



Cromer Archers

Notes for new and returning archers

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Use your local archery shop

Your bow must be matched to your body and your arrows must be matched to your bow. We are fortunate to have an excellent archery shop in Norwich

<https://www.clickersarchery.co.uk/> . The shop has been there for decades and the expert staff will help you to choose the right things. You can rely on their secondhand equipment, which you can't always do on online buys. I do not have any connection with Clickers, financial or otherwise, except than as a satisfied customer.

Dimensions

As an engineer and scientist I find metric natural and the UK has been metric for fifty years. However, partly because many items are made in the US, archery tends to stick to the old units: pounds, inches, grains etc. No, I am not making up 'grains'. It is a unit of weight used in shooting. There are about 15.5 grains in a gram. The exception is face sizes, which are metric, and target distances for metric shooting.

Bows

There are three types: longbow, compound and recurve (Olympic). Some beginners start with a fibreglass one piece bow, nicknamed 'jelly bow', and there are other variants such as wood flatbows. It is best to start with a wooden limbed recurve.

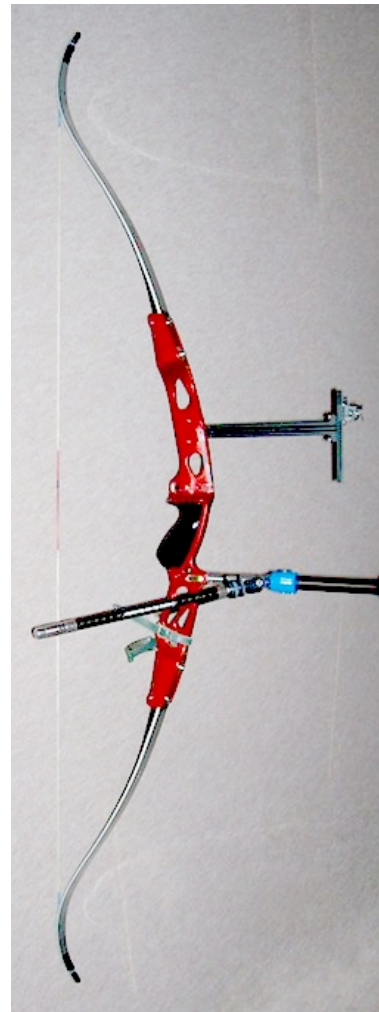
Longbow



Compound



Recurve



Recurve

This the most popular and is used in the Olympics. It takes to pieces (take down) to reduce its size for transport. The basic parts are riser, limbs, sight, string, button and rest though there are a few others that I'll describe later. If you are a newcomer it is best to buy a wooden limbed recurve bow, possibly secondhand. They are low cost and will help you build up your muscles. You can buy stiffer replacement limbs as you get stronger. You specify a bow as follows: length, draw weight and handedness. The first two will need expert guidance, perhaps at Clickers. You might also consider a complete basic kit for example: wood riser: <https://www.clickersarchery.co.uk/products/clickers-archery-wooden-take-down-bow-basic-kit/> or metal riser: <https://www.clickersarchery.co.uk/products/clickers-archery-kit-basic-metal/>

Riser

This is made of wood or more usually an alloy of aluminium. It holds the limbs and has threaded holes for fitting the other parts that are needed. The spacings are standard and threads are often strange US ones called Unified National Coarse (UNC). For example sights are held on with 10-24 UNC countersunk the threads of which are actually 3/16" diameter.

Wood



Metal



Limbs



These click, or are bolted, on to the riser. Wood ones are fine for starting and it doesn't cost much when you buy new more powerful ones.

Bow size and draw length

This will depend on how long your arms are. Draw length is the distance from the nearer edge of the clicker (below) to the string when at full draw. Here is a typical table (from Clickers) to help you select. You can buy bows with higher draw weights so you shoot the greater distances.

