BROADHEAD TEST: IMPROVED ASHBY

By

Cleve Cheney and Wallace Vosloo

When a manufacturer of an article is never satisfied that is a very good sign. When they strive for perfection you can know they have a good product. Good manufacturers identify weak points in their products and do something about it. Manufacturers who are not good are satisfied to live with and continue to produce products with weaknesses they are aware of.

I have previously written a broadhead report on the Ashby broadhead produced by GrizzlyStik. I found it to be an excellent broadhead but based on our tests and feedback from the hunting field, where the broadhead has also performed magnificently, the owner of GrizzlyStik, Garett Schlieff, is developing the broadhead and striving to make it even better. It is exciting to be involved in the development work. Recently some "improved" Ashby broadheads were sent to us to test.

Based on testing and experiences in the hunting field the weaknesses in the Ashby broadhead were identified as:

- The point where the threaded insert meets the base of the broadhead – would occasionally fracture when the broadhead was used on big animals (Figure 1).
- The single bevel straight edge would show small serrations when going through bone such as ribs and scapulas. The broadhead would still travel into the vitals and do the job but Gary is not satisfied. The cause of the serrations are thought to be because the steel is too hard (and therefore brittle) and the straight, as opposed to a concave edge, appears to be more prone to small serrations being formed. In future developments the steel is going to be less hard and the straight edge is going to be concaved. Perhaps a bevel and a half will be tested against a single bevel which, although sharper, is weaker than either a bevel and a half or a double bevel. A single bevel and bevel and a half are used to split bone if it is encountered, thus making the passage of the shaft much easier to traverse.

But development comes a step at a time and the broadheads we were sent now had the straight edge of the thread radiused, as shown in Figure 1, to make it stronger. Garrets instructions to us were: "Try and break it" and so we set out to do just that.

BLADE DESCRIPTION

- One-piece forged construction.
- Blades forged from 440C cutlery-grade stainless steel.
- Precision CNC machined.
- Ground with wide bone-splitting 25° offset single bevels.
- Straight edged blades.
- All blades receive a final stropping and honing treatment to render them shaving sharp and hunting ready straight out of the packaging.

- The point is a non-skip 30° Tanto profile.

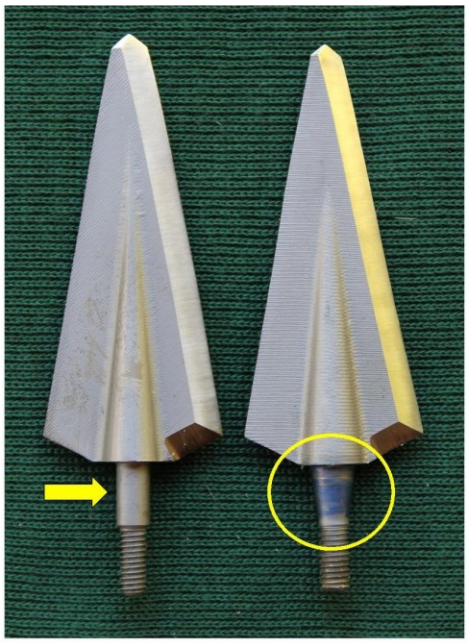

Figure 1: The improved Ashby (right)

The average weight of the 3 broadheads sent for testing was 308.7 grains.

The broadhead, which has a mechanical advantage of 2.27 was mounted onto 30" Grizzly Stik Momentum UFOC 250 shafts with special inserts to accept the radiused thread. The complete shaft had an FOC of 28.33% and weighed a total of 950 grains. The arrows were shot from a shooting machine using a Hoyt Spyder 70 pound bow at a distance of 20 yards and were chronographed at 192 feet per second, producing kinetic energy of 77.75 ft/lbs and a momentum of 80.99 slug ft./sec. High speed video footage was shot with a Metek Vision Research camera.

The broadhead was sharp enough to pass both the fingernail and paper test (Figure 2).

