

Biggest Game Arrows

When rifle hunting in Africa, one does not use a light – fast .243 on elephant, Cape buffalo, hippo, or any other BIG & dangerous game. Sure a .243 might be able to get the job done, if the hunter is very lucky, but the odds would be stacked against him. It is the same for the bowhunter. Bowhunting big game with equipment that might get the job done is not in the bowhunter's, nor the animal's best interest. When

building arrows for really big game, the more we understand about the proven penetration enhancement factors (see *ArrowTrade* March 2011 page 139, Top 12 Penetration Enhancers) and the more we incorporate them into our big game arrows, the higher the likelihood of our success. I don't know about you, but if I were hunting for big and dangerous game, I would want every advantage I could get.

These considerations apply to all bowhunters, but they are especially important to the traditional bowhunter. Longbows and recurves are not as efficient as compound bows, yet they can easily get the job done when matched with the proper arrow and broadhead combination.

It is the arrow and broadhead that do the killing, so why not build an arrow that will perform like a .375 H&H, or better yet a .500 Nitro express? Why not build an arrow with the greatest likelihood of getting a complete pass through, even through heavy ribs, every time? Here's how...

Choosing your arrows: Bigger game requires bigger bullets or in our case, heavier arrows. Tests have shown that a minimum of 650 grains is needed to consistently breach the heavy bone threshold. Note: I recommend a minimum of 950 grains for Cape Buffalo and Asiatic Water Buffalo, and 1000 - 1250 grains for elephant. (See sidebar for making a 1,250 grain elephant arrow.)



When penetration on BIG animals is your goal, look into heavy, hard hitting arrows like these pictured above.



Bowhunter Steve McCalmant took this trophy Cape Buffalo with one shot from a 73 pound recurve bow and forever changed the way the professional hunter and the camp owner look at the lethality of bow-hunting equipment on dangerous African game.

There are several good choices in arrows for really big game. We find that the Easton Full Metal Jacket Dangerous Game arrow (.250 spine, 550 grains at

32 inches) seems to be the most popular in Africa with the GrizzlyStik Safari (.250 spine, 575 grains at 32 inches) being the second most popular. There's

most pro-shops do not offer them and they require a much greater skill set, but it should be stated that Dr. Ashby has had very good results with some of the heavy hardwood shafts he has tested.

FOC (Front of Center):

Conventional wisdom still tells us that a FOC of about 15 percent is ideal but Dr. Ashby's findings have been that you

a newcomer on the scene that has great promise. It's called the "Heavy Hunter" (.320 spine 490 grains at 32 inches). They're made by Gold Tip, for BearPaw Products, and endorsed by Byron Ferguson. These arrows are heavy and tough but at this time a .320 spine is as stiff as they go so they will probably not be stiff enough for the kind of bow weights normally used for elephant, Cape buffalo, etc. For more normal sized big game though, they should be a nice option to have. Carbon Tech's Rhino (.300 spine, 445 at 32 inches) is another heavy hitter worth looking into. Alaska Bowhunting Supply added a new arrow for 2012, the Momentum U-FOC 175 (.175 spine, 430 grains at 32 inches). The shaft's .175 inch deflection is stiff enough to shoot well out of high-performance bows from 80 to 100 pounds or more. Note: I did not discuss wood arrows because



just can't have too much FOC. In his testing of the heavy bone threshold, interestingly enough, he found that the amount of FOC an arrow has had no effect on the arrow's ability to breach the heavy bone threshold on the near side rib. Let that one sink in... As much as we push FOC - for breaking that near side rib, it doesn't matter. However! Only those arrows with high percentages of FOC, 19 percent and up routinely continued penetrating all the way to the opposite side. In other words, there is a direct correlation between the amount of FOC an arrow has, and the arrow's ability to penetrate once heavy bone is breached. Bottom line - high FOC is a serious consideration when making arrows for really big game.

Increasing your FOC is normally achieved simply by adding heavier broadheads. You can get broadheads that weigh in excess of 300 grains. They will of course cause your arrows to flex more at the shot in effect "weakening" them by reducing the dynamic spine. Before investing in broadheads, we suggest that the bowhunter pick up a test pack of field points so they can find the heaviest head they can shoot well from their bow. Sometimes though, to shoot the heavier broadheads you must go up in spine weight. There is only so much FOC you can gain by adding heavier broadheads, but every little bit helps. If you max out on broadhead weight, there are handy screw-in weight adapters on the market today that screw in to the back of the arrow's insert for increasing the FOC and overall mass weight. There are also weight tubes that will increase mass weight, but you will sacrifice some FOC if you

use them. If you're still looking for more FOC, look into full length tapered arrows. The tapered profile offers built-in FOC. They're inherently heavier at the front and lighter at the back so they make it easy to achieve maximum FOC. More FOC = more penetration.

