

STRUNG OUT

Confused by all those strings on the shop wall? Don't worry, as John Dudley explains all...

I am sure you have heard the saying "you are only as good as your weakest link". It's very true, and one that can be directly applied to your bow. Regardless of how expensive or high tech your kit is, if you put the wrong string on it you will only be shooting something as accurately as the string – because, again, you are only as strong as your weakest link.

Unfortunately, many manufacturers make a good bow yet sacrifice the string material, string-making process or strand count in order to lower costs or gain an unfair speed boost to out-market their competitor. This is a bad choice to make and the only person that stands to lose is the consumer.

There are some manufacturers making some good strings and cables on new bows right out of the box; I won't mention names but later on as I describe what to look for in a good string you can easily see for yourself. The purpose of this article is to tell you what makes a good string, and what to look for – so the next time you invest you invest and trust in the right kit. I also see too many shooters buying the best bows on the market but when it comes time for string replacement electing to go the cheap route and greatly devaluing their investment. So let's cut it out!

Eyes on

When I look for a string there are a few very important things to consider. First off, I want a string that will have no stretch and a minimal settling period, if any! The bottom line is, the longer it takes for a string to be broken in, the more it costs in time, money and trips to the bow press.

If you are a tournament archer this is even more important – because for the amount of time invested in tournament preparation, the last thing anyone wants is to have to re-adjust a string during the course of a day or two's competition.

For those of you who have been shooting long enough know that the days of standard Fastflight and Dacron material will know that the further we go back in time the more frustrating strings were to manage. Luckily times have changed, and there are some very good strings on the market – and that's mostly due to huge boosts in technology, both in the materials and the string making processes. So, nowadays, the settling period of a high-quality string can be as little as two or three shots. I kid you not:



A good string – that is made correctly with proper pre-stretch processes – should be totally settled within only a few shots.

Unfortunately there is nothing on the packaging will let you know if the string you're buying is up to that, because advertising hype is very common. Most string companies make these promises on the package regardless, but the best testimony is asking other archers. People you know and respect within your shooting community are a great resource for locating a good string. Top-level shooters will not cut corners on strings so they are a good place to look.

Remember, there is a big difference between stretching and settling. Stretching is something that continues with time and is very frustrating. Settling is simply the string fibres and lubricants adjusting to the force of your bow. A good string – that is made correctly, bear in mind – will have no stretch with minimal settling time.

After you've considered stretch the next thing to look out for is served end loops. It is really important to use strings that have served end loops. On a compound, the string or cables coming on and off the cam post during normal maintenance and tinkering increases wear and tear on the loops' connection point. If you have a served end loop you can rest easy that the fibres underneath are not being weakened or separated.

Many of the bow accidents I have seen over the years are from people not looping all the strands around the cam post correctly. With string or cables that don't have served end loops it is an easy mistake to have several strands of the loop not fixed properly around the post – and this can cause damage to the string, bow or possibly yourself. In addition, if you are an outdoor shooter and are commonly resting your bow on the ground then having end-loop protection is vital. On some bows the loop connection point on the bottom cam is exposed and the constant dirt, grime and dings that occur call for the added armour. It takes more time and a higher-level process to have end loops that are served and several companies out there elect not to serve the loop in order to reduce cost. As a consumer, check this through the packet for this before you buy.

Another important thing to consider on your string is the servings. A string that is made with poor tension or with a poor process will have servings that loosen, separate or break. Servings that do not stay in place are extremely frustrating and very time consuming. When it comes to

With the strings and cables under stress over the cam, you've got to use served end loops – so wear and tear doesn't take its toll

servicing separation you should again rely on people you know and trust to give testimony to a string that doesn't have these issues.

Some of the older bows I shot would really test the servings on my strings. It was a constant battle, but once I found a string with a serving that was made correctly I didn't have to deal with it separating and eventually breaking. Many years ago I switched to Winners Choice – and one of the reasons was that it offered a "no separation" guarantee. For the company to have such confidence in the its own product caught my attention – as I had never before had such a promise on a piece of kit that is put under so much stress.

Materials

I could write a book about string materials, fibres, blends, serving types and the reasoning behind each one – but here space is limited, so I will put it all in a nutshell for you. Regardless of the brand of actual string materials there are really only four base fibres that are used for composing bowstrings. These fibre materials are: Dacron, Spectra, Dyneema and Vectran. And each of these fibres have different characteristics and give you different advantages and disadvantages.

The first one, Dacron, is a material that has been around a long time. On older style recurve and traditional bows that do not have reinforced tips this is still the best choice of fibre. It is not abrasive on the limb tips and gives a softer feel to the shot. However, Dacron is definitely not the choice for a compound bow or a newer recurve bows.