Draw Length	Recommended Bow Size	Riser Size	Limb Size	Min Weight	Max Weight
Under 17"	48"	14.5"	48"	10lbs	22lbs
17" to 19"	54"	19.5"	54"	10lbs	22lbs
19" to 21"	58"	19.5"	58"	10lbs	24lbs
21" to 23"	62"	20"	66"	14lbs	32lbs
23" to 25"	64"	20"	68"	16lbs	32lbs
25" to 27"	66"	24"	66"	12lbs	30lbs
27" to 29"	68"	24"	68"	14lbs	30lbs
29" to 31"	70"	24"	70"	16lbs	30lbs

Draw weight

This is how hard you have to pull the string to reach full draw. You might ask other archers let you try drawing their bows with no arrow. Take great care not to let the string go at full draw or you might damage the limbs. You can use a luggage scale to measure the weight.

Handedness

If you are right-handed choose a right-handed bow R/H.

Compound

These are one-piece bows with an arrangement of wheels and more than one string. They are more compact and were originally designed for hunting. The purists tend to look down on compound but they do have advantages. One is that as you draw the string back the force increases but then reaches a maximum and drops back to a lower level. This means that you can more easily hold the bow at full draw for aiming, and you can pull a stronger bow to get better range. After release the bow applies an increasing force on the arrow so it accelerates more smoothly, rather than the greatest force being at the moment of release as it is with recurve and longbow.

Longbow

This is a one-piece wood bow, traditionally made of yew with sap wood on the front and heartwood behind. Now it is usually made of osage, hickory, bamboo or lemonwood, often laminated in combination. The limbs are usually round in cross-section and draw weights higher than for other types of bow. There is no sight nor rest. People put a rubber ring around the lower limb to act as a simple sight. Arrows are released at quite a high angle to get the necessary range.

Other bits for recurve and compound bows (examples are for recurve)

Sight



This bolts to the side of the riser. You line up the ring with the target. This one is for a recurve bow. Compound bows need a more complicated sight with a small telescope on it. For those you look through a small lens called a peep that is fitted into the bowstring.

Button



This screws through the riser and lines the arrow up so it clears the riser. The small white bit is a springy piece of plastic.

Rest



As the name suggest this is what you put the arrow on. Rests for compound bows are more complicated and some are pulled up as you draw and drop away as the arrow is released.

Clicker



It is important that you pull the arrow back to exactly the same point each time. You push the point of the arrow under the springy clicker. When the arrow is pulled back far enough it releases the clicker which goes 'click' against the riser or an extension plate.

Arrows

An arrow is made of four parts: shaft, point, fletchings, and nock. The nock and point are held in with hot melt glue and the three fletchings are glued on to the shaft with superglue or cement using a jig. The fletching that points away from the riser is called the 'cock' and is a different colour.



Point



Fletchings



Nocks

Shafts

Shafts are made from wood, aluminium or carbon fibre. Some shafts have an aluminium tube core and an outside layer of carbon. Others are pure carbon. A wood shaft will cost a pound or two. Aluminium will cost from three to eight pounds. Carbon based shafts will be from three to thirty-five pounds. It is usual to buy a set of shafts – six or twelve - at the same time. This makes it more likely that they will match and you need spares as you will break some, especially if you suffer a 'Robin Hood'. Shafts can be trimmed to an exact length, but care must be taken with ones made completely or partly from carbon. A small high-speed cutting disk is used. The dust is dangerous so you must wear a mask. It is best to get the shop to cut them for you. They will have a jig to cut them all to exactly the same length.

This is what they might look like:



Aluminium shafts. The right-hand one has a large diameter for indoor shooting.



Carbon and aluminium



Pure carbon: thinner and lighter

Length of shaft

You draw the bow until the string touches your lips or you lock your hand under your chin. This is called 'full draw' and the arrow point should then leave the clicker. You need someone to measure the distance for you, or to mark it on a longer shaft, so you can then get the shafts cut and the arrows made up. You can buy a shaft with a nock but no point or fletchings that has a scale marked on it.

Matching arrows to a bow

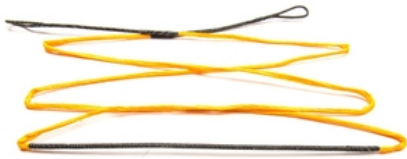
The Archer's Paradox: To understand this first watch the excellent video on https://www.youtube.com/watch?v=O7zewtuUM_0 . This shows how an arrow flexes from side to side between the bow and target. Only longbows and compound bows are shown but the same applies to recurve bows. There are adverts but you can skip them after a few seconds.

