STRING 'EM UP

Choosing the correct string for your bow is far more important than many realise; Duncan Busby looks at the factors and options you've got to consider

Every compound bow needs a string; your choice of string can determine how well your bow performs, the speed and tune of your arrows, as well as how well your set-up will resist adverse weather conditions. It's one of the most important parts of your equipment but, despite this, it is also one of the most overlooked parts as well, with many people putting little or no thought into the construction and maintenance of their string. I hope to offer you some insight into the world of bow strings and help you to understand the effects of your current string, as well as successfully choose your next one.

The construction of a bowstring is a fairly simple process: The string is made by winding thin strands of fibre around the posts of the string jig. The posts are set at a particular distance apart – this determines the finished length of the string – and, once the correct number

of strands have been wound on they are twisted together; this also lets you fine-tune the final length

A general rule for an efficient-shooting bowstring is to put in one twist for every two inches of string. twist for every two inches of string; too many or too few twists can result in an unstable shot. At this point the end serving is applied, the end serving is wound on using a serving tool; this keeps the tension of the serving consistent and makes sure there are no gaps and the serving is neat. The amount of serving applied will depend on the string and the bow it's being fitted to. Serving protects the parts of the string that come into contact with the cams or other parts of the bow, it also holds the strands together and creates the end loops. Finally, the centre serving is applied; this is where you nock the arrow – because of this the centre serving needs to be strong and durable as it protects your string from being worn away by constant friction from your nock, fingers or release aid. It also needs to be the correct thickness to allow the nock to fit properly.

The first important choice to make when deciding on your compound string is the material as the different types can vastly change the properties and characteristics of the finished result. There are several different types of material on offer from a number of manufacturers; BCY and Brownell are the two most popular choices. Most of these materials are made from HMPE (high-modulus polyethylene) in the form of Dyneema and Spectra; these can be used on their own or blended together to give the finished material its own individual qualities. Many are blended with Vectran – a form of polyester – as it helps to minimise stretch.

The type of material you choose will depend on your bow, its poundage and speed and the specific characteristics you are looking for in your string. Some of the more popular choices for compound shooters are: BCY 450 Plus or 452X, Brownell Xcel or Astro Flight. These materials offer a very strong string with little or no stretch while maintaining high arrow speeds, whereas BCY 8125 and Brownell TS plus have a little more stretch which can cause your bow to come out of tune, but tend to give you better arrow speed and a softer feeling shot, it's really down to your own personal preference.

Just as each string material has its own characteristics and uses, the same is true of serving materials. Again, these are made from Dyneema, Spectra and polyester; BCY 3D or Brownell 1D are more commonly used as end serving as they are thin and have a high resistance to abrasion, this makes them perfect for fitting into cam grooves. Centre serving needs to be thicker to allow for a good nock fit and grip – as you don't want your nocking point to slip – for this, BCY 62XS or Brownell Diamondback are more favoured, though BCY Halo is also being used more and more by compound archers especially in areas of extreme friction. Currently the most popular choice amongst pro archers is BCY 452X with 3D or Halo end serving and 62XS centre serving.

The next decision will be the strings' colour – and this is where you can have some fun. String materials come in more than 40 different colours and, with most good builders offering strings in either one, two or three colour options, the combinations are almost endless. Though this decision is largely down to how "bling" you'd like your bow to look, some archers prefer to use clear or white as they reflects heat and can help to prevent unwanted stretch, plus they have a lower wax content. Serving comes in many different colours, too – so you have an opportunity to make a truly individual looking setup.

The final consideration in the construction of your string is the amount of strands you'll need; the strand count of the string will influence arrow speed, arrow tune and most importantly string stability. The fewer strands your string has the faster your arrow speed will be but, as a consequence, your string will be weaker and may have a tendency to continually stretch throughout its life, especially in hot weather. It can also cause more vibration in your bow; ultimately your string will be less stable and will have a shorter life span.

A string with a greater number of strands will be a lot more stable and more resistant to stretch as well as lasting much longer, although it will produce slower arrow speeds. Many pro archers go for the higher strand count and sacrifice a little speed for greater peace of mind. Most string builders will put the material manufacturers recommended number of strands into their strings; this is usually a middle ground giving good arrow speeds while maintaining a safe and stable string, unless you know exactly what you are doing this would be the most sensible way to go.

