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The advertisement features a central image of a mounted deer head with large antlers. Two longbows are positioned vertically, one on each side of the head. The bow on the left is labeled 'MILLENNIUM' and the bow on the right is labeled 'APOLLO'. The bows are made of wood and have a smooth, curved shape. The background is dark, making the bows and the deer head stand out.

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INSTINCTIVE ARCHER®

Fall, 1998

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COVER PHOTO: Bob Martin with a 70-pound static-tipped recurve made in Hungary by bowyer Csaba Grozer (see page 31 for more details).

INSTINCTIVE ARCHER® MAGAZINE

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Rik Hinton, Editor

From the old oak desk of the Editor

Greetings from a hill high above our new home in Horseshoe Bend. The commanding 360-degree view from here was well worth the gallon of sweat that I left on the steep slope below trying to get here. There is no easy way to reach the top, no path to follow. It's one of those places that you must earn in

order to enjoy, and the very day I moved to Horseshoe Bend, the steep face of this hill began calling my name, challenging me to make the climb, to see the view from the top.

The lung-burning ascent seemed to go on forever, but slowly, step after step, I made my way toward the peak, and then, with the new dawn's sun shining at my back, I took the last few steps to the top.

What a grand view, and with it came feelings of success, accomplishment—and then reward. There, three steps to my right, lay the left half of a bull elk's antler in the long summer grass, dropped a few months earlier by a large six-point bull who had survived winter's challenge.

I'm sure he stood here just as I am, realizing that he'd made it, and enjoying the spectacular scenery. The bull had an awesome view of the distant timbered ridges and the grass-covered slopes below as he dropped last year's antlers to the ground—an even larger set already beginning to grow.

He's out there somewhere even now, lying in the shadows of a distant, heavily timbered ridge, biding his time, gathering strength, waiting for the first scent of autumn to reach his nose, and for the first bugle of his rivals to echo through the pines. His mane is growing shaggier with each passing day, as is his attitude. Soon, he'll slip from the cool morning shadows to scream his challenge to the world, and the rut will begin.

It's a time-honored challenge long anticipated, and once accepted, long savored. But be warned—accepting a bull's haunting challenge in the high timber may have far-reaching, even life-changing consequences. Years, perhaps even decades later, you may, inexplicably, find yourself pulling up stakes, leaving the comforts of suburbia behind and moving everything you own and your heart and soul to the rugged hills above a small logging town just to be closer to elk country, hiking to the top of steep hills just because they're there, and grinning like a fool just because you found a bull's dropped antler in the tall grass above your house. If you've called bulls in close enough to smell them when they scream, then you are probably, like myself, too far gone to save—but the rest of you take heed:

**ELK FEVER IS BOTH BLESSING AND CURSE.
AND IF YOU'RE LUCKY, IT'LL ONLY GET WORSE.**





Letters to the Editor:

I recently purchased the Spring 98 issue of *Instinctive Archer*®, and I really enjoyed your publication. I especially enjoyed how your magazine ties ancient cultures with their use of archery, ie. Saxons, Chinese etc.

Aside from being a traditional archer, I also am very much interested in genealogy and history, hence my appreciation for your magazine.

I am a Scottish American, and would like to learn about the use of archery in ancient Scotland, but I am having a hard time finding sources. This is the reason for my letter. I am in hopes that you could point me in the right direction.

I have read accounts of Robert Bruce employing Scots archers at the battle of Bannock Burn, and also read accounts of the Scots using bows in battle as late as the battle of Killiecrankie. (1690 AD) but I can't find any detail as to what types of bows (long, short) etc. I can only assume it was a bow style borrowed from the English.

I would greatly appreciate any help that you could give in my research of this subject.

Brett Johnson

Dear Instinctive Archer

Thank you very much for a very fine magazine!

Kind Regards,

Erich Darr

Great Magazine! An issue was on the 3D shoot sign up table. I swiped the subscription card. Now on my kitchen table is *Instinctive Archer*®. Beautiful.

I was formally introduced to archery in high school. That gentleman shot a Smithwick bow with footed arrows. The grace of his form and that equipment still lingers in my mind. Thirty-nine years later, I am still excited about archery. Texts such as yours are a longtime coming. Locating equipment in the early eighties was a chore, but the advertising in Traditional oriented publication opens the market to us, so do not be stingy with advertising.

May I add one regret? During 1959 I got into archery for about \$50.00, now a teenager needs heavy dollars to pursue "The Sport".

Wil Jordan

Dear Will, Purchasing bows for teenagers can be expensive if you purchase new, top-of-the-line bows, but there

is an affordable alternative: shop the garage sales. At least once a month a friend or two will show me the beautiful 40- to 50-pound recurve they just purchased at a garage or estate sale for the obscene price of \$15 to \$25. Most of these bows were considered "top-of-the-line" in their day, and because of their timeless, durable construction, most are still capable of shooting an arrow every bit as well as they did when they were brand new. I must pass on one note of caution however—once you find a gem of a bow or two at garage sales, you may never be able to pass a garage sale again without wondering what archery treasures might be waiting inside.

Rik

I enjoy your magazine very much. Thanks. I also enjoy your articles from Gary Sentman and Scott Toll.

A traditional friend, Boogidy

Gentlemen, THANK YOU FOR ATTEMPTING TO DESTROY MY HERITAGE.

I have been an avid reader of your magazine over the last year. I enjoy your articles, and points of view on our sport very much. I am an instinctive hunter (no sights for me thanx). I'm the proud owner of a Ben Pearson Strato-Jet, Damon-Howatt Mamba, Martin Saber, a custom Uncle Gene osage longbow, and a self bow I made with the help of Uncle Gene personally. I own a Martin Ted Nugent Speed Demon, and a High Country Safari Lite, PSE Challenger, Bear Hunter, and I also have a very old crossbow given to me by my father. My son (2-1/2 yrs old) owns a Lil Ben recurve, and a Golden Eagle compound, and a Jennings Micro Carbon Extreme. My wife shoots a MacPheason compound (instinctive also). We are a hunting family, and are into every aspect of our chosen lifestyle.

However, I am very concerned with not only some of your published letters to the editor but more over some of the articles published in your magazine by contributing authors. The constant referrals to compound shooters as training wheel shooters, and belittling any one that does not shoot instinctive is a prime example of the apathy and inexcusable in-fighting that is tearing our great lifestyle limb from limb! We as professional outdoorsmen, women and children should entice everyone we come in contact with by enlisting them into our chosen form of hunting, period. Notice I did not refer to Traditional or compound "New Age" shooters, for we all are archers. United we stand, and divided we will most certainly fall.

You have a great publication, don't cheapen it by publicizing this type of non-productive dribble. It is not of gentlemen-like honor to attempt to turn someone off to their chosen equipment by slighting them, nor does it help you to enlist them to the traditional side of predator style by exhibiting this type of attitude towards them. If your name isn't Fred Bear, Howard Hill, Ted Nugent, Byron Ferguson, or G. Asbell you will unlikely be remembered when you go to the happy hunting grounds anyway, so leave this world something tangible to remember you by, educate and enlist everyone together we can learn from each other and prosper for many years to

come. Remember, to each his/her own. Let's unite and together we will save our heritage for many generations to come.

Nikk Nicholson
Alabama State Director
Ted Nugent United Sportsmen of America
1852 Ranch House Dr
Semmes, AL 36575
(334) 380-7811

Dear Nikk,

Many of our readers are probably unfamiliar with the **Ted Nugent United Sportsmen of America**, how about you or Ted sending a letter telling us about the organization and the type of activities you are involved in? Some of those outside the U.S. may not know who Ted Nugent is or where he came from, and I know they would find it interesting.

As you are aware, by the very nature of our magazine, we publish letters and articles primarily about longbows and recurves, but we don't, as you imply, "belittle" those who like to shoot compound bows. I think most of us have close friends and relatives who love to shoot compound bows, and teasing them about having "training wheels" on their bows goes along with teasing each other about driving a Ford or a Chevy.

The compound-oriented magazines don't really think we are shooting sticks when they refer to our beautifully handcrafted longbows and recurves as "stickbows." Neither do we think compound bows really have training wheels bolted to their limbs.

"Training Wheel Bows" and "Stickbows" are both light-hearted references to either (1) bows with wheels attached, or (2) bows that look like sticks. Neither term is by itself derogatory, and neither should be taken as such. Some people like to shoot compounds, others like to shoot recurves, and some even like to drive (egads, dare I say it?) GMCs!

One thing you may not realize about us is that the name *Instinctive Archer*® Magazine refers as much the way that we are "instinctively drawn to archery" as it does to our "instinctive" way of shooting without sights. We're not interested in anti-compound sentiment, primarily because we're not anti-compound. Bob Martin and I have spent more than a few adventurous days afield with compound bows in our hands, and I'm sure most of our readers have as well. Those who are looking for the anti-compound bandwagon will have to go elsewhere. There are some however, who could, if they were in the right mood, take your words "I am an instinctive hunter (no sights for me thanx)" as a slight against bow and rifle hunters who like to shoot with sights. Sometimes even the best of intentions can be misconstrued.

Regarding your reference to apathy—thankfully it's almost as common among traditional archers as vegetarianism is among mountain lions.

P.S. It is interesting to note that sights were attached to longbows and recurves long, long, before the compound bow came into existence, and still are today. You can see examples in many of our back issues.

Rik



Here's my renewal for another 2 years, you've continued to put out a top-notch magazine. It looks like the "New Kid on the Block" is here to stay!

I've included a picture from the last British LongBow Society Shoot. It was held at Carter's Grove (18th century plantation) in Williamsburg, Virginia. The Shoot was great fun, and the host, Jay Gaynor, really outdid himself. Everything was perfect - including a dinner at one of the historic restaurants in Colonial Williamsburg. There's nothing better than a fine meal after a long day of shooting.

Jay varied the attire for the shoot - in addition to the standard, white lawn clothes, he suggested 18th or 19th century costumes. I decided to pay homage to the Thompsons (see above photo) - sadly it didn't help me shoot like them.

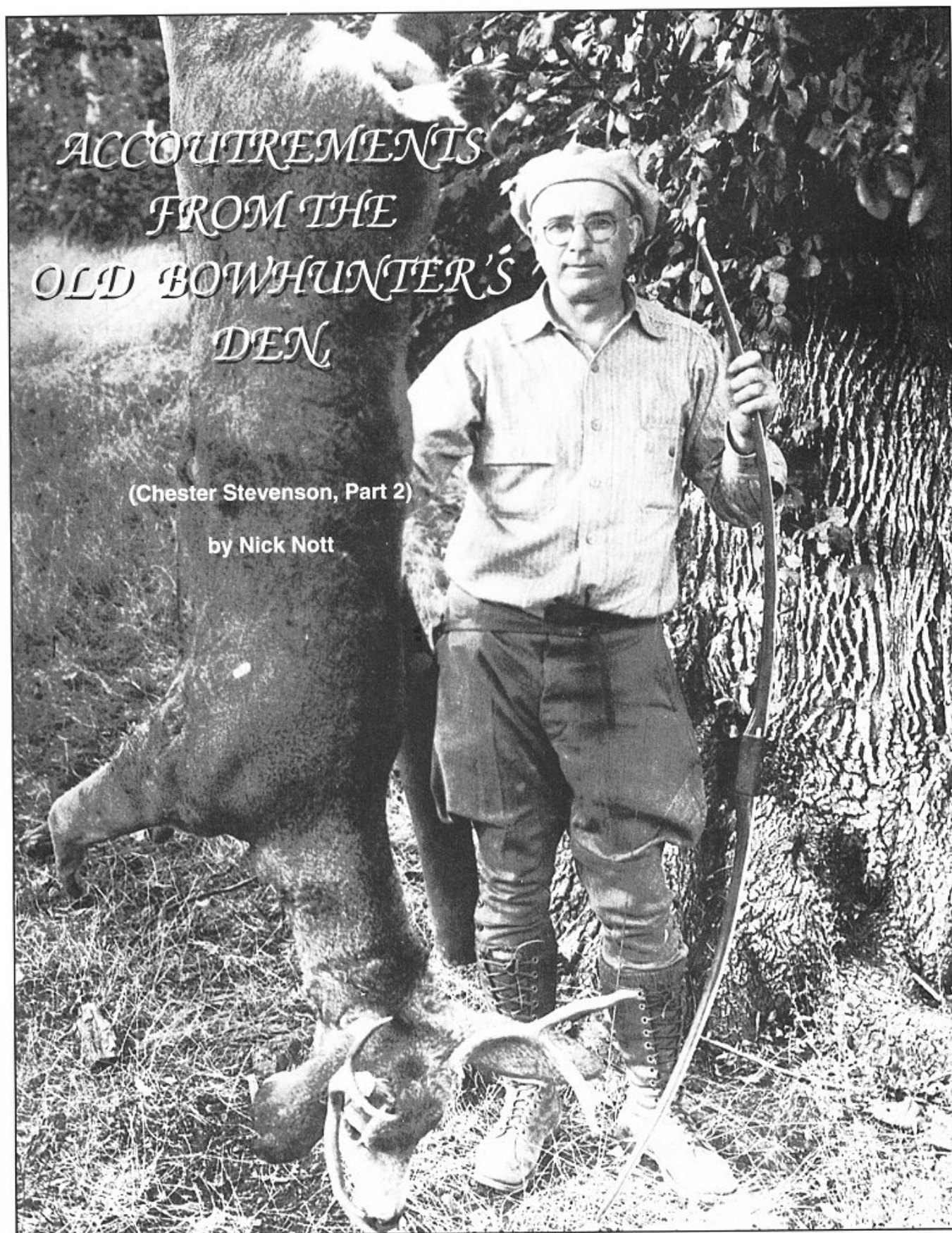
Thanks again for the fine magazine.
Bruce Douglas

Dear friends, Rik, Tracy and Bob,

We are really enjoying *Instinctive Archer*® Magazine and having met you all, feel a "part of it." We often shoot longbow clout and target with our friend Hugh Soar.

