

## 6.12. RELEASE

### 6.12.1. Complementary Knowledge

Type: Critical moment.

Element: The release of the shot.



The propulsion of the arrow.

#### Objective:

Propel the arrow the same way shot after shot, while maintaining all the activities that have been engaged so far: Physical, Visual, Attentional, etc.

#### Form:

Before progressing to the form of this step, review the picture below illustrating some of the important predispositions to a proper release.



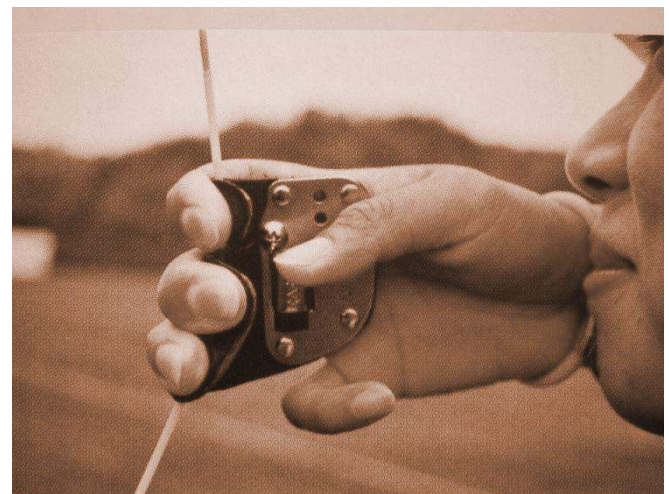
As these predispositions are very difficult to change once they have been established, it is of the highest importance to have the novices implementing them properly from the start.

These predispositions to release are not limited to Recurve archers, or even archers drawing the string with their fingers.



These predispositions are also valid for release users.

The non-used fingers (generally the thumb and the little one) keep their initial shape and stay as relaxed as possible.



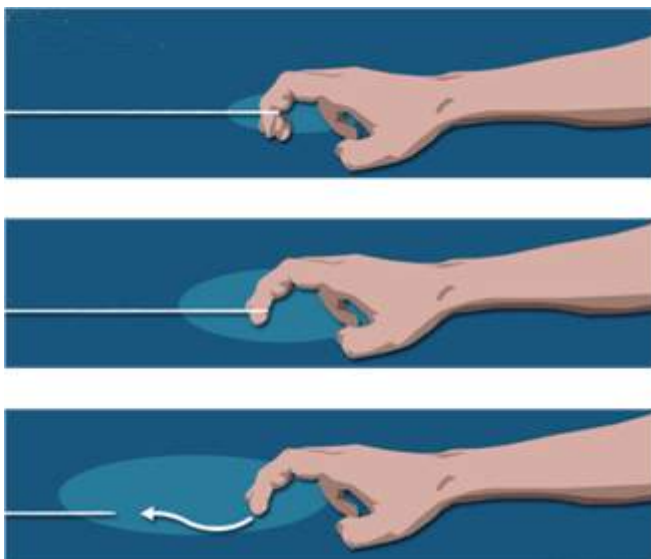
The classic proper form for a string hand that should be kept during the entire release process; including after the release.

The shot must take an observer by surprise; no tell-tale signs of the impending shot should be visible.



The string fingers keep their curled shape during the release. During the release, the string fingers abruptly relax while keeping their curled shape. As a

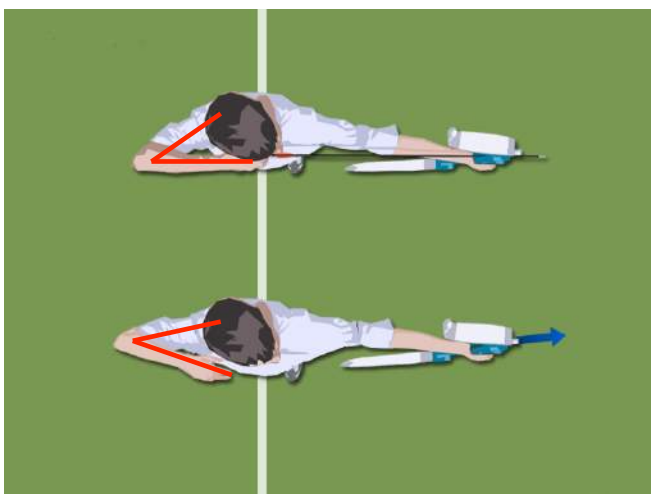
consequence, the string deviates laterally while rolling off the finger tips.



The string rolls off the finger tips.

The wrist should also maintain a consistent shape before, during and after the release.

