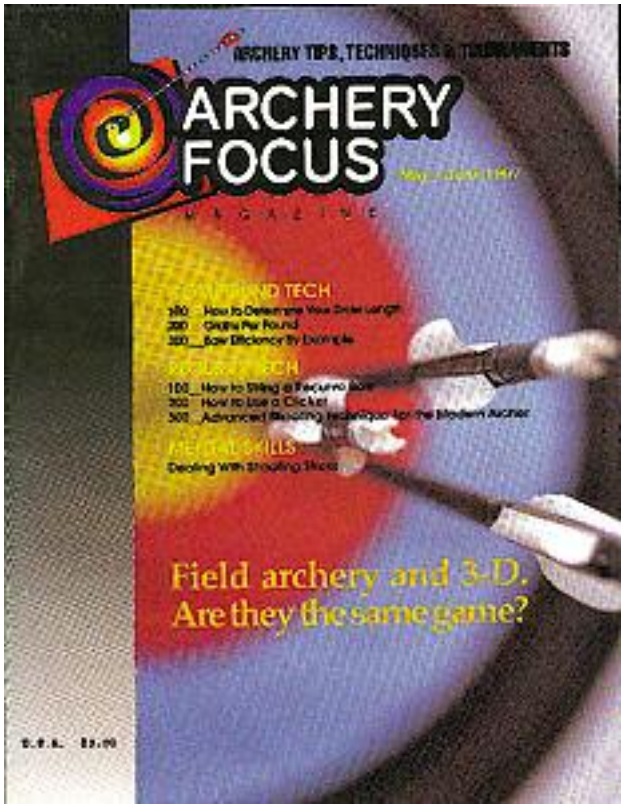
Archery Focus

Volume 1, Number 2, 1997 $5.00



NOTE

Prior to the Vol. 3, No. 3 issue all we inheirited were individual articles from the AFm website. With the help of a generous subscriber were were able to download those articles and convert them to our present file format. This "Whole Issue" has been reconstituted from those files and so doesn't look exactly like the current issues.

EDITORIAL

Have you learned all there is to know about archery?

Kris Facer
*Editor, **Archery Focus** Magazine*

I have met many archers who have shot a bow and arrow for years that admit they too are still learning different techniques and methods of shooting a better arrow than the last one shot.

Archery Focus reaches out to those of you who are interested in expanding your 'archery focus', even if it means learning the sport for the first time. (There is plenty of room in archery for more people to have fun.) The May/June issue is packed with valuable archery information, provided in a variety of levels from beginning to advanced, to help expand your knowledge of archery.

Some people shoot a bow and arrow and think to themselves this is the same game over and over. However, archers who really get into the sport, have found there is more to shooting a bow and arrow than that. It is a fascinating game as you learn to shoot with different variables, which can include your form, your mental train of thought, your equipment, new rules, new competition. The list goes on. ***Archery Focus*** also provides a variety of different methods that you can use as you search for what works best.

Many new archers find that there are many areas of personal opinion when it pertains to shooting a bow and arrow. That's because everyone is unique in their own way. And, that is why many people try a few different methods before finding what works best for them. Don't count out the advice you get from your archery peers or from sources like ***Archery Focus***, rather look at the information and sort out the parts that work best for you.

That's the fun, and sometimes frustrating, part of learning a new sport. There is always more to learn. Work with the information you receive and continue that search to building your very own perfect, unique system. While you're doing that, good luck with your shooting. A little more luck is sometimes all it takes.

Good Shooting,

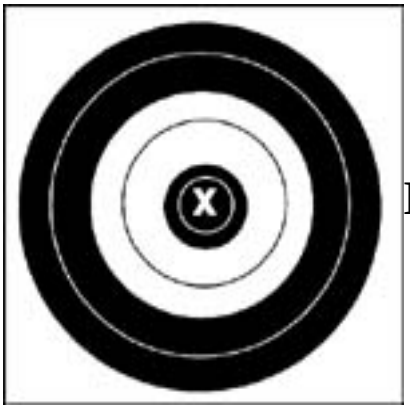
Kris Facer
Editor, ***Archery Focus*** Magazine

P.S. If you enjoy competition, don’t forget to check out the Archery Tournament Calendars. There are an incredible number of tournaments scheduled nationally for the 1997 Spring/Summer Season and many more local events that did not make our list. You can check with your local archery club or contact the host organization for more tournament information.

SPECIAL FEATURE

Field Archery and 3-D

by Diane Watson



How much of a difference is there?

When most of us started shooting archery, we considered all forms of archery to be archery. When I broke out onto the 3-D scene, I was considered a spot shooter. I asked several of my competitors, “Just what do you mean?” They said, “Well you shoot spots and I shoot only 3-D targets.” This comment puzzled me.

At what point was it decided that field archery and 3-D archery are not the same game? The rules may be somewhat different, but the goal is the same. We’re trying to hit the same given spot. If it’s a field round, then the goal is to hit the X in the center ring. If we are playing the 3-D game, then the goal is to hit the 12 ring.

The ‘ultimate’ goal at any one of these games is to be consistent. Let’s compare field archery and 3-D archery. I believe you’ll find the games are not different. You may even find that if you indulge a little bit between both games, your scores will improve, and you just might enjoy the whole sport of archery.

During my involvement in archery, I have always been taught that form, form, form, is most of the answer to being a good shot. And where does this good form come from? Practice, Practice, Practice. When shooting a field round, there are various shooting distances. It’s the same for 3-D. The only difference is in 3-D we are not told the distance, where in field rounds we are. Think about this... when we walk up to the stake we must set our (mind) site. Now this is where many of you feel I must practice with a 3-D target. The answer is No.

FIELD ARCHERY GIVES GOOD PLATFORM TO A 3-D SHOOTER

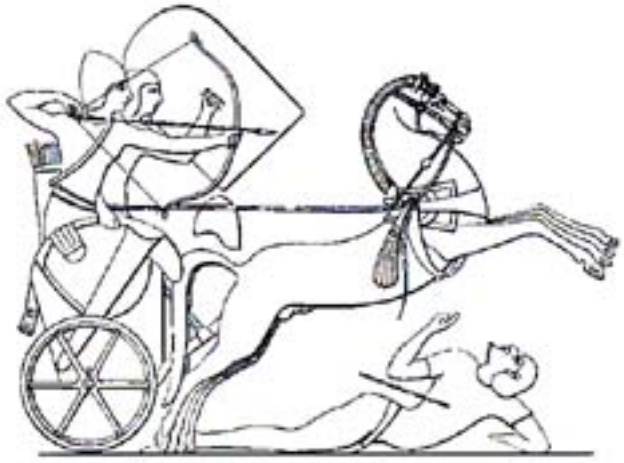
When shooting a field round, practice judging yardage by looking at the stake and then the target. However you judge your 3-D target, do the same for the field target. For instance, if I'm at a 53 yard target butt, I'll walk toward the stake and find 10 yards, then 20 and so on. Judge your yardage just as if you were on the 3-D range. Once this is done, go to the next step. Set your bow sight. Set it in the same manner as you would while shooting 3-D. Then, set your feet the same way you would if you were shooting a 3-D target. Then, SHOOT THE SAME FORM. Your aiming spot will look different, but you are still trying to hit a SPOT on a target. As you can see the key ingredient to both forms, actually all forms of archery, is consistency and confidence that you can hit what you are aiming at. Confidence that you can hit your aiming spot not only once but several times.

Here's another thought to ponder. How many of us spend hours tuning our equipment? A number of archers spend an enormous amount of time. Next time you tune your equipment, tune it the same way as usual. Then go out and shoot a field round. This will be a great way to test your tuning and shooting abilities. You may find that you group at 20 or even 30 yards, but your groups are beginning to open up. Chances are that your bow is tuned fine. But the problem will be in your form. When you've spent time shooting 3-D, you may not be able to pick out a certain problem. This is because you are only shooting one arrow at that target. It'll show up now because you are shooting more arrows at one spot. Your inconsistency will show up tremendously. When doing this during a field round you can start a process of elimination. You can go down your check list and make sure you are following through with your shot sequence every time. When only shooting one arrow at a time, this can be very difficult to breakdown and find where your mistakes are being made. One big thing that most of you may find is when you are shooting different distances, especially the longer shots, we tend to change our form. Your form must be the same whether you are shooting 20 yards or 53 yards. A field round will test your form at all distances.

By indulging in a couple of rounds and making notes, one big thing most of you may find is that you're not looking through your peep the same way at all distances. The key is to be consistent. Consistency is the root to all great shooters. By indulging in a few field rounds, you will find that you've become a more consistent archer. Although judging yardage can make or break you when it comes to 3-D, so can your form. You can be the best in the world at judging yardage, but if you can't make the shot, then knowing the yardage does no good. You can't concentrate on 30 different things at one time, so work on your form first and get that consistency drilled into your brain. Your good consistent form will become second nature. Then, you can work on your yardage. When you don't hit where you're aiming, then there will not be a big question mark as to what happened. You'll know that you made a good shot, and it must have been an error in yardage estimation.

The bottom line is Field Archery (or spot shooting) can be a tremendous asset to your 3-D game. Just like Mikey said... "Try it. You might like It!" You'll be amazed at the difference.

SPECIAL FEATURE



Did You Know? ...

by Jennifer Furrow

...in approximately 1200 A.D. archery training was a popular pastime?

The Egyptian army practiced, under experienced supervision, the tactics of shooting from a moving chariot as in war. Chariots, fitted with quivers and a case to prevent the bow from warping, were used by the Egyptians to practice shooting at a full gallop. The archers had to have both hands free, hence they had no shields. The only armor worn was a thin metal jacket, constructed of squares, and a helmet. The foot archer carried a quiver with up to thirty arrows. The arrows had shafts made of reed and arrowheads of bronze. They used a few different types of bows. The composite bow, the triangle bow, the recurve bow, and the longbow.

The bow found in the tomb of Rameses II, was first recognized as an important relic only in 1893. Until then, it had been thought to be a musical instrument. This finding soon gave way to the important history of archery.

The sport of archery has a tremendous history as a great weapon of war. The bow provides a tie between many different cultures as used throughout history in warfare. The bow was a familiar object recognized by many. The damage caused from an arrow could be as small as a scratch to instant death. But, the greatest casualties of war were the painful wounds from the deeply embedded arrows.

Metal has been used in making arrowheads for centuries. Copper was used for arrowheads and other weapons in Mesopotamia and Egypt, until it was replaced by bronze around 2000 B.C. The weapons improved as the knowledge of metals improved. There were many different types of arrowheads from flat, blade-shaped points, to some with two barbs or one vicious ‘spur’.

It’s not just an accurate shot that makes a good archer. There are other important matters, particularly on the battlefield. A properly trained archer knew how to take care of his personal armament and deal with unexpected incidents of war which might mar the performance of his weapon.

Over the centuries archery training has been a popular pastime. The training helped with the skills needed for battle, as well as the skills used for recreational archery. Although archery has changed

drastically over the past centuries, the progression of the bow as a weapon of war has greatly affected the way we view archery as a recreational sport now. Whether you are shooting for recreation, competition or hunting, the progression that we know has been greatly affected by the warriors of the past.

Product News

Scott Archery's Little Goose: the Life-Time Release!

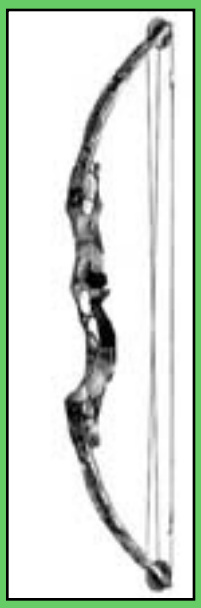
Scott Archery has recognized the need for high quality archery equipment for not only the adult archers, but also for the hands of youth and women. Utilizing the same concept and design features as the ‘Mongoose’, Scott Archery introduces the ‘Little Goose’.

The ‘Little Goose’ offers the accuracy of a rope release with the dependability of a caliper. Utilizing a single caliper with fully adjustable trigger pressure, the ‘Little Goose’ allows a consistent settling of the string. However, the ‘Little Goose’ is different from many other releases since it has been specifically designed for shooters as young as 4 or 5 years old, and with a simple adaptation of an adult strap onto the aluminum pivoting head it quickly becomes a release for an adult. The benefit is that you have one release that can be used at any age for any given situation!

The ‘Little Goose’ is only one of the many quality release aids designed and built by Scott. Scott Archery designs and produces 100% American made archery products.

For more information on the ‘Little Goose’ and other Scott products, contact Bill Scott at 101 Tug Branch Road,
Clay City, KY 40312, or by phone at (606)663-2734.

Jenning Archery Makes Buying a New Bow a Breeze



Jennings has announced the design of a new, very affordable high let-off hunting bow - the new Jennings Breeze™. The Breeze features easy-to-shoot 80% letoff wheels, a lightweight reflexed riser, durable carbon/glass limbs and an insulating plastic grip. The new Jennings Breeze is perfect for the bowhunter who is ready to upgrade to superior Jennings technology.

The Breeze is available in Advantage Camo and new Jennings TreeLine Camo.

Jennings Archery is a division of Gainesville, Florida-based Bear Archery Inc., 4600 SW 41st Blvd., Gainesville, FL 32608. (352)376-2327.

Neet Straddle Bag Doubles Storage Capacity of Standard Bow Cases

Neet Products, Inc., the largest manufacturer of archery cases, Quivers and other sewn archery accessories in the U.S. introduces the revolutionary Straddle Bag.

Designed as an extension to an existing archery case, this innovative product provides additional storage for arrows, sights and accessories. The Straddle Bag features genuine #5 YKK Zippers, snap wrap web handles, D-ring hanger with reinforced riveted mounting, durable 1000 denier Cordura® material and thick 3/4" foam padding for extra product protection.

“I’ve been designing and creating archery accessories for over 40 years, and this is one of the finest, most practical items I’ve ever produced,” said Neet Products President LeRoy Young. “It’s a perfect way to carry all the tools of the trade.”

For further information on Neet’s extensive line of archery and firearms equipment, or to request the 1997 Neet Products Archery Catalog and Supplement, contact Neet Products, Inc., 5875 E. Highway 50, Sedalia, Missouri 65301 or call (816) 826-6762.

Beman USA Offers Ranger Aluminum Arrow Shafts

Known as the world leader in all-carbon arrow technology, Beman USA has developed a line of aluminum arrows. The new Beman Ranger line-up offers shafts in sizes 2016, 2018, 2117, 2216, and 2219. The shafts are constructed of 5086 aluminum alloy and offers a straightness to ±.005" with the tensile strength rated at 58000 PSI. Beman Rangers feature a non-glare, tan and black hard anodized finish and are perfect for bowhunting or recreational archery. The Ranger series provides archers and bow hunters with a high-quality, inexpensive shaft or finished arrow. The Beman Ranger arrows are made in the USA.

For more information on the Ranger, or to receive a copy of Beman's 1997 catalog, write to Beman USA, 513 N. Neil Armstrong Rd, Salt Lake City, Utah 84116-2887 or call (801)539-1433.

SPECIAL FEATURE

On the Web

by George Tekmitchov
(gtekmitchov@msn.com)

Web sites, as anyone who has spent any time on the Internet knows, can be a great resource for gathering information. This issue, we'll look at a few useful and interesting web sites offering information on archery. Sites will be examined for content, and we'll provide some information on loading time for these sites (sites which are too graphics-intensive can take a long time to load over a slow connection). Note that all of the indicated URL's (Universal Resource Locators or web addresses) were current at press time, but may have changed in the interim.

