

Tom Dorigatti

*D-Loop, Draw Length, Nocking Point, & Peep Height*

## Proactive Bow Setup Documentation Part 2: - A Pictorial Review

*Since my first article on "Proactive Setup Documentation" (Volume 10, Number 3), I have received quite a few requests to explain a few of the items in more detail. Since your shooting accuracy is based upon your consistency, and if you miss a shot or two, your ability to make a quick analysis as to whether it is you who erred or something in your equipment has changed, setup documentation is essential to ensure you can quickly check any part of your setup. Then, if something has changed, you may also accurately duplicate the correct setting with confidence. This article deals primarily with how to get the measurements on the items dealing with draw length and the peep height above the nock. These have proven themselves time and again to be nearly "dead-on" when I have had to make a string and/or cable change, change a D-loop, or have to reverse the center serving on the bow string, thus requiring you to re-establish your correct nocking point.*

The steps below are based upon the assumption that you have established your correct draw length, peep sight height, nocking point, and arrow rest positioning and that the bow is grouping well. Once you have documented and

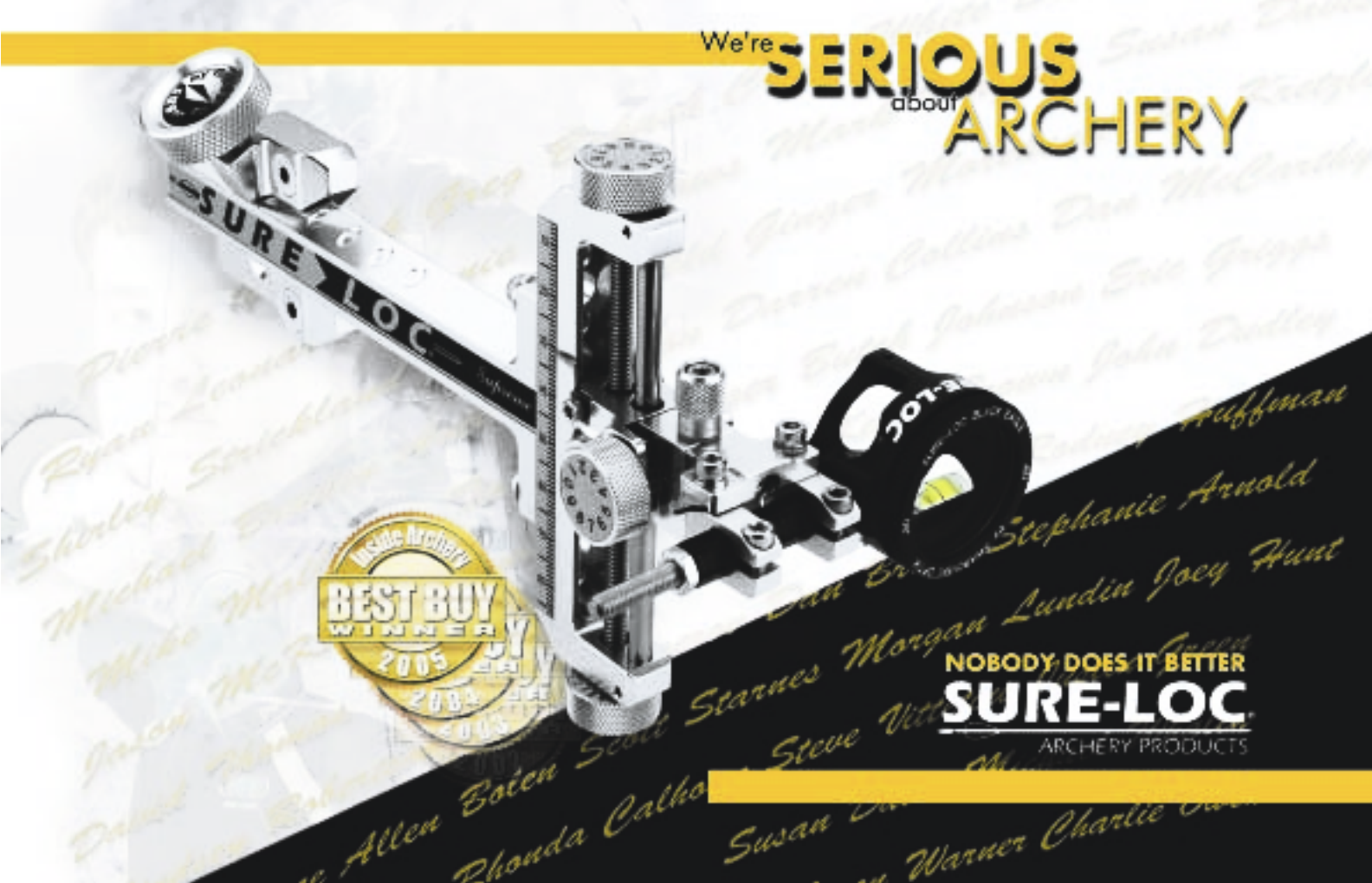
marked everything, you should be able to duplicate these settings with ease; especially during a bow string and/or cable change, or a change of your D-loop.

