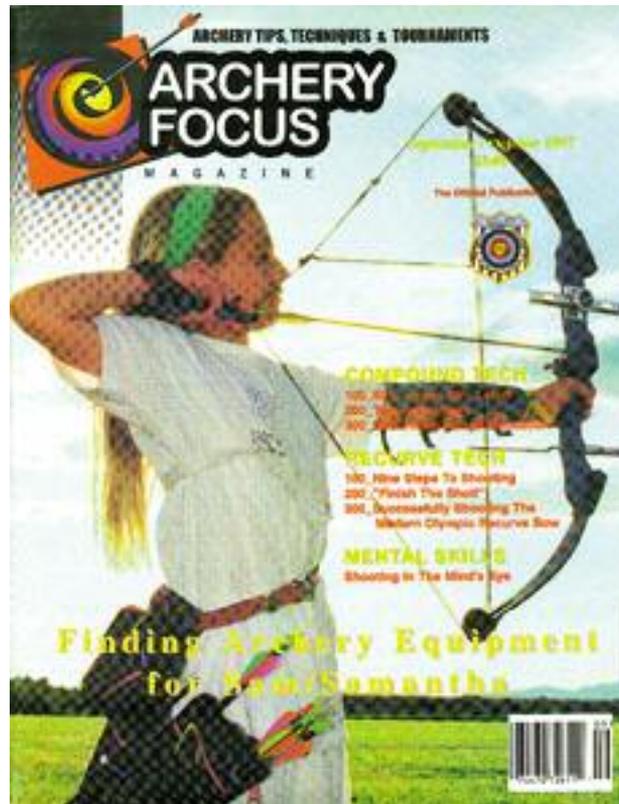


# Archery Focus

Volume 1, Number 4, 1997 \$5.00



## NOTE

Prior to the Vol. 3, No. 3 issue all we inherited were individual articles from the AFm website. With the help of a generous subscriber we 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.

# Archery Focus

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## Basics are Essential



Everything seems to come back to the basics; they are essential in anything you do in life, including archery.

We start at the beginning and progress forward allowing ourselves to step back as necessary to get back on target. Just like riding a bike, we pick up our archery gear and start riding, oh, I mean shooting. We don't always think about what actions take place. But we get there just the same. (Lisa Franseen explains more of this mind process in her article, *Shooting in the Mind's Eye*). And, whenever we have a problem with our shooting for whatever reasons (form, equipment or nerves), many of us go back a step or two and some times start from the beginning to remember what worked the first time.

*Archery Focus* has been complimented over and over again for remembering the basics in the archery information provided. It seems a lot of times archery literature is written toward the adept archer, thus making it difficult for a new archer to interpret. *Archery Focus* will continue to be beginner friendly. (Another great step-by-step article is *Nine Steps to Shooting* by Jennifer Furrow-Fonua).

Getting back to the basics of outdoors also shows up in this issues Bowhunting/Traditional Article by T.J. Conrads, *Hunting With Traditional Equipment*. T.J. shares with *Archery Focus* readers what is needed to have a safe and enjoyable bowhunting experience using traditional equipment. Good luck to those of you taking hunting trips this 1997 season.

From the new archer to the experienced archer, basics are essential. The information might be different, but the need for information is the same.

Shoot for the Stars,

Kris Facer  
Editor, *Archery Focus* Magazine

I'd like to introduce and welcome Olympic archer, Denise Parker to the *Archery Focus* staff. Denise brings a strong variety of archery experience and knowledge. (Yes, she is an accomplished bowhunter, too.) Denise also brings with her a Bachelors Degree in Marketing and experience in advertising and public relations. She is looking forward to the challenges and rewards of bringing you quality information and service.

# The Basics: Nine Steps to Shooting

*by Jennifer Furrow-Fonua*

It is an essential part of shooting to have all your thoughts on one thing: To shoot this shot perfectly. Forget about last night's movie, or what you want for lunch, even how you shot your last arrow, these things will make your score for that end, not up to its usual standard. Attempt to shoot every shot in perfect form.

To shoot each shot perfectly, you must know and be able to execute each of the nine steps in its order. Make your shooting form routine, meaning precisely the same order for each arrow. Keep in mind that a beginner's checklist might be totally different than that of an advanced archer. Here is a general list of the nine steps to shooting successfully:



## **STEP 1: Body Position/Stance**

There are two major stances that are used today. The most commonly used stance is the square stance, where the shooting line is evenly straddled, and the weight of the archer is distributed evenly over both feet. This is a good stance for the beginning archer to try and determine how it feels while shooting. To get a more exact square stance for the beginner, take an arrow and lay it across the shooting line with the arrow pointing directly at the target, forming a cross with the shooting line. Then place the toes of each foot against the arrow. It might be a good idea to mark your feet placement until you get more comfortable with your shooting stance.

The second major stance is the open stance. This can be achieved by first placing your feet in the square stance, then moving the lead foot (the foot closest to the target) back about 5 inches from the center line. This stance is used more by men than women.

There are a few differences in each of these stances. But for the beginning archer, it is best to first

learn the square stance. You will not only be square to the target, but your alignment will be more correct while getting full use of your shoulders in positioning.

Remember, as you shoot more shots, you will learn what is more comfortable for you and be able to adjust accordingly.



### **STEP 2: Nocking/String Fingers**

Nocking the arrow is placement of the arrow in shooting position on the string. This is an important step in shooting. Finger placement on the string is also important. One of the most successful ways is to get a deep grip on the string. Using the three drawing fingers (the index, middle, and third finger), first place the index finger on top of the arrow with the other two fingers below the arrow, gripping deep past the first joint. You must get a good grip on the string, while also keeping it relaxed during the pre-draw. The other method also used is gripping with the tips of your fingers, instead of deep. This method you would place the three drawing fingers on the string as in the first method, but you would hold the string slightly in front of your first joint. It takes more effort to be consistent with this method and is not advocated for beginning archers.



### **STEP 3: Bow Hand Placement**

Your bow should fit between your index finger and your thumb, with the finger and thumb forming a loose ring around the bow handle. You can choose to shoot with either a high or low wrist. Low wrist

is used by many archers because once they learn to relax the wrist, their whole hand becomes relaxed. Using the high wrist method, there is less surface area on the bow handle, thus causing less chance for torquing. The bow should never be gripped firmly by the hand in the drawing, aiming, and releasing steps of shooting. You will reduce the torque if the bow is held loosely. (For more information about bow hand placement see the May / June issue of Archery Focus).



#### **STEP 4: Pre-Draw**

Starting the pre-draw you should have your hand placed properly in the bow handle, with your bow arm up, and the sight fixed on the center of the target or just above it. Your elbow should be rotated, as to keep it out of the way of getting hit when releasing. You should also maintain a relaxed bow arm, wrist and fingers. Your fingers are placed on the string in the 'deep' or 'tip' position. You are now ready to draw.



#### **STEP 5: Drawing**

Maintaining the pre-draw position, draw the string by pulling with both your back and shoulder muscles. It should feel like you are pulling your shoulder blades together. You should have your drawing elbow slightly higher than your drawing shoulder. Drawing should be constant and smooth. Once you have established a smooth and constant draw, maintaining relaxation in the fingers and wrist, you are ready to anchor.



### **STEP 6: Anchor**

There are two commonly used anchor methods, on the side of your face or down the center of your face. The advantage of the center anchor is its simplicity and accuracy. Where the advantage of the side anchor is its ease of aiming, getting a good line, and the execution of the shot. The disadvantage of the center anchor is that it is difficult to position the neck in the right place, and it is hard to get a good line. The disadvantage of the side anchor is only that it is difficult to master the accuracy. Using either anchor, you need to make sure that the anchor is tight, but the head is relaxed. It is important to get the anchor into the jaw firmly. Your nose should barely touch the string. The nose is important because it could eliminate a lot of high and low arrows. Constancy is a big part of your anchor position as it is in all the steps. A constant anchor point will help with grouping your arrows.



### **STEP 7: Aiming**

When talking with top archers, you will find a common answer related to aiming. “It comes from the subconscious”. Many archers don’t aim, because it comes naturally. You need to focus on both the target and the sight pin. Focusing on the target, your sight pin will automatically float to the gold. Aiming must be relaxed and not forced. Also, if you try to forcefully aim, you will stop and start while pulling, because you’ll find that the sight pin will move constantly. Many archers stop and start while shooting, because they are trying to shoot the perfect shot. A continuous flow while aiming is essential for a good shot. If shooting with one eye closed, be relaxed so that not to cause peaking after the shot. Choosing to shoot with one eye or two depends on the archer and his/her ability to

focus with either one eye open or both open. Some people have a hard time using both eyes because they see double. For the beginning archer, shooting with one eye is probably easier to start with. But try both ways and find which is the most comfortable to you.



### **STEP 8: Release**

Releasing the arrow is one of the most important and critical steps in shooting. The key elements are relaxation and concentration. The release is activated by relaxing the entire string hand from the wrist forward to where the string feels like it is sliding in a smooth straight line through your fingers. The release needs to be consistent. When you concentrate on the follow-through, the release becomes more consistent and automatic. Once you have developed a smooth release your draw hand will naturally recoil with the hand passing by the chin and neck. This is achieved by maintaining proper back tension throughout the shot.



### **STEP 9: Follow Through**

Your fingers and bow hand need to be relaxed in order to maintain a good follow-through. It is important to have consistency in your follow-through which will help improve accuracy. The follow-through is the extension of the release. Once the arrow is released from the string, the back half of the body should continue moving. Meaning that the shoulder blades should be coming together

continuously. The front half of your body should continue toward the target, keeping the bow arm solid after the shot. The follow-through is a very important step because when it is perfected, the release is then perfected.

### **Review OF THE NINE BASIC STEPS:**

#### **STEP 1: Body**

##### **Position/Stance**

Feet in the same spot  
Weight evenly distributed

#### **STEP 2: Nocking/String**

##### **Finger**

Arrow nocked correctly  
String fingers placed properly  
on string

#### **STEP 3: Bow Hand**

##### **Placement**

Fingers and wrist relaxed  
Bow hand in same place each  
shot

#### **STEP 4: Predraw**

Bow hand pressure in proper  
spot  
Bow arm, wrist and fingers  
relaxed  
Bowsight lined to target  
Elbow rotated

#### **STEP 5: Draw**

Squeeze shoulder blades  
together  
Keep draw elbow higher than  
draw shoulder  
Draw smoothly and  
consistently

#### **STEP 6: Anchor**

Anchor firmly, keeping head  
relaxed String touching nose  
slightly

#### **STEP 7: Aiming**

Tension maintained in the  
shoulder blades  
Focus on the target, staying  
relaxed  
Continuous flow while  
drawing and aiming

#### **STEP 8: Release**

Relaxation and Concentration  
Execute consistency  
Maintain proper back tension

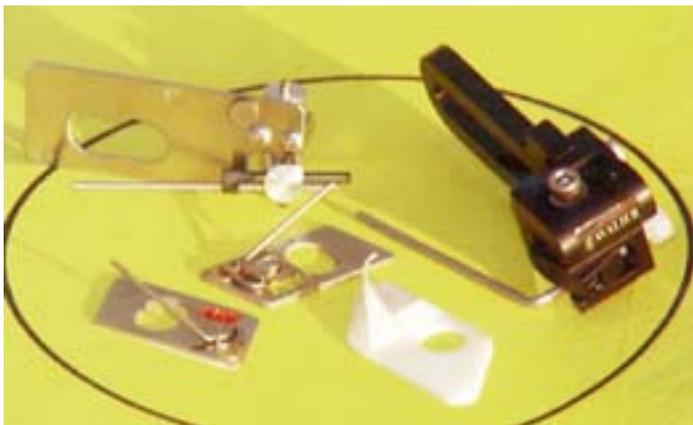
#### **STEP 9: Follow Through**

Relax fingers on the string  
Front and back half need to  
continue moving

Good Luck and Good  
Shooting!

