

Avalon Archery Club

Terry's guide: Buying your first archery equipment

Written by Terry Franklin – Version:1 - November 2016.

Trying to work out the technical aspects of archery equipment, and making decisions on your first purchase, can be a little daunting for most new archers. This guide is intended to help you understand the variety of equipment and specifications available, what equipment is most suitable for a new archer, and how and where to purchase such equipment. Visiting a specialist archery shop is the most common approach and will significantly reduce how much you need to understand. However, for those buying second hand or via the internet, or even if you visit a specialist archery shop, this information could help inform your choice. It is provided in good faith in order to assist new archers in their purchasing decisions. However, neither the author nor Avalon Archery Club will accept any responsibility for any dissatisfaction or inappropriate purchases of archery equipment as a result of this guidance document. Other brands of guidance may also be available!

Please feel free to ask a club coach and/or other experienced club members about anything you don't understand, or to have a look at and get opinions of equipment bought/used by other members (but don't expect them to advise you exactly what to buy).

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WHAT TYPE OF EQUIPMENT TO BUY

Recurve bow:

The vast majority of new archers start with a 'take-down recurve' bow (as used on your beginner's course). 'Recurve' refers to the shape of the limbs on the bow. These may be placed under the category of 'target archery' on some websites.

Take-down recurve bows come in three sections and essential accessory components (which may or may not have to be purchase separately):

Riser

The central section that includes the handle, and which the limbs fit to each end. Usually metal (or wood or composite plastic on mainly beginners and some old bows).

Limbs

Come as a pair. Available in different lengths (inches), stated by the length of the assembled bow (see table below), and draw weights (poundage – often expressed as # rather than 'lbs'!)

String

Sold by bow length (i.e. for a 68" bow, you buy a string listed as 68", although the actual length of the string will be several inches shorter).

Available in different types of nylon. 'Dacron' is the entry level and should be used for 'beginner' category bows. 'Fastflight' can be used on 'intermediate' bows and gives a slightly faster and quieter shot.

Nocking points

One or two small brass rings fitted to the string to indicate where to put your arrow. These may need setting at the correct height by a club coach before you first shoot.

Arrow rest

Most new archers start with a stick on plastic rest. 'Hoyt Super Pro' is the most recommended type. Some other brands can be a bit too stiff and may give arrow clearance problems. NOTE: Second hand risers may come with the tab cut off the arrow rest if it was previously used with a pressure button. A new rest (or a pressure button) may need to be bought and fitted.

Sight (unless shooting barebow)

Usually a separate purchase (unless part of a 'kit').

Other types of bow - see appendix 1 for a brief explanation, and which types can and can't be used at Avalon Archery Club.

Quality / Price

Generally split into three main levels – beginner, intermediate, and 'advanced' (or expensive!).

Intermediate (ILF) (£110 - £300):

Most new archers buy an intermediate level bow. The cheapest available (new) is around £110 but a typical price is £140 - £300.

International Limb Fitting (ILF):

Most brands (some Hoyt brands differ) now use this standard for fitting limbs to risers. It means different brands of limb and riser are interchangeable (although some, e.g. cheaper brands, may not be a perfect fit or it may be necessary to file/sand down corners of limbs to get a good fit between different makes).

The limbs simply and quickly slot in to the riser, making it quicker and easier to assemble and disassemble compared to beginners bows which use a bolt to secure the limbs.

If you are likely to upgrade to higher poundage limbs in the future, then a cheap pair of limbs are likely to be just as good as expensive ones for your first purchase. Cheapest ILF limbs are around £50.

Good results are achievable with cheap intermediate level equipment – a junior club member recently beat a national record using a riser costing £60 and limbs costing about £65 (and entry level arrows)!

Beginner's bows (£60 - £70):

Some new archers prefer to pay a bit less by starting with a beginner bow (although this could be a false economy if you feel it's limiting or holding you back a bit after a year or so).