NON-COMMERCIAL SITES

After months of anticipation, the **Fédération Internationale de Tir à l'Arc (International Archery Federation)** (http://www.archery.org/) site is on-line from FITA's new office in Lausanne, Switzerland, and has proven well worth the wait. With extensive information on rules, current news and records, this site has it all for the Olympic-bow oriented shooter. There's history, addresses for all the national archery associations around he world, and in addition, the site is extremely well laid out and *fast-loading*. This one will keep you coming back for more on a regular basis.

National Archery Association of the United States (http://www.usarchery.org). While this site has been slow to be updated, it does contain lots of useful information including application forms for important tournaments such as the U.S. Nationals. It also has a good section for beginning archers on the fundamentals of our sport. The site also has an on-line version of the Nock-Nock member publication. It is a well-constructed site with a *reasonable load time.*

Sagittarius (http://snt.student.utwente.nl/~sagi/) is one of my favorite sites, with lots of good information and lots of links to other sites. Sagittarius keeps a chronicle of interesting USENET

articles pertinent to our sport. Sagittarius does a great job of tracking other web sites (or providing pointers to other sites that do this) and is highly recommended. Updated frequently and *fast-loading*.

California Archery (http://www.archeryweb.com/archery/) is a terrific site, and a good example for other states with information on clubs, bowhunting, the NFAA, and a list of commercial sites. *Medium load time*.

COMMERCIAL SITES

Martin Archery (http://www.martinarchery.com/) has the Easton arrow charts in a useful on line format.

Quick's Archery in Great Britain maintains a good site (http://www.quicks.com/) which is full of information on equipment and maintains a few links to other sites.

SPECIAL FEATURE

3-D National Tournament Tours

by Nathan Lipscomb
1996 A.S.A. World Champion

Archers looking for a family oriented environment should check out three nationally promoted 3-D tours.

The sport of 3-D archery is in full swing for 1997. Archers looking for a family oriented environment should check out three nationally promoted 3-D tours offered by Archery Shooters Association (A.S.A.), North American Bowhunters (N.A.B.H.), and International Bowhunting Organization (I.B.O.). These organized tours offer archers an established, professional and amateur tournament schedule. The 1997 tours began in February and will end in August.

The Archery Shooters Association Pro/Am Tournament Tour
A.S.A.'s Pro/Am Tour averages approximately 1,400 shooters at each event. There are 15 different shooter classes, including four professional divisions and eleven amateur divisions. Shooter classes begin with the Youth division and progress to the Senior class. This tour begins and ends in Gainesville, Georgia. In August, the World Championships will offer its champion a $30,000 prize and a 'Shooter of the Year' title. The men's professional with the top overall points accumulation for the year, will take home a $50,000 prize from A.S.A. Not a bad way to make a little pocket change!

At each A.S.A. event, you'll find the Pennzoil Trebark Bowhunter Challenge which is open and offered to anyone wishing to test their shooting skills at 20 McKenzie 3-D pop-up targets. Archers must shoot this course with bowhunting equipment. There is no pre-registration required, so bring your bow and test your skills. The winner receives a fully rigged Solo-Cam bow valued at $600. Other prizes such as gift-certificates for top of the line archery equipment and Trebark camouflage clothing sets are also offered to contestants.

While shooting the A.S.A. tournament, your family may want to participate at the Easton Family Fun Shoot. Easton Technical Products supplies the equipment for you to shoot. In addition, the Pennzoil Pit-Stop Archery Trailer will be at all seven A.S.A. tournaments to help you with archery repairs, questions and desires. And there is a 20 target practice range set-up for all shooters.

All classes of archers shoot 20 targets on Saturday culminating in a Brunton Shootout for the top 10 professional shooters and top 10 amateur shooters for the day. The pro's and amateurs are paired together by drawing names. The team will then shoot for a $2,000 prize. 20 targets are shot on Sunday. After the completion of the two day shooter, the top five professionals shoot four more targets. The top three advance to the final round where the champion will be decided by the last target shot.

Amateur shooters may qualify in their state for the A.S.A. Federation Championship which will be held August 2 and 3.

The North American Bow Hunters Tour

The N.A.B.H. or Cabela's tournament trail kicked off in February in Mesa, Arizona. The tour will continue its monthly tournaments until late July where they will complete their tournament schedule in Shelbyville, Illinois.

The N.A.B.H. tour follows basically the same rules as A.S.A. with a few exceptions. A 50 yard maximum distance is set for the targets, as compared with the A.S.A. 45 maximum distance. There are 18 different classes starting with the Cub division up to the Senior Open Hunter class. Each event pays back according to the number of competitors in each division and offers a "Shooter of the Year" title in every class.

Cabela's joined Easton Technical Products and Golden Eagle to make an archery shoot for kids. The archery pro's give advise and help the children with their shooting skills. I was able to personally help with this fun shoot in Augusta, Georgia and loved seeing the kids shooting a bow for the very first time. After the shoot is completed, Golden Eagle has a drawing from the kid's names for free compound bows. What an incredible way to introduce the sport of archery to the future generation!

The International Bowhunting Organization Tour

I.B.O. promotes the unity of bowhunters to preserve the future of its heritage. Ken Watkins, the president of I.B.O., continues to work toward the preservation of bowhunting and the advancement of a complete yearly archery tournament series.

The I.B.O., which was founded in 1984 to promote bowhunting and provide education for bowhunters, has 6 major tournaments beginning in Arizona and ending with the I.B.O. World Championships in Peak-n-Peak, New York. I.B.O. has 22 different classes starting with the Future Bowhunters (F.B.H.), ages 8 and under, up to Male Seniors, ages 50 and over. I.B.O. has a 50 yard maximum distance on targets. There is no speed limit on the equipment you shoot, as in the A.S.A. and N.A.B.H Tours. However, there is a 5 grains per pound arrow weight per one pound of peak bow weight rule. An example of this rule would be; an 80 pound bow with a 400 or more grain arrow (80 x 5=400).

The I.B.O. Tour includes a Brunton Shoot-out which consists of the top three scores from the Pro class. The winner takes home the $1,000 first place prize.

An I.B.O. Bowhunter Defense Fund has been set up. The $5.00 cost to participate in a 3-D shoot is donated to organizations such as the Wildlife Legislation Fund of America (W.L.F.A). Over $31,000 was donated to this fund last year and a total of $76,000 has been raised over the years.

As you can see, the three major organizations offer an outstanding tour this year. We hope to see you on the course!

Nathan Lipscomb is a Bear/Jennings Pro Shooter who participates in all three 3-D Tournament Tours and uses the following equipment:

Bow: Bear Majestic
Sight: Sure-Loc with Bulls Eye Scope
Stabilizer: Bowmar Stabilizer
Rest: Golden Key Golden Premier
Arrow: Easton XX78 with C.D.M. Flite-Mate Points
Broadheads: Muzzy
Release: Carter
Binoculars: Zaworski

Contact the specific organization for more 3-D Tour Information:

Archery Shooters Association (A.S.A.)
P.O. Box 5078
Nashville, GA 31639
(912)686-7402

International Bowhunters Organization (l.B.O.)
P.O. Box 398
Vermilion, OH 44089
(216)967-2137

North American Bowhunter (N.A.B.H.)
c/o Sportsman's Quest
1115 Illinois Street
Sidney, NE 69162
(800)224-4990

What is Traditional Archery?

by T.J. Conrads

Time was when the longbow and recurve were the only bows available to the archer. Then early in 1967 a man by the name of Hollis Wilbur Allen designed and patented a device which used pulleys and cables to launch an arrow. The compound bow had come of age; and the world swelled with archers who took to this efficient bow. Today, however, there is a strong resurgence of the old ways of archery and traditional bows are back in vogue, big time.

Just what is traditional archery?
It's a way for us to escape from the technological advances in our lives which have not only entered our work, but the mountains and forests as well. It's a step back in time when archery meant more than the score on a card, a time when archers laughed and enjoyed their time afield appreciating the simple, but gratifying, sport of shooting a bow and arrow. A time when recurve and long-bows were more than just tools - they were our companions. More than anything else, traditional archery is a state of mind, it is an attitude. And it is fun.

The archer today has a multitude of traditional bows to choose from: longbow, recurve and selfbow. Bowyers - those who hand craft these bows - are improving and developing traditional bows like never before in the history of archery. Although each style is classified as a traditional bow, they have distinct differences in design and shooting characteristics.

One style is the longbow, a simple bow of laminated wood and fiberglass with a single string. Two designs today are the straight limbed and the reflex-deflex, the

later of which is the most popular for its almost complete lack of handshock. It was just this type of bow that Dan McMahon, in 1995, won the Easton Eagle Eye Championship and its purse of $1,000. Not only was Dan the only finalist to compete with a traditional bow, he beat all the other contestants who were shooting compound bows with sights. He used his longbow and wood arrows to take the award.

Many custom traditional bows are quite elaborate in the design of the riser section, such as this recurve.

A replica of an old English selfbow, the hand-shaped horn nocks at the end of to keep and hold the string.

Recurves date back thousands of years, to when the early Mongols and Turkish warriors wielded these bows in armed conflict. At that time they were made of animal horn and other material, what is called a composite bow. Today's recurves are a study in beauty with graceful curves and exotic woods used in the riser sections. But the real draw of the recurve bow is its very forgiving shooting characteristics. The deep deflex of the limbs from the riser combined with the graceful arc of the reflexed limb tips store more energy pound-for-pound than a longbow of similar draw weight. And, the added mass in the riser section increases stability when shooting.

Recurve bows are not only made with exotic hardwoods. Many manufacturers use either aluminum or magnesium to make their risers. This allows them to mass produce the riser sections and maintain strict weight tolerances. Although not as beautiful as wood, these metal risers are just as efficient in use, albeit rather unappealing in esthetics. It is interesting to note that the recurve bow is the only design allowed in competition in the Olympics.

Then there is the selfbow. This design of bow is made from a single stave of wood. There are no laminations or fiberglass used in the construction of a selfbow, thus the word 'self.' Some are made from a single piece of wood, called a 'stave,' or they are made from matching billets and connected in the handle with a dove-tail splice. The single stave selfbow is the oldest design of bow. Early prehistoric man must have fashioned a simple limb with twine at each end and flung the first shaft through the air, thereby engraving in future generations the lust of the bow and arrow.

Today's selfbows are made of many different types of wood. Yew, osage orange, hickory, vine maple, dogwood, black locust and mulberry are just a few of the many different woods which are used. However, yew is the oldest and most respected wood for the selfbow. This style of yew bow,

averaging in length from 66" to 74", was used in the battles of Hastings in 1066, Crécy in 1346, and by the English longbowmen of yore to defeat the French crossbowmen at Agincourt in 1415.

Of course, a bow without an arrow becomes just a piece of art. To make it a tool you must have the shaft, and for the traditionalist that shaft will most likely be made of wood. The most popular - and most sought after - wood for arrow shafts is Port Orford cedar. It only grows in harvestable numbers along the Oregon coast, and is a finite wood. One thing an arrow shaft must have is straight grain, and Port Orford cedar is one of the straightest grain woods available. Other woods used for arrow shafting include maple, larch, birch, spruce and ramin (a South American hardwood). But the smell of Port Orford cedar, the straight grain and consistent weight factors make it the number one choice of traditional archers.

Aluminum shafting is also available and can be shot out of traditional bows just fine. It is perfect in straightness and weight from shaft to shaft, something no wood can achieve. Easton makes some of the finest aluminum shafts on the market today, and they have created a shaft with a wood grain appearance for the traditional market called the Easton Classic®.

Arrows for traditional bows come in many different designs and colors. The arrow in the middle is an aluminum shaft fletched with barred turkey feathers. The other two are cedar arrows which have been crested and fletched with dyed feathers.

Yes, traditional archery is making a big comeback from what was once called its demise in the presence of the compound bow. In 1988 there were but a dozen or so bowyers - those who hand craft traditional bows - in the United States. However, today there are several hundred bowyers in this country, and dozens more in other countries such as Australia, France, Italy, Spain, Germany and many others. The business of traditional archery is a global one, reaching out to unite all lovers of the bow and arrow wherever they may be. And it is on the fast track of growth as more and more people come to find the reasons they shoot the bow and arrow, and remember the pleasure of their youth.

For more information about Traditional Archery, contact one of the following clubs nearest you.

Adirondack Traditional Bowhunters
Selkirk, NY 12158, (518) 767-9861.

AL Society of Traditional Bowmen
Columbiana, AL 35051, (334) 361-8261.

Archers Who Care
Fountain Hills, AZ 85268, (602)837-3119.

Arqueros Tradicionales Club Palo Blanco
623 Ote, Garza Garcia, N.L 66220.Mexico.

Bearhill Traditional Archers
Hazel, KY 42049, (502) 492-8505.

Black Rose Traditional Archers
Tigard, OR 97224, (503) 620-8407.

Bootheel Traditional Bowhunters
Bragg City, MO 63827, (573) 628-3665.

Brownstown Bowhunters
Seymour, IN 47274, (812) 523-1083.

Carolina Traditional Archers
Spruce Pine, NC 28777,. (704) 765-1701.

Club Pond Archers
New Durham, NH 03855, (603) 859-4261.

Pennsylvania Traditional Archery Association
North Fork, PA 16950, (814) 367-5607.

Pennwoods Traditional Bowhunters
Leechburgh, PA 15657, (412) 845-7674.

Piedmont Traditional Archery Club
Mebane. NC 27302, (919) 563-2682.

Prarie States Traditional Bowhunters
Hot Springs, SD 57747, (605) 745-5650.

Primitive Archers of Illinois
Springfield. IL 62704, (217) 787-5689.

Quebec Association of Traditional Archery
C.P. 2025, Ste-Gertrude, Ville de Becancour.
Quebec, Canada GOX 2S0.

Robin Hood Archery Range
Elberton, GA 30635, (706) 283-4878.

Royal Welsh Archery Guild
San Leandro, CA 94577, (510) 635-1545.

Saddle Mountain Traditional Archers
Astoria, OR 97103, (503) 325-9566.

Seneca Tri-State Traditional

Colorado Traditional Archer's Society
(970) 243-0161.

Edward I Longbow Society
New Orleans, LA 70124, (504) 486-7149.

Flatrock Traditional
Springfield, MO 65802, (417) 865-5275.

Great Plains Traditional Archery Society
Albert Lea, MN 56007-3040.

Green Country Traditional Archers
Claremore, OK 74017, (918) 342-0081.

Green Mountain Traditional Bowhunters
Colchester, VT 05446, (802)879-5149

Horsecreek Traditional Archery Club
Cairo, GA 31728, (912) 377-8276.

Idaho Traditional Bowhunters
Boise, ID 83703, (208) 336-6761.

Indiana Longbow Association
Fairland. IN 46126, (317) 835-7239.

IN Traditional Bowhunters Association
Austin, IN 47102, (812) 752-6264.

Iowa Traditional Bowhunters Archers
Amity, PA 15311, (412) 884-4760.

Sierra Nevada Traditional Archers
Lockeford, CA 95237, (209) 727-3134.

Southern Illinois Traditional Bowhunters
Makonda, IL 62952, (618) 529-2818.

Southern Nevada Traditional Bowhunters
Las Vegas, NV 89104, (702) 457-5692.