# Arrow Rests for the Olympic Bow

*by George Tekmitchov  
US Archery Team Member*



**The arrow rest may be one of the most important but least thought about parts of our archery gear. One may take a lot of time to think about the initial purchase of a rest, but once a decision is made, most shooters seem to keep shooting the same style rest for many years. This is especially evident among the top shooters in our sport. Most top shooters don't change rests too often.**

## **REST OVERVIEW**

Arrow rests suitable for the Olympic Bow range in price from two dollars for a simple plastic rest to more than \$75.00 for a top of the line magnetic rest. The more expensive rests are not always more reliable or functional but they usually offer many more options and “things to play with” to enhance performance, ease of tuning, or accuracy. Low-cost rests are usually simple, functional and reliable but usually do not have important features such as detachability, an important consideration for the traveling archer, and usually lack adjustment features which can assist the tuning process.

1997 has been a banner year for new arrow rest designs with a number of innovative new rests on the market. Some old favorites are still around as well. The goal of this article is to let you know what's out there and how it can work for you.

## **OLD FAVORITES**

Some of the most prevalent rests on the shooting line have been around a while.

### **Hoyt Super Rest**

I'm always amazed at how many top archers continue to use Earl Hoyt's 30-year old **Super Rest**.

This simple, nylon plastic rest has probably been used to shoot more arrows out of Olympic Bows than any other- mostly because it comes with every Hoyt recurve riser. This rest has even been copied by manufacturers in the Far East and Europe, down to the last detail, because it works so well and is quite an inexpensive rest. Expect these rests to last for an entire shooting season if your tune is good, but you'll tear them up in no time if your nocking point has a strange setting. The **Super Rest** attaches with a double-sided foam tape patch, which requires a clean surface for good adhesion. Some individuals have problems in high heat and humidity with this type of tape backing if the surface has not been prepared properly.

### **Cavalier Champion Rest**

Better known to old timers as the Olympian rest, the **Cavalier Equipment Company, Inc.**

**Champion Rest** was for years a favored design among top shooters, Made from a single piece of metal, the machined, anodized aluminum back plate and self-flipping wire makes for a reliable and simple rest with much longer durability than similar rests. The **Champion** attaches to the bow with two small steel allen-head screws.

A lower-cost and somewhat larger version of this rest is the adhesive-backed **Cavalier Super T300**, which, along with the Hoyt Super Rest, is the standard rest recommended by the makers of Spin-Wing Vanes.

### **Golden-Key AT Rest**

This popular wraparound flipper style rest from Fred Troncoso's Golden Key-Futura Inc. is a fairly solid design using a stout arrow support wire and a coil spring, which returns the wire to the start position after the shot. The **AT Rest** is designed with a built in spring plate to be used instead of a cushion plunger. In the plate configuration, a bolt attaches the wraparound arm to the riser using the plunger hole, For archers preferring to use a cushion plunger, the rest must be attached with the plunger itself, which can be a problem with some plunger designs. This can be dealt with on bows such as the Hoyt Avalon, which has two plunger mounting holes in tandem. Many of the screws on the AT are unplated steel, which needs some care to prevent rust. Shooters using the AT like it most for its relatively stiff support wire.

### **THE NEW CROP FOR 1997-98**

Rests designed for finger shooters are becoming a bit of a rarity in many manufacturers' lines, but a few companies have shown their commitment to this market with some noteworthy offerings for 1997-98. There is a school of thought among some top coaches and technicians that a stiffer arrow support in the vertical plane is desirable. This thought is evident in some of the new products for this year.



### **Cavalier Free Flyte Elite**

Olympic Coach Dick Tone of Cavalier Equipment Company has long placed top priority on rests for the finger shooter, and his company again leads the pack for finger shooters this year with the introduction of the **Free Flyte Elite Rest**. This 100% CNC machined, anodized aluminum rest takes the great features of the original, popular (and still available) Free Flyte and goes beyond with a smoother, more solid construction and fewer exposed parts. This elegant rest is of extreme high quality with a smooth action and sheltered rust proof adjustment screws.

The **Elite** has both a wraparound mounting arm and a “quick detach” assembly which allows the archer to install an included quick-release base directly to the riser with stain less steel screws. The wraparound arm works extremely well on bows that have two mounting holes in the plunger area. It also works well as a drill guide for the quick-detach base option.

New features include relocation of the reversible magnet system to the side of the rest, a locking mechanism for the sweep adjustment screw and a larger, more solid 0.077” (2 mm) support wire. Like the original Free Flyte, the **Elite** has a reversible and powerful magnetic system allowing use as either a retractable rest or flipper rest. In addition, the magnet system allows adjustment of the arrow support retraction speed, from aggressive to mild, or adjustment of the flipper function, from heavy to feather-light.

Regarding the retraction mode, I have tested the original Free Flyte in previous years using high-speed video, and noted that the support wire falls completely away just after the arrow leaves contact with the plunger, providing complete fletching clearance, even with a light setting. The new **Elite** is even faster and smoother than the original Free Flyte. It is also priced considerably higher due to the expensive CNC machined parts used.

I was personally amazed at how quick and easy this rest could be set up and tuned. It fit my Hoyt Avalon like it was custom made for it. After months of use in every kind of weather and thousands of miles of air travel, the rest still looks brand new.



## Asahi ARE Rests

Asahi Archery, a Tokyo archery firm, is moving forward into the market with a line of well designed, high quality magnetic flipper-type rests for the Olympic bow.

The **ARE AM-100** is the basic model. This is a flipper-style rest with an attractive stainless steel plate. It mounts to the riser with an adhesive backing. The rest wire is surprisingly stiff though it is only one millimeter thick (0.043"). Set up on this rest was quick and easy.

The next step up from the basic **ARE AM-100** is the . Not surprisingly, this is an adjustable model which allows the height of the rest wire to be adjusted with the use of a small Philips screw. It uses the same adhesive backing and stainless steel plate as the **AM-100**. This rest also was easy to set up, and the adjustability was useful to get the arrow in just the right place on the plunger tip.



The top of the line rest in ARE's line is called the '**Free Tuning Rest**'. This aptly named rest is supplied with two rest wires of two stiffness ratings and a cantilever arm which allows further tuning of the wire stiffness (by adjusting the wire's unsupported length). The rest also features two ways to adjust the wire's vertical setting, complete range adjustability of the sweep of the wire and a method to change the wire angle. One important aspect of this rest is that, unlike some arrow rests which look as if they were assembled from a parts bin someone spilled on the floor of a Home Depot store, this rest has the minimum number of parts needed to function, enhancing reliability. The **Free Tuning Rest** comes with more than enough adjustment shims and only one size allen wrench is needed for adjustments I found it was possible to affect the bare shaft tune with an adjustment to the length of the support arm, so this could be a useful tuning tool. Because the pivoting assembly has more mass and a stronger magnet than the other ARE rests, it was more important to make sure the vane clearance was correctly set. It was easy to set the wire sweep with only a single screw.

All of the new ARE rests contain a powerful little magnet, which allows the rest wire to rebound against the plate after the arrow has left the bow. This is not a new idea but it is very well executed in the ARE rests. The 100 series rests, like the **Hoyt Super Rest**, need attention to surface preparation

due to their adhesive mounting system. Also, because these rests have rigid steel mounting plates, they may be difficult to adapt to a riser with a curved surface in the mounting area. This can be overcome by substituting foam-backed double-sided tape for the stock-thin tape on the rests. The Free Tuning Rest comes with both an adhesive backing and a pair of stainless steel screws for permanent mounting. It is convenient to use the adhesive for initial testing and tuning, then after the final position is found, to use the screws for permanent installation.

## **PLUNGERS**

A brief word about cushion plungers needs to be said, because arrow rests for the most part don't work without them!

In the United States, most Olympic Bow competitors use either the US-made **Cavalier Master Plunger** or the German-made **Beiter Plunger**.

### **Beiter**

The **Beiter Plunger** features a 'tool-less' adjustment system with a calibrated, micrometer-like scale on a stainless steel and aluminum housing designed by Werner Beiter. The **Beiter Plunger** comes with a molded spanner wrench which allows for a very positive lock-down on the riser, and is available in various combinations of body length and plunger rods to allow for almost any style and combination of riser and rest. The plunger is supplied with additional rods because the Beiter design does not have a separate tip for the rod. Once the rod wears out it must be replaced, but fortunately the plunger can be reassembled with no change to the spring tension due to the calibrated scale. A range of three different springs, each with different tension, is supplied with the **Beiter Plunger**. The spanner-lock feature of the **Beiter Plunger** means in many instances it can be made to work both as a plunger and mounting bolt for some wrap around rests, although this is not suggested in the literature accompanying the product. Beiter plungers have become more difficult to find in the US for the past couple of years and the price has increased considerably, but they are still a top choice among archers.

### **Cavalier**

The **Cavalier Master Plunger** is regarded as one of the smoothest plungers on the market owing to its Teflon-lined barrel and polished stainless steel plunger rod. The body of the Cavalier plunger consists of stainless steel with an anodized aluminum locking collar and barrel, available in a number of popular colors. The **Cavalier Master Plunger** comes in two body lengths to accommodate various bow designs and rest options. Adjustments are quick and easy with only two stainless steel set screws allowing full adjustment. Like that of any plunger, the smooth Teflon tip of the Cavalier plunger can be prone to some wear over time but is easily replaced with absolutely no change to the spring tension. It can simply be unscrewed from the plunger pin and easily replaced. Extra plunger tips and a full set of tools accompany each **Cavalier Master Plunger** which can cost as little as one-fifth the price of a Beiter Plunger. Also available from Cavalier is a **Master Loc Plunger** which is designed to work with wraparound rests on bows which have no provision for a second mounting hole in the plunger area. This plunger has a heavy-duty body and a different type of locking collar for a dual-role of holding the rest to the bow.

## **Shibuya**

Shibuya, a Japanese firm known for their superb target sights, also makes an excellent cushion plunger. The **Shibuya Plunger** is not widely distributed in the US but is used by some top archers. It is very similar in appearance and function to the Cavalier plunger, but instead of a Teflon internal liner, it has a one piece Teflon plunger rod and tip and a stainless steel liner.

# FITA and its Member Associations

Federation Internationale de Tir a l'Arc  
(International Archery Federation)

*by Jim Easton,  
F.I.T.A. President*



**The FITA organization is the International governing body for archery recognized by the International Olympic Committee (IOC).**

A FITA Member Association (MA) is the National Governing Body (NGB) in every country that participates internationally in archery. The NGB is a member of their countries National Olympic Committee (NOC).

Most NGB's are funded by their NOC to operate the NGB, train archers, promote archery activities and to transport their archery team to International archery championships and competitions.

This NOC funding happens for archery NGB's because archery is an Olympic sport and the NOCs will support mainly sports that are on the Olympic program.

One of FITA's more important goals is to maintain our position on the Olympic program. Without archery representation on the Olympic Program, most NOCs would not support the archery association in their country, or would drastically reduce the support. All FITA MAs realize how damaging this would be to their association if it happened. With our position on the Olympic Program, we are able to encourage archery associations in other countries to join FITA and start development of the sport in their country.

With the Olympic Round Match Competition, archery has proven itself an exciting and interesting sport for television broadcasters and spectators on TV and at the archery stadium.

We feel our Olympic Round Team and Individual Match competition has pleased the IOC and TV broadcasters. We must be sure that the Olympic Round stays intact and remains short and easy for TV and spectators to understand and enjoy. Efforts to complicate the competition with round robins or double elimination formats must be prevented at the Olympic Games or we may soon lose our spectator and TV appeal and eventually lose our position on the Olympic program.