Their disadvantages are:

- Upgrading limbs – your choice is limited to low quality bolt on limbs which can be more prone to slight warping (although it's cheaper to upgrade at around £35 for a pair of new limbs).
- Wooden handle/riser bows have less cut away in the sight window which has a slight impact on straight arrow flight – the recent metal handles/risers (Core brand) are much better in this respect.
- May not include attachment points for all types of accessory (e.g. clicker or draw length indicator), although most can be fitted with a sight, pressure button, and stabilizers.
- Shouldn't be used with the slightly faster and quieter 'fastflight' string (dacron should be used).
- Slower to assemble and take down (limbs secured by a screw in bolt rather than slot in ILF on intermediate bows).

I estimate performance/results when shooting well with a beginner's bow will be around 70 - 90% of that achievable with an intermediate level bow. These bows could be a suitable first step for those whose long term aim is to move onto shooting a longbow.

Advanced bows (£400 - £1,000):

Some say you should spend as much as you can afford on a good quality riser (although should start with a cheap pair of limbs and move to more expensive limbs as and when you upgrade poundage and/or are achieving a high standard).

I think it's unlikely that a bow in this category will give you better results for at least your first couple of years (although I haven't personally tried one so I can't be sure!).

One slight advantage of a more expensive riser may be the comfort or fit of the handle in your hand although most new archers might take a year or more to develop or reach their optimum hand position.

There aren't usually any extra 'features' with these more expensive bows (although risers may offer a little more scope of adjustment on the limb fitting).

Arrows:

Usually sold as a set of eight. (Normal practice is to shoot an 'end' of six arrows at a time, leaving two spares which are usually required sooner or later!).

Most new archers start with Easton aluminium arrows (XX75 – 'Jazz' or 'Tribute'). Around £40 - £45 for a set of eight arrows.

Length and diameter (spine) are quite important – see section below on 'what size to buy' – step 4.

BEWARE of cheaper brands (and materials) from general internet retailers – usually in limited sizes and could easily give disappointing results or be rather unsuitable in practice.

WARNING – CARBON ONLY AND FIBERGLASS ARROWS AREN'T ALLOWED OUTDOORS.

See appendix 1 for more information on different types of arrows.

WHAT SIZE TO BUY

Whether you buy online or go to a specialist archery shop, it's worth having an idea of specifications (size and strength of bow, length and diameter of arrow) that are appropriate to you. Archery equipment still uses imperial measurements (inches, pounds).

Determining measurements is a four stage process to be carried out in the following order:

1. Arrow length - based on your full draw length.
2. Bow length - based on arrow length.
3. Bow draw weight (or 'poundage') – based on you strength, stamina and ability.
4. Arrow diameter (or 'spine') – based on arrow length and bow poundage.

The table below is for you to record measurements appropriate for you:

	Minimum	Suggested	Maximum
1. Arrow length (inches)			
2. Bow total length (inches)			
- Riser length			
- Limb length			
3. Bow draw weight (lbs,#)			
4. Arrow spine			

STEP 1 – Arrow length

This can be measured approximately by staff at a specialist archery shop. However, it's also a good idea to have a club coach measure/observe this whilst you're actually shooting at the club. Arrow length should be based upon your normal (or preferably optimal) draw length whilst shooting a bow poundage that you can comfortably draw and hold.

Other Considerations:

- TOO SHORT IS DANGEROUS – An arrow that is pulled inside the bow and accidentally shot can splinter and/or cause injury to yourself or others on the shooting line. It's better to err on the side of a longer arrow.
- Growing children - it can be worth allowing a little extra on the length if you don't want them to outgrow their arrows too quickly.
- Draw length is measured from the string to the front edge (edge nearest the target) of the bow. Arrow length may be the same as draw length or may be a little longer.
- Arrows can usually be supplied in half and quarter inch lengths.

STEP 2 – Bow length

An approximate guide is to add 40 inches to your draw length (e.g. for a 26" draw length, the recommended bow length would be 66").

Bow lengths usually come in increments of 2" (i.e. 64", 66", 68", 70").

'Standard' riser length is 25 inches (limb length and poundage are based on fitting to a 25" riser). 23" is commonly available (suitable for some junior archers or petite adults). Some brands (very limited number) are also available in shorter/lighter 21" (for younger juniors) and longer 27" (for the very tall).

