

Archery

A Guide for the Novice Archer



Third Edition

By Gary Jackson and Ashley Jackson

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PART ONE

Preface

Congratulations on your decision to give archery a go.

This book is free to anyone who would like to have access to it. Its purpose is to provide unbiased information on which you can build a solid base for your archery.

Regardless of why you have decided to get involved with archery

1. Learn **GOOD** habits from the very beginning. Good habits make for great results. It is harder to correct a bad habit later on.
2. Always **CHECK** your equipment before you shoot:
 - Bows absorb a lot of energy and vibration during shooting and things **WILL** work loose.
 - Make a habit of checking that everything is tight that includes your sights.
 - Also check your string to make sure it's not fraying or overly worn and that the serving is not coming unraveled. Shooting with a damaged string can have catastrophic results.
 - Check your arrows for loose fletches, nocks and points.
3. If in doubt **ASK**. There are always people at the club who will happily help. But don't go shopping around for advice. It will only confuse you. Find someone at your club or at a supplier who knows what they are talking about.
4. **FINALLY** regardless of your reason for taking up archery be it for competition or recreational purposes, relax and have fun.

During the course of this book, I will touch on various forms of archery however this book is focused on those of you wanting to shoot Target Archery as defined by Archery Australia and World Archery.

NOTE: Many of us began our archery journey on recurve bows. Some of us have then moved onto other disciplines. And many of us shoot multiple styles depending on the day.

Please note that Crossbows are prohibited by Law in Western Australia

Introduction

Archery is generally understood to be an individual endeavour in the same way as is playing golf or tennis. Having said that, just as it is possible play in a team with golf or tennis so is the case with Archery; club teams, state teams and national teams as an example.

You may ask why do I bring this up? Well knowing 'your why' is important as it helps you to understand where your focus as an archer ultimately needs to be particularly, when it comes to buying your equipment and what club structure is best for you.

For example, you may want to shoot traditional archery in which case you would buy a longbow, where as if your focus is competition target archery, then your equipment will most likely be a recurve or compound bow. *(Many longbow archery also shoot target Archery)*

Who Can Become Involved in Archery?

Archery is a sport for both able bodied athletes and those classified with a physical or visual impairment.

For those with a classified disability as defined by World Archer and Archery Australia, are athletes who have attended an assessment clinic and have been assessed by an authorized person usually a Medical Doctor or Physiotherapist appointed by A.A. or W.A. as having a qualifying disability.

Classified archers are permitted to use compound bows in competition and will often use assistive devices, such as custom draw or release aids, mouth tabs or wheelchairs. Classified archers may compete with able-bodied athletes in target archery events using their assistive devices.

For more information on classification refer to <https://www.paralympic.org/archery/> or talk with your club president

With respect to age limits, typically once a child can hold and draw a bow there is no reason why they can't start shooting.

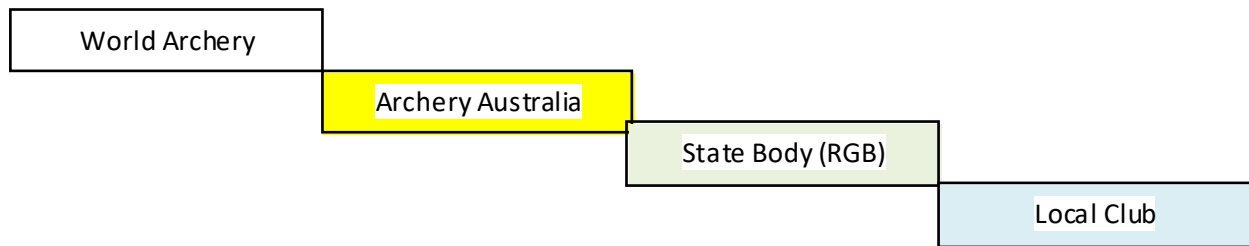
Archery Australia limits youth membership to 12 years of age as long as their 13th Birthday occurs on or before the 31st December.

Archery Organisations

In Australia, if you shoot at an A.A. affiliated club then part of your club membership fee will include your liability insurance.

There are several other archery organisations In Australia; these include Traditional Archery Association, Australian Bow Hunters Association and AIM to name a few. This book and the advice contained herein leans more towards the standards set out by World Archery and Archery Australia.

The Structure of World Archery Affiliation in Australia.



#RGB – Regional Governing Body

NOTES:

- References in this book comply with both World Archery and Archery Australia rules and are valid as of September 2022.
- In the world of archery most things bow-related are referred to in imperial measurements (feet and inches), there are a few exceptions where measurements are given in metric units, but these are few and far between. However, when it comes to shooting distances, in Australia we adopt the metric system.
- A bow's draw weight must not exceed 60 lbs. Bows over 60lbs are not permitted for target archery

You will often hear recurve bows called Olympic recurve; this is because for able bodied archers this is the only style of bow that is currently permitted to be used in Olympic competition.

Para-archers are permitted to shoot compound bows, with a number of restrictions applied. For details, please refer to the para-archers section of the World Archery rules by searching **para-archery rules** or follow this link <https://www.worldarchery.sport/sport/disciplines/para-archery>.

In 2023 attempts were made to have Compound Bows permitted for able bodied archers at the 2024 Olympic Games, however these attempts were not successful.

BUYER BEWARE

Above all else you want you to enjoy your experience with archery. **Please Do Not** go out and buy any equipment for yourself your family or friends, even if it's with the best of intentions, without doing some due diligence by seeking some sound advice from an independent source.

(NOTE: In general I do not consider Archery suppliers to be independent, they have a vested interest that being to sell you equipment. A good source would be to have a chat with fellow club members particularly the club coaches)

The one thing above all that will kill your enthusiasm is to turn up to a club and be told you can't shoot because your equipment is unsafe or dangerous or is not legal to shoot.

The Best Place to Start

Most Archery Australia clubs offer a program called Come "n" Try, which is designed to give people the opportunity to try archery. At Come "N" Try sessions you will have the opportunity of getting a feel for the various types of equipment many clubs will have available Recurve, Compound and Longbow for you to try.

NOTE: Crossbows are no longer in legal to buy Western Australia.

Come 'N 'Try

In Australia, and under the umbrella of Archery Australia, many clubs, offer Come 'n 'Try sessions. These are short sessions generally one to two hours in duration are offered to give the people an opportunity to try archery in a safe and encouraging environment.

A list of affiliated clubs offering Come 'n 'Try can be found at <http://archery.org.au>.

All coaches running Come 'N 'Try sessions have undergone specialist training and are accredited by Archery Australia to provide the appropriate level of coaching and training. Coaches are also a great source of information when it comes to advice on equipment.

Most clubs will have a section on their website that covers the details of their Come 'n 'Try sessions if in doubt contact or visit your chosen club to find out more about what they offer and the dates and times they run their session.

As previously mentioned many clubs have a range of various bows types to choose from.

PART TWO

Let's Begin

Before we can look at buying any equipment you need to know a couple of things.

Draw Length

Draw length is the distance you pull back the string for comfortable and proper shooting form. It is used to determine what length arrows you need and what size bow is best suited to you.

There are a number of ways to determining draw length however the method described here is the preferred one. Place a measuring stick at the top of your sternum, stretch your arms in front of you and note the measurement at the end of the finger tips.



Determining the ideal size bow for you either recurve or longbow match your draw length to the bow size chart below

DRAW LENGTH	RECOMMENDED BOW SIZE (RECURVE)
14 to 16 inches	48 inches
17 to 20 inches	54 inches
20 to 22 inches	58 inches
22 to 24 inches	62 inches
24 to 26 inches	64 to 66 inches
26 to 28 inches	66 to 68 inches
28 to 30 inches	68 to 70 inches
30 inches and above	70 to 72 inches

Selecting the right compound bow is a little more involved than with either a longbow or recurve bow. It is best to talk with the club coaches to get an idea of the bow size and poundage that would suit.



Compound bows have variable draw length and poundage systems so it is important to do your research here.

Dominant Eye

Just like you have a dominant hand, you also have a dominant eye. To find out which eye is dominant, choose an object in the distance on which to focus. With both eyes open hold your arms out in front of you as shown in the diagram below.

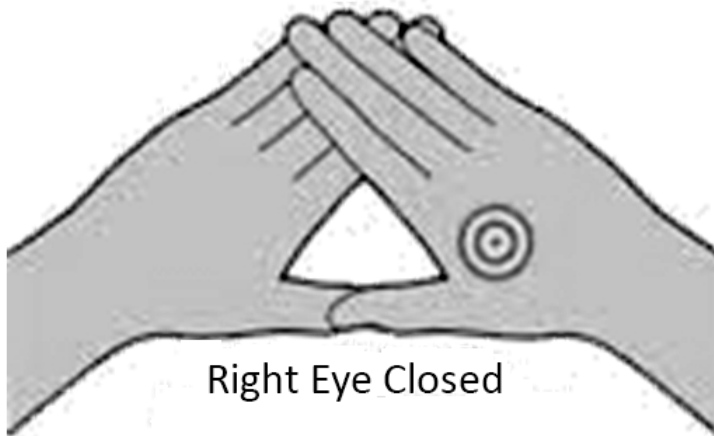
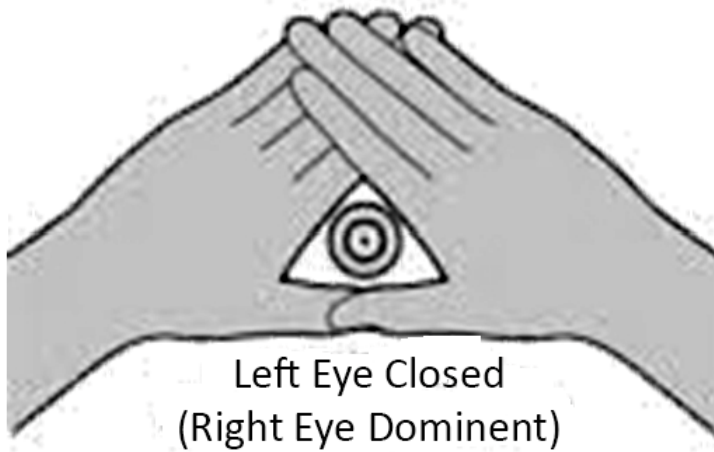
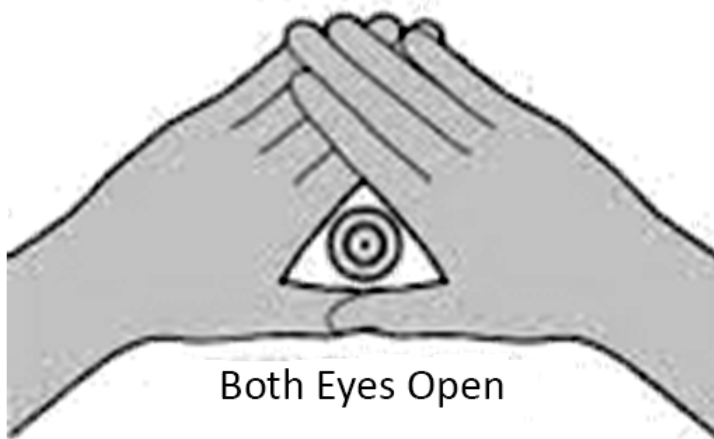
Next, without moving your hands close your right eye, then open the right eye and close the left one. You will notice the image will stay still on the object with one eye open and moves with the other eye. Your dominant eye is the one that was open when the image stayed put.

For most people, their dominant eye is on the same side as their dominant hand. However, exceptions exist. If you find that your dominant eye is on the opposite side of your dominant hand, you may need to make adjustments when shooting a bow.

For example, archers who are right-handed and left-eye dominant have two options: They could shoot a left-handed bow, or they could shoot right-handed and compensate. One way to compensate is to close or wear an eye patch the left eye, this allows the right eye to aim the bow without distractions. While it is debatable which solution is best, try both to see which you prefer.

This is another reason why it's sensible to go to a Come 'N' Try session, you get the opportunity try left and right bows to see which you prefer.