FITA now has 110 MAs and we hope to achieve 120 before the Sydney Games in 2000 and 150 by the year 2004. To do this development, FITA has a Development and Technical Assistance Committee (DTAC) working directly with potential new MAs and through the IOC Olympic Solidarity, promotes archery in their country. Nearby countries are invited to these seminars to encourage participation in our sport or to improve their level of performance. We work closely with the Member Associations to hold these learning seminars. This grass-roots development is crucial for FITA's growth.

The seminars are meant for coaches and administrators so these trained individuals can, in turn, teach local coaches and administrators how to develop archers and archery organizations in their regions.

The DTAC is made up of a Chairman, Raoul Theeuws, and two members, Don Lovo and Don Rabska. Don Lovo, who is also Chairman of the Judges Committee, is able to combine his judges training trips with DTAC missions. Many times the FITA judges are the leaders of archery in their country and a combined FITA effort can be a very efficient use of our FITA resources.

FITA has also asked our stronger MAs to help us develop more new members and improve the level of some of our developing MAs. This has worked in several cases and we appreciate the efforts by some of our members to help bring in new MAs, or improve the performance of newer members.

The FITA office has been relocated to Lausanne, Switzerland, and has its first full-time executive director, Tom Dielen. Tom will work with DTAC to increase development activities, as well as improve services to all our members.

FITA has tried to develop a close cooperation with the archery manufacturers with very limited success. Those manufacturers who have the vision to understand FITA's worldwide development efforts and the benefit to our sport, have joined FITA as Associate Members and we appreciate their vital help. We will continue to try to interest other manufacturers to become Associate Members of FITA.

The 1996 FITA Associate Members are:

Arizona	Jan Van
Archery	Drunen
Enterprises	Kinsey
Asahi Archery	Archery
Co., Ltd.	Starret
Bagar & Pilar	Company
Bjorn Bengtson	Maple Leaf
Sweden AB	Press, Inc.
Brownell &	Martin Archery
Company, Inc.	Mizuno
Easton	Nagai Archery
Technical	Co., Ltd.
Products, Inc.	Werner Beiter
Hoyt USA	
Ishii Archery	
Company, Ltd.	

FITA is very aware that our function is not just to represent archery at the Olympic Games and our various World Championships. We also must develop and encourage all levels of our sport.

We have many different FITA rounds that will offer a different type of competition to meet various desires of the archers of the world as follows:

- FITA Standard Round
- FITA 900 Round
- Half FITA Round
- FITA Round
- 70 Meter Round

We also will propose a new round, which is now called the Club Olympic Round (COR). This Round is designed for the club or local competitors. It is the Olympic Round (OR) match competition, but all archers will shoot the full number of matches and the winners and ranking is based on the number of matches won and at what point during the matches were the wins accomplished. This will let all archers experience the excitement and challenge of the OR and yet shoot a full number of arrows. Some ideas for a club would be to shoot a 70 meter round or a half FITA in the morning and a COR in the afternoon. We believe this more 'friendly' COR version of the OR will offer further benefits to the world's target archers.

FITA has archery competition for field archers, outdoor target archers, indoor target archers and even 3-D shooters. All these forms of competition are available for recurve and compound bow shooters and barebow for field archery and 3-D.

There are also other archery organizations in the world that specialize in field archery (IFAA) and 3-D archery (IBO). These organizations serve a purpose in offering other type rounds and international competitions that are open to all archers. FITA World Championships are more limited, each country can send only a maximum of three or four archers per division, as is done in the Championships of other Olympic Sport Federations. The FITA Member Associations usually pay for the travel and expenses for their national archery teams. The archers at FITA World Championships officially represent their country and wear the country uniform and carry their national flag.

The other International Archery organizations have been approached and we are talking about a cooperation between our groups. If these groups become affiliated associations to FITA, our affiliation will truly represent all archers and strengthen our position in the Olympic movement and the world of sports. Each group would retain its complete independence, but would cooperate with FITA to hold an official Championship of field archery and 3-D archery.

We hope this cooperation will strengthen all archery groups and our sport, as well as foster the growth of our sport.

For additional F.I.T.A. organization or membership information, contact the F.I.T.A. office at:

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Telephone 41/21/614.30.50  
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# Turkey Feathers

*by Randy Ulmer*



I may fletch my arrows with turkey feathers, but I'll never be a traditionalist. I've become a technologically advanced predator. I'm comfortable with what I've become. Fred Bear and the G. Fred Asbell are the true bowhunters of this world. They are the purest of the purists. I am not.

Once I was a traditionalist. I designed and built my first bow and my first arrow. I built them without the aid of an instructional booklet, a kit, or a teacher. I didn't choose yew or osage orange. Instead I chose willow, not because of its strength or its durability, but because it was all that was available to a six year old boy with a pocket knife. My arrow shafts were of willow for the same reason. Chicken feathers served as fletching. I tied them on with cotton kite string.

Monofilament fishing line soon replaced the cotton string - my first venture away from all natural products. I should have never used synthetic material, for it was a trend that would prove irreversible. It would ultimately mean the demise of my career as a purist.

I later abandoned willow wood. I bypassed yew and osage orange and went straight to aluminum and fiberglass. I've been on a downhill slide ever since. I've fallen in with the permissive ranks of the gadgeteers and the technocrats. I have not, however, abandoned my feathers.

Perhaps I'm unable to completely separate myself from everything traditional. But before you attempt to label me as a latent purist, let me try to justify this long lasting affair with the feather.

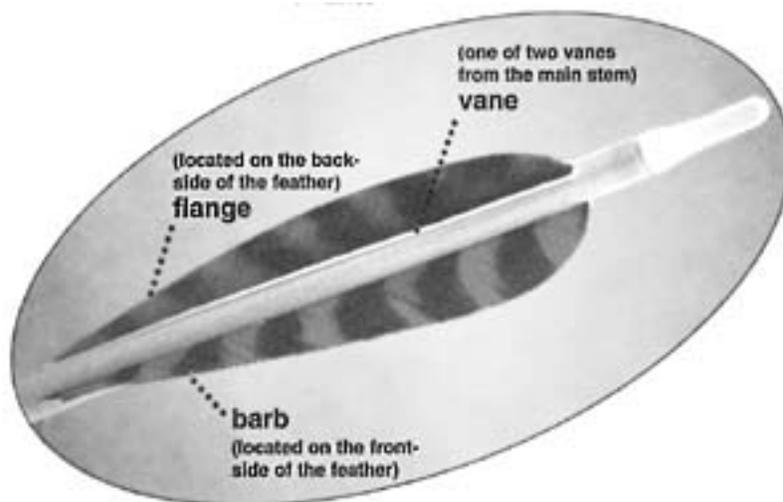
## I love feathers

My fascination with feathers has never diminished. Feathers have properties so perfectly suited to archery that one might believe they were designed for the archer, rather than for winged flight. Maybe this is so. If domestic turkeys no longer fly, then why do they still need their feathers? Why haven't they lost them like Darwin said they would? I believe it is because archers still need them.

I studied the anatomy of the feather while in veterinary school. I was amazed by the simplicity of its design and the complexity of its structure. Every flight feather has two vanes on either side of the main stem. Each vane consists of many barbs in a parallel row. Each of these barbs has several hooks on the front and a rounded flange on the back. The hooks on the front of one barb hook onto the flange on the back of the adjacent barb, locking them together. If they are unhooked, they can be reattached simply by stroking the feather.

This interlocking system gives the feather tremendous lateral strength. Push sideways on a feather and you'll see what I mean. Plastic vanes have very little lateral strength. This lateral stability is the primary reason the feathers correct poor arrow flight so quickly. As the arrow fishtails or porpoises, the feather provides stiff resistance. Plastic vanes, on the other hand, fold over easily, providing little resistance.

Feathers have almost no linear support. If a feather encounters an obstacle while in flight (such as an arrow rest or a tree branch) it simply folds down, creating very little flight disturbance. A plastic vane, on the other hand, has too much linear support. If it crashes into the arrow rest it wreaks havoc on the arrows flight.



On average, plastic vanes weigh four times as much as feathers. Big deal you say? If arrow speed is a concern, it is a big deal. Every grain of weight you remove from the back of the arrow, you can remove from the front of the arrow without significantly changing the percent front of center balance point (that difficult to understand measurement so critical to good arrow flight.)

If you replace four inch vanes with four inch feathers, you remove twenty-five grains from the back

of the arrow. You can now remove twenty-five grains from the front of the arrow without changing the percent front of center balance point. These changes make the arrow fifty grains lighter and correspondingly faster. Removing weight from the ends of the arrow has the added benefit of making it act stiffer. A stiffer acting arrow usually groups better (for release shooters.)

Once I've tuned my bow and arrows, almost nothing will tighten my groups like feathers. Put a set of four or five inch helical feathers on your hunting arrows and watch your groups get smaller.

### **I hate feathers**

I've tried repeatedly to quit feathers. I believe I could quit at any time if I really wanted to.

Feathers are noisy. They're noisy in the quiver and they're noisy in flight. Noise is a bowhunter's bane.

Feathers collapse when they get wet. They lose their ability to steer the arrow. The broadhead takes over the controls and accuracy suffers.

Feathers are fragile. Shoot them into a bale of straw, push them back through and they look like they've been through a paper shredder.



I try to go back to plastic vanes every other year, and always come running back to my feathers. Each time I prove the problems feathers create are inconsequential when compared to the problems they solve. None of man's fabrications will ever adequately replace this creation of nature.

Because I am a tinkerer by nature, no one can ever stop me from trying every conceivable new gadget that shows up in my mailbox - it's my technological right. Nor, on the other hand, will anyone ever deprive me of my one final, tangible link to the traditionalist, my turkey feathers.

# I.F.A.A. and its Championships

(International Field Archery Association)

*by Ken Rogers,  
I.F.A.A. President*



The IFAA is an association of affiliated national field archery associations or its equivalent; one from each affiliated nation.

During the time after World War II the United States had military installations in many regions of the world. Some of its military members were field archers and, quite naturally, they set up field ranges on and around their military posts to pursue their hobby. Civilian personnel in those countries and near those installations soon participated in the sport and developed a liking for field archery. Eventually there was a recognized need for an international organization to unite the many countries and their field archery efforts. In 1968, the driving forces met to discuss and act on that effort. The NFAA had 'invented' Field Archery in 1939 and several leaders of the day were invited to, attended, and supported the formation of, the IFAA.

Today, in its 28th year, the IFAA conducts an IFAA World Field Archery Championship (WFAC) each even numbered year and an IFAA World Bowhunter Championship (WBHC) each odd

numbered year. In 1996 the first ever IFAA World Indoor Archery Championship (WIAC) was held in the United States and was hosted by IFAA member nation affiliate, NFAA, USA. The second WIAC will be held in March of 1998 and will once again be hosted by the NFAA, USA. Current plans are to hold the third WIAC in 1999 elsewhere in the world. It will then be held on each odd numbered year after that.

In addition to these IFAA World events, the IFAA sanctions regional competitions recognizing qualifying scores as IFAA record scores. The regional competition for North America is the North American Field Archery Championship (NAFAC) which will be held this year in Caledon, in the vicinity of Toronto, Canada, August 2-4, 1997.

National competitions are also sanctioned by the IFAA. When a national field archery association or its equivalent affiliates with the IFAA, all of its member archers automatically become members of the IFAA. Or, to turn that around, the only way an archer may participate in IFAA competition is to be a member in good standing of a national field archery association or its equivalent, which is a current national affiliate of the IFAA. In the U.S. that is the USA National Field Archery Association (NFAA), and in Canada, the Canadian Field Archery Association (CFAA).

