DO YOU FEEL THE NEED FOR SPEED?

FASTER ARROW SPEEDS CAN OFFER SEVERAL ADVANTAGES FOR THE ARCHER, BUT HOW DO YOU GO ABOUT BOOSTING YOURS? DUNCAN BUSBY EXPLAINS

Fast cars, fast internet speeds and fast food; if it's fast we love it, and archery is no different. There's no denying that achieving a decent bow speed can be a huge advantage, since a faster arrow will be less affected by the wind and it'll help you to hit longer distances more easily and with better accuracy.

Show any archer a new bow and often the first thing they'll ask is "how fast is it?" We'd all like to achieve more speed, but, as with cars, many high-performance bows are notoriously difficult to handle and they're not an option for most target archers, so how do you increase your speed without having to change your bow?

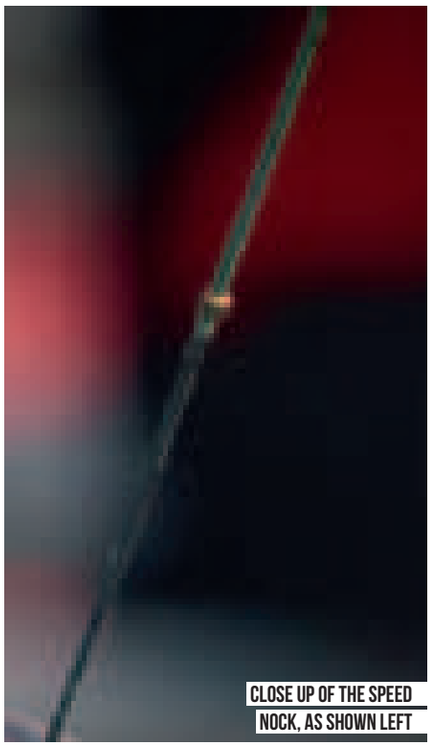
There are three main components that contribute to greater arrow speeds; more draw length, more draw weight, and less arrow mass. The longer the draw length, the more power the bow stores and the more energy it will deliver to the arrow. Equally, the higher the draw weight, the more power the bow stores and the more energy it will deliver to the arrow, and the lighter the arrow, the faster it generally flies. So for the purposes of testing manufacturers establish their bow's advertised IBO (International Bowhunting Organisation) speed at a super long 30-inch draw length, an unrealistic 70lbs draw weight, and shooting a lightweight 350 grain arrow.

This doesn't help most target archers to establish their bow's particular bow speed, so before you even start trying to increase your speed you'll first need to find out how fast you bow

A CHRONOGRAPH IS A USEFUL TOOL FOR GETTING A READING OF YOUR ACTUAL BOW SPEED – WHICH MAY BE DIFFERENT TO THE ONE STATED BY THE MANUFACTURER

A LIGHT ARROW, SUCH AS THE LIGHTSPEED, WILL TRAVEL FASTER THAN A HEAVIER ONE, LIKE THE X10 PROTOUR, BUT WILL BE MORE SUSCEPTIBLE TO WIND DRIFT

SPEED NOCKS CAN AFFECT THE EFFICIENCY OF YOUR BOW AND GIVE YOU UP TO 10FPS GREATER ARROW SPEEDS



CLOSE UP OF THE SPEED NOCK, AS SHOWN LEFT

actually is by using a chronograph.

Now, increasing your draw length is not an option for most archers unless you're under-drawing, but it's important to know what effect it'll have on your bow speed. As a general rule one inch of draw length is worth about 10fps of arrow speed, so if your particular bow has an IBO speed of 320fps and you intend to shoot the bow at a 27-inch draw length you should expect an approximate 30fps loss in speed. This is one of the reasons I see so many smaller archers shooting inappropriately long draw lengths, but the added speed this will give you is a poor trade-off for the loss of comfort and control you'll get; a fast arrow is no good if you can't accurately shoot it.

The simplest option is to increase your poundage, but this does have several limitations, the most obvious being the 60lbs peak weight limit imposed by the majority of archery governing bodies. If you're already shooting close to this limit then there may be little to gain by increasing your draw weight only a fraction further. But if you do have a large margin of adjustment to play with, you'll need to remember to take into account the effect this will have on your arrows. A heavier draw weight will usually require a stiffer spine, which will then, in contrast, slow down your arrow speed.