Since the release is a continuation of the shoulder motion and the forearm/arm unit is primarily a simple relay between the string shoulder and the string, the angle between the string forearm and upper arm changes very little, if at all.



- The form of the release can be influenced by:
- the posture of the novice at full draw, particularly the overall body alignment;
  - the dynamism of the draw extension, particularly on the novice's string side;
  - the draw extension technique adopted by the novice;
  - the bow weight.

Hence there are various release shapes, depending on skeletal differences and type of muscular action at full draw.

It is easy to visualise the effect that variations in the draw extension on the string side would have on the release:

- little or no expansion at full draw generates quite a static release, i.e. the string hand does not move backwards very much;
- a strong expansion at full draw generates a lively release, i.e. that the string hand moves backward quite fast.

The various draw extension techniques discussed in the previous sections will affect the release action as follows:

Remember that the terms "move" and "moving" when used to describe shoulder blade action may not refer to a visible motion. Rather they describe the feeling and intent as experienced by the archer.



The release form generated by the string elbow moving horizontally whilst squeezing the string shoulder blade toward the spine.

With the string elbow moving horizontally and the string shoulder blade moving toward the spine, the string fingers stop just behind the sternocleidomastoid, the muscle going vertically from the collar bone to the ear.

**Note:** On the above elite archer it is very easy to verify that the string hand has kept the same shape as at full draw



The release form generated by the string elbow moving a little up whilst squeezing the string shoulder blade toward the spine.

With the string elbow moving diagonally a little up and backwards, the string fingers will come to rest on the upper chest just below the string side shoulder.



The release form generated by the string elbow moving a little down whilst squeezing the string shoulder blade toward the spine.

The string elbow moving a little down while the shoulder blade moves towards the spine extension technique generates a very different form of release. Because the string elbow keeps going diagonally down **and** backward, the string hand ends up behind the archer's head.



The release form generated by the string elbow moving horizontally backward due to the string shoulder blade moving away from the spine.

When the string elbow moves horizontally and the shoulder blade moves away from the spine, the string fingers stop just in front of (or against) the sternocleidomastoid, the muscle going vertically from the collar bone to the ear.

Two variations of the above technique:

- For a release generated by the string elbow moving a little up whilst moving the string shoulder blade away from the spine, the string fingers end up on the collar bone at the base of the sternocleidomastoid muscle.
- For a release generated by the string elbow moving a little down whilst moving the string shoulder blade away from the spine, the string fingers finish their movement near the string ear.

Since the shoulder blade motion is difficult to feel by many novices, the coach can refer to the direction of the string elbow as a guide.

The area where the string hand ends is called the "back end".

If the novice is using one draw expansion technique, but their release action corresponds to a different expansion technique, they are executing a movement upon release instead of "following-through" the muscular activity of their actual expansion technique. These are not proper releases and the artificial release movement must be corrected.

## 6.12.2. Exercises

### Hands Free Mimics – Exercise

#### 1. Pulling the string elbow

With the bow hand, the novice holds the string elbow and resists the backward pull of the draw extension technique.



The novice abruptly releases the string elbow, which follows-through in a simulation of the muscular activity from the posterior part of the string shoulder and the back during a release.



Repeat with the head turned in order to watch the string elbow during the simulation of the release. With a natural effort (i.e. no specific technique), the string elbow should:

- move backward and horizontally;
- keep the same angle.

The motion should come from the shoulder joint rather than the arm.

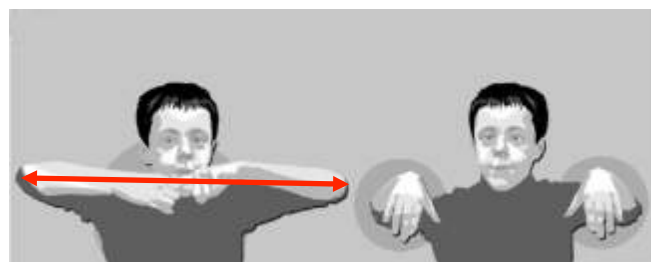


Watch the string elbow during the simulated release.

#### 2. Pulling on hands:

Point downwards with the middle finger of the bow hand and hook the string fingers on it as if they were gripping the bow string. Raise the enlaced hands up to the throat level with the elbows slightly above the horizontal. The string wrist and hand should be aligned with the forearm. Ensure that both forearms are aligned elbow to fingers to elbow. The back of the string hand should be flat (the knuckles should not point out). The unused fingers must be relaxed. The drawing hand should be "twistable".