### **Items Required**

1. Tuned bow with correct draw length and proper grouping already established (final tune completed)
2. Bow square
3. Measuring instrument, millimeter gauge or ruler marked in  $\frac{1}{64}$  inch increments, and calipers (optional)
4. Tape measure
5. Fine-tipped permanent marker and masking tape
6. Long arrow or measuring arrow

### **Items Being Reviewed in this Article**

1. D-loop Measurement - string to inside of D-loop
2. Brace Height: Transferring the measurement to the sight window
3. True Draw Length Measurement using #2. above
4. Nocking Point Height with a Special Tip



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## 5. Peep Height from Top of Nock

1. **D-Loop - String to Inside** I use a set of calipers to measure the “length” of the tied D-loop from the outside of the bow string to the inside of the stretched out loop (see Photo #1). This is a very important measurement, because it does affect your anchor point, which also directly affects how your draw length feels. When changing a D-loop, if you have pre-made your spare D-loop the same length as #3 above, then this should fall into place when your D-loop is secured. A word to the “wise” on changing D-loops. It is a better practice, when changing D-loops, to remove only one end at a time. First place a nock on the string, and then remove one end of the D-loop. Tie on that end against the nock or tied on



nocking point, and then tie on the other end of the D-loop. However, if you tie in serving above and below the arrow nock, and then place the D-loop on the outside, then this is not necessary.

2. **Brace Height** Many bow manufacturers specify a given brace height range for optimum performance of your bow. However, if the brace height changes, then it also changes your true draw length, thus affecting your performance as a shooter. Most good shooters will operate from the True Draw length rather than the AMO draw length as far as bow tuning and set up are concerned. Over the years, I've come up with a sure way of establishing a consistent measuring point for obtaining true draw length, based upon the brace height of the bow. By doing it in this manner, you always have a positive reference point that is the correct True Draw of the bow. I use this method in lieu of simply measuring to the tip of the launcher blade or arrow rest. Why? It is because this method works even when the arrow rest has been changed or re-positioned! Here are the steps I use to get a good brace height marked onto the bow itself and onto the bow square so it can be quickly checked at anytime.

a. Using your bow square or any straight edge long enough lay the “T” part of the square into the deepest part of the grip and then mark the square or straight edge at the inside edge of the bowstring when it is at rest.

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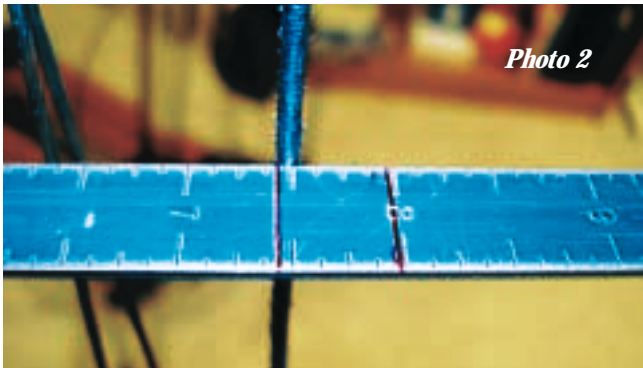


Photo 2

- b. Reverse the “T” of the bow square or straight edge so that the “T” is resting against the inside edge of the bow string—do not clip the bow square onto the string—place the edge of it against the inside of the bowstring. Be careful not to displace the bowstring.
- c. Align the bow square or the straight edge horizontally along the inside of the sight window and along the centerline of the holes in the riser for arrow rest attachment.
- d. Using a Fine Tipped magic marker of a color you can see, make a straight vertical line on the inside of the riser that matches the distance you marked in Step a. (immediately above). On many bows, you will notice that it is not in the center of the mounting screw hole, and in many bows with two holes, you will find that it is not exactly between them. You can be off by as much as  $\frac{3}{8}$ ” if you just pick a point. Even more interesting is that if you have a grip on your bow and then remove it, generally the brace height measurement above will change by as much as  $\frac{1}{2}$ ”, due to the thickness of the grip itself! (This is shown in the photograph; the mark on the left is the brace height of the bow without the grip)