Stick & String Bowhunters
Lawrenceburg, IN 47025. (812) 637-2008.

St. Sebastian Archery Society
Weymouth, MA 02189, (617) 335-3424.

St. Sebastian's Renaissance Guild
Sacramento, CA 95626, (916.)991-7905.

Superiorland Traditional Bowhunters
P.O. Box 26, Marquette, MI 49855.

The Oklahoma Longbowmen
Rt. 2 Box 134. Calurnet, OK 73014.

Traditional & Primitive Archers of Alabama
Somerville, AL 35670, (205) 778-8871.

Traditional Archers Association of Nova Scotia

Society
Waterloo, IA 50701,. (319) 234-0292.

Kansas Traditional Archers Association
Alta Vista, KS 66834, (913) 499-6328.

Kentucky Traditional Bowhunters Association
Versailles, KY 40383, (606) 873-2022.

Little River Stickbows
Linden, NC 28356, (910) 893-9852.

“LOBO” Traditional Club
(913) 741-0567

Longbow Hunters International
Walnut Creek, CA 94598, (510) 938-2721.

Lost Art Bowhunters
Sandy, OR 97055, (503) 637-3144.

Louisiana Traditional Bowmen
Morganza, LA 70759, (504) 694-2223.

Maine Traditional Archers
Warren, ME 04864, (207) 273-2235.

Maryland Traditional Bowhunters
White Marsh, MD 21162, (410) 335-8917.

Michigan Longbow Association
P.O. Box 145, Fottersville, MI Nova Scotia, Canada B2V 2E1, (902) 462-0671.

Traditional Archers of Alaska
Eagle River, AK 99577, (907) 694-7923.

Traditional Archers of Arizona
Phoenix, AZ 85020, (602) 943-9449.

Traditional Archers of California
Rio Linda, CA 95673, (602) 842-3572.

Traditional Archers of Oregon
2424 SW Corbeth Ln., Troutdale, OR 97060.

Traditional Archers of Southern New York
Yonkers, NY 10710, (914) 961-7390.

Traditional Bowhunters of Arkansas
Little Rock, AR 72203-1517, (501) 834-8883.

Traditional Bowhunters of British Columbia
British Columbia, Canada V1X6A5, (250)491-1172.

Traditional Bowhunters of Florida
Umatilla, FL 32784, (904) 669-5636.

Traditional Bowhunters of Georgia
Tucker, GA 30084, (770) 270-9424.

Traditional Bowhunters of Maryland
Princess Anne, MD 21853, (410) 651-2259.

48876.

Michigan Traditional Bowhunters
2020 South 7 Mile Rd., Midland, MI 48640.

Mississippi Traditional Archery Association
Greenville, MS 38701, (601)335-4162.

Mountain Traditional Archery
210 Cooper Hollow, Tellico Plains TN 37385.

Nebraska Traditional Archers
Plattsmouth, NE 68048, (402) 339-1130.

Nevada Traditional Archers
Carson City, NV 89701, (702) 885-9584.

New England Traditional Archery Association
N. Attleboro, MA 02760, (508) 643-2972.

North Idaho Traditional Bowhunters
Potlatch, ID 83555, (208) 875-2301.

Ohio Society of Traditional Archers
Pleasantville, OH 43148, (614) 468-3422.

Ohio Traditional Bowhunters
1230 25th. St. NE, Canton, OH 44714.

Traditional Bowhunters of Montana
Missoula, MT 59802, (406) 728-6058.

Traditional Bowhunters of New Brunswick
P.O. Box 111. Dolhousie, NB, Canada EOKIBO

Traditional Bowhunters of New Jersey
Teaneck, NJ 07666, (201) 833-0600.

Traditional Bowhunters of Southern Oregon
Grants Pass, OR 97526, (541) 476-2321.

Traditional Bowhunters of Texas
Sabinal. TX 78851, (210) 988-2237.

Traditional Bowhunters of Virginia
Ruther Glen, VA 22546, (804) 448-1411.

Traditional Bowhunters of Washington
Roquiam, WA 98550, (206) 532-6901.

Traditional Company of Archers
Burlington, Ontario, Canada L7T 3S7, (416) 639-2405.

Twisted Limb Traditional Archery Club
San Antonio, TX 78250, (210) 684-5459.

Olde Tyme Bowhunters
Birmingham. AL 35213, (205)328-4904.

Ozark Traditional Bowhunters
Fayetteville, AR 72704, (501) 575-0784.

Pennsylvania Longbow Association
Phoenixville, PA 19460, (610) 933-2054.

Two-Dogs Traditional
Florissant, MO 63031, (314) 921-1712.

Utah Wood Bow Club
Salem, UT 84653, (801) 423-2354.

Virginia Traditional Bowhunters Association
Richmond, VA 23236, (804) 674-0150.

Willow Ridge Traditional Bowhunter
Regina. SK, Canada 54N 6G1, (306) 789-8859.

Wisconsin Traditional Archers
Sheboygan, WI 53081, (414) 458-7567.

How to Determine Your Draw Length

by Sonny Fiala

Anchor Point

Knowing your draw length is a valuable tool as you make the decision to start shooting a bow and arrow.

Before determining your draw length, it is imperative that you decide where you'll anchor. (Anchor is the position where you will bring your drawn string before releasing the arrow.*) I personally prefer an anchor point in which the drawing hand is placed under the chin along the jaw bone. This positions the arrow at a straighter 90 degree angle to the body.

There are a couple of methods for determining your draw length.

Method #1

This method is the most accurate way to measure. To establish a good draw length, it is wise to have a very light weight bow on hand along with an arrow marked in one inch increments. Have the person to be measured stand straight and erect and have them extend their bow arm. Be sure the bow arm extends at a straight angle from the side of the body, not in front of the body. Draw length is measured from the nock groove on the arrow to the front of the bow riser.

Method #1

Generally, the person should draw the bow three times and an average of those three draw lengths should be taken. Also, be sure the person's head is turned to look straight down the bow arm. Most archery pro shops can help you with this method.

Method #2

If a bow and arrow are not handy, you may want to use Method #2. Make a fist with your bow hand and extend the bow arm so that your fist touches a wall. As in Method #1, remember to extend the bow arm at a straight angle from the side of the body, not in front of the body. Keep your head straight while looking down your bow arm. Then, take a yardstick and measure from the wall to your anchor point. This measurement will be for a finger shooter. If you choose to shoot your bow with a release, add one inch to your measurement.

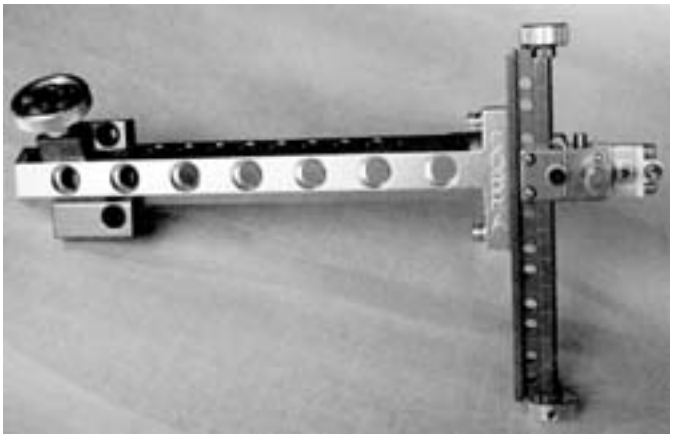
A bow purchased with an incorrect draw length will inhibit an archer's shooting improvement. So now that you know your draw length, start your search for a bow that will provide you the most enjoyment.

Method #2

*** Safety Notes:** Please do not release the marked arrow. Holding the string and arrow, let down slowly until the bow is in its original relaxed position.

Never ‘dry fire’ a bow. Dry fire means to draw and release the bowstring without an arrow. Shooting without an arrow to absorb most of the bow’s stored energy could cause severe damage to the bow and possible injury to the shooter or others nearby.

PRODUCT EVALUATION



Cobra's Triaxis Pro Vector Sight

by Rick McKinney

The Cobra Manufacturing Company has been making hunting sights for over 20 years. Cobra's bowhunting sights have been a proven product over the years and have been a successful item for hunters in the field. In the past few years, it appears that Cobra is expanding their market and product knowledge to promote the target world.

Cobra may be new to the target archery market, but the Triaxis Pro Vector Sight shows their vast experience in product development, and their knowledge of bow sights is well advanced over most archery companies. The quality of this product also shows their commitment to this market.

THE CONTAINER

Upon receiving the Triaxis Pro Vector target sight, I was very anxious to 'tear it apart', so to speak, in order to see how it works. The sight comes in a fairly sturdy plastic container that is designed for protection when storing it. Most target archers must travel a far distance in order to get to the events, and a sight is a terrible thing to damage while traveling. If it gets bumped it could bend your sight pin or scope. So, most archers take the sight bar off the bow before putting their equipment in their bow case. Many archers carry their sights in a separate container when traveling and Cobra has thought of that. A nice additional feature.

When I opened the container, I was impressed with how the foam was cut out for an exact fit for the sight bar, sight extension, sight block and a small area for allen wrenches. Some time ago I purchased a small hand gun plastic case for my sight since I travel rather extensively during the year for competitions, seminars, promotions and meetings. I use a soft bow case and put the plastic sight container in the bow case for travel. The plastic case cost a bit over $10 and was not even close to the quality of the Cobra sight case. I consider the sight case a good investment for protection, and think that Cobra has the right idea.

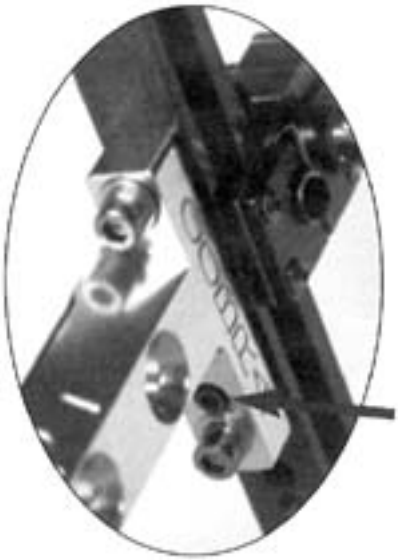
THE MOUNT BLOCK

I looked at the mount block that attaches to the side of the bow and found it to be very solid for an

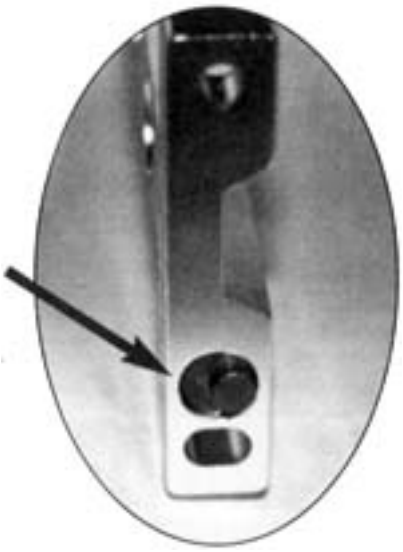
Olympic style archer. The mount fits on recurve competition bows very easily and is aesthetically pleasing. The knob to lock the sight extension to the side mount has a small Teflon tip or similar material at the end so that it locks down on the sight extension and does not vibrate loose. The knob itself is a bit difficult to loosen once tightened due to the position of the knob and the Teflon tip that secures it into place.

This is not a real critical issue, but can be bothersome to people when trying to tear down their gear and cannot get the sight knob to move due to its locking system. However, it is a small price to pay for knowing that the sight extension will not move during critical moments in a competition.

Cobra offers the Triaxis Pro Vector wedge block as an accessory to this sight. It is a bit larger and bulkier than what comes with the sight. Instead of having one locking knob it offers two locking positions in order for more security. This item is ideal for 3-D competition speed bows. The tremendous vibration that is generated by this type of equipment is rather severe and Cobra has thought of the problem in advance.



SIGHT EXTENSION



The sight extension is 8" long which is standard for most Olympic style sights. It is a fairly clean looking piece of aluminum that has no real distinctive features pro or con, except, there is a small allen screw embedded in the extension that is attached to the sight bar. I was not sure what it was until I read the instructions and was really excited about it. Cobra has come up with a Micro-Cant (pat. pending) adjustment feature that is something I personally think is a wonderful idea. As many experienced archers know, when trying to get your sight bar perfectly vertical to the bow or to your liking, it is really frustrating to get it just right without a lot of trial and error. You either move it too much one way or not enough. The two locking screws that hold the sight extension and sight bar together is usually all you get and then you have to loosen these two screws, then position the sight bar as best you can. With this new Micro-Cant (pat. pending) device all you have to do is loosen the two screws a small bit and then, using an allen wrench, adjust the sight bar ever so minutely with this Micro-Cant (pat. pending) adjustment. Once you find the position you want the sight bar at, you just tighten down the two screws and the sight bar is exactly where you put it instead of moving just a small bit as has been experienced by most people.

SIGHT BAR

The sight bar comes with a micro adjustment screw system that the sight block moves up and down on. The adjustments are extremely accurate and very finite in Olympic style terms. According to my figures each click on the adjustment is .0042". Ten of these clicks (which on top of the micro

adjustment knob there are 10 numbers in an equally circular area) moves the sight block down or up to the next line on the laser calibrated scale. According to the instructions, if you start at the top of the sight mark and start 'clicking' your way down, there are 1000 clicks to the bottom mark! I decided to take their word. I did test ten complete revolutions on the knob and ended up exactly ten laser marks down (that's 100 clicks). There is no doubt that this sight is right on the mark!

The smoothness of the adjustment is exceptional. It is very easy to move the sight block up or down using this adjustment. I will talk about the sight block in a moment, but first we need to finish with the sight bar. One side of the sight bar has the 'laser' engraved scale on it while the other side has a small strip of white tape attached to it for those who like to mark the distances right on the sight. Cobra has thought of both groups who either like to write down the calibrations of their distance in a little black book and those who like to just put a mark on the sight and write down the yardage near the mark. Although Cobra has put small holes in the sight bar to lighten it up (I presume) they will need to do more than that to make the sight light enough for archers who are used to shooting a very light sight.

There are three different groups of screw holes in the back of the sight bar to attach the sight extension to. Obviously, Cobra recognizes that different size risers require the sight bar to be positioned in different areas. Also, some bow manufacturers position the mounting areas for sights in different locations. Some people have a rather long distance between their eye and anchor point while others have a very short distance. This too can determine where to position the sight bar.

