

GET INTO ARCHERY | HANDY GUIDES



Setting up an Archery Range

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WWW.ARCHERYGB.ORG

Introduction

As with any sport, a special area is needed for archery practice and competition. This guide outlines the requirements needed to shoot – these include the size and shape of the space needed.

For archery conducted under the auspices of Archery GB all ranges must be registered, and where necessary have been assessed and, if necessary, dispensations agreed.

The range layout, the procedure of shooting and the presence of a coach, or qualified supervisor, are essential for the safe conduct of our sport. It is not sufficient to install a target somewhere and start shooting arrows.

A target archery range on a flat level field is needed for the safe practice of target archery. In field archery, the ground is mostly far from level, however in this discipline there exist special rules for range layout.

The specialist disciplines of clout and flight archery have other requirements.



Notes

The distances are shown in yards and metres. In the UK, Imperial, metric and rounds recognised by World Archery, the International Federation, can be shot.

This publication is guidance only and should not be considered as the Rules of Shooting.

The following guidelines are based upon Archery GB and World Archery recommended standards.

Rules

Pre-requisites for designing a safe and effective range

To conduct archery safely, the design of an archery range has to recognise the following 5 prerequisites:

Pre-Requisites

- There is a clearly visible straight line on the ground, called the shooting line. Archers must shoot their arrows only when standing on or astride this line. In target archery there is only one shooting line for all archers, even if they are not shooting the same distances; targets may be placed at different distances for different target lanes.
- Archers shoot only at the target directly opposite their shooting position.
- There is a definite time-slot for shooting and the archer may not raise the bow arm to shoot until the signal to start shooting is given.
- Shooting will be in one direction only – at the designated target.
- Archers should aim continuously toward their target when drawing their bow. The bow must not be drawn in such a way that if the string was accidentally released the arrow would fly out of the safety zone.

Never allow people to stand ahead of the shooting line.
There should be no access ahead of the shooting line while shooting is in progress


Following the shooting period, archers will go to the targets, score and collect arrows, and return. This pattern is then repeated throughout the session.

The way to create time-slots for shooting is to use sound signals, for instance a whistle or an electronic timing system. There should be one sound signal to go to the shooting line and to start shooting, and two sound signals to stop shooting and to collect the arrows.



These rules have to be followed at all times, whether practicing or at a tournament. They are the preconditions for safe archery.

In practice, we want to shoot safely on a range that allows more than one archer to shoot close alongside each other and at the same time.

A photograph of an indoor archery range. In the foreground, a large target with concentric rings of white, blue, red, and black is mounted on a dark wooden stand. An arrow is visible in the red ring. The background shows a wooden floor with yellow and red lines, and an archer in a white shirt and dark pants is standing in the distance. The ceiling has a grid of fluorescent lights.

The range layout, the procedure of shooting and the presence of a qualified supervisor are essential for the safe conduct of our sport.

Indoor venues provide an easy way of controlling archery. Outdoor ranges need careful planning to safeguard both archers and the general public.

1. Range Registration

Range Registration

All clubs affiliated to Archery GB have to register their ranges – including indoor, outdoor, field, clout, flight, and all tournament venues.

Clubs are asked to self-assess each range (except Have-A-Go sites) that they use against the Rules of Shooting – specifically Rules 302 Range Safety – and provide further information to support Archery GB's facilities actions.

For ranges that do not comply with the Rules of Shooting a site visit can be arranged by an Archery Range Assessor who can support the club to continue to shoot safely.

Examples of not complying with the Rules of Shooting include not having the required overshoot or side safety areas.

The process can be completed online by the Club Secretary. It will be repeated every 3 years from 2017.

For further information visit the website www.archerygb.org/range or contact Membership Services.

Reduced safe zones

In a very few cases an archery range with the required measurements for safety is not available.

It may be possible however to reduce the exclusion zones beside and behind the archery range by introducing physical barriers.

In some cases, natural features, a wall or solid structure can be used to reduce these areas.

It is essential that the arrows cannot pass through this barrier and therefore the materials used are key – and maintained. If the required overshoot or side safety areas cannot be guaranteed then a site assessment will be needed.

Contact an Archery Range Assessor to discuss this in more details. Contact details can be found on the website at www.archerygb.org/range



2. Outdoor Target Ranges

Operating standards contribute to the creation of a safe environment. They include minimum spatial standards, site orientation, backstop, overshoot area, grass length, public access, changing facilities and secure storage – all described in Archery GB and World Archery guidelines.

Finding a Range

Clubs use a variety of venues for archery. The majority use a school or other such playing fields and often share with other sports such as cricket, rugby and football.

When looking for a new facility, think about what is essential or desirable to have for your club. Try to be as flexible as possible – it may be unrealistic to aim for your own range depending on the size of your club.

Plenty of venues may have appropriate space and equipment for your club.

Minimum Standards

Archery GB has outlined minimum standards for outdoor target ranges as follows:

- 1 • A grass sports field at least 124 yards long and 41 yards wide.
- 2 • Grass that is flat not sloped, short, well kept and well drained
- 3 • A field that does not allow access to the general public except at specific and defined points
- 4 • A fully accessible changing room, or club house which has toilets. This should be heated
- 5 • A notice board or sign post where the archery club can advertise their activities
- 6 • A secure storage area where archery equipment can be kept overnight

Outdoor field orientation

Once a ground has been identified for use as an archery field, the range orientation will be determined by the size and shape of the ground, and the main access point, buildings and other such features.

Where if possible, the field orientation should prevent the archers from shooting with the sun in their eyes.

The shooting line should be on the south side of the range and the targets on the north side, within +/- 20 degrees. This is to allow the sun to be behind the archers most of the day.

Keep in mind that there are right-handed and left-handed archers, as they face different ways when on the shooting line. So, the sun position during early morning or late evening shooting must be considered.

See the next page for laying out a range at a club, and the Appendix for laying out a competition range.

Ancillary Facilities

You may wish to think about access and parking as you look for a range. Especially remembering that archery is practiced by disabled people.

Remember that disabled archers may wait on the shooting line if they have mobility issues.

However, toilet and catering facilities benefit everyone. Taking on a field without these may be fine for a small section of your club, but ensure you are thinking about all your member's needs.

Outdoor field of play layout, with safety zones

The diagram opposite shows a practice archery field layout. (Additional markings are required for tournaments.)

If archers are shooting different distances the targets must be staggered not the shooting line;

- There should be a 5-yard space between the shooting line and waiting archers;
- The measurements for the safety zones shown on each side of this field are for experienced archers and novices under instruction.

- (1) Overshoot distance is always at least 50 yards. In addition, the total distance from shooting line to overshoot line must be:
 - At least 110 yards if targets are set at 60 yards or less.
 - At least 150 yards if compound bows are used.
- (2) 10 yards exclusion measurement to side of the shooting line.
- (3) 20 yards exclusion measurement to side of range at 100 yards.
- (4) Side safety zone width increases linearly to overshoot line
- (5) Normal maximum target range is 100 yards.

There should be no dead ground in the overshoot area, which must always be clear during shooting. Be aware that archers may still be behind the targets looking for arrows that missed the target. Always check this before the signal to start shooting is given.

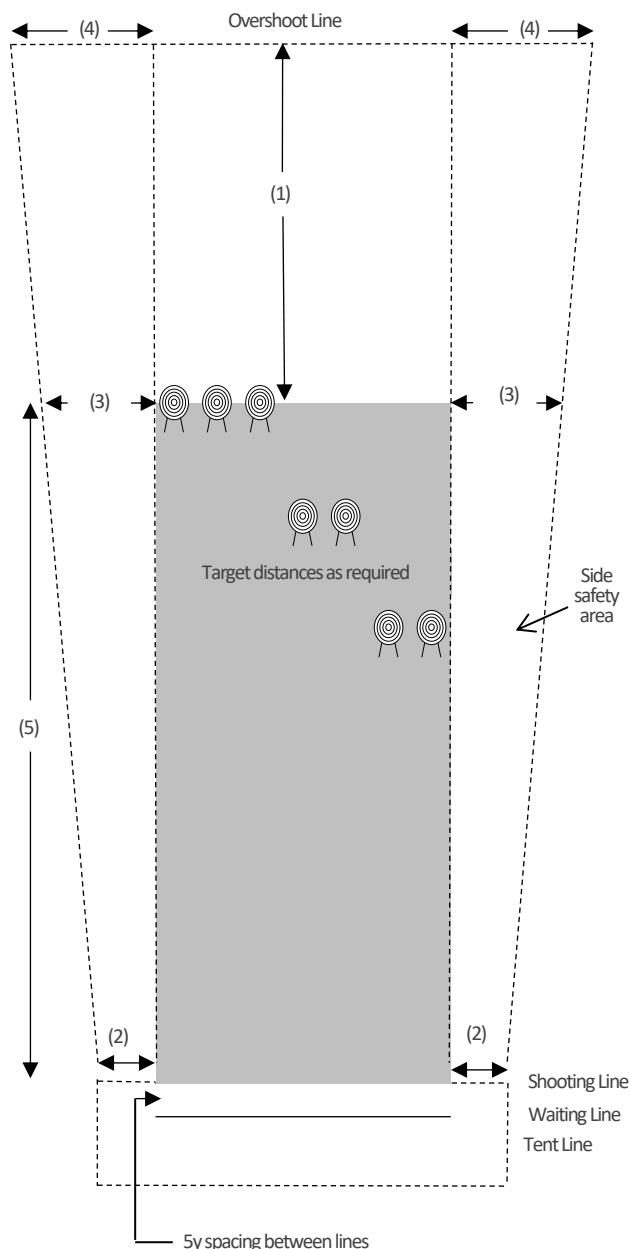
The exclusion areas each side of the range must be kept clear from all obstacles which could obscure any potential danger.

Outdoors, the spacing between the targets should be 8ft or more, allowing space for 2 archers to shoot comfortably side by side.

Each archer stands with one foot either side of the shooting line (or both feet on the line) to shoot their bow when the signal to start shooting has been given.

Whilst archers are waiting to go to the shooting line they must stay behind the waiting line until the signal is given to advance to the shooting line.

When the archers have shot their required number of arrows they must return back behind the waiting line. They wait there until the signal is given to advance to the targets to retrieve their arrows.



3. Indoor Shooting Ranges

During the winter months, archery is still shot outside. However, a club will often use a sports hall, gymnasium or any similar convenient hall for their practice.

The usual advantage of an indoor venue is the comfort of the archers during the winter, although once established, the area can be used any time.

Minimum Standards

Archery GB recommends that indoor shooting venues should aim to have the following as a minimum:

- 1 • A heated, well lit hall at least 25 yards long and 21 yards wide
- 2 • A fully accessible changing room, or club house which has toilets. This should be heated
- 3 • A notice board or sign post where the archery club can advertise their activities
- 4 • A secure storage area where archery equipment can be kept overnight

The most common indoor shooting distance is 20 yards (18m); the maximum distance recognised for indoor shooting is 32 yards, but this may not be possible in all venues.

The waiting line is normally 5 yards from the shooting line; this distance may be reduced to 3 yards if the space available is restricted, but safety must not be jeopardised. Behind the waiting line space is needed for the archers' shooting equipment.

Behind the targets there should be a safe arrow stop device, normally special backstop netting. A backstop net is often used to 'catch' arrows and thus to protect both arrow and wall

from collision damage. This is obviously important in convincing venue managers/owners to make their premises available. Irrespective of the presence of a backstop net no-one must ever enter this zone while shooting is in progress.

The netting should be attached along the top edge only and hang loosely. This will give greater stopping ability.

Never rely on backstop netting to stop arrows if there is any activity going on behind it.

These curtains do deteriorate and with some high-powered bows now available arrows have been known to pass through them.

The following recommendations for an indoor venue should be observed.

- Access to the range must only be possible from behind the shooting line. Any other access should be locked during practice.
- There must be access to all emergency exits, but if some are in front of the shooting line entrance into the hall through these must be restricted.
- There should be no windows or glass in the wall behind the target line that can be hit by an arrow that misses the target.
- An appropriate arrow stop can cover these windows.

In some multi-sport venues areas are separated by divisional curtains. It is unlikely that these would stop an arrow. Either impenetrable barriers must be installed or there must be the same side safety distances as used outdoors.

Under no circumstances should there be any human activity taking place behind the target area even if backstop netting is being used.

The number of targets indoors is usually dictated by the available width of the activity hall. Each archer will need a minimum of 80cm of space when on the shooting line.

The normal target faces used indoors have diameters of 40cm and 60cm. The target butt should be bigger than the target face, so that any arrows that just miss the face will still land in the target butt.

4. Field, Clout and Flight Archery

These forms of archery have different, specialist requirements and those needing to set up ranges for these disciplines are strongly recommended to consult archers with appropriate experience.

The discipline of **field archery** differs from target archery in the sense that many different shooting lanes are set out along a course spread out over the natural terrain, often within woodland.



The shooting lanes must be set so that any arrows that miss the target will not travel into areas that could be populated with other archers or spectators.

Targets should not be placed on top of a rise where an arrow that misses the target can travel to an area that is not readily in view of the archer when they are standing in the shooting location.

The course must have safe paths to allow the officials and working staff to be able to move around the field of play with safety.

Only those persons who have been given permission will be allowed on the course when shooting is taking place, and they must keep to the safe paths at all times.

Field archery offers wonderful opportunities for archery, when there is no level terrain available. An archer should have some moderate experience of shooting at a close target set on level ground before turning to field archery.

Field archery clubs should have a safe and well-defined practice area.

For further information please download our guide for landowners that are interested in setting up a field archery course - <http://www.archerygb.org/facilities>

Clout archery has some similarities with target archery: it is practised in a flat field with something to aim at. In comparison with target archery:

- The target range is greater - up to about 200 yards
- The side safety and overshoot distance requirements can be up to 75 yards
- The target is a marked area of ground marked with a small flag

An archer must receive some specific training before clout shooting.

In **Flight Archery** the intention is simply to shoot an arrow as far as possible. This naturally requires a large controlled area, such as might be found in enclosed rural estates or inactive airfields. If specialist flight bows are to be used, the range must be over 1000 yards long.

5. Setting out a competition archery range

Competition ranges must be set out with accurate measurements. The range must also be square. That is, the theoretical line between the mark on the shooting line and the centre of the target must be perpendicular to the shooting line. If this is not the case, the archers will soon tell you!

This 'squareness' can be achieved with specialist equipment such as a theodolite. However, following the guidelines in the Appendix will help.

An indoor range can be set up in the same way, however, buildings are often square to start with, and floor patterns are often available to achieve the required square accuracy.

See the Appendix for laying out a competition range.



6. Further Reading

As mentioned previously, this document is guidance and the Rules of Shooting should be observed at all times.

Additional information can be found in the following documents:

- World Archery Constitution and Rules
- Archery GB Code of Practice - Have a Go's
- Archery GB Code of Practice - Archery Demonstration
- Archery GB - Facilities: Guidance and Specifications

Appendix

Setting out a Competition Range

You will need a tape measure and a bit of basic geometry - any triangle in which the sides are in the ratio 3:4:5 will have one angle that is a right angle.

For an outdoor range, look over the ground, pacing the distances to get a rough idea where the range will sit. Set out the shooting line with a string and a peg at each end. Call the pegs A and B. Pegs should be easy to see.

Starting at peg A, measure 30 yards along the shooting line and fix a peg at that point, peg C. Again, starting from peg A, measure down the range 40 yards and temporarily put down a peg, peg D. Keep a tape measure between pegs A and D.

Set another tape between pegs C and D. Adjust the position of peg D until the distance A-D is 40 yards and the distance C-D is 50 yards. You now have a right angle at A.

Put a temporary string from A through D and along the range as far as the longest target distance required. Using peg A as the zero point, measure along the range and put a peg in at each distance required – pegs E, F, G etc.

Repeat the process from peg B at the other end of the shooting line, putting in pegs H and I to establish the right angle and then pegs J, K and L etc. along the range.

Put temporary strings across the range at each of the required target distances between pegs E and J, F and K, G and L.

Now mark the target positions and shooting positions. Work from one side of the range, say line A-G. Measure along the shooting line and along each target line and mark the shooting and target positions, normally every 10ft with pegs, paint or other marker.

The shooting line, waiting line and tent line must be marked, usually with proprietary white liner paint or similar. If strings are used as the line marker or otherwise retained on the range, they must be pegged at intervals to prevent a trip hazard.

Although there is no requirement to actually mark the target lines continuously across the field, this does make setting up the targets easier.

Overshot and side safety distances are not marked on the ground, but there may be a need to rope these areas off. For higher level competitions, additional lines may be required.

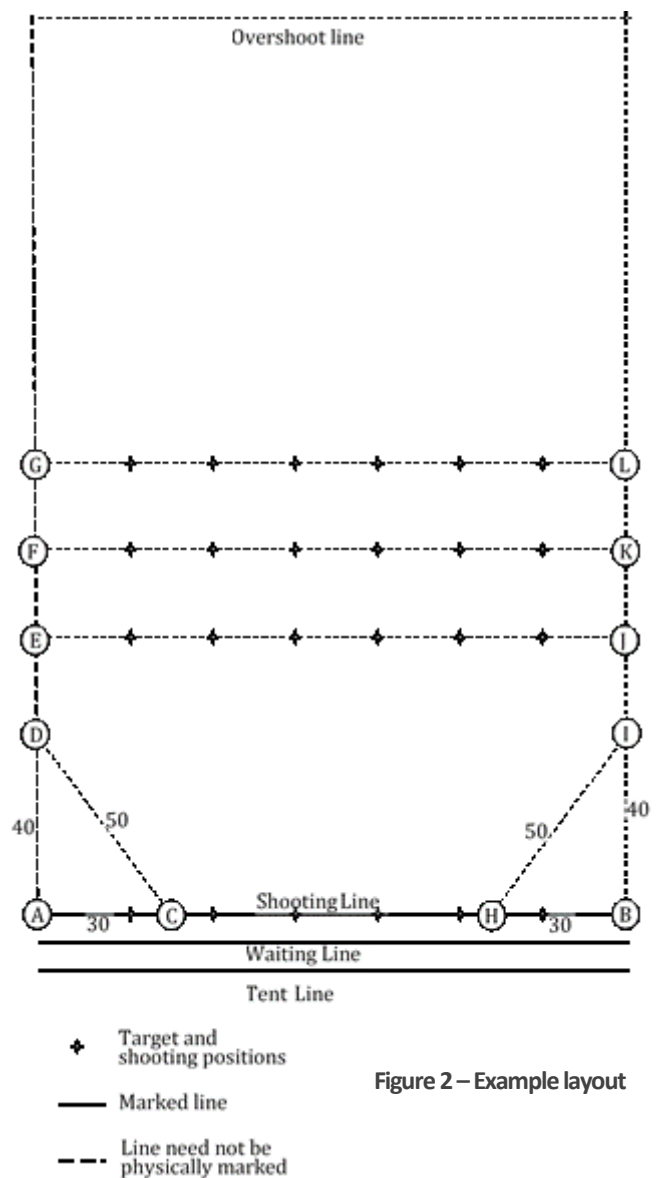


Figure 2 – Example layout



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