During 1995, the IFAA began working on a standard format for its bowhunting championships. The format was completed in late 1995 and was accepted by the IFAA World Committee at their biannual meeting in 1996. This year, 1997, saw WBHC-97 held in the Republic of South Africa under that new format. It was a successful first test of the new format and was well accepted by the attending archers. Basically, the new format provides a menu of events from which the organizing nation may shop and choose. Mandated, are two paper animal target rounds and beyond that, it is the nations choice of what other rounds from the menu they may wish to put on over the four day event, or they may utilize the paper targets exclusively. This is important for those nations who may not be able to afford the expense of 3-D targets. Rounds such as 'Game Trail', Precision round, Classic animal, one arrow 3-D, two arrow 3-D and others are included in the format. Simulated treestand shots (shooting platforms), running targets, herd targets and timed targets are included in some of the rounds. WBHC's are unmarked distance tournaments and sincerely test the skills of the participant. The next use of the new format will be in 1999 with WAHC-99 being held in Germany.

IFAA's namesake tournament is the Field Archery Championship. In 1996, the tournament took place in Darrington, Washington and was hosted by the NFAA (USA). In 1998, the WFAC moves to New Zealand and will take place over the Easter weekend, April 7-13, 1998 in Auckland. The Field Archery tournaments are marked distance rounds which include the Field round, the Hunter round and the Animal round. These tournaments are contested over five days of actual shooting. Opening ceremonies are held the day before the first round is shot and an International banquet, or gala, along with the award ceremonies and closing ceremonies occupy the day after the last round is shot. Initiated at WFAC-96, the Champion of Nations competition is a team event within the championship. Each nation may enter one team. The teams are made up of adults only and do not, at present, include professionals or Veterans (over 55). One archer, man or woman, from each of IFAA's shooting styles fills out each team at seven members. (Competing teams may be less than

seven members especially in those nations who may not have a certain style.) This event will be a part of the New Zealand event and it will be interesting to see if the U.S., the defending Champion of Nations, will repeat their win or if we will have a new 'Champion of Nations'.

The IFAA does not subscribe to the 'Elite Archer' concept. Every archer, qualified only by higher membership, is eligible to participate in IFAA competitions. Some archers are assisted by their country and/or national association in traveling to these competitions. Most are not.

The IFAA during the past couple of years has seen a definite rise in Field Archery interest around the world as evidenced by the increase in nations seeking affiliation. In the past year, we have found it possible to send representatives of the IFAA into Malaysia, Singapore, Hong Kong and Mauritius to present informational talks and to assist in their affiliation with the IFAA. This has proved quite productive for the IFAA as all of those mentioned have become affiliated or are in the process of affiliation.

I hope this brief introduction has been enough to give *Archery Focus* readers a little better idea the IFAA. Perhaps Archery Focus will invite us to visit again. Good shooting in your favorite archery sport.

Ken Rogers started his archery service as a life member of the NFAA and has been honored to serve in nearly every administrative position in club, league, region and foreign association. Serving as the NFAA Director for the State of North Carolina before his retirement from the Marine Corps Ken continued in that position after retirement and subsequently served as Councilman for the Southeastern Section of the NFAA. While serving his last year for the eight state section, Ken was asked to stand as President of the NFAA which he did. And since January 1995 Ken has served as the IFAA President which he is currently serving a second term

For more information about the IFAA, contact one of the following representatives nearest you.

Ken Rogers (President)  
283 Carlson Drive  
Midway Park, NC 28544

F.J.L. Loet Smit (Secretary)  
P.O. Box 10211  
Vorna Valley  
Midrand, 1686  
Republic of South Africa

Tim Stone (Treasurer)  
14 Doon Street  
Kallangur 4503  
Queensland  
Australia

**Visit the IFAA World Wide Web page at:**

<http://www.archery-iffaa.com/>

# “Finish the Shot”

## (Extend past the clicker)

*by Rick Stonebraker*



Imagine yourself standing still, concentrating on the ten in front of you. Your grip is correct, your holding arm is firm and you go over the release process in your mind. When ready, you execute your moves: One, two, three, four steps and you release the bowling ball down the alley. Your release hand forms a slow arc towards the ceiling and the ball rolls down the alley to the TEN - hopefully a strike. Wrong subject? Maybe! But the procedure is the same: you do not stop the hand immediately after releasing the ball, it has a follow-through, and if it is smooth and consistent, the ball should roll where you want it.

The same applies to releasing an arrow. What happens after a shot can directly involve what happens during a shot. When does the shot end? Certainly not when the clicker goes off or when you release the arrow, regardless of whether you use fingers or a release. If your whole world revolves around the clicker or the release, then you tend to program yourself to this critical point. Think beyond that point and you'll have fewer problems.

The clicker was originally designed as a draw-check indicator. Its fundamental purpose was to ensure the archer drew the bow the same length every time. Drawing less than intended will give less poundage which will result in low arrows. It may also change your line of sight which could make the arrow go left or right, depending on the situation. On the other side, drawing more than intended would cause more poundage which will cause the arrows to go high and right/left due to inconsistent string alignment.

Through the years, the function of the clicker has evolved from a draw-check indicator to a timing device. The draw-check merely let the archer know when they drew the arrow to the full length. They then held that draw, aimed at the target and released the arrow. As a timing device, we tend to draw, aim, then when the clicker goes off, release the arrow. We have moved from mentally releasing the

arrow to letting a tiny piece of metal dictate when to let go. Which is all well and good, but we have to go beyond that point.

As mentioned before, archers tend to use this 'clicking' as the trigger mechanism to release the arrow and it is possible this is the 'critical point'. "When the clicker goes off, release the arrow and that is the end of the shot". Archers get programmed on this aspect and this needs to be changed. If the shot is extended past the 'clicker' then the critical point is minimized to the point that there is no critical point. The shot then turns into a nice smooth sequence of events with no relative beginning or ending.

A proper follow-through can cure any of the three big problems when shooting: dropping the bow arm, peeking, an explosive release, or a combination of the three.

### **Dropping Bow Arm**

Many archers tend to drop their bow arm after release. Whether the bow is too heavy (mass weight) or they just don't hold it up, the bow drops like a stone. Obviously, a dropped bow arm leads to low arrows and is a valid reason to work on a good follow-through.

### **Peeking**

One of the most common causes of left / right arrows. The archer's being in a hurry to 'watch' the arrow in flight. Instead of keeping the head straight, archers will look away from the string to see what is happening. This is an inconsistency that a correct follow-through can cure.

### **Explosive release**

When an archer shoots so violently that the release hand snaps back suddenly and the bow arm flies in a wild arc, they have little chance of a smooth follow-through. They are like a tightly wound spring or rubber band. There is no smooth transition from aiming to the end of the shot. It just explodes and it is over. There are several archers who shoot quite well with this method so I won't say that it can't work. But for most archers, finishing the shot smoothly works best.

When is the shot finished? I try to envision that point at which the arrow reaches the target. When I release the arrow, I keep looking at the target (without peeking) until the arrow reaches its goal. I also try to keep my sight on the target after I shoot the arrow, even if it is only for a split second. When I extend my shot to the target, then I am less likely to place all the value on the clicker or release.

Where is your sight after you release? I would be willing to wager that very few people know what they are aiming at AFTER the release. To determine what you see after a shot, aim at a target and when the clicker goes off, do not release the arrow but check to see if you are still aiming where you intended to. You may be surprised to see that you drifted far away from the intended point of aim.

### **Aiming exercise**

An exercise to help in aiming after the shot. You may use any distance you choose but start up close,

say 20 yards at the appropriate target face. Do all the same things you do when shooting, but when the clicker goes off, do not release the arrow. Instead, look to see if the sight is still in the center of the target. If it has moved, that means there is movement exactly at the point of release. What happens directly after a shot has a bearing at what happens during a shot.

Practice shooting without releasing the arrow. When you are able to aim at the center AFTER a shot, you will be much better at aiming DURING the shot.

### **Drifting**

If you drift while shooting, which direction are you drifting and how much do you drift? When you get to full draw and the sight is in the gold, close your eyes and continue your shot. Do the arrows go right or left and how much? The quicker you shoot, the less drift that can occur. A person who holds a long time may drift quite a bit. To eliminate or minimize the drifting, your best bet is to learn to shoot quicker. An alternative is to change your stance. Experiment with moving your back foot until the drifting is minimized.

### **Summary**

These are a few ideas to help with “finishing the shot”. I am sure there are many more, but work on these few basic exercises. There are no ‘tricks’ or ‘shortcuts’! Simply work on the fundamentals. Remember, archery is fun!

# Shooting In The Mind's Eye

*by Lisa Franseen, PhD*

The Mind's Eye is perhaps the most powerful tool that we possess. The Mind's Eye imagines, creates, and visualizes any possibility that we desire. In the process, our Mind's Eye influences our physical reality and our ability to actually have that which we have visualized. A simple example might help to illustrate. You're working at the computer and suddenly, in your Mind's Eye, you picture something you'd like to eat. You think "that sounds good," and suddenly you're heading to the kitchen. All the necessary functions that are performed in the process of getting the food occur spontaneously, with a minimum of conscious thought. We stand up, walk to the kitchen, grab the food, walk to the cupboard to get a dish, etc. In our Mind's Eye is pictured the outcome which we desire and our bodies, more or less, automatically do what is physically required to successfully reach the outcome. It is not necessary to consciously think about which muscles to extend or contract as we stand or walk or reach; nor to think about where the kitchen is in your house and how to get there. In fact, it is easier to allow your body to do automatically what it knows how; if you attempt to consciously think about and control every muscle movement, it actually makes the process much more difficult. The Mind's Eye not only visualizes the outcome that we desire. It also believes, without an ounce of doubt, that it is in our capacity to reach what we are visualizing. In going for the food, it is doubtful that you would wonder if you are actually capable of making it to the kitchen or able to eat what you are after.

## **What does the Mind's Eye have to do with archery?**

Similar to the example above, the Mind's Eye greatly influences our actual success in archery. When we can visualize ourselves landing the arrow in the gold, and believe without a doubt that it is in our capacity to do so, then our bodies can more easily do what is necessary to achieve that outcome. Archers who don't or can't visualize themselves shooting successfully are at a great disadvantage. And, like attempting any physical activity, consciously thinking about every muscle you need to extend and contract can interfere with your ability to execute a good shot (unless, of course, you are just learning how to shoot).

Using the Mind's Eye in archery sounds simple, but to actually use it to your advantage rather than disadvantage can be more complicated than it sounds. Think about what can happen in your Mind's Eye following a low scoring end and preparing for the next end. If you feel frustrated or upset, begin to think that "maybe today is just not a good day for shooting," feel less confident in your abilities, and see yourself as not prevailing, there is a good chance that your performance will not improve. Using the Mind's Eye to your advantage means believing in your abilities and feeling confident that you can succeed, despite your performance and despite the outcome. Using the Mind's Eye in this way does not mean that you will have immediate 'success' (depending on how you define success - we'll talk about that in another issue) but it does mean that success will come more easily and more

quickly.

### **How does the Mind's Eye influence our physical reality?**

The Mind's Eye influences what occurs physically because the mind and body are intimately connected. They influence one another constantly. It was once thought that the mind and the physical body were completely separate; that is, the function of one did not in any way influence the function of the other. Today, we know this to be absurd. Our thoughts and emotions influence our physical health and our physical health influences our mental health. There are an endless number of examples: Feeling under tremendous pressure at work, the stress eventually causes an ulcer to develop. You have depression because you contracted a disease that brings you to contemplate your mortality. Feeling sure that you'll botch a big job interview, you end up doing just that. Or, you seem to get sick every time you visit your family. These examples illustrate how the 'mind-body connection' can bring about negative consequences, and are common examples many have had experience with. However, the mind-body connection can and does bring about good consequences, too. Positive thoughts, optimism, and strong coping skills elevate physical health. Likewise, a healthy, strong physical body elevates mental health. With regards to archery, if we think positively and believe in ourselves, the probability of executing a strong shot is much higher than if we think negatively and have a pessimistic outlook.

