



(Above) Good shooting form is required with fast, low-brace height bows.

(Right) Today's speed bows come equipped with smooth-drawing cams; these are necessary for shooting in awkward positions.

(Below) One way to make your speed bow more accurate is to choose an ultra-smooth release aid. Fletcher's Fletch Hook is a great choice.



(Right) Speed bows have low-brace heights that range from 6 1/2 to 5 inches. The shorter the brace height, the longer the power stroke for a given draw length, which yields more speed and energy output.



Fast bow setups can help you score a hit when the distance is unknown. Pictured is the Mathews Reezon 6.5—the fastest one-cam bow on the planet (340-fps IBO!)

GOING FOR SPEED

Looking at today's speed bow and what it can do for you.

By Joe Bell

I'd been jogging for nearly a mile across the tundra, zigzagging streams and jumping blackish-looking "arctic pools" in fear of getting grossly wet or even losing my legs. I was going fast, stalking caribou, which were now hidden from a swell in the terrain. Soon they would resurface, though, and I knew I had to keep going in order to reach a row of boulders; otherwise, I'd be spotted out in the open.

Moments later, as I tucked in behind solid granite, I could barely see the fuzzy, bobbing antlers coming out from beneath the ripples in the ground. Safely hidden, I was now

inside 60 yards from the bachelor group of bulls, including the largest Quebec-Labrador bull I'd ever put my eyes on. He was huge, with all the "goodies" that make a near world-record-type qualifier.

Hoping for a shot inside 50 yards, I began crab crawling, dragging my binocular and clothes through the spongy environ. "No pain, no gain," I kept telling myself, as I continued to encounter lichen with my face.

Five minutes later, I reached the last bit of cover left—a small boulder about knee height. Now all I needed was the shot range and a well-placed arrow, and I'd be done.

JOE BELL PHOTOS



Darin Cooper used a Hoyt Katera to harvest this black bear last spring. Despite this bow's low-brace height, he finds this bow extremely forgiving and accurate.



The string stop, such as this one by Hoyt, has made the low-brace height speed bow more user-friendly, since it eliminates string slap and minimizes shot vibration.



Steep shooting angles are common when out bowhunting. Because speed bows provide flatter arrow trajectory, it makes these shots easier to manage.

Reaching for the rangefinder, I noticed the bull was already in the perfectly quartering-away position. I held the unit to my eye, waiting for the magic number. But what I got was a flashing LCD screen with two hash-lines. I tried again ... same result.

Panic was setting in as I tried to troubleshoot. It wasn't long before caribou eyes homed in on my bobbing head. Within seconds, the animals began sidestepping backward, obviously becoming alarmed. Switching to plan B, I began eyeing the shot distance. "Forty or 45, or maybe even a low 50," I calculated. "But hurry ..."

About 10 seconds went by as I

pondered the distance over and over. Soon the bulls turned and went into a gallop across the sea of tundra. I could only watch as massive antlers bobbed out of sight, never to be seen again.

WIDENING THE HIT WINDOW

We've all been there. Legit, but fleeting shot opportunities appear in the field but, for various reasons, we don't react in time. One common reason why we delay shooting is due to not knowing the shot distance. When this is the case, and there simply isn't enough time to use a rangefinder—or as in my case, it breaks or malfunctions—a fast bow setup can really help save the day, and possibly turn a "maybe" situation into a successful one.

Fast bows can help because they flatten arrow trajectory, which lessens the chance of the arrow striking the target high or low when the distance is unknown. In other words, a fast setup will tighten your bowsight's pin gaps. Less pin gap simply means more margin for vertical error.

Let's take the shot scenario at the caribou, for example. My setup at the time was shooting a decent 250 fps. Uncertain of the shot distance, I obviously felt a level of discomfort about taking the shot without a reading from my rangefinder.

On the other hand, had I been equipped with a much faster setup, say, one that shot an arrow at around 300 to 310 fps (easily achievable by today's standards), my confidence level

could have been much different. After all, this kind of setup would allow a generous hit window of about 11 yards, compared to 6 or 7 yards from a 250-fps bow rig.

To bring real-world validity to the hit-window concept, let's plug it in to my encounter with the caribou. Let's assume I had guessed the caribou to be about 45 yards away—a split between 40 and 50 yards, which I was confused about. Figuring a caribou's vitals are about 15 inches in diameter and my setup allows for a plus or minus 5 1/2-yard error in shot distance. This means that I could kill the bull as long as he was standing somewhere between 39 1/2 and 50 1/2 yards! Eleven yards of error built in to a 45-yard shot? Now that's very doable, and awfully convincing.