Your arrow must have the correct stiffness, called 'spine'. Too much spine and the arrow will not flex enough to clear the bow cleanly. Too little and it will flex too much. It will fly unreliably and be difficult to aim. Spine is defined in various ways, either as a number or a grade. Again Clickers will help you choose. Here is an example of a manufacturer's table to select spine, in this case by spine group on Easton shafts. You will have chosen your bow to match your body size and muscles so you select the spine by draw length and draw weight.

COMPOUND BOW – Release Aid Calculated Peak Bow Weight—lbs.			Correct Arrow Length for Target - Field - 3D										RECURVE BOW Bow Weight—lbs. Finger Release	
ATA Bow Rating up to 275 FPS	ATA Bow Rating 276–300 FPS	ATA Bow Rating 301–340 FPS	23"	24"	25"	26"	27"	28"	29"	30"	31"	32"		
29–35 lbs. (13.2–15.9 kg)			00	01	02	03	T1	T2	T3					21–27 lbs. (9.5–12.2 kg)
35–40 lbs. (15.9–18.1 kg)	29–35 lbs. (13.2–15.9 kg)		01	02	03	T1	T2	T3	T4	T5				27–32 lbs. (12.2–14.5 kg)
40–45 lbs. (18.1–20.4 kg)	35–40 lbs. (15.9–18.1 kg)	29–35 lbs. (13.2–15.9 kg)	02	03	T1	T2	T3	T4	T5	T6	T7			32–36 lbs. (14.5–16.3 kg)
45–50 lbs. (20.4–22.7 kg)	40–45 lbs. (18.1–20.4 kg)	35–40 lbs. (15.9–18.1 kg)	03	T1	T2	T3	T4	T5	T6	T7	T8	T9		36–40 lbs. (16.3–18.1 kg)
50–55 lbs. (22.7–24.9 kg)	45–50 lbs. (20.4–22.7 kg)	40–45 lbs. (18.1–20.4 kg)	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10		40–44 lbs. (18.1–20.0 kg)
55–60 lbs. (24.9–27.2 kg)	50–55 lbs. (22.7–24.9 kg)	45–50 lbs. (20.4–22.7 kg)	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11		44–48 lbs. (20.0–21.8 kg)
60–65 lbs. (27.2–29.5 kg)	55–60 lbs. (24.9–27.2 kg)	50–55 lbs. (22.7–24.9 kg)	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12		48–52 lbs. (21.8–23.6 kg)
65–70 lbs. (29.5–31.8 kg)	60–65 lbs. (27.2–29.5 kg)	55–60 lbs. (24.9–27.2 kg)	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13		53–57 lbs. (24.0–25.9 kg)
70–76 lbs. (31.8–34.5 kg)	65–70 lbs. (29.5–31.8 kg)	60–65 lbs. (27.2–29.5 kg)	T5	T6	T7	T8	T9	T10	T11	T12	T13	T13		58–62 lbs. (26.3–28.1 kg)
76–82 lbs. (34.5–37.2 kg)	70–76 lbs. (31.8–34.5 kg)	65–70 lbs. (29.5–31.8 kg)	T6	T7	T8	T9	T10	T11	T12	T13	T13	T14		63–67 lbs. (28.6–30.4 kg)
82–88 lbs. (37.2–39.9 kg)	76–82 lbs. (34.5–37.2 kg)	70–76 lbs. (31.8–34.5 kg)	T7	T8	T9	T10	T11	T12	T13	T13	T14			68–73 lbs. (30.8–33.1 kg)

Other things you will need

String: get expert advice here as to length and type. You can make your own but for that you need a jig and a fair bit of manual skill.

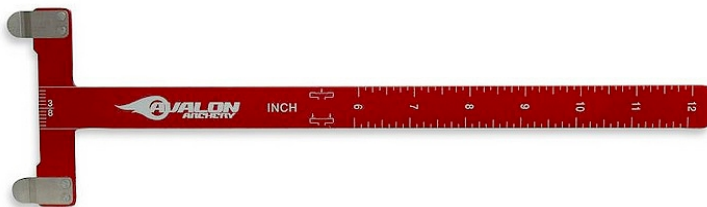


Nock point: This clamps onto the string to give a location point for the arrow. That sits under or over the nock point.