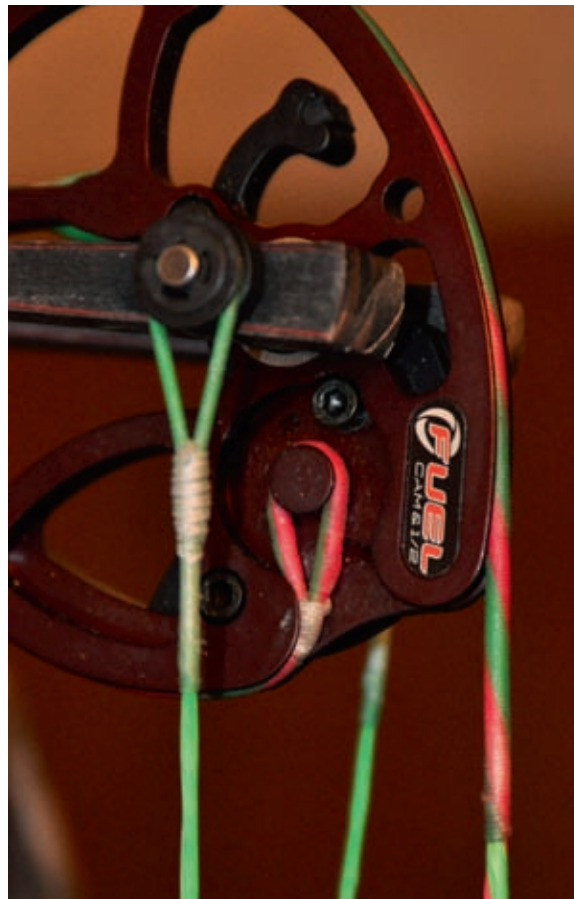
The next fibre is Spectra – which, ultimately, is Fastflight. Spectra is durable, soft to shoot and has positive speed advantages. The downside, though, comes twofold: It stretches, and will continue to stretch for the duration of its life... so as long as it is on your bow, it will stretch – oh, and the other downside is that since it's used in ballistic vests, there's not a lot around on the market, so it's expensive.

So, while Fastflight and Spectra are fast, stretching is a serious problem in today's compound world. Dyneema is one of the most popular and best materials available today. (I, personally, am most familiar with BCY products, so references to individual pieces of gear are most translatable to that company's kit.)

DynaFlight, DynaFlight 97, 8125 or 4125 are Dyneema products. Dyneema is a material like Fastflight, but without the stretching characteristic. Dyneema is fast and soft and has a great life expectancy – but it does have a slightly-more-than-minimal settling period. So although it won't continue to stretch forever, you'll still have to take some time to shoot it in. And this is where the important of a quality string-making process comes in – because when this material is combined with a good process the settling period can be eliminated after manufacture.

And, to round up our four, I'll look at Vectran; the material that has zero stretch, and is the savior to compound shooters. Still, though, it has disadvantages: Its fibres are abrasive and more coarse than Dyneema. Some of the first Vectran strings were S4 or 450 or 450+ – and they didn't stretch at all, but their working life was short and strings always looked fuzzy and dry. Vectran, by itself, also doesn't have any natural give so is more likely to break. And that's really it's biggest downside.

To combat this, in recent years BCY mixed Dyneema and Vectran together to make a blend that let the advantages of each fibre offset the negative of the other. Ultimately, the Vectran keeps the Dyneema from hardening and the Dyneema keeps the Vectran from wearing out and breaking. The blends are what we know now as 452 and 452X. 452X is one of the most popular





Mark the position of your cams when strung so you can return your set-up to its proper positioning after installing new strings

materials in archery right alongside the 8125 blend of Dyneema. I shot 452X for many years but now have gone back to the 8125. 8125 will have a softer feel and less wear, but 452X has proven track record as well. Know the characteristics, and you can make an informed decision as to what's best on your bow.

Setting up a compound

Murphy's Law states that once you get a bow shooting its best then the strings are due to be changed. There are so many variables to get things right – and on a compound that includes cam orientation, synchronization and timing... just to list a few. For most people who don't know the proper process the bow won't ever feel the same again.

However, if you do it correctly you can pick up where you left off. When the time comes time for you to change your string and cables on your compound there are two methods you can follow: An easy way and a hard way. And everyone's probably tried the hard way, so let's look at the easier one!

Start off by taking a pencil or felt-tip pin and marking your cam position using the limb as a reference. These marks let you know exactly where your bow rested and what you want your bow to be after the swap. After marking your cam position you should check your peak pulling weight on a scale – so you can confirm the poundage is the same after the swap. Many measurements change during the time you shoot a bow so confirming the true pull weight is important.

Once cams are marked and measurements are confirmed then it is time to change the strings and cables. A good quality string should be twisted to the recommended length before it is

packaged – so when you remove your strings and cables from the package then you should try not to remove the twists that are in it.