Now you have more of an idea of what you're looking for you can decide where to go to purchase your new string. The easiest option is to buy a factory made string from your local pro shop; these strings are made by the bow manufacturers so you know they will suit your set-up and are the correct

Above: Thinner serving is better on the end of strings as it fits more comfortably into the cam grooves

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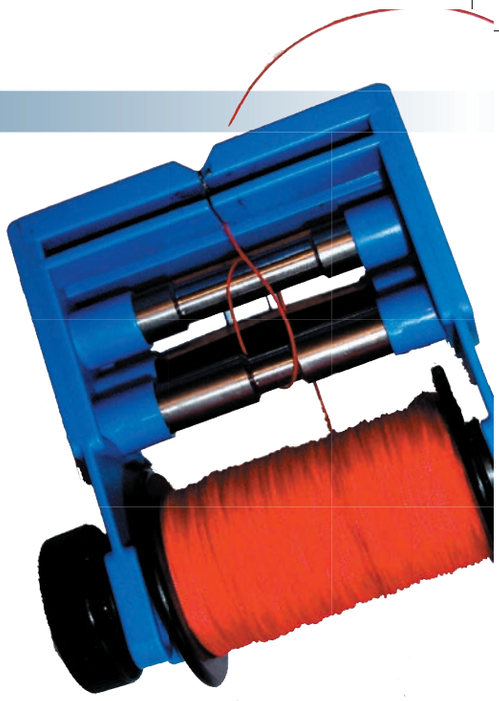
length. The only drawback to a factory string is the lack of options available to you; colours may be limited and you will usually have no choice in the string and serving material used. Factory made strings are also made in high volume so quality control may not be as tight as with hand-made strings – that said, factory strings are the best option for you if you simply want a new string at a moderate price that you know will work with your set up. Mathews Zebra strings, for example, use a unique blend of fibres that give you a reliable string with very low stretch that limits peep sight rotation; Zebra strings are available for almost all compound bows so are well worth a look.

If you are looking for something a bit more customised a hand built string will be the best option for you; the extra attention provides a greater number of options when it comes to string colour and material type and as they are custom and, of course, the care means the quality of the finished product will – more often than not – be extremely high. Many string builders have their own finishing or building processes making their strings unique to them; the most common is pre-stretching. This process puts the string under high tension taking almost all the stretch out of the fibres so it will "shoot in" far faster than an off-the-shelf model, and will be less likely to stretch in heat.

All this precision and attention to detail comes at a price, with some of the better-known companies charging upwards of £80 a set. Remember, though, you're buying top quality by people who really know their stuff. A hand-built string should last for many thousands of arrows and resist adverse weather conditions as well as being extremely accurately made to your exact specifications. If you are unsure where to go to buy your new string try asking around at your club or at some tournaments, find what is working for other archers and what is popular, the internet is also a good resource. Just be careful when ordering your string, if you provide the wrong information you will receive the wrong string and this can be a costly mistake.

If you're feeling brave enough you could try making your own string; you will need a string jig, serving tool and some string and serving material; all these items can be bought at your local pro shop. Make sure that the tools you buy are well made; low-quality string jigs and serving tools can make it difficult to make an accurate and high-quality string. There's nothing worse than putting a lot of time into making a string only to find out it is the wrong length or has loose strands. There are several instructional books and DVD's available to show you how to make strings, as well as lots of online information, but unless you know exactly what you're doing it is unadvisable to make your own string – as it's not just your score that can be affected by a poorly made string, it can make your bow potentially dangerous to shoot.



Right: A serving tool allows you to get a tight grip on the string – so nothing slips during shooting