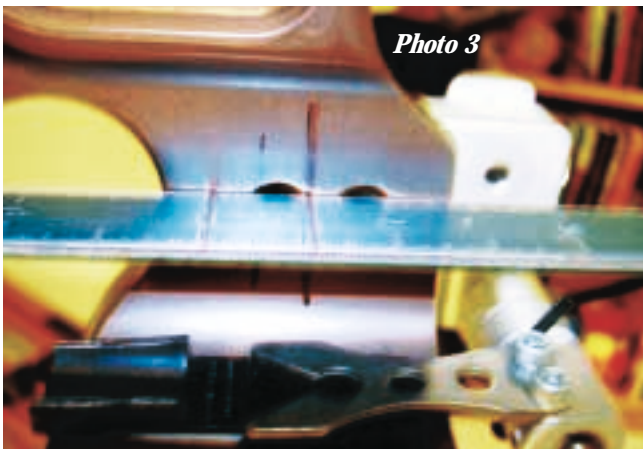


Photo 3

3. **True Draw Length** The mark on the riser you end up in Step 2d can be used to establish your true draw length as the bow is now set up, which is easily duplicated, time and again, unless you change grips, or add a grip, or remove the grip (Notice I marked both brace height measurements). I feel that it is more accurate and useful than marking at the tip of the arrow rest or launcher blade, mostly because this can be used regardless of the arrow rest you mount on the bow and won't have to be redone unless you change brace height. This will measure the true draw (not the AMO draw) of the bow. Steps to get this measurement are simple:

- a. Load an arrow on the string and then draw the bow back to the stops either with your release aid or use a crank board and mark a long arrow at where the arrow and the vertical line match up. You should repeat these three times to insure it is the same each time. If line “moves” then you are not pulling consistently and must “average” the lines and go for the middle, or start again.
- b. If you are not using a measuring arrow, then measure from the bottom of the nock slot to the line on the arrow and write this distance down as close to the measurement as your measuring instrument measures.  $\frac{1}{6}$ ” is close enough, in my opinion (see Photo 4).

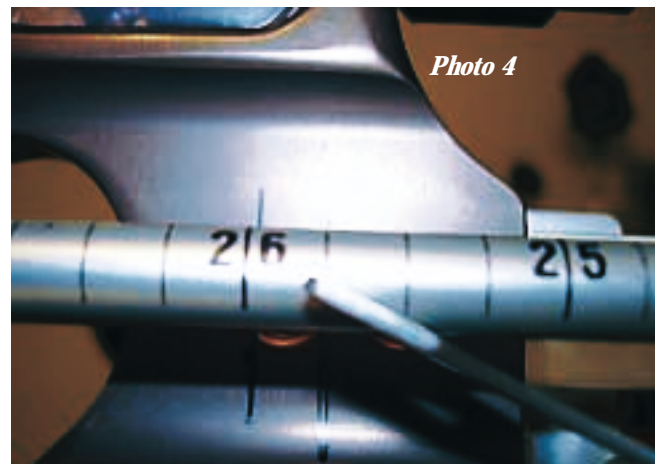


Photo 4

- c. You now have your true draw length that your bow is set for. To get your AMO draw length, simply add  $1\frac{1}{2}$  inches to this measurement. (Remember, if you change your brace height, then your mark on the riser needs to be re-done).
- d. It is a good idea to set aside that arrow that you marked for a permanent reference to have available in case you suspect the string or buss cable has stretched, thus changing the bow's draw length. If you suspect a

change, all you have to do is draw back this arrow and see if the lines on the bow and the arrow still match or not.

- e. Remember, changing the length of the D-loop does not change the draw length of the bow; it simply moves your anchor point and makes it feel like the bow has changed.

4. **Nocking Point Height** This is one of the most critical parts of your documentation. Most people try to match up a mark on their bow square with placing the tips of the launcher blade just nicking the bottom of the bow square then reading across a small gap to the lines on the “T” of the bow square. Others use a split arrow shaft of the same size they are shooting and place it onto the bottom of the bow square and then place that onto the launcher or other arrow rest to get their nocking point. Special Tip I have recently found a way of duplicating your nocking point nearly perfectly with a single positive measurement, as long as the arrow diameter and arrow length are not changed! Here’s what to do:

- a. Place your bow into a bow vise or get it set into a steady vertical position.
- b. Place an arrow your bow is tuned to on the bowstring and also onto the arrow rest.
- c. If a fall-away rest, raise the rest to the full up position and hold it solidly there. No need to draw the bow back to full draw. In fact drawing the bow isn’t necessary and may be less accurate.
- d. Making sure your rest is in the full up position, (if a fall away, you’ll need a helper to hold the rest at full up position) go to the very tip of the arrow.
- e. Using a square, place one edge on the stabilizer and the other vertically to the tip of the arrow.
- f. Mark the stabilizer with a magic marker where the