You should also be careful not to overload yourself; struggling to pull back a bow which is too heavy will lead to injuries and poor shooting form, both of which will have a much larger impact on your results than a lack of arrow speed.

The third factor in increasing your bow speed is to shoot lighter arrows. Arrow weight has an inverse relationship with arrow speed; as arrow weight decreases, arrow speed increases and visa versa.

Conversely, a bow transfers energy into a heavier arrow more efficiently than it does into a light arrow since the kinetic energy it generates gives it far more hitting power. But up to a point this is usually only an advantage to bow hunters – target archers generally benefit more from shooting a faster arrow with a flatter trajectory.

There are several models of arrow available that boast a lightweight construction to help you to achieve higher down-range speeds. But if you don't want to switch, you can shoot your current choice of arrow in a weaker spine and cut them a little shorter to reduce the overall weight. Again, there are both benefits and drawbacks to be considered here; a lightweight arrow may travel faster, but in order to keep the weight down many manufacturers construct their lightest arrows entirely from carbon using a much thinner arrow wall. So in order to maintain a stiffer spine this arrow will have a larger diameter than its heavier counterparts and, when coupled with its lighter weight, its susceptibility to wind drift increases significantly.

Whereas a shorter, weaker arrow with a smaller diameter will help you pick up some extra speed and will be less affected by wind drift, it can however lack the down-range stability of a longer arrow, which could cause your groups to open up at longer distances. Using a lighter point weight can also help to increase arrow speed as it will reduce the overall weight of the arrow, but this too can make the arrow more susceptible to wind drift as well as reducing its down-range accuracy.

When choosing either lighter or shorter arrows you need to take several points into consideration. Firstly, using an arrow which is too short could be dangerous to shoot; if the point of the arrow sits behind the arrow shelf at full draw it could pose a danger if it falls off the rest. Secondly, most bow manufacturers recommend you shoot an arrow that weighs at least five grains per pound of draw weight, in order to safely dissipate the energy of the

bow. This means that for a 60lb bow your arrow must weigh at least 300 grains, as anything less could cause damage to your bow and will invalidate any warranty it has.

If you don't want to adjust your bow's essential measurements or change your arrows you could consider changing your bow string. There are several different materials on the market all offering slightly different characteristics. Some boast low or zero stretch properties, while others promise higher arrow speeds or increased longevity; it all depends on the specific blend of materials that has been used to make the string.

Some string materials, such as BCY-X, offer the best of both worlds; high arrow speeds with very little creep or stretch. However, for flat-out speed I'd recommend materials like BCY 8125 or 8190. Shooting a string with fewer strands will also produce a faster arrow flight, however, you should be extremely careful not to go under the recommended minimum strand count given by the string manufacturer as a weak string is prone to failure.

You may also want to consider adding speed nocks to your string. Speed nocks are the crimp-on brass or aluminium nocks sometimes used as a nock point. They are attached to your string over the serving, usually an inch or so from the cams, and are sometimes covered in a heat-shrink wrap to improve their cosmetic appearance. Used correctly, speed nocks can increase your arrow speed by up to 10fps by affecting the efficiency of your bow; they do this by fractionally slowing the string down as it's taken up by the cam on release. Although this seems contrary to increasing speed, in removing any slack the nocks allow the string to sit tighter in the cam track, which in turn helps to direct more energy to the arrow.