Simulate a release while watching the drawing hand, using a mirror to make observation easier if desired. At the end of the simulation, be sure that both hands are relaxed, the wrist should be bent down, and the fingers completely relaxed.



Simulation of relaxed hands through the release.

**Note:** The illustration above exaggerates the wrists' relaxed final state. The string hand will not be dangling after the release of an arrow. This exercise is just to ensure that the novice simulates the release by relaxing the hands, rather than by opening the fingers. This excess relaxation of the wrists will disappear over the next steps, and in particular under the effort of handling a bow.

Repeat with the head turned in order to watch the string elbow during the simulation of the

release. Using a natural effort (i.e. no specific technique), the string elbow should:

- move backward and horizontally;
- keep the same angle.

The motion should come from the shoulder joint rather than the arm.

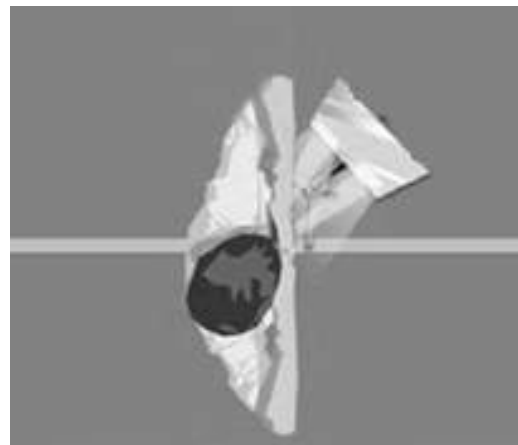


Watch the string elbow during the simulated release.

Then repeat with the head turned in the direction of a target (even a fictitious one). Here again, simulating in front of a mirror makes it easier to observe the release.



The novices can simulate their shot, doubling as a learning situation for the draw action.



Watching a simulated release.

While looking toward the target, the string hand should slide along the neck and end up more or less below the ear (when using a natural effort, without any specific technique).



End of the travel for the release hand for the quadrilateral method.

### 3. Release simulation with opposite thumb:

The string fingers of the novice grip the thumb of the opposite hand, which is vertical and pointed up. The novice pushes the thumb forward "through" the string fingers.



Repeat the simulation but pulling with the string fingers instead of pushing the thumb.



Then repeat both simulations from a proper “full draw” position, as shown below:



In the latter two alternatives, upon the simulated release, the string hand moves suddenly toward the novice and inward. The string fingers keep their shape.

#### 4. Release simulation on a panel:

Use a flat rectangular or square panel, depending on the size of the novice. A rectangular item may fit two different-sized novices, depending on its orientation. Even the mirror that is so useful for coaching may be used for this exercise.

Have the novice place one edge of the panel against their body and grip the opposite edge with their string fingers as shown below. Keep the thumb and little finger inside the string hand in a similar shape and position as when shooting.



Have the novice apply a regular, continuous pull and suddenly release.



When properly executed, the string hand slides along the panel toward the novice and has the same shape as before releasing.

## Simulation in Pairs - Exercises

### Objective:

To learn the continuity of the draw action.

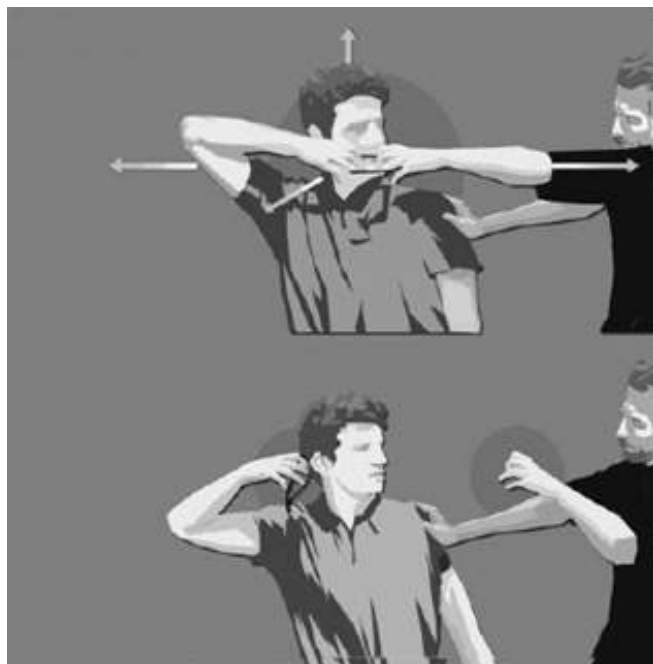
### Equipment:

Two pieces of tube or hollow cane about 10 cm long with a cord loop threaded through.

### Situation:

The assistant emulates the bow; the novice assumes the shooting stance but leaves their bow arm down at their side.

The novice grips the loop as if it was a bow string and the assistant holds the other piece of cane or tube. The novice assumes a "nearly-full-draw" position with their string arm while the assistant puts their other hand on the novice's bow shoulder, as illustrated below.



The novice pulls the loop toward the neck, while the assistant slows down the pull and releases at the completion of the full draw position.

### Instructions:

The novice applies a slight drawing pressure on the cord with the assistant giving minimal resistance by pushing lightly on the novice's shoulder. The novice doubles the effort. The assistant slows the novice's action as the cord nears the novice's face. When the novice has completed the draw extension, the assistant lets go of the cane. Notice the recoil or backwards movement of the novice's string arm and the pressure applied on the assistant's body.

Many other simulations are possible, such as the following two using assistants that are self-explanatory:



## Release Mimics with an Elastic Band - Exercises

### 1. Vertically

The novice stands on the two loose ends of an elastic band and grabs the loop of the elastic in the string fingers. The length of the elastic should be such that the band is a little stretched when the novice stands upright with the loop in their string fingers. The drawing wrist and hand are flat and the unused fingers are relaxed and soft. The finger tips should be against the side of the thigh. Throughout the exercise, maintain a vertical body, avoiding the temptation to lean to one side.



Left (below): with a straight arm (i.e. keeping the elbow straight) start a slow and continuous, small (a few millimetres at most), upward pull from the string shoulder.



Right (above): During the vertical pull, release the elastic. The string hand should follow-through upward along the thigh without changing shape.

### 2. Horizontally

The novice holds the ends of the elastic band in their bow hand and grips the loop using their string fingers. The length of the elastic should be such that there is a light stretch when the novice is at full draw. The drawing wrist and hand are flat and the unused fingers are soft and relaxed.



Above: The novice comes to full draw and executes their draw extension technique.

Below: The novice releases the elastic band and completes their follow-through with relaxed string fingers and wrist.



Repeat with the head turned in order to watch the string elbow during the simulation of the release. Through a natural expansion (i.e. no specific technique), the string elbow should:

- move backward and horizontally;
- keep the same angle.

The motion should come from the shoulder joint rather than the arm.

Important: The head must be turned while at full draw in order to observe the string elbow before, during and after the release process.





Watch the string elbow during the simulated release.

Finally, simulate the release with an elastic band in front of a mirror as illustrated below.

As before, have the novice come to full draw with the elastic band. With his/her head turned towards the target ask him/her to watch him/herself in the mirror. Eliminate unnecessary hand, wrist, and forearm muscle contractions as much as possible. Lower and spread the shoulders apart while keeping the back of the neck stretched to its maximum. Release the string finger grip and watch the hand separation as the rhomboid and trapezius muscles contract during the follow-through.



Drawing an elastic band while looking in a mirror.

Repeat the exercise with eyes closed. The coach strives to help the novice identify the feeling connected to a proper release, particularly:

- the sliding of the string hand along
  - the jaw (unsighted)
  - the neck and lower jaw (sighted);
- the direction of this sliding;
- the back end of the string fingers;
- the relaxed and curled shape of the string fingers at the back end.

[Checking the Proper Predispositions to Release – Exercise](#)

**Instructions:**

The novice stands upright and holds the bow by the string with the string arm down along their side as illustrated below.



The assistant holds the novice's string forearm in one hand and the riser in the other hand.



The assistant pushes down on the bow, to generate a little tension in the novice's string forearm.

Then the assistant brings the bow in front of the novice, as it would be in pre-draw.

## Discovering the Feel of the Release - Exercise

### Instruction:

The novice stands upright and holds the bow by the string, with the string arm down to the side as illustrated below.



The novice observes the shape of the wrist, hand and fingers.



The string elbow of the novice can bend, if needed, to get the string hand in front.



The assistant holds the bow by the grip and pushes down on the riser a little while the novice maintains a relaxed string hook. Suddenly the assistant presses down much more and the string escapes from the fingers of the novice.



The string hand of the novice should still have a relaxed hook shape.

## Relaxing of the String Fingers for Releasing - Exercise

### Situation:

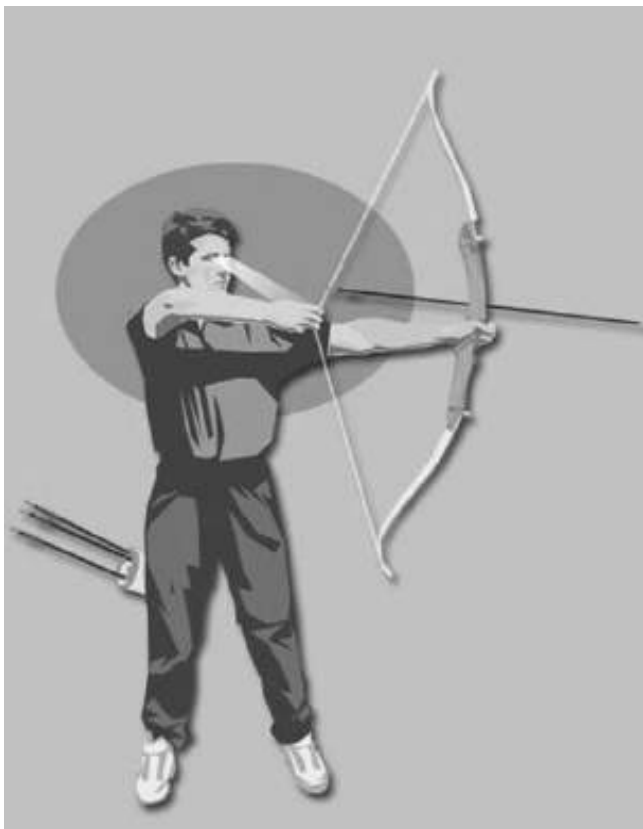
After the above simulations, have the novice set up to shoot at 3 or 4 meters from the target.

### Equipment:

The basic equipment set-up. Do not use a clicker even if it has already been introduced.

### Instructions:

Raise both hands and the arrow to shoulder height, not above. Start drawing the string slowly (about 10 cm), towards the breast bone to avoid hitting the chin upon release. Visually check the string hand, wrist and forearm, they must be in line and relaxed. Watch the slow movement of the string hand, forearm and elbow; ensure the elbow is held high enough.



Visually follow the slow motion of the string forearm.

Making sure the arrow is pointing at a target or a net, release the string while continuing to watch the string hand moving back. The release must be done during the draw, so do not stop the drawing action.

The first release can be achieved through a slow progressive relaxation of the fingers, but the speed of relaxation should increase as the novice progresses through the exercise until relaxation is instantaneous (but still a relaxation, not a finger opening!)

To practice this exercise the release must occur at an increasing draw length:

- At 1/2 draw;
- At 2/3 draw;
- At 3/4 draw;
- Just before the facial reference point is reached;
- At full draw, with nevertheless a micro progression of draw length.

**Important:** The draw must not stop; ensure a continuous backward motion of the string until the release.

Under the supervision of an assistant checking the shot direction, the novice watches the string hand throughout the entire release action, i.e. before, during and after the release..

Before the release, make sure the novice checks the proper predispositions to a good release: hand and wrist aligned with the forearm, flat back of hand (no knuckles pointing out), relaxed unused fingers.



After the release make sure the novice checks the relaxation of the string hand, it should be bent slightly downwards.



It is better to finish with an "overly-relaxed" string hand, as shown in the above illustration,

than with any stiffness. The excess of relaxation will disappear gradually during the learning process. It is fundamental, however, that the novices implement the release by relaxing the finger flexors or at least by reducing their level of muscular contraction.

For each successive arrow, increase the draw a little, until full draw is reached. When the string hand can no longer be directly observed because the string hand is under the chin, use a mirror to observe the hand during and after the release.

During release the eyes follow the string hand's follow-through. After release, the eye's focus is on the string wrist's final position, as shown in the previous picture.

Once the exercise has reached full draw, repeat it for a few ends. After some ends, the clicker can be introduced, if desired.

The string hand should slide along the neck or jaw depending on the aiming system, never away from the neck or face.

Always keep the string hand as relaxed as possible.

**Note:** Try a deeper string grip if the novice cannot avoid either:

- the knuckles standing out on the back of the string hand; or
- The string wrist bending out.

Continue this exercise following the standard teaching process:

1. Shoot with the eyes closed while concentrating on the string hand.
2. Same as 1, but with eyes open, looking up and unfocussed.
3. Same as 2, but looking and shooting at a blank butt.
4. Same as 3, but shooting at cut-out faces, starting from the 6 zone and continuing with smaller cut-outs right up to using a face with no cut-outs.

## The Follow Through on Release - Exercise

**Objective:** Release with constant string arm shape at the elbow.

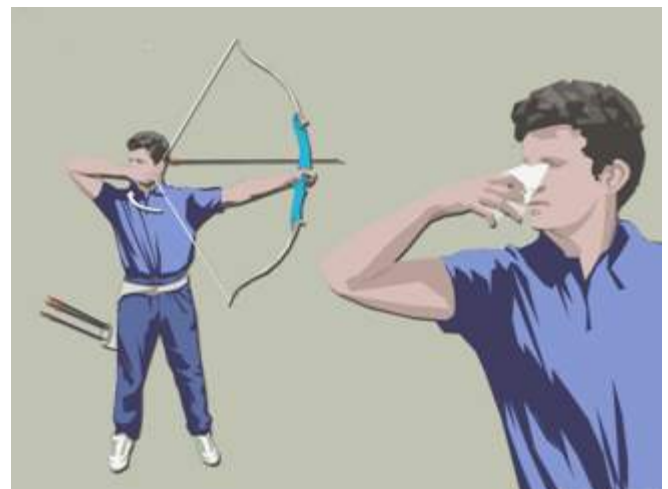
### Rationale:

The backward movement of the string arm is due to the follow-through of the activated muscles, i.e. mainly from the muscles from the posterior part of the string shoulder and from the back. Because the muscles from the string arm are not particularly involved, the arm shape should almost remain the same through the release process.

### Instructions:

Standing about 4 meters from the butt, turn the head at full draw to observe the string elbow while ensuring:

- The constant angle at the elbow;
- The string elbow moves back in the same horizontal plane (more or less);
- The pivoting/rotation motion of the string arm is at the shoulder joint.



The above is valid for a natural expansion effort. If the novice is using a particular draw extension technique, the form of the release will vary accordingly.

## The Release at Reduced Draw - Exercise

Equipment:  
A bow.

Instruction:

- In pairs;
- The novice just hooks the string as usual;
- The assistant holds:
  - The bow with one hand;
  - The forearm of the novice with the other hand.
- The assistant pulls the bow a small distance away from the novice and counts to three.



- At three the novice must release while the assistant gives follow-through assistance to the novice's string hand.



## The Relaxation of the Unused Fingers - Exercise

Have the coach or assistant verify the relaxation of the thumb and small finger as done earlier, but this time with the focus being on a proper release: The string fingers relax with a minimum of other changes in the string hand.



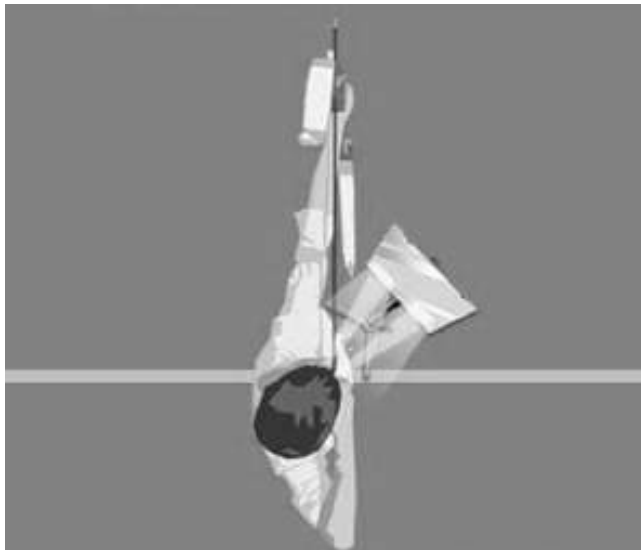
An assistant, by touch, brings the novice's attention to the level of relaxation of the thumb and the little finger.



The thumb and the little finger should be relaxed and keep the same position and shape throughout the release process.

## Visual Control of the Release - Exercise

Set up a mirror close to the novice and at an angle so that the novice can see their image whilst at full draw and aiming at a blank butt. The novice should be able to turn their eyes, without changing their form, to see the reflection of their facial reference point and the direction the string hand travels close-up, as illustrated below.



Self-observation during the release.

- 1.** Have the novice use the mirror to observe the release form. Keeping the string hand as relaxed as possible, ask them to release while watching the string hand and arm in the mirror.
- 2.** Have them shoot with eyes closed, while concentrating on the release and feeling that the body and release remain in the shooting plane (no twist).
- 3.** Do the same as 2, but with their eyes looking up and unfocused.
- 4.** Do the same as 3, but have them looking and shooting at a blank butt from a normal shooting distance (18 meters).
- 5.** From a normal shooting distance, shoot at a set of decreasingly cut-out faces (five cut-out target faces and one complete face).

## Assisted Release - Exercise

### Objective:

Allow the novice to feel the physical follow-through.

