

## The Critical Role of Draw

I have to concur with the disturbing point Jeff Mueller made in last issue's cover story. That Wisconsin retailer and tournament archer believes the majority of archers are being set up with the wrong draw length!

Draw length is a very personal thing. Everyone is different. You have a responsibility as someone who sells archery equipment to make sure the bow your customer wants to buy will fit their draw length and is set to do so before they leave the store. I'll go beyond that and suggest retailers should also be checking draw length, and adjusting as needed, anytime they have a customer bring in a bow for repair or to have an accessory mounted. You can't put a bow in their hands that will guarantee that they will never miss again. But you have to put a bow in their hands that they can shoot well.

As a coach, I get shooters from all

over the country and elsewhere. My work with them begins with form development concepts before I watch them shoot. But when my student's do begin to shoot I have to assess their full-draw-position and the draw length of the bow. We can't continue until the bow "fits" the shooter. Aaahhhhh, and therein lies the rub, most of the time the bow doesn't fit!

I do mean most because approximately 70 percent of the people that come to me for instruction need a different draw length setting than what they have been shooting, some by as much as 2 inches. This is a very important part of coaching, I think, because you can't make chicken salad without chicken; you can't make an archer shoot his best without the right bow setup. And setup begins with draw length.

I have been so concerned with this fundamental concept over the past two years that I felt the need to

write this article. Without a doubt, this is the most important article I have written in recent memory. Only when draw length is correct can shooters begin reaching their potential in human performance. Please read it with care, keep it close to the workbench in your shop and refer to it often. If you follow the guidelines set forth here then you and your customers will reap the benefits of good shooting for many years to come.

### THE AMO DRAW LENGTH STANDARD

The Archery Trade Association (formerly the Archery Manufacturers Organization or AMO) has set forth standards for the industry. Among those is the standard for draw length. Traditional Draw Length is defined to be the distance from the nock of the arrow to the back (the side facing away from the archer) of the bow. This distance, of course, is to be measured while the archer is at full draw.

Traditional Draw Length is also defined to be True Draw Length plus 1-3/4 inches. To refresh your memory, True Draw is the full-draw distance from the nock to the pressure point in the grip of the riser. True Draw closely matches how long your body is for the purpose of drawing a bow since it measures the distance from your drawing hand to your bow hand's contact with the grip.

Manufacturers design, build and advertise their bows around the Traditional Draw Length standard. Although a 30 inch Mathews may not be exactly the same length as a 30 inch Hoyt, the two match closely and that's the reason for standards.

Using the longer Traditional measurement helps archers get the right arrow length. Most everyone knows



*Traditional draw length is measured from the nock to the back of the bow. In this picture it is 30" while the True draw length measures 28 1/4" to the inset of the grip. The standard Traditional Draw Length is equal to the True Draw length plus 1-3/4 inches.*

By Larry Wise

## Length Determination



*Hooking a release aid to the bowstring with a D-loop alters the effective draw length of any bow. A long release head or a long loop can increase the draw length by one or more inches and make it too long for your customer. Be sure to fit the bow to your customers with the release and loop installed as they intend to use the bow.*

that if they have a 30 inch bow they need at least 30 inch arrows so they don't draw the arrow off the back of the arrow rest. The shorter True Draw measurement would, if advertised, cause lots of arrow length problems so the industry uses the longer Traditional measurement.

### HANDLE DESIGN CONSIDERATIONS

Most handle risers today are of the reflex design. In other words, they curve toward the archer. There are a few that are straight and a few that are deflexed and, therefore, give a higher brace height. Regardless of the design, your draw length will be the same. If it is 28 inches on a reflex handle then its also 28 inches on a deflex handle; the handle design doesn't

change the length of arrow you draw across the arrow rest.

The only difference is in the power stroke, the draw distance the arrow nock stays on the string. If you give up an inch or two to a higher brace height that means there's an inch or two less for the power stroke and the arrow receives energy from the bow over a shorter distance. Less energy transfer means the arrow is slower.

### CONSIDERATIONS FOR MEASURING

One thing is for sure about draw length; your body stays the same size and length no matter what accessories you use. However, that accessory equipment does have an effect on the draw length you need

from the bow you use. Accessories like release aids, D-loops and removable grips all affect the draw length of the bow needed to fit a given archer.