At the time of that caribou hunt, about eight years ago, the thought of hunting with a speed bow appalled me. They were notoriously noisy and critical to shoot. However, that was then, and this is now. Due to advancements in engineering, many of these bows are now extremely quiet and ultra user-friendly (little vibration at the shot). They also perform exceptionally well in terms of accuracy, especially when the archer demonstrates consistent shooting form. Today, I consider a speed bow a deadly weapon for most bowhunting situations.

SPEED BOW: ANYTHING RATED 330 FPS OR MORE

A speed bow gets its power from two distinct places: First, lower brace height, and second, more aggressive cams. Both are proven to make a bow more difficult to shoot, especially in bowhunting situations. In my mind, any bow with a 5 to 6 1/2-inch brace height is considered a speed model, and/or one that comes with an IBO speed rating of 330 fps or more.

Why is brace height so important to speed? Simple. It

Some of today's most popular speed bows include the BowTech 82nd, Hoyt Katera and Martin Warthog.



extends the power stroke of the draw cycle without affecting an archer's draw length. The shorter the brace height—which is the measured distance between the bowstring and the throat of the grip in the undrawn position—the longer the power stroke. Of course, more power stroke means more power and faster arrow speeds if all else is equal.

The downside, of course, is that, as the brace height is decreased and the power stroke is increased, the arrow remains on the bowstring longer during takeoff. This further magnifies any small mistakes the archer may make, such as gripping the bow incorrectly, roughly releasing the arrow, etc. The result can be a gross loss of accuracy.

More aggressive cams are a way to transfer more energy from the draw cycle to the bow's limbs and, eventually, to the arrow. However, overly aggressive cams make the bow less user-friendly to draw and shoot (sometimes causing excessive strain to the archer's muscles), especially in a bowhunting situation where a slow draw may be necessary. Also, aggressive "bumpy" drawing cams tend to heighten shot noise—another minus.

These two factors have always hindered the speed bow's popularity. However, here are four engineering details that have eliminated most of the downsides. As a result, the speed bow is back for good.

Advent of Parallel-Limb Angle:

Thanks to Matt McPherson, who owns Mathews Archery, we have parallel-limbed bows. He invented this technology back in 1996, a creation that effectively reduces limb vibration after the shot. With each opposing limb tip parallel to the other, the oscillating forces move in equal and opposite directions, effectively canceling each other out. This ingenious design makes a bow extremely quiet, more efficient (faster), and drastically cuts down on shot recoil. The end result is an easier-to-shoot bow. All of today's bow manufacturers use extreme-style parallel limbs, and this is why today's speed bows function so well.

Slim Grips: Ultra-slim bow grips



Cold weather can pose a problem with low-brace, speed-minded bows. The more clothing you wear along your forearm, the greater the chance of bowstring collision, which can cause an errant shot.



Faster setups give you tighter pin gaps. This effectively widens your hit window, giving you more confidence of hitting what you're aiming at.



Even from a treestand, deer can pop up where you least expect. In this case, you must sometimes simply guess the distance by eye, and then shoot. This is where a fast hunting bow can be a godsend.

and forgiveness between a 6- and a 7-inch brace-height bow will be difficult, if not impossible, to notice.”

Better, Smoother Cams: Today's speed rigs come with smooth, but fast, cam systems. I know, I hunted with the 6-inch brace height Hoyt Katera last year and was impressed with its smooth-drawing Z3 Cam & 1/2 System. The bow pulled and shot like a dream; it put field points and broadheads in the same spot.

New cam systems also deliver smoother arrow cycling, since nock travel is cleaner and extremely level. “Level nock travel makes a bow more forgiving and generally easier to tune,” commented Craig Yehle, Bow Tech's chief engineer. “It does so in two particular circumstances: when the arrow's spine tolerance is not tight, and when fixed-blade broadheads are used. Poor nock travel causes the arrow to flex considerably. If spine isn't consistent, the arrows will flex in varying amounts and the arrows with the most deviant spine will fly as if bent. Fixed-blade broadheads will magnify this effect.”

WHEN SPEED ISN'T GREAT

Although today's speed bows are sweet-shooting, a more forgiving bow may be a better bet for some archers. Basically, the less polished your shooting form is, the less likely you'll enjoy a speed bow's accuracy.

Also, consider your nerves when shooting at game. If you tend to be somewhat controlled when shooting at game, a speed bow can really give you an edge in certain bowhunting situations, as alluded to earlier. However, if you have a tendency to get overly excited and more erratic when trying to execute a smooth shot on game, a more forgiving bow is probably a better bet. In this case, choose a relatively fast bow, but one with a brace of around 7 to 7 1/2 inches.

“There is no question that lower brace-height bows may be more critical,” says Derek Phillips, Mathews pro-staff manager. “They simply require the shooter to be more consistent with his form and other aspects of the shot.”

