

**world  
archery**



# How to make ?

## an Archery Practice Range



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# How to make ?

## an Archery Practice Range

### Introduction

Archery is practiced all over the world. Like in other sports, a special accommodation is needed for practice and competition. Bow and arrows are (part of) the equipment of an archer; an archery range on a flat level field with arrow stop and shooting line is needed for the safe practice of target archery. In field archery the target lanes are mostly far from level. However in this discipline there exist special rules for range layout.

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

About the range location, one should think about promotion of the sport; hence strive to find safe and proper shooting venue where is some fluctuation of people. It will automatic providesome newcomers to the sport. Let us not make shooting range in the middle of forest, miles away from civilisation!

## Rules to respect

### Rule 1

There is a clearly visible straight line on the ground, called the shooting line, and archers only launch their arrows standing 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.

### Rule 2

There are target lanes, perpendicular to the shooting line and archers shoot only in the target lane corresponding to their place on the shooting line.

### Rule 3

If more than one archer is practicing at the same time, shooting takes place in designated time-slots only and the archer may not raise the bow arm until the signal to start shooting is given.

### Rule 4

Shooting will be in one direction only.

### Rule 5

Archers 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.

### Rule 6

Targets mats should not be too stiff (particularly for entry level programmes to avoid bouncing back arrows) and well fixed on the stands. The stands should be well anchored to the ground (outdoor) and very stable for indoor. Metal part must be avoided in the stands.

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

### Outdoor Field

The field orientation should prevent the archers from shooting with the sun in their eyes. To achieve this, different orientations for archery ranges need to be considered for the northern and southern hemispheres.



The orientation of an archery range in the northern hemisphere is “the shooting line is on the south side of the range and the targets are on the north side”, with a tolerance allowance from the magnetic north of +/- 20 degrees. This is to allow the sun to be behind the archers most of the day.

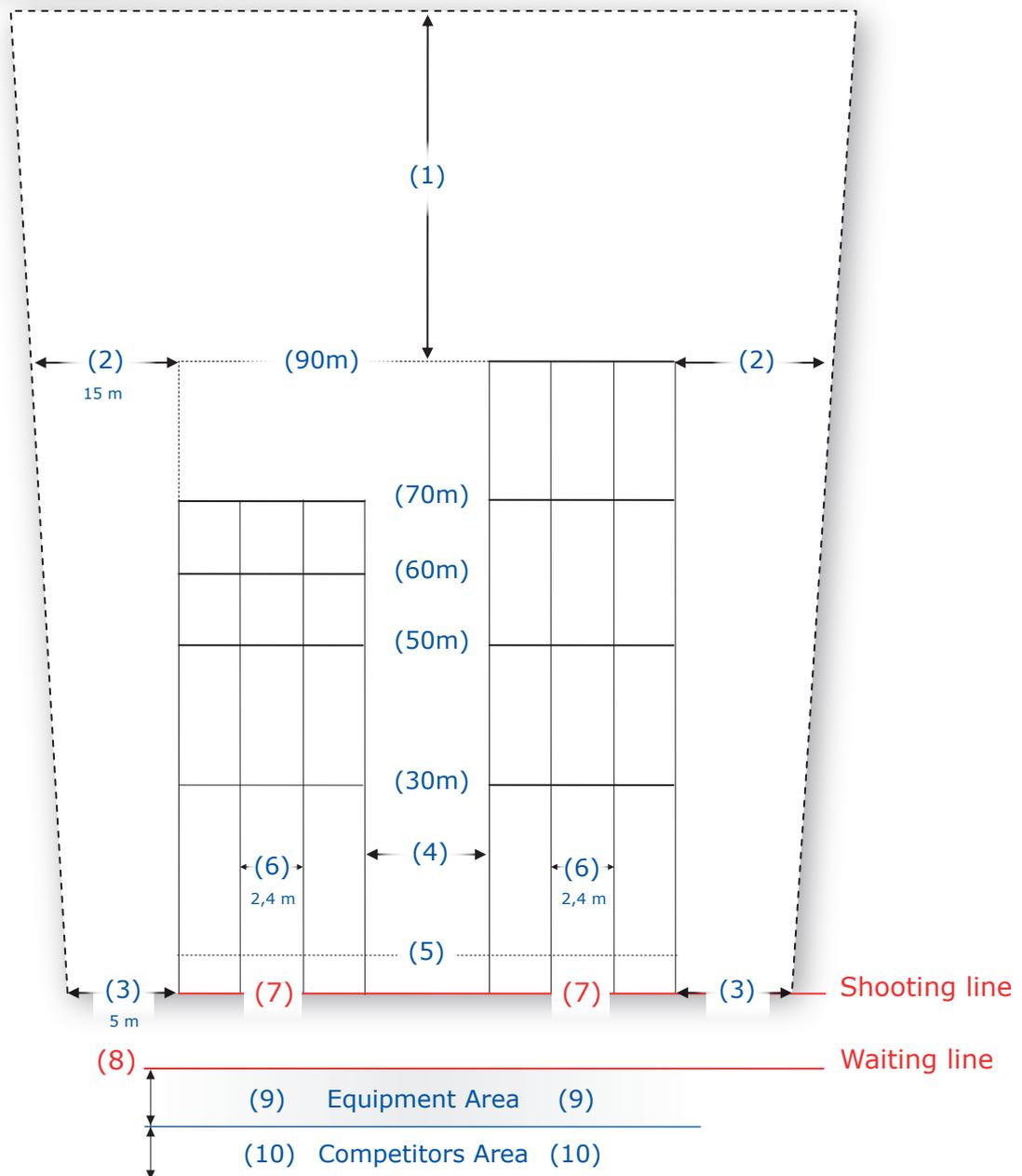
The orientation of an archery range in the southern hemisphere is “the shooting line is on the north side of the range and the targets are on the north side”, with a tolerance allowance from the magnetic north of +/- 20 degrees. This is to allow the sun to be behind the archers most of the day.

In countries around the equator the time of competition, together with the orientation of the field should prevent the archers from shooting with the sun in their eyes. Always keep in mind that there are right-handed and left-handed archers, their frontal plane on the shooting line is orientated opposite. So the sun position during early morning or late evening shooting must be considered. When it is not possible to avoid facing the sun, the shooting line should be in the shade. But even with such a setup, it is not ideal to aim at a target having a sunset just behind... Another relevant detail is that the field must be flat, or flattened, in order to avoid injuries walking to the targets, for example.



Shooting line

### Outdoor Field



(1) There should be dead ground in the 50-metre overshoot exclusion area, and it should always be clear before and 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.

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

## Outdoor Field

- (4) If you have enough available space on your field, you should add a 10-metre...
- (5) This line is there mainly for tournament purposes. If an archer has an arrow that falls before this line set 3-metre ahead of the shooting line, the arrow is deemed as not being shot. Therefore another arrow may be shot-but under the guidance of the officiating judge.
- (6) The spacing between the targets is set so that each archer has a minimum personal space to shoot of 80 centimetres (1 metre for wheelchairs).
- (7) Each archer stands with one foot either side of the shooting line to shoot their bow. The shooting line must be straight and parallel to the targets line.
- (8) Whilst archers are waiting to go to the shooting line, they must wait 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. This waiting line must be at least 2 metres behind the shooting line, 3 metres if you plan to use your field for competition.
- (9) Shooting equipment only should be placed in the equipment area. Any tackle boxes or similar should be kept in the competitors area. Always leave walk ways through the equipment area to allow easy passage for the archers to get through. The width of the equipment lane should be from 2m to 5m (for tournament).
- (10) The competitors area is for the archers, team managers and coaches. Visitors should be marshalled in this zone to minimise accidental damaged to equipment or personal injury.

For a correct efficiency, the minimum area recommended to build a good practice archery range is : 30 metres width and 150 metre length. You may use movable targets in order to setup your field following the archers you want to train. Using 15 targets (1 at 5m, 1 at 10m, 1 at 15m, 1 at 20m, 1 at 25m, 2 at 30m, 1 at 40m, 2 at 50m, 1 at 60m, 3 at 70m and 1 at 90m), allows you to welcome a wide range of different level archers.

## Indoor Facility

Depending on the local characteristics such as climate and the availability of an outdoor venue, an indoor venue may be designed for archery practice under all-season weather conditions.

Sometimes an archery club can use a gymnasium or any similar convenient hall for their practice. Sometimes a small surrounded safe outside area is available. A safe surrounded area for archery practice at a distance of at most 25m will be considered from the point of safety as 'indoor facility'.

The usual advantage of an indoor venue is the protection of the archers from cold in countries with real winter weather or from the heat of the sun in tropical countries.

The most common indoor shooting distance is 18m; this is the distance used at World Archery indoor championships.

Behind the targets there must be a safe arrow stop device, which can be a "special arrow stop curtain". Never rely on a "special arrow stop curtain" 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.



At 5m behind the shooting line there must be a waiting line. This can be reduced to 3m if the space available is restricted, but safety must not be jeopardised. Behind the waiting line we need space for the archers, shooting equipment. Behind this area there must be a competitor's area, which will accommodate the archers, when shooting is not taking place, along with the team managers and coaches. A total length of about 30-metres is required for an indoor accommodation.

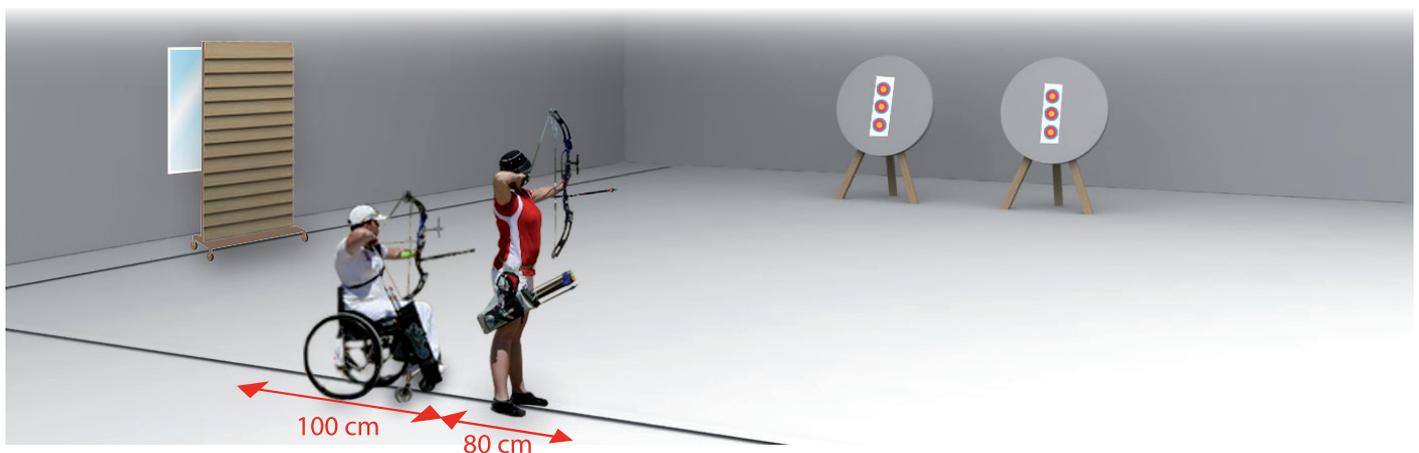
## Indoor Facility

The following recommendations for an indoor accommodation 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 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.
- If there are side windows less than 2m high, they must be protected with an appropriate cover or with a shield.

In the case of using divisional curtains like in some multi-sport venues, they must be able to stop an arrow. A curtain should be attached at the upper side only, thus having a more arrow stopping ability. Under no circumstances should there be any human activity taking place behind the target area even if an arrow stop curtain is being used.

The number of targets in an indoor accommodation is usually dictated by the available width of the activity hall. Each archer will need a minimum of 80 centimetres of space when on the shooting line. Consider to have 100 centimetres for in case of a disabled archer on wheelchair.



The FITA target face for indoor competition at 18 metres has a diameter of 40 centimetres: the target butt should be bigger than the target face, so that any arrow that misses the target will still land in the target butt and not in the arrow stop curtain.

### Target Mats

World Archery recognise two types of target mats : the first type stops the arrow in point area during impact. These are softer and it is easier to pull the arrows from them. They are filled with polymer textile material.

The second type stops the arrow by squeezing the arrow body during impact, they are harder and it is difficult to pull the arrows out of the mat. Children could have some problems pulling the arrows out of this type of mat. They need more power to pull arrow from mat, than to draw their own bow. These targets are made of stiff plastic foam or pressed straw.



- By vertically or horizontally attached bands. These are made of straw, compressed wood fibres, corrugated cardboard, or synthetic foam.



- By a block of foam or compressed straw, with an exchangeable centre or not.



- By straw strands tightened and rolled up in spiral.

Priority should be given to natural recycling material for the mats.

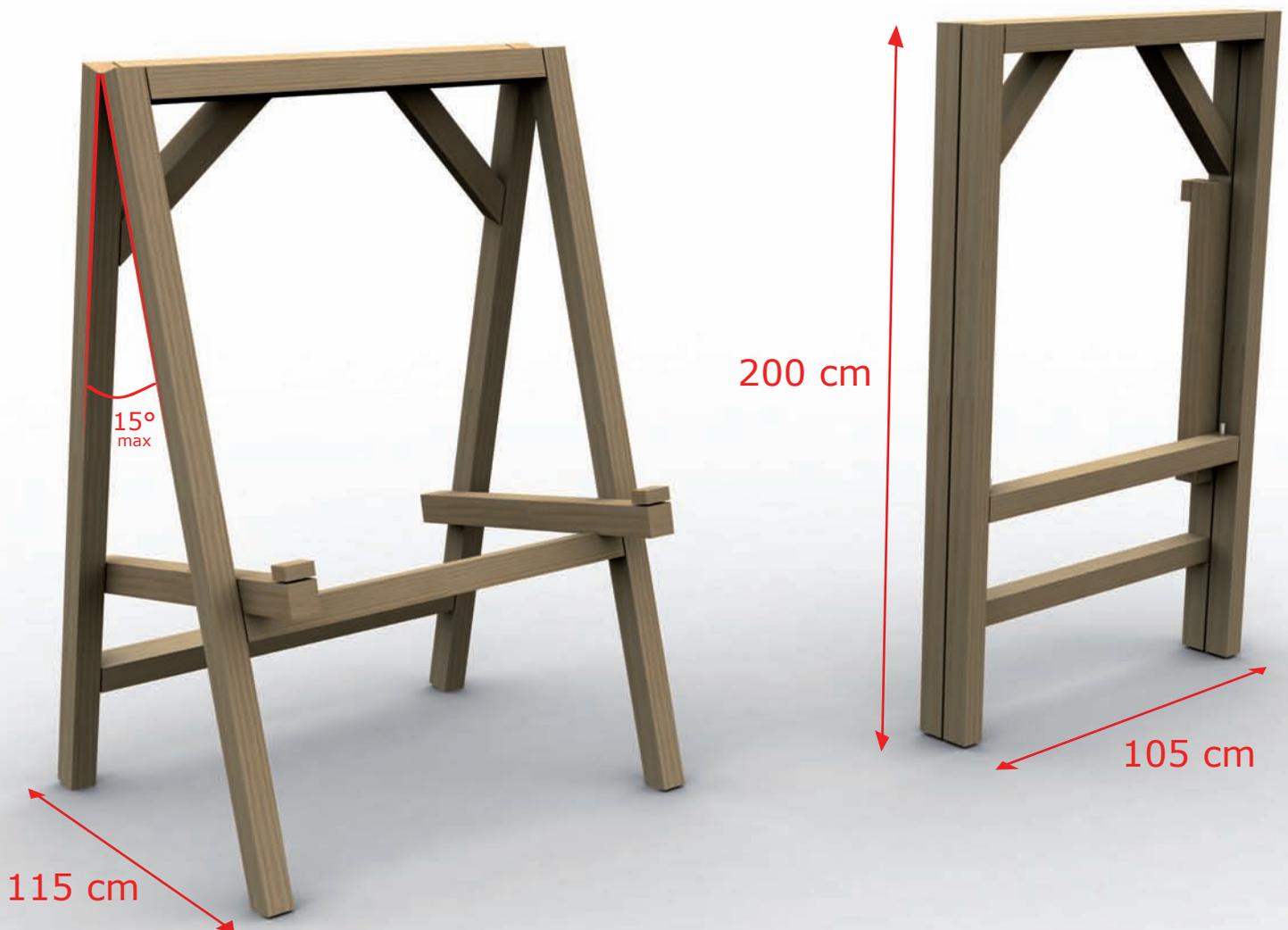
In order to keep your installation safe and useful in long term, and avoid arrows passing through the target, a floating carpet of rubber on the back of the target can enlarge its lifetime.



## Target Stands

For entry level programmes, wooden low stands are recommended for three reasons:

1. To get the arrows on the targets lower than the face height of the beginners. With this set-up, in case of an archer being hit by the back of an arrow at the time of pulling the arrow out of the mat, the potential injury should be minor.
2. Missing arrows will not fly so far away; hence they should be retrieved quite easily.
3. Lower target butts help archers using wheelchairs to collect their arrows.



## Field Archery Range

The discipline of field archery differs from target archery in the sense that the field of play has many different target lanes spread out over the natural terrain.

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 field of play when shooting is taking place, and they must keep to the safe paths at all times.

The whole target face must be visible to the archer when standing on the shooting location.

Field archery offers wonderful opportunities for archery, when there is no level terrain available.

To start field archery, the archer should have some moderate experienced of shooting at a close target set on level ground.

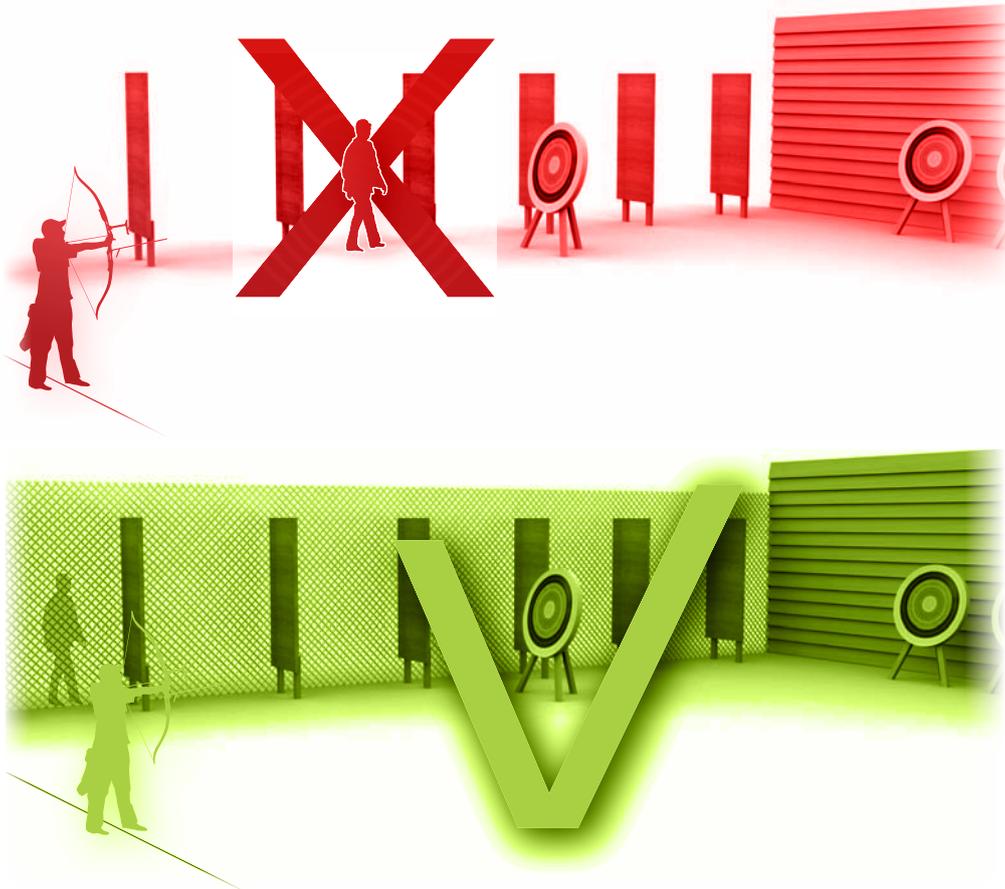
Field archery clubs should have a safe and well defined practice area.

## Security Barriers

When shooting indoors the safety area beside the shooting range may be reduced by using lateral barriers made from an arrow penetration resistant material. These vertical barriers are required also in cases where a steel construction could be the cause of arrows being damaged or bouncing back toward the shooting line.



On an outdoor range, when shooting a distance further than 25m, these lateral barriers are less appropriate. They cover the free sight area but cannot prevent unauthorised people from entering the range through the spaces between the barriers. In an indoor facility lateral barriers can be combined with vertical barriers, thus reducing the possibility of people inadvertently walking between the vertical barriers.



## Emergency and First Aid

Do not forget to develop an Emergency Action Plan and write it down so everyone knows what they have to do in case of an emergency.

The basic rule of first aid for a sports injury is RICE.

**R** - Rest

**I** - Ice or cold water for cooling the injured area and prevent inflammation

**C** - Compression/pressure to reduce the blood flow to the injury area

**E** - Elevation/raise the injured part to help prevent swelling

## Emergency and First Aid



- Access to a communication system for contacting specialised assistance
- Blunt ended or bandage scissors
- Bandages-crepe and tubular in various sizes (ask your chemist or medical centre)
- Safety pins in various sizes
- Zinc oxide strapping for securing bandages, and strapping joints
- Gauze swabs, cotton swabs/cotton balls
- Cleansing tissues
- Self adhesive strip dressings, athletic tape/adhesive tape
- Antiseptic ointment
- Orthopedic felt or foam pads (can be cut to shape) - for sore feet
- Instant cold packs or cold spray (ask your chemist or medical centre)
- Petroleum jelly
- Pain relieving tablets for anti-inflammatory and pain relief
- Eye patches
- Insect repellent
- Towel
- Latex gloves
- Plastic bags
- First aid manual



## Examples of Archery Ranges

Antibes Archery Club (Southern France):

This field has been made for club archers to train, but also in order to organise some outdoor competitions.

On this field you have 22 targets, all available until 90 meters.

All the field is protected by a wire netting. It is perfectly secured and prevents the access for passers-by or animals. This is reinforced by wood panels on the right side and behind the targets.

A club-house has been built close to the field, and all of it is enlightened.

*General view of the field. On the right side and behind the targets, one can see the wood panels. Targets disposition are for a 70m Round View. On both pictures, one can see also wheelchair paths. Those can be useful in case of damp field.*



*View of the original disposition of the targets for daily training : 22 targets between 70m, 50m, 30m...  
Allowing archers to shoot following their levels with a maximum of safety, everyone being on the same shooting line.*

The following pictures are also coming from the Antibes training field. One can see all the arrangements that can be done on an outdoor facility



*Parking, field wire netting, club-house.*



*Possibility to store heavy material such as butts replacements, initiation bows, arrows, in a secured way.*



*Picture taken from the targets view : one can see where the club house is located, and the shooting line.*



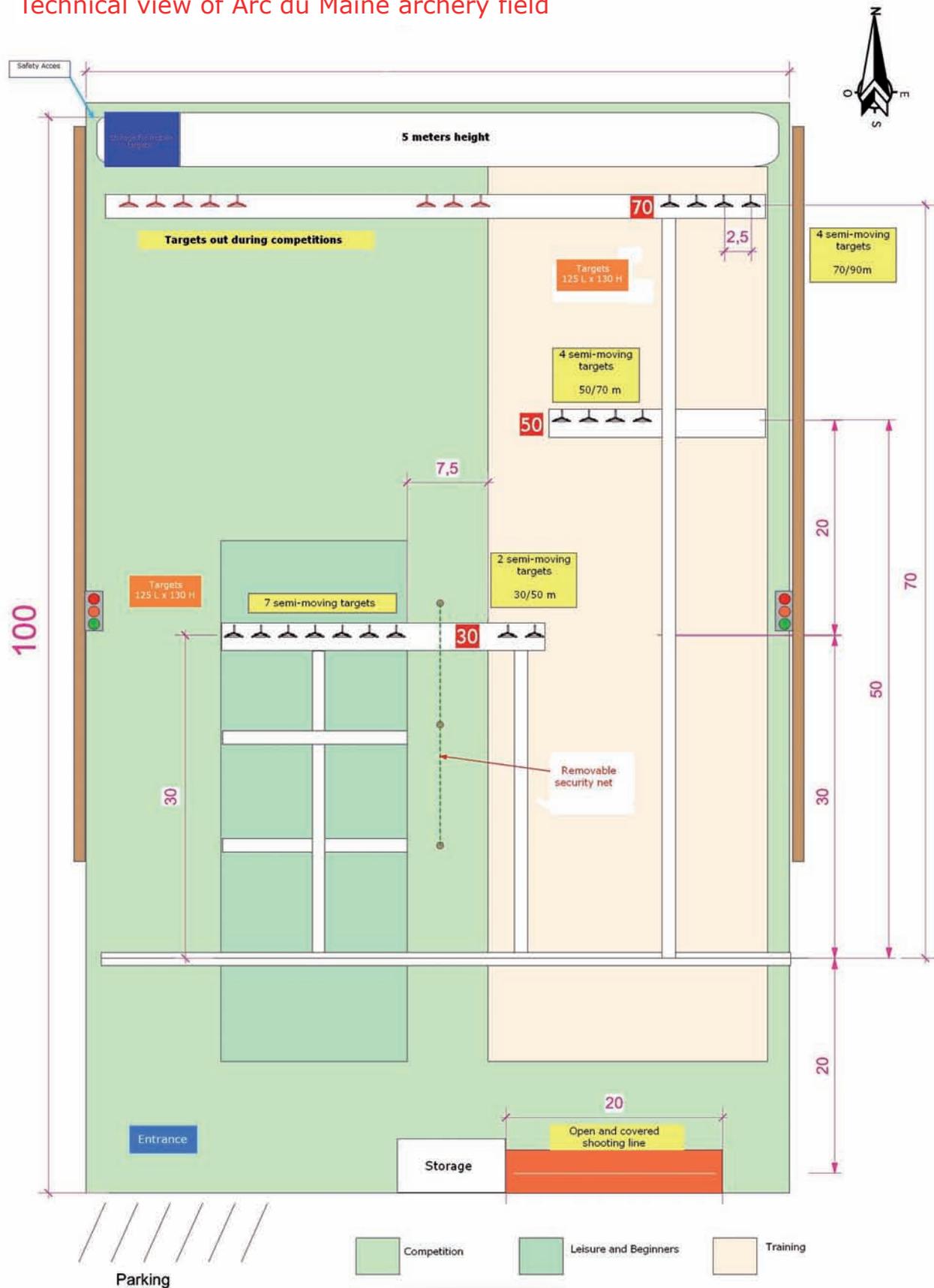
*Picture taken from the 70m line : it shows the entire field, and also a special tuning of the stands, a piece of rubber to stop the arrow in case of important deterioration of the target (black piece).*

### Arc du Maine - Le Mans (Western France)



*Field picture has been taken during an official competition*

Technical view of Arc du Maine archery field





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## an Archery Practice Range

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