During this process you are only going to replace one string at a time before confirming the length is correct, and this is where our cam marks come into play. Start off by putting your bow in a press and removing the string only and replace it with the new string. Remove the bow from the press and pull it back a few times. Now look at your cam marks. Depending on the length of the new string you may need to

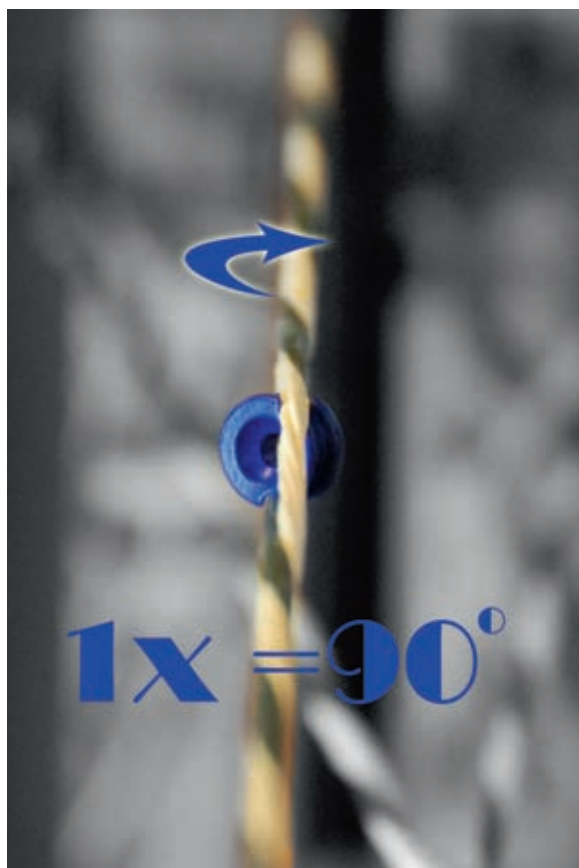
add or remove a few twists to get your mark back to the starting position, which – remember – you've previously marked on the bow. Put the bow back in the press and adjust the string accordingly to get the mark to the desired position. Remove the bow and pull back a few times before checking the results of your adjustment. If you've bought the correct string you should only have to twist or untwist a few times – so if the marks are dramatically off after your first attempt then the string could be the wrong length.

After you successfully install your string and have you cam marks to the original position then select one – just one – of the cables to install. Repeat the same process as above. Install, pull back a few times and check the mark. Twist only the cable you have installed until the cam marks line up correctly. Then move to the other cable and do the same process.

only doing one string and one cable at a time you avoid having to worry about brace height, axle length, cam timing or orientation, draw length or peak weight being different. If you have a good replacement string that is ordered to the correct length then this is easily achieved.

Once all the strings and cables are replaced install the peep sight. You will first need to install the nock and loop set

One twist of the string usually accounts to a 90-degree movement of the peep





A mixture of Dynema and Vectran, BCY's 452X is a favourite with compound shooters

then measure to where your peep should go. (I normally use the string I just removed as a reference for that.) On a good quality string there should be something in the string showing you its centre. For a two color string the center is obvious, it is between the two colors – but, either way, it's important you install the peep in the centre. Winner's Choice always leave a small piece of material about where the peep should go.

After installing the peep sight it is important that you get your peep to the correct position by adding twist to the string instead

of flipping strands around on the peep. A string that is made correctly should allow for the peep to be in the same position at rest as it is at full draw. Do not flip strands like in the old days. Keep your peep in the true center of your string and change its resting position by adding a twist or two. Most strings will adhere to the rule that one twist equals about 90 degrees of peep rotation –so you really shouldn't ever need more than three twists to get your peep in the right position. And having a string that keeps your peep in the same position at rest as it is at full draw really is essential.

Forward thinking

If you're going to order a purpose-made string, then do mark and remove everything, measure it and send of the readings to whoever is making your replacements – as it will help eliminate the chance of your new kit being mismatched to your bow. Plus, if you don't like to change the string and cables yourself then it is easy enough to mark your cam position where you like it and ask your shop of choice to replace the strings and cables and make sure the new set-up lines up to the marks.

Another important thing to consider is that compound archers are very different in string selection than recurve shooters. This is because recurve shooters remove the string each time they shoot and re-twist the string back to spec before they shoot the next time. So for a recurve shooters stretching and peep orientation are not needed considerations. However, serving separation and loop serving quality is even more important.

When the time comes for you to replace that string and cables on your bow you need to be sure to recognise the importance of not cutting any corners. The string and cables of a bow really is the tie that binds, and in many cases is the determining factor in the accuracy of your archery equipment. With the right choice and few simple steps you can be back on track to putting more arrows in the middle. Shoot straight!

John Dudley

www.dudleyarchery.info