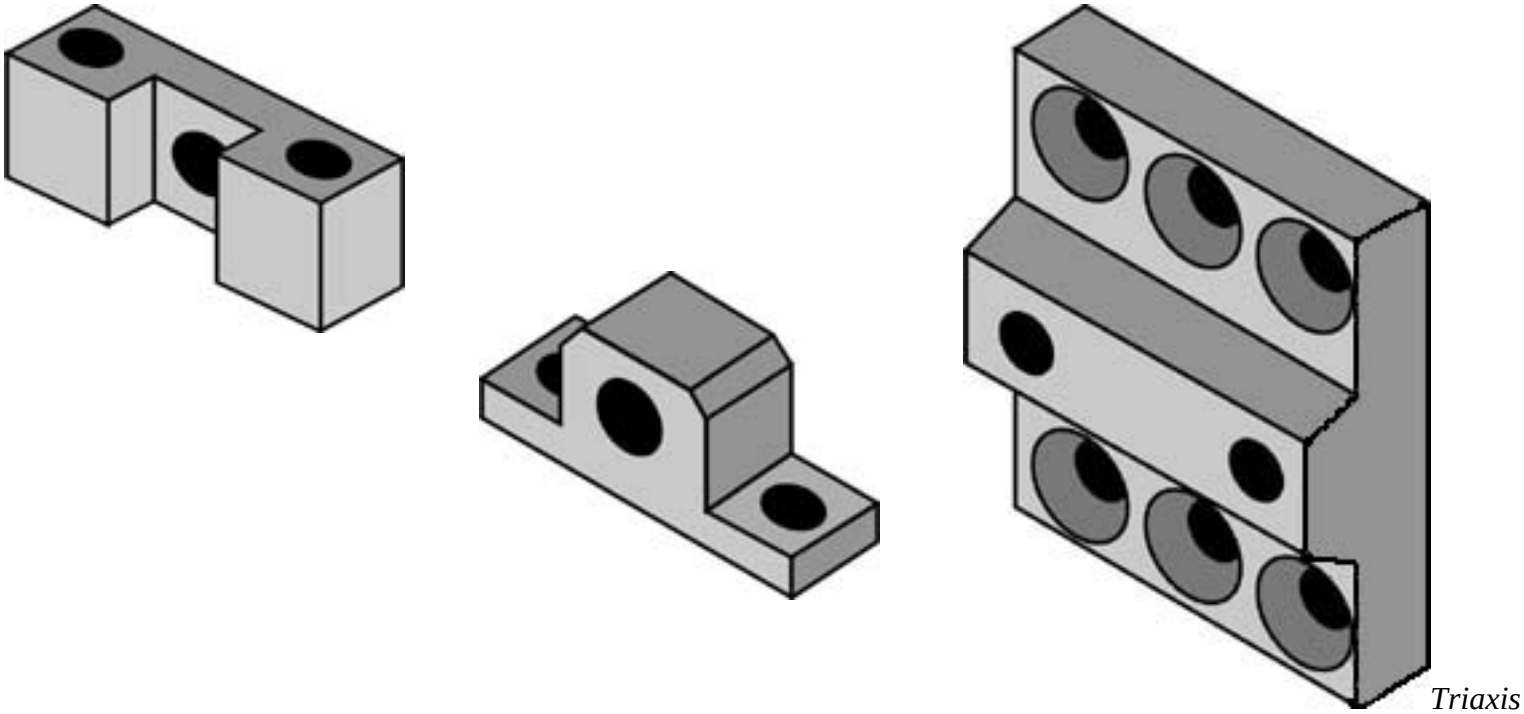
SIGHT BLOCK

The sight block is a very smooth block. It glides on the sight bar and moves effortlessly when the archer moves the vertical quick release button down. This disengages the block from the micro adjustment threaded rod and you can position the block to your next location. Once you find that location, just re-engage the release button and it securely attaches itself to the threaded rod again. According to the instructions it may be necessary to slightly move the block just a small bit in order for the block to attach itself to the threaded rod. When playing with this, I found it to be wise to do just that. It doesn't take much to do it and I would think that common sense would encourage archers to do anyway.

Windage adjustment is just about as simple as vertical adjustment. The knob is a bit small and does require a decent grip on it in order to move it, but the finite adjustment is rather exceptional. On the opposite side of the knob adjustment are the markings to see how many clicks you have moved the windage. I think this is possibly the only weak area of the sight. It is a bit confusing as to why the marks are on the opposite side and why the knob to adjust the windage could and should have been a bit larger for a better grip. I can understand part of the reasons for the size of the knob, but a few adjustments to the design could have taken care of the concerns they may have had.

There are three pin blocks that come with the sight. There is a 6/32 pin block that is pre-mounted on the windage assembly. The other two pin blocks are 8/32 and 10/32. I like that idea. There have been

times when I have wanted to test a different scope or sight pin and the threads were a different size. It can be very frustrating to not be able to try something out to see if you like it just because of the thread differences in the industry. Cobra has thought about that and has included these three different sizes! There are two screws that are used to attach the pin blocks. They are obviously necessary to adjust your level on your scope (for those who use one). Once it is adjusted, you can just lock the two screws down and you're set. The neat thing is that if you want to take your scope or sight pin off the sight block so that it doesn't get damaged or you want to try another type of sight pin or scope, you can loosen a side screw that attaches the mount block to the sight block. This works great for travel! However, in order to test other scopes or pins of the same size thread you will need to order another pin block. That should be no problem and is well worth it. The block base will have to be purchased as well. For those serious archers, they should do that anyway.



Triaxis

Pro Vector Wedge Block

FINAL WORD

An excellent sight for an archer who really wants the best without having to pay severely for it. Although the sight is not anywhere near economical in comparison to other target sights, it is definitely well worth the money for what you are getting. I would have no problems using this sight in a World or Olympic Championship event. It is built solid and is quiet (no vibrating rattles that can drive an archer nuts). There are only two drawbacks that I can tell and they are not that serious. The first is weight. The sight is a bit heavy for Olympic style archers. However, with a few adjustments of stabilizer weights, the weight issue can be eliminated. The other is the windage adjustment knob, which is probably just a picky thing that I looked at since there were so many excellent features. It just did not add up to the rest of the quality the sight had to offer.

Should you buy it? I recommend you take a serious look at it. A sight purchase is a serious investment. This sight has the quality and features that any club, state, national or international shooter would want.

For more information about the Cobra sight line, contact:

Cobra Manufacturing Company
P. 0. Box 667
Bixby, Oklahoma 74008
• Phone: 918-366-3634
• Fax: 918-366-3614

How to String a Recurve Bow

by Jennifer Furrow

There are many ways to string a recurve bow. Several ways and reasons will be described throughout this article.

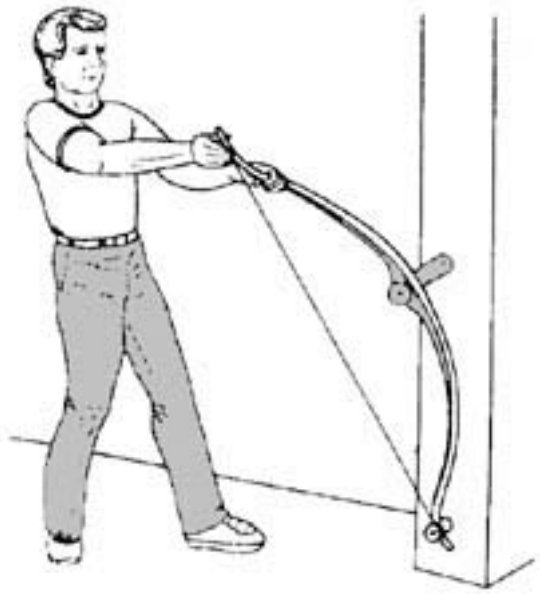
One of the first things you need to know when stringing a recurve bow is that the large loop of the string goes on the top limb, while the small loop goes on the bottom limb. This order is important because the small loop will generally stay in position on the lower limb while stringing and unstringing the bow, and the upper loop, or large loop, will be traveling up and down the limb when stringing and unstringing the bow. Since the limb tip is smaller than the width of the limb below the tip, the loop needs to be a bit larger. The position of the bow string is very important. The string's bottom loop must fit securely in the groove in the bottom limb. Before releasing pressure on the limbs, make sure that both string loops are still in the grooves on the limbs. All of these methods that will be described can be dangerous if not done properly.

Courtesy of the NAA

The first method we will discuss is called the **Box Bow Stringer Method**. The bow box stringer is durable and not easily loosed. This method is best used on flat surfaces, not grass. Open the bow and adjust the arms so that the recurve of each limb fits comfortably in the padded area at the end of the stringer. The bow should be placed in the stringer with the outward curvature of the limbs facing down toward the floor. Now, stand on the side of the box stringer and push the handle of the bow downward with one hand while moving the string upward into the notches of the upper groove with the other hand. Make sure that before you release the pressure, both ends of the string fit securely into the grooves.

Another popular method used mostly in archery clubs is the **Wall Stringer Method**. This method is easy, convenient and safe because the stringer is mounted to the wall. The stringer must be mounted so that the archer has room to stand behind the bow while stringing it. The bow is placed on the stringer so that the handle of the bow is on the upper peg, and the lower limb is under the bottom peg. While directly behind the bow, pull back the upper limb moving the string into the notches of the limb. Make sure that both loops of the string are securely fastened in the notches before you release the pressure.

The **Cord Stringer Method** is the safest and most commonly used method. The cord stringer comes as a long cord with leather pouches at both ends of the string. These pouches fit over each end of the limb. To use the cord stringer, first hold the bow with the front face of the bow facing downward.



Courtesy of the NAA

Grip the center of the riser with the hand that has the most control and strength. With the bow facing down, put the larger pouch over the tip of the lower or bottom limb. Then put the smallest pouch over the tip of the upper limb. Make sure that both pouches are fitted securely over the tips. The stringer cord should now be hanging below the bow. Step on the stringer cord using the same side as the hand used to hold the bow. Make sure the cord is in the middle or "ball" of your foot. Pull up on the riser just enough to make the string taut, making sure that the lower end of the string is still securely sitting in the grooves on the lower limb. While still pulling up slowly on the riser, guide the string into the notches of the upper limb. Watch that your fingers stay to the sides of the limb, making sure not to place them between the bow string and the face of the bow.

The **Loop Method** is another way to string your bow. What you need for this method is a 48 inch piece of rope tied in a loop. Take the cord loop and put it through itself around the handle of the riser and tighten. Hold the bow in your strongest hand with the curve of the limbs facing outward. Place the lower limb on something soft but firm. Step into the loop with the foot opposite of the one holding the upper limb. Make sure the cord is under the ball of the foot. Place the hand holding the bow under the upper limb tip, and pull upward. The bow will then bend. While pulling up with one hand use the free hand to slide the string into the grooves of the upper limb. To avoid twisting the lower limb, make sure you pull the limb directly upward. This will reduce the chances of twisting the lower limb.

Courtesy of the NAA

Another method, which is widely used because of its convenience, is done using just your body. The **Push-Pull Method** is not only dangerous to your bow, but can cause very harmful bodily injuries. This method is not encouraged by me, the magazine nor bow manufacturers. However, it is commonly used, thus a simple explanation will follow.

To begin, you would first take your bow holding the riser in your weaker hand and the palm of your strong hand on the curve of the upper limb. Pull the riser of the bow in the direction of your weaker hand while firmly pushing out on the upper limb with the other. While doing this gently slide the string into the grooves of the upper limb. Be sure that both the upper and lower string fit securely in the grooves before releasing the pressure. This method can be very dangerous because the chances of the string not properly fitting in the grooves is great. If the string does not fit securely, it may slip causing the upper limb of the bow to snap back hitting you in the face or eye, thus causing serious injury. Also, if the pressure held by the weaker hand is released too soon, that hand will lose control and the bow will snap downward hitting you in the thigh or upper leg. So please take precaution using this method, even the most experienced archer can make a mistake.

The **Step-Through Method** is one of the oldest ways of stringing a bow. It's used more for the heavier bows. This method may also cause the bottom limb to twist, and is not recommended by bow manufacturers. To use this method, hold the bow vertically with its face toward the free hand and the outward curve of the limb pocketed in the stronger hand to help control the power. Step between the string and the riser/limbs with the leg on the same side as the stronger hand. Place the tip of the lower limb over the front ankle of the opposite leg. Now, the bow handle should be behind the thigh on your strong side (the step through leg). Lifting the free side heel from the floor will help reduce the possibility of twisting the lower limb. With your strong hand, hold the curved part of the upper limb, push it toward the free side, bending the bow. Be sure to keep the pushing hand open to ensure that the top limb doesn't twist. Then slide the string into the notches of the upper limb with the free hand, making sure that the string is still in the notches of the lower limb before releasing the pressure. Again, it must be stated that most bow manufacturers do not recommend this method due to the unequal stress caused on the limbs thus creating twisted limbs. The warranty will probably no longer be accepted.



To unstring a recurve bow, just reverse any of these processes. Most of these methods can be used for either right or left handers.

Remember: There are many ways to string a bow and these are a few of the most commonly used ways. When stringing the bow, there are a few important things to remember. First, always make sure that the string is seated properly in the grooves of the upper and lower limb before releasing pressure. Also, always remember that the archers' safety is the most important. Good luck and I hope that one of these lasting methods will help you in stringing your own bow individually and properly.

Grains Per Pound

by Scott Shultz

Have you ever heard the term "Grains Per Pound"? If you're a serious 3-D shooter, you probably know exactly what this term means. However, if you're starting into the exciting 3-D game or shoot informally at many local tournaments, you may not completely understand what this term refers to. Let's take a closer look at the "Grains Per Pound" issue to determine how it works and why.

Grains per pound is a measurement that was designed to be a standard for safety and performance; encouraging performance, while yet limiting unsafe bow and arrow set-ups on the course or in the field.

The standard for most 3-D competitions, whether at local, intermediate or professional levels, is 5 grains per pound. What this means is when you select an arrow shaft and set-up your bow, the total weight of the arrow must correspond to the peak draw weight of your bow. More specifically, this translates into "a minimum of five grains of total arrow weight per each pound of peak bow draw weight". For example, a 60 pound bow requires a 300 grain arrow (60 x 5 = 300). An 80 pound bow requires a 400 grain arrow (80 x 5 = 400).

Many bow manufacturers suggest a six grains per pound guideline for their bow set-ups and often base their warranty on a grain per pound minimum. Each manufacturer may have a different standard for their respective equipment. Regardless, these standards have been established to create a safe, reliable, yet high performance standard. The International Bowhunter Organization (IBO) has been a longtime supporter of the 5 grains per pound standard and conducts all its tournaments with a bow scale and arrow grain scale 'weigh station' to maintain the accuracy and integrity of this standard.

Let's look at an example of one of the many popular arrow and bow combinations that shoot extremely well and also fits perfectly into the 5 grains per pound rule.

The Easton ACC 3-38 cut to TOAL (Total OverAll Length) of 28.5 inches, equipped with 2 inch plastic vanes, uni-adapter, 'G' nock and a 1-piece 87 grain point yields a total arrow weight of 338 grains. This stiff, yet relatively light-weight, shaft has the spine strength to match well with the 68 pounds of bow weight that it requires to shoot legally or within the 5 grain per pound standard. How

did we know what poundage the ACC arrow required for our bow weight? It's simple, 338 (grains) divided by 5 = 67.8 (pounds).

Initially the Easton Arrow Shaft Selection Chart is invaluable when starting your arrow selection process. The final timing and tweaking usually is on an individual set-up basis.

Another fine set-up utilizes a fat, thin-walled 2312 aluminum shaft which matches up well for speed and accuracy and hits the 5 grain per pound perfectly, too. A 2312 cut to 28 inches TOAL with a 2.5 inch plastic vane, unibushing and a 90 grain point will weigh approximately 360 grains. Again, 370 (grains) divided by 5 equals 72 (pounds).

The arrow grain/weight and bow peak draw/weight combinations are almost endless. It’s very possible that the arrow shaft you are presently shooting would work well when you adjust your bow weight up or down to hit the 5 grain standard. Possibly switching the field tip for a different weight would achieve the same result.