Limbs are sold by length of the assembled bow and are based on a 25" riser. Sometimes listed as 'long' (for 70" bow), 'medium' (68"), and 'short' (66"). The table below shows the common combinations for intermediate bows.

Riser length	Limb length	Total bow length
25"	'Long' (or labelled as 70")	70"
25"	'Medium' (or labelled as 68")	68"
25"	'Short' (or labelled as 66")	66"
23"	'Long' (or labelled as 70")	68"
23"	'Medium' (or labelled as 68")	66"
23"	'Short' (or labelled as 66")	64"

NOTE: Beginner bow sizes are slightly different – 'standard' risers are usually 24" and shorter junior versions may also be available.

In practice it's usually possible to shoot more than one length of bow. At lower draw weights (or 'poundage'), a slightly shorter bow can give a little more power to the arrow. A slightly longer bow may be a little easier to draw.

STEP 3 – Bow draw weight (poundage)

It's generally advisable to start at a lower poundage and then to increase it (by changing your limbs) in the future as and when you have accomplished a reasonable shooting technique, and when your strength and stamina allow.

How often you upgrade your limbs will depend on how regularly you practice, age, general fitness, your budget, and how ambitious you are. Some archers go through several upgrades of limb, whilst others will stick with just their original poundage (or even reduce it). Staying on a lower poundage is likely to limit the distances you can reach or that you'd be required to shoot at competition level (outdoors).

'Over-bowed' – a poundage that is too high, especially early on, makes it very difficult (or near impossible) to develop and maintain a good shooting technique, and hence is detrimental to accuracy and consistency of your shots. There's also a greater risk of injury.

Choosing a draw weight

Bows used for beginner's courses are usually quite a low poundage and it's likely you'll be able to manage some increase for your first bow. Ask at the club if there are other bows you could try/feel to help give you an idea (either heavier poundage club bows or those belonging to other members).

NOTE: Only draw a bow whilst stood on the shooting line and when permitted by the Field Captain. NEVER loose (shoot) a bow without an arrow as it can damage the bow. If you visit a specialist archery shop, they should let you try some different bows/poundages.

The table below gives an idea of typical limb/draw weights for a first bow. However, occasionally poundages outside of the min/max range may be appropriate.

	Minimum	Typical range	Maximum
Adult gentleman	18	22-26	30
Teen over 15 / adult lady	16	20-24	26
Junior age 13 - 15	16	18-22	24
Junior age 10 – 12	12	14–18	20
Junior age 9 – 10	10	12-14	16

But a word of caution. Shooting a few arrows, in the shop, with a higher poundage bow can give a false impression of what you can comfortably pull. Bear in mind you need to be able to shoot comfortably up to 60 arrows in a normal club session.

Children going through a growth spurt may require a lower poundage (either when starting archery or temporarily after some years of shooting) – as their arms grow longer, their draw length will increase, as too will the poundage (the poundage increases the further the string is pulled back). Muscles don't usually strengthen at the same rate as increase in arm length.

Measuring (or estimating) actual draw weight

The 'standard' for measuring poundage is at a draw length of 28" (or 26" for shorter junior bows), and on a 25" riser. If your draw length is shorter than 28", the poundage you pull will be lower than stated on the limbs and likewise a draw length over 28" will result in a higher poundage. A 1" increase or decrease from a 28" draw affects the poundage by about 1.5 lbs. (E.g. Someone with a 30" draw length using 24lb limbs will actually be pulling about 27lbs). Bow scales can be used to more accurately measure actual draw length.

Your actual draw weight (making an allowance for longer/shorter draw length) is one measurement used to determine arrow spine (step 4).

Effects of riser length:

Fitting limbs to a shorter (23" riser) will increase the stated poundage by about 2lbs. Where two poundages are quoted for a limb, the lower poundage is for a 25" riser and the higher poundage for a 23" riser.

The poundages stated on limbs aren't always accurate and some variation can occur between different makes of limb (i.e. a 24lb limb of one brand could feel and have exactly the same draw weight as a 26lb limb of another brand).

STEP 4 – Arrow spine (thickness)

Arrows come in different diameters. The diameter (and wall thickness) affects how much the arrow bends as it leaves the bow. Arrows are meant to bend a little as they leave the bow – it helps the fletchings to clear the arrow rest.