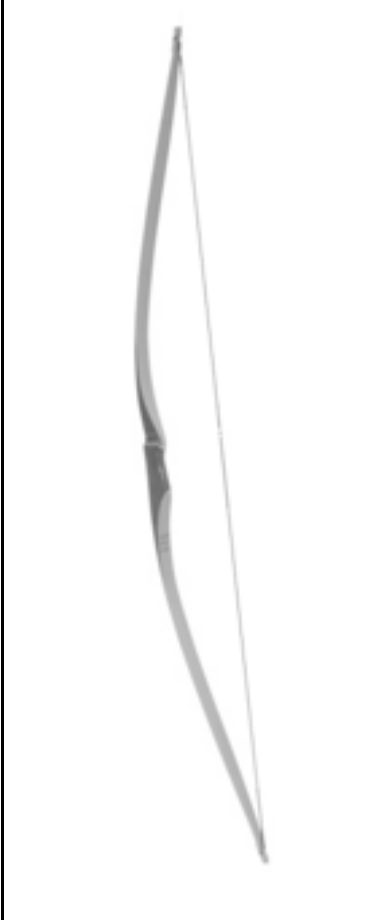


This diagram shows how right eye dominance would look.



The Right Stuff

It's time to look at equipment. With longbows the bow length is measured from tip to tip. With a recurve bow the bow length is the length of your riser plus the length of your limbs this is known as the (AMO) length. With compound bows as discussed earlier the bow length is measured from the centre of each cam this is known as axle to axle length

The Bare Bow

<i>Longbow</i>	<i>Olympic recurve bow</i>	<i>Compound bow</i>
		

Choosing Your Bow Poundage

DRAW LENGTH	RECOMMENDED BOW SIZE (RECURVE)
14 to 16 inches	48 inches
17 to 20 inches	54 inches
20 to 22 inches	58 inches
22 to 24 inches	62 inches
24 to 26 inches	64 to 66 inches
26 to 28 inches	66 to 68 inches
28 to 30 inches	68 to 70 inches
30 inches and above	70 to 72 inches

Bow poundage – This will be determined by how much you can comfortably pull back. For adults just beginning I recommend starting with 22lb or 24lb. For children consider around 12lbs to 16lbs

IMPORTANT NOTE: when choosing a bow draw weight remember when shooting a competition you will shoot anywhere from 72 to 144 arrows per event. It is important that you choose a bow weight that you can comfortably draw repetitively **NOT** the maximum weight you can draw. Take your time to build your draw weight over time.

Longbows

If you have decided that you like the idea of shooting a longbow, then the biggest decisions you have to make are what bow length and what poundage your bow will be.

The table above is a guide to help you decide on bow size. The best place to start if possible is to try a bow out. As mentioned previously Come 'n 'Try sessions can be a good place to try out various bows. Check if your chosen club has longbows available for come and try.

Recurve Bow

If you are going to shoot a recurve bow, the decisions you need to make are what size of riser you want, what limb attachment system you are going to use, total bow length and draw weight.

We start with risers, the common riser sizes are 23, 25 or 27 inches in length. Most adult archers will use a 25-inch riser. If you are very tall (188 cms or above) then you might want to consider a 27 inch riser. 23 inch risers are generally used by children.

With regards to limb attachment system the most versatile system is the international limb fitting system (ILF). The advantage of today's component-based bows is that you can change the size and poundage of your bow by swapping out the limbs. You can also choose from a large range of limb construction material and manufacturers

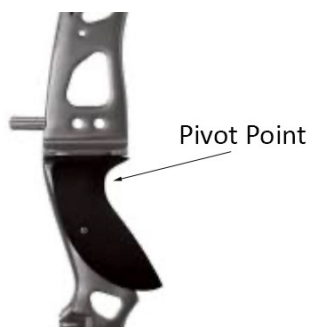


The other type of limb fitments use a screw in bolt. These are generally used on cheaper, low end take down bows, they also offer some flexibility with respect to limb construction material and manufacturers

In my view, ILF is the better option as it gives you somewhat more flexibility in your choice of limbs.

Brace Height

This is the distance from the pivot point (The deepest part of the grip) to the string at rest.



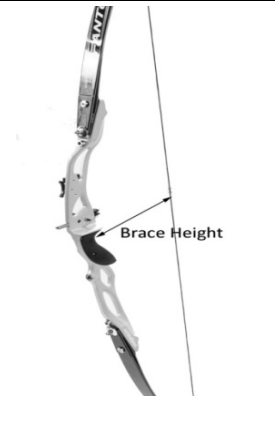
Brace height is something relevant to all bows. The bow manual will provide the recommended brace height for that particular bow. In some cases, on recurve bows, the brace height is determined by the size and type of limbs so please read instruction manuals carefully.

Longbows Bows

Brace height is measured from the deepest part of the grip, known as the pivot point, back to the bowstring at rest height. Most longbows will have a brace height of around 6 to 7 inches.

Recurve Bows

BOW LENGTH (AMO)	BRACE HEIGHT
54 inches	7 inches
56 inches	7.25 inches
58 inches	7.25 to 7.75 inches
60 inches	7.5 to 8.25 inches
62 inches	7.75 to 8.5 inches
64 inches	8 to 8.75 inches
66 inches	8.25 to 9 inches
68 inches	8.5 to 9.25 inches
70 inches	8.25 to 9.5 inches
72 inches	9.5 to 9.75 inches



Brace height once again is measured from the deepest part of the grip, known as the pivot point, back to the bowstring at rest. Most bow and limb manufacturers will provide you with their recommendation on brace height but as a starting point give you can refer to the table above.

AMO stands for Archery Manufacturers Organization.

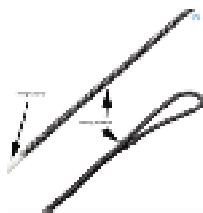
The industry has a standardized method of measuring arrow length, and you will often see this referred to as AMO Length

Compound Bows

Brace heights for compound bows are provide by the bow manufacturer and vary from maker to maker. Generally, compound bows come with their string and cables fitted in the factory so when you receive your compound bow it will have already had the brace height set. Typically the brace height for a compound bow is around the 7 inch mark

Bow Strings

Bow strings are made from multiple strands of a special bow string material. The string then has a serving around the ends of the string to form a loop which slips over the bow limb tip and a center serving.



The strand count is the number of strands used to make the string. The number of strands will be determined by the material used and the weight of your bow.

As a rule of thumb, the lighter your bow draw weight the fewer strands conversely the heavier the bow draw weight is then you will have more strands. For a recurve or longbow, the strand count is typically anything from 12 to 18 strands, on a compound its typically around 18 to 22 strands.

When it comes to what material is used with recurve and longbows the cheaper commercial strings around the \$15 to \$20 mark are usually made from Dacron or Spectra (also called Fast Flight).

More expensive strings and custom-made strings are made from newer materials, such as ultra-high modulus polyethylene and tend to have less creep (stretch) and greater performance.

When I make strings, I tend to use the following string materials

- For compound bows, I use BCY 452X.
- For recurve and longbow, I use BCY 452X, D97 or X99. I sometimes use B55 (Dacron) for longbows.

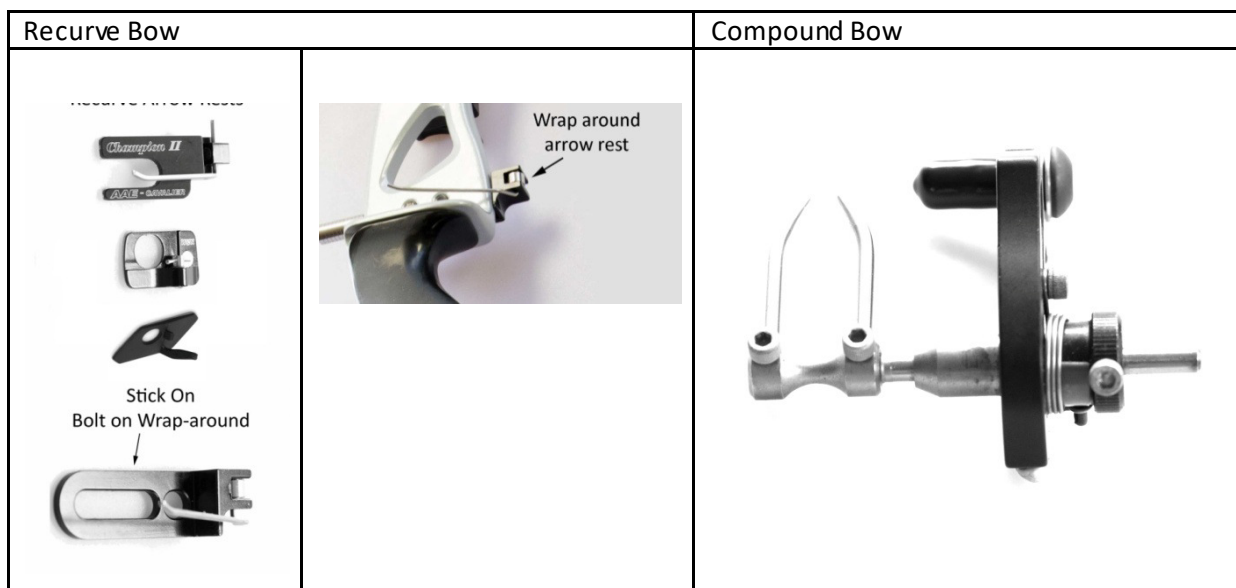
NOTE: Learning how to make your own strings gives you the benefit of having custom strings that suit your bow and shooting style.

Setting Up Your Bow

Arrow Rest

Recurve and compound bows use arrow rests. With a longbow the arrow generally sits on a piece of leather attached to the bow shelf.

The arrow rest is mounted to the riser. There are several different types of rests below is a sample. The first three are attached to the window cutaway using double sided tape. The fourth rest called a wrap-around rest attaches to the outer side of the riser (center image) with a bolt. Compound bow arrow rests are typically the wrap around style.



For recurve bows, my preference style is the wrap around as it is unlikely to dislodge and, in my view, provides a more stable platform.

Nocking Points

All bows require a nocking point, which is the location on the string where you attach (nock) the arrow.

Once you have attached your arrow rest the next thing to do is add your nocking point. To do this you are going to need a Bow-Square and your choice of nocking point.

For recurve and longbow there are essentially two options for nocking points: Brass or Tie-in



My preference is to use the brass nocks. My reason being they are easier to reposition should you need to redo your nocking point. Which will happen for a range reasons including, turning your bow.

With a compound bow in addition to the nocking point you also install a D-Loop.

The brass nock and D-loop material are available from your archery supplier. With respect to the tie in nocking points most people will use waxed dental floss or light weight serving material.



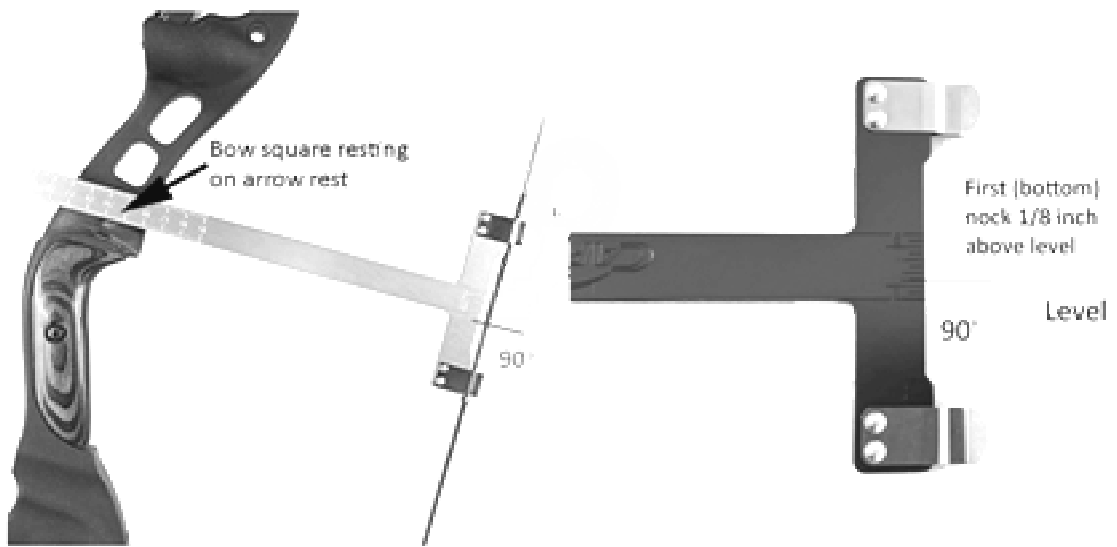
Installing a Nocking Point

Begin by stringing your bow. Clip your bow square to your bow string as shown below. Rest the long end on your arrow rest. Ensure your bow square is level at 90 degrees to the string as shown.

Your nocking point is a fluid concept and you might need to change it a few times to get it in just the right position. This is why I recommend using the crimp on brass nocks discussed earlier. They are easily moved.