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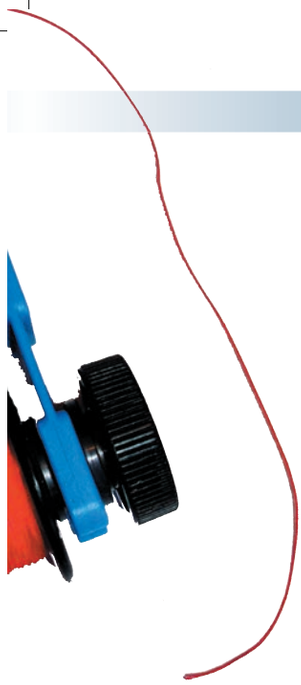
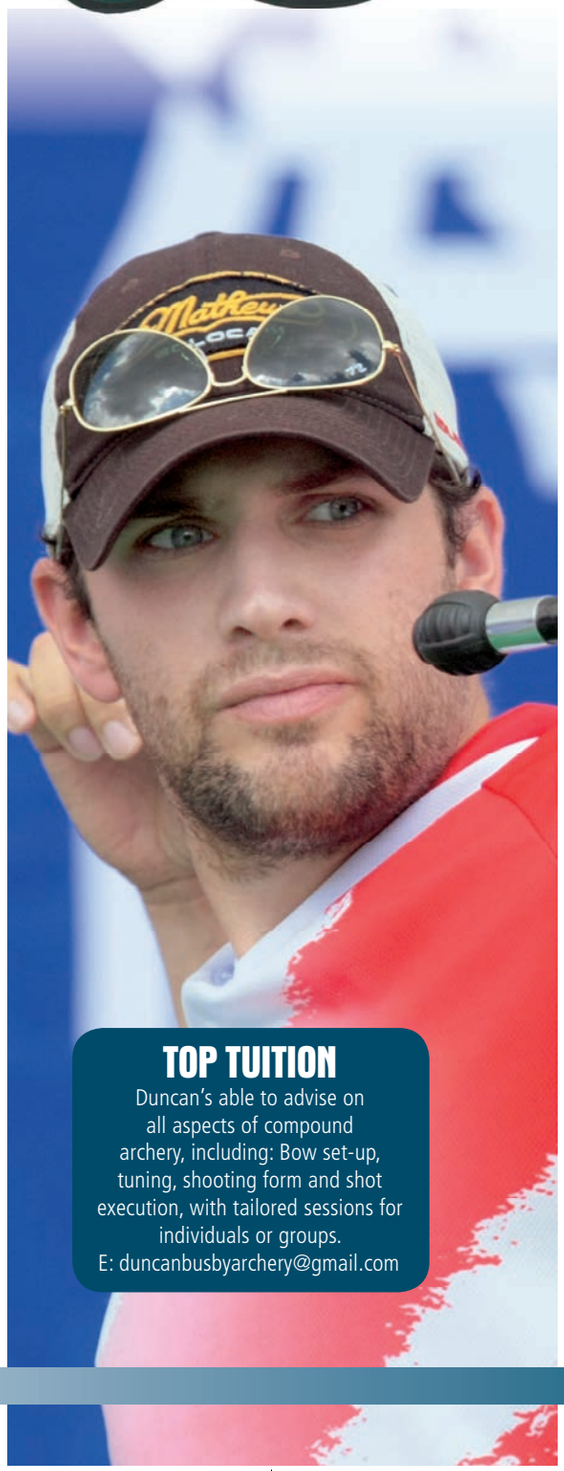


Finally, once you have bought or made your string you need to take good care of it to ensure it lasts as long as possible and keeps performing shot after shot. In order to keep your string at its best you need to keep it well waxed. Silicone wax is the best for use with modern string materials as it penetrates the string better and has a much slicker finish; this helps to waterproof the string and keeps the individual fibres together while protecting your string from fibre-to-fibre abrasion. Rub a small amount of wax into your string about once every two to three weeks especially after shooting in the rain, then remove any excess wax by tying a small length of serving around the string and running it over the surface, this will prevent a build up of wax on your string which will attract dirt and dust as well as slow your bow down. You also need to check your string for broken strands or areas of wear; this can be a sign that there is something rubbing on your string from your bow or in your kit bag, if this goes unchecked it can cause your string to fail causing potential damage to you or your bow. The most common areas for string damage are around the peep sight and behind the cable slider; always be careful when working on your peep as it is very easy to damage strands when moving or installing it. Check the condition of the serving around the cams, too, as there can be a lot of friction in this area and once the serving has broken it can be very difficult to fix.

Good luck with the purchase of your next set of string. With any luck I've been able to help you choose the perfect string for you bow and your style of shooting, and hopefully allow you to feel the difference a well-built, high-quality string can make to your set-up.



TOP TUITION

Duncan's able to advise on all aspects of compound archery, including: Bow set-up, tuning, shooting form and shot execution, with tailored sessions for individuals or groups.
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