Even though the 5 grain per pound standard is a guideline for 3-D competitions, which depicts hunting situations, most actual hunting set-ups utilize a heavier arrow shaft than the 5 grain per pound standard. The need for longer vanes or feathers, an 8-32 tip adapter and a stout broadhead requires a stiffer, heavier arrow shaft which often adds up to weights of 450 to 500 grains. Few hunters are capable of shooting a hunting bow at 90-100 pounds.

Today the 5 grain per pound standard is widely accepted as the standard for many 3-D competitions. The standard does, however, have its supporters and its detractors.

Most obvious is that an archer with a long draw will attain higher speeds than a person with a shorter draw. Also, a person with a longer draw is often a bigger, more muscular individual capable of pulling a heavier weight bow. Even though the arrow weight requirement increases as the bow weight rises, the combination of a long draw with a higher weight bow will result in a very fast set-up.

The shorter draw archer (27" or 28"), regardless of bow weight, is incapable of matching the high speeds of the longer draw set-ups. This problem is especially evident in the ladies divisions where short draw lengths and lightweight draw weights are most normal. A larger, stronger woman can easily distance herself from her smaller female competitors.

This whole argument is moot if the grain per pound standard is being used as a safety guideline for hunting or informal shooting rather than hard-core competition. The enjoyment of shooting archery on a challenging 3-D course or just shooting informally with some friends far outweighs any disparity between different draw lengths. Speed is a key word for 3-D competitors and some hunters, too. How fast will the average bow shoot an arrow at the 5 grain per pound standard? Taking the standard of a 30" draw length and a 60 pound bow shooting a 300 grain arrow, the average bow with

a semi-cam design eccentric will produce speeds of 270-280 feet per second. If the bow poundage and arrow weight is incrementally increased, speeds will increase as well.

A cam-equipped bow with short axle-to-axle length and an aggressive riser design can develop speeds well in excess of 300 feet per second! If this happens to be a hunting outfit, it is indeed very fast. However, broadhead flight and arrow stability are very difficult to maintain at these extreme speeds, and again, most hunters opt for a slightly heavier hunting shaft.

3-D archery is a rapidly growing sport filled with fun and challenge. The 5 grain per pound standard has addressed the safety concern for the competitive shooter and equipment reliability is seldom an issue on today’s 3-D courses.

Purchasing Your First Compound Hunting Bow

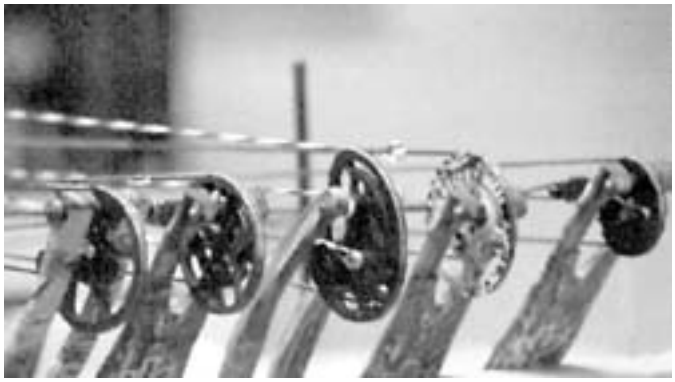
by Ralph Ramos

Purchasing a modern hunting bow can be quite challenging with today's high tech gadgetry. But don't let all the high tech lingo shy you away from taking the first step into this wonderful world of bowhunting. By the same token, shopping for a hunting bow is similar to planning for a once in a lifetime bowhunting adventure. Prehunt anxiety, researching the hunt, doing your physical homework, as well as getting on the actual game you're hunting is much like the process of searching and anticipating having a first hunting bow in your hands.

After gathering all the recommendations and advice given by bowhunters in your region and knowing all the diverse type of bowhunting setups throughout the country, prehunt anxiety will drive you nuts when trying to decide on which bow to purchase. Whether you're hunting in the Eastern or Western part of the United States, selecting the bow that fits your body size and comfort is the most important factor that should not be overlooked in bowhunting. Knowing the average hunter wants to save money and find the best deal for their buck, I strongly recommend that you utilize the nearest pro shop technician/dealer in your area to help you determine your personal needs and draw length before spending your hard earned money elsewhere. I agree that most pro archery shops are a bit more expensive than a WalMart or even a Pawn Shop in your local area, however purchasing the right setup from the start will allow you more hours of enjoyment and less headaches with your investment in the future. Futhermore, these archery technicians/dealers not only carry a good selection of archery bows and accessories, but are also qualified archery professionals whom support bowhunting and the archer.

Being from the 'Land of Enchantment' in New Mexico, I have the experience of hunting open country big game animals and competing in 3-D tournaments where I prefer a flat bow. Considering most of your shots in this scenario will be between thirty and fifty yards, cam type of bows are a must in the Western United States or the 3-D arena.

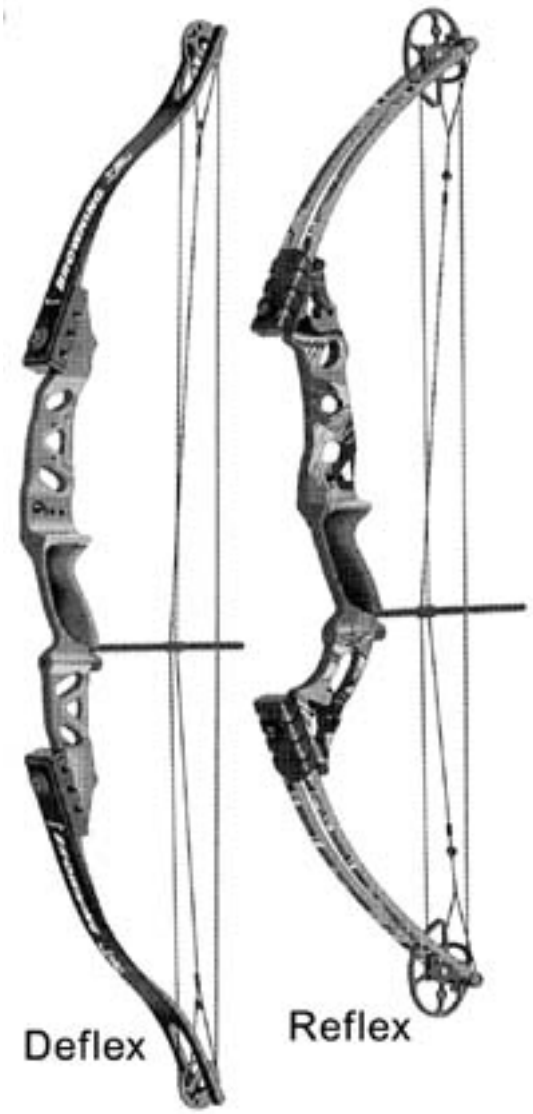
Most hunting bows in today's market are offered with 'hatchet' hard cams, 'slight oval' soft cams, or single cam eccentrics, and any of them will do the job in any hunting situation. Once you select your personal draw length, cam style could well be determined automatically with the speed and kinetic energy you are trying to achieve. For hunting in the Western United States arrow velocity between 260 and 280 feet per second can easily be achieved by any draw length archer using a cam type of bow. In addition, cams offer you plenty of punch to hunt any average big game species in North America. Cams also let the hunter attain at least 50 pounds of kinetic energy for the average size deer and 60 pounds for larger game with plenty of penetration potential. 'Hatchet' type cams provide the



left to right: hard cam, soft cam, single cam, energy wheel, round wheel

archer approximately ten to fifteen feet per second more speed than the soft or single cam, therefore the “hatchet” cam is faster and provides more energy than these other two eccentrics. Normally a short draw length archer twenty-seven to twenty-nine inches long prefers a ‘hatchet’ type cam which permits them to gain all the speed and energy they possibly can achieve without over stressing their body with high poundage, thus rewarding them to shoot comfortably. Whereas the long draw length bowhunter thirty to thirty-two inches may shoot a soft or single cam giving them the additional power stoke from their draw and speed not needed from the ‘hatchet’ cam to achieve the higher velocity, furthermore adding the benefit of a smooth draw to the bow and a comfortable draw weight.

Bow riser style is another very important factor when selecting a hunting bow, after all this is the part that you will be holding and supporting during that key moment of your bowhunting shot. Most modern compound risers are either made of cast magnesium, being least expensive, or machined aluminum, costing you a bit more money. Although both will work remarkably well, machined aluminum risers tend to be more durable in strength and notably lighter in mass weight. Besides riser material, riser designs are basically deflexed (meaning the limbs of the bow are positioned behind the bow's grip) or reflex (meaning the limbs are positioned in front of the bow's grip.)



Deflex bows are normally longer in length allowing less sensitivity to grip torque, being more forgiving, and designed to be a more accurate type of riser. On the contrary, deflex risers having the accuracy but don’t have the speed of a reflex riser. Reflex risers are more popular on shorter axle-to-axle bows being a significantly faster riser. Furthermore, reflex risers utilize larger eccentrics and give up the forgiveness of the deflex riser which is more sensitive to grip torque allowing for better chance of error in the shot. Deflex riser styles are important as far as shootability and accuracy. Nevertheless, don’t be afraid to use a reflex style riser for hunting on account of loosing accuracy. Let the record show that most 3-D tournaments have been won with reflex risers.

In the beginning of this article I mentioned that actual hunting preparation and searching for the perfect bow correlate to one another. Equally important are the accessories that you mount on your

bow. When selecting accessories for your modern compound bow, the need for durability and noise free is most important. Keep in mind that all bows produce vibration after the shot which steers this radical movement toward the out-most parts of the bow. This vibration tends to loosen all accessory components on the bow. Therefore, equipment mounted to the bow needs to be of the most enduring towards vibration, keeping all parts from coming loose or broken.

Most hunters today use four basic components mounted to their bow which includes a sight, quiver, overdraw, and stabilizer.

Bow sights are a great tool for both novice and experienced bowhunters, teaching them to concentrate and focus on picking a spot on an animal. Most bowhunting sights are either stable pins or crosshairs, although some hunters use a moveable type of system offered with various types of aiming apertures. With current technology, fiber optic pins and wires have become very popular due to the light gathering ability, which allows better visibility in low light conditions to the hunter. All three of these sight styles offer this fiber optic technology, although when selecting a sight double check the toughness of the pins. Keep in mind that thinner optics are weaker, making them more opt to break. Furthermore, cold weather tends to make some fiber optics brittle permitting them to break more easily than wire or metal pins. No matter what sight you select, they all serve the purpose of helping the archer hit the target accurately therefore building confidence.

Quivers on a bow can be the most convenient and safest way to carry your arrows for your hunt. Quivers are made by numerous companies in many shapes and sizes. I prefer to use the same company name of my bow because of the fact that most bow companies build their quivers to mount on their style of bows with least trouble or need for modifications. Covering as well as securing broadheads and arrows is the sole responsibility of the quiver providing you the safety along with accessibility to an arrow when needed. A quiver attached to a bow tends to be noisy, therefore a bowhunter needs to make sure the selected quiver is mounted securely and arrows are aligned in a quiet position, eliminating rattles and tweaks brought from arrow parts rubbing together. For the average hunt in the Western United States I recommend that you carry a minimum of six arrows on a quiver in the field, however quivers can hold between four to nine arrows depending on the brand and style of quiver. Counting on your preference and type of hunt, quantity of arrows that you carry in the field may vary from hunt to hunt.

The aid of shooting a shorter arrow to gain velocity out of your hunting bow can also be attained by mounting an overdraw attachment. Overdraws have been used on bows for quite a long time and

continue to gain popularity amongst bowhunters in the field. Overdraw attachments can help both a short draw and a long draw archer. Using arrows of lighter than six grains per pound of draw voids the warranty on most bows and could possibly cause harm to the shooter. Archery Manufacturers and Merchants Organization (AMO) advise bow companies to void a bows warranty if the bow is shot at less than the minimum recommendation of six grains per pound of draw weight because of the hazard that could occur to the archer. Equally important, the need of an overdraw may be eliminated with today's fast design of bows and the use of the more expensive carbon aluminum arrows. This type of setup permits you to shoot a full length lighter weight, stiffer spined arrow gaining the same speed as an overdraw. Although in a search for speed, most hunters still use an overdraw and prefer a more inexpensive aluminum arrow for hunting. Overdraws that I prefer, again, are the types and styles offered by the same bow manufacturing company. These companies manufacture and modify their accessories and bows to fit best together, eliminating parts from coming loose or breaking.

Stabilizers are the last most common accessory found on a hunting bow. Many archers prefer to use a stabilizer because of particular reasons such as supplementary forward balance, reduction in torque, and minimizing shot vibration from the bow. Altogether these three reasons add to a bows accuracy, performance, and dampen noise created by the vibration coming from the shot of the bow. Stabilizers come in different lengths, weights, and circumferences as well as being constructed of different shock absorbing materials. Most bowhunters use a stabilizer between six to twelve inches in length and eight to twelve ounces in weight. Despite every size and weight of any hunting stabilizer, all styles benefit the accuracy of any bow, however all-in-all the accuracy may be very minimal that the bowhunter may not notice the benefit. Nevertheless mentally satisfied, the majority of bowhunters choose to use one, while other bowhunters prefer to leave the excessive weight and added bulkiness of the stabilizer at home for the 3-D range.

After being conscientious and researching all the types of bows on the market, I can imagine all the anxiety that you have built up prior to buying your first hunting bow. Hopefully this article has helped you on knowing the different types of risers, cams, and basic accessories that the average bowhunter uses before spending your money. I am most positive that whatever bowhunting setup you select will be a great one. Good luck and enjoy using your new bow on harvesting that trophy animal of your dreams.

Bowhunting Organizations

Becoming An Outdoors Woman
College of Natural Resources,
UWSP
Stevens Point, WI 54481

Bowhunters of North America
P.O. Box 1702
Bismarck, ND 58502

International Hunter Education Association
P.O. Box 490
Willington, CO 80548

National Bowhunter Education Foundation
249B E. 29th Street, #503
Loveland, CO 80538

National Crossbow Hunters Organization
4741 SR. 107 NE
Washington C.H., OH 43160

National Poaching Hotline
(800)800-WARDEN

Physically Challenged Bowhunters of America
RD #1, Box 470
New Alexandria, PA 15670

Pope & Young Club
15 E. 2nd Street
Chatfield, MN 55923

Professional Bowhunters Society
P.O. Box 246
Terrell, NC 28882

Safari Club International
32045 DeQuindre
Madison Heights, MI 48071

The National Crossbowman
398 E. State Street
Kennett Square, PA 19346

World Bowhunter Association
205 Pleasant Avenue
Park Rapids, MN 56470

SPECIAL FEATURE

Getting Kids Started in J.O.A.D.

(Junior Olympic Archery Development)

by Lloyd Brown,
Youth Promotions Manager,
Easton Technical Products

One of the best ways for a young person to get started in the sport of Archery is through a Junior Olympic Archery Development (JOAD) Program. The JOAD program is a division of the National Archery Association, with over 200 clubs nationwide.

It's no surprise that many of the top U.S. archers started their archery roots in the J.O.A.D. program. These archers include 1996 Olympic Gold Medalists Justin Huish and Rod White, as well as team members Lindsay Langston and Janet Dykman. The J.O.A.D. Program is a great place to find trained and certified instructors to help insure quality instruction is given to participants from the first shot.