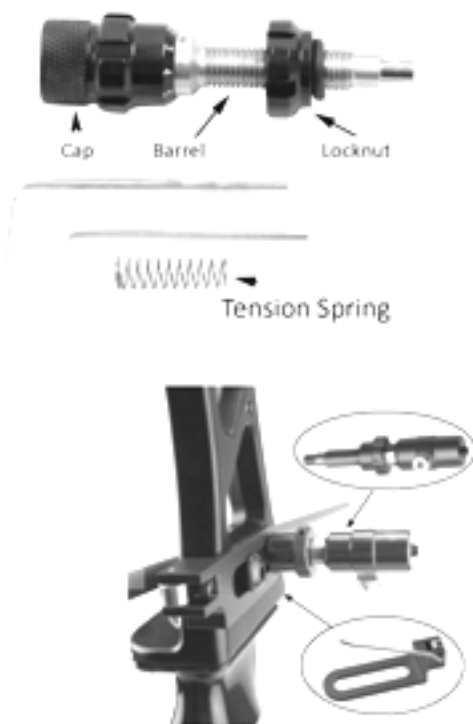
If you are unsure how to do this, ask a fellow archer they will be happy to help out or, if you bought your bow from a local suppliers, ask the store to show you how to do this.

The location of your nocking point is important as it affects the flight of your arrows.



Plunger Button

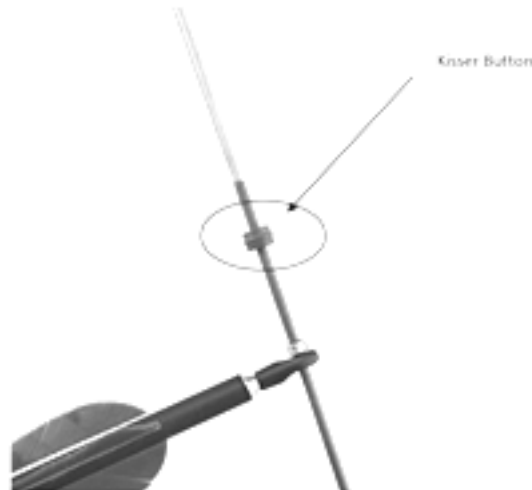
The plunger, also called a “cushion button,” is used on recurve bows and serves several purposes. It guides the arrow down the bow's centerline during the shot and moderates (within reason) the arrow's flexing upon release. Properly tuning your plunger button is an important step in tuning your bow. The plunger position and pressure setting affect arrow flight.



Kisser Button (Optional)

The optional kisser button is a simple device that is attached to your bow string to help with shot consistency.

The logic behind it is that it is one more reference point on the face to ensure that the string and drawing hand are set in the same position for every shot after shot. At full draw the kisser button should touch your lips.



Clicker (Optional)

A clicker is an optional accessory whose purpose is to ensure consistent draw length. There are various types but all do the same thing. Pictured below on the left is the basic style clicker that mounts to the inside of the bow window. The second mounts under the sight mount and wraps around onto the arrow. Whilst a clicker is an optional component it is highly recommended as it helps to deliver a consistent draw length thereby improving shot consistency.



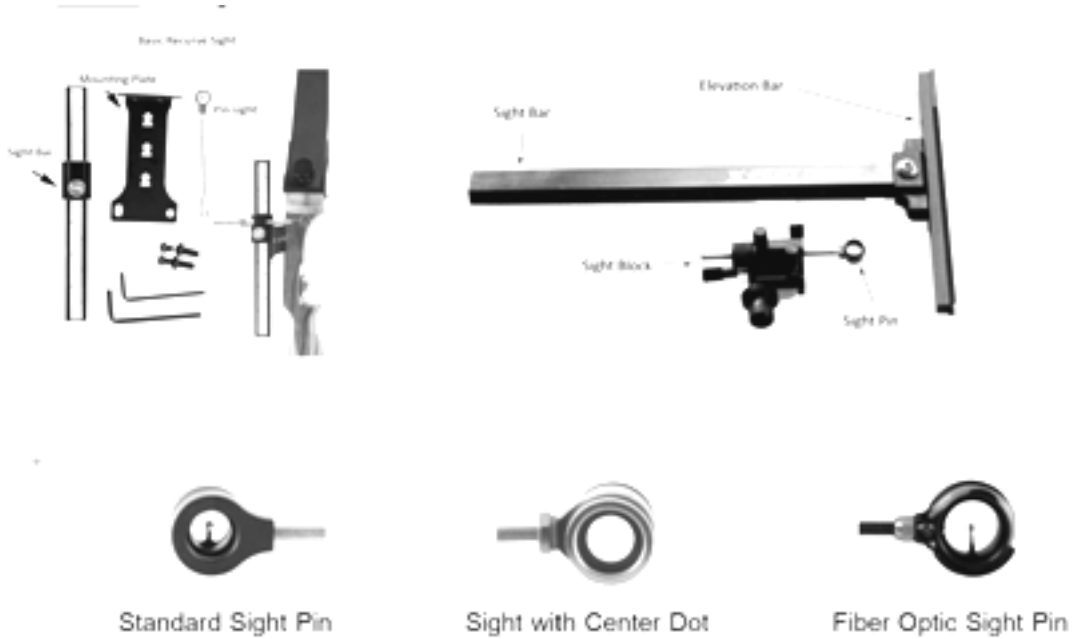
NOTE: If shooting a Longbow in competition, kisser buttons and clickers are not permitted.

Sights

Recurve and Compound bow sights are similar however compound sights are usually heavier duty and have more robust mechanisms than recurve bows.

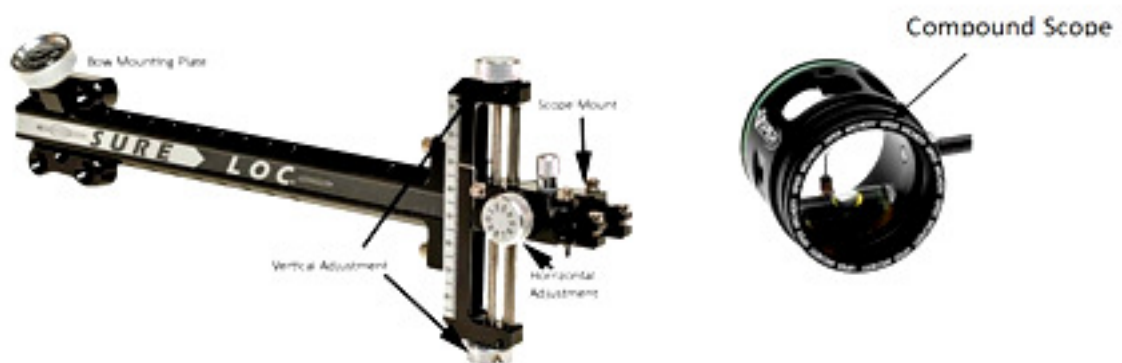
Longbows do not have sights.

Recurve Bow Sight – (Magnified scope lenses are not permitted)

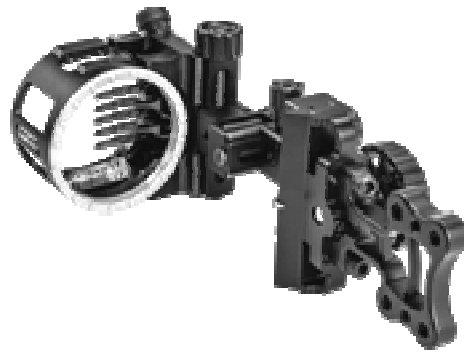


Compound Sights

Archers using compound bows may use sights with multiple pins or telescopic lenses. The image below is a typical target sight.



The sight below is also a compound sight but is used primarily for field Archery and Hunting. If you are interested in shooting field archery and funds are readily available then it's worth considering this as an optional add-on to your kit.



Stabilisation

Stabilisers are not there to make you bow look pretty or to make you look cool, they have an important function! This is to help improve your shooting. They are engineered to very specific specifications.

Do you NEED a stabiliser? The answer in short is no. However, in my view, stabilisers are an essential key in aiding you to balance your bow, maintain a steady aiming pattern on target and reduce vibration during and after the shot.

The image below may look like a stabilizer but it's NOT it is a boom arm from a microphone stand. Sadly I have seen some archers use these. Honestly, they add significant weight to your bow making it more difficult to manage and are unlikely to improve your shooting.

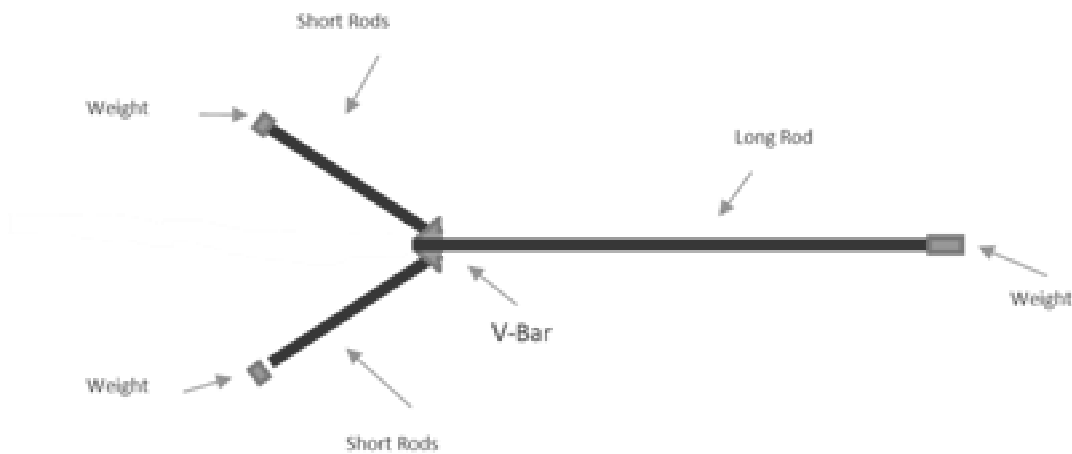


Stabilisers come in many sizes and configurations, but all serve the same purpose. They shift the center of gravity, produce a dampening effect, and stabilize the bow during the shot cycle by increasing the bow's inertia much like a tightrope walker who holds out a long pole. In short they help to maintain balance and slow down unwanted bow movement.

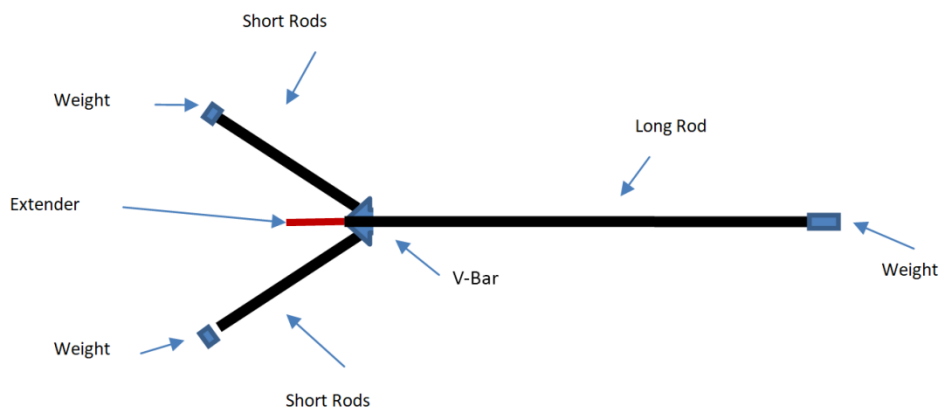
Without stabilisers, bows can feel unstable while you aim, potentially making it difficult to hold your bow stationary.

This basic setup below would typically be used on a Recurve bow however it is also acceptable for use on a compound bow. Typically, the front rod would be in the vicinity of 28 to 30 inches long and the two rear rods 10 to 12 inches.