Ironically, even though there is research to show support for the mind-body connection, there is still a tendency to treat things as though the mind and body are separate. For example, a physician may treat the symptoms of an ulcer without teaching the patient how to better deal with stress. Without a knowledge of stress management, the patient will most likely develop other stress-related symptoms, such as headaches, cold sores, anxiety, lower resistance to infection, drug and alcohol abuse, etc. Similarly, archers who are having difficulty shooting as well in competition as they do in practice often tackle the problem by increasing the amount of time they spend shooting. Keeping in mind that shooting is both a physical and mental exercise, these archers may do better by focusing on how their mind, thoughts, and beliefs are influencing their ability to shoot under pressure.

With a fuller understanding of the Mind's Eye and how it effects your shooting ability, the next step is to learn to use the Mind's Eye to your advantage. This requires: 1) perfecting the use of visualization, 2) learning to objectively correct your mistakes without emotionally judging them, 3) realistically defining success, and 4) basing your confidence on more than the outcome of your performance. Each of these topics will be discussed in future issues of Archery Focus.

**Until then, good shooting!**

Lisa Franseen received her PhD 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.

## Eissenger, Thomas Win Coaches of the Year Award



Texas A&M Archery Coaches Kathy Eissinger and Frank Thomas were cited as College Coaches of the Year during the 1997 United States Intercollegiate Archery Championships in May.

Eissinger has served as Program Director of the NAA College Division for the past year. She is a lecturer in Texas A&M's Department of Health & Kinesiology, covering topics such as archery, outdoor education and racquetball. Kathy recently completed a Level 4 certification course in the NAA Coaches Development Program. A graduate of Texas A&M, she is married to Richard Eissinger and lives in College Station, Texas.

Thomas, along with Eissinger, has conducted the South Region Indoor and NAA National Indoor for many years. He has been employed at Texas A&M since 1979 and is currently the Director of the Activity Program (Health & Kinesiology Department). Frank teaches archery, outdoor education and aerobic walking. He was the Assistant Competition Manager in charge of implementation at the 1996 Olympic Archery Competition, and was recently appointed the assistant coach for the 1997 U.S. World Target Championships Team. In July, Frank will accompany the Recurve Team selected for the World Championships to the Moscow Grand Prix event.

An NAA Certified Level 4 Coach in the Coaches Development Program, Frank has been active with the NAA College Division for the past 10 years. A graduate of Arkansas Tech University, he earned his Masters degree from Texas A&M. Frank and his wife, Alessandra live in Bryan, Texas with their three children.

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## Earl and Ann Hoyt Honored at USIAC

Texas A& M Archery Coach **Frank Thomas** presents **Ann** and **Earl Hoyt** of Bridgeton Missouri with the 'retired' plaque (tray) they donated 20 years ago to the NAA College Division. The tray has the names of 20 USIAC male recurve champions from 1979 to 1997 engraved on it.

**Grace Amorski** of Diamondhead, Mississippi will receive the retired tray with the names of 20 USIAC female recurve champions for the same period.

# National Archery Association Offers Coaches Development Program

The Coaches Development Program of the National Archery Association offers everyone the opportunity to gain certification for coaching or instructing archery. It is the most comprehensive archery coach development program in the United States. The program has six classifications:

## **Level 1 Camp Instructor**

This is a service course designed to train and certify archery instructors for short-term camp and youth recreational programs. The course is a 12-hour activity scheduled by request to the NAA National Office. The minimum age for certification is 15 years and NAA membership is not required. The course fee is set by the course sponsor who is responsible for course materials, the expenses and a \$100 honorarium for the NAA assigned course instructor. Certification is valid for four years. Level 1 certification is not required for enrollment in the Level 2 course.

## **Level 2 Archery Instructor**

This course is designed to train and certify instructors to teach group archery classes, JOAD programs and Level 1 Camp Instructor courses. Participants must be NAA members and 18 years of age or older. The course is a three-day activity scheduled by request to the NAA National Office. Certification is valid for four years. The course fee is set by the sponsor who is responsible for course materials, the expenses and a \$200 honorarium for the NAA assigned instructor.\*

## **Level 3 Archery Coach**

The Level 3 course is designed to develop coaches to teach and coach individual as well as team archers. Participants must be NAA members, at least 21 years of age and must have held Level 2 certification for at least one year\*\* The course is an intensive, seven-day event scheduled once or twice a year at the Olympic Training Centers. Certification is valid for four years. For U.S. citizens, the course fee of \$200 covers all materials as well as room and board at a Training Center. Level 3 certification is a prerequisite for enrollment in the Level 4 course.

## **Level 4 National Coach**

This course is designed for experienced coaches who want to extend their coaching activities and skills to the National Team level. Participants must be NAA members and must have held Level 3 certification for at least three years. The course is an intensive, seven-day event co-scheduled with the Level 3 course at the Olympic Training Centers. Certification is valid for four years. For U.S. citizens, the course fee of \$300 covers all materials as well as room and board at a Training Center. Level 4 certification is required for participation in the National Coach Development Program.

## **Level 5 Master Coach**

Master Coaches are appointed by recommendation of the Coaches Development Committee with final approval by the NAA Board of Governors. The appointment is an honorary position recognizing significant achievement and contributions in archery coaching. Prerequisites may include past appointment at U.S. National, World Target, Pan American Games, or Olympic Team Coach, and outstanding contributions to the NAA and sport of archery through coaching, publication, seminars, teaching or research.

## **Coach Development Camps**

These are held annually at the Olympic Training Centers and are staffed by members of the National Coach Development Program. The camps are two-day events organized by the Coaches Development Committee to ensure that all NAA coaches are informed of developments in archery and coaching principles as applied to athlete training. The camps can be used to re-certify Levels 2, 3 and 4. The camp fee of \$100 covers all materials and room and board at a Training Center.

\*By application to the Coaches Development Committee, experienced Level 2 or Level 3 coaches will be certified to teach regional Level 1 and 2 courses.

\*\*Under exceptional circumstances the Coaches Development Committee may consider application to the Level 3 course by individuals who do not hold Level 2 certification, but who have extensive and verifiable experience in archery instruction or coaching that includes group teaching.

## **NATIONAL COACH DEVELOPMENT PROGRAM**

The National Coach Development Program was established to promote continued development of advanced archery coaches and produce a group of U.S. National Team coaches to staff elite archer training programs, U.S. Archery Teams (USAT), Junior USAT, International and Olympic competitions. The program emphasizes development of team coaching skills as well as coaching of individual athletes. Acceptance into the program requires active NAA Level 4 or 5 certification. Under some circumstances, experienced Level 3 coaches may apply or be invited to participate but they must attain Level 4 certification within two years of entering the program.

Admission to the program is initiated by application to the Coaches Development Committee stating intent, credentials and coaching background. The NAA National Office will maintain a personnel file on each coach accepted into the program. The file will be open to the coach, the CDC and the NAA Board of Governors. The size of the development program will be maintained at a number where all coaches can expect to participate each year in one or more developmental or competition events. Members of the program will be reviewed by the CDC at two-year intervals, resulting in renewal of the appointment or dismissal from the program. One development coach will serve on the Coaches Development Committee. In addition to an annual Coaches Summit Meeting held at the Olympic Training Center in Colorado Springs, Development Program coaches can participate as coach, assistant coach or instructor in nine prioritized developmental activities or events:

1. Junior USAT events
2. Resident athlete program
3. Junior World Championships
4. Regional outdoor championships
5. Collegiate All-American camps
6. Level \_ courses and advanced training camps
7. JOAD training camps
8. Coach development camps
9. Adult training camps

On the basis of their performance in these developmental activities, coaches will be eligible for selection as assistant coach at some USAT and Junior USAT events. Selection to an event will be initiated by the CDC which may also consult with the National Team Coaches and the JOAD, Athlete Training and Collegiate Committees.

## **U.S. NATIONAL TEAM COACHES**

A major goal of the National Coach Development Program is the naming of six U.S. National Team Coaches. This group of coaches will constitute the pool of head coaches for the Resident Athlete Program, USAT and Junior USAT events, and International Team competitions.

National Team Coaches will be appointed by the Coaches Development Committee subject to approval of the NAA Board of Governors. Selection will be based in part on experience, prior coaching success and performance in the National Coach Development Program. In addition, the position of National Team Coach will require:

The ability to work together with the other National Team Coaches to develop and implement a single U.S. National Team coaching and training philosophy that will be implemented throughout the NAA's coaching and athlete training programs.

One National Team Coach will serve on the Coaches Development Committee. The performance of the National Team Coaches will be reviewed annually by the CDC, resulting in a recommendation to the Board of Governors for renewal of the appointment or dismissal from the position.

## **TEAM COACH SELECTION POLICY**

Applications for team coaching positions will only be accepted by the Coaches Development Committee from pairs of coaches who have together established their relative positions as head and assistant coach, and who have worked out a mutually agreeable training plan for the competition. Head Coaches for the Resident Athlete Program, USAT and International Team competitions must be U.S. National Team Coaches, but assistant coaches may be from the Development Program pool. Selection of head and assistant coaches for all USAT, Junior USAT and International competitions or camps will normally be based in part on prior experience and performance in prioritized competitions or events.

# Hunting With Traditional Equipment

## An Introduction To The Basics of Traditional Bowhunting

*by T.J. Conrads*



Traditional archery has its roots in using the bow as a tool whether for man against man in warfare or for putting meat on the table. At one time or another most archers will feel the need to hunt with their bows. It's a time honored by tradition based in no small part that as humans we are essentially a very important cog in the wheel of life. So it should come as no surprise if you wake up one morning and feel a tug from your internal instincts and want to take your bow to the woods This is a normal and healthy feeling. But before you do there are some basics which you need to know before you ever launch your first arrow at a living creature.

### **Bowhunter Education**

Whether you are a seasoned hunter or a beginning outdoorsman your first step to becoming a bowhunter is to take a certified Bowhunter Education course.

This course is designed to teach you the foundation of bowhunting and outdoor ethics Such topics as

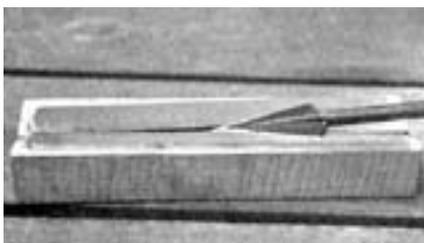
bow and arrow safety, bowhunting ethics, history and bowhunting practice are explained and expanded upon. You will learn the importance of a sharp broadhead and how it effectively and humanely kills game; correct shot placement on game; blood trailing; proper game care if you are lucky and skilled enough to harvest a game animal; and many many other very important aspects of bowhunting

Several states have laws which require the bowhunter to complete a Bowhunter Education course before receiving a bowhunting license. Even if your home state does not require it, I strongly suggest you contact the National Bowhunter Education Foundation or your local department of fish and game and ask them to put you in contact with one of their Bowhunter Education instructors. I have taken the class several times including an instructor's class, and have learned something new each time. You owe it to yourself and, more importantly to the hunted game animal to become a knowledgeable and safe bowhunter.

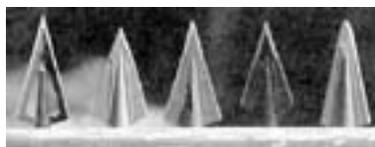
### **The Business End**

There are many different styles of broadheads on the market for bowhunting, however, most traditionalists use solid two or four blade broadheads on their arrows. These simple heads are designed to fly perfectly straight, split through bone, be resharpened and reused They can either be glued on to the forward end of a wood or swaged aluminum arrow, or onto an insert designed for aluminum, fiberglass and carbon arrow shafts.