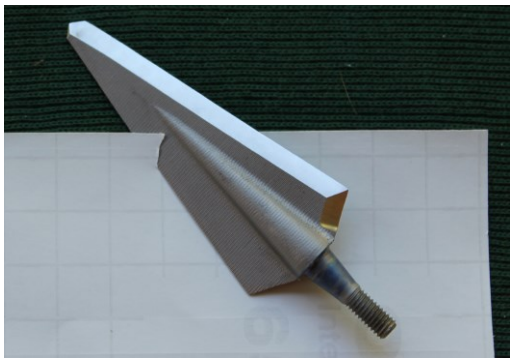

Figure 2: Sharpness test

Next step was to shoot it into foam to measure penetration then into a bovine scapula, bovine heart and finally into a bovine humerus using the same broadhead for all tests and without sharpening between tests. The shooting machine was set so that the broadhead would hit the scapula ridge on impact. We

had just conducted some tests using a mechanical broadhead, one of the blades of which had broken when it hit the scapula ridge. We wanted to see if the same would happen with the Ashby.

RESULTS

The broadhead penetrated 380mm into a foam block. The broadhead cut through the scapula ridge deflecting slightly before penetrating with ease through the flat part of the scapula. The leading edge on one side of the broadhead showed small chips (Figure 3 and 4).

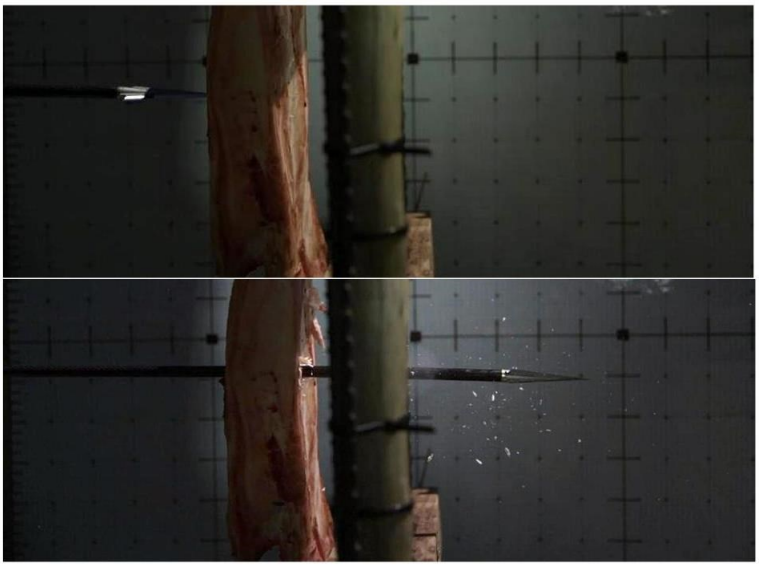

Figure 3: High speed video footage of the improved Ashby broadhead passing through a bovine scapula

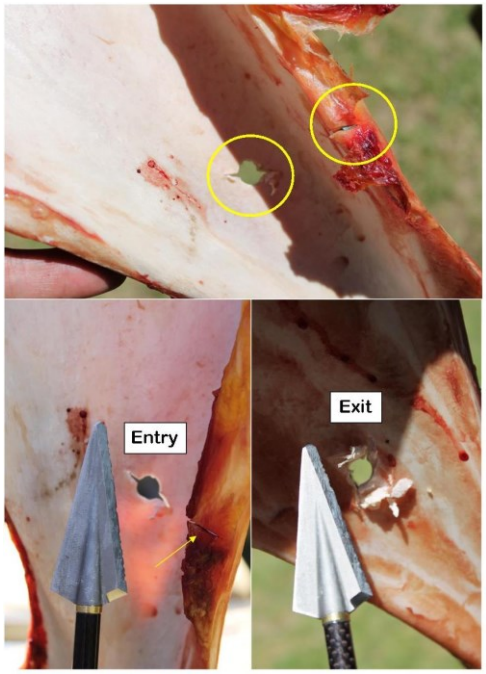

Figure 4: Ashby shots through bovine scapula

As expected it sailed through a bovine heart without being re-sharpened (Figure 5 and 6).

