

Broadheads: Straight to the Point

Adopted from an article by Mark Romanack

It's never too early to practice shooting broadheads. It's amazing how the simple act of screwing a broadhead onto an arrow can make an otherwise fine shooting arrow fly like a cork screw.

Bow hunters who assume their broadheads will impact in the same spot on the target as their field tips are in for a rude awakening. Placing a broadhead on the end of an arrow changes the aerodynamic characteristics of the projectile. Not surprisingly, the point of impact is also influenced. Unfortunately, the solution to this problem isn't simple because the cause may be one or more of many factors that influence arrow flight.

Understanding Arrow Flight. Before you can completely appreciate why broadheads cause arrows to fly erratically, you must understand what happens when an arrow is shot from a bow. When the string is released, the forward force of the bow limbs causes the arrow to flex or bend momentarily out of shape. Once the shaft is clear from the bow, the arrow snaps back into shape causing the arrow to wobble in flight. Plastic vanes or feather fletching attached at the back of the arrow help to quickly stabilize this wobbling motion and allow the arrow to fly smoothly through the air. Fletching plays a vital role in arrow flight. Not only does the fletching steer the arrow, but it also imparts spin on the shaft that further stabilizes it in flight in the same way that rifling in a gun barrel improves bullet accuracy.

The wobbling effect created when an arrow is shot from a bow is controlled in part by the arrow spine or stiffness. A lightly spined arrow shot from a high-poundage bow is going to wobble violently and result in poor arrow flight. Arrows that are stiffer than necessary tend to be heavy and ultimately rob the hunter of arrow speed. The ideal combination is an arrow spine that matches the draw weight of the bow.

When a broadhead is attached to the end of an arrow, the delicate balance required for smooth arrow flight is disturbed. The blades of the broadhead act like fletching, creating a situation where the arrow is being steered from both ends at the same time. Commonly referred to as broadhead planing, it's clear to see why arrow flight goes haywire the moment a hunting-style arrow tip is added to the equation. The bigger the broadhead blades, the more this steering struggle impacts on arrow flight. Unfortunately there isn't a cut-and-dried solution to this problem. Several factors may need adjustment before predicable and accurate arrow flight can be established.

Broadhead Features. Bow hunters often suffer from the bigger is better theory. If one size broadhead is good, bigger models with larger cutting diameters must be even better. Broadheads with large cutting diameters are the primary reason so many hunters experience problems with broadhead planing.

The problems are most pronounced with models that feature a cutting diameter larger than 1-1/4 inches. Broadheads with smaller cutting diameters such as 1-1/8 or 1-1/16 inches fly better in most cases, but size alone isn't the total answer. Broadheads, like any mechanical device, are subject to quality control problems. Slight variations in broadhead weight or balance can cause some heads to fly erratically. In a package of six broadheads, it's common for one or two units to be virtually untuneable.

Also, the more blades a broadhead sports, the more these heads tend to create planing problems. Not surprisingly, two-blade, traditional-style broadheads, such as the Patriot, Zwickey Black Diamond, Magnus, Delta Nubbin, Del Ma Bearcrazy and Bear Razorhead, usually fly like darts. The primary drawback to these hunting tips are the slit-like holes they generate. Sometimes these holes can lead to a weak blood trail.

Three-blade broadheads are an excellent compromise between arrow flight and resulting blood trails. A wealth of good heads are available with cutting diameters ranging from 1 inch to 1-1/8 inches. Some of the most popular models include the Rocky Mountain Premier and Titanium, Wasp SST Hammer, New Archery Products ThunderHead and Satellite Mag.

Broadheads with more than three blades are also prime candidates for planing problems. The extra blade surfaces can increase the problem of broadhead planing significantly.

The new mechanical or open-on-impact style broadheads are the most accurate broadheads available. Because these broadheads fly with the blades folded down against the ferrule, the overall diameter in flight is usually less

than one inch. Open-on-impact heads are tailor-made for some bow hunting situations. When faced with the possibility of long shots, mechanicals are a logical choice. Mechanicals also work well when combined with very fast bows. For best results they should be used with bows featuring at least 60 pounds of peak draw weight. Mechanical heads also function best with stiffer arrow shafts. They don't work well with wood shafts.

The Role of Fletching. Fletching steers the arrow and imparts stabilizing spin to the shaft. Broadheads fly best when matched to arrows that feature a slight two- or three-degree twist or helical to the fletching. Bohning suggests a five- inch vane for hunting.

Shaft Straightness. For consistent arrow flight the shaft must also be straight. A slight bend in an arrow may not show up when shooting field tips, but when a broadhead is added to the equation look out. Arrow straightness can be checked using a simple spin tester.

It's also important that both the arrow nock and insert are aligned on the arrow shaft properly. A nock or insert that's mounted slightly off center will have a similar impact on arrow flight as a bent shaft.