Arrow wraps: Even though the existence of an arrow wrap on the nock end of an arrow adds a little weight to the wrong end, we still recommend using them because they protect the arrow shaft from the fletching adhesive and that makes re-fletching down the road much easier. With a simple heat gun or even boiling water, the arrow wraps and feathers will easily pull right off the arrow as opposed to trying to strip feathers or vanes with razor blades, utility knives, or even commercial feather stripping tools. Fletching cement penetrates the surface of the carbon and makes it nearly impossible to remove feathers glued directly to a shaft without damaging the shaft.

Installing arrow wraps is easy, especially if you have an old mouse pad or some piece of firm foam or rubber that has some give and grip to it to hold the wrap during installation, but that will have enough resistance to keep wrinkles and bubble from forming as you roll it onto the arrow.

Tip: Cutting an arrow wrap will reduce its weight and if you can, it works out great to cut it so that you have a mark you can use for a locator for the back end or front end of your feather.

Feathers: Nearly all longbow and

recurve shooters shoot feathers these days and feathers are still in my opinion the best form of fletching there is. Once I was discussing hunting the big five in Africa with a PH (professional hunter) and he made a statement that surprised me. He said that he knows a bowhunter is savvy about hunting the big five if he shows up with feathers instead of vanes whether shooting a compound or a traditional bow. Interesting...

We don't really need to cover gluing on the feathers. Every pro-shop has fletching jigs and knows how to use them. Still there are a few points about feathers that we should cover.

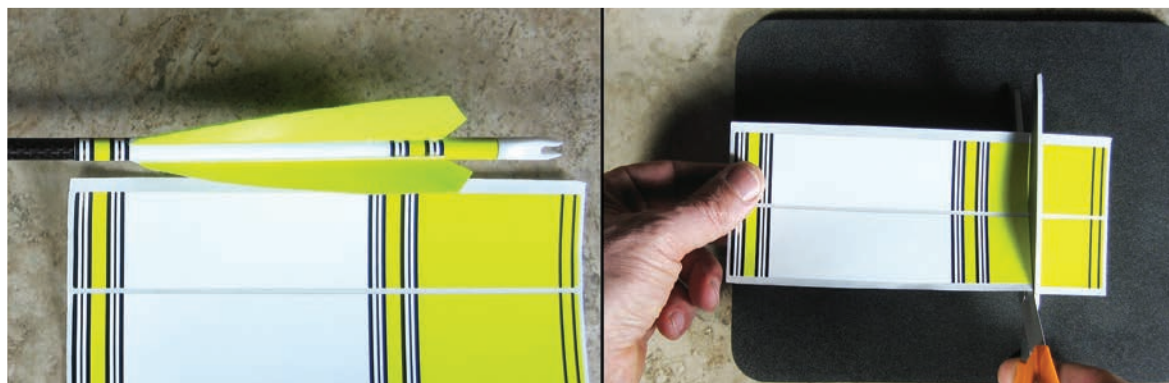
What size? Tests have shown that if you have straight arrows and they are well balanced that even three 1 inch feathers will work just fine but most traditional bowhunters use three 5 inch feathers. Even though this is more than you need, it's a good compromise. You don't need anything larger. Another popular feather configuration is four 4 inch feathers. If you have not tested 75 x 105 4-fletching you might want to. Those who shoot that style swear by them.

Which wing? With the bows of

Weight adaptors fit in the back of inserts so you can adjust overall mass weight and your FOC percentages.



Cutting arrow wraps reduces the weight on the nock end and give you control of where the pin-stripes end up which can assist feather alignment.



today it should not matter which wing you shoot, but in the U.S.A., most right handed shooters shoot left wing feathers and most left handed shooters go with right wing. (In Europe it is the opposite.) Whichever one you decide on, just make sure if you purchase single bevel broadheads to get left bevel broadheads to match left wing feathers and vice-versa.