### Situation:

If the body sizes allow, the assistant holds the novice's bow wrist and wraps the other arm around the novice's back, with his/her arms overlapping the novice's arms, as in the image below, while shooting at a butt at close range.



Manual assistance helps the novice to better understand what should be done.

### Equipment:

The basic equipment set-up.

### Instructions:

The assistant applies a slight drawing pressure on the novice's arms, substantially increasing the physical expansion.

During the release, the drawing action is sustained by the assistant to make the novice aware of the appropriate physical follow-through.

Repeat the exercise while decreasing the degree of assistance.

Continue this exercise following the standard teaching process. Instruct the novice to repeat the exercise with eyes closed, looking up, looking at a blank butt, and then by shooting at increasingly complete targets.

Various other forms of manual assistance are possible. Two are depicted below.

## Facial References During the Release - Exercise

### Objective:

To discover facial reference marks during the follow-through of the string hand.

Situation: Simulations.

Equipment: Mirror.

### Instructions:

The string fingers hook either a loop of rope, or onto the forefinger of the bow hand that is vertical and pointed toward the ground. The archer then applies a simulated drawing action to both hands and brings the string fingers to:

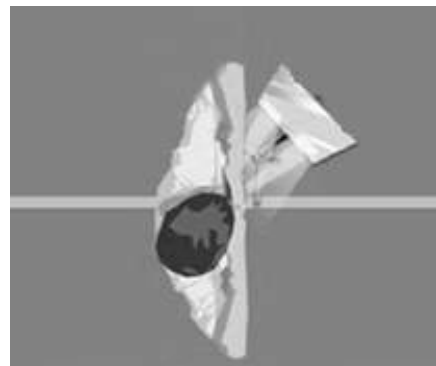
- The mouth for straight line and triangle methods;
- The neck for the quadrilateral method.



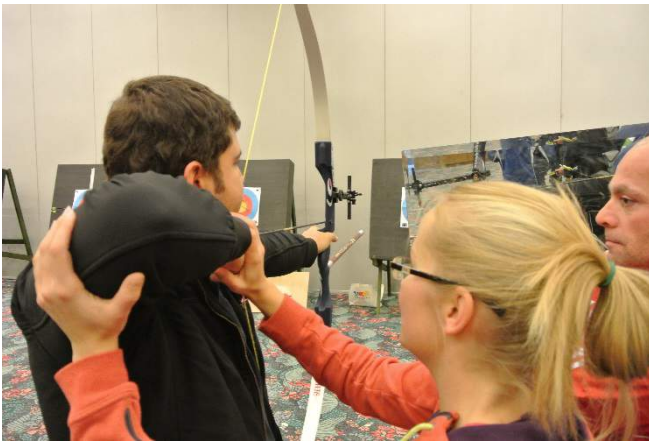
A novice simulates the shot, doubling as a learning situation for finding the facial reference point.

The forearms form a straight line. The head is turned towards the target and the novice is looking in the mirror. Eliminate unnecessary hand, wrist, and forearm muscle tension.

Lower and spread the shoulders apart while keeping the back of the neck extended. Have the novice notice the increased tension in the fingers.



Watching a simulated release and backward movement of the string hand.



Assistance from the expansion (above) until the release (below)



Assistance from the expansion (above) until the release (below)

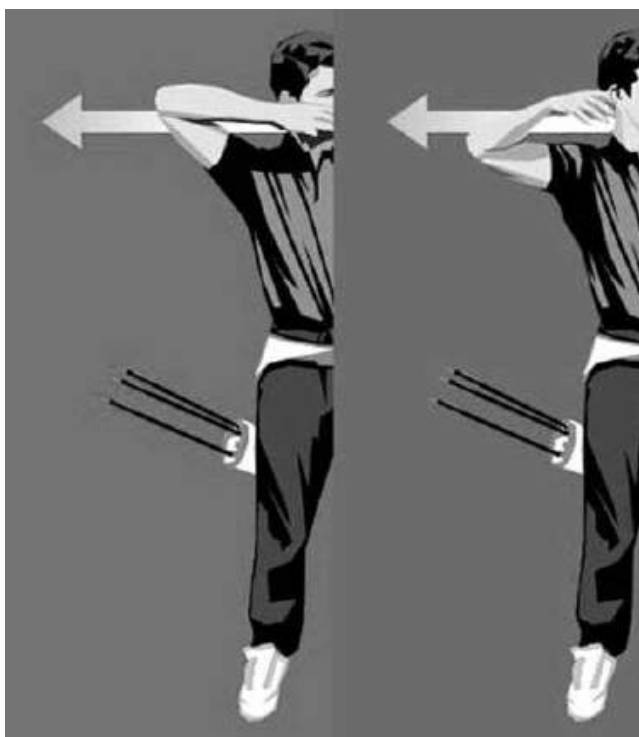


Release the string finger grip suddenly and observe, in the mirror, the sliding of the string hand/fingers along:

- The cheek for straight line and triangle methods;
- The neck for the quadrilateral method.



