

Pluck, Pluck, Pluck, . . .

There seems to be an epidemic of plucking. Here a pluck, there a pluck, everywhere I look a pluck.

I recall the Coach Kim seminar at the Chula Vista Olympic Training Center a year ago last spring. Here were dozens of archers willing to spend a considerable sum to have a gold medal winning Korean coach comment on their form. As Coach Kim walked the shooting line taking short video clips of each archer I saw pluck after pluck. Recurve bows, compound bows, young archers, old archers, relative beginners, elite archers all plucking. Virtually all of the archers there were plucking. I wonder what Coach Kim thought about that.

I walk down the shooting lines at the NAA Nationals and see most of the Junior archers plucking (many of the Senior/Adult ones, too). Some of the compound/release archers pluck, too.

I remember when my coach and mentor, Rusty Mills, was teaching me my first arrows and he said, "You're plucking." My reply was, "I am what?" If you do not know what plucking is, it is your release hand moving out away from your body upon loosing the string. The term is an allusion to the plucking of a string on a stringed instrument like a guitar. Proper form dictates that your draw hand should move straight back away from the bow, not fly outward away from the string plane.

Most of the people I talked to about this consider plucking to be a flawed release, but the more I think about it, the more I disagree. As a beginning coach I emphasized that it was important to "let the string go; don't let go of the string" and that "the release was the hardest part of the shot to master." Now I realize that the release is not all that difficult; you see, I had it wrong.

To Pluck or Not to Pluck

In order for an archer to pluck, he must be creating forces to open his draw arm. In a pluck, the forearm swings outward, hinging at the elbow. Since the *biceps* muscle is primarily involved in bending the arm, the fact that the arm is flying open at least tells you that you haven't engaged the *biceps* (Behind every cloud is

a silver lining.) What opens the arm is (primarily) the *triceps* muscle. So, why would the *triceps* muscle be engaged? Because the load of the draw hadn't been transferred to the muscles in your back.

Contrary to popular opinion, a bow cannot be drawn without engaging muscles in the arm and shoulder, but those muscles have to pass the load onto back muscles so they can then relax. If they don't relax . . . pluck. (It also hurts. I know this because I tried to teach myself how to shoot with a recurve bow.)

So, the key to a fluid release is the transfer of the draw load to the back muscles. How is that done? The simplest approach is to focus on attaining full extension in the shot. In the old days, people talked about archers having "good line." This is the same thing . . . but different. Having good line means good body alignment, the key part being a draw elbow straight back, such that at full draw (just prior to release) a line drawn through the arrow would exit through the bottom of the elbow. The elbow can be higher (and must be for people with certain physical structures), it may also wrap around further toward the back, but it must not be lower or stick out in front of the string plane.

If you look at a lot of people shooting and extend imaginary lines back from their arrows, you will probably see those lines exiting under their forearms somewhere. The telltale sign of a plucker is a flying draw elbow (*see Figure*).

I was working with a student just this morning who wasn't getting fully extended and was noticeably plucking (which, of course, is a major cause of poor groups leading to poor scores). We took a practice bow, lighter in draw weight than his competition bow, and put a clicker on it. I asked him to come to full draw and anchor (without the clicker) with his eyes closed. Three repetitions of this exercise gave me a good feeling for where his conception of full draw was. I then set his clicker about 3-4 mm ($\frac{3}{16}$ ") closer to the bow. We had already talked about how to use the clicker (and the concept of full extension, and how to get there, etc.), so I asked him to draw and anchor, this time with his eyes open so he could watch his clicker as he settled in. I then touched his elbow and



A "fly away elbow" leads to a pluck.

asked him to move it in an arc backward. When the clicker fell from the point, he executed an excellent release and followthrough with a little gasp. The gasp wasn't for nothing. I had asked him to not shoot the arrow.

Now this young man had quite good archery form, had done myriad clicker checks, etc., but I don't think he had ever experienced the power of his shot from full extension. He executed shot after shot (blank bale) with good line, full extension, no pluck, and a good followthrough. He also was smiling through the entire exercise. This was not a "miracle cure." I know everyone (including me) wants a miracle cure, but as in all things worth doing, lots of work will be done before he has fully integrated what he learned into his shot.

An archer's shot has many parts. If it is practiced without being complete, the result is practice frustration. A correctly set clicker is one of those points necessary for a complete shot. (Why do you think the most accurate recurve archers all use one?) A clicker set too far out will prevent a comfortable draw and anchor which then can be followed by a short extension resulting in a shot going off when the elbow is in line, the back muscles engaged, and the arm muscles loose. Now, this student is still young and growing like a proverbial weed, so it is understandable that he had "outgrown" his clicker setting. What I want to elevate is the importance of getting full extension, in which the clicker playing just one role.

Coach Kim mentioned that once a month all of the young Korean archers in a school club stand up against a wall and have their full spans marked on the wall. Any archer whose span had changed more than a little needed at least a clicker adjustment, and possibly longer arrows, etc. You won't see Korean archers plucking.

If you are a young archer and have a coach, ask him/her to check your line and adjust your clicker accordingly on a frequent basis. If you are fully grown, get a coach to help you get to full extension. If you don't have a coach, use a video camera and record yourself shooting. Then sit down with the tape and your playback unit and have a good discussion with yourself about the importance of getting full extension.

Compound Pluckers?

I have already indicated that compound bow archers can have plucking problems, too. The story of my early plucking experience as a beginner (above), was with a compound bow and finger release. In fact, because of the compound bow's letoff (its greatest asset as it provides more time to aim) it is easier to pluck a compound bow than a recurve. A recurve archer has his full draw weight in hand at full draw. A compound archer has only 20-40% of the peak draw weight in hand at full draw.

If, and it is a Big If, you have your bow set to your correct draw length, because of the low holding weight there is a form flaw that you can fall (slide, wiggle) into. Because the power of any particular recurve bow is determined by its draw length, one wants to draw it as far as good form allows. If you were then to rotate your navel toward the target the bow will rip the string from your fingers (because you would lose a lot of the bone-to-bone alignment of good archery form). The power of a compound bow is determined by the shapes of the eccentrics, the cabling scheme, etc. consequently one doesn't have to pull it into the equivalent of recurve bow form and most do not. This coupled with a low holding weight can allow you to rotate your torso until your navel is pointing between straight out from your body and toward the target. This rotation prevents any kind of good alignment or full extension and puts undue stress on the bow shoulder.

The cure for this I learned from Bob Romero (Yes, I was afflicted!), team coach of the bemedalled 2003 World Championships U.S. National Compound archery team. His recommendation to me was to add a step to my shot sequence: namely, "point your navel" or "rotate your torso" back away from the target so that I had good shoulder alignment to the target. My release now flies straight back again and I no longer find myself plucking.

Whether you are an archer or a coach or both, I hope this article has brought to your attention the role getting to full extension plays in getting a clean release and consistent followthrough. Now, let's go shoot some arrows!

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