Introduction to Range Estimation

There are two basic steps to range estimation that can be applied to hunting or 3-D archery. Step 1: *pre-draw estimation*. Step 2: *distance acquisition*.

Pre-draw estimation requires the archer to make an estimate of target distance before the bow is drawn. This can be done with several on-the-bow aids. For distances of about 30 yards or less the human eye will do quite well with practice. For distances greater than this, the archer can use a little assistance.

Have you ever noticed that many of the great 3-D archers prop their bow in a leg holster or prop it on their waist conveniently positioned between the eye and the target? You can bet they are using a framing method to help them get a good idea of the target distance. Since target sizes are of uniform size, this framing type of range estimation will work quite well.

The limb tips of your bow can be used as a framing reference. For instance, a target of known size will appear to be larger at closer distance and smaller at longer distance in relation to the size of your limb tip. Also, you can frame the target between the wheel of the compound bow and the limb tip to get a reference of distance. You can use your sight adjustment knob or virtually any specific sized part of your bow or sight for this framing method.

Some archers also hold their arm fully extended as if pointing at the target. Some archers have been observed doing this with the thumb ring of their finger sling dangling below their hand. Do you suppose they notice the relation of target size and (consequently) distance, to this ring? The key to this is to find a reference on your bow and practice looking at targets, 3-D or other, of known size at known distances in relation to your chosen framing reference. 5 yard intervals are easy to detect with this technique. Another point to remember is that the framing reference must be kept a specific distance from your eye in order for this to work. Hint: you will notice that many of the great distance 'guessers' hold their bow arm fully extended while viewing the target before the shot.

Distance acquisition: With the right knowledge you can virtually pinpoint the distance to the target while your bow is at full draw. With a scope and a target of known size, the following method should be employed. Force one edge of the target to align with one edge of your scope lens. For example, on 3-D deer targets, align your scope so that the hips of the deer are on the edge of your scope. Start at any distance you wish. For your first trial, make notes of where your aiming dot appears on the deer at 5 yard increments . Obviously, the deer will fill more scope at the closer distances and your aiming dot or crosshair will be relatively close to the hip. You will notice that as you increase your distance, the aiming dot will advance toward the head of the deer. With a good set of 3-D targets and pictures you can see now how distance estimation errors can be virtually eliminated.