Bracing height gauge or bow square

This enables you to set the nock point at exactly the right height. You clip it onto the string and lower it to touch the rest. You don't need it often so you can always borrow one.



Quiver: to put onto your belt to hold your arrows and items like a puller and a pen. You also need a clip on your belt to which you can attach your scorebook. You also need a belt as well.



Tab: this is a piece of leather, or a device made of metal, plastic and other materials to go on your string fingers ('release aid' for compound). The more complicated ones (right) have a platform that you tuck under chin instead of your thumb.



Simple tab



Pro tab

Bracer: this is a strip of plastic or leather that goes on your holding arm to stop the string tearing your skin off or catching on your clothes.



Bowstringer: to tension the bow limbs so you can put the string on – recurve and longbow only. Ask someone to show you how to string and unstring the bow safely.



Case(s): for bow and other equipment.



Stand: to hold your bow off the ground between ends.



Arrow puller: to pull arrows out of the target.



Chest guard: to avoid the string catching on your clothes.



Score book and pad



Chair and possibly golfing or fishing umbrella

Shooting procedure

A round is made up of ends that are started and stopped by a blow on a whistle by the field captain. During an end each archer shoots either three or six arrows. When everyone has done so and the end whistle has blown, everyone walks to the targets to score and retrieve their arrows. You don't touch any arrow until scoring is complete. In competitions there are time limits, usually 2.5 minutes to complete shooting your three arrows. Club meets are more relaxed. Note that the procedures are a bit different during the covid problem.

Targets

A target is made up of four things. A boss that stops the arrow, a stand to put the boss on, a paper face that has the markings for scoring and plastic pins that hold the face on the boss.

Boss: The round ones are made from straw that has been made into a sausage and then formed into a flat spiral. The square ones are usually some sort of foam either as a block or flat sheets held together in a frame.

Face: These are always made of paper. They come in various sizes and styles. For outdoor shooting the most common sizes are 122 cm for the longer ends and 80 cm for the shorter ones. Indoors, 80, 60 or 40 cm faces are used because of the shorter distances shot and there are other faces like the Vegas face that has three 40 cm faces on. Faces are marked with coloured rings for scoring. There are five concentric rings, gold, red, blue, black and white. Each ring is split into two concentric ones for metric rounds and there is an inner gold ring for compound archers.

Stand: This is invariably made of wood to reduce the risk of stray arrows being damaged. The boss has to be held at a certain height and angle.

Pins: These are made of plastic to avoid arrows being damaged and have large heads to hold the paper face in place.

Other tools and bits you might need at the field

Allen keys: These are now the standard tools used to fit and remove devices such as sights. A key will be supplied when you buy such things but you will soon lose it. It is best to buy a set including both metric and imperial sizes, where the keys fold away into a handle.

Spanners: Things like stabilisers sometimes need a spanner so check what sizes you need. Keep them in your archery tool box. They don't need to be high quality as you don't use a large force, so a cheap set in a roll might be best.

Screwdrivers: If your bow and bits require flat or cross point screwdrivers buy ones that fit and again keep them in your archery tool box.

Pliers: These are needed to fit or remove nock points etc.

Craft knives: These are handy for removing glue or general trimming.

Grease: I keep a tiny pot of standard car grease in the box. After a while screws inserted into aluminium might start to seize up. A **tiny** bit of grease prevents this.

String wax

Glues: such as fletching cement, cyanoacrylate (super glue) etc.

Shooting at home

Unless you have a very large garden, shooting at home might not be safe or wise. Archery GB insurance does not cover you at home, nor anywhere that is not a proper shooting range. You will of course need to buy a target boss and possibly a stand, though people mostly put the boss on the ground to lower the arrow's path. Even if space is not a problem you must allow for overshoot. This is how far your arrow might fly if you miss the target. One option is to buy a net to string loosely across behind the target to catch any strays. An arrow is a lethal device. Another option is to shoot towards your house, then the only harm is to your house and arrow. There is a small hole in one of my gutter down pipes where an arrow went just beyond the edge of the net. For the sake of the sport and your finances you must ensure no accidents happen.

This the 95 cm layered foam boss, bought from Clickers, that I use at home. It stands on the ground without any support and does not fall over when hit. It weighs 17 kg.



Rounds

Archers usually choose to shoot a specified round, of which there are about a hundred. Each round is a set number of arrows shot at set distances onto a set size face and each has a name. For example the 'National' round is where you shoot four dozen arrows at a 122 cm face on a target 60 yards away, and then two dozen at 50 yards. There are some rounds designed for junior archers as well.

There are two types of round. Archery GB (GNAS) rounds use the face on a five zone basis, scoring 9,7,5,3,1. Both 10 and 9 gold zones score 9 and so on for the other colours. The National round is one of those, so the maximum you can score is $72 \times 9 = 648$. Metric

(FITA) rounds score using ten zones 10 down to 1. An example is 'Short Metric' with 3 dozen at 50 m and 3 dozen at 30 m on an 80 cm face. Maximum score here is $72 \times 10 = 720$. For compound archers some rounds use the smaller 'inner ten' ring to score 10.

Of course you don't have to shoot rounds but if you record your scores it is a good way to see how you are improving. If you get someone else to record and sign off your scores, the club records officer will store your scores and calculate your handicap as in golf. Quite soon you will become confident enough to enter your first competition, which I know you will find great fun. Archery GB has a classification scheme with awards such as Master Bowman, Six Gold Badge, Red Rose Award etc.

The wikipedia page at https://en.wikipedia.org/wiki/Target_archery will tell you more.

Types of shooting

One **definite** no-no is to say 'fire an arrow'. That is for guns. Archers 'shoot'.

Club shoots

You can choose either to shoot rounds or not. Bizarre targets such as teddy bears or model animals are also used. Pictures of politicians have been known to feature as targets as well and generally improve people's aims.

Club competitions

When enough people are interested, we are happy to arrange these. We democratically agree what round to shoot. Such competitions can also be handicap ones where each person's score is adjusted by his or her handicap to give everyone an equal chance of winning, so it is a good idea to shoot rounds and record your scores and handicaps properly.

National competitions

These are usually run by other clubs or Archery GB. At the top are the FITA Star competitions – now called World Archery Star - in which archers wanting to be in the national team or at the Olympics build up their scores over a year. Anyone can enter and there are Archery GB awards for achieving certain scores. The maximum score is 1440 but anyone scoring 1000 or more gets an award. So you must score an average of 6.9, in other words mostly red or better. The round shot is 3 dozen at each of 90 and 70 metres on a 122 cm face and 50 and 30 metres on an 80 cm face. These competitions are the exception to the relaxed fun rule. They are taken very seriously. All Olympic shooting is at 70 m.

Clout shooting

A clout is a cloth. One is fixed to the ground in a field at a greater distance than usual and people take turns to shoot at a slightly higher angle than usual to try to hit it.

Improving your strength

Your strength will improve simply by shooting. However there are also exercises that you can do. Buy some rubber exercise bands and do some 'reversals'. This is where you hook your thumb (left hand for right-handers) into the band and then pull the other end of the band up to your mouth with your three archery fingers, just as if you were shooting. Then gradually let your hand back down over about ten seconds. To start with don't do many repetitions ('reps') but gradually increase. The bands are usually colour coded for how hard they are to pull so you can increase the draw weight as well. You might find you need

to double them over to match your draw length. The bands are a few pounds (money) on eBay.

Books

Archery GB

Having not done archery for some years I can't get used to the name change. Grand National Archery Society sounds much more historic and noble. I feel the same about The Cyclists Touring Club becoming Cycling UK. I guess it's government funding bodies insisting on it being GB or UK before shelling out taxpayer's money. Sad though. So bland and uninteresting.

Archery GB has published a book called The Archery for Beginners Guidebook. It costs £7.99.

The Archery GB Rules of Shooting (£14.50) has all the information about rounds, handicaps and shooting rules. There are some bizarre rounds in there. Look up Popinjay. However no-one, including Archery GB, has one for sale at present.