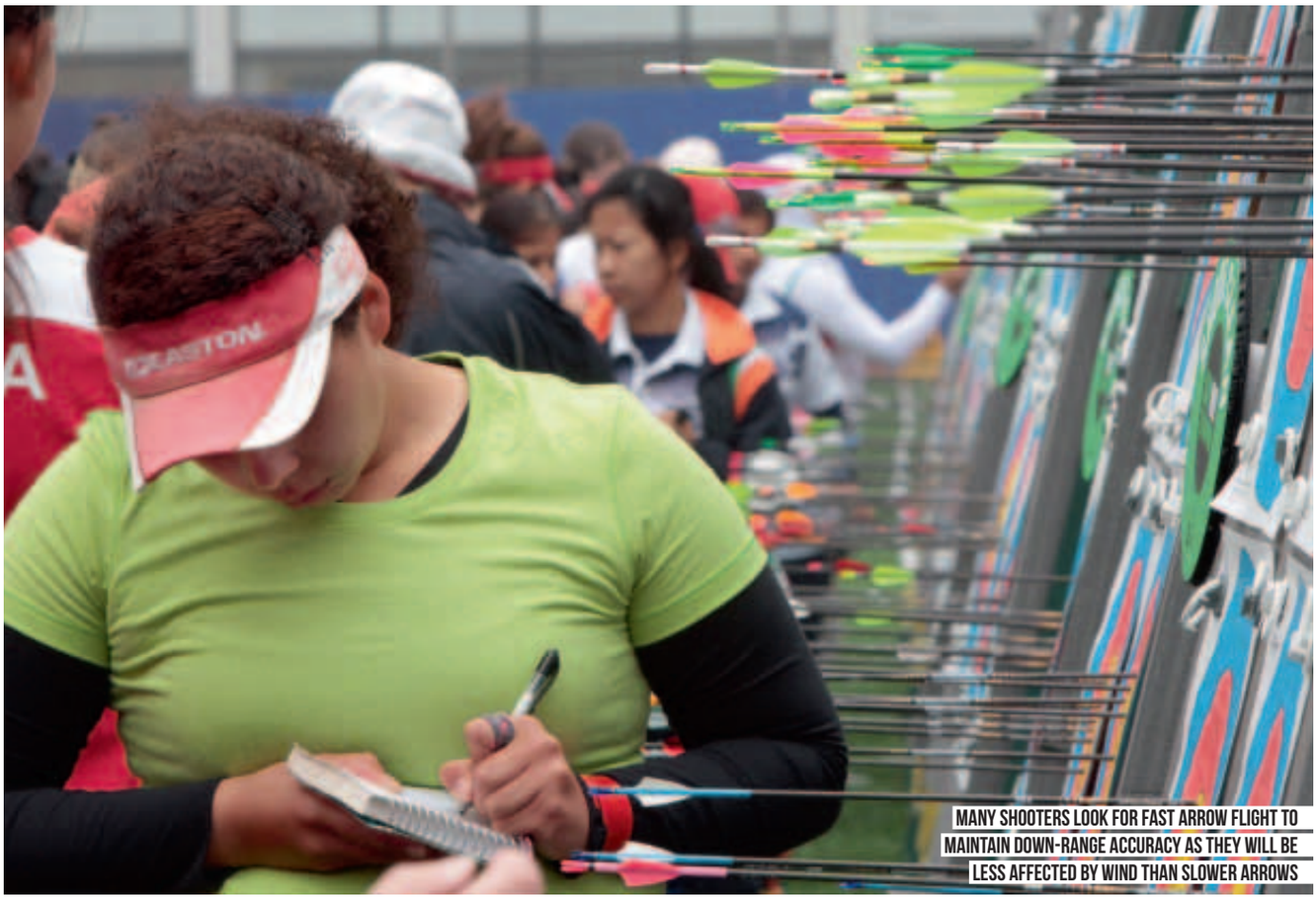
If you don't currently have speed nocks on your bow you can add them yourself. A good place to start is to add three nocks to the top and bottom of your string around an inch and a half from the cam, then chronograph your bow again to see if you have picked up any extra arrow speed. You should then change the number and position of the nocks to see how this affects your bow's speed.

Be careful not to place the nocks too close to the cams as this can cause damage to your bow. You should also be aware that adding too many nocks to your string will have the opposite effect and will slow your bow down. Speed nocks seem to work better on some bows than others, so experiment to find out what works best for your set-up.

THE ADDED SPEED THIS WILL GIVE YOU IS A POOR TRADE-OFF FOR THE LOSS OF COMFORT AND CONTROL

Your bow's speed can have a direct influence over your results and a fast bow has many benefits, as arrows that fly more quickly will hold their trajectory better than slower arrows. So you'll find that you'll have less need to adjust for distance and your arrows will be less affected in flight.

As you're probably unlikely to ever achieve the kinds of speeds advertised by bow manufacturers, I'd expect most archers will forever be looking for ways to improve the speed of their bows. And if you ever find yourself in need of some extra speed, trying these tips may just give you the boost you're looking for, but remember, speed can come at a cost and will cause more harm than good if you have to make too many compromises to achieve it, so use it wisely.



MANY SHOOTERS LOOK FOR FAST ARROW FLIGHT TO MAINTAIN DOWN-RANGE ACCURACY AS THEY WILL BE LESS AFFECTED BY WIND THAN SLOWER ARROWS