To figure out if a speed bow is intended for you, when testing one at the bow shop, try to shoot the bow from your knees and by rough-releasing the arrow a few times. Be sure to wear your hunting jacket and facemask, too. Conduct this test with several bow models, including those with more forgiving brace heights, and examine the results. Such comparison should give you some indication on whether a speed bow is right for you.

Also, consider your normal hunting application. If you're a western guy, and frequently hunt in mild temperatures, you won't have to worry about extra layers of clothes colliding with the bowstring. However, if you frequently hunt in cold weather from a treestand, lots of clothes can cause you trouble with a low-brace-height speed bow, which will place the bowstring closer to your arm and have a slightly longer power stroke, which means more pulling back, as well.

WAYS TO MAXIMIZE ACCURACY

After extensively test-shooting a variety of speed bows over the past year, I've discovered five things that can really make or break your accuracy with a low-brace height bow.

1. Use a Drop-Away Rest: Once the arrow-holding arm on a drop rest goes down, it can no longer disrupt the arrow if torque is applied to the bow grip. For this reason, using a drop rest on a speed bow is a no-brainer.

Be sure to choose a quality model. I like the flexible Whale Tail holding arm on the Arizona Archery/Cavalier Avalanche, which seems to dampen initial arrow oscillation, resulting in a smoother, more accurate shot. Other great choices include the QAD Ultra-Rest, Ripcord and VaporTrail Limbdriver.

2. Avoid Ultra-Light Arrows: I prefer arrow shafts that weigh at least 8 1/2 to 9 grains per inch when using a low-brace height bow. Lighter arrows tend to “whip” out of the bow more, causing tuning issues and loss of accuracy. Also, I notice less shooting vibration when using slightly heavier arrows. The result is a sweeter-shooting bow.

3. Balance the Bow: Speed bows usually have radically reflexed risers, which don't balance all that well when you screw in a mid-length stabilizer. If this is the case, do what you can to balance the bow. Use a small V-bar and various counterweights to make the bow hold nearly plumb in your extended hand. This will increase aiming comfort, make the bow almost motionless after the shot, and increase accuracy.

4. Shoot a Better Release: A “rough” release will be more obvious when using a low-brace bow. To make your releases smoother, use a comfortable, high-quality release. Experiment to see which offers the best trigger and cleanest arrow takeoff. A release with a polished hook will offer a super-smooth take off when using a string loop. One of my

favorites is the Carter Quickie and new RX Series. I also like Scott and Fletcher hook models.

5. Maintain a Relaxed Bow Hand: Be sure the pressure of the bow's grip is in line with the bone in your forearm that meets the base of your thumb. It's called the radius. If not, then it's easy for the hand to collapse or impart twist to the bow grip, resulting in variation from one shot to the next.

There's no question that speed can be a good thing. Of course, you'll have to do your part and shoot with good form and execute a good release. When you do that, a speed rig can really save the day when you're unsure of the shot range. In many cases, you can simply rough guess the range to the target and shoot. Then let the benefits of using blazing-fast arrow speed come to life. ←

TUNING YOUR SPEED BOW

Don't attempt to shoot beyond 300 fps using non-compact fixed-blade broadheads unless you're yearning for a headache. Instead, using one of today's ultra-compact models such as the Muzzy MX or 90 4-Blade, Wac 'Em, Wasp Boss Bullet, NAP Nitron, G5 Striker, Slick Trick or similar head. Or, use a proven, top-quality mechanical.

Next, be sure to align the broadheads perfectly to the shafts. Screw them into some arrows and spin-test across rollers. Any wobble near the base of the broadhead and insert/tip of shaft is not acceptable. Continue to mix/match the broadheads and arrows until concentricity is precise.



Choose compact fixed-blade heads for speed setups. Good examples include the Slick Trick 100, G5 Striker and NAP Nitron. After some fine-tuning, the author shot this 50-yard group using a Hoyt Katera. How's that for low-brace height accuracy?

From here, shoot several three- or five-arrow groups (from 30 or 40 yards), noting their size after each session. Do the same with your field points, and then compare any group size differences.

Accuracy should be nearly the same, despite point-of-impact difference. If not, I would recommend using more fletching offset or helical, or trying a different broadhead brand altogether. I use a Bitzenburger jig and max out vane offset using Arizona Archery Max Hunter vanes.

Once I'm happy with a broadhead's level of accuracy, I follow this up with some long-range group tuning. I shoot from about 50 yards, but this time I shoot five-arrow groups and begin making micro adjustments to my arrow rest in hopes of improving accuracy. After each group series, I move the arrow rest slightly outward (to the left for a right-handed shooter), about 1/32-inch out. Then I shoot again and record the results. I do this two more times and note which setting produces the very best groups. Sometimes a slight tail-left or slight tail-high-left arrow departure yields a more accurate outcome.

With long-range group tuning, I've sometimes tightened arrows groups by 10 to 20 percent. —J.B.