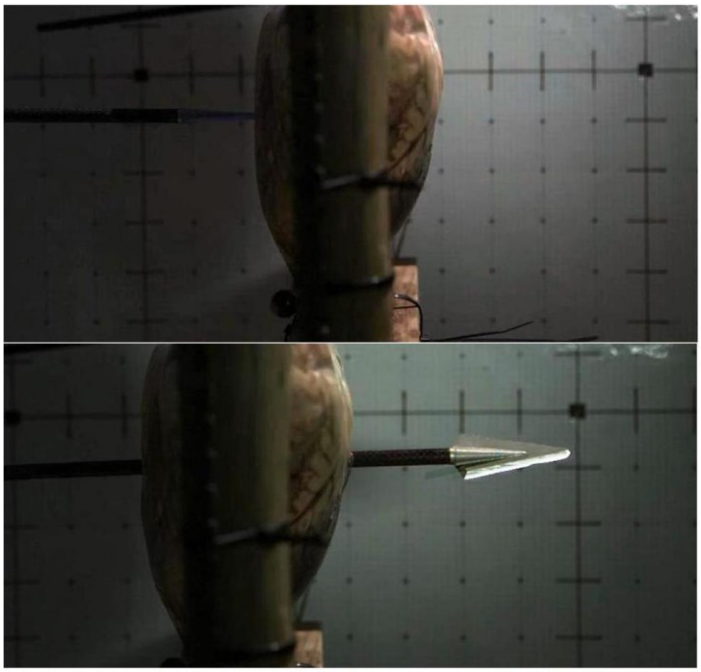

Figure 5: High speed video footage of the improved Ashby broadhead passing through a bovine heart

Figure 6: Wound track through bovine heart

The broadhead was then shot into the thick lower part of a bovine humerus – again without re-sharpening. It penetrated through 50mm of thick bone with about 12mm protruding on the far side (Figure 7 and 8). The bone was inserted into a vice and heavy duty pliers were used to extract the broadhead. It required some force to do so and I was half expecting either the threaded portion or the blade itself to break whilst being subjected to this abuse. It did not and finally the broadhead was

extracted. The small chips on one side of the blade were easily re-sharpened and the broadhead was as good as new (Figure 9).

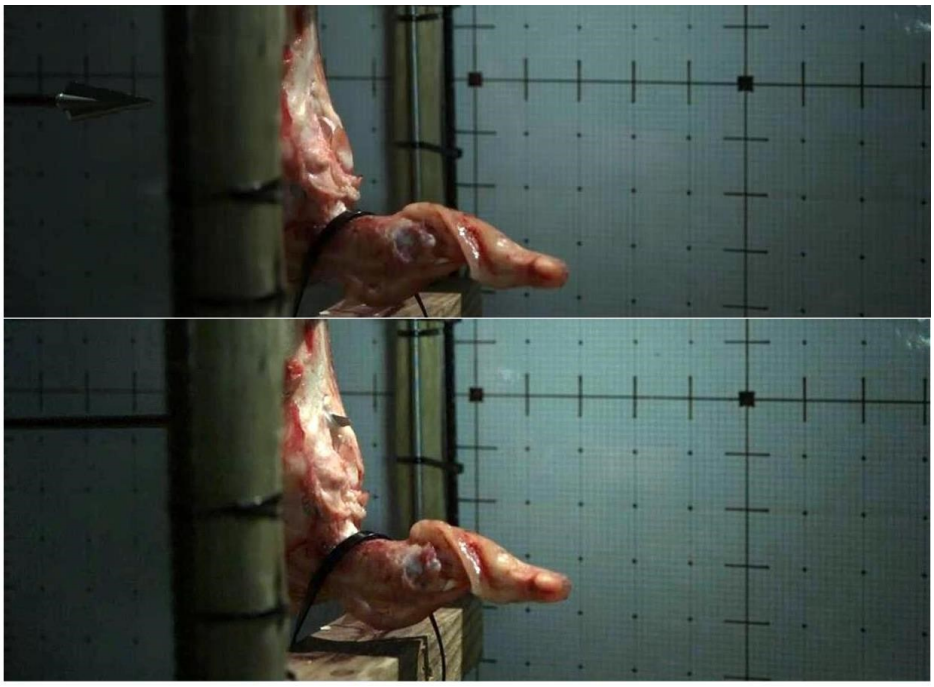

Figure 5: High speed video footage of the improved Ashby broadhead shot into the base of a bovine humerus.

Figure 8: Shot into bovine humerus

Figure 9: The same broadhead used in all the tests after a quick re-sharpen (right)

DISCUSSION

The integrity of the broadhead is super strong. It is very sharp and has excellent penetration ability. The planned development of the broadhead is to use less hard steel (which will prevent chipping of the cutting edge), possibly reverting to a slightly concave shape and using a bevel and a half instead of a single bevel. Grizzly Stik are now taking a broadhead, which has already proved itself in the hunting field to be one of the best on the market, to new heights. We will keep you posted.

ACKNOWLEDGEMENTS

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