Most of us purchase pre-cut feathers and these feathers have sharp leading edges that can end up embedded in your hand if you don't trim that leading edge and add a drop of glue over it. Note: Once the glue has dried check for any sharpness. If you find any, a smooth-cut file can be used to remove the sharp edges. After filing, add another drop of glue.

Arrow length: It is not a bad thing if your arrows are longer than your draw length. As a matter of fact, some of our customers shoot full length arrows to optimize their mass weight and percentage of FOC. You can use your

For permanent installation of inserts, a two-part epoxy like JB Weld is a good choice.



arrow length to assist in the tuning by starting full length and slowly cutting off bit by bit of the shaft until you find that perfect length. Some outside the box thinking will assist you during this tuning process as it is not what is normally circulated by the masses. (More on arrow tuning in a future article.)

NOTE: Arrow tuning, using arrows with high and ultra-high FOC is tricky. Especially when trying to bare shaft tune. The arrows will be exhibiting

indicators of non-perfect flight, but what you are seeing them exhibit, may not be the same as arrows with lower FOC's. Always have very light and very heavy field points that will allow you to verify your findings by increasing or decreasing point weight.

How long of an arrow can you shoot? In Dr. Ashby's report on the natives of Papua New Guinea he writes that they use well tillered, but crude bamboo bows with arrows over 4 feet

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Arrow wraps like these, not only protect the arrow from the fletching adhesive, they make a distinct and attractive arrow.



As a safety measure, sharp leading edges of feathers should be cut and sealed with glue.

long, weighing in excess of 2000 grains, with 40 percent and higher FOC ratings routinely to take their native Rusa deer

at 25 yards or more. He has studied other arrows from around the world as well and found that we in the U.S.A. shoot the most modest of FOC's.

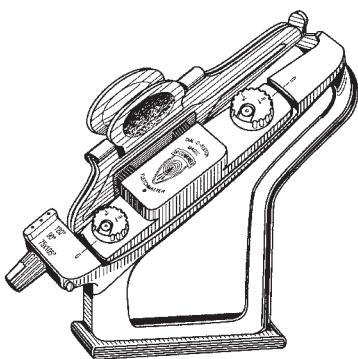
just beginning to rediscover the many advantages of having high amounts of FOC in our hunting arrows; more stable flight, faster paradox recovery and a substantial boost in arrow penetration – things our 'primitive' counterparts have, apparently, long known."

Inserts: When permanence and rock solid adhesion is desired, a slow cure two-part epoxy like JB Weld is a

Dr. Ashby stated: "When did it become 'traditional' to use such modest amounts of FOC in our hunting arrows? The few original stone-point Indian arrows I've had a chance to examine have shown from 20 to just over 40 percent FOC. Authentic arrows of oriental origin have typically shown FOC's in the 30 to 40 percent range. So have most of the arrows I've seen in use by African tribes. We 'moderns' are

A 1,250 grain arrow, with a tough solid single bevel broadhead is a proven performer on elephant.

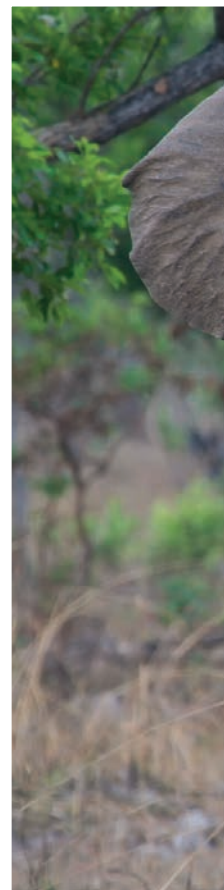
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good choice. Although the case for a good quality hot melt adhesive like Quick-Stick hot melt with more flexibility than rigidity is easy to make. During the arrow tuning process using a hot-melt adhesive makes it easy to remove and reinstall inserts as needed by screwing in a field point and carefully heating it with a torch until the heat reaches the glue on the insert and warms it to the point that it will release. You must be very careful to apply just the right amount of heat or you will damage the arrow.

Broadheads: Strength, perfect flight, profile, and sharpness are all important considerations when choosing a broadhead for the really big game, especially for animals like elephant, Cape buffalo, and Asiatic buffalo. There are hundreds of good quality broadheads on the market and it can be mind-boggling to choose the right one. Here is where having a trusted expert in the industry can be a life saver. One such man is Neil Summers of Bowhunting Safari Consultants. He

has decades of experience and when it comes to elephant hunting he saves his clients of muddling through all those broadheads because he has a very short list of broadheads that he trusts. Their success is his success and he has seen what works and what does not - first hand.

Extensive broadhead testing has shown that long, narrow, thick single bevel broadheads are the clear champions of penetration. Not only do they penetrate extremely well, single bevels can split bone - if they are pushed by a heavy enough arrow retaining enough momentum at the point of impact. At the moment of impact, bone resists being broken, so even though single bevel broadheads are designed for breaking bone, you must have enough momentum to get the job done. The bigger the animal the bigger the bones so you must plan accordingly, use heavy arrows and strong broadheads. Look for broadheads that fly well from your bow and shoot the heaviest broadhead you can. The easiest way to increase





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your FOC is to use a heavy broadhead. Single bevel broadheads are available from: Alaska Bowhunting Supply as the GrizzlyStik, as well as from Eclipse, Grizzly, ABowyer, Steel Force, Vintage Archery - Tuffhead, & Zwickey

Double bevel broadheads have taken their share of ultra-big game as well. Again, talk to those you trust. Contact booking agents, or talk to guides, find out what has worked and what hasn't. When it comes to double bevel broadheads check the bowhunting forums, talk to other bowhunters to see what they have used. Some of the more popular of these double bevel broadheads are: Silver Flames, Zwickey, Magnus Classic, Ace, Eclipse, Steel Force, VPA, Zephyr, and STOS.

If it ain't broke don't fix it. This is a great axiom. If you're a deer hunter and you've never had a problem with shooting let's say, 2216's with 125 grain Magnus Classic two blade broadheads, then why change? I get asked this question a lot. The truth of the matter is, I agree with you. Why change indeed? There is no reason to. There is a psychological element to this traditional bowhunting and you must have confidence in your equipment. There is no need to change unless...

I do a lot of tech support on the phone, and I talk to many, many bowhunters who describe how they never had a problem with their set-up until they hit their last

(fill in the blank) in the shoulder blade and got almost zero



penetration. Losing a big game animal to the shoulder blade is a painful experience. Solution for shoulder blade hits? Your best chance when it comes to shoulder blades is heavy arrows, at least 650 grains, and strong solid bone-splitting single bevel broadheads. Like Dr. Ashby says, "Don't shoot gear that works only when everything goes right, shoot gear that works even when things go wrong."

ARROWS FOR ELEPHANTS

For really BIG game you want to bring out the big guns, or in our case, heavy arrows with momentum. With the right arrow and broadhead combination, driven by a heavy enough bow, you can make a clean kill on any animal that walks the earth. Experiment with heavy arrows and increasing your FOC. Test it yourself. You just might start getting pass-throughs on all your big game and two holes are better than one!

Bowhunters in pursuit of elephant have quite a challenge. However, with the right equipment, penetrating the massive ribs and reaching the "goodies" is actually not difficult. The problem is all the misinformation so readily available in print from so called "experts" who have good intentions, but nothing to base their opinions on.

Alaska Bowhunting Supply has been helping bowhunters successfully harvest elephant for many years. They have a suggested set-up that has produced a 100 percent success rate. All of their customers who have called to share the results of their hunt have reported phenomenal results with the following set-up.

Elephant: Minimum 1200-1250 grains. Take GrizzlyStik Safari arrows, and leave them full length, which is 32.5 inches. Add Ashby forged one-piece broadheads, which are 315 grains each. Add five 50 grain weight adapters to the back of the brass insert. Your arrow will now weigh 1250 grains or very close to that and will be "good medicine" on elephant. Note: When installing the weight adapters use some Loctite on the threads to lock them in place.

Cape Buffalo: For Cape Buffalo or Asiatic Buffalo, the minimum suggested arrow weight is 950 grains which you can achieve with the same components as listed above for the elephant arrow, but with none of the weight adapters.


*Shoot true,
Todd Smith*

Weights that screw into the back of the insert are used to boost both FOC balance and the overall weight of this arrow for hunting elephant.



ABOUT THE AUTHOR

Todd Smith has been a traditional bowhunter for over 40 years. After learning the art of handcrafting wood arrows in Alaska from his mentor John Dodge, he built arrows professionally for several years. In 2008, after a 19 year stint with 3Rivers Archery, he made the decision to help other businesses grow and currently offers marketing services through his website ToddSmithCo.com

Todd Smith's Traditional Focus column in *ArrowTrade* is being sponsored in part by Alaska Bowhunting Supply. 

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