No matter what, though, we still feel "homesick" for Montana and Idaho and our colonial cousins, so our thoughts are with you and hope to meet you again, and cross arrows. Our regards to all our longbow friends!

Our love and best wishes—Pete Day
Best wishes from me too—Pat



If you have been an archer for four or five decades, you may be old enough to remember a regular column, *From the Den of The Old Bowhunter* by Chester Stevenson in *The Bowhunter* magazine. I am not old enough to remember, but I am fortunate to live in the town where Chet lived, and to have known him when I was young. My dad was a close friend of his, and I tagged along on many visits to Chet's house.

Chester Stevenson was well known in the 1940s, 50s and 60s through his articles on hunting and equipment building. In the Northwest, particularly Oregon, his home-state, he became a legend. He was hunting deer and squirrels in the late 1890s and continued to do so into the 1960s. During those years, he made hundreds of bows, thousands of arrows, and many quivers and related gear.

Before he died at age 95, Chet gave many of his bows and arrows to my father; then when my father passed away in 1996, I ended up with them. Also, I will credit George Golden, who died several years ago, for holding onto lots of Chet's equipment, most of which also ended up in my hands—legally and above board, I might add.

It has been a learning experience and a lot of fun studying and looking over Chet's equipment. I am not sure that what he made is all that unique, you can be the judge of that. But for me, being several generations removed from Chet's era, it seems that he did some things as he made his gear that are worth noting.

No one knows how many bows Chet Stevenson made. I have seen well over a hundred, just in my local area, and have seen many more in photographs of Chet's den. Unfortunately, he did not sign most of his bows. I have

examples of signed and unsigned bows of his that are almost exactly the same and are obviously made by the same bowyer. By the way, all of the unsigned bows that I have, and that you might have, should

know we made it. For that matter, we ought to sign quivers we make, and even arrows.

Most of Chet's bows were made from yew or osage. He wrote about the fine qualities of yew, but I notice in many of his hunting photographs, he was holding an osage bow. He liked the toughness and durability of osage, and the fact that he could make short, strong hunting bows with it. Many of his deer were shot with five-foot, seventy-pound bent-end (static recurve) osage bows. On these, he used self-knock.

The yew bows that he made were generally longer, with horn knocks, because he felt that narrow tips were best for that wood. He rarely put an arrow shelf on a bow. Most, but not all, of his yew bows were backed with rawhide. Interestingly, he did not seem too particular about following the grain on the back of the bow. Some bows have a huge variation in the amount of sapwood left at different parts of the limbs. Others do follow the grain more closely. I was too young to notice that sort of thing when Chet was alive, so I never asked him about working down a limb. My dad said it was hard to get information out of Chet concerning bow building. He would answer a question, but wasn't one to teach the whole process.

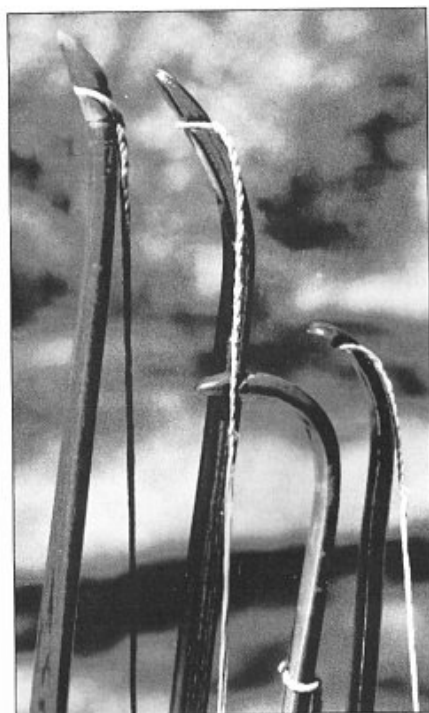
Chet experimented with all kinds of woods in making bows, and was well known for his use of baleen. This material, sometimes called whale bone, is from the mouth of baleen whales, and looks like crude, but beautiful, fiberglass. He got his baleen from natives in far North America who traded for some of his equipment. Applied on the back and the belly of the bow, it greatly strengthens the bow.



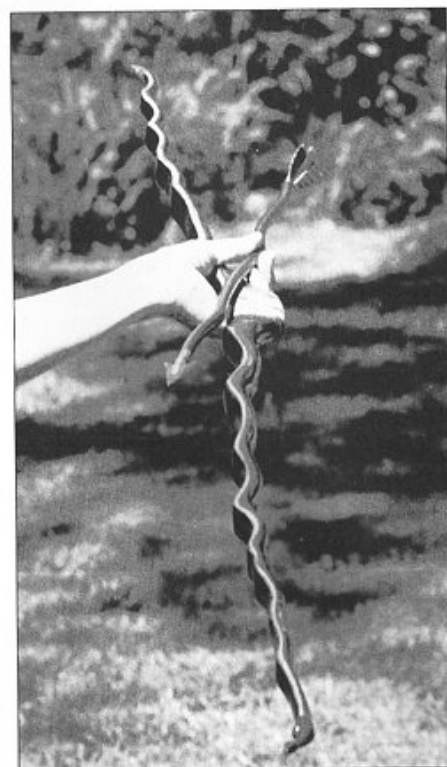
Examples of Chet's homemade equipment.

have been signed by their makers. I was complaining to my son recently that so much of what Chet made was unsigned, and that bowyers sure ought to sign their stuff. Well, he had the nerve to ask if I have signed the few bows I have made. He had me there. I have only signed one.

Every bow made ought to have its builder's name on it. Whether a bow is a collectable item or not, your kids or my son or somebody in the future just might like to hold onto a bow if they



Several types of Chester Stevenson's bow tips.



He was a true master of bow and arrow woods, as this "snake" arrow and bow illustrate.

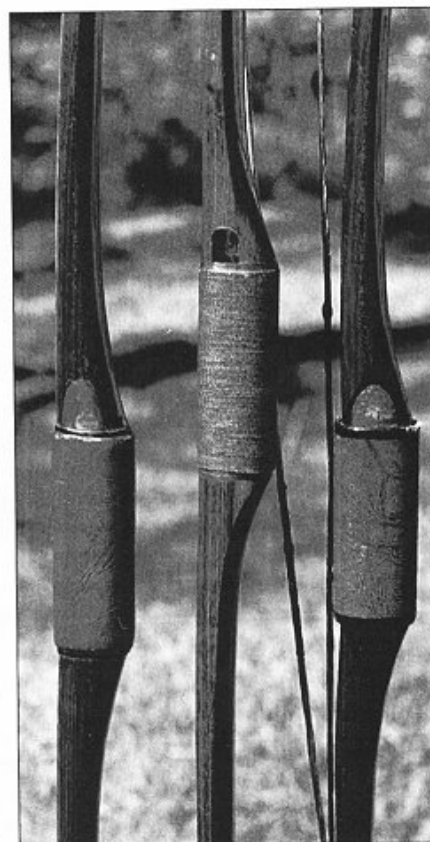
Many of the handles of Chet Stevenson's bows were wrapped tightly with small cord, then the cord grip was painted in a colorful camouflage kind of pattern. On others he used deeply textured leather for the grip. Sometimes, a small piece of mother of pearl, often taken from an old cufflink, was inlaid where the arrow slid across the bow.

Most of the quivers which I have from Chet Stevenson are full of arrows which I assume he made. He did not sign them, you see. His photographs show that he cut his feathers in various shapes, but he did seem to prefer a low, long fletching. My guess of why he cut the feathers so low is that he could stuff lots of arrows in his quiver, and they would take the abuse of crowding. Short, stiff feathers are far more durable, and they hold up in wet weather better than high feathers do. Around here, western Oregon, it rains most of the time at least during deer season, so low stiff feathers make sense.

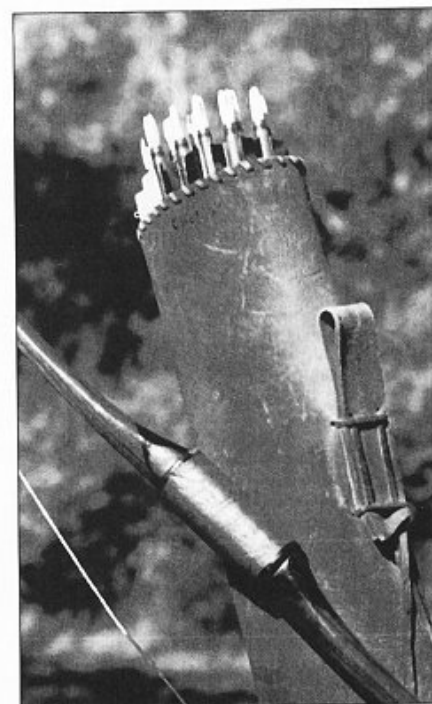
Arrow making for Chet Stevenson always began with a trek into the woods, looking for a perfect log of Port Orford cedar. Usually he was in the company of Grover Gouthier, his regular companion, or another friend or two. They would find a log, saw it into a three-foot section, then examine it to make sure the center growth ring was exactly in the center. If it was not, the log was abandoned and the search continued. Lopsided growth rings meant crooked arrows. Apparently they found logs that were already fallen or blown down.

After carrying out the bolts they selected, they used a small doweling machine to make their own shafts. Chet and a friend designed and built their own "arrow analyzer" which would spine-test, weigh, and balance the shafts.

A close look at Chet's arrows seems to indicate that he glued the feathers on the shaft before he painted them. The paint covers the glue and runs up onto the base of each feather. Why did he do it this way? I'm not sure. Maybe the glue held better to the raw shaft than it did to paint. It looks very nice. There is no white base showing on the feather.



Osage bows made by Chester Stevenson.

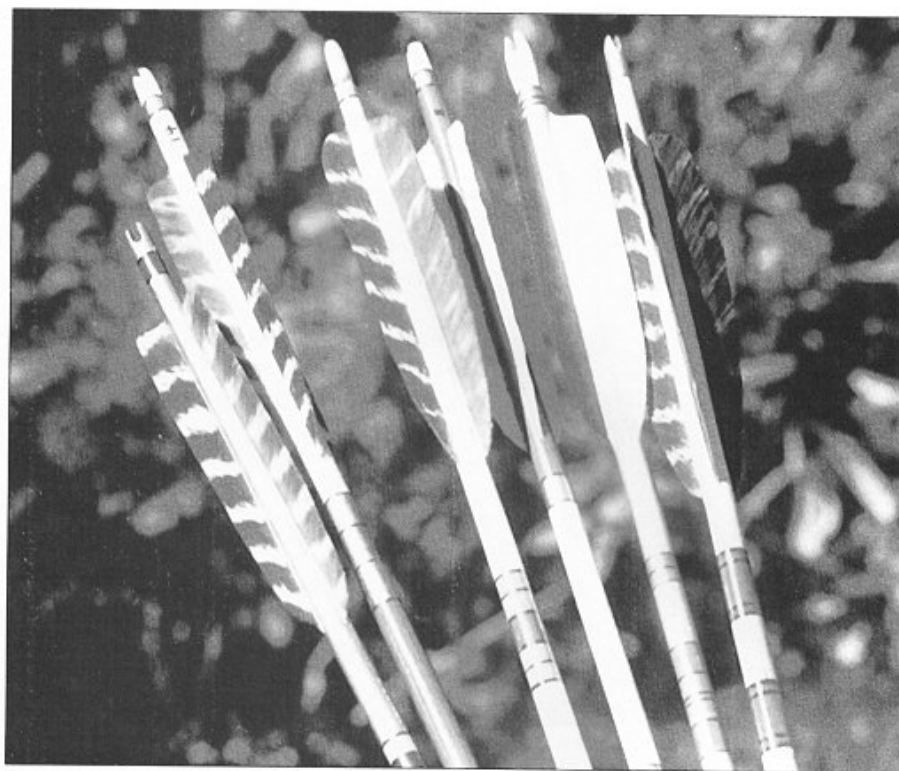


Chester Stevenson's typical hunting gear—long hip quiver and short, osage bow.