Broadheads kill by hemorrhaging as opposed to shock in the case of a bullet. To be effective and humanely bring down game your broadheads must be razor sharp. It takes a lot of practice to be able to sharpen a broadhead by hand using a mill file, but with a little practice you will be able to consistently keep a razor edge on your broadheads. Of course, there are other inexpensive devices that will help the bowhunter keep his or her broadheads in hunting condition.



*This hone, similar to the Truangle hone, has two mill bastard files set at correct angles to provide an accurate tool for sharpening two- and four-blade traditional broadheads.*



*Some of the more popular traditional broadheads. Left to Right: Delta Snuffer; Journeyman; Zwickey Delta; Magnus; and the Abel Wolverine.*



*Many sharpeners use hones attached to guides, such as the Gatco sharpener shown here, which allow the user to quickly put a razor edge on a broadhead.*

One such tool is a Truangle® hone, which has two files glued at fixed angles on a wooden block. You simply run the broadhead-tipped arrow along the files a few times on each side and you have a sharp edge. Knife sharpeners such as the Lansky and Gatco systems also work quite well. And a better one yet is the Li'l Shaver, made by Young Innovative Products. You simply place the broadhead in a hand-held jig and run a guide with a file attached across the broadhead to create a razor sharp edge.

No matter, which procedure you decide to use, just remember you have no right to release an arrow at any game animal unless your broadhead is razor sharp.



*Top to Bottom: Side quiver, bolt on bow quiver and a strap on Great Northern Professional bow quiver. The later is the author's favorite bow quiver.*

## **Quivers**

For the traditionalist, there are many types of quivers in which to carry your arrows in the field: bow quivers, back quivers, side quivers and hip quivers are the most common. A quiver must do three things: it must safely carry your arrows, protecting the broadhead and the bowhunter; it must carry enough arrows for the day's hunt; and it must keep the arrows quiet and readily available should shot opportunity become available. All the above quivers will work, although each has its advantages and disadvantages.

Bow quivers are by far the most widely used. They allow the bowhunter to attach them to a bow by either sliding them on, strapping them on or bolting them on. Bow quivers allow you to carry both your bow and arrows in one smart package, easy to maneuver through the brush and always at hand. However, many bowhunters feel the added weight (although minor at best) along with the sight of the attached quiver when shooting distract from both performance and aesthetics of the traditional bow. Personally, this is the style of quiver I use most of the time.

Back quivers are just that, quivers that you sling over your back to carry your arrows. Many traditionalists have back quivers made from the hide or leather of a game animal they have taken,

such as deer, bear, fox or coyote. Most are beautifully hand-crafted from fine leather, decorated with all sorts of talismans which have many meanings, and special to the owner. They are traditional in every aspect, dating back hundreds of years, and can carry up to several dozen arrows which are readily accessible to the bowhunter.

The main disadvantage of the back quiver is the tendency of your arrows to snag brush and tree limbs as you sneak and stalk through the forest. And arrows have a habit of bouncing around in the back quiver as you hunt, making undue noise and dulling your broadheads.

Side quivers are slung around the neck and over one shoulder and hang down along the bow-hunter's side. They hold enough arrows for a day's hunt, and hold them quietly. Their only disadvantage is that you must keep one hand on them while hunting to keep the quiver from rotating around while you walk.

Hip quivers are designed to strap onto your belt, keeping your arrows close at hand. They are more steady than a side quiver, but the rigidity of the quiver strapped to your body requires you to take more time maneuvering through brush than other styles of quivers.



*Three types of packs the author uses.*

*Clockwise from top: Cabela's daypack; custom wool pack made by Pack Idaho; light weight fannypack.*

## **Hunting Packs**

I consider my hunting pack the most important part of my gear. Not only does it carry essential items like a bone saw, rope and lunch, it has my survival kit as well. No matter how well you know the area you will be hunting, you should never leave your camp without some sort of emergency kit which will allow you to survive a night or two out in the woods. I have found myself in a situation before where I could not feasibly get back to camp and had to stay overnight in the forest, and I'm sure it will happen again. But as long as I have my hunting pack I know I can safely - and comfortably - spend the night out there.

There are several types of packs available: fannypack, backpack and daypack are the most common. Depending on how much gear you want to carry, you can use either of these three basic styles; I have and use all three, plus some other specially designed hunting packs.

There are several things to look for in a hunting pack. First of all, it must be quiet. Wool and Polar Fleece are the most quiet, with nylon being unacceptable because of its noisy characteristics. Make sure it has padded shoulder straps and a waist belt to alleviate the load if you are to be out hunting all day. I like lots of additional pockets on my packs so I can add other items depending on where I will be hunting and how long I'll be gone.



*Whether for an hour or a day, the author always carries a minimum amount of gear in his pack.*

*Clockwise from top left: first aid kit; camera tripod; flashlight and spare batteries; knife; water container; water purifier; lightweight saw; 25 feet of rope; broadhead file and arrow guide; bow kit; and emergency sleeping bag.*

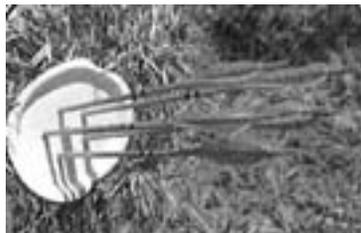
My normal hunting pack consists of 25' of nylon rope, bone saw, light jacket (depending on the weather), water bottle and purifier, lunch, camera and extra film, small tripod, bow kit (extra nocks, broadheads, spare bow string, taper tool, lighter, file and hot melt glue), and my emergency kit. Although my emergency kit is larger than most, the basic items I always carry are: two types of fire starter; emergency sleeping bag (2 oz.), matches and lighter; sewing kit; hard candy; PowerBars; medical supplies (aspirin, bandages, suture kit, mole skin, povidine iodine solution, antihistamine etc.); small flashlight, extra batteries and a spare lamp; local topo map and compass. This may sound like a lot of stuff to carry, but it all fits into a compact, light mass which fits nicely in my pack.

### **Know Your Maximum Effective Range**

Every bowhunter needs to know his or her effective shooting distance. Hunting with traditional equipment, your effective range will be much smaller than that of bowhunters who shoot with the aid of sights, releases and other mechanical accouterments. You owe it to the animal not to take a shot outside this self-imposed shooting distance.

A good standard on which to base your effective range when hunting big game is to find the maximum distance you can keep your arrows in a nine inch circle. Using a paper plate as your target, start at five to ten yards and shoot six arrows in sequence at the plate. If you cannot keep all six arrows in this area, you are not yet ready to hunt with your bow. If all the arrows are within the plate, extend the distance five more yards. Keep increasing this distance until you cannot keep the arrows

within the paper plate. Once you can consistently (which means with every shot) keep all your arrows within this nine inch circle, you have found your maximum effective range when shooting at big game.



*Know your effective range when hunting big game. If you cannot keep all your arrows in the nine inch circle of a paper plate, you are not ready to release an arrow at a game animal. Practice until you can, then remember to wait until you get within this range before you shoot.*

### **Focus Your Concentration**

The key to shooting your traditional bow well enough to hunt is maintaining your concentration on the task at hand. Shooting a bow instinctively requires an intense concentration on the spot you wish to hit. Only by practice will you come to understand and be able to use all the mechanics involved with shooting your bow, when the acts of focusing on the target, drawing the bow, finding anchor and releasing become systematic. Once you have attained this, you must learn to focus all your attention on a small spot of your target or game to shoot consistently well.

### **On Your Way**

Bowhunting is really about enjoying wildlife and wild places. It breeds a deep respect and awe of the natural world around us. Hunting with your traditional bow is taking a step further back, putting a self-imposed restriction on your hunting equipment and allowing the hunted game animal the greatest opportunity to escape, thereby extending your enjoyment of the outdoors and making yourself a better hunter. Now that you have the basics, it is up to you to continue to learn more about our wonderful heritage we call bowhunting.

For readers who wish to contact those businesses mentioned in this article, they can be reached at:

**Abel Manufacturing**  
6915 N. Frontage Rd.  
Fairland, IN 46128  
(317) 835 2406

**Great Northern  
Bowhunting Co.**  
201 N Main  
PO. Box 777  
Nashville, MI 49073  
(517)852-0820

**Journeyman  
Broadheads**  
Box 825  
Erin, Ontario  
Canada NOB ITO  
(519) 855-6285

**Kustom King Arrows**  
1260 E 86th Place  
Merrillville, IN 46410  
(219)769-6640

**Magnus Broadheads**  
P.O. Box 1877  
Great Bend, KS 67530  
(316)792 9222

**Pack Idaho**  
HC 61, Box 40  
Salmon, ID  
83467  
1-800-276-4681

**Selway Archery**  
802 S. 2nd.  
Hamilton, MI  
59840

**Three Rivers  
Archery Supply**  
PO Box 517  
Ashley, IN 46705

**Truangle Hones**  
6658 5 St Rd 13  
Wabash IN  
46992  
(219) 563-8160

**Young  
Innovative  
Products**  
1322 Greendale  
Niles, MI 49120  
(616)684-3675

**Zwickey  
Archery, Inc.**  
2571 E. 12th  
Ave. N.  
St. Paul, MN  
55109  
(612)777-1965

## 65% vs. 80% Letoff

*by Dale Keene*



**The decision to shoot an 80% letoff versus a 65% letoff bow is one that needs to be looked at carefully before a choice is made. With the amazing number of excellent bows on the market today, one should consider several factors before making a final choice.**

The first question to ask yourself is, “What is the primary thing I am going to do with my bow?” Will the bow be used mainly for hunting, 3-D, target shooting, or a combination of all three?

For the hunter, an 80% letoff is probably going to be the best bet. There are several reasons for this. In a hunting situation you may be required to hold at full draw for a long period of time while waiting for an opening. While the 80% bow will be slower than a 65% or 50% letoff bow, it will still be plenty fast when using broadheads.

For the 3-D shooter, there are several more questions to ask yourself. If you like the physical weight of your equipment to be light, then the 80% may work better for you. If you like a heavy setup, then you may opt for 65%, since it will provide more tension while at full draw. Since the higher the letoff, the slower the arrow, your draw length needs to be considered. A long draw shooter will not need as much poundage as a shorter draw shooter will. One option for the short draw archer is to shoot lighter weight carbons, but you will sacrifice line cutting ability with the smaller diameter shaft.

In every tournament I shoot in, there is always a carbon shooter in my group that has at least two or three shots that are JUST outside the line, while I always have the same number of arrows that are JUST touching the line with my 2512's. The larger shaft has come to my rescue time and time again, so for 3-D I stick with them.

The same holds true to a certain degree for the target shooter, although the speed is not so important. It is really a decision of personal taste, and what delivers the best groups.

Another question would be the type of release used. Most finger shooters will need the 65% letoff to insure a clean release. A back tension release will work with either . A puncher may like a little more tension to help them stay in their shot.

It all boils down to what works best for YOU. The 80% will be a little slower, but there are quite a few bows available that will shoot the heavy arrows at 280 fps and faster. The 65% will allow you to reduce the peak weight, while increasing the holding weight to obtain the same results. Again, it is what works best for each individual.

Try several different bows at your local PRO shop, and decide for yourself. Don't go out and buy a bow just because your buddy shoots one. Determine what works best for you, and stick with it.

Dale Keene's personal 3-D set up is:

- Oneida Eagle MR-80 (29-1/2" draw length)
- Carter BK Target Release
- Easton XX75 2512, 108 gr. NIBB point, 2" Flex Fletch vanes
- 65% Letoff - 69 lbs peak, 24 lbs holding weight, 282 fps
- Okie Phase 3 Stabilizer, 36" long
- Toxonics Naildriver Sight Bar
- Super Scope, 4X lens
- Brownell S4 string material, 14 strands

# Finding Archery Equipment for Sam/Samantha

*by Ann Bakken*



How does a parent go about finding equipment for their young and enthusiastic archer? Let's start with the basics.