Recently I had to order a different release head for my Pinky Boss release. The caliper head I've used for several years made the draw length of my Hoyt Protec hunting bow too long. It added a full half-inch of distance between my hand and the arrow rest and that was too long for me under any conditions. (This was a real problem with heavy hunting clothes on.) Rather than putting smaller wheels on my bow (I shoot the Wheel & 1/2), I changed the release head to the shorter Talon head. Now my hunting bow draw length fits great, I still have my 22-inch power stroke and the peep sight is close to my eye.



*Changing release heads, as I did recently, can alter the draw length. I removed the longer caliper head and installed the talon to get my hunting setup to match my draw length correctly. The shorter Talon head gets my hand and, therefore, my drawing arm closer to the arrow nock and inline with the arrow as it should be.*

# COACH'S CORNER



Hooking the release head directly to the bowstring will move your drawing hand closer to the nock and effectively shortens the draw length of the bow. If this setup is too short for the shooter then just add a loop to increase the draw length.



Removing the grip from a bow handle lengthens the effective draw length of a bow by as much as  $\frac{3}{4}$ ". I prefer to keep the warmer plastic or rubber grip on my hunting bows but never shoot my target bow with such a grip as the narrower metal riser promotes less torque transfer.

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In the same way the D-loop length on a bowstring can have a big effect on the draw length needed from the bow. If the loop is an inch long or longer then less length is needed from the bow. But many archers aren't very aware of their equipment choices and may not realize that the long loop has drastically changed the draw length of the bow. Instead they just stretch back farther with their release hand and put their body in an over extended position, a position that yields poor performance and missed shots.

If your customer removes the D-loop then the bow's draw length may not be long enough. Without the loop the bowstring will be drawn further than with it so an adjustment has to be made to get the right fit. Once again, your customers need the right body position to get the most from their shooting form so change the bow to make it fit.

Finger shooters don't have to worry about release head design or the D-loop. Even a change in finger tabs isn't going to affect the draw length they need so their life is a lit-

tle easier with respect to loops, etc.

I quite often remove the wooden or plastic grip from the handle of a new bow. Many of them don't fit my hand or are angled differently than I prefer. Removing the grip alters the draw length of the bow by as much as  $\frac{3}{4}$  inch. Without the grip on the handle the bow's draw length is effectively longer by that  $\frac{1}{2}$  to  $\frac{3}{4}$  inch.

Although this is a cheap way to get more draw length out of your bow you have to be aware that it has consequences. If your customer

doesn't need more draw length but wants to remove the grip then an adjustment has to be made to compensate. If the cam system has adjustments there's no problem but if not then a cam size change is in order and that can get expensive. But, the draw length has to be right and so does the bow hand placement and it's up to the dealer in you to make it happen.

### FULL-DRAW POSITION DEFINED

So when is a person correctly at full draw? How do you know for sure when you're evaluating a customer's form? What are the visual clues to full-draw-position?

If you understand good shooting form then these questions are not that difficult to answer. We're talking about body position here and that's observable. You can look at someone's, anyone's, body when they claim they are at full draw and know for sure if they are or not. You just have to know the standard or



*A front view of proper full-draw-position will show level shoulders, erect head and a level chin. The drawing elbow will be level with or slightly higher than the arrow nock.*



*The top view of an archer in proper full-draw-position should show his or her drawing forearm directly in line with the arrow shaft. This position places the draw-side shoulder blade and rhomboid muscles in the best position to execute the shot with back tension. In this position the drawing force has been transferred to the back, allowing the arms to relax and perform consistently.*

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# COACH'S CORNER

model that defines full-draw-position.

Full-Draw-Position is that position to which you draw the bow-

string in order to place your scapula in the most effective location for executing back tension.

Well, those are the words but

you need to know what it looks like. It looks like the picture at the top of the left-hand column. So when you look at this picture, what do you see? How do you know that this is correct and other positions are not?