The nocks on Chet's arrows vary. Many have self-nocks, with a wrapping of ribbon glued on for reinforcement. The ribbon looks like common ribbon we would use for decorating a Christmas present. I'm going to borrow that idea for my next set of arrows. Chet also used aluminum nocks, apparently common for awhile among American archers, and then used plastic nocks in his later years.

On the other end of his arrows, Chet used a variety of points and heads. On many arrows, he attached blunts made from bullet casings. These he used for small game hunting and stump shooting. A few of his arrows have modern-looking field points, but I suspect he did not use them much. For broadheads, he made all his own. The shape of his broadheads varied from one set of arrows to the next. Some were long, dangerous-looking things, and others rather stubby. He did not write much about broadheads, except to say that, whatever the shape, they must be sharp.

One more thing about his arrows, he often numbered them. He was very meticulous about having matched sets of arrows and the numbering of each shaft helped him to sort out



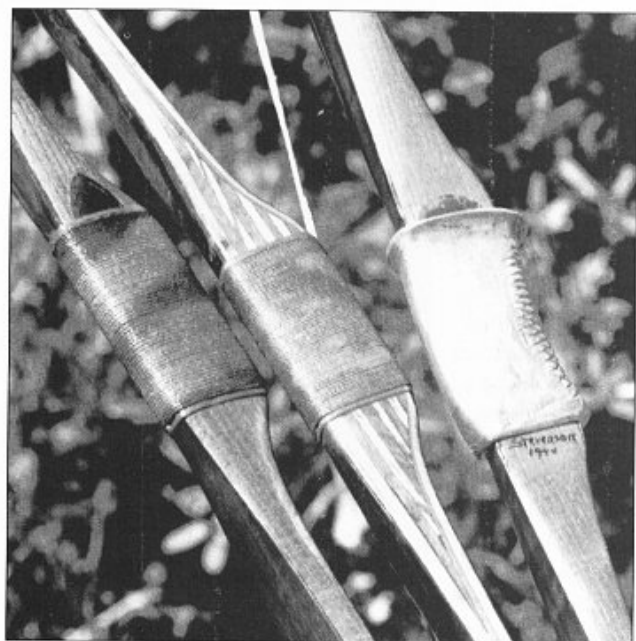
Long, low fletching typical of Chester Stevenson's arrows.

those that did not deserve to stay with the others.

Of all the things Chet made, his quivers are my favorite. He probably wrote more about his quivers than about all of his other equipment put together.

Many of his quivers were built to preserve a memory, one from the leg of a moose shot by B.G. Thompson, another from a bobcat shot inside a favorite hunting cabin in the Cascade mountains, still another from a fox pelt sent to him by a friend.

His quivers generally were one of three basic types, a back quiver, a small hip quiver for stump shooting, or a long hip quiver for hunting. This last



Several bows made by "The Old Bowhunter," with baleen on front and back. The hand grip on the right is aluminum.

PACIFIC YEW LONGBOWS

JAY ST. CHARLES

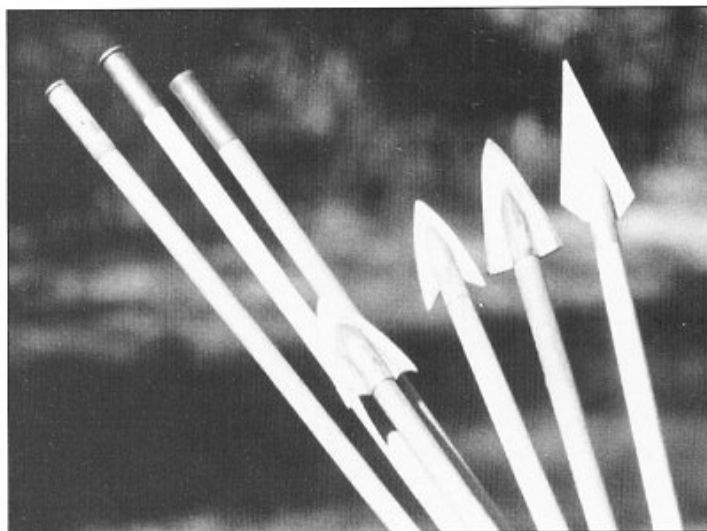
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type was often made the full length of his hunting arrows. In the rain, a leather cap or cover of some kind could be placed at the top of this long quiver to keep the feathers dry.

One of his more unique quiver designs is a good-sized back quiver with a home-made hatchet attached to the back. Not only does this look handsome, but the hatchet was used to chop out arrows shot into stumps and trees.

Among the other items made by Chet Stevenson are armguards, sheaths, knives, hatchets and leather pouches. For awhile, he hired his friend,



Various point styles made by Mr. Stevenson. He didn't write much about broadheads, except to say that, whatever the shape, they must be sharp.



Bow, quiver, and arrows made by the "The Old Bowhunter" himself.

Frank Harrington, to produce beautifully tooled belts and pouches. These he advertised and sold for a few years.

As all of you fellow archers well know, it is great fun to handle old bows and arrows and try to learn from them. The items built by the "Old Bowhunter" hold a particular interest to me because I was fortunate enough to know him, and because I now hunt the same places he hunted. But beyond the nostalgia, a study of Chet Stevenson's gear, and the equipment made by others who are now gone, will continue to teach and inspire us all to make better and more practical archery equipment.



EDITOR'S NOTE:

A book, *From the Den of the Old Bowhunter*, edited by Nick Nott, is available as of October 1, 1998. This book consists of many of the articles and original photographs of Chester Stevenson. For information, write to Nick Nott, 30811 Izaak Walton Rd, Eugene OR, 97405.

ANTELOPE STIX



the story of... and how to build a great roving wand.

by Curtis Hermann

Forty years ago roving was a very common way to practice for hunting, in my case it was an easy and fun way to spend the day. I simply stepped out the door and into the wild alfalfa field thirty yards away and began to let the arrows fly. It was an excellent way to practice for small game.

Our most common big-game animal we had dubbed our "Prairie Companion," and it was the small, elusive and fleet-footed Wyoming pronghorn antelope. The antelope was a difficult quarry to say the least, but also the most fun. His curious side will keep you entertained during your entire hunt.

In those days we did not have the knowledge Mel Dutton has shared with us all on how to hunt antelope. Pit blinds over water holes for antelope were unheard of and calling and/or decoying during the rut was a concept not yet tried. Simply put, it was spot and stalk with an occasional opportunity to lure one into range by using a white handkerchief tied to sagebrush, add a long string, pull the string, wave the flag, attract the antelope. As a hunting technique it was moderately successful at best and then generally only at sunrise or sunset.

This roving trip came about when I decided I needed to improve my hunting accuracy by 20% before returning home to Wyoming to hunt antelope. It would be my first antelope hunt in thirty years. Knowing that the prairies are deceiving and remembering that the antelope are small in size, I was thinking of shots missed and three that didn't. I remembered exactly how we used to improve that prairie accuracy with a

roving wand we created in the 1950s. I decided it would be fun to do an article on those wands. They worked very well and the method used to make them is easy to share with fellow bowhunters.

I also wanted to do a pictorial on enjoying traditional archery in a scenic part of the southwest. Traditional archery gear and scenic desert areas go together naturally, even though most of us acquaint bows and arrows with good forest cover and a day in the woods. The long arching flight of an arrow over and through the cactus and blue skies of the desert will set your heart on adrenaline pump.

For the photo shoot, I chose the high desert above Yucca Valley near Joshua Tree National Park. A fair climb up into rugged desert mountains high above the searing heat of the low desert and a bit more comfortable.

There is an old movie set back in the desert mountains called Pioneertown. It started out as a movie set built in the 1950s for Roy Rogers, Gene Autry, Hop-along Cassidy, Lucky Hayden (Hop-along's sidekick), and 15 other Hollywood cowboys. It came with a rustic post office, saloon, hitching posts and the OK Corral of "High Noon" fame. The early buildings had three sides, all the better for lighting and camera angles. As Hollywood vacated the sets, Lucky Hayden set up a ranch and others moved in, finished off the buildings and a town began. Pappy and Harriet's Pioneertown Palace (the old saloon) can be seen in a Sheryl Crow video

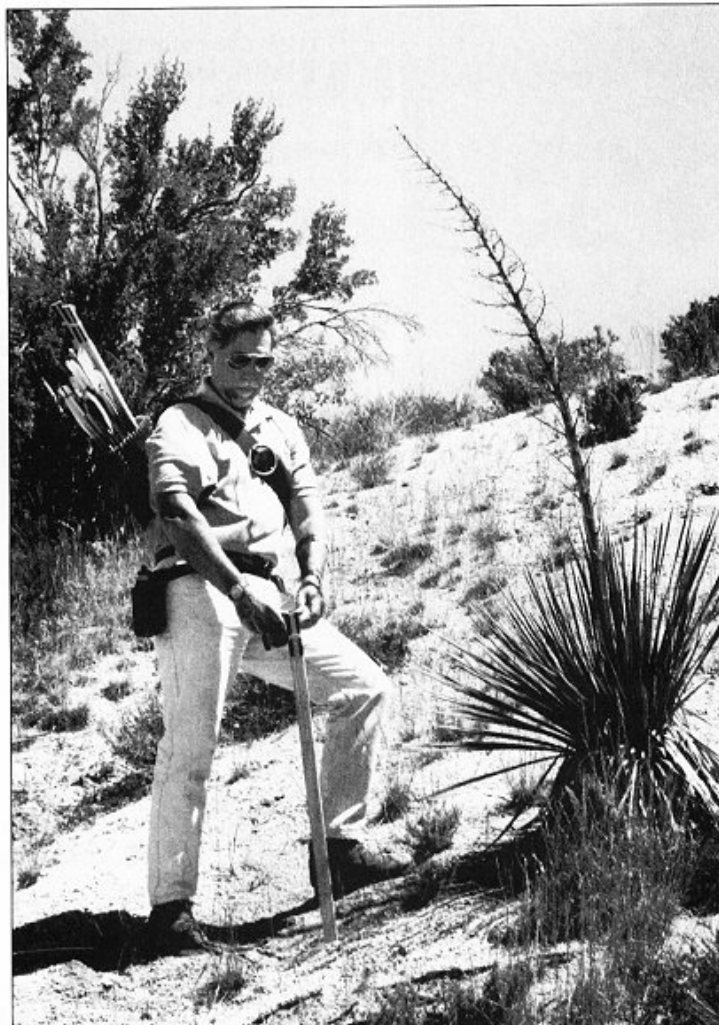
Back to roving, during the mid summer months when milk weed stalks were stiff and dry we would use them for wand shooting. We would also pull one up where the soil was soft, as the long root made for an excellent stake. We could then move it to wherever we wanted. Eventually we began to cut them, so that an arrow's length would stick above ground. You see, an antelopes heart is 27" to 28" high above the ground and we could get used to focusing at that level for shooting. It was also easy to store them in your quiver and retrieve them again.

That's how it all started, then one day we decided to reinvent or *modernize* our wand. They soon became the local rage as they worked so very well. Here is how we made them.

To make the modern version you need 3 to 5 eight-foot (96") redwood laths from the hardware store, usually at a cost of around \$1.00 each. Cut them into thirds (32") and using 80-grit sandpaper, wrap around the stick and sand all four edges at the same time. This is just to get rid of any splinters, especially along the edges. It is not critical to waste too much time on this step, you're not building furniture.

Line the sticks up evenly on your workbench and on one end draw a line at five inches from the end. Use a wide felt tip pen as you want to be able to see this in the field, as this is the depth that you will stick the wand into the ground. Turn the wands over and do the other side the same way. Sharpen the end four inches of the area below the line.

Next line up the sticks in a row on a sheet of newspaper, all nice and even, then lay another piece of newspaper over



The author placing a wand next to a "Mojave Yucca."

the top leaving four inches of the unsharpened upper ends exposed. Tape the newspaper down snugly. Spray the exposed portion with a can of flat black spray paint, let them dry (usually about 10 minutes) turn wands over and repeat the last step. (I also stack them and do the top and sides, this is not necessary however, just picky on my part.)

While they are still lined up on your bench, use a square or straight edge and pencil to draw a line across the black portion, two inches down from the top end of the wand. This will act as a guide for the tape. Take a roll of white (or colored) paper tape in 1/4" or 1/2" width and tape on the cross. I tape on the vertical stripe, centering by eye at the bottom of the flat black. I go up one side, across or over the

top and down the other side. I then wrap each one all the way around, centered on the drawn pencil line. This also keeps the vertical line from coming loose.