String fingers slide against the neck in the quadrilateral method.



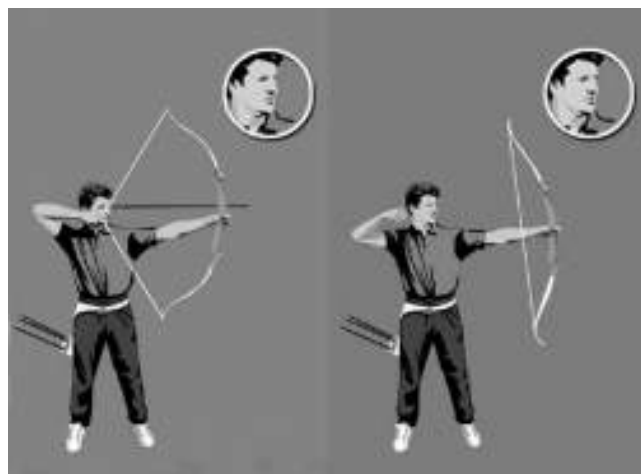
The string hand continues the follow through.

Repeat this exercise with eyes closed.

Repeat again with a rubber band, with a bow fitted with an elastic string and, then follow up by actually shooting with the normal equipment, at first while looking in the mirror.

After the novice has shot the bow while looking in the mirror, follow the standard teaching process. Instruct the novice to repeat the exercise with eyes closed, looking up, looking at

a blank butt, and then by shooting at decreasingly cut-out target faces.



The novice's face stays passive.

#### Reminder:

During the release, the string arm moves according to the expansion technique used by the novice while at full draw. This is because, from a purely physical perspective, releasing is a continuation of the muscular activities with one change - the decrease in intensity of the contraction of the finger flexors.



### Release in the Arrow Axis - Exercise

An assistant holds one hand a few centimetres from the back of the string hand of the novice at full draw.



The string hand or fingers of the novice should not hit the hand of the assistant during the release.

### The Direction of the Release - Exercise

A light elastic band is looped around the string elbow of the novice. The assistant holds the elastic with one hand; with the other hand he/she braces the novice's body.

When the novice is at full draw, the assistant pulls lightly and consistently on the elastic in the direction of the novice's draw expansion technique (refer to the various motions of the string shoulder blade and elbow described earlier in this chapter).

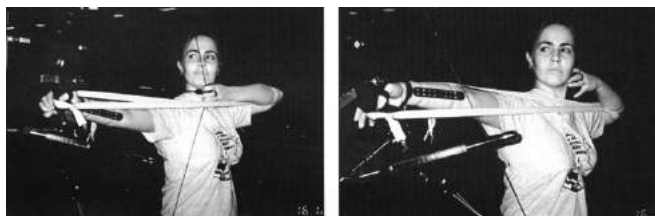


Upon release the assistant continues the pull on the elastic band in the same direction to help the novice release with a good follow-through.

## Making the Release More Dynamic - Exercise

### Equipment:

- Regular shooting equipment;
- A loop of light elastic attached to the string elbow and passing in front of the bow.



### Instructions:

- The novice shoots as usual, but with the elastic band in place.

For most of the expanding techniques, at the end of the release the elastic band touches the collar bone at the base of the sternocleidomastoid.

### Notes:

- The elastic band finishing away from the above final contact point is usually evidence of an incorrect release;
- This is an excellent exercise to erase any slight creeping that happens during the start of the release process and which is so common and damaging to the shot;
- For a lasting effect, this exercise should be done for 40 minutes (or more).

## Making the Release More Dynamic with a Harness - Exercise

### Equipment:

- Regular shooting equipment, but no arrow;
- A harness to be affixed on string elbow and attached to the bow string with a rope (or sometimes elastic).

**Note:** the harness and rope (or elastic) must be strong enough to bear the load of the draw weight of the bow.

### Instructions:

- The novice comes to full draw.



- Then releases after the usual expansion process.



### Notes:

- Care should be taken when using a rope to ensure proper shoulder alignment and muscle engagement in order to reduce the possibility of injury to the athlete.
- The bow string pulling the string elbow out of line is evidence of an incorrect release.