight at 600 kilograms! The largest zebra I have ever seen.



Photo 4

In terminal ballistic terms, permanent wound channel size for expanding bullets is usually three times the bullet's

final diameter. This is the right side of the zebra stallion's heart. The hole the 600-grain CNS created as it passed diagonally through the chest cavity is easy to see. Surprisingly the stallion still managed to run a couple of hundred paces before dropping, a classic example of the toughness of African game.



Photo 5

A single 600-grain North Fork cup nosed solid accounted for this fine, 12-year old dagga boy. The bull was standing facing to my left, with his head turned to look at me. His

left horn curl covered his shoulders 'vital triangle' area as he did so. This necessitated shooting him a little further rearwards than I prefer. Dust behind the bullet indicated that it had exited but the bull only ran 150 paces before dropping. We found him lying on his back with his legs in the air! A single shot kill.



Photo 6

The 600 grain CNS passed through the bull's chest cavity and liver before exiting well behind his right shoulder.



Photo 11

There was rumen content in the bull's lungs indicating that the 'backing shot' CNS had passed through the rumen before penetrating on to the front of the chest cavity. I believe that a bullet penetrating through soft body tissue creates a vacuum behind it, as it did so this is what 'sucked' the rumen content into the lungs.



Photo 7

The 600 grain CNS passed through the buffalo's 6th rib as it entered its chest cavity. Judging by the size of the hole, its nose section must have been fully expanded by the time it did so.



Photo 12

The second buffalo to fall to a 600 grain North Fork .505 Cup Nosed Solid was this wonderful 15 year old, broken horned dagga boy. It was

my intention to locate and hunt the oldest bull buffalo in the Dande and I did!



Photo 8

This rib bone fragment was found in the bull's lungs. 'Secondary projectiles' as they are also known, are an important part of the 'killing' process. The damage the CNS caused to the lungs was expensive and the reason why the old bull only made 150 paces before dropping.



Photo 13

Shot through the heart with a 600-grain .505 CNS, the old bull did not make 50 paces before dropping. The size of the exit hole in the right ventricle is clear evidence that permanent wound channel size for expanding bullets is at least three times the bullet's final diameter. A convention round nosed .505 solid, or even a flat nosed one, would not have made a hole as large as this. For buffalo especially, it is my impression that large caliber CNSs may just be the perfect bullets for all awkward angled backing shots.



Photo 9

To test the penetration of the 600-grain CNS, I shot the old dugga boy from the rear.



Photo 10

'Backing' shots are an important part of buffalo hunting. This is where I shot the old dagga boy after he was already dead in order to evaluate the penetration of the 600-grain CNS. I recovered the bullet in the very front of the chest cavity!