

11.4.6. Specific or shooting strength

The development of strength on the archery range uses the same progression criteria as in general strength training (start with body weight, then progress to overloads such as barbells, dumbbells, etc.), i.e.:

General strength	Specific Strength
More weight	More mass (kg) More tension (drawing effort)
More repetitions	More arrows or shots
Less rest	Burst of arrows and/or short rests
More time under the load	Long hold (time at full draw)

11.4.6.1. More mass weight

Shoot with a heavier mass-weight bow for at least 40 minutes to improve the specific strength required to hold the bow up at full draw. To increase the mass weight: wear a weight-band on both wrists or on the string wrist and attach one wrist weight to the bottom part of the riser.

Recommended additional weight on each wrist:

- Girls: ½ pound
- Women & boys: ¾ pound
- Men: 1 pound

Shoot at a regular pace, without rushing or taking breaks. When doing this exercise, all archers must shoot in a single line at the same time for it to be most effective.

At the conclusion of the exercise, keep the weight-bands on the wrists while collecting the arrows. Once back to the shooting line, remove the weight-bands immediately before shooting the next end and continue the session for at least 10 more minutes.

This exercise is recommended before changing to a heavier mass bow, for instance when the archer will be adding some stabilizers, or changing from a wooden riser to a metal riser.



An inexpensive alternative is to use a light elastic resistance band looped around the bow wrist and secured under one foot as shown below:



The addition of "mass" can be regulated by changing the length of the elastic.

Another alternative is to hang a weight from the riser as shown below.



Using water or sand in a plastic bottle has the advantage of allowing regulation of the weight by increasing or reducing the contents of the bottle.

This last variation exercise has the further advantage of helping prepare the archer for shooting in windy conditions.

11.4.6.2. More bow tension (drawing weight)

The easiest way to increase the bow tension is to have the novice shoot with limbs that are about 10% heavier (roughly 2 pounds) than the normal ones.

If heavier limbs are not available, loop an elastic resistance band around the string elbow and the bow, passing through the bow fingers of the novice. Use the extra bow weight for a minimum of 40 minutes, or even up to 80% of the session. Conclude the exercise by immediately shooting 3 additional ends without the extra weight.

Always shoot at least 3 arrows per end and as in the previous exercise, all archers must shoot at the same time in a single shooting line. Shoot without rushing but also with no breaks during the exercise.

When using an elastic band (highly suggested), it should be 2 meters long:

- Girls: ½" wide
- Women & boys: ¾" wide
- Men: 1" wide

Choose a good quality elastic band from a sewing supply store. Make a loop or harness for the string elbow and knot, or better sew, it at a length that provides the resistance needed by the novice.



Naturally, there are many other ways to generate a higher bow weight or drawing tension with an elastic aid; three possible options are shown below.



With two (light) elastics



Or with one (light) elastic

Another way to use an elastic band, is to loop it around the bow and hold it at the position that the arrow would be nocked with the string fingers as shown below. In this case no arrow is used and the bow is drawn and let-down rather than shooting an arrow.



11.4.6.3. More arrows / shots

Two options can be considered to accomplish this:

- More arrows during each practice session;
- More shots as a consequence of more practice sessions.

More arrows during a single practice session

This alternative is generally used for entry-level archers, since usually they can only practice during scheduled classes. The coach has several alternatives to allow the novices to more shots per session:

- Extend the duration of the classes;
- Reduce, as much as possible, the non-shooting time during the classes;
- Have the novice shoot more arrows per end;
- Combine any of the above alternatives.

More shots as a consequence of more practice sessions

This solution is used more by archers who have more access to their equipment, the coach and an available range. Keep in mind that there is a safety concern in allowing a very new beginner to take equipment home, since they may shoot arrows unsafely.

A safe solution, allowing the novice to shoot a bow without an arrow, is shown below.



In this system, the elastic band stops the string just before it returns to rest and is less violent for the bow than the shot of an arrow.

For most of the entry level bow weights, a good quality elastic band from a sewing supply store will suffice to catch the string and be durable enough for prolonged use. Make a loop or harness for the string elbow and knot, or better sew, the elastic at a length that provides the proper slowing-down of the bow string. The sound upon release will be a good indicator; it should be low and smooth. Depending on the draw length and arm size of the novice, an elastic band about 1.75 m long and 3 cm wide should do.

Some of the other advantages of this simple and inexpensive device are:

- Upon release, the novice does not attempt to watch the arrow flight; hence they stay focused on the follow-through of his/her shooting form;
- It strengthens the release, eliminating any tendency to collapse upon release;
- It allows practice when there is not enough time to go back and forth to the archery venue. Because there are no arrows to collect, plenty of shots can be made in only half an hour;
- It also allows the novice to shoot in front of a mirror, which provides valuable visual feedback.

After a while, the same exercise can be done with a non-elastic device connecting the string elbow and the bow string. In this case, the movement of the string upon release should be quite small, no more than 10 cm at most, as a rigid connection is harder on the string shoulder than an elastic one.



11.4.6.4. Burst of arrows – Short rests

The exercise immediately above works well for this purpose since it allows the novice to shoot many shots within a short period of time because no time is spent loading or collecting the arrows.

Running for arrow collection is another way to reduce the rest between ends, even over the short shooting distances used by novices. Please be aware, however, that due to safety precautions the archers should not run whilst holding the arrows in their hand. They should be safely contained in a substantial quiver.

Finally, resting less between arrows while on the shooting line is another alternative. In this situation the coach must be sure that the novices do not shoot faster than their usual time for the shot execution. The time is saved between arrows, not during the shot process itself.

11.4.6.5. Holding for a long time at full draw

This is an old, popular and efficient way to develop the specific strength of the archer. The coach should start by asking the novices to stay three times longer than usual at full draw (approximately 8 seconds) for three consecutive draws. When the novice can maintain their form for a 8-second hold (no creeping, form deformation or shaking, etc.), the coach increases the difficulty by

- a) Extending the time at full draw up to 11 seconds;
- b) Extending the time at full draw up to 14 seconds;
- c) Adding one more set - i.e. four attempts of 14 seconds each;
- d) Extending the time at full draw up to 17 seconds;
- e) Extending the time at full draw up to 20 seconds;
- f) Adding one more set - i.e. five attempts of 20 seconds each.

Between each long hold, allow the novices to rest for 150% of the holding time - i.e. 15 seconds of rest when holding for 10 seconds, or 30 seconds of rest when holding for 20 seconds.

11.4.6.6. Combinations

When the novice is experienced with the above exercises, they can start using them in various combinations. Two suggestions for combinations are depicted below.



Long hold with heavier bow weight (drawing tension)



Reduced rests with heavier bow (more mass)