Photo 5

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- square now contacts the stabilizer. (For clarity, I put masking tape on the stabilizer to denote this point.)
- g. Using a good ruler or your bow square, place the “T” of the bow square on the top of your stabilizer directly under the tip (point) of the arrow.
- h. Be sure you are perpendicular to the stabilizer and then make a mark on the measure or bow square at the exact sharp tip of the arrow. Then, write down the measurement on the Table, and extend the mark on your measuring instrument (*see Photos 5, 6, & 7—left and next page*).
- g. You will be able to use this anytime that you change servings, strings, cables, or D-loops and it should, if you measure it correctly, return your nocking point to near perfect. I’ve used it to re-tune several bows after a string/cable change or a center serving change, and it has worked perfectly every time. In every case, the first shot has impacted, at worst in the bullseye, but often times in the X-ring.
- h. This is especially effective on center serving changes, where the cables and strings weren’t disturbed. In most

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cases I've tested, the first shot has been into or near the X-ring. Normally, if I make an error, that first arrow is high, but in the bullseye (I haven't yet figured out why.)

i. Make sure you use the same length arrow and measure perpendicular to the stabilizer without pushing down on the stabilizer or moving the arrow when you mark the bow square or instrument you are using.

5. **Peep Height from Top of Nock** This is a very important measurement. I use the top of the nock because it is a very repeatable and positive reference point. I also shoot a hooded peep site, so I measure from the top of the nock to where the "Hood" contacts my measuring tool; again another positive and consistent, exact measurement (see Photo 8). I also mark this in millimeters, but some archers mark it using a steel measure in 64<sup>ths</sup>. It is next to impossible to accurately measure to the "center of the peep hole" and get it accurate enough!

We have discussed several techniques of marking the measuring tools and/or the bow to insure accurate duplication of the critical tune settings, thus saving you time and aggravation should something move or needs to be replaced. In conclusion, the most important aspects of this documentation are:

- Document items only when the new bow has been "shot in" and the new strings and cables have had some time to "seat" themselves.
- Once the bow is group tuned and your draw length is set, then measure and document everything in the Bow Setup Measurements Table (see the article in Volume 10, No. 3). Remember, the Bow Setup Measurements Table isn't cast in stone, and there may well be other items you wish to include in the table.
- It is important to not only write the measurements down, but it is also important to mark as many of the measurements onto the bow or onto a measuring instrument, such as your bow square. This gives you a quick reference any time you want or need it to verify that everything has remained the same.
- Your draw length can be quickly checked by using a mark on the riser and a marked arrow or a measuring arrow.
- The nocking point can be nearly exactly re-set by using your stabilizer and measuring up to the tip of the arrow and matching the number in the Table, or the mark the distance right onto your measuring instrument.
- Measurements should always be made with the same instrument and always made to a positive and consistent point of reference that can be duplicated and minimizes error. Always use your instrument and never someone else's; it is your instrument that counts.

In my next article, "Setup Documentation Part 3, a Pictorial Review," I'll readdress several items relating to the critical measurements on the arrow rest, cams, and cable guard.

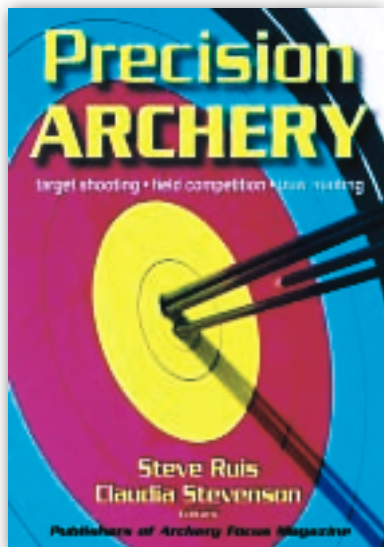
- Center Shot From Window to Edge of Launcher or Rest.
- Launcher Height from Arrow Shelf to Tips of Launcher
- Marking the Cam Positioning
- Marking the Angle of the Cable Guard

**Tom Dorigatti** has been shooting archery since he was 12 years old. He has been bowhunting and in competitive archery for nearly 40 years. During his archery career, Tom has competed or shot archery in no fewer than 38 of the contiguous United States plus Alaska, Hawaii, the Azores, and Guam. He has won numerous local and state tournament titles and has placed as high as second overall in three different sections of the



NFAA. Tom prefers to shoot in the Unlimited Division, but has recently been learning to shoot a recurve bow FITA style. He is also the mastermind behind the archery puzzles currently adorning these pages.

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