First determine which eye is dominant? If the archer is right eye dominant, then they will use right handed equipment. If left eye dominant, then they will use left handed equipment.

The second step is to determine the archers shooting style. Are they interested in compound or recurve? Check out both styles, because each has its advantages.

Finding affordable, quality equipment for the young archer can be a difficult task in some areas. The saying, "you get what you pay for" cannot be truer for the youth market. Bow manufacturers do their best to account for all possibilities when it comes to young kids. However, most of their equipment has been geared toward adults whom have longer draw lengths and heavier poundages. You must do your homework to end up with equipment that your child can be proud to shoot. The following information should help you with your research.

## **BASIC EQUIPMENT**

Let's start with the basic equipment all youth archers should possess.



1. Finger Tab: Find a finger tab that is the right size for your child. The material should not be longer than the fingers when curled around the string. Most finger tabs can be trimmed to fit. Black Widow makes an excellent tab, and they have an extra small size that will fit the smallest hands. (Hold off on a release until the child is proficient at all aspects of their equipment. The child will have enough to learn without the added responsibility of a release.)



2. Arm Guard: Arm guards come in a variety of lengths and colors. Small arms make almost any guard a possibility. If the elastic on the arm guard doesn't shorten enough, just wrap it around the arm a second time.



3. Quiver: Quivers offer a 'home' for the arrows. Two basic kinds of quivers are available; those that are worn around the hip, and those that sit on the ground. For a very young child, the ground quiver may be useful in keeping the child in their assigned shooting spot. The hip quiver comes in many styles, colors, and patterns. Let an older child express their personality when choosing a hip quiver, just make sure it's not too large that it drags on the ground, or drag down the child.

## **BOW PARTS**

The chart below shows the relative expense of various parts of a Compound or Recurve bow.

Risers (this is the center section the hand holds onto) can be made of many different materials, the cheapest of which is plastic. Plastic holds up well for bows of very low poundage, but will need to be kept out of hot cars. Even low poundage bows are under some stress, and when left in a hot car, can be deformed. Cast risers are a molded piece of metal that is cast into a desired shape. Machined risers are cut from a solid piece of metal by a CNC machine. This is the newest riser type on the market, and generally the most expensive.

Limb materials and configurations come in a wide variety. Glass, wood, carbon, laminated and combinations of these. Quality is determined by the workmanship. The best glass limb can be better than the worst carbon limb.



Arrows are a disposable commodity. I recommend purchasing 6 arrows of a lower quality at the very beginning; Easton E75 or Red Eagles. They will become bent, lost, or bent and lost. Once the child gets the basic shooting down, purchase a dozen higher grade aluminum arrows such as Easton Gamegetter II or XX75.

## **THE YOUTH BOW**

When purchasing a Compound bow, take into consideration the growth rate of the child. Compound bows purchased with the draw length adjustment in the shortest setting will allow for maximum life of the equipment. Do not settle for a bow that only fits the child when in the longest draw length. Many manufacturers and archery dealers can custom build a bow to fit the child, including draw length, bow poundage, and wheel design. Beginning archers should shoot a bow at a poundage that can be pulled back easily, for a relatively long period of time. The wheel design, (round, soft cam, or radical cam) will directly affect the accuracy of the bow. The round wheel is the most forgiving and easiest to shoot, especially for the beginning finger shooter.

An advantage the recurve bow has over the compound is the draw length is not predetermined. Recurves 'grow' with a child, and they do not require special equipment to change the draw length. The longer the draw length, the heavier the bow poundage. Generally, as a child grows, so does their strength. The recurve is an ideal choice for the growing child, many manufacturers produce quality recurves for the youth market. Most recurves are 'take down' models, meaning they come apart when the bow is unstrung. Because limbs can be purchased separately, bow length and limb weight are easily modified by purchasing new limbs, not an entire new bow.

Generally speaking, a good setup for a beginner will consist of a cast riser, solid glass limbs, and Easton XX75 aluminum arrows.

## **REPUTABLE DEALERS**

A reputable dealer is also very important in selecting archery equipment for your young archer. They should:

1. Be able to fit the draw length of the bow to the child so there is room to grow.
2. Recommend arrows that fit the requirements of the parents, such as durability, and length, while matching the bow to the child.
3. Provide instruction to the child as well as the parent.
4. Support the child's improvement with recommendation of accessories when needed.



A reputable dealer will know their product line well enough to fit a child, or will take the time to call the manufacturers about custom bow setups. A bow that fits is easier to shoot and will shoot better scores. Arrows are the most important piece of equipment. Ask the dealer how they arrived at the correct arrow size for your child's bow, a simple chart should be available for you to follow. An incorrect arrow choice can have a devastating affect on accuracy. A reputable dealer will have in stock small diameter arrows suitable for the low poundage that children shoot. Ask the dealer if they are certified Instructors, and how long they have been teaching archery. A reputable dealer will be concerned with safety and will cater to a beginner with short distance targets, large targets, and lots of encouragement. A reputable dealer will not sell you everything in the shop at the very beginning, they will watch the improvement of the child and suggest products as needed.

The bottom line? Don't be afraid to ask questions! Read everything, listen to everyone, then decide what makes sense for your young archer and their shooting style.

**Good luck and good shooting!**

	<b>Low \$</b>	<b>Medium \$</b>	<b>High \$</b>
<b>Limb Material</b>	Glass	Composite	Carbon
<b>Limb Configuration</b>	Solid	Laminated	Laminated Recurve
<b>Riser Material</b>	Plastic	Cast	Machined
<b>Arrows</b>	Fiberglass	Aluminum	Carbon

# Successfully Shooting The Modern Olympic Recurve Bow

*by Don Rabska*



**After reviewing my previous article, there was a section that was briefly covered but not as thoroughly as it deserves. This subject is so critical to the execution of a perfect shot that it warrants much greater attention. The subject is **motion** or more accurately **momentum**.**

**Looking back, I don't believe the importance of good draw motion in the development of momentum was emphasized enough. Therefore, here is more on this important topic.**

The most critical time in the shot is the loose of the string and most archers and coaches would agree with this statement. However, the most critical element in the shot is determined by the direction of energy in which sufficient momentum is created to retain the maximum draw distance of the bowstring and its location at the moment of release. In other words, the string must be released from the furthest point of the draw. There can be no forward motion of the draw fingers. To do so would shorten the power stroke of the bow, reducing stored energy. If the shot is collapsed in the drawarm, the string will roll forward on the fingers, away from the anchor before losing contact with the finger tab. This will reduce energy from the bow and change the position of the bowstring at release, commonly resulting in left or low left arrow impacts (for right hand archers, opposite for left hand archers).

The bow is most efficient when the draw is released at the point the bow reaches maximum tension for that individual archers 'at clicker' draw length. If the string is maintained at the furthest draw position and the drawarm maintains momentum on release, the bow will deliver its full available energy to the arrow.

When the bowstring is cleanly released at maximum tension, the archer absorbs virtually none of that energy (due to no forward motion of the draw hand) causing the archer to experience the JOLT! The jolt is a good reaction and an interesting phenomena that only occurs when the bows full energy is

unleashed on the arrow. This effect causes the body to recoil from the instantaneous transfer of energy. Grand Master, Onuma-sensei used to say that this action will add ten years to your life. To paraphrase, the shock wave produced and sent through the body by this action maintains the natural flow of energy throughout the body creating good health. This body reaction is very noticeable in most top archers.

In review of some of the topics covered in the previous information, certainly good archery technique and proper bone alignment, are necessary in maintaining good control of motion. To develop the scapula motion (back tension), the drawing arm biceps must be relaxed. When this technique is used the drawarm scapula will automatically move toward the spine and bring the elbow into alignment. Close attention must be paid to place the drawing arm forearm somewhere between the mouth and the forehead. It is very important to find the elbow location that best allows you to feel a direct line to the drawarm scapula. This position is critical in making the draw 'direct', without creating additional muscle activity in the drawarm shoulder. When the drawing arm position is correct for the individual, the draw will feel very natural, as though arm and scapula were fused together like a long lever. Relaxing the drawing hand and forearm will also assist in good scapula motion and in achieving a relaxed release.

This continuous motion is undoubtedly one of the key components to achieving top performance. When the lines of forces are directly toward and directly away from the target, and are maintained throughout the shot, there is little that can go wrong. The launch and flight path of the arrow will remain undisturbed. Having momentum in a positive direction will create consistency and the reproducibility needed for each and every shot.

Think of the shot as completing a circle, where the beginning and end meet. Also, think of the draw as the shot, because there is no shot without the draw. This may seem obvious at first, but it is actually more complex than first appearances would indicate. The draw is everything to the shot because the lines of force are determined by the way we draw the bow and retain continuity of the draw. The most crucial part of the draw is the anchor, as we often stop to 'anchor'. Anchoring most often causes an abrupt change in the direction of force. When the draw is stopped for any reason momentum is halted and the lines of forces (force vectors) change drastically.

The shot must be a single action once the draw is initiated, never actually stopping, especially when the clicker 'clicks'. The clicker should only indicate to the subconscious mind the signal to complete the final degree of relaxation in the draw fingers. The fact that the string is no longer held by the draw fingers is inconsequential to the continuous draw of the bowstring. Again, it is important to think of the follow-through and not the release. Focusing on the release can create a desire to stop the draw motion in order to release the string. The release must be a by-product of the continuous drawing action. The shot cannot be stopped to release the string, as it would constitute a secondary action (a break in the circle) allowing changes in the direction of force while totally eliminating momentum.

It is also important to note here that a recurve bow, when held statically, will actually lose draw weight if held in the full draw position for more than a few seconds. The continuous motion is vital in attaining a consistent power curve from the bow to produce the same energy shot after shot.

In relating to momentum, think of the draw like a run away train. The train possesses tremendous energy along a straight line, or the train has substantial 'momentum'. To cause any deviation along that line of force is virtually impossible. The same concept should be considered in the draw of the bowstring. Releasing the bowstring while in continuous motion is a complementary event to the single action of the shot. When correctly executed, little can go wrong in regard to the flight path of the arrow. Even if the release is felt to be slightly rough to the archer, the arrow will most often still go to the desired point of impact. When the drawarm force is generated in a single direction, any secondary influence to that direction will have little to no effect. However, should the motion stop to release the shot, or the lines of forces change due to a transfer of muscle activity into muscles other than the ones required to draw the bow (for example when anchoring), the shot is easily disrupted and vulnerable to any change in the direction of forces. To restart the motion and recreate the original momentum takes much more energy than simply continuing the draw along a straight line. In no other sport does motion stop to complete an action. The action of hitting a tennis ball, the swing of a golf club, the throwing of a ball, all have continuous motion. Therefore, why would our sport be any different. Stopping the draw motion is the most common and devastating error in good archery performance.

The archer must fully realize that approaching the anchor point is the most critical step in the draw. If the act of anchoring is treated simply as the rear sight position, this mental picture may help in maintaining a consistent draw and not treat the anchor as a totally separate event in the shot process. The drawhand should be brought into the face with consistent placement, but not hard against the face as nerve receptors are very sensitive to pressure. In this step, it is better not to anchor hard. When coming into anchor, initiate a light touch, then into a 'snug' anchor while still maintaining slow continuous motion. The draw can remain at the same speed or even speed up if the muscle activity remains in the muscles connected to the scapula. If the anchor is hard against the face, the feel of the hand position will be less accurate due to nerve receptor overload. It is easier to feel a light touch in an exact location than hard pressure.