You can use your imagination in this area, you can use those little fluorescent dots (either in the center of the cross, or by themselves) that you pick up at the office supply store. You can also use the fluorescent labels and put a black dot in the middle with a felt pen. These are very visible and would save the cost of a can of flat-black paint. You may want to use a drop or two of Duco cement on these to assure lasting adhesion. I personally like the cross idea as it tends to draw the eye in both vertically and horizontally to the center, a psychological advantage.

Place the wands in realistic and challenging hunting positions. Choose your shooting positions, so that you can be on your knees or in natural type blinds or other realistic positions you might actually find in the field. I try to avoid most standing shots or target type

shots for two reasons. One, your chances of standing upright on the prairie and shooting at an antelope is probably nonexistent. Second, if I want target practice, I go to the club range where it is appropriate. This is for hunting experience or for the fun of doing something different than before. In the game of wands, the archer whose shot comes closest to the wand gets to place the next wand and choose the next shooting position.

Your wands should be stored in your archery or hunting vehicle where they will always be ready for action. You will soon find them indispensable for practice both before hunting and in the hunting camp itself.



John Bowden (left) and Curtis shooting at two "antelope Stix" in a dry, sandy creek bottom.

While using the wands, be sure to bring any broken pieces out with you. The scrap makes a great starter for the camp fire, and those that remain usable in a shortened fashion just make for more variety in a roving wand. They also simulate the height of smaller game. Your ANTELOPE STIX are now done. You may actually spend an hour making your first set, once you get the hang of it they can be done in thirty minutes max.

Grab a couple of buddies, put several wands in each quiver and go roving, have a great time. Your shooting will improve, as will your fun level. By the way, take a camera and record the day, this is after all "the good times and the good ol' days" that we are all so fond of. . .



Two close misses. Note the upper arrow bending slightly and spraying dirt just as it strikes the ground.



TIPS ON ENJOYING THE DESERT ENVIRONMENT:

1. Water, water, water—always carry plenty of water. If your going for a long day and expect to be far from your vehicle, seriously consider the purchase of a good re-hydration pack found in all good backpacking stores. Decide how much water you will need and double or triple it. Also throw 3 to 4 bottles of Gatorade into the cooler to replace lost electrolytes (very good for avoiding headaches caused by rapid dehydration). It is better to have too much water than to little.
2. Use "Sun Block" every three hours using a minimum of 15-SPF (I use 45-SPF). Again, "overkill" is hard to do.
3. Use Sunglasses that stop 100% of UV-A and UV-B rays.
4. Wear a good hat to shade your eyes and protect the top of your head. I carry two, both are made of straw and have good ventilation as well as shade qualities.
5. Bring boots that are of good quality to resist the abrasive rocks and the millions of sharp needles and thorns of most desert plants. You have no idea how many little sharp pricks you get until after you learn how to walk in the desert. Eventually it becomes like an instinctive dance as you learn to skirt around each cactus or plant as opposed to brushing them as you do in other habitats. A Vibram sole or rock tread is good because desert soil is very loose and the rocks are smooth and slick.
6. Bring a jacket or wind-breaker, just in case. You're in an extreme environment and weather changes come rapidly and out of nowhere, from winds that blow over eighteen wheelers to lightning, hail, thundershowers, and flash-floods. Be prepared to enjoy the best and the worst the desert has to offer.
7. Retrieve arrows in or near plants or rocks with thought and care. Most plants have thorns or needles and either may harbor any one of several species of rattlesnakes, tarantulas, or scorpions. Don't be afraid, just be careful and remember that one step back will remove you completely from the danger zone or striking range of all of these species.

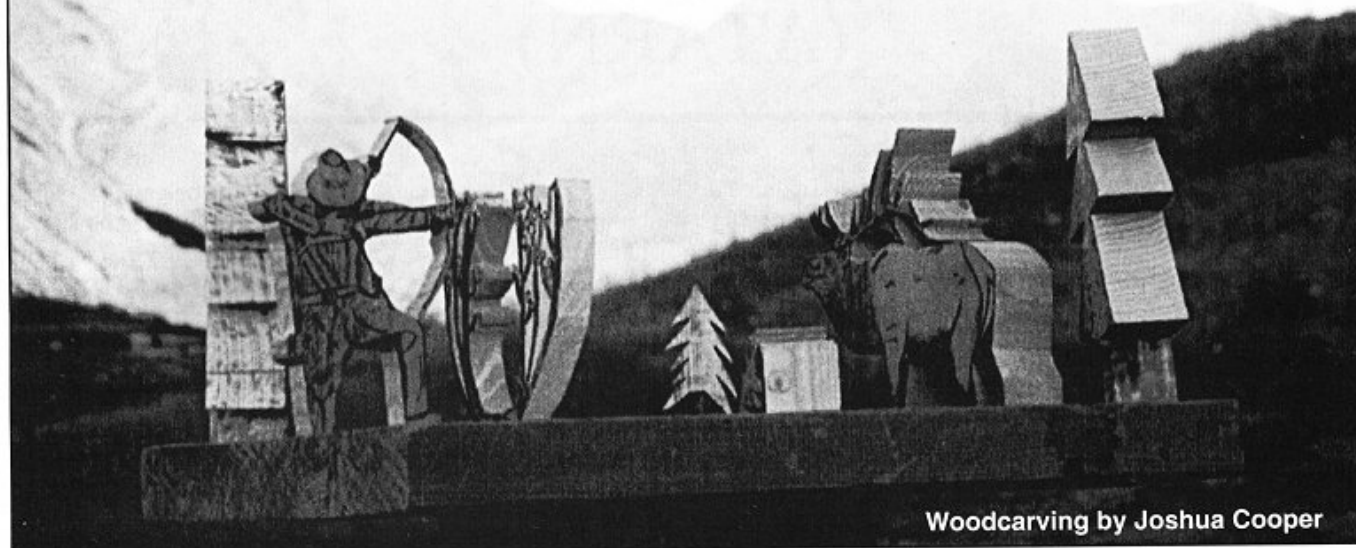
NOTE: Many deserts are covered with very soft sand or sandy soil scattered with very hard rocks. Choose your target areas with a little care and carry flu-flus, field points, rubber blunts, broadheads, and a few throw-away arrows for the especially challenging shots. Generally more arrows are better than fewer—you ARE out to have a good time. And don't forget to bring your camera, the desert is a very scenic place.



John Bowden and the author discussing "Antelope Stix" under a Joshua tree.

THE ONE THAT GOT AWAY

by Joshua Cooper, age 13, 1997 Season



Woodcarving by Joshua Cooper

This last hunting season was a very fun and educational one. As my sister, dad, and I were going down the road to our camp, there was a grouse in the brush. I wallowed through the brush, but the grouse wasn't coming out. By the time we got to camp it was late but we got up on the mountain and were able to see a big bull bugling.

When we got back my sister's allergies were so bad her face was swollen and she could barely see. So we had to take her home and we got back home around 1:00 a.m. Saturday.

That morning around 10:30 we returned to our camp and started hunting. We spent the whole afternoon in the trees having nap time. In the evening when it was cooler, is when we saw the first bull. He was down in a big aspen draw and we were on top of the ridge. We made a plan, and were just about to go down there when dad bugled. The bull took his cows and ran. So we started back to camp both dying of thirst. There were two bulls bugling back and forth so we stopped and listened to them.

I said "Dad, let me see the binoculars," and looked down into the aspen draw. There, at the edge of the aspens was a nice big five-point bull. My dad was so thirsty he wanted to just go back to camp, but I begged to go after the bull.

I got down to the top of the aspen patch and started cow calling, but nothing happened. I started down along the edge of the aspen patch, my heart was going a mile a minute. When I got to the edge of the aspens, there was the bull, bedded down. He must have seen me move because he took off through the trees. I ran up the hillside and saw the bull about a half mile away. I cow called very loud and the bull stopped and looked back.

I looked straight across the draw and there was dad, he bugled and the bull turned around. When the bull started coming back I sat down in some brush and waited for him to

come into sight. When the bull got out of the aspens he was right below me.

I cow called again and the bull came running up at me. All I could see were those gigantic antlers coming at me. When the bull stopped I drew back but couldn't stop shaking. My mind started saying, "Hold it, pick a spot, don't let go—You let go you idiot!" My arrow sailed right over his back.

I cow called and ran around the mountain. The bull was just standing there, so I got another arrow and let fly. My arrow went just under his vitals and the bull was gone for good.

When we got back to the road we saw some elk on another mountain. It was almost dark so dad took off for the elk and I ran for the truck. When I got to the truck I drank some water and then drove the truck to dad.

I got to the little road he was on, parked the truck, and walked down the road to where the elk were and there was dad just looking at them. It got dark so we went back to the truck. The next day we went back to the same spot and there they were. There were just two, so some had taken off, but I cow called and here came the bull to us. Dad drew his bow but the bull was behind some trees and dad couldn't get a shot. The bull took off and we hunted some more but didn't get anything.

So that was the end of that weekend. We went back the next weekend and saw some elk but never got close. It was funny though, because Dad made a push for me but nothing came out. We stopped on the ridge and sat our bows down so we could take off our coats. All of a sudden I heard some noise and looked up and there was a 150-pound black bear running straight at me. I screamed so loud that before I knew it the bear was inside-out, running the other way. It didn't take him long to get out of there, and that was the end of our hunting season.



ASIAN TRADITIONAL ARCHERY RESEARCH NETWORK (ATARN)

This is a proposal to establish an Asian Traditional Archery Research Network to provide for mutual friendly exchange and support among the different archery traditions of Asia, and to widen appreciation worldwide of the different archery traditions of Asia.

A recent study has convinced me that the archery traditions of Asia (for example those of Mongolia, China, Korea, Tibet, and Japan) have at one time or another enjoyed cross fertilization and the exchange of techniques (albeit sometimes on the battlefield.) Now some of these great traditions have disappeared, while others flourish, but in isolation.

The archery traditions of Asia are rich in folklore, history, artistic expression, philosophy, technique, science, and technology. Some, however, are in danger.

You are now invited to participate in this network of researchers, exponents, and craftsmen to further the cause of Asian traditional archery. Some guidelines for the work of the Network are described below.

ACTIVITIES:

The network carries out the following activities-

- Historical, folkloric, artistic, technical, or military research on traditional Asian archery forms, with particular emphasis on:
 - publishing articles and research papers
 - editing and keeping in print rare or ancient classical works relating to important aspects of Asian archery traditions
 - collating a bibliography of materials and index of anthropological or archaeological collections to assist in research on Asian traditional archery
 - monitoring sources of materials required for the manufacture of traditional archery products
 - holding meetings for discussion, exposition or exchange concerning the archery traditions of Asia
 - soliciting funding to support the activities of the Network
 - making representations to Governments and international organizations on any issues which might prejudice the maintenance or development of national or local archery traditions.

ORGANIZATION:

Until such time as participants have a better idea, I am prepared to coordinate the network from Hong Kong.

I shall consider the feasibility for operating some of the activities for the network through the Internet, but it should be appreciated that penetration of the Internet in many Asian economies is very limited at present.

It is proposed that any contribution from participants which is published should be published in two languages: the literary language of the original participant's archery tradition and English.

I have provisionally obtained support on a non-official basis for setting-up the network from Mr. Xu Kai-cai of China and Dr. D. Batchuluun, a medical doctor and traditional archer of Mongolia.

HOW TO JOIN:

This is not a club or society, although it may be necessary to create a legal entity later for some purposes. No agreed mechanism yet exists for the administration of any funds. There is therefore no membership fee. You are invited to communicate your interest to participate by sending the following information to me by letter, fax, or Internet e-mail:

- Name/title,
- Correspondence address,
- Fax number,
- Internet email address,
- WWW home page,
- Specific tradition of archery in which you have experience or are interested in carrying out research,
- List of relevant publications, if any,
- Proposal to contribute materials or articles, if any, and
- If you wish to associate a club, society or association, please provide contact details and a description of your activities.

I would be grateful if respondents could provide in the literary language of their own traditional archery form (if applicable) a translation of the words "Asian Traditional Archery Research Network."

Please contact Stephen Selby (ATARN) at:

Postal Address:	Flat A1, Clouddridge, 30, Plunkett's Road, The Peak, Hong Kong
Internet email (interim):	srsselby@hk.super.net
Fax(Hong Kong):	(852) 2808-2887

GREAT ANCESTRAL BOWS OF NORTHERN EUROPE

by Ragnar Insulander

FOREWORD

Different types of bows have been manufactured all over the world. Some of them have been famous for different reasons, for example the English longbow, the composite bow and the American Indian bow. The two-wood bow from North Europe is one of the least-known types of bow. I will present three great two-wood bows from North-Europe. Finally I will describe what might be the worlds oldest bow. The first bow is one of the rare findings of Saami bows, the bow from the Vibby-bog.



PART 1: THE SAAMI BOW FROM THE VIBBY-BOG

The Saami bow (Sa. "jouks") is known to have been extraordinarily strong and the Saamis were said to be expert bowmen. In an old folk song from the Faroe Islands even the viking-god Oden is equipped with a Saami bow.