Arrow bendiness or 'spine' rating should be matched to your bow's draw weight to achieve optimum arrow flight. It's usually possible to shoot several different arrow spines from the same poundage bow but one is likely to give better arrow flight than the others. Likewise a single arrow spine can be suitable for more than one poundage. It's not worth worrying too much about having a perfect match from the start but it's something to consider and aspire to as you progress (e.g. for your second or third set of arrows if you go that far!)

However, it is worth trying to get a reasonable match from the start as an arrow that's far too stiff may not clear the bow properly or will 'fishtail' (zig zag in flight) a lot, and an arrow that's far too weak could bend permanently or break.

Selection charts

The correct (or best) spine depends on:

1. Actual draw weight (see step 3), and
2. Arrow length.

Easton (the main arrow manufacturer) has a selection chart to help choose the correct spine. Some consider, especially for lower poundages, that the charts select an arrow that is too stiff and one spine

lower is often more appropriate (for aluminium arrows). A club coach or a specialist archery shop may be able to advise further.

Pressure buttons

'Pressure buttons' or cushion 'plungers' can be fitted to the bow (through a hole in the handle just above the arm of the arrow rest) to make some adjustment to the bend of the arrow. However, this is for fine tuning only and can't be used to correct a badly matched arrow.

What the numbers mean

The spine (for aluminium arrows) is usually given as a number that looks like a year (e.g. 1816). The first 2 digits (18 in this example) refers to the outside diameter (18/64th of an inch). The second 2 digits are the wall thickness of the aluminium tube (16/1000th of an inch).

Other considerations:

- If you think you are likely to increase your bow poundage in the not too distant future, then arrows that are properly matched to a starting poundage may be too weak for an increased poundage. It may therefore be worth going for arrows that are a bit on the stiff side initially.
- Easton aluminium arrows will generally be good for at least a few years of regular use (although some replacement of nocks and fletchings is likely over this period). I.e. one set of arrows could last for one or two limb upgrades if you don't want to change both limb and arrow together.

OTHER EQUIPMENT:

In addition to the bow and arrows, the following items are usually required too:

- **Sight** (unless you're shooting barebow) – ones with a rack and worm screw tend to be more secure and easier to make fine adjustments to the height.
- **Bowstringer** – essential for putting the string on your bow.
- **Armguard (bracer)** – most archers wear one and it's certainly recommended for at least your first six months. Even if you're unlikely to hit your arm with the string, it's useful for keeping your sleeves out the way of the string.
- **Quiver** – the safest and most convenient way to carry your arrows around, and when on the shooting line. NOTE: These are usually right or left handed.
- **Bow stand** – keeps your bow off the ground (making it less likely to be accidentally kicked/stood on). Magnetic ones are nice and quick to assemble.
- **Finger tab** – beginners usually find it easier to use just the fingers to start with. However, tabs can give a smoother loose (release), are usually necessary for higher poundages, and most archers will eventually use one. NOTE: These are right or left handed.

The following aren't essential but are worth considering:

- **Equipment case / bag** – main types are a basic carry bag, backpack (the most popular type), or suitcase style with/without wheels.
- **Arrow spares** – eventually everyone loses a nock or fletching (and occasionally a point) from an arrow. Nocks and fletching are relatively cheap and sold by the dozen. If you purchase

spares at the same time as new arrows, you can be sure of the right sizes and colours. The club has a fletching jig for members to borrow.

WHERE TO BUY:

Specialist archery shops

Visiting a shop in person

This is the most common method. You can usually see and feel the equipment before you buy. Some people decide on make of bow by how it feels in the hand. Some shops also have a short archery range where you may be able to try (shoot with) equipment. Specialist advice is also usually available – particularly useful if you're really not sure about measurements, although prior advice from your club/coach may be useful too. The downside is travel/time, and cheapest options may not be so easily available.

The nearest shops are:

Wales Archery – Crick (just over the Old Severn Bridge), South Wales. Rated highly for good service by those club members who have been there.

The Archery Shop – Poole, Dorset. Competitive prices (the club purchased its beginners equipment from here following quotes from many shops).