The J.O.A.D. Program is based on a qualification and ranking system where archers earn award levels based on the scores they shoot with indoor and outdoor rounds. The J.O.A.D. Division also has its own tournaments from the local to national level. These tournaments offer excellent opportunities for young archers to travel and compete with other kids from around the country. J.O.A.D. clubs are a great place for kids to meet lifelong friends in this lifetime sport, as they compete individually and as a team in a progression of tournaments from local, State, Regional, National and World Championships.

Another benefit of the J.O.A.D. program is the ability for young archers to compete within their age group and ability level. There are separate divisions for archers 12 and under, 15 and under, and 18 and under. Some clubs may also offer a division for the youngest archers at 9 and under.

Archers who participate in J.O.A.D. programs can attend the J.O.A.D. camps that are held each year

at the Olympic Training Centers in Lake Placid, New York and San Diego, California. At these camps, Juniors have the opportunity to get together with other archers for a week of intensive archery training. Archers also learn related skills such as physical conditioning and mental preparation. Regional camps are also held at Universities and other locations.

Each year, the top Junior Archers are selected from ranking tournaments to the Junior US Archery Team. This honor provides them with recognition in membership publications and a notice to archery equipment manufacturers for sponsorship. They can also qualify for a free trip to the National Championships when they make the J.O.A.D. Olympian Team.

Every other year the top Junior archers can compete to earn a position on the Junior World Team. Team members have all of their expenses paid to represent the United States at the Junior World Archery Championships. In 1998, the team will travel to Sweden! Teams in the past have competed in Norway, Italy and France. Team positions are available for boys and girls in both the Olympic and Compound divisions. Many successful J.O.A.D. Clubs are based at Archery proshops, such as the Hall's All Stars at Halls Arrow in Connecticut, or the Cherubs J.O.A.D. at Archer's Haven in California. There are some, however, that are based at schools, parks or other youth organizations. You can get an archer started in the J.O.A.D. program by contacting the National Archery Association for a location nearest you. If there are none, you can help get one started by contacting your State or Regional J.O.A.D. coordinator, or the National J.O.A.D. Director, Jackie Fiala through the NAA office.

J.O.A.D. is Fun! Call and get started today for great instruction, fun tournaments and great rewards.

National Archery Association:
One Olympic Plaza
Colorado Springs, CO 80909
• (719) 578-4576
• Fax (719) 632-4733

Dealing With Shooting Stress

by Lisa Franseen, PhD

Stress is something that all of us experience throughout our lives, in our jobs, our relationships, and yes, even out on the archery field. Some people handle stress quite well and actually enjoy it and thrive from it, while others avoid it at all costs. If you would rather spend your life lying in the sun on a tropical beach with a million bucks in the bank, then it might be worth learning more about stress, what causes it, and how to best cope with it (unless, of course, you're able to head for the beach!).

Stress is actually a process that begins with an external situation that is calling for us to perform. In archery, this might be our parents pressuring us to shoot "as well as dad did", or an upcoming tournament where most of our competitors are elite. Each archer reacts differently to these situations. Some might enjoy the attention from parents or the challenge of competing against tough opponents, whereas others will feel anxious and not believe they are able to cope with the situation.

What is most important for archers to understand is when we feel stress there are countless changes in our bodies, that then changes our ability to shoot; to either shoot better or worse. Think of the last time you were really nervous while you were shooting. How did you feel? Most likely, your stomach was churning, palms were sweating, your breathing was shallow, your heart was pounding, and your muscles were more tense. These are symptoms of anxiety, and depending on who you are, helped you to either shoot better or worse. Why the difference? For some archers, anxiety helps their focus and concentration. For others, anxiety actually causes them to lose their focus and sometimes to even panic or freeze. Instead of becoming psyched up, you get psyched out.

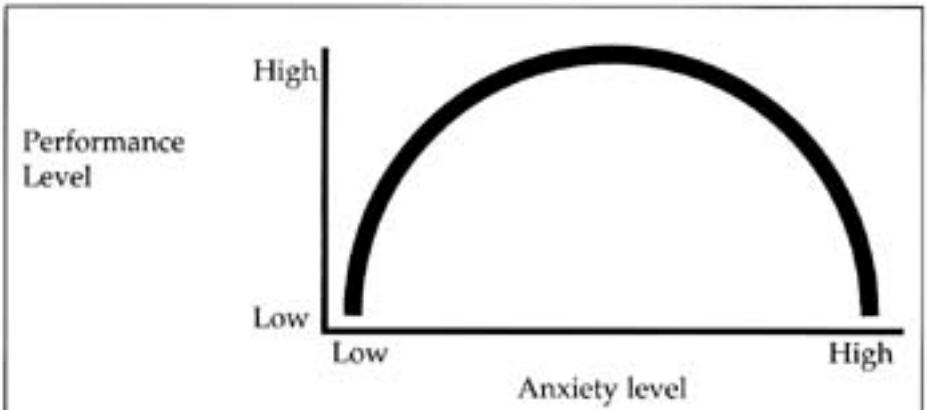


Figure 1. The Inverted-U arousal-performance relationship.

Each of us has an optimal level of arousal for shooting our best. Figure 1 shows how very low and high anxiety lead to poor performances. An anxiety level somewhere between low and high leads to peak performances. Remember, everyone has their own optimal level of anxiety; what level works for you will not work for another. The first step is to figure out what your optimal level is and then learn how to obtain that level when you need it.

What is **your** optimal level? All it takes is self-monitoring to figure it out! Think back on your best performance. Close your eyes and imagine yourself shooting, how it felt, and then rate on a scale of 1 to 10 how relaxed or anxious you were (1 = extremely relaxed or flat; 10 = extremely anxious or panicked). Now rate how relaxed or anxious you were as you think back on your worst performance. You'll probably notice a difference. It's also helpful to monitor yourself over the next couple of weeks by rating your anxiety level after each practice and each competition and comparing it to your performance level. The following layout might help:

Date:

Practice or competition? (circle one)

I felt ...

Extremely 1 2 3 4 5 6 7 8 9 10 Extremely
relaxed, flat anxious, panic

Performance level:

Poor 1 2 3 4 5 6 7 8 9 10 Excellent

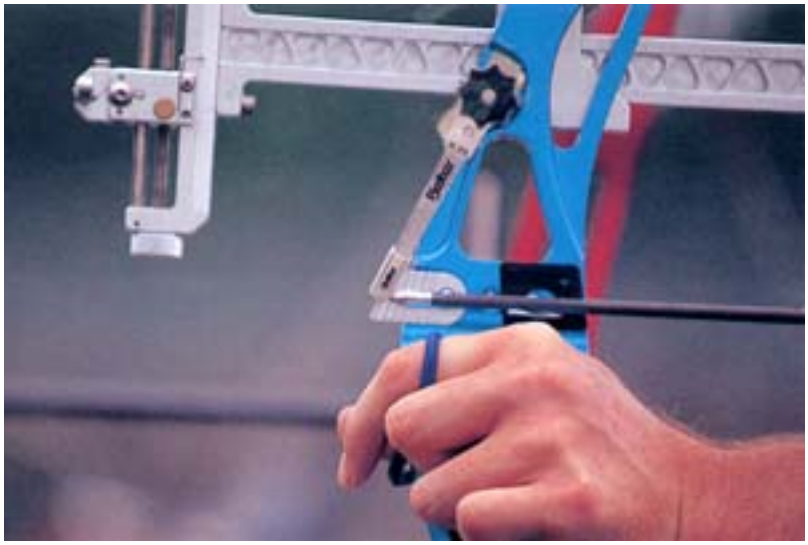
Once you've figured out what level of anxiety leads to your best performances, you can learn and practice adjusting your level as needed. It's important to keep in mind that other things effect your performance in addition to your level of anxiety, especially the things you are saying to yourself. But, for now, let's focus on techniques for increasing and lowering physical anxiety.

For those of you who tend to thrive on stress and shoot better when you're a bit anxious, you need to make sure that when it's time to compete you are psyched up enough. You probably shoot better at more challenging tournaments than easy tournaments or practice because you are more psyched up for the more challenging competition. If you find that you are feeling flat, don't seem to care how you perform, don't feel any anticipation, find that your mind is wandering, or you're moving around slowly because your muscles feel heavy, then you need to take control and get psyched up. Setting goals, increasing your breathing rate and activity level, listening to energetic music, visualizing yourself feeling energized and ready to compete, and saying positive, activating statements can all help to increase your arousal level. Each of these will be discussed in more detail in future articles.

For those of you who shoot best when you're calm and relaxed, you probably do better during practice than competitions because there is little or no pressure; little stress to perform, and thus less anxiety. You need to monitor your level of anxiety going into a competition, and when it's too high, take control and calm yourself down. Deep, diaphragmatic breathing, relaxation, calming visualization, goal-setting, soft and slow music, and positive statements can all help to decrease your arousal level. Again, each of these will be discussed separately in future articles.

Stay tuned - if you are willing to practice ways of psyching up or calming down that have been suggested here, then you are on the right road to taking control of your performance!

Lisa Franseen received her Ph.D. degree from the University of Montana and is a Sport Psychology Consultant in Denver, Colorado. She has provided applied mental skills training to Olympic Archers during training camps, national and international competitions and the 1996 Olympic Games in Atlanta. Lisa also teaches sport psychology for Level 3 and 4 Archery Coaching Certification Courses. While working with the United States Olympic Committee, she specialized in the development of mental skills programs and performance enhancement with elite individual athletes and teams which included the U.S. Archery, Swimming, Judo, and Taekwondo resident teams.



How to Use a Clicker

by Rick McKinney

The clicker is one of the most important tools for an Olympic style archer or a recurve shooter. Why is this tool so important for the archer, how did it become so important and how do you make it work for you instead of you work for it? First, let's start with a little history about the clicker as I recall.

I don't really know who came up with the idea of the clicker, but I can tell you my experience of learning about it. Years ago, a gentleman by the name of Victor Burger from the United States shot extremely well. He dominated most of the events until a man by the name of Lester 'Jugger' Jervais came along and started shooting more consistent and accurate than Victor. The biggest difference between the two men was a little tiny device that Jugger had on his bow. They called it a draw check device. If you used it properly, it made sure that you drew the bow back exactly the same every time. This way the poundage of the bow would not vary so much at full draw. If an archer drew too much one time, they were able to get more poundage out of the bow causing the arrow to travel faster and a bit further than normal. If the archer drew the bow a bit shorter the next time the poundage of the bow would be less and the arrow would not travel as fast or as far. This created a very difficult challenge among the archers. Earl Hoyt developed the first draw check that was available for purchase in the United States. Most archers, myself included, just took a thin metal strip and taped it on the bow and used that for a draw check.

The peculiar thing about this draw check, is that it was a better device than most people realized. It cured one of the most difficult problems archers had; target panic. Target panic was something that could ruin an archer's shooting career in no time. It caused many archers to switch from right handed to left handed in order to cure the problem. If they couldn't cure the problem, they generally quit shooting all together. Target panic is something that most people dread and today we have something similar, but yet not as terrible. We call it clicker panic. It is when you are afraid to draw the arrow through the clicker because your aim starts to move off of what you were aiming at and also when the clicker finally clicks, the archer explodes off the shot. All of this is attributed to a form of panic. We are very afraid that we will miss. The clicker helps us aim so much better if we learn constant motion. I know that you have been told this time and time again, but it is one of the most fundamental parts of good shooting.

When I was in South Africa many years ago, I was very fortunate to meet a gentleman by the name of Mick Shiers. He was a wonderful archer and such a gentleman. He told me a story about how he came up with a draw check device that he used in South Africa to post the first 1200 score in a Star FITA. Unfortunately, FITA did not recognize the score due to many unknown reasons, but the way Mick accomplished this new world record was by using a clicker. Although I am sure there are a lot of stories on how the clicker first was used and who invented it, it seems that many of the regions came up with the idea or something similar during the same window of time. As I mentioned earlier Earl Hoyt was the man who put a patent on it in the United States and offered it to the world as an accessory for the bow.

I started using the clicker at the old age of 11. I had been shooting for almost a year and obviously, I wanted to use what the top archers used. Since I could not afford many of the expensive gadgets, I had to settle for home made devices. The clicker was one that all I had to do was cut off a small piece of banding wire that the archery club used to band the straw bales together and tape it on to my bow. I don't recall if it really helped me, since I was at a very fast learning curve in my shooting. But at least I had a 'cool' clicker on my bow!

The funny thing about the clicker is that most consider it just another tool to shoot better or a necessary evil. The sooner the archer starts shooting the clicker, the better. This is a controversial statement, but I will stand to that recommendation due to the many archers I have worked with over the years. The beginning archer is the easiest to adapt to a clicker. The more the archer has shot without a clicker the more difficult it is for the archer to convert over to the basic principle of executing the shot properly during the click. It also is a lot harder for the archer to learn constant motion since without a clicker, the archer has learned how to slowly "creep" forward while aiming. This "creeping" is really easy for the archer to aim and so, does it automatically. Now, when the archer puts the clicker on, they realize that they cannot creep anymore. They have to expand in order to get through the clicker. It is a completely different mind set and so becomes very difficult to learn this new approach. That is why a beginning archer would be wise to learn to use the clicker as soon as possible so that it becomes very automatic in the motion and technique of the archer.

I remember the time my father was watching me use the clicker and was becoming rather impatient with my lack of being able to execute the shot properly. He said I looked good when I was at full draw, but when that clicker clicked I exploded off the shot and did not complete the shot properly. He would take me up to the blank bale or buttress and we would start working on proper set up, constant motion and then the proper follow through. He kept pounding into my head that if I could keep it simple and keep my motion going, I would be able to execute a good shot.

Years before the blank bale lesson he was watching me shoot my 25.5" arrow with my drawing shoulder up to my ear and he was very frustrated with the way I looked. He took my arrows out of the quiver and gave me his in replacement. He said, "If you want to shoot, you have to use my arrows from now on". The arrows were 29.5" long! I had to expand my draw length 4"! At first I was very

frustrated. I felt he was punishing me because I was not as good as my brothers. At times, like most youth, I really struggled with my father. Here was a sport I dearly loved and he always made it so difficult for me. I just wanted to shoot the bow and arrow. And yet, if it wasn't for his help and guidance, I would have never been able to come close to the accomplishments I achieved later in life. The draw became a major focus in my shooting. Over a short period of time I was able to expand my draw and my shooting performance increased considerably. Over the next couple of years I increased my draw length to just shy of 31". This is rather uncommon for most to have such a long draw for my size. Many people believe that I have extra long arms and that I am a bit unique. Yes, I am unique, but my arms are normal. I just learned to apply my draw length properly and correctly. Today's archers have a better draw and alignment than in the past. This is due to the understanding of the clicker and the alignment of the archer.

What does alignment have to do with the clicker, you say? Many archers will determine their draw length early on in their shooting career. As they improve their form or grow, they tend to forget to change their draw length. It is hard for some archers to want to make a change in their arrow length since they may have been very successful at a certain draw. Unfortunately, they start to scrunch up. This puts the archer out of line and it makes it extremely difficult to execute a good shot. Some archers are able to get away with a short draw because of their motion. The problem seems to occur more often when they are under stress, which seems to be at competitions. Who would have thought!