What you should notice most about the archer in the picture is his drawing forearm. Where is it? You should see that, from a top view, his drawing forearm is in direct line with the arrow shaft. This tells me



*The rear view of full draw position should show the elbow directly behind the arrow nock or slightly above it. Alignment with the arrow is easily seen from this angle.*

## Learn more at ATA seminar

Because retailers can benefit so greatly from learning to recognize and help customers obtain the proper draw length, Larry Wise will be presenting a seminar on the subject at ArrowTrade booth 1235. The seminar will start at 2 p.m. Friday and Saturday and will take approximately 30 minutes. This is a great way to reinforce what you've learned through this column.



*In this picture my student, Luke, is drawing short to show how his forearm has not rotated far enough around to line up with the arrow shaft. Most of my students come to me with this full-draw-position and need one or two inches of draw length added to their bow.*



*Here, Luke is forcing an overdrawn position. You can clearly see that his drawing forearm is rotated well beyond correct alignment with the arrow shaft. In this position his scapula and rhomboid muscles are compressed tightly against his spine and will provide no help in executing the release.*

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that his drawing shoulder is positioned so that his right-side back muscles – the rhomboid muscles – can have maximum leverage on his scapula (shoulder blade). In short, he has transferred his holding power into his back muscles and is able to relax most of his arm muscles, aim steadier and execute the shot more consistently.

The full-draw front view should show his drawing arm either level with the arrow shaft or his elbow slightly elevated. His arm should never be below the shaft, as this would push his scapula too close to his spine and significantly reduce the ability of the rhomboids to contribute to the shot process. It's all about leverage in the back muscles.

From behind the shooter, you should see his elbow line up directly behind the shaft. If it is wrapped too far around then he has drawn too far and the draw length of the bow is too long. If his elbow has not come far enough to get directly behind the arrow then he is drawing short.

If he or she needs more draw length the situation is easier to deal with. Adding a longer D-loop will help for virtually no cost. Removing the grip from the handle will help also. Changing draw length modules nets a bigger change as does installing a longer string although some single cam bows require the cam to be rotated to a specific position to get best results and a string change should be avoided.

### CONSISTENT RELEASE

We are always trying to attain the most consistent release humanly possible. Getting your drawing forearm directly behind the arrow shaft is a major step toward that goal. It is from this position that your release hand can escape cleanly and directly away from the arrow nock when the release aid activates.

From other positions behind the nock your hand and arm may impart pressure and torque to the release and bowstring. This, in turn, will cause each arrow to impact differently in the target.

Far too much emphasis is

placed on the “touch point” or anchor point on the face or jaw. I'm not too concerned about that part of an archer's form as any touch point should be secondary to establishing the position of his or her drawing shoulder and shoulder blade. In fact, I don't use the term “anchor point” anymore because it has such a strong mental image attached to it, an image of hard contact between hand and face that blots out the more important function of shoulder blade and rhomboid muscles. For that reason I use the term “full-draw-position” and help my students build a new mental image around it.

Many archers out there are still trying to touch their nose to the bowstring: Even on the 32-inch bows on the market! If you're shooting a 68 inch recurve bow then your nose will naturally touch the string when you reach proper full-draw-position but you'll not touch the string with a much shorter compound bow. The head should be kept upright with your chin level so your back muscles can have their maximum leverage at full draw. If your customer/student has a light touch point along the side of his face or jaw that's fine as long as it's only a touch and does not build a lot of pressure that can adversely affect the release.

Shooting archery well is all about body position. It's all about maximizing the use of your skeleton and minimizing muscle use. It's about relaxing as much muscle as possible and that happens when the force you need to draw the bow is transferred into your back and out of your arms. If you get all of your customers fit to this standard, everyone wins. Everyone has the best chance to shoot well.

Keep well, shoot straight.  
*Larry Wise*

**Editor's Note:** Larry Wise's first book, “Tuning Your Compound Bow,” has just been updated with a new chapter on hybrid cams plus other new information. His latest, “Core Archery” details correct form in a step-by-step format, defines

back tension and how to execute it, and presents a plan for the high performance mental game. Get either through his web site [www.larrywise.com](http://www.larrywise.com), or by phone at 1-877-Go4-XXXs. They are also available from Target Communications, 7626 W. Donges Bay Road, Mequon, WI 53079.



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