Quicks – Honiton, Devon.

Internet orders

There are quite a few other archery shops around the country and all provide an internet ordering service. In addition to the above, a couple of 'mainstream' ones with competitive pricing are 'Merlin' and 'Bow Sports'. Choice of shop can sometimes be influenced by specific equipment preferences (not all brands and products are available from all shops).

BEWARE OF CHEAP VERSIONS from non archery specialists – cheaper (often fiberglass) arrows and some cheaper bows may be available from general internet retailers (e.g. through eBay). Much of this equipment may have serious limitations when it comes to shooting and you may be disappointed! 'Proper' archery equipment is generally only available from specialist archery shops (or second hand).

Second hand

It is possible to get decent second hand purchases on eBay. However, finding equipment that's an appropriate specification (see 'WHAT SIZE TO BUY' above) can be more difficult or take longer. It's unlikely you'll find everything you need and most new archers end up buying something new.

BEWARE – OLDER MAKES OF BOW. Whilst many older makes of bow may still be perfectly useable (and often cheaper), it may not be possible to replace the limbs. Either because the limbs for that make/model are no longer made, and/or if the riser can't take modern limbs. Therefore beware of any bows that aren't 'International Limb Fitting'.

BEWARE – PRICES. Don't assume that if it's on eBay, that it's much cheaper than new. Some good quality brands/equipment can sell for not much less than new prices. Some equipment (e.g. beginner's bows) are even advertised at higher than new! It's worth checking what it costs new before bidding (and consider postage cost too). However, if you're lucky or have the time to search, you may pick up a good deal as some club members have.

Appendix 1 – other types of bows and arrows

Bows

Recurve

In addition to the take-down recurve that most new archers start with, there are other types of recurve bow:

'Hunter' bows – shorter and mainly used for field archery (shooting in the woods etc.), sometimes one piece rather than take down.

'Middle Eastern' or 'Korean traditional' bows – these are shorter again and usually shot using the thumb (and a protective thumb ring) rather than fingers on the string.

Longbows and flatbows

'Traditional Longbow' – A very old design (as used in medieval times as a weapon of war). Usually higher poundages to compensate for the lower efficiency, and usually shot with wooden arrows, off the hand (no arrow rest).

'American flatbow' – a little more like a traditional English longbow.

All the above are shot barebow style and are permitted indoors and outdoors at Avalon Archery Club.

BEWARE - we can't offer any specific experience or advice on buying or using these bows.

Compound bows

These are a modern and more efficient design with shorter stiffer limbs and a pulley system (wheels or cams on the ends of the limbs) for the string.

They are usually shot with a mechanical release aid (shooting using the fingers may be uncomfortable due to their much shorter length, or may not be possible on higher poundage bows).

WARNING - Mechanical release aids aren't allowed outdoors at Avalon Archery Club as we don't have the required safety distance behind the targets. Therefore please think twice before buying a compound bow. We also can't offer any specific experience or advice on buying or using these bows.

Cross Bows

Avalon Archery club does not allow the use of Cross Bows.

Arrows

Carbon arrows have the advantage of being lighter than aluminium, so will fly faster. However, arrows that are all carbon (and can be as cheap as aluminium arrows) have the disadvantage of not being picked up by metal detectors. Arrows lost on the field and then damaged by the grass cutter can then be a hazard to other users due to the carbon splinters that are medically difficult to remove. Arrows that are all fiberglass may have the same issues.

WARNING – Carbon only, and fiberglass arrows aren't allowed outdoors at Avalon Archery Club due to the hazard to other users.

Hybrid carbon/aluminium arrows (e.g. Easton A/C/C or A/C/G) have both a carbon and aluminium layer along the length of the shaft and are therefore findable with the metal detector (in theory). They are therefore permitted outdoors.

Wooden arrows are usually only used with longbows, although could be used with other types of bow as long as their spine (stiffness) is a reasonable match to the bow. These are permitted at Avalon

Archery Club. Arrows buried under the grass can be still be difficult to find as only the point will register on a metal detector. However, fine splinters that can arise from carbon arrows when damaged are much less likely from wooden arrows.