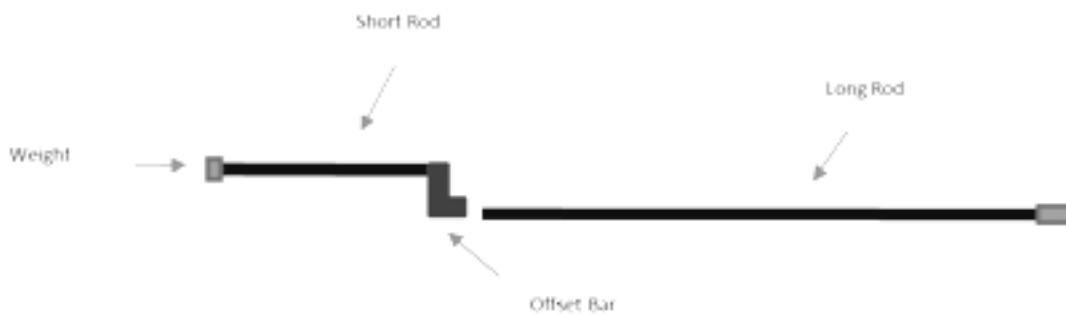
Standard Recurve Stabiliser Setup



In this variation below there is the addition of an extender. Extenders are best suited to recurve bows; they are designed to further change your bow's centre of gravity.



With compound bows the riser is generally set up to accept a front rod and a rear stabiliser using an off-set bar



As with the recurve setup, the front rod would be in the vicinity of 28 to 30 inches long and the rear rod 10 to 12 inches.

How much weight should I use?

This is much like the how long is a piece of string question. There are multiple formulae out there but in my view it's, ultimately what feels right to you. Most stabilisers are sold with some weight included but you may need to buy additional weights.

Starting point

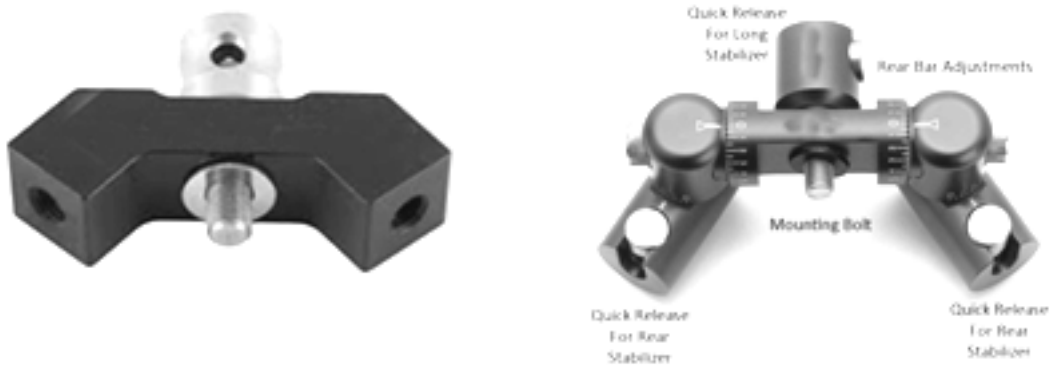
This is where I would recommend you start. With a lightweight set-up you add 140g(30oz) on the long rod and 120g (25oz) on each twin rear rods. Draw your bow and begin aiming (*make sure you have an arrow in the bow just in case*) if the sight appears to want to move up from where you are aiming then you need to add weight if the sight seems to want to move below your aiming point, then remove weight. If the bow feels too heavy, reduce the overall weight on each rod.

E.g., $140\text{gm} - 10\% = \text{approx. } 125\text{gm}$ and then for the short rods $120\text{gm} - 10\% = \text{approx. } 105\text{gm}$. Again, talk with other archers to get an idea of what they do.

V-Bars & Offset Mounts

V-bars are mainly used with Recurve bows but some archers will use them with their compound bow.

There are two style of V-Bar the fixed block shown on the left and the fully adjustable as shown on the right below. Both accept two stabilisers

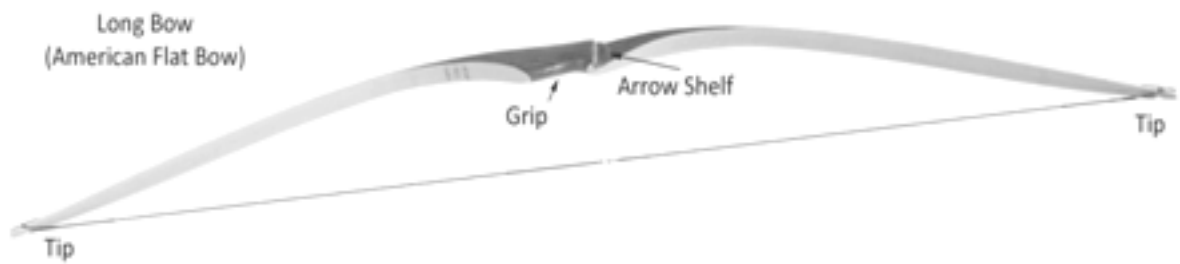


Below is an off-set mount these are used on Compound Bows. The offset mount only accepts one stabiliser



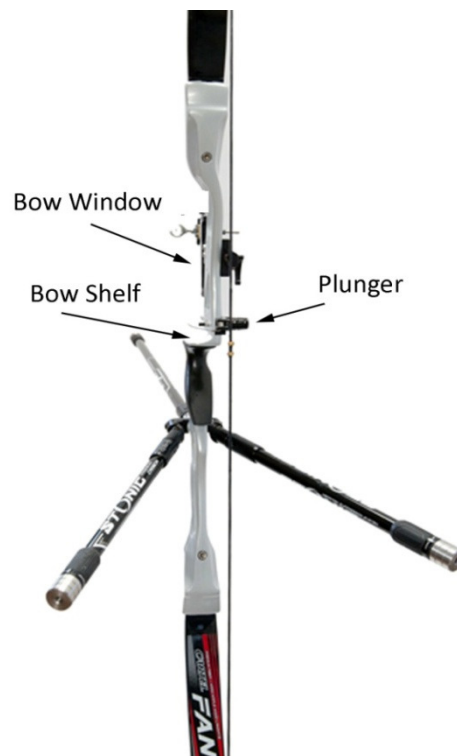
Bow - Full Set Up

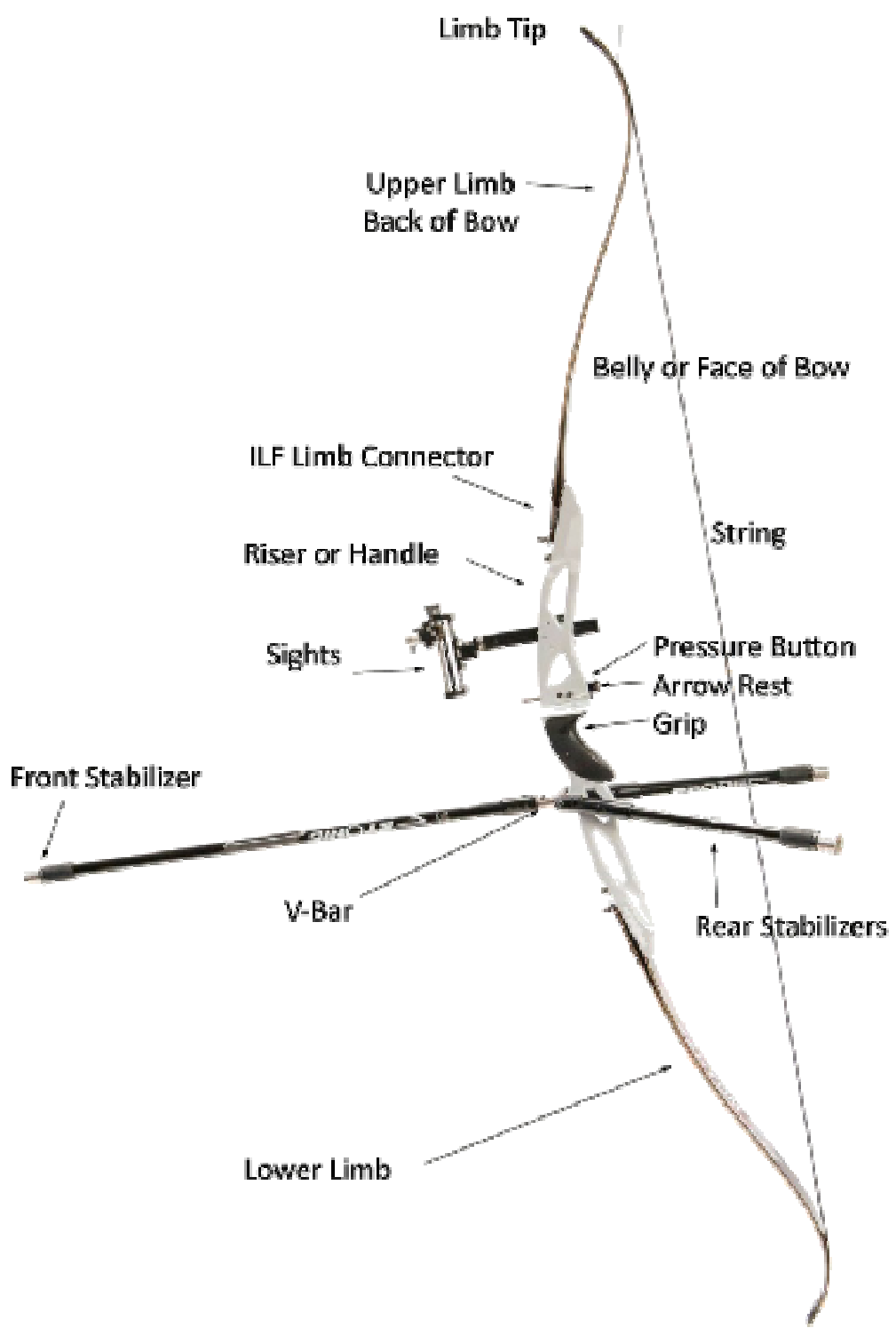
Longbow



The longbow is about as basic as it gets.

Recurve Bow

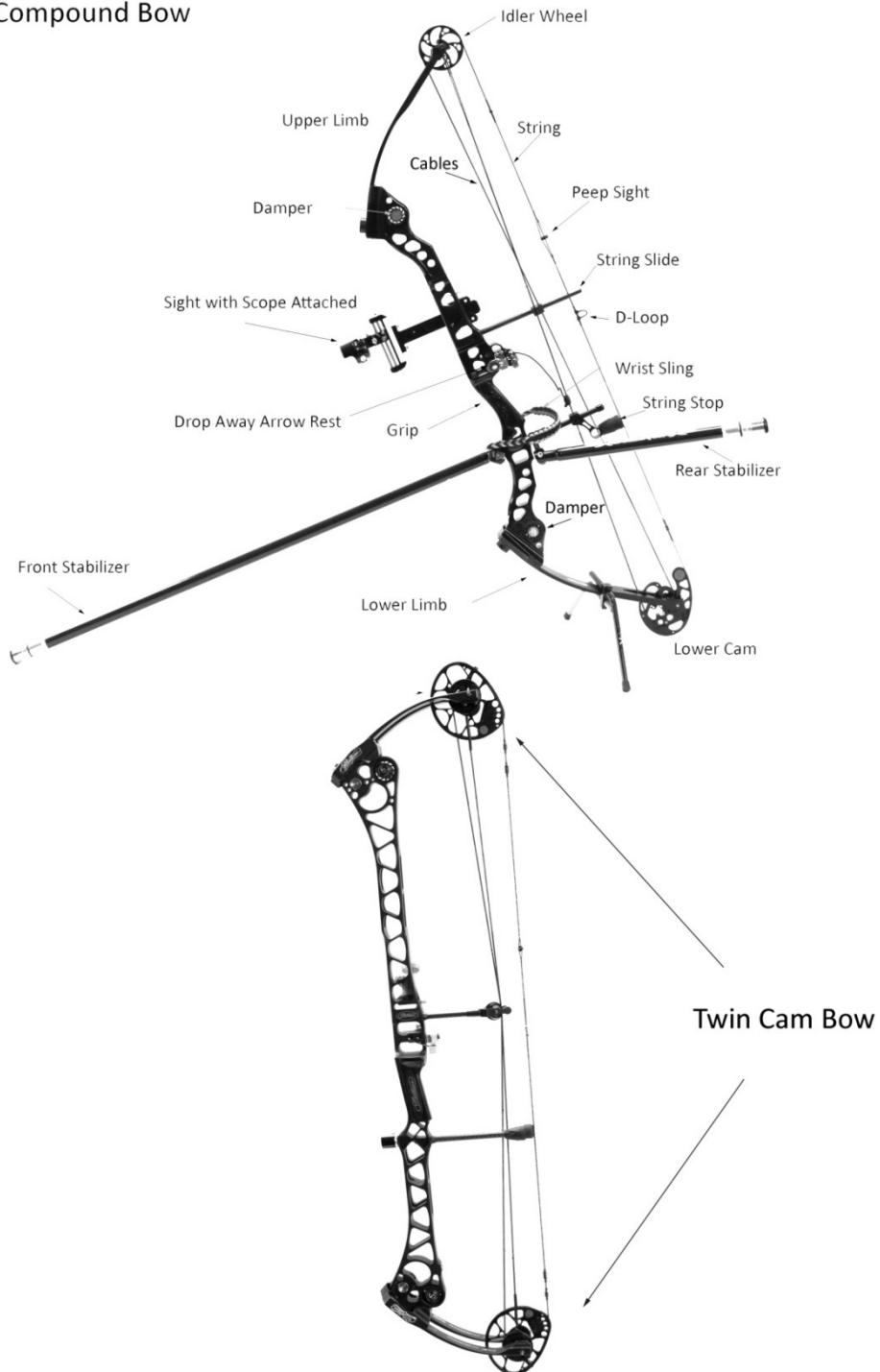




Compound Bow

The top bow is a Solocam (Mathews Conquest 4) it has a cam at the bottom and an idler wheel at the top. The second bow has two cams (Mathews TRX 7).

Compound Bow



Additional Components

To this point, I have only discussed accessories that relate to your bow. What I am going to do now is introduce the accessories related to shooting your bow.

Finger Tabs and Gloves

 <p>The image shows two different styles of finger tabs. The one on the left is labeled 'Shelf' and has a curved, shelf-like top edge. The one on the right is labeled 'Finger Spacer' and has a more rectangular shape with a central opening between the two finger loops.</p>	 <p>The image shows a basic, simple finger tab with two finger loops and a central opening.</p>
<p>This style of finger tab is used on a recurve bow. It features a finger separator and a chin shelf. Your finger positions will be 1 above the nocking point and 2 below</p>	<p>The tab above is a basic version which can be used for recurve and longbow or barebow recurve. Again you finger positions will be 1 above the nocking point and 2 below</p>
 <p>The image shows a finger tab with a strap across the middle and two circular buttons on the side. The brand name 'MARKSMAN GUITERS' is visible on the right side.</p>	 <p>The image shows a finger glove with a strap across the middle and a thumb loop.</p>
<p>The two options above are primarily used with Longbows. With the finger tab you will be using 3 fingers under the nocking point. With the glove you can use 3 fingers under or 1 above and 2 below the nocking point.</p>	

Release Aids

When shooting a compound bow ideally you will use a release aid. There are a myriad of options when it comes to release aid styles. Ultimately you will need to try a couple out and then use what feels most comfortable.



- Thumb Trigger Release requires you to actually press the trigger to shoot the bow.
- Back Tension release will fire the arrow once you are in the right position without you pressing a trigger.
- Wrist releases attach to your wrist and require you to pull the trigger with your finger. Wrist Releases are often used for field or hunting.

My preference is for a thumb/trigger release as I feel that I have more control over the shot. Your choice of release should be based on what feels most comfortable for you

Quivers

Quivers are used to hold your arrows and often have pouches for storing other items. There are a number of types and styles of quiver. Below are examples of the 3 types of quivers



- Field quivers as the name suggests are usually used for field events. The arrows face backward so they are less likely to get caught up in scrub or bushes.
- Target quivers the arrows face forward.
- A bow quiver mounts onto the bow and the arrows fit into the quiver. These are used primarily in Hunting or field archery. Again, this is a case of what suits you.

NOTE: Some Archers will use a field quiver for target archery. Again it's really a matter of personal choice.

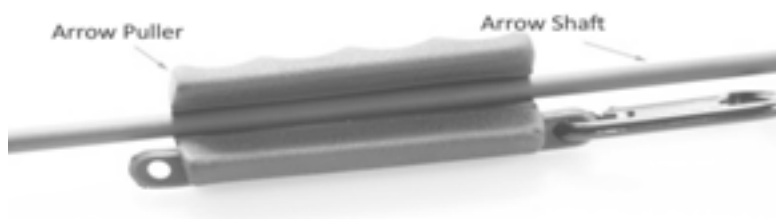
Arm Gurds

Used to protect the forearm from the bow sting



Arrow Pullers

Arrow pullers are optional but well worth the investment, less than \$20. They are used to make removing your arrows from the target butt easier.



Bow Stands

I personally consider a bow stand as an essential accessory as it supports your bow when you are not using it.



Typical Compound bow stand



Recurve and longbow stands

Wrist and Finger Bow sling

The purpose of the sling is to prevent the bow from slipping out of your hand as you release the arrow.



Wrist Sling

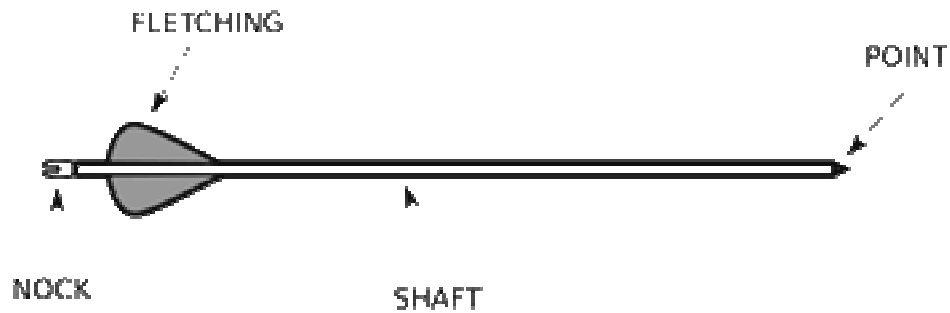


Finger Sling

Arrows

In order to shoot well you need to ensure you are shooting the right arrows for you and your bow. Arrows are generally sold in sets of twelve. I will start with an overview of anatomy and then move into how to select the right arrow for you.

Anatomy of the arrow

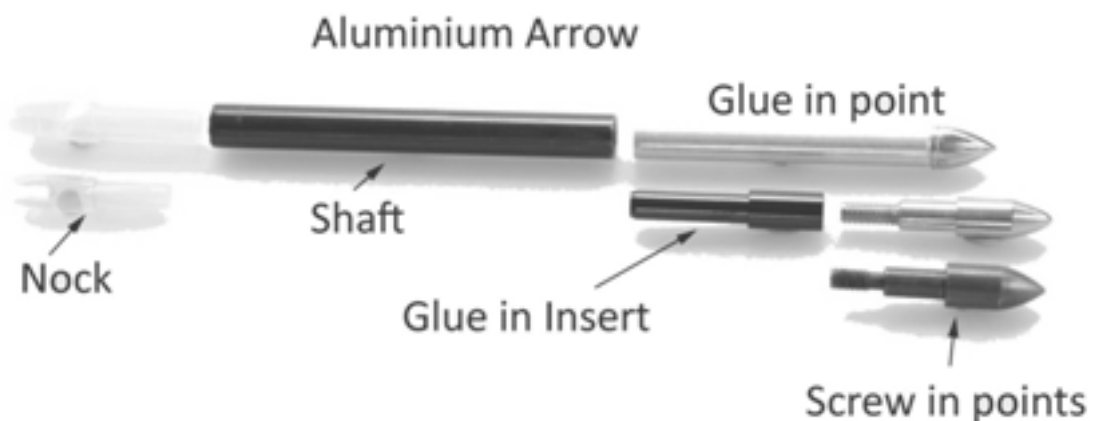


Arrows are made from a number of different materials...

- Wood
- Fiberglass – not recommended
- Aluminium
- Aluminium/Carbon Fibre composite
- Carbon Fibre.

Similarly, there are also different points and nocks.

The following diagram gives you an idea of how an arrow is assembled. The example shows glue in nocks and points.





The picture above shows an aluminium arrow shaft with glue on nock this example has been fletched with feathers. Feather fletchings / vanes are normally used on arrows used with a longbow and or for field archery

An option used mainly with carbon or carbon aluminium arrows is the pin nock. With this option a metal or plastic pin is glued into the back of the arrow and the nock is pushed onto the pin. Using the pin nock system helps protect your arrows from what we call a "Robin Hood" when an archer splits an arrow already in the target with another arrow.



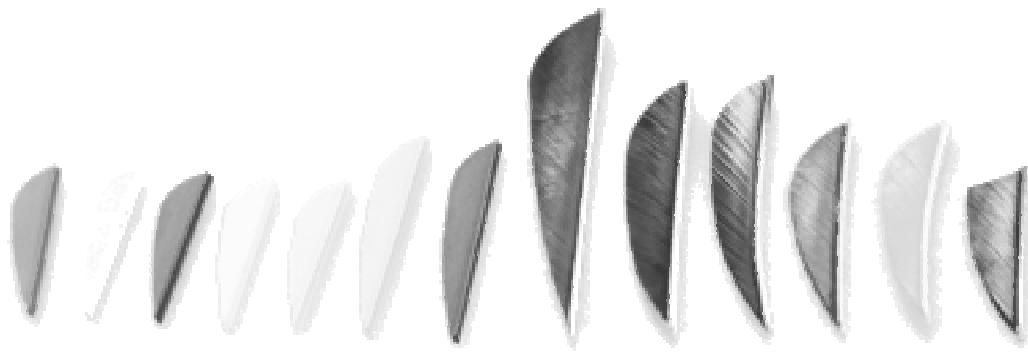
Robin Hood – One arrow goes down the back of another arrow

In Australia your arrow choice will be governed by the following

BOW	PERMITTED	NOT ALLOWED
Longbow	Wood or Aluminium	Carbon or Carbon/Aluminium
Recurve	Aluminium, Carbon/Aluminium or Carbon	Wood
Compound	Aluminium, Carbon/Aluminium or Carbon	Wood

Fletches / Vanes / Feathers

Fletches are attached to the rear of your arrow and stabilize the shaft during flight by causing it to spin as it leaves the bow. Fletches are typically made from plastic material or from feathers. They come in a variety of colours and sizes. Arrows typically have three fletches installed on them. Fletches are also known as vanes or feathers.



As mentioned above arrows come in sets of twelve this is because arrows are considered as a disposable element, they can break or bend beyond repair and can get lost. Similarly fletches can come off. It is for this reason that I recommend you learn how to fletch your own arrows. To do this you will need a fletching jig.

Fletching Jigs

Fletching Jigs are relatively inexpensive and easy to use. Below is a typical single arrow fletching jig and sells for around AUD \$70



Arrow Points

As with all things archery there are a number of different types of points available. Your point choice will be governed by but not limited to the following...

- Bow type
- The type of arrow
 - Wood, Carbon, Carbon/Aluminium, or Aluminium
- Your shooting preference
 - Target, Field, Hunting
- Eg with wood arrows you would use a glue on point



NOTES:

1. Whilst still available I do not recommend fibreglass arrows as they have a tendency to shatter easily.
2. The use of broad head arrows is not permitted in target archery and you will most likely find your club will not permit their use as they wreck the targets.

Arrow Selection.

Selecting the correct arrow for your setup is crucial. Arrows have what is called a Spine. The Spine is the measurement of the arrow's flex or bend. Arrow shafts are sorted by spine measurements, and manufacturers designate them with a number and percentage of straightness. You'll find the spine number and straightness identifiers on the arrow's label. Some common numbers for spines are 350, 400, 500 and 600. The lower the spine numbers the stiffer the spine.

Therefore a 300-spine arrow has less flex than a 600-spine arrow. And Straightness might look like this .003 or .005 the lower the number the straighter the arrow.

Arrows also have a weight, known as Grains Per Inch (GPI). The higher the number the heavier the arrow.

As a novice you really don't need to worry too much about straightness or GPI. This will become more of a consideration as you progress with your archery.

Group T5 gives you options on arrow spine and arrow type.

Group T5			
*620-670R	0.620-0.670	A/C/E	6.1
*600-650R	0.600-0.650	X10	7.0
620	0.620	ProTour	6.7
*610-660R	0.610-0.660	A/C/G	7.3
3-04	0.680	A/C/C	7.2
660	0.660	Carb1	6.6
630	0.630	Inspire	7.9
670	0.670	Apollo	7.7
2013	0.610	75	9.0
1914	0.658	X7	9.3
1916	0.623	75	10.0

So now you select your preferred arrow in this example I will select an Easton A/C/C 3-04 680 spine which has a weight of 7.2 grains. Arrow selection becomes to some degree a matter of choice

What arrow choice is recommended.....

- Compound and Recurve Bows select either – Carbon, Carbon/Aluminium or Aluminium
- Longbow select either – Aluminium or Wood

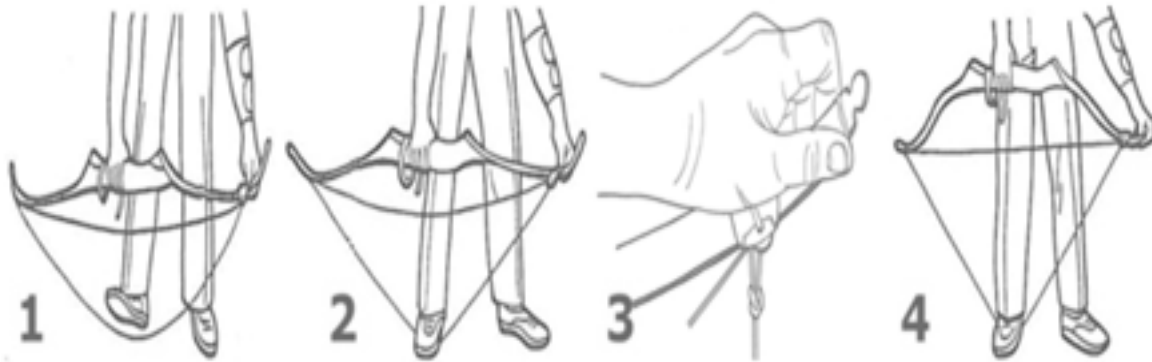
Bow Stringers.

Used with both longbow and recurve bows

For safety I recommend always using a bow stringer. A bow stringer is an apparatus that makes it easier and safer to string your bow. There are multiple options out there including making your own. My preference is for this type as it fully encases the limb tip.



Stringing Your Bow (Recurve / Longbow)



This end covers the top limb tip
leaving it clear of the string groove



This end fully covers the bottom limb
tip preventing the string from slipping
off during stringing

1. Put the sting on your bow by placing the larger loop of the string over the top limb sliding it down the limb below the tip next place the smaller loop over the bottom limb tip string groove
2. Attach your stringer as described above
3. Place your foot on the stringer cord
4. Holding the riser pull the bow upwards
5. With your other hand slid the top bowstring look up towards the bow tip until it slips into the bow tip groves
6. Ensure the loop fully engages on the tip
7. Let the bow stringer down and remove.

Tools

Before we get down to shooting your bow, I am going to go through some of the tools and extras that I believe are essential. There are probably more but this is a good place to start.

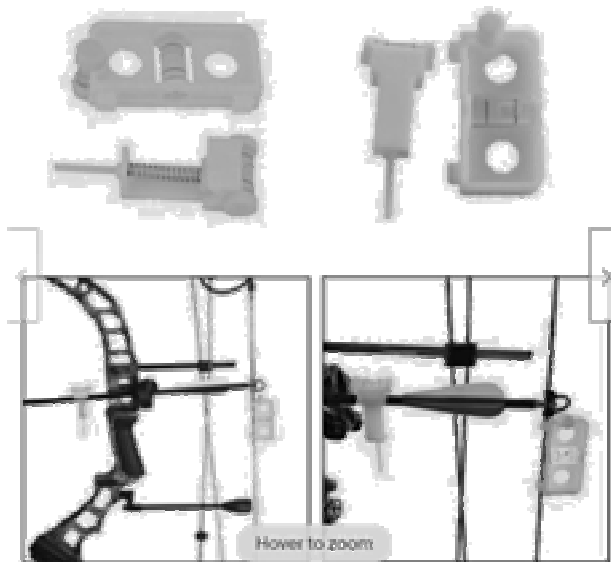
Firstly, pretty much every component you buy will come with its own set of tools including allen keys **PLEASE KEEP THEM** as they are often specific to that component and sometimes it is not possible to use an off the shelf tool to adjust them. Also make sure you have both metric and imperial size allen keys.



Nocking Pliers



Allen Keys Metric & Imperial and Torque



Bow levels



Limb Alignment Tool



Phillips and Flathead Screwdrivers



Adjustable Wrench



Fletching Glue



Dental Floss



Lighter



Pliers



A decent multi-tool



If you shoot Compound then a set of D-Loop Pliers

Bow Cases

Your Archery equipment is expensive and needs to be correctly stored and protected. As part of your initial purchase, I recommend you get yourself a good quality bow bag / case. There are many options available from hard cased to utility bags. Here are a few styles for reference.

	
<p>Compound Hard Case</p>	<p>Recurve Hard Case</p>
	
<p>Compound Soft Bag</p>	<p>Backpack – Come in both Recurve and Compound Styles</p>
	
<p>Soft Recurve Bow Case</p>	<p>Soft Longbow Case</p>

What Do I Need to Get Started?

The following table outlines what I would consider the basic equipment you need to equip yourself for Archery. There are of course different views. In the appendix is a list of recurve bow essentials recommended by Bill Nicholson, President of Kalamunda Governor Stirling Archers.

STARTER KITS

Recurve Bow	Compound Bow	Longbow
Riser	Bow	Bow
23 inch	Arrow rest	Arrows:
25 inch (most common)	Compound Sight	12 x shafts (Wood or Aluminium)
27 inch	Scope Lens:	12 x points to suit
Limbs 22 -26 Lbs	4X (most common)	12 x nocks and pins
Bow string to suit	6X	Fletches/Vanes
Arrow rest	8X	Finger tab or Glove
Clicker	Arrows:	Arm guard
Pressure button	12 x shafts Carbon Carbon Aluminium Aluminium	Bow Stringer
Recurve Sight (It's better to spend a little extra on this item)	12 x points to suit	Bow Square
Arrows:	12 x nocks	Quiver
12 x shafts Carbon Carbon Aluminium Aluminium	12 nock pins if you are going to use pin nocks	Bow bag / Case
12 x points to suit	Fletches/Vanes	
12 x nocks	Release Aid:	
12 nock pins if you are going to use pin nocks	Thumb Trigger	
Fletches	Back Tension	
Finger tab	Wrist Style	

Arm guard	Wrist or finger bow sling		
Wrist or finger bow sling	Bow Square		
Bow Stringer	Bow stand		
Bow Square	Quiver		
Bow stand	Front Stabiliser 28" or 30"		
Quiver	Off-Set Bar		
Stabilisers 28" or 30"	Rear Stabilisers 8",10" or 12"		
V-Bar	Bow bag / Case		
Fixed Block - cost effective			
Fully Adjustable - best option			
Rear Stabilisers 10"- 12"			
Bow bag / Case			

NOTE: You are going to get damage especially to your arrows during shooting. My advice is to have additional fletches and Nocks on hand and if you budget permits a second set of Points this will allow you to repair and maintain your arrows. Some of us will also have additional shafts on hand so we can replace lost or arrows that are damaged beyond repair.



PART THREE

SHOOTING YOUR BOW

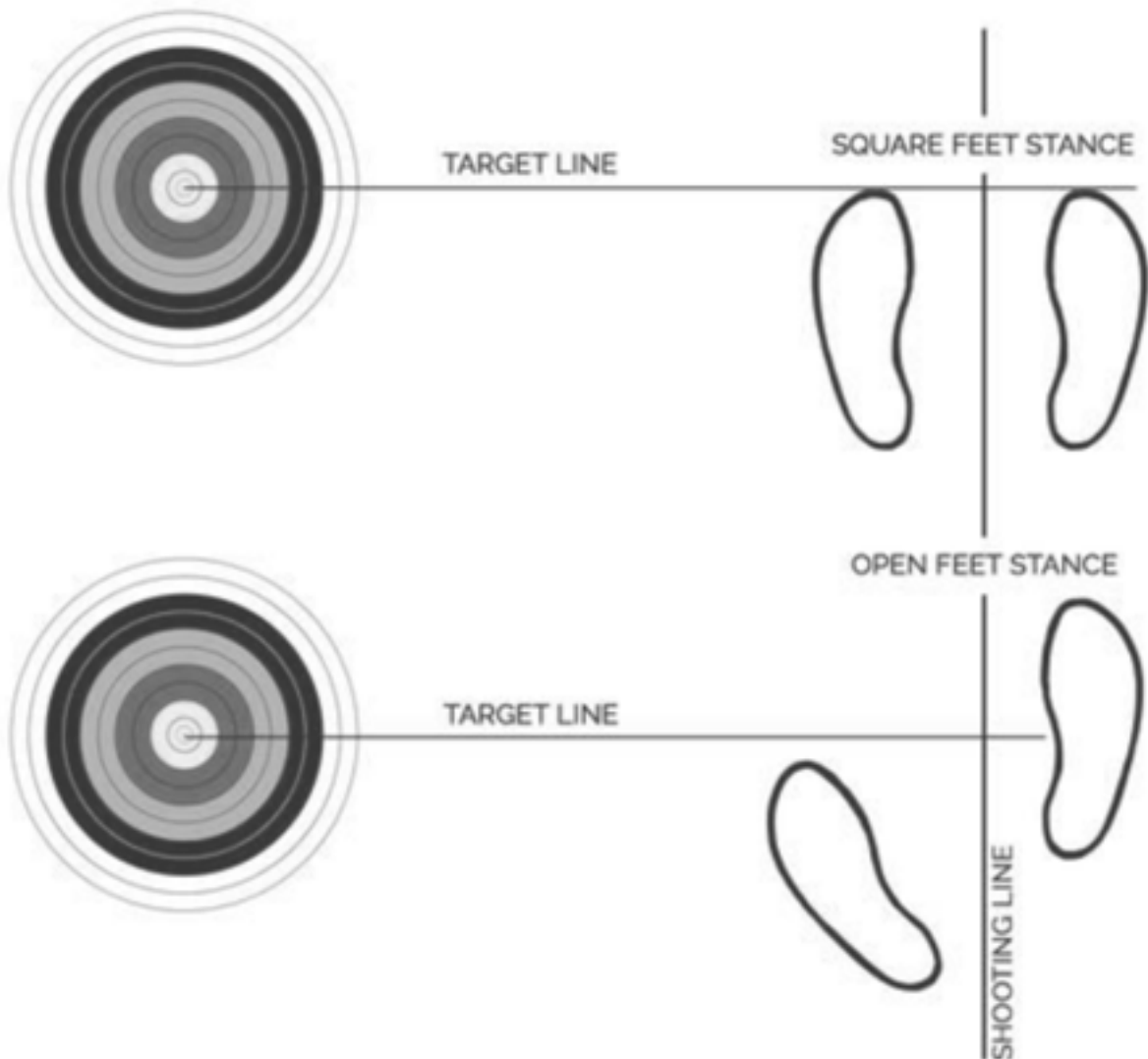
The 10 steps to shooting a bow are:

	Standard Shot Cycle
1	Stance
2	Nock your arrow
3	Grip you bow
4	Set your draw hand or release aid
5	Pre-Draw
6	Draw
7	Anchor
8	Aim
9	Release
10	Follow Through

If you search the internet you will find various examples of the shot cycle. Also some coaches will use a variant of the model shown here. The key here is use which ever you prefer. As for me I prefer to keep it simple and use the shot Cycle above.

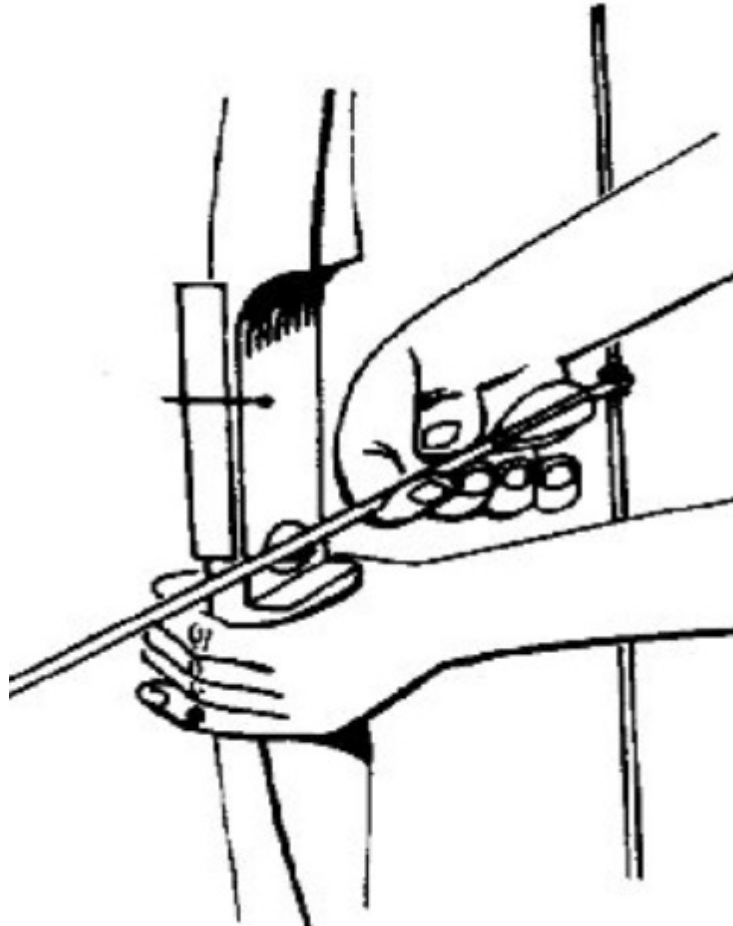
1 Stance

Stance refers to how you stand. There are two options Closed where your feet are at 90° to the target. Or Open where your feet are at an angle to the target. (See diagram below). Although many coaches will get you to shoot with a closed stance, the bottom line here is stand what feels most comfortable and delivers consistent results for you.



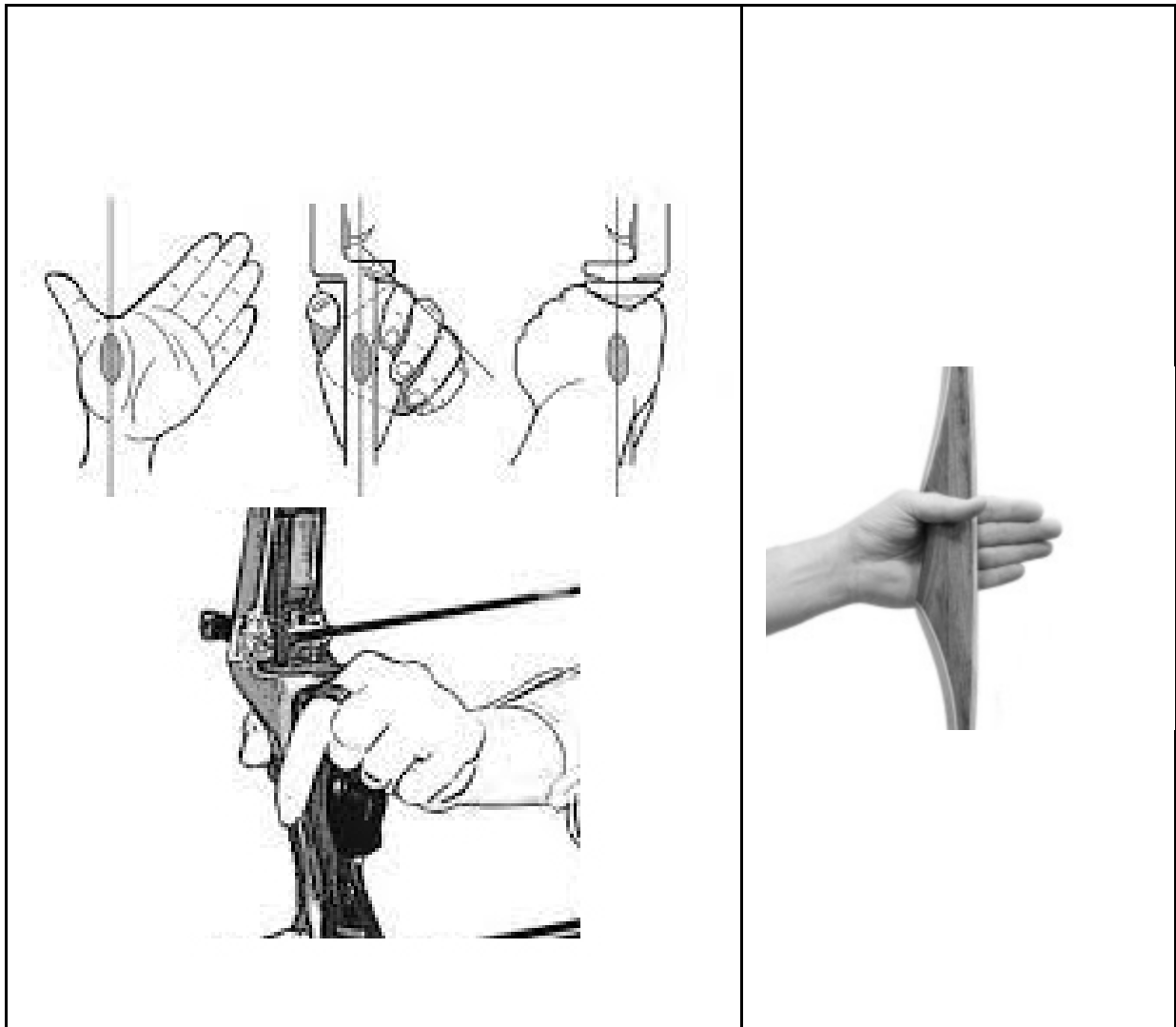
2 Nock your Arrow

With your bow facing towards the target, attach your arrow to the string at the nocking point, this is called nocking your arrow. Always point your bow towards the target when you have an arrow loaded



3 Grip

This refers to how you hold the bow with your bow hand making sure you have the correct hand position on you bow



4 Setting your Draw hand

Your draw hand is the hand that you draw the bow string back with. Here you are being asked to make sure you have the correct grip placement (recurve) or have your release aid set on the D-Loop (compound)

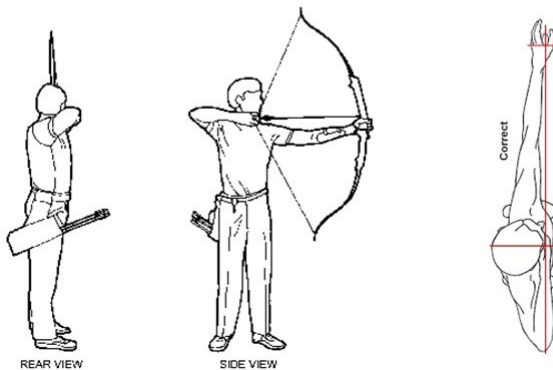
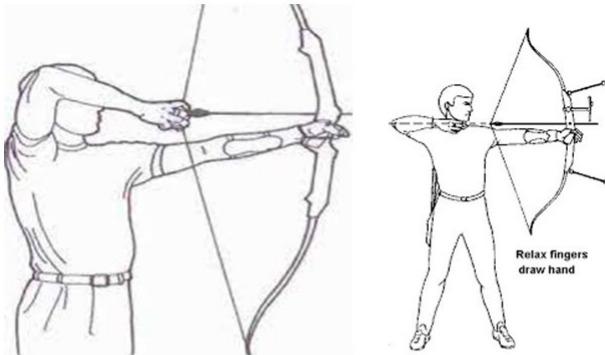


5 Pre-Draw

This is when you centre your focus on your upcoming shot. Take a couple of deep breaths and relax. Some people will use this time to visualize their shot.

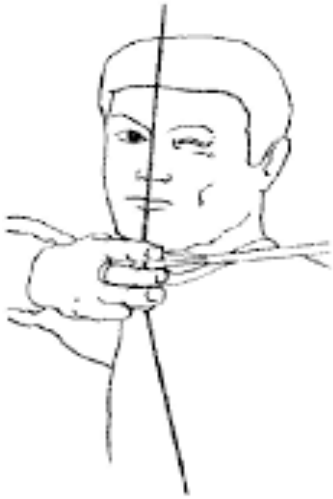
6 Draw

The Draw principle is the same for recurve, longbow and compound. Begin by raising your bow arm keeping your bow level and pointed towards the target. Draw the arrow straight back towards you. Do not raise the bow and draw the string back at the same time. They are two separate actions



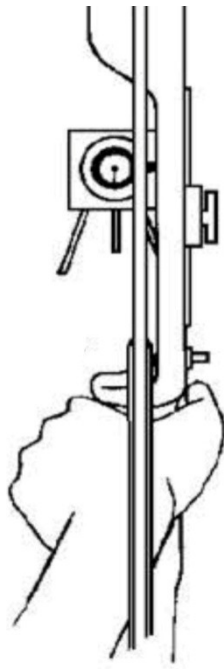
7 Anchor

To anchor make sure you are just shy of full draw. If you are using a clicker (recurve only) this is just before the arrow goes through the clicker.



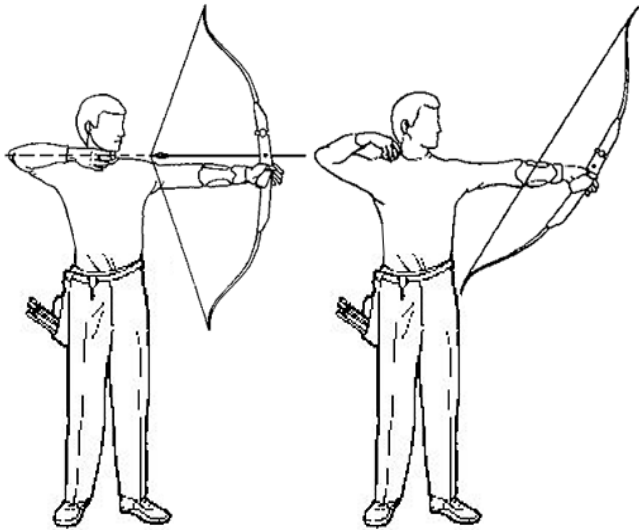
8 Aim

Using your dominant eye look through your sight window aim at the target.



9 Release

Before you release complete your draw which is as soon as your arrow passed through the clicker (recurve only) or you are at full draw no further travel is available (compound), release the arrow. Keeping your bow arm up until after the shot is completed.



10 Follow Through

Is simply the part of the release which continues once the arrow has left the bow. Typically the bow will rotate forward Do not drop your bow arm until after this rotation. Your draw/release hand will travel backwards away from your anchor position

NOTES:

1. Be sure not to let your bow arm drop down until after the shot is completed.
2. Do not try and look at your arrow as it travels towards the target (known as peaking) and will have an effect on your shot.
3. If you want to see where your arrow struck the target particularly at longer distances you can use a spotting scope mounted on tripod or binoculars.

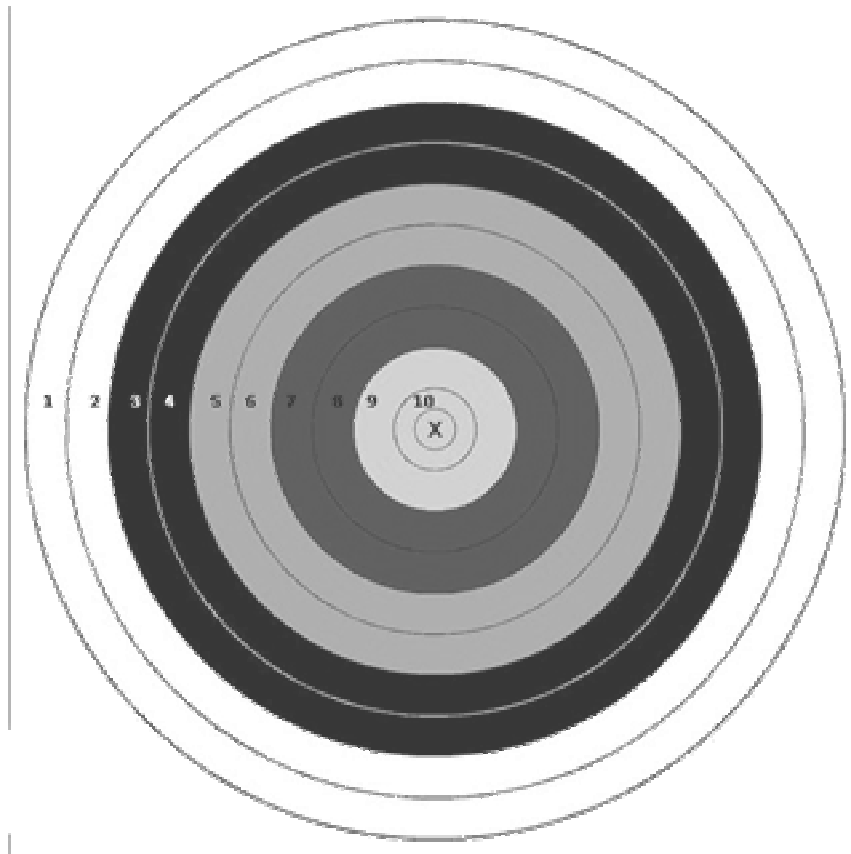


PART FOUR

Shooting & Scoring

Target Archery

Targets come in various sizes 122cm, 80cm ,60cm 40cm being the most common for outdoor target archery. They consist of 11 scoring regions 1,2,3,4,5,6,7,8,9,10 and X as shown on the diagram below



When shooting you shoot 6 or 3 arrows at a time depending on the shoot you are doing. This is referred to as an "END" you score your arrows based on where you hit the target. If your arrow cuts the line then the higher value is awarded. The X is used to determine the winner in a competition. The archer with the most "X's" is the winner. Lets say you shoots a perfect 60 (4 10's and 2 X's) your opponent also shoots a perfect 60 (2 10's and 4 X's) in this case your opponent would win.

Some Basic Terms

Flight

- This the name of the shoot you are competing in e.g. Geelong which consists of 90 arrows shot at a distance or 30mtrs on a 122cm Face

Round

- The Geelong is split into 3 rounds of 30 arrows each

End

- Is the shooting of each set of 6 or 3 arrows (depends of the event)

Shooting, Classifications

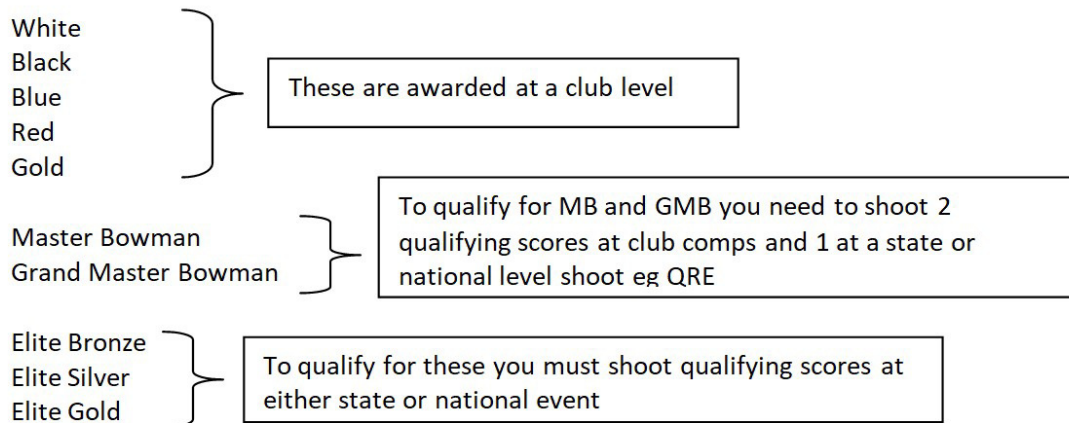
The classifications below are defined by A.A.

Class: is determined on your age

- Under 12 - Joeys
- Under 14 - Cubs
- Under 16 - Intermediate
- Under 17 – Cadets
- Under 21 - Junior
- Open 21 to 50
- Master 50 to 60
- Veteran 60 to 70
- Veteran Plus 70 +

Division: is determined by the type of bow you shoot e.g., recurve, compound, longbow etc

Classification: is determined by the scores you shoot during club competitions and are



PART FIVE

Safety and Shooting Etiquette

The following are the basic rules to be followed on the shooting range at all times. Check with your club for any variations they may have.

Always check your equipment prior to shooting to ensure it is put together correctly and that there are no loose or broken parts.

1. Bow

- i. Limbs
 - Cracks and twisting particularly the TIP and STRING NOCK
- ii. Riser
 - Limb bolts
 - Sights
 - Arrow rest
 - Plunger
 - Stabilisers
- iii. String – check for fraying
- b. Arrows - Nock, Fletches, Shafts, Points

2. Range set up

- a. Make sure the target is firmly affixed to the ground with the use of pegging
- b. Ensure there is adequate clearance behind the target to accommodate overshooting (50Mtrs as a minimum)

3. Personal Safety

- a. Wear closed in shoes
- b. Do not wear loose fitting clothing as these may get caught in the string
- c. Olympic recurve / longbow – always use a finger tab and arm guard
- d. Compound – always use a release aid

4. General Safety

- a. Never walk around with an arrow loaded in your bow
- b. When you have an arrow in the bow always face the target
- c. Do not shoot if other people are in front of the shooting line

5. Shooting Control

- a. When shooting at the club on shoot days the range is controlled by the Director of Shooting (DOS) The DOS has total control over the shooting and all archers MUST follow the instructions of the DOS
- b. The DOS controls the range using whistle commands these are
 - i. 2 Blasts of the whistle
 - Approach the shooting line and prepare to shoot
 - ii. 1 Blast shooting commences
 - iii. 3 Blasts shooting stops – collect your arrows
 - iv. 5 or more blasts – signifies an emergency STOP SHOOTING IMMEDIATELY
- c. NO RUNNING AT ANY TIME – walk to collect your arrows

6. Collecting Your Arrows

- a. Approach the target from the side
- b. Ensure no one is in front of the target when withdrawing your arrows
- c. Check your arrows for damage
 - i. Nock, Fletches, Shafts, Points

7. General Etiquette

- a. Always be respectful on the shooting line. Abuse, racist or anti-social behaviour is not tolerated
- b. Refrain from talking while others are shooting
- c. No Drinking (alcohol) Smoking or Vaping on the shooting line
- d. Always signal the DOS or COACH if there is an issue
- e. If in doubt ASK SOMEONE

Glossary

Arm-guard	Protective arm covering for bow-arm. Usually plastic, metal or leather.
AMO	Archery Manufacturers Organization. AMO length is a standard measurement of bow length that is designated to be three inches longer than the bowstring. It usually applies to Recurve Bows and other “conventional bows”. For example: If your bow has an AMO length of 60”, the length of your bowstring, and the actual length of your bow when strung will be 57”.
AtA	Axle to Axle (compound bow)
ATA	Archery Trade Organisation (ATA) formally known as the AMO this organization is based in the USA and sets manufacturing standards for archery equipment as well as promoting the sport of archery
Bare shaft	An arrow without fletchings.
Barebow	A bow with no sight or aiming devices.
Berger/Plunger Button Cushion Plunger	Spring-loaded button. Used to absorb some of the sideways force of the arrow after release
Bouncer (Bounce-out)	An arrow that strikes the target and then falls to the ground.
Bow-scale	Device used to measure the draw-weight of a bow
Bow-square	Device used to measure bracing height and nocking-point position.
Brace Height	Distance between string and pivot-point of the bow
Broadhead	Arrow point used in hunting. V-shaped with two or more cutting edges.
Butt	Backstop behind target face, usually straw or foam.
Cam	Eccentric pulley found on compound bows.
Chest-guard	Protective clothing used to prevent string catching on clothes or body.
Clicker	Metal or plastic device. Produces audible click when arrow is at full draw.
Clout	Archery competition where archers shoot at a peg in the ground.
Creep	Non-recoverable elongation unlike stretch which is basically elasticity or recoverable elongation
Crest	Coloured markings on the arrow shaft.
Compound Bow	Bow with eccentric pulleys and cables allowing high bow weights, but low weight at full-draw.
Draw	Pulling the bowstring.

Draw length	Draw length is the distance you pull back the string for comfortable and proper shooting form. It is generally used to determine what length arrows you need.
Draw-weight	Weight held by archer at full draw.
End	A specified number of arrows (usually 3, 4 or 6) shot between scoring.
Face	Target – usually made from paper or card.
Field Archery	Archery shot in wooded course.
Fishtailing	Movement of arrow from side to side during flight.
FITA	Federation Internationale de Tir a L'Arc. International target archery federation (now World Archery)
Flemish twist	The traditional longbow string with the loops made in the same manner as a rope, by twisting and splicing, rather than being a continuous strand of string material with the loops formed by serving. Can be used with olympic recurve, but not recommended.
Fletching	The feathers or coloured plastic “wings” attached towards the rear of an arrow.
Fletching Jig	Device used to hold arrow and fletching to ensure consistent positioning while the glue is drying.
Flight Shooting	Archery shooting for maximum distance.
Flu-flu	Large spiral fletching designed to slow arrow down quickly.
Foot marker	Device pushed into ground to ensure consistent foot position.
F.O.C.	Front of centre – the balance point of the arrow when the point is fitted.
Gap shooting	Using the distance between the arrow and the target as an elevation gauge.
Gold	Centre of the target (it is often coloured yellow).
Gold shyness / Gold fever	See Target Panic.
Group	Several arrows shot close together.
Kisser Button	Small plastic device attached to the string for alignment with mouth at full draw.
Grip	Where hand is placed on riser. Often plastic or wooden.
Limb	The energy-storing portion of the bow above and below the riser.
IBO	IBO stands for the International Bowhunters Organization . The International Bowhunters Organization has created a standard for bows which is produced through a test. The IBO speed is obtained by shooting a bow with the maximum pull weight of 80 pounds +/- 2 pounds.
Longbow	Single-piece bow. Traditional archery.

Loop	Portion of the string that is strung around the limb tip.
Loose	The action of releasing the string.
Nock	Plastic device at the end of an arrow in which the string is placed.
Nocking Point	Position on the string at which the nock is located.
Overdraw	Device used to permit archers to use arrows shorter than their normal draw length.
Paradox (archer's paradox)	The way the arrow bends around the riser on release.
Peak draw-weight	Maximum weight held by archer whilst drawing the bow.
Pivot-point	Position on grip farthest from the string.
Point	The pointed metal device inserted at the tip of the arrow.
Porpoising	Movement of arrow up and down during flight.
Puller	Rubber mat used to protect hands and provide grip when pulling arrows.
Olympic Recurve Bow	Bow with limbs that curve away from the archer.
Quiver	Pouch, usually worn around the waist or placed on the ground, used to hold arrows and other accessories.
Rest	A wire or plastic device on which the arrow sits before and during the draw.
Riser / Handle	The handle of the bow.
Serving	Protective wrapping of string material around string to prevent wear.
Shaft	The body of an arrow.
Sight Window	See Window.
Sling	Device to attach bow to archer's bow-hand.
Spine	The stiffness of the arrow shaft.
Stabiliser	Rod and weight combination attached to the bow to eliminate unwanted torque and vibration.
Stacking	Rapid increase in the draw weight of the bow, not in direct relation to the draw length.
String Walking	Used by bare bow archers. Fingers moved up and down string according to target distance.
Stringer	Device used to bend the limbs of a bow to allow the string to be attached.
Tab	Protector for string-fingers to prevent chafing.
Target Panic	Affliction where archer cannot hold the sight in the gold.

Toxophilite	Archer.
Tiller	A measure of the balance of the two limbs.
Tuning	Adjustment of the bow and arrow to provide most accurate and forgiving arrow flight.
TFC	Torque Flight Compensator. Device used to absorb vibration.
Windage	Horizontal adjustment of a sight to compensate for wind-drift.
Window	Recessed area of riser above the grip.

Additional terms may be found here:-

<https://assets.sportstg.com/assets/console/document/documents/1001.pdf>

Appendix- Courtesy of Bill Nicholson.

The following suggested equipment list was compiled and supplied by Mr Bill Nicholson President of Kalamunda Governor Stirling Archers

Item		Suggested
25" riser Right Hand		Kinetic; or Core Astral? Or Cartel Fantom (or similar)
Limbs	24 - 26 pound - Long	Kinetic or Core Prelude limbs or similar
bow string to suit 70" bow		
arrow rest		Avalon Tec One Maxx Rest
pressure button		Avalon Tec One button
sight	(Worth spending a wee bit more)	Avalon Tec One Maxx Sight
Arrows:		
12 x shafts	Skylon Radius (doz) - uncut	Skylon Radius shafts - 550 spine
12 x points to suit	Skylon Radius (doz)	Skylon Radius points for 550 spine
12 x nocks and pins	Skylon (doz)	Skylon pin nocks
fletches plus spares		AAE plastifletch EP16 (total of 50 or more - maybe 20 - cock fletch/30 for the other 2 fletches)
Finger tab		Cartel CR 306 or similar
arm guard		Avalon Stretchyguard ??
finger sling		WNS finger sling
Bow Stringer		any of your choice
Bow Square		any of your choice
bow stand		Cartel EZY Bow Stand
quiver	either front facing or field style	need to pick one you like and \$\$\$
30"-32" stabiliser	Topoint brand or Epic Stonic	Epic Stonic Plus Carbon Long Rod

Need soonish:			
bow bag			
Optional / for later:			
V-bar block			
V-bars			

Ref: Alternative Archery - England ... www.alternativess.com OR archeryshop.com.au OR
Toxophilite Archery (local) OR Archery Equipment (local)