Draw back arrow and watch clicker move inward

How do you go about using the correct clicker? First, let's start by making sure that the clicker is the right length, right thickness and it has a piece of tape on the end. The right length determines the thickness of the clicker. Most Asian made bows have a shorter length clicker. The purpose was to make sure that the clicker knob or screw was not in the way while aiming. Usually, at one or two of the distances, if the archer is shooting a stiff arrow, the sight may be difficult to see since the clicker is right down the middle of it. This is very distracting while aiming. The clicker is slowly moving down to the moment of clicking and the archer sees the movement while trying to aim. So, Yamaha, Nishizawa and some others moved the clicker down in order for it to be out of the way while aiming. It still gets in the way, but it is a neat idea. Earl Hoyt's clicker was rather long and the main reason that I could tell was that the stiffness of the clicker is important. If the clicker is too stiff it can

Keep motion going but slow it down

Aim fast and use constant motion, just go slower

cause your arrow to move when the clicker clicks. Since the stiffness of the clicker may depress the plunger a bit, once that pressure is relieved, the arrow pops out and you may get a bit inconsistent. Also, if the clicker is light enough, when the archer accidentally shoots through the clicker (instead of waiting for the clicker, some people do get a bit impatient!) the arrow usually will score fairly well. If the clicker is a bit stiff, the archer may miss the target.

On the other hand, if the clicker is too soft or flimsy, you may run into the problem of it rebounding back against the fletching as the arrow passes the clicker. Since the clicker is so flimsy, it literally swings way out because of the high energy being transferred into the arrow or lost in all the stabilization and any other moving parts of the bow (i.e., the clicker!). This rapid movement of the clicker has been seen on high speed films which shows that if the clicker is too soft it may hit the fletching as it goes by the clicker. So, if the archer wants to have good clearance they do not want too soft of a clicker.

A very important item I have found to use is
a small piece of electrical tape put at the end of the clicker. This tape should be placed in the area that the arrow point comes across the clicker. This prevents a scratched or damaged point to cause premature releasing. The reason is because the archer uses both feel and sound when shooting. Not only does the sound activate the stimulus of executing the shot, but the feel does as well. Try shooting while someone lightly taps your bottom limb. It usually causes the archer to let go. However, it isn't a good "let go". Since the archer did not hear the click the archer's subconscious mind doesn't want to let go, but the conscious mind has already determined it is time. Now, talk about a major conflict! This is when the archer starts to lose doubt. This feeling also occurs when the archer hears another archer shooting a shot. If the shot is close to when the archer is anticipating their clicker to go off, then there is a strong possibility that the archer will release the string and yet not want to. Again, it is the battle between the conscious hearing the shot and the subconscious not feeling the shot causing a conflict in which the subconscious loses and the archer shoots a poor shot.

You will need to replace the tape every so often, since it will wear. The Beiter plastic piece is a good substitute. However, since it is hard plastic, it may still cause some scratching sensation with the

point. I feel tape is the best. A final thing to do is mark the bow or surface just behind the clicker. This way if the clicker moves or is moved you will know where to move it back to. Sometimes the clicker gets bumped. It is easy for the clicker to move, so it is really important to be able to put it back where it belongs fast.

Once you have determined most of these important points, just remember to have constant motion and you should be set. Now, how do you come through the clicker? Two good ways are the following:

1) Draw the arrow back and slowly watch the clicker move inward so that it is about ready to click. Then sight in. Keep the motion going, but slow it down considerably. This way you know how close you are to coming through the clicker. If the aim is fast, the motion stays constant, just slower, it will be a well executed shot.

2) Draw the arrow back with about an inch or a half inch to go. Start the aim and keep the motion going. This means a larger amount of movement, but it has been proven to be very successful. The key is motion. Keeping it going makes the shot a cleaner and more efficient execution.

That is all there is to having the clicker set up properly and used properly.

Good luck!

Advanced Shooting Technique For The Modern Archer

Part one of a two part article

by Don Rabska

Nothing in archery is new except materials and equipment. Our sport has been practiced too long for any new breakthroughs to develop in shooting form. So why then is this article titled 'Advanced Shooting Technique'? The reason is in 'rediscovery'!

Good archery technique, in general (other than in a few selective countries) has declined over the last several decades, although it appears that we are getting back on the right track. I have a theory as to why good technique has been in decline, which states this: At no time in the history of archery has man or woman shot such light draw weight bows. Because of this, we have subsequently lost much of our good shooting form and the proper use of our skeletal structure. Because bows are lighter, we have gotten away from using our bone structure and bone alignment, allowing the use of too much muscle. Excessive muscle use only leads to a loss of power and 'body stability'. These topics will be discussed later on in this article.

Most modern archers shoot from the chest up, ignoring the rest of the body entirely. In the days when archers commonly shot bow weights well in excess of 100 lbs. (45 kg.), good bone structure and bone alignment was an absolute necessity. This article will cover the components of good form as it was developed centuries ago by many of the great archery cultures.

The information presented in this article is referred to as a 'Shooting System', and represents a compilation of information I have gathered over the last 30 years of my archery experience. Much of the information in this article is developed from the Korean technique, Russian technique, from my top archery friends and what I have learned on my own. However, the main components of this technique, the body stability and power source come from the study of Kyudo, Japanese traditional archery, of which I am currently a student. The Japanese have been studying and perfecting archery technique for the last thousand years. It is from two masters of this art that I have finally come to understand the 'shot'.

Out of my great respect for Kyudo, this portion of the article presents a riddle, as follows: "How can an archer using a bow of approximately 60 lbs. (27 kg) draw weight, shoot 13,053 arrows in a 24 hour time period?" That is one arrow shot every 6.6 seconds for 24 hours! Not impossible, this record was set in the late 1920's in Kyoto Japan by a young Kyudo master. The previous record was over 10,000 arrows shot in the same time period.

For any archer who has ever shot 400 arrows in one day, they know very well how much of a work-out that can be. Now imagine shooting over thirty times that amount. Where does the archer get the power and strength to shoot so many arrows? I will assure you that it is not from the muscles in the body, but from the bones and a small specific group of muscles located in the stomach. The rest of the body must be relaxed, very relaxed. Power comes from relaxation, not tension. A tense muscle is a weak muscle. As a very famous Kyudo master, Onuma sensi, once said when asked how he could draw such a heavy bow (actually three bows at once all in excess of 40 lbs. draw weight), he answered, "with my bones and my blood," he was 79 years old at the time.

Following is my shooting system as best as I can describe in written form. In this system, I like to start from the ground up, so we encompass the entire body as a single unit rather than an accumulation of individual parts.

A) The stance

If you follow this procedure, your current stance will probably change slightly. The feet should be at least shoulder width apart, with approximately 60% to 70% of your weight placed on the balls of your feet. Having a slight heel on your shoes will help this. I do not recommend shooting in “flat” shoes that do not have some rise in the heel. It does not matter if you shoot an open stance or the traditional square stance. The important consideration is that you are comfortable and stable. One caution however, if you use an open stance, make sure your upper body is in line. When shooting an open stance, archers often forget to rotate the upper body into position, bringing the bow arm in line with the chest. In the traditional square stance, this alignment is virtually automatic.

Figure 1

Figure 2

B) Legs

There should be equal weight distributed on both legs, and they should be relaxed. Leg strength in archery is as important as upper body and mid section strength, possibly more important than the others. The knees should not be locked and should not have tension. If the knees are locked this will restrict blood flow making you weak with the possibility of ‘passing out’ in hot weather.

C) The Hips and Stomach (first of three key points)

Hip position is an important key to stabilizing the body. To find the correct hip position, I recommend the following procedure. Take your shooting stance with your feet about shoulder width apart. Next, tilt your buttocks up at the hips, i.e. tilt your ‘rear’ up and then relax, allowing your hips to tilt forward into a natural pocket. Try this several times to get the feel of relaxing so your hips set into that natural position. Do not force your hips forward, but they should be under you. (Figures 1 & 2)

Once you find that position, natural and relaxed, you are ready to focus on the first of the three important key points in the shooting system. At this position, focus on tightening your stomach about three inches (7.5 cm) below your belly button. Tighten your stomach as though you were going to get ‘punched’, do not pull your stomach inward in an

attempt to look a few pounds (kg.) thinner. Now relax everything else in your body, but maintain good body posture. No slouching. Allow everything to relax down to that area of the stomach. This technique will connect the legs, mid section and upper body into one unit instead of three independent parts. By relaxing, you will lower your center of gravity making yourself very stable with greatly improved balance. You must maintain the tightness in your stomach throughout the entire shot. It will take some practice, but if you do it right, your bow sight motion will reduce by half. You will find aiming is much easier and you will find extra strength in your shot. Additionally, tightening the stomach will keep the ribs down so you will not have a tendency to arch the back. This is a more common problem among women, but many men have this tendency as well. This technique will also improve your wind shooting by substantially reducing body motion caused by the effects of wind forces.

Figure 3

D) Bowarm Shoulder (second key point)
More accurately, it is the bowarm scapula position that is most important. This is the second key point in the shooting system. If the scapula is not in the correct position, the rest of the form will not be stable. The scapula must be down, but do not arch your back and, slide the scapula over the tendons in the back, i.e. do not move the shoulder back, move it down, straight down. To do this, reach your bowarm down along your leg as if your pockets were lowered and you were reaching for your last coins. Another explanation would be to move your bowarm straight down (palm of the hand flat against the leg) reaching until the shoulder stops in a natural position without undue effort. From this position, rotate the upper portion of the bowarm 'in' slightly until the arm rotation stops naturally, do not force it beyond this point. When you raise your bowarm, keep the scapula down, raise only the arm. When raised, the inside crease of the elbow joint will be vertical. This will align the bones at the shoulder joint giving you 'bone to bone' alignment. The bone alignment at the shoulder joint is extremely important because it offers the most rigid resistance possible to the recoil of the bow. A bow, like a gun, recoils upon release. The bow goes forward only when the arrow has completely left the bowstring. For some, raising only the arm will take a good deal of practice. It is best to practice in front of a mirror with your shirt off, so you can easily see your shoulder position. When done properly, the top of the shoulder joint should create a 'V' shape, or what I call a divot (fig. 3). This 'V' location is just at the connection of the arm and shoulder.

Figure 4

Figure 5

Figure 6

Also, if the shoulder position is correct, the palm of your hand should be facing the ground with your hand fully open (fig. 4). As you curl your fingers back, you will see that your knuckles will form a natural 45 degree angle, automatically placing your bow-hand in the proper position (figures 5 & 6). Note: The drawing arm scapula must also be down, equal height to the bowarm scapula (fig. 7). This topic will be discussed in the second portion of this article.

Figure 7

In the next issue, I will discuss how to generate the bowarm's power, as well as the continuation of topics that make up the entire shooting system. Until next time, practice stabilizing your body with the power of your stomach and work on that bowarm position.

Good Shooting!

BOW EFFICIENCY BY EXAMPLE

(Part 1 of a two part article)

by Larry Wise

The bow and arrow is considered, by many experts, to be man's third greatest invention. It performed a simple task which provided food for its inventors and won many wars. But twentieth century man and all his creativity has complicated it with high tech gadgets and lots of thinking. Even so, archery is still relatively simple compared to guns and rockets. And it's a lot quieter.

Bow efficiency is one of the simple parts of archery that sounds difficult. It's not difficult to compare the energy a bow gives to an arrow to the amount of energy it stores in its limbs. If you have a weight scale and access to a chronograph you can compute your own bow efficiency after you read this short article. Oh ya, better get a calculator, too.

Bow efficiency is the foot-pounds of energy in a moving arrow divided by the foot-pounds of energy stored in the bow's bent limbs. What it is not, is **bow performance**.

Although these two concepts are related they are not the same thing. Bow performance is the measurement of how consistently and how easily a bow will shoot numerous arrows into the same spot over a given time frame. Performance includes the concept of 'forgiveness', ease of aim, noise level, accuracy, long term consistency and many other aspects that people want to include. One thing I'm sure of is that **good performance is not possible without good efficiency**. You must have a highly efficient machine before you can have good performance.

The bow's job is to transfer energy from its limbs to the arrow. How well it does this job is a measurement of its efficiency, if the bow stores 50 foot-pounds of energy in it's limbs and transfers 40 foot-pounds to the arrow, it is 80% efficient. In other words, 40 divided by 50 is .80, or 80%. See, I told you this was simple.

So where does this stored energy come from? The answer is **you**. When you draw the bow string, the limbs bend and store most of the energy you expend in getting the string to full draw. Some small amount of your energy is used to overcome various friction and bow part movements. This energy is lost and is not stored. Yes, some of your energy is wasted but that's necessary to get the result we want - a moving arrow.

When you release the string, some of the stored energy is used to move bow parts such as string, cables, wheels and limbs. This energy is also lost and will not be transferred to the arrow. What isn't lost to the bow system is given to the arrow and produces arrow speed. This is still simple, isn't it?

Hanging spring scale

MEASURING STORED ENERGY

The only semi-difficult part is measuring the stored energy of the bow. As you will see, this involves a simple adding of the draw weight measurements of your bow at each inch of the draw stroke. This measuring can be done at home on your bathroom scale or using a hanging spring scale (this is easier). You can also use the draw length and draw weight number pairs to plot a graph of your bow's force-draw which you'll see in the example to follow.

To use your bathroom floor scale, you must have a sturdy stick of wood or metal rod with a groove in one end for the bow string. Stand the rod or stick vertically on the scale, put your bow string across the other end through the groove and push down on the bow handle any desired distance. The scale will record the weight needed to draw the bow that distance. Doing this inch by inch is not easy, but possible.

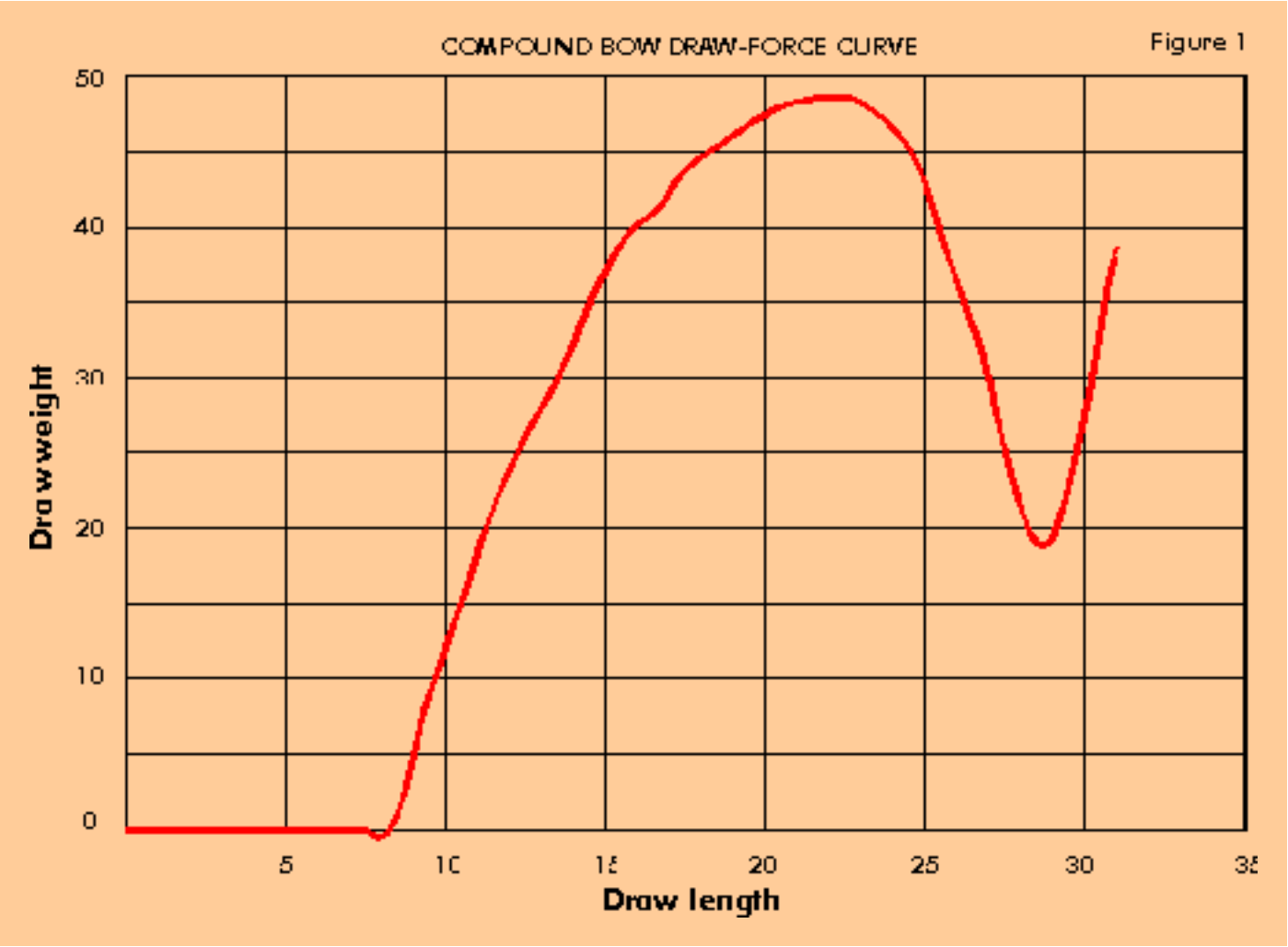
A hanging spring scale works better than the stick method. Attach the scale to one end of a 6 ft. long 2 x 4 board with a winch at the other end. Hook the bow string across the scale hook. Tie the winch rope to the grip and crank away. Mount a tape measure to the scale hook also and measure the draw length from the string to the arrow rest. Crank in one inch increments and record the draw weight on the scale at each inch. Do this until the bow is drawn past the valley weight which is the lowest holding weight you feel at full draw.

RECORDING THE WEIGHTS

Record 0 pounds for the brace height of your bow. Crank the winch to increase the draw length one inch and record that weight. When you're done, your list will look something like this list I made for a test bow having a brace height of 9 inches: (9, 0), (10, 8). (11, 14), (12, 21). (13, 26), (14, 30), (15, 35), (16, 39), (17, 41), (18, 44), (19, 45.5), (20, 47), (21, 48), (22, 48.5), (23, 48.5), (24, 47), (25, 44), (26, 37), (27, 31), (28, 22), (29, 19), (30, 27), and at 31 inches the weight went to 39 pounds.

Since the low weight is 19 pounds at 29 inches that will be the last weight we will work with for

calculating efficiency. That's where I should be anchoring and releasing this particular bow's string. The graph of these weights plotted against the draw length looks like Figure 1. Yours will look similar but may go up faster at the start of the draw stroke if it is a cam bow.



The area under this curve represents the stored energy of this bow and can be calculated by adding the weights we have recorded. Add all of the weights starting with the 0 at brace height and up to but not including the valley weight. Now add only half of the valley weight to your total to get a good approximation of the stored energy of your bow. We only add half of the valley weight because we're cutting off the graph at that point (it's a math thing you don't have to worry about, just do it because it works. Trust me on this, I teach math every day.)

My total is:

$$0 + 8 + 14 + 21 + 26 + 30 + 35 + 39 + 41 + 44 + 45.5 + 47 + 48 + 48.5 + 48.5 + 47 + 44 + 37 + 31 + 22 + (9.5) = 686$$

This is 686 inch-pounds of energy. Divide by 12 to get 87.2 foot-pounds of energy which is the usual unit for energy measurement. That's pretty good stored energy for a medium cam bow which only peaks 48.5 pounds. Most compounds will store more foot-pounds of energy than their peak

weight number while recurves will store less foot-pounds than their peak weight number. I'll talk more about this in the next issue.

MEASURING ARROW ENERGY

Now you have to weigh your arrow in grains of weight. If you don't own one, borrow a grain scale from someone that reloads rifle ammunition to get this measurement. Next, shoot the arrow through a chronograph to get its speed in feet-per-second. Using these two pieces of data and the following formula, you can compute your arrow's energy.

> Arrow Kinetic Energy = (arrow weight x velocity x velocity) / 450,240.

For my example I used a 420 grain arrow which shot at 216 feet-per-second from my medium cam test bow peaking 48.5 pounds.
The arrow energy is:

K.E.= (420x216x216) / 450240
= 19595520 / 450240
= 43.5

This represents 43.5 foot pounds of energy in the moving arrow. The 450240 converts the grains and feet-per-second into foot-pounds so it can be compared to the stored energy. (That's more math stuff you don't need to worry about. Remember, this is supposed to be simple.)

BOW EFFICIENCY CALCULATION

Now that we have both the energy stored in the bow and the energy of the moving arrow, we can determine the efficiency of the bow as a machine. Divide the arrow's energy by the stored energy:

BOW EFFICIENCY= KINETIC ENERGY / STORED ENERGY
= 43.5 / 57.2
= .76
= 76% EFFICIENCY

This means that my test bow delivered 76% of the available stored energy to the arrow. That's real good for any machine. Please keep in mind that our measuring isn't super accurate, but it's good enough to allow us to be confident in the 76% value and pleased with our bow's efficiency.

I’ve done this with some of my math classes and they seem to get it, so I hope you’re able to also. Now that you have it, what does it tell you? Well, lots. That’s why I have to stop writing this article and start another for the next issue on how to use this 76% value when comparing bows.

Until next issue, shoot straight, keep well.

Larry Wise is the shooting staff Director for XI Bows, archery coach, a math teacher in the Pennsylvania public school system and author of four books on archery. These books: *Tuning Your Compound Bow*, *Tuning Your Broadheads*, *Bow and Arrow: A Complete Guide* and *Tuning and Shooting Your 3-D Bow*, are all available from Larry Wise, RR#3, Box 678, Mifflintown, PA 17059. *Bow and Arrow* is $15.95 while the others are $10.95. Please include $1.50 per book for shipping.

The U.S. Wins 2 Gold and 2 Silver in Istanbul, Turkey at the 4th World Indoor Championships

Shane Parker captures a Silver in the Men's Olympic Division taking out Sebastian Flute ('92 Gold Medalist) of France and Jari Lipponen of Finland with 119 passes out of 120.

Dee Wilde of Idaho (right) and Tom Crowe of Oregan (left) fight for the Gold medal in the Men's Compound Division. Final result - Dee Wilde GOLD and Tom Crowe SILVER.

Jamie Van Natta, Theresa Berthold and Glenda Penaz win the Women's Compound Team Division.

Hopkins takes First Place in A.S.A.’s Florida and Georgia Pro/Am Tournaments

GAINESVILLE, FLORIDA - 1,160 of the nation's best Archers gathered in Gainesville, Florida for the 5th Annual 1997 Bear/Jennings ASA Florida Pro/Am Championship.

Jeff Hopkins of Clayton, Delaware wins first place in the Open Pro Division and takes home $10,000.00 in tournament and Pennzoil 3-D Challenge bonuses.

Shooting her first Professional tournament, Chenee Tillett wins first place in the Women's Pro Division and takes home $2,500.00 in tournament and Pennzoil Challenge bonuses.

Additional outstanding shooters for the Florida Pro/Am were 1st place Senior Pro George Dixon, 2nd place Women's Pro Laurie Watson, 3rd place Women's Pro Susan Thompson, 2nd place Men's Pro Derek Phillips and 3rd place Men's Pro David Stepp.

GAINESVILLE, GEORGIA - 1,257 of the nation's top amateur and professional archers gathered at the Chicopee Woods Agricultural Center in Gainesville, Georgia for the 1997 ASA Georgia Pro/Am Championship.

One year ago, this same event was the site of Jeff Hopkins' record-breaking 436 point round, which won him his first ASA Open Pro Division Championship. **For the second year in a row, Hopkins wins first again.** Leaving Cohn Boothe with 2nd place and Bobby Ketcher with 3rd.

The Women's Pro Division found Susan Thompson with 1st place, Darla Owen with 2nd place, and Kathy Caudle with 3rd.

For ASA membership, club, or tournament information, contact the ASA Headquarters at (912) 686-7420.

1997 N.A.A. National Indoor Championship

Several N.A.A. National Indoor Records were broken or tied at this years tournament. Congratulations!

Mens Senior Olympic	Butch Johnson
Womens Senior Olympic	Janet Dykman
Mens Senior Compound	Mark Penaz
Womens Senior Compound	Becky Pearson
Mens College Olympic	Vic Wunderle
Womens College Compound	Jamie Van Natta
Boys FITA Compound	Jeremy Snyder
Girls FITA Compound	Ashley Kamuf
Boys Junior Compound	Matthew King
Girls Junior Compound	Amber Dawson
Boys Cadet Olympic	Alex Sims
Girls Cadet Compound	Ashley Butler
Mens Master Olympic	Bary Weinperl
Mens Master Compound	Frank Pearson
Mens Senior Barebow	Jerry Peach
Womens Senior Barebow	Jeannie Roop
Mens Senior Crossbow	Tom Holland
Womens Senior Crossbow	Carol Pelosi
JOAD Boys FITA Compound	Adam Teal
JOAD Boys Junior Compound	Adam Wheatcroft
JOAD Boys Cadet Compound	Travis Ward

SPECIAL FEATURE

The National Archery Association Offers Olympic Opportunities and More

In 1879, the National Archery Association (N.A.A.) of the United States was formed to foster and promote the sport of archery through tournaments, programs and publications. Today, the N.A.A. and its allied organizations have more than 50,000 members.

With a mission statement “to promote the sport of archery with the ultimate goal of achieving Olympic and World Archery Champions”, it’s no wonder that the N.A.A. is the only archery organization that is recognized by the United States Olympic Committee for the purpose of selecting and training men’s and women’s archery teams to represent the United States in the Olympic Games as well as the Pan American Games.

Dedicated to its mission, the N.A.A. sponsors a number of programs for archers at all skill levels. These programs include everyone from beginning to elite archers, students, coaches and officials.

One such program is the **International Teams Program**. For this program, the N.A.A. chooses the U.S. representatives for international competitions such as the Olympics, Pan American Games and World Championships through trial tournaments. The N.A.A. also sponsors archers to compete in all international events.

Another N.A.A. program that you might be familiar with is the **Resident Athlete Program**. Started in 1987, the Resident Athlete Program allows archers to live and train full-time at the U.S. Olympic Training Center. The program was based in Colorado Springs, Colorado until December 1994, when it moved to the ARCO Training Center in Chula Vista, California, near San Diego.

The **U.S. Archery Team Program** was established in 1981 by the N.A.A. Four wonderful groups of elite archers make up this program. The first group of archers are known as the (Recurve) U.S. Archery Team. This special team is chosen yearly and consists of the top eight male and top eight female recurve (Olympic style) archers in the country. Team members conduct seminars for other active archers and are scientifically tested to improve technique, nutrition, and physical and mental

training.

The second group of archers make up the (Recurve) Junior U.S. Archery Team which consists of the top six male and top six female archers under the age of 18 in the United States. Following the rigorous training and nutritional programs, these youth have improved on almost every national record in the books. This Junior program was founded in 1985, and from there several former participants in this program have already surfaced as international contenders and champions.

Originated in 1992, the Compound U.S. Archery Team is comprised of the top five men and top five women compound shooters who are chosen based on their placing in selected tournaments. A training camp is held for the team each year.

In addition, the N.A.A. began naming the fourth group of archers known as the Junior Compound U.S. Archery Team in 1995 and will, in the future also name annual U.S. Crossbow, Ski Archery and 3-D Teams. This will bring the total of elite archery groups under the U.S. Archery Team Program to seven.

Many active archers are familiar with the N.A.A.'s **Junior Olympic Archery Development (J.O.A.D.) Program**. J.O.A.D. provides local archery instruction and competition activities for young archers. An incentive component of the J.O.A.D. program is the J.O.A.D. Olympian Awards program. Archers can earn the ranks of Yeoman, Junior Bowman, Bowman, Junior Archer, Archer, Master Archer, Expert Archer, Olympian, Silver Olympian and Gold Olympian, based upon scores. From beginners to Gold Olympians, thousands of young archers learn the fun and excitement of archery in more than 250 J.O.A.D. clubs annually. One of the N.A.A.'s current goals is to expand and develop the J.O.A.D. program with an emphasis on conducting training camps at the regional level in addition to the existing national-level camps. After the J.O.A.D. program, the N.A.A. provides continuity for archers to participate in the sport beyond the age of 18 through the college and local club programs.

The N.A.A. **College Division Program** includes more than 40 clubs and intercollegiate teams. Archers compete at college meets and in the college divisions of open tournaments. The top 10 men and top 10 women from the U.S. Intercollegiate Archery Championships (USIAC) earn All-American status in the recurve bow division each year. In 1995, the College Division began naming All-Americans for the compound bow division. These All-Americans are invited to a training camp at the Olympic Training Center each year. Eight $500 scholarships are awarded by the N.A.A. Foundation College Scholarship Program annually.

Through the **Coaches Development Program**, the N.A.A. certifies individuals to coach or instruct archery programs. It's the most comprehensive archery coach development program in the United States. The program has six classifications:

Level I - Camp Instructor;

Level II - Archery Instructor;
Special Category - Instructor Trainee;
Level III - Advanced Coach;
Level IV - National Coach;
Special Category - Master Coach.

Coaches are recertified on a regular basis.

The **Officials Program**, designed to standardize archery officiating throughout the U.S. and ensure consistent interpretation of the rules, is coordinated by the N.A.A.'s Officials and Rules Committee.

As another part of the N.A.A. mission, the organization is involved with many archery tournaments each year. The N.A.A. serves in different capacities at these events, which are both at home and abroad. Such tournaments include the National Indoor, the National Target, the National Field Championships, the National J.O.A.D. and U.S. Intercollegiate Archery Championships along with more than 300 annually sanctioned local tournaments.

There are more than 400 N.A.A. adult, J.O.A.D. or collegiate clubs. Clubs coordinate archery instruction and the sanctioning of tournaments at the local level through the N.A.A.

Prior to 1996, N.A.A. member clubs around the country bid exclusively for, and hosted, all N.A.A. National and Regional championship events. While N.A.A. clubs continue to conduct these tournaments, the N.A.A. is seeking bids to bring these events to new, exciting, and in some cases, larger market areas in response to dozens of inquiries from communities and area sports commissions from throughout the country. *For 1997, Canton, Michigan and Franklin, Massachusetts submitted successful bids for the* ***113th National Target Championships*** *(August 3-8) and the* ***National J.O.A.D. Championships*** *(July 11-13)* respectively.

Membership in the National Archery Association is open to everyone involved in all disciplines of archery whether as a sport, hobby, craft or volunteer. Local, N.A.A. chartered State Associations and regional archery groups provide year-round competition geared to the differing age and skill level of their members. Memberships are offered to adults, families, youth, full-time students, clubs and associates.

For more information about the N.A.A. or to become a member, contact the **National Archery Association** Office at (719)578-4576, or write to:

National Archery Association
One Olympic Plaza,
Colorado Springs,
CO 80909