The most important part of the shot is the draw and this is what must be given top priority. Shot consistency and greatly improved accuracy will be a direct result if motion is maintained. To accomplish this, focus on what it feels like to draw the bow. Maintain this same feeling as you approach your rear sight position (anchor) and maintain the same feeling of the draw while the draw hand is being positioned under the chin. The draw should not be too fast as this too can create a tendency to stop suddenly. As the draw hand settles into position and the bow sight is brought near the center of the target, the speed of the motion can then be increased slightly or maintained at the same velocity, as long as there is no change in the original feeling of the draw. Additionally, give yourself lots of 'running room'. For example, some archers will try to attain a 'set draw' that places the arrow point only a few millimeters from the edge of the clicker. The reasoning behind this thinking is that the archer then has only a small distance to come through the clicker. This idea may

work for some, but it is not a practical approach to shooting a strong consistent shot. In this case, the archer often stops the draw to cautiously 'set up' in preparation of the shot. The problem here is the change in muscle activity to hold the draw at that critical location. This usually causes the archer to 'freeze up' on the target, then requiring tremendous energy to draw the bow those last few millimeters. If archers would give themselves running room, they will have enough arrow point to draw through the clicker to allow the time necessary to aim the shot while maintaining smooth continuous motion.

As noted in the last article, the scapula positions, not the face or chin is where the true anchor is created. Your body knows where to draw each and every time. If the same feeling of the draw is maintained from start to follow through, then the first 20" (or so, depending on your draw length) of the draw will feel no different than the last \_" of draw. It must be emphasized that the real key to good shooting is to keep moving and just try to get the sight somewhere near the bullseye by the time the clicker goes off. That's it!

**Until next time, continued Good Shooting!**

# Debunking Yardage Estimation

*by Kirk Ethridge*



**The sport of 3-D shooting has obviously become very popular. In fact, my part of the country offers more 3-D tournaments than any other archery event. This type of tournament apparently requires the archer to ‘guess’ the distance to the target. This is a myth. The great 3-D and FITA field archers do not ‘guess’ the distance to the target, **They know it!****

My education with range estimation began in earnest at the World Field Championships in The Netherlands, 1992. One half of the world field championship round is unmarked distance and the other is marked distance. I did quite well on the marked distance round only to regress far enough during the unmarked round to not qualify for the finals.

During FITA field rounds, three shots are fired at each target. The strong European contingent that I was shooting with frequently scored a 4 or a 5 (out of 5 possible) on the first shot while I frequently scored a 2, 3, or 4. At the end of the day, I found myself out of contention.

At this world championship, I would rarely see the Europeans loose an arrow on the first draw of the bow. They would virtually always draw, aim and then let down to prepare for the shot (it was then illegal to move your sight after drawing the bow for a shot). They would then shoot, usually hitting the ‘x’. Then, after hitting an ‘x’, they would adjust their sights! That kind of behavior makes no sense, unless the initial draw and let-down was more significant than it seemed. I later learned that during this first draw, the shooters were doing what is commonly called rangefinding.

When rangefinding with a sight, the archer first looks at the target and tries to give a ‘best estimate’ of distance to the target. The archer then sets the sight and prepares for the shot. Once the target is viewed through the sight, scope, aperture or pin the true distance is revealed by comparing the size of the target with known landmarks on the bow or sight. Since rules dictate that the sight can not be moved until after a shot has been fired, the archer must then decide where to aim on the target in order to score a bullseye. For instance, if the archer set his sight for 55 meters and then looks through

the sight to discover the target is actually 60 meters, he would have to perform 'elevation compensation' to score a 5. (The archer would aim higher than the bullseye to compensate for his incorrect short sight setting). After the shot, the archer then moves the sight to the correct setting for the next two arrows or simply aims high again. (The reverse is done if the range was initially overestimated.)

There are three steps to range estimation that can be applied to 3-D or FITA field archery. Step 1: *pre-draw estimation*. Step 2: *distance acquisition*. and Step 3: (only for FITA) post-shot or *final distance determination*.

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

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

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

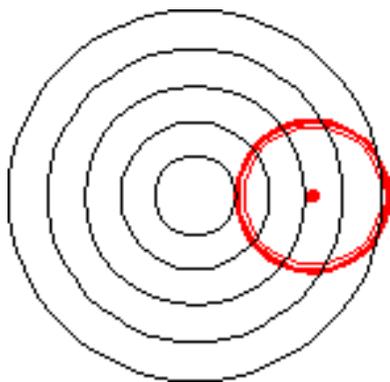
Some archers also hold their arm fully extended, as if pointing at the target. Some have been observed doing this with the thumb ring of their finger sling dangling below their hand. Do you suppose they notice the relation of target size and (consequently) distance, to this ring? The key to this is to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

**Distance acquisition:** With the right knowledge you can virtually pinpoint the distance to the target while your bow is at full draw. With a scope and a target of known size, the following method should be employed. Force one edge of the target to align with one edge of your scope lens. For example, on 3-D deer targets, align your scope so that the hips of the deer are on the edge of your scope. Start at any distance you wish. For your first trial, make notes of where your aiming dot appears on the deer at 5 yard increments. Obviously, the deer will fill more scope at the closer distances and your aiming

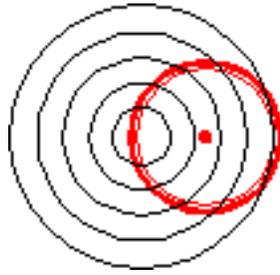
dot or crosshair will be relatively close to the hip. You will notice that as you increase your distance, the aiming dot will advance toward the head of the deer. With a good set of 3-D targets and pictures you can see now how distance estimation errors can be virtually eliminated. (This works no matter which way the deer is facing when using a scope you simply align the hip with the opposite side of the scope from which the animal is facing). You will of course have to map out your system with each of the target sets or 3-D animal targets.

If you're a FITA field shooter and know which target size you're using, this method is almost foolproof. Force the target into one side of your scope and observe where on the target the aiming dot falls. Begin at the minimum distance for your target size. On this target, begin observations at 5 meter intervals and advance to the maximum distance for your given target size. With the different aiming rings on the FITA field target, you should be able to find the distance with uncanny precision. With practice, you can soon determine the distance to the target least to within a couple of meters at the longer distances.

### ***Range Estimation in FITA Field***



*In this fictional example, the scope dot is seen to move in toward the center as the target recedes in distance. Here is the range picture for 25 meters. The scope dot lies within the 2 ring.*



*At 35 meters, the scope dot lies in the middle of the 3 ring.*

*At 50 meters, the dot can be seen in the 4 ring. These sight pictures will vary depending on your equipment and the distances to be judged. Using the standard target, you can develop a system that will work with your particular sight.*



Pin shooters will find the above system works well for them, too, with a little adaptation. Most of the good sights are adjustable; the distance from pin tip to sight guard is variable. By forcing one edge of the animal against the sight or pin guard and then observing where the pin tip appears on the target at varying distances, a great system can be developed.

This technique will also work no matter which direction the animal is facing. For instance, the hip can be used in reference to the pin tip or the pin guard to develop your system. Alternately, when the animal targets are angled, the body or animal height can be used as a reference. For instance, the

sight can be adjusted such that the pin guard is at a fixed distance above the closest yardage pin. Force the back of the animal to align with the edge of the top of your pin guard. With this system you will notice that as distance increases, less and less animal will appear in this gap. Hint: You may want to set this gap to fit a specific target size maximum distance. For instance you could chose to adjust this gap to fit perfectly the 3-D small deer at 45 or 50 yards. (For the other sized deer or animal targets simply note where your top pin appears on the animal at its maximum shot distance). As you advance toward the target you will notice that the pin progresses down the deer towards its abdomen.

The pin shooter can even build in a complete rangefinding system into the sight. (This is easily accomplished on a good fast bow.) Generally five pin sights are used, thus allowing four gaps between pins and one gap above and below the pin. With a little ingenuity, one can adjust the gaps between these pins to fit standard size targets at least four specific distances. (For example, 30, 35, 40, 45 yards or any distances you wish.) Once these pin gaps are set, adjust the pin set so that the top pin is dead-on at, say, 20 yards. You now may have to bend the tips of the other four pins in order to have them sighted at the next four distances, (usually 30, 40, 50, and 60 yards or whatever you wish). I'll bet many of you 3-D shooters have seen top archers use this trick! (This system appears as if the pin rods are spaced at increasingly greater intervals, as does naturally occur as distance increases, but the tips of the pins are bent up or down to allow them to fall on the desired sighting distance.)

Bead sight shooters have a good built-in range finder. I have noticed many will have one bead that is disproportionately above or below the cluster of beads used for sighting. One excellent shooter sets a bead lower than his maximum yardage bead. This is usually set to fall at the foot of the deer. The bead is adjusted up or down to allow the smallest deer target to just fit between the two bottom beads at maximum distance. (The small deer will be perfectly framed between the bottom fake sight bead and the archer's longest sight-setting bead.) The large deer target then will fall between the next to the last sighting bead and the fake rangefinder bead. (It will be framed perfectly at a specific distance which is easily determined by varying the distance from the target). Once you know your maximum distance framing reference, walk forward at 5 yard intervals and make note of where the different sight beads appear on the target. You will discover that you can soon estimate the yardage very precisely in this manner. Expect to be able to determine the distance to within 2 yards quite easily.

To use a scope on this deer width system, align the belly of the animal with the top of your level. Adjust the extension of your sight to allow the small deer to be perfectly framed between the top of your level and the bottom of your scope dot at the maximum distance for this target, say 50 yards. Systematically advance toward the target first at 5 yard intervals as before. By making notes you will see the scope dot advance down the deer's body. You will be able to then determine distance as before when you developed your system using the animal length as your reference. Your shot can now be made with confidence, since you know the distance.



*In this example note how the scope dot moves on the target's body as the distance varies. The top illustration shows the sight picture at twenty yards. Remember, the sight picture you see will vary depending on the size of the target, the power of your scope and the distance. Since the targets are currently size-standardized and your scope is of constant power, the only variable is the distance. As an alternate system, you can sight from the foot of the target and note the changing height of the dot. The benefit of this method is that it works independent of the angle to you that the target is set.*



*Using a standard set of targets, or cardboard cutouts with the same dimensions, walk away from the target at five yard intervals. Note the position of the scope dot at each distance. This position must be memorized! Once you have the relationship at each distance firmly imbedded in your mind, begin to shoot at random distances. You'll soon see whether your range estimates are correct. Keep practicing until you are confident in your ranging.*



*Once you've mastered shot placement at any distance for one target, it's time to start on the next. If this sounds difficult and time consuming, you are correct. Is the effort worth it? You decide. Your competitors are mastering this technique!*

Step 3 is **final distance determination**. After looking through the sight you now know the exact distance to the target along with your sight setting. Aim high or low according to your sight setting error and fire the shot. You can then adjust your scope to hit dead-on, or continue to aim off in order to score the bullseye. Either method has its merits.

As you may have noticed, these systems can become a little complicated, similar to card counting in blackjack. Your willingness to practice and study will be your main asset when using these systems. Many of my friends who compete in 3-D will merely get a reference for the target maximum distance. However, it is quite obvious that the top money winners have honed their systems to maximum benefit. Once you have mastered one of these methods, the game again becomes a game of known distances. All that is left for you to do is just hit the target!

A final note on my debunking of the yardage estimation myth: without bow and sight in hand, very few archers can estimate distance well past about 35 yards. (There are of course those few exceptions that prove the rule). If you feel these Systems give unfair advantage to the archer who uses them, there is an alternative: compete in marked yardage events! This puts us all on the same level again.

Remember, you cannot control what another person does in his mind. Unmarked yardage experts will use every advantage allowed them and so should you. An old Tennessee saying is that you have to get off the porch if you want to run with the big dogs!

Kirk Ethridge, an active archer for over 20 years, holds a number of national and international titles. In his book, *Professional Archery Technique*, Kirk shares archery techniques that helped him become a top ranked professional archer. To order your copy, send \$14.95 plus \$2.00 shipping to:

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