Everyone who wrote on the Saamis between the 16th and 18th century awards them very high regard for their hunting ability. The young boys had to practice target shooting every day. The target could be a piece of birch bark stuck on a pole, and the children did not get anything to eat before having hit the

mark. According to Linne, the Saamis were able to hit a sparrow in the highest pine-top.

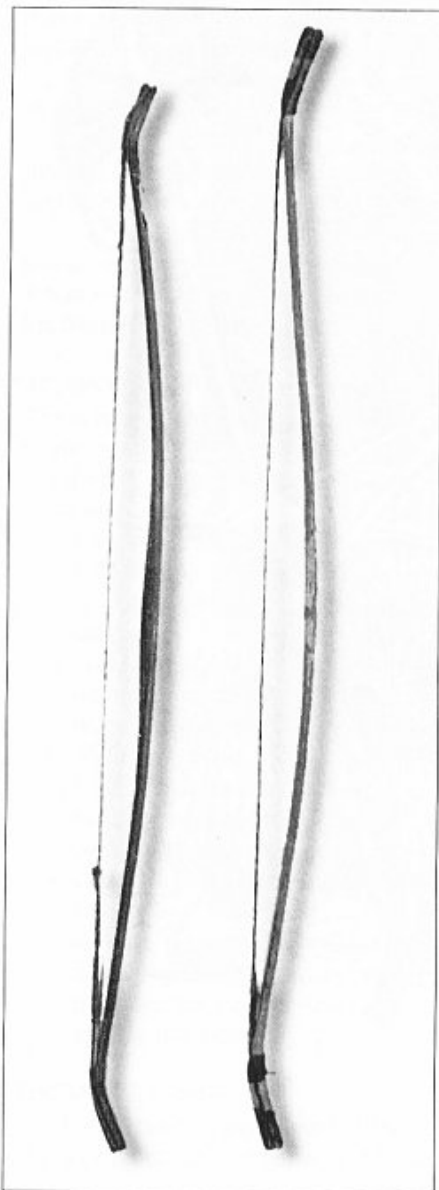
There are only a handful of findings of Saami bows in Scandinavia. The most beautiful is perhaps the bow from the Vibby bog, now at the Museum of History in Stockholm where it can be seen in permanent exhibition. It has been dated to 900BP (+/- 70 years), and as in the case with all the other findings, only the 126-centimeter belly has been preserved.

The wood is compressionwood from pine (*Pinus silvestris*). The belly has some lines or grooves which have been cut in. Besides the approximate 1 to 2 millimeter deep grooves, the bow also has some decorations in a typical Saami-pattern. There are also some weak traces

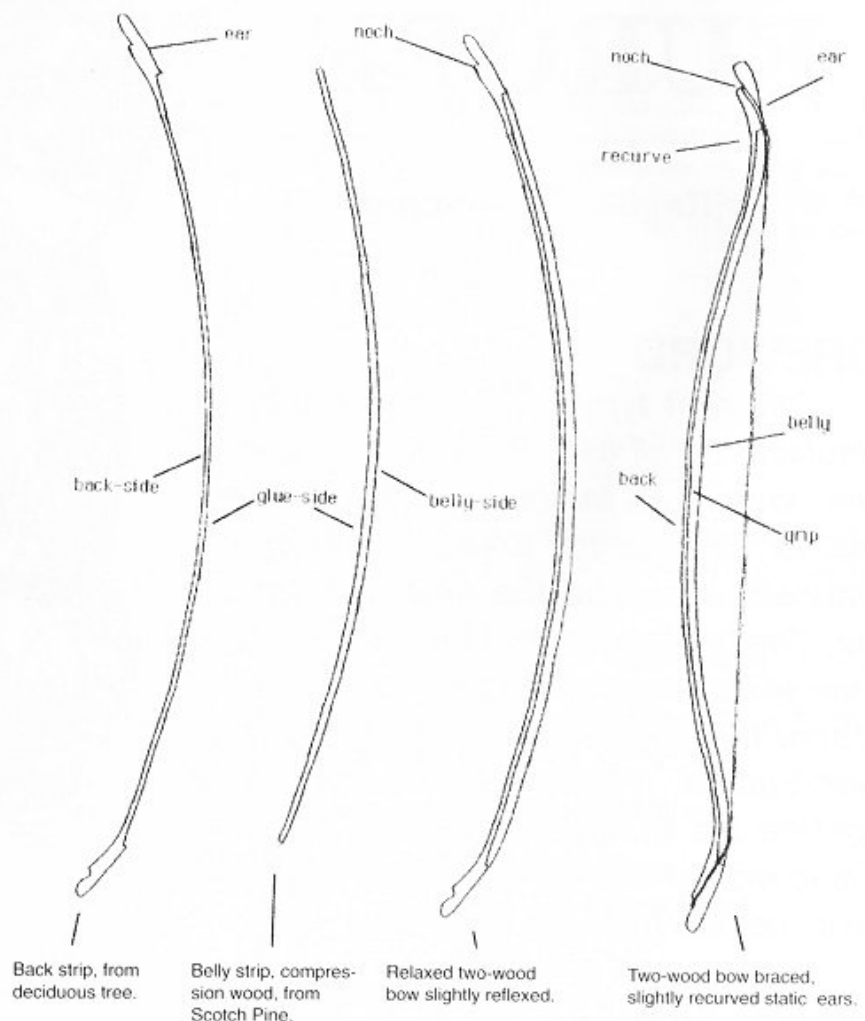
of diagonal "binding."

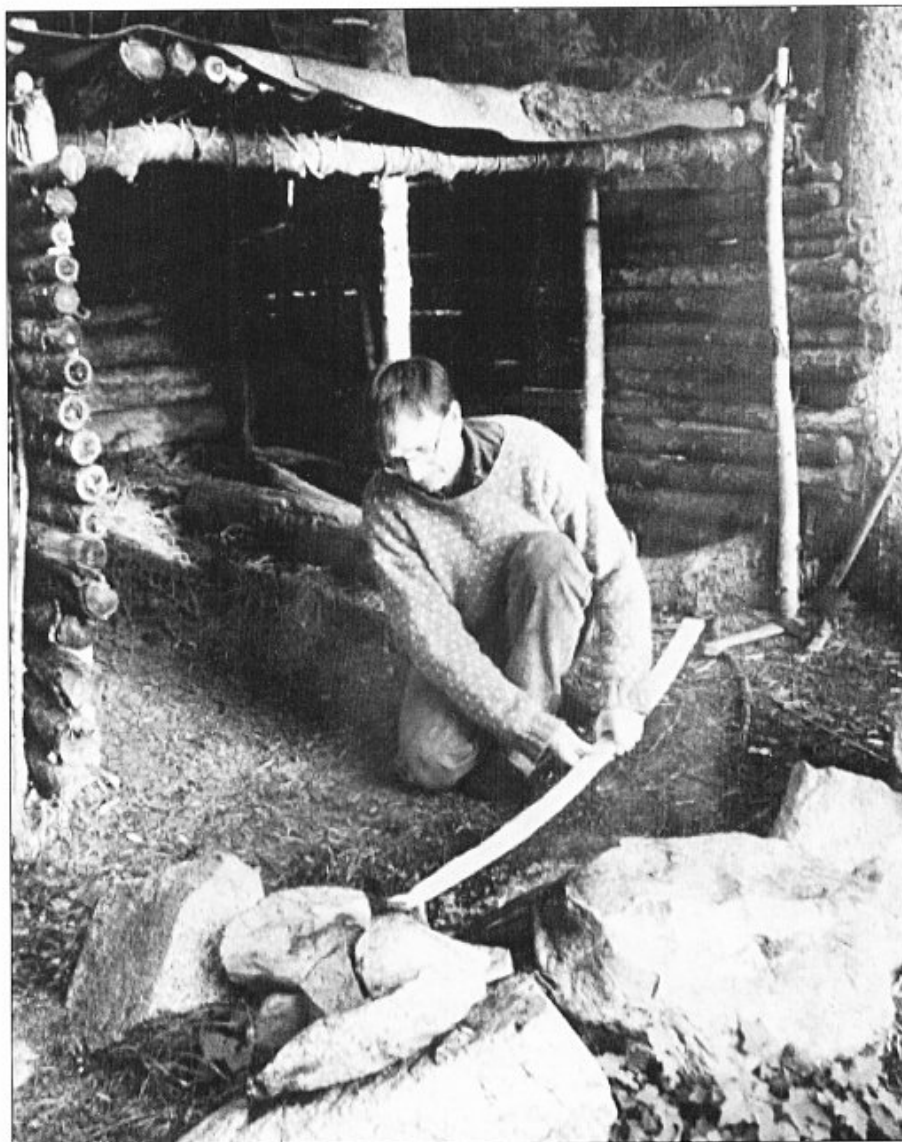
The knowledge of how to build a Saami-bow disappeared completely during the 19th century. To reconstruct this bow I had to start from almost scratch. I have examined recent Fenno Ugrian bows, old text sources, and illustrations. I have also learned a lot from Saami ski-makers who were active in this century. All in all, I have come to the following conclusion: the bow originally had static ears that were more or less recurved and the bow was probably somewhat reflexed.

The ears were made of the same wooden strip as the back of the bow, or eventually of separate pieces made of a third kind of wood, bird-cherry (*Prunus padus*).



Construction of Saami two-wood bow.





Fire hardening the belly strip.

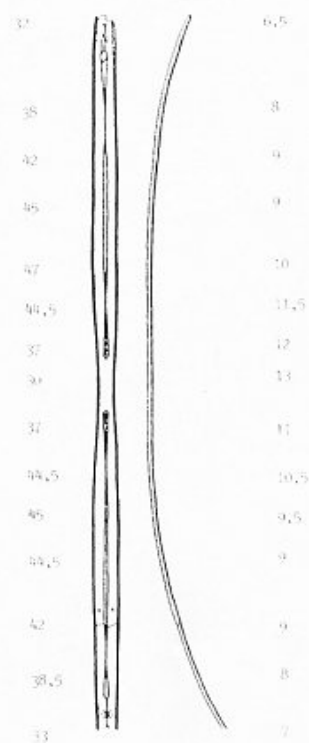
The back was made of birch (*Betula Alba*) and was flat and thin (0.3 to 0.5 cm).

The complete original bow would have looked as the reconstruction shown on the previous page. The total length was 155 cm.

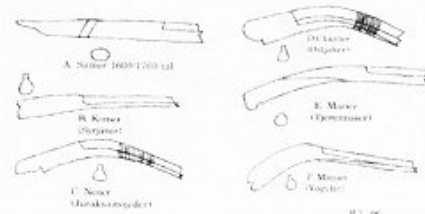
With help of the illustrations on the previous page, it should be possible for anyone to build a replica of the Vibby-bow. The compression wood from Scotch Pine is found in a tree with a trunk that is slanting. Under such conditions the tree produces compensating cells and curvature that differs from the normal cell structure. This kind of wood was also used in both skis and keels for

sledges in the northern coniferous zone. It was actually this special compression-wood that was the secret behind the extraordinary qualities of the Saami bow. A tree with compression wood is easiest to find in or close to a bog, but the best quality is found in the hills.

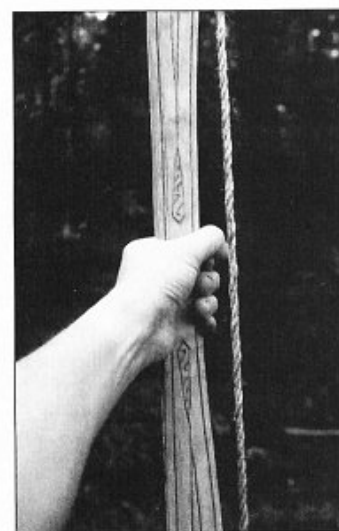
Let the outside of the pine-tree be unworked and constitute the belly-side (when tillering the bow you have to do some work on this side). The glue-side is carved flat. The grooves, 1 to 2 mm deep, are cut on the belly side. Before gluing the compression wood, it should be hardened over fire. Depending on how big the fire is, the heating should continue for 5 to 15 minutes. One half of



Bow dimensions.



Different styles of siyahs (ears).



Reconstruction of the Vibby Bog bow, without the birchbark binding.



Hunting in the Winter among the Fenno Ugrian people.

the bow can be heated at one time (heat on both sides of the strip), so the whole procedure will take 15 to 30 minutes.

The back (made of birch) is also 126 cm long (if the ears will be worked out of the same piece, add an extra 30 cm), has the same width as the belly, and is approximate 5 mm thick at the grip and 3 mm at the ends. The ears, are 13 to 15 cm long.

When the bow is tillered and has been shot for a while, it should be covered with a layer of birchbark as a protection against rain and snow. Take the birchbark when the sap is running, at that time it's easy to peel off in long strips.

Start by making a cut with a sharp knife horizontally (or slightly diagonally) around the tree. Then slowly pull the strip down and outward, the angle and the force (and the width of the tree) decide the width of the strip pulled off. The somewhat-elastic birchbark is then fastened very tightly with a special method to the bow without any glue. If it's fresh and fairly thin it can be attached at once, if it's stiff, boil it a few minutes and then, when it's still hot, wrap it around the bow, simultaneously stretching it.

PART II: THE KHANTY BOW FROM RUSSIA

During my work with Saami and Fenno-Ugrian bows I came across a fantastic bow at the ethnographical museum in Stockholm. It far exceeds anything I have seen among this kind of two-wood bow, and made me wonder how powerful the bows of the northern hunters of ancient times were.

The bow was collected by the Swedish explorer, collector, and diplomat Fredrik Robert Martin late in the 19th century. It's a bow from the Khanty (Ostyak), one of the lesser-known people in Russia, living on the banks of the rivers east of the Ural Mountains in Russia. Among them and other Fenno-Ugrian people, the bow and

arrow were used as recently as in this century.

The term used by the Khanty for the bow was "joyol," "johut," or "jogot." They had special names for the different parts of the bow as well as for different kinds of arrows. Arrows for reindeer were called "veli-layte nal," arrows for ducks "vasak nal," arrows with forked point "lovl," with spherical points "puh" or "poy," arrows for squirrels "anke-puh" and finally whistling arrows were called "orelta-puh."

The bow is 181 cm long (including two 14 cm ears), has a maximum width of 5 cm, and is 2 cm thick.

The backstrips are 3 to 4 mm thick and the ears are fastened between the back and the belly. The original bow has a very delicate look, covered with very thin yellow and brown birch-bark that seems to have been glued onto the wood. The ears are covered with the skin from the feet of swan (an excellent and unique water protection) which have been sewn together with sinew.

The bow displays a very high degree of handcraft technique. The Khanti were known to be excellent bowyers and they sold bows to some of the neighboring people. Explorers who saw the Khanty handle the bow were impressed both with the skill in hitting targets as well the power of the bows. When they tried to pull it they had to use their feet to bend the bow.

The wood which the Khanty-bow at the ethnographical museum in Stockholm is made of has not been analyzed. But from written sources we know that birch was used for the back and the compression wood for the belly was from some type of coniferous tree, in this case probably larch.

Naturally I could not resist to make a copy of the bow. But when I tried to bend it, it was absolutely stiff and there was no way for me to string it.

When I read in *Instinctive Archer*® about Chief A.J.'s huge bow of yew, I realized the extremes you are dealing with when working with bows with these kinds of dimensions.

The Khanty bow is 196 cm long, 15 cm in circumference at the grip, and 10 cm in circumference at the string nock.

The wrist guard was an important piece of equipment for the Khanty archers. It was made of a curved horn-plate (sometimes it was made of birch-bark or leather) and they wore it "under" the clothes.

It's a challenge for the most skilled bowyer to build bows of this dimension, and you should be aware of the risks involved. If the bow should burst, a wooden splinter from it could cause severe injuries, especially to the eyes.

References:

Kai Donner Ethnological notes about the Yenisey-Ostyak, *Suomalais-ugrilaisen Seuran Toimituksia LXVI* (Helsingfors, 1933), 41.

Adolph Erman, *Reise um die Erde, I:1* (Berlin, 1833)

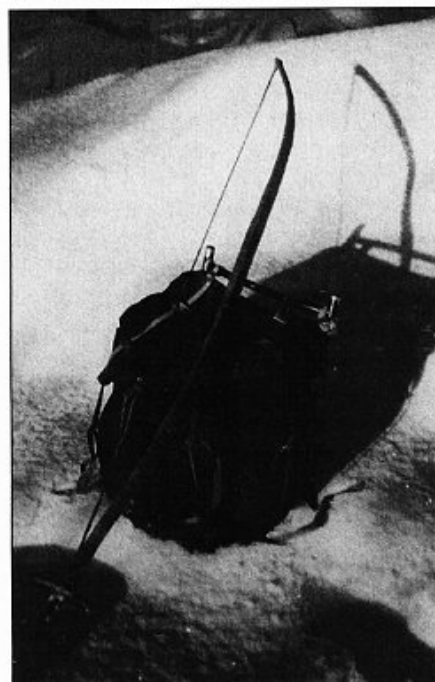
Ragnar Insulander "The Fenno-Ugrian two-wood bow: A missing link," *Bulletin of Primitive Technology*, Fall 1997 nr 14.

F.R. Martin, *Sibirica* (Stockholm, 1897).

U.T. Sirelius, *Reise zu den Ostjaken* (Helsingfors, 1983).



PART III THE BOW THAT DOUBLES AS A SKI STAFF

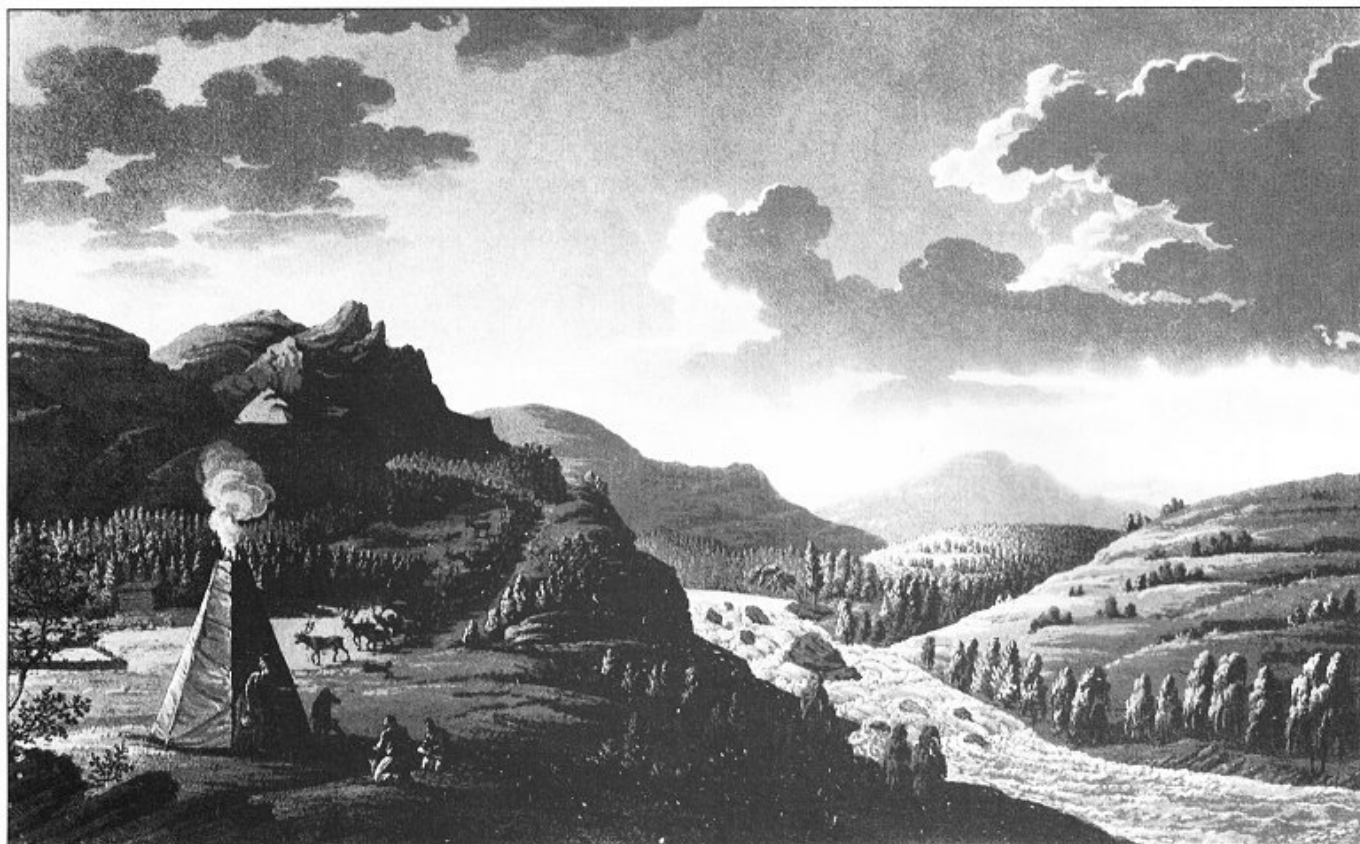


The Saami-bow occurred in several variants. A comparison between the finds from Sweden, Norway, and Finland, shows a great similarity concerning the main characteristics, but there are some variations. There have existed at least three types of Saami bows.

The older type (2,230 BP), is 180 cm long and very thick and powerful. During the middle ages the bows were somewhat shorter (160 to 170 cm) and thinner.

The 18th century saw the end of bowhunting among the Saamis and from that era comes the famous bow from Orbyhus. It's the only complete Saami bow preserved down to our time in Scandinavia, maybe it's the only one in the world. From archeological fragments we know that this kind of all-wood composite bow has been used among the Saamis and other Fenno-Ugrian people for at least two thousand years. It's a special weapon for hunting squirrel. It has rudimentary ears and is also constructed to be used as a ski staff.

The bow is kept in a private collection at Orbyhus Castle in Sweden. The castle dates back to the 16th century when Gustav Wasa, Sweden's first king, made it a stronghold in this part of the country.



Lapland. From Skioldebrand Voyage Pittoresque au Cap Nord, 1801. A Nordic way of life in the old country.

The bow is about three hundred years old, the approximate end of the bowhunting era among the Saamis. Originally they used the bow for all kinds of hunting, such as bear, wild reindeer, grouse, and small fur-bearing animals. It was replaced by cross-bows and firearms, but it survived as a special weapon for hunting squirrel in certain localities far into the latter half of the 18th century. When the famous Swedish naturalist Linne visited the Saami in 1732, he referred to it as the "squirrel-bow."

The bow from Orbyhus differs from the older types of Saami bows in several ways. As with the others, it is made of two staves of different kinds of wood which are joined together with a glue made of the skins of perch. The back of the bow is of birch wood and the belly is of a special compression wood.

The bow is completely covered with birchbark as a protection against rain and snow. The somewhat elastic birchbark is fastened very tight with a

special method to the bow without any glue. The bow is also constructed to be capable of being used as a ski staff.

When the Saamis hunted reindeer they ran on skies with the spear as one ski staff in one hand and the bow held as a second ski staff in the other. To


accomplish this, the lower end of the bow is provided with a metal point to which a circular wooden piece is fitted with leather straps.

The exceptional construction of the bow is a fine example of the specialized weapons used by the Saami hunting culture.




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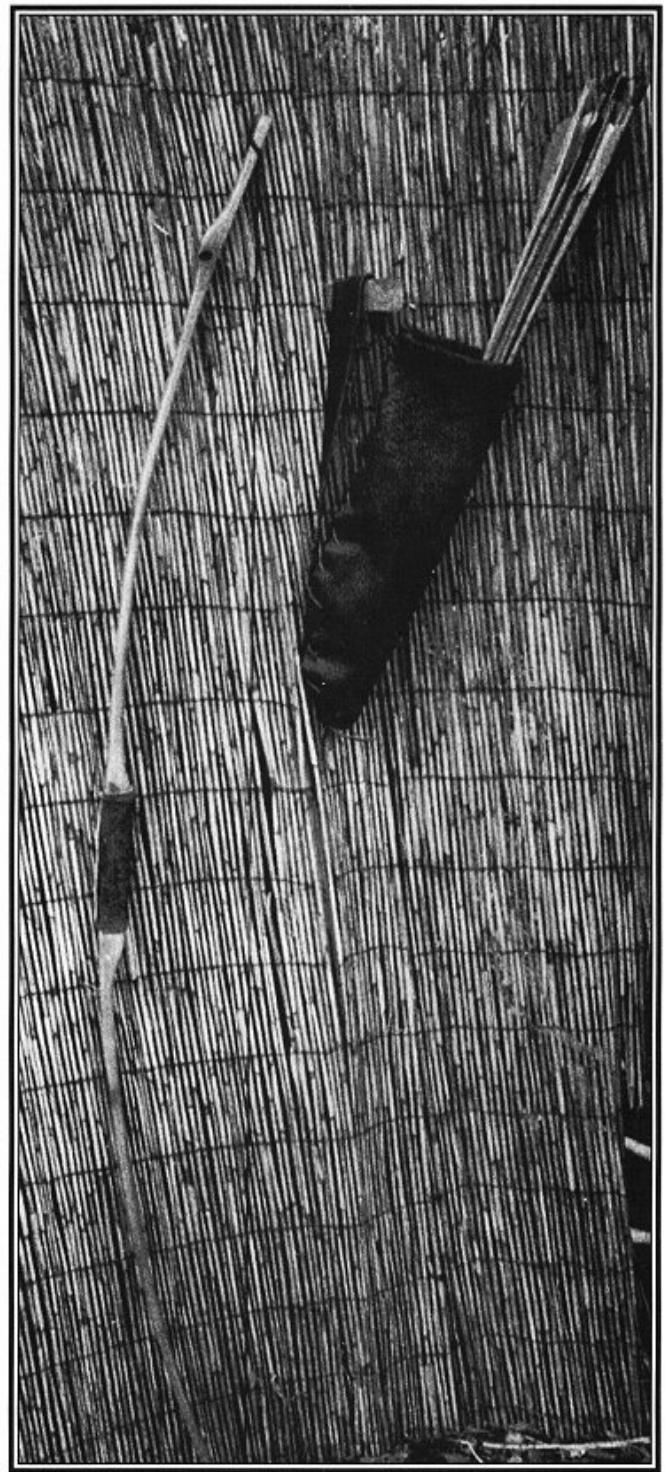
“CYCLOPS” and fifty years of bow making

by Alfred Jones, Ph.D.

Growing up during World War II, some of our heroes included Richard Haliburton, Admiral Richard Byrd who explored Antarctica and in particular the adventures of the famous bowyer and archer Howard Hill. At that time, a very good lemonwood bow of thirty or forty pounds could be bought through the Sears Roebuck catalogue for \$12.50. That amount of money was often out of the question for the average boy of the 1940s and since lemonwood was readily available in virtually any lumber yard, we learned how to make our own bows and arrows.

One of the boys in my neighborhood in Oak Cliff in Dallas did have a store-bought bow and from someplace, I am sure I will never know where, my father came across an osage orange bow of about six feet that looked like the proverbial dog's hind leg. It had more twists and turns in it than anything I had ever seen. One look at it and I was of course disappointed and somewhat embarrassed to show it to my friends. However, the boy with the pristine lemonwood bow told me that to have a real Osage Indian bow was a great prize. I was under six feet and stringing it was a trick that I had to learn. The bow shot like a dream. Since we lived in a wooded area on the outskirts of town, there were many places to shoot. We were soon able to dispatch rabbits and small game.

One summer, my friend and I decided that we would go into business at a recreational park in Oak Cliff by the name of Kidd Springs. It had a lake and a large picnic area which drew hundreds of people from all over the city. In the summer, there was a small carnival and booths were available to rent for various purposes and we wanted to set up an archery range with targets on bales of hay. We needed about six bows, at least, and of various draw weights for the project. Although both of us had a paper route and had money to rent the booth for the first month, getting the bows and arrows was another matter. In those days, there were few if any books on bow making, but we did come across a book written in



England during the 1890s called *Modern Archery* with some of the most excellent examples of bow making. (See chart at end of article constructed by a U.S.A. bow maker by the name of Forest Nagler.) I continue to this day to use the specific guidelines for various woods including degame, which lemonwood was called at that time, as well as yew (which was not available to us) and also osage orange which was abundant and for the taking all over Dallas. We had no sophisticated

tools so we started out making limb bows out of osage or bois d'arc. We could buy lemonwood staves of one inch by one inch for the traditional English long bow and two inches by one inch for the flat bow and whittle them down in accordance with the guidelines in *Modern Archery*. Somewhere we came across a jig for attaching feathers to the cedar shaft but I have long since forgotten where we got the tips.

We finally had three osage bows and three lemonwood bows along with our own personal bows. Since the draw weight was around thirty pounds, our loss was minimal, but we did have two bows break on us over the summer. Although we made it very clear that each bow had a specific draw length, there were times when this was exceeded and the bow broke. We therefore had to have two operations, that of running the range and also making bows. We combined the two endeavors and sooner or later, someone would order a bow from us. As well as I can remember, we charged \$5.00 to make a bow and \$0.25 each to make an arrow. I am sure that Sears also sold arrows at that time since archery was popular.

That summer was the beginning and I have been making bows ever since. For me, the days of the compound bows came and went. I now have experienced a full circle in that wooden self bows are back in vogue. Over a period of 50

years, I have made at least that many bows. "Cyclops" is my most recent bow. Thanks to a very generous gift of two fine bois d'arc logs given to me by Jerry at Valley Traditional Archery Supply in Whitewater, Colorado, I was able to split them and have enough wood for four bows. These logs came from East Texas. It is no problem to find bois d'arc growing along the Red River between Texas and Oklahoma, but getting good bow wood is often difficult. By the nature of bois d'arc, it is gnarly, full of knots and during the drying time of six to eight months can be infested with insects that must have teeth of iron. Once they get into your wood, they can ruin what would have been potentially a good bow. One can cut down a fine tree and then find that the growth rings are so close together that you are well advised to put it to one side and use it only for such things as tips, overlays and handles. Perhaps some laminates of backing strips can be made from the wood, but not a proper bow. You can, however, go fifty to a hundred yards and find a tree with growth rings that are the best you have ever seen. Therefore, if you can find a limb that is long enough, straight enough, with no twists, no knots, and with good growth rings you may have a better than average chance of making a bow. Your task now is to keep the bugs out of it while it is drying.

For the most part, my bow making skills came from trial and error. It was not until 1980s that I had the good luck of meeting the next generation of bow makers who were into self bows and acquainted me with the archery literature which was beginning to come on the market. Dr. Ron Hardecastle in Austin as well as his friend and very superior bow maker Ron Robinson gave me a graduate course in not only selecting good wood, but in perfecting my skills. Both of them used to kid me about using wood to make a bow that the average bow maker would have relegated to the kindling pile.

Once I discovered hickory, I began to make a lot of bows. By this time, lemonwood from Cuba was no longer available and hickory was the second wood of choice if you could not get lemonwood. The only problem with hickory was to learn very quickly how to distinguish it from its cousin pecan. You will see it graded as hickory/pecan. You can not make a good bow out of pecan. Hickory is abundant in Arkansas, Tennessee and Missouri. It does not have the problems that are found in bois d'arc and it is an easy wood to work with. Osage or bois d'arc is very difficult to work with when you are having a go at it with a draw knife. You can easily gouge out a hunk of it and ruin your efforts even after hours and hours of work.





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I never developed the skill of sinew backing, but did learn from Dr. Harcastle how to use laminates to back a bow. Many an osage bow of dubious quality has been saved with a hickory backing. Now I use rawhide almost routinely because it is a good backing material and easy to apply.

Ash, maple, black locust and oak can be used to make a bow, but I fear that I lack the skills to use these woods to their best advantage. Since both hickory and osage are so readily available in spite of the fore mentioned caveats, I just stick to what I know best and make traditional and flat bows out of these woods. Not long ago, I discovered mulberry, or red mulberry, also available in Texas. It is as good as osage and quite a bit easier to work with. I find that it takes longer to dry and the use of a moisture meter is helpful. If it is split or worked before it is dry, it will warp so badly that it is useless.

For many years, I lived in England and learned how to make yew bows. This is a wonderful wood to work with and one can make bows of very superior quality and are in my opinion, the finest shooting bows in the world. Since much of the really good yew is no longer available in England, we used Spanish yew. However, no wood in the world can match the yew found in the Pacific Northwest of America. Terry Russell of Montrose, Colorado is the finest yew bow maker I have ever come across. He gets a permit each year to cut in Oregon and uses only billets and he has mastered the art of splicing to make an outstanding bow.

And so back to "Cyclops." This was part of the wood that Jerry gave me and when I cut into it and

		Width of Limb			Thickness of Limb			
Distances from Ends in inches		A	B	C	1	2	3	4
0		.47	.37	.30	.41	.37	.35	.33
4		.94	.75	.56	.50	.44	.40	.36
8		1.33	1.06	.78	.57	.51	.46	.41
12		1.43	1.13	.84	.65	.57	.52	.47
16		1.50	1.19	.88	.71	.63	.57	.52
20		1.58	1.25	.93	.76	.68	.61	.55
24		1.63	1.30	.96	.80	.71	.64	.58
28	Dips	1.70	1.35	1.00	.83	.73	.66	.60
29		1.62	1.30	.97	.87	.78	.71	.65
30		1.40	1.05	.90	.95	.90	.85	.80
31		.95	.87	.80	1.30	1.20	1.10	1.00
32	Handle	.87	.80	.75	1.60	.50	1.40	1.30
34		.87	.80	.75	1.60	1.50	1.40	1.30
Weights of Bows Based on Widths		}	A	78 lbs.	62 lbs.	50 lbs.	41 lbs.	
			B	62 lbs.	49 lbs.	40 lbs.	33 lbs.	
			C	46 lbs.	37 lbs.	30 lbs.	25 lbs.	

found the "eye," my first reaction was to cut the stave in half and make a bow out of billets. The more I studied it, the more I was convinced that I could work with the "eye" and still use it. As it turned out, this is one of the finest bows and with far more character than any I have ever made. And so, after fifty years of bow making, "Cyclops" is the result.

There are few experiences equal to that of going out into the woods, finding your own bow wood, cutting it, grading it for quality, letting it dry and then making a bow. Roy Henderson of Waterloo, Indiana, will sell you a stave, or a roughed out bow and all the fixings. This may be the best way to go if you are in an area where you can't get out and find your own wood. Over the past fifty

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Barkin' Dawgs and Angry Hawgs

by
Scott VanArendonk



"... a hawg charges you, all's you got to do is jump up and grab a hol of a tree," my guide Doug said. We were bouncing along in an old, beat-up Chevy Suburban, heading for the far side of a 2000 acre hunting preserve. "You don't have to git real high up a tree, though, cuz them hawgs cain't jump. You jist need to git out th' way. They leave you 'lone after while."

My mind raced trying to remember: did he say this applies "if" a boar charges, or "when" a boar charges? Was it merely a possibility a hog would become aggressive and chase after me, or was it a certainty? I'd heard these Russian boars were dangerous. Never having seen one, however, I didn't have a clue about what I was getting myself into.

Less than a week earlier, I had read on the Bowsite (an internet website for bowhunters) that a bunch of hunting archers from around the country would be converging at the Caryonah Hunting Lodge in Crossville, Tennessee, to hunt wild hogs, and they still had a spot open in their group. Without question I was interested in the hunt, but I was also intrigued by the prospect of meeting in person some other Bowsite regulars. When my wife gave her blessing to the whole idea, I tried to make room in my calendar for the trip. It all came together with very little trouble, and soon I was packing my bags and fletching a few new arrows.

I'd never been on a hunt in a game preserve before, so I didn't know what to expect. More accustomed to hunting

free-range animals, I told myself I would simply go down and see whatever there was to see. I was mostly interested in the fun and the fellowship with the other hunters. Killing a hog wasn't a necessity for me to have a good time, and to be honest, I figured I'd be coming home empty handed. That was perfectly fine with me.

"... Best shot on a hawg is when they's broadside and kinda pointin' away from you," Doug continued. "If'n he's pointed at you, he's gonna come after you. Then you got problems. Wait 'til he's quartering away, and prolly he'll jist run away after you shoot."

"What will a hog do to you if you can't climb a tree in time?" I asked.

"They's got a real mean bite to 'em. Sharp teeth and tusks. That's mostly what you got to be worried 'bout."

When the Suburban rumbled to a stop, I told Doug I didn't want to use the dogs in my hunt. "I really want to try to stalk within range of a hog. Just put me in a spot where I'm likely to see one, and I'll be happy. Maybe along a game trail or in a feeding area." Doug understood my interests, and he led me to an area where four or five game trails converged.

"Set up on the other side o' that blow-down right there. Hunker down and keep real still. Figure out which tree you gonna climb if'n one comes after you. 'Em hawgs'll prolly come through sometime before lunch. I'll be back to gitcha 'bout noon, okay?"

This was now Doug's third warning about the aggressive nature of these critters. He did use the word "if" this time, but with his persistent words of caution, it felt like this was a matter of "when," not "if." I crept into the woods with Doug's words ringing in my ears: "*sharp teeth and tusks.*" I sized up each tree I passed for climbability. As it turned out, my caution wasn't necessary; no hogs were seen in the morning's hunt, though every snap of a twig or rustling of a leaf had me eyeing the safe haven of the hemlock next to me.

"*Didn't see a thang, huh?*" Doug asked when he returned a few hours later. "*Well, that's huntin', I guess.*"

A part of me was relieved no hogs happened by, but now I was becoming curious. I'd had a few hours to think about it. Despite the numerous cautions about these aggressive animals, I simply wanted to see one. What does a wild boar look like? What's it like to be close to one? Just how big are they? As we bounced along in the old Suburban, I shared with Doug my sense of intrigue and curiosity when he said, "*After lunch, why don't we just let th' dawgs find one fer you. You ain't gotta shoot it if'n you don't want. But if you just wanna see one, we can do that. No problem.*"

"*Remember, I want to try stalking. If I don't kill the first hog the dogs find, that's not going to feel like a waste of time to you?*"

"*Naw. This is your hunt, not mine. I'm just here to help.*"

"*Okay, then. I think I'd like to see one o' them hawgs.*" As I said this, it struck me how hard it is to be around Southerners and not pick up a bit of their

drawl. I wondered if by the end of my hunt in Tennessee, I'd be calling home and saying, "*Darlin', you shoulda seen them dawgs chase them hawgs! Lawdy!*"

Within an hour after lunch, Doug and I heard baying and barking. We approached the scene and found the dogs slowly pushing two hogs along a game trail. They went about their business of rooting for acorns until one of the dogs got too close. With a swing of the tusks and a short burst of speed, the two boar scattered the pesky canines. Then the whole scene developed again.

Unlike any domestic hogs I'd ever seen, these hairy bruisers were much more muscular and built up around the shoulders, and their snouts were a touch longer. When I looked closely, I saw the tusks Doug had earlier mentioned, and I was instantly convinced these were some serious animals, able to do some serious damage. If I had plans to stalk one of these bad boys, I would need to be careful.

"*Is there any way you can get the dogs out of here?*" I asked Doug.

"*Sure. I can do that.*" Doug replied.

"*I'd like the boar to settle down a bit and go back to their routine. Then I may try to sneak in on one and see what happens. Maybe I'll get a shot. How's that sound?*"

"*Fine. Just remember. . .*"

"*I know.*" I interrupted. "*I'll be ready to climb a tree if a hawg comes after me.*"

"*Awright, then.*" Doug said as he turned and walked away. Within a minute of his calling the dogs with him, the scene was transformed from commotion and chaos to silence and relative

stillness. The hogs went back to rooting for acorns and rubbing their coarse fur on tree trunks, and it was enjoyable simply to watch them from a safe distance of sixty yards.

Fifteen minutes later, I nocked an arrow and decided it was time to try a stalk on one of these hogs, the bigger black one if possible. I'm not sure if it was a coincidence or if this black boar picked up some of my movement, but I hadn't taken five steps when he came over in my direction. My eyes shifted from the advancing hog to the pine tree next to me. If the boar charged, I wanted to be within lunging distance of the stout branch eight feet off the ground.

At twenty yards, the hog spotted me and stopped momentarily. His ears stood up as did the bristling hair all along his spine. The boar held me in his gaze, and the effect on my heart was like a drag racer stomping on the accelerator. If I'd held still, he might not have figured out what I was. Concerned more about self preservation, however, I turned and prepared to leap for the tree branch if it came to that. Seeing the movement, the hog appeared to become agitated and advanced in my direction. He was now fifteen yards out and closing, and the internal sirens were blaring. I took another step toward the haven of the pine tree.

The hog stopped and stared. Is he getting ready to charge? Is this the calm before the storm? Is he trying to figure out what part of my legs to chomp with his "*sharp teeth and tusks?*" This was one of those moments when the passing of time loses all sense of proportion.

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Welcome



An interesting standoff and a feigned charge resulted in a freezer full of lean, wild pork.

when the seconds are measured in terms of intensity rather than duration. My instinct told me to stand my ground, so I did.

The hog took a few steps to the left as if to circle me. Wanting to keep him fully in my view, I slowly turned in that direction. Seeing my movement, the boar feigned a charge and stopped at twelve yards. Another staredown. I was fully prepared to chuck my beloved recurve and scramble up the tree. But again, something told me to wait.

Up to this point in my bowhunting career, I'd spent most of my days afield pursuing the Michigan whitetail deer. For me part of the allure of bowhunting these cautious animals in my home state is the thrill of being in their space. Whitetails are masters of detection, and the excitement of being close to one that is unaware of my presence in the woods will keep me coming back for years to come.

My standoff with this wild boar, however, was an altogether different experience from my whitetail encounters. Now I had the overwhelming sensation this agitated animal was invading my space. Matters of "fair chase" in hunting take on a whole new dimension when the line between the chaser

and the chasee gets erased. In an instant, I decided to take a shot if the opportunity presented itself.

Again the boar feigned a charge and then continued to move to the left. If I was going to shoot, the time was

now. My arrow drew smoothly, and everything felt right. As my quarry emerged on the other side of a tree trunk twelve yards away, I was at full draw, picking the tuft of hair where my arrow would go. In that brief instant before releasing, I noticed how the wood and string in my hands felt woefully inadequate to handle this bristling mass of muscle and tusk. As if to counter my fleeting doubts, my arrow, tipped with a razor-sharp broadhead, rocketed from my bow, found its mark on the boar's rib cage, and buried itself up to the fletching. As my guide had predicted, the boar ran in the direction he was pointed and lay down after just thirty yards. I knew that hawk was mine.

I will never forget the up-close encounter I had with that boar, and my wife and I will be enjoying our freezer full of pork in the months ahead. There are, however, plenty of opportunities to hunt other big-game animals in this wonderful world of ours, and I'm eager to give them a try too.

Will I return? Maybe. Am I glad I went? "Lawdy, yes!"






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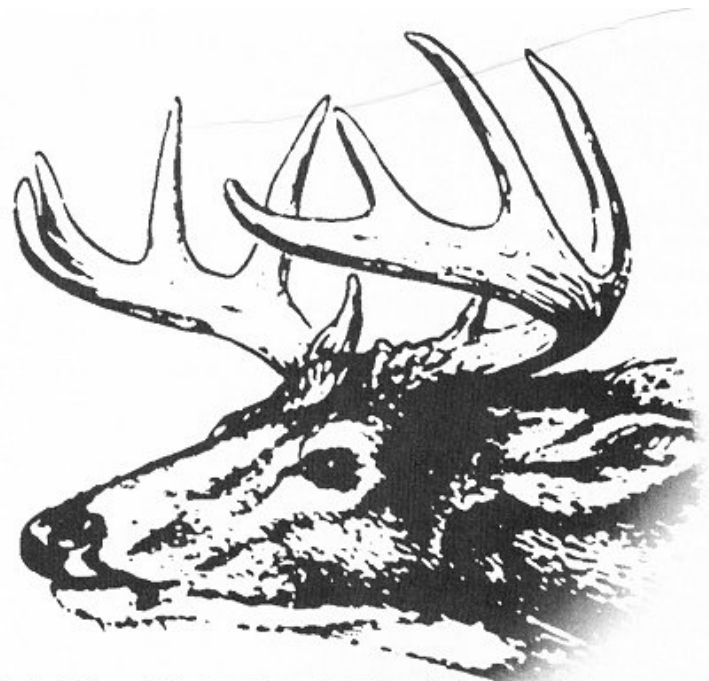
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THE

LEMONWOOD BOW

By Doug Campbell



I had been working all night, but the sale bill for the auction had said there were two bows for sale. That meant there were no options in my book. I had to stop and see what they were.

As it turned out it was worth missing a little sleep. After standing around most of the day I was the lucky bidder who took home an eighteen-dollar addition to my bow collection. It was an old lemonwood longbow with black fiber backing. I was told it was made in the "40s" sometime. The finish was cracked pretty badly and the string was missing. A few minutes and some wood wax helped the finish and my string jig took care of the other problem.

I worked for three weeks flexing the old bow a little at a time 'till I was able to string it then reach full draw. The draw weight turned out pretty good at sixty-two pounds at my draw length. But the rainbow trajectory left some to be desired. Some 60- to 65-pound cedar shafts I already had shot good. I had the idea that I wanted to kill a deer with this old bow, so my recurve went into the corner and the practice started in earnest.

Deer season finally came around and I felt fairly confident out to twenty yards or so. The first month of the season was uneventful with no opportunities for shots, but a planned trip to northern Missouri had me pumped up. A whole week during the rut with nothing but hunting was what I waited for all year.

Chuck, a friend of mine, and I worked hard all week to connect. We had several close encounters but could not get any shots until the last morn-

ing I could hunt. We set up to rattle in a brushy patch of timber before daylight.

At dawn Chuck crashed the horns together, he no sooner finished the sequence than five does came trotting in. The does messed around there for a few minutes pinning us down, but offering no shot opportunities.

When they left we switched rolls and I started rattling the horns. Within fifteen seconds a small six pointer came slipping in, catching me in the act of moving. I froze and we had the classic staredown for a few minutes. When he decided maybe I was just a strange-looking stump and started sniffing for acorns I slowly brought my bow up, came to full draw, and released. I think he was faking me out since when my arrow got to where he should have been he was already ten yards away.

Chuck and I had a good laugh over this and discussed what to do next. After an unsuccessful search for my arrow we started to move down the draw farther into the brush. We hadn't walked ten steps when I saw movement about sixty yards ahead of us. The movement turned out to be a decent eight-point buck.

We dropped in behind a couple of trees and grunted at him, without any hesitation the buck turned and headed toward us. As he came he veered toward Chuck who proceeded to send an arrow under his belly at twenty-five yards.

This time it was Chuck's turn to go hunt his arrow. We

couldn't believe seeing this many deer and calling them in without moving more than twenty yards. We weren't being particularly quiet, with Chuck thirty yards away digging his arrow out of a tree when I looked down the draw again and saw another buck crossing the ditch.

I grunted at this buck and he turned and headed right toward me. We didn't even have time to take cover and just froze where we were standing. The buck kept coming and walked by at about twelve yards, which I guess was to close to hit since I shot right over his back. Needless to say Chuck and I both had plenty to rib each other about for a while. This turned out to be the last of the deer through the "wonder" spot for the morning.

It was time to head home before I knew it and no deer for the old longbow, but a ton of exciting memories. It was Thursday afternoon and I had to go home and catch up on some chores and get things ready for opening day of gun season. My wife Karen, enjoys deer hunting, but hasn't gotten into bowhunting yet. I try to get everything right for her since this is about the only hunting she does and it is a great opportunity for us to be in the woods together. After spending most of the day Friday catching up I decided to take my bow and put her stand up about two o'clock in the afternoon.

The stand was an old homemade chain-on type which is big and stable but makes a bunch of noise being put up. By the time I had finished banging around and

had the stand hung in a big sycamore tree behind the house it was after three o'clock so I decided to just sit there for a while. Less than ten minutes had went by when fifty yards away a small buck stepped out of the cedars.

Out came the grunt call again, a couple of soft blows and the buck headed my way. It seemed like he was on a string that lead to the base of my tree. When he walked by looking for the other buck he never had a clue what was waiting for him. The old lemonwood came to full draw and the cedar shaft suddenly was disappearing through his chest, tight behind the shoulder.

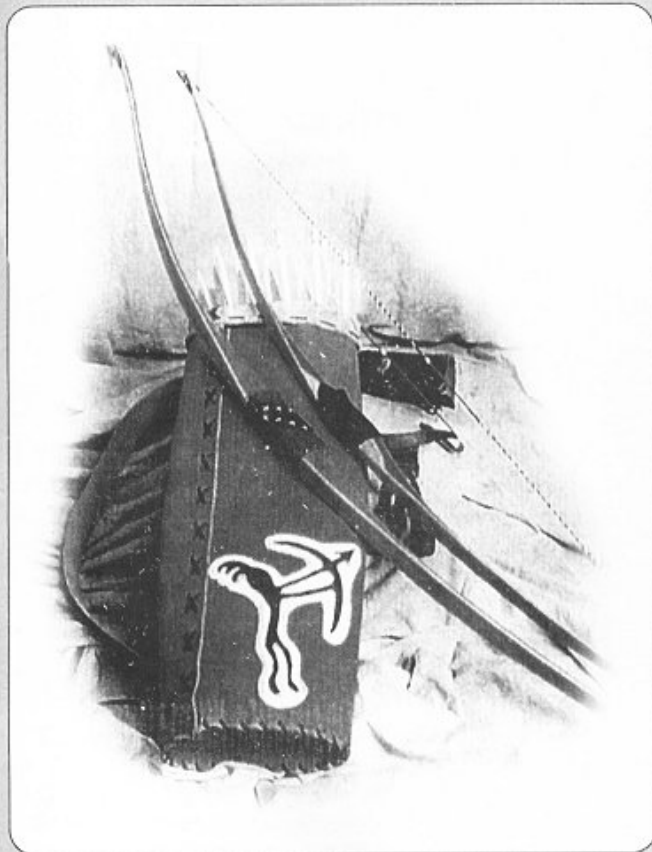
I guess the rainbow trajectory doesn't hurt much when you are only shooting ten yards. The Zwickey-tipped shaft shot through the buck and was stuck in the ground. After a short tracking job it was a real joy to run my hands over my first longbow-killed deer. After traveling a couple hundred miles and spending a month and a half chasing deer I had finally killed my deer within a couple hundred yards of my back door out of my wife's tree stand. Sorry Honey.

There is a special feeling of achievement when you take on a challenge and after much time and work accomplish it, this one was even sweeter being able to do it on my own place within sight of my house.

By the way, the next day my wife was able to take a nice fat doe to help with our year's venison supply.

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