

Protocol for Archery Field Set-Up and Use

California Archery Sport Club

7 March 2015

1.0 Description of Outdoor Field

The outdoor Archery Field is located on Golden Bear Softball Field on the Clark Kerr Residential Campus. The nearest street intersection is Dwight Way and Sports Lane in Berkeley. The field is grass, with a dirt softball infield. Large trees surround the field on the east west and north sides. A chain-link fence surrounds the field on the north, south, and west sides. Arrow resistant netting is mounted on the fence on the north side of the field, also referred to as the back of the field. The field is flat, but is inset into a hill that rises eastward and northward, and peaks at around 20 feet above the north-east corner of the field. The hill provides a natural physical barrier in case arrows miss the target mats in that area.

2.0 Outdoor Field Set-up

Proper field set-up is important for safe practice. A diagram of the required field set-up for regular practices is shown on the next page. Deviation from this set-up (e.g. as required for tournaments, beginner sessions, special seminars, etc.) requires pre-approval from Rec Sports. The field set-up will be as follows:

- Shooting line(s) will be set up at 50 or 70 meters from the base of the northeast hill, parallel to the existing line of permanently mounted bales.
- Should both the 50- and 70-m lines be set up, the two shooting lines will be spaced a minimum of 2 meters apart, with the measurement taken parallel to both lines. For shorter distances, such as 18 or 30 meters, the 70-m line may be maintained (with the 50-m line closed), and portable bales may be set up at the desired distances in front of the permanently mounted bales.
- For distances 30 meters or less, a shooting line may be created in an east-west direction in line with the home-to-first base line, on the condition that the line is restricted to the grassy outfield. The draw weight limit for bows on this line shall be 30 lbs on all bales except those east of the lamp post. Portable mats for such a line shall first be placed starting at the east side of the field, with additional mats added to the west as needed. The heavier the bow, the farther east the archer using it should stand, in order to be closer to aiming at the highest part of the hill.

For further clarification, see Appendix.

3.0 Equipment Restrictions

- Every bow shot on the field must be set below the maximum draw weight prescribed for the development stage of the person shooting it. An absolute maximum draw weight of 60 lbs (the WA limit, for expert archers) will be enforced.
- The maximum poundage for compound bows for developing archers who have been practicing consistently for a minimum of 4 hours per week shall be the following:
 - Less than 12 months of shooting experience: 40 lbs
 - Less than 18 months of shooting experience: 50 lbs
 - 18 months of shooting experience or more: 60 lbs

- Crossbows are not permitted.
- Pure-tension release-aids (typically used for compound bows) are not permitted.
- Broadheads (hunting tips) are not permitted.

4.0 Supervision

A keyholder must supervise all outdoor field practices. The definition of a keyholder is a USAA Level 2 Certified Instructor (or above) who is a club officer, Team Captain, coach, or other Level 2 Certified individual as designated by the board. The duty of the keyholder is to control the shooting process with whistle commands, keep time of shooting ends, and ensure that practices are conducted safely. In addition, a Rec Sports approved safety officer must be present at every practice.

5.0 Required Skill and Training

New Club members with their own equipment are subject to observation (by coaches, Team captains, or Club officers) to ensure that their skill level is appropriate for the type of equipment used. In case the skill level is not appropriate, the archer may be asked to undergo additional training before the equipment can be used. When the archer's skill level is appropriately matched to the equipment, the following rules will be observed:

- Any increase in draw weight shall not exceed 4 lbs, with at least 20 hours of practice and at least 3 weeks between each increase. Violation of this rule can result in removal from practices for 2 weeks and restriction to the original poundage for 4 weeks afterwards.
- When increasing poundage or trying new equipment, archers will stop shooting when fatigue alters their ability to shoot with correct form as indicated by a coach, the range commander, a key-holder, or the archer him/herself.
- All beginner archers (archers with less than 6 months of shooting experience) will take a break of at least 20 minutes after every 2 hours of practice.

6.0 Range Rules

All archers must read and agree to observe the following rules.

- A Liability Waiver must be signed before shooting.
- UC Berkeley approved activities only. This is not a public range.
- A UC Berkeley approved archery instructor must be present whenever archery is in progress.
- Closed-toe shoes must be worn, no loose or baggy clothing, long hair must be worn up or tied back, dangling jewelry or accessories must be removed or secured.
- Eye protection must be worn when shooting at distances less than 9 meters.
- Whistle commands are to be strictly observed:
 - Two whistles – approach the shooting line
 - One whistle – begin shooting
 - Three whistles – stop shooting and collect arrows
 - Four or more whistles – stop shooting IMMEDIATELY.
- A single set of commands controls the entire field. No separate commands if there are separate shooting lines.
- Target or field points only. No broadheads.

- Club-owned equipment must be checked-out from the equipment manager, and returned at the end of practice. Do not take equipment without permission.
- Draw the bow only when it is pointed at a target mat, and only when the field is clear.
- Maximum of 3 shooters per mat at distances of 9 meters or less, 4 shooters per mat at distances greater than 9 meters.
- Everyone helps with set-up and take-down of the mats.
- Everyone helps with picking up debris and keeping the field clean.
- Everyone helps with finding lost arrows.
- Missing arrows **MUST** be found before leaving.

7.0 Procedure for handling of equipment shed keys

Club owned equipment (except for the permanent mat installations at 70 m) must be stored and locked in the storage sheds outside practice hours. Keys are distributed to Club officers, coaches, Team captains, and a few selected senior Club members who are willing to supervise practices. A keyholder must be present during each practice, and is responsible for locking the equipment sheds at the end of each practice. Keys are not transferable without prior approval of the Club officers.

8.0 Protocol for training with release aids

The following protocol has been developed for training with release aids on compound bows. This protocol was developed by the USAA Level 3+ certified instructors at UC Berkeley. The purpose of the protocol is to ensure that compound bows with release aids can be operated in a safe and reliable manner. Release aids include any device used to hold the string except the fingers, including trigger releases, back-tension (hinge) releases, and pure tension releases. This protocol shall be implemented immediately and will continue until further notice.

- New compound archers using a release aid, or experienced compound archers using an unfamiliar release aid, must train under the direct supervision of a USAA Level 3+ certified instructor. The instructor will review with the archer the concept of the release mechanism and ensure the archer understands it. The instructor shall at all times ensure that the release aid is being used correctly and that archer's set-up and shot cycle is such that no danger is posed in case of an inadvertent release anywhere during the cycle. No archer shall use a release aid without supervision until competency has been demonstrated and approved by a Level 3+ coach.
- The training must take place in an enclosed space, such as the Combatives Room of the Recreational Sports Facility, or on an outdoor field with a significant physical barrier in the direction of shooting, such as the far east part of the Golden Bear Softball Field (shooting north toward the highest part of the hill in the back of the field).
- Prior to shooting arrows, the archer must train with the release aid on a solid or elastic strap to simulate the position, function, and draw force of a bow. The archer will train with the strap for a minimum of one hour, but must continue until 100% competency is achieved. A Level 3+ instructor must be present during this part of the training, and must confirm that the required level of competency has been achieved before the archer can progress to shooting with a bow.
- After competency is achieved with the release aid on a strap, the archer must train with a bow at a target distance of no further than 9 meters while aiming toward the center of the mat. The archer will train at this distance for a minimum of 5 hours, but must continue until 100% competency is achieved. A Level 3+ instructor must be present during this part of the training, and must

confirm that the required level of competency has been achieved before the archer can progress to shooting regular target distances.

- If at any time the archer is observed to misfire with a release aid during practice at regular target distances, the archer must restart the training process with that device.

9.0 Guests

Guests on the field must comply with the following restrictions;

- A guest cannot practice on the field more than twice a month. Club membership is required for greater any frequency.
- A guest must have the appropriate level of skill for the type of equipment to be used.
- A guest must have a UC Berkeley Archery Club member as a host. The host must be present the entire time the guest is on the field.
- A guest who is a minor requires pre-approval from Rec Sports. The parent or guardian of the guest must be present the entire time the guest is on the field

10.0 Safety Reviews

A safety and security review will be held at the beginning of every semester. All returning Team members, coaches, and Club officers are required to attend. The purpose of the review is review all safety and security practices on the field, and to reinforce the importance of maintaining these practices.

11.0 Set-up for Indoor Shooting

This section outlines the set-up procedure for archery in the Combatives Room of the Recreational Sport Facility at UC Berkeley. This room has been used for archery in this manner since the Archery Club's inception in 2005. The Combatives Room is approximately 60 ft. wide and 90 ft. long, and is normally used for aerobics and dance classes. When set up for archery, the final configuration includes a backstop net approximately 7 ft. high across the back of the room, and up to six target mats in front of the backstop net. The normal shooting distance is 18 m, or 60 ft. Although the backstop net is made specifically for use in archery, it will not stop small diameter carbon (or carbon/aluminum) arrows shot from high-poundage competition bows, nor will it stop arrows with bladed points. The net does a very good job stopping wood or aluminum arrows with target or field points. Nevertheless, the net should never be used to protect people or property, and no one should be behind the net during active shooting. The setup and takedown processes were each designed to be completed in less than 10 minutes using three people.

The backstop net, associated hardware, target mats, and target stands are stored in a locked cage inside the closet at the back of the room, as shown in Figure 1. The cage is may be unlocked by one of the Club's authorized key holders.



Figure 1. Locked cage containing hardware.

Figure 2. Rolling out the net and cable.

The backstop net consists of two 30 ft. wide sections which have grommets at their tops and a plastic cable clip attached to each grommet. Both nets are attached to a common 3/16" diameter, vinyl coated steel cable via the clips on each net. Each end of the cable is terminated in a loop, and spring-link (carabiner) is attached to each loop. The cable remains attached to the net at all times. To set up the net, it is removed from the closet and unrolled on the ground, as shown in Figure 2. This should be easy to do if the net was properly folded and stored the previous time it was used. On the east wall, approximately 8 ft. above the ground, a 5/16" threaded steel eyebolt has been attached to the concrete wall through a concrete anchor. On the west wall, there is a similar eyebolt, to which a small rope pulley has been attached. The pulley remains attached to the eyebolt, and is not removed as part of the takedown process. Using the spring link, one end of the cable is attached to the eyebolt on the east wall, as shown in Figure 3. A chair is helpful for reaching the bolt. The other end of the cable is attached to a rope, which is then threaded through the pulley, as shown in Figure 4. Again, a chair is helpful for reaching the pulley. By pulling on the rope, tension can be applied to the cable.

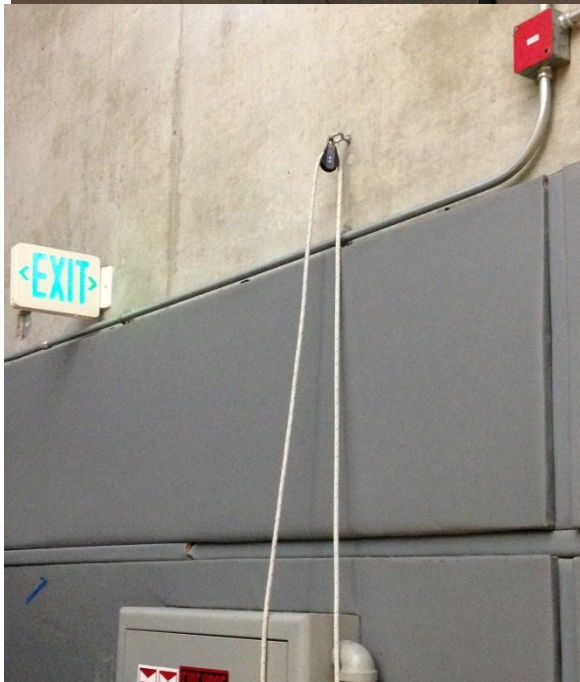


Figure 3. East wall cable attachment.

Figure 4. West wall pulley/rope attachment.

A slight amount of tension is applied to the rope to initially lift the cable and net slightly off the ground, as shown in Figure 5. Before applying final tension, the entire net is moved toward the east wall (away from the pulley) and lifted off the ground as much as possible to remove the weight of the net from the cable as much as possible. By having the entire net to one side, the remaining weight of the net will be removed from the center of the cable, making it much easier to apply tension to the cable and lift it higher. Final tension is applied to the rope by one person while another person threads the rope through another eyebolt anchored near the ground, and then ties the rope to a tie-down that is anchored in the wall, as shown in Figure 6.



Figure 5. Initial lift and net slide to the east wall. Figure 6. Applying final tension.

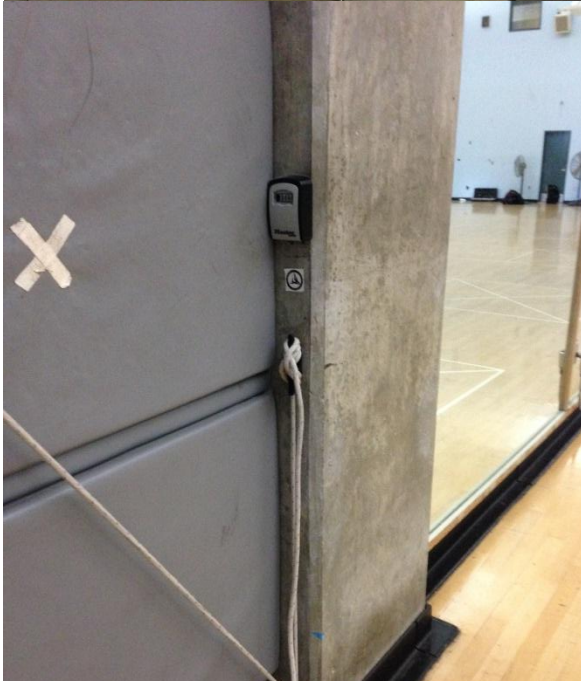


Figure 7. Final tension at pulley.

Figure 8. Final tie down of rope.

The final configuration at the pulley and the tie down are shown in Figures 7 and 8. Once the cable is up and secured, the net can be deployed across the room on the cable. As the last step, an 8 ft. long 2" diameter ABS pipe, supported by a base, is slid under the cable at its center to reduce the amount of drooping of the net, as shown in Figure 9.



Figure 9. Final net configuration, supported at the center to reduce droop.

Appendix: Cal Archery Outdoor Field Set-Up Regulations

50-meter line:



- The blue rectangle surrounds the bales 50 meters from the black line.
- The red line is a lamp post.
- No bales will be set up to the left of that lamp post.
- The black line in the bottom picture is the shooting line.
- The green line is marked by cones, and runs from the right end of the 50 meter shooting line to the left end of the 70 meter shooting line.

30 meters set up at the 70-meter line:



- The blue box circles the bale 30 meters from the shooting line.
- 30 meters can also be shot safely from the east-west shooting line.

70-meter shooting line:



- The blue box circles the five permanent bales 70 meters from the shooting line.
- The red line is the lamp post.
- The crossed out bale is at 30 meters, and will be set up on the east-west shooting line if all five 70 meter bales are being used.
- The black line is the shooting line for the 50 meter bales.
- The green line is marked by cones, and runs from the right end of the 50 meter shooting line to a minimum of 2 meters from the left end of the 70 meter shooting line.



- The black line is the shooting line--it runs from the pole marked in red to the second pole on the other side of the cage.
- The green line and runs from the right end of the 70 meter shooting line to the left end of the east-west shooting line. No archers should be standing north of the green line.

18/9 Meter Line:

East Side



- The 18-meter shooting line runs parallel to the right field line (home plate-first base line).
- The red line to the right is in line with the 70 meter bale second from the right. All bales of the east-west shooting line must be placed to the left of this line.
- The red line to the left is the lamp post. Archers shooting bows of poundages greater than 30 pounds must shoot at bales to the right of this line.
- Bales at 9 meters must be to the left of the yellow line to prevent the possibility of arrows bouncing out of the field.

Middle section



- The red line in the center of this picture is the lamp post.
- Bows over 30 pounds must be shot on bales to the right of this line.
- Bales at 9 meters must be set up to the left of the yellow line.

West Side



- Bows over 30 pounds must be shot to the right of the black line, which stretches to the lamp post.
- The red line marks the lamp post.
- The blue rectangles mark the bales shot from the 18 meter shooting line.
- During beginner sessions we need to accommodate up to 15 bales at 9 meters.
- Only during beginner sessions will bales be set up on the left side of the purple line. Maximum draw weight during beginner sessions will be 22 lbs, and senior members will observe all shots. No other shooting lines will be set up during beginner sessions.
- Bales will NEVER be set up on the left side of the line stretching from first to second base.

Additional Photos:

View of the field from Sport Lane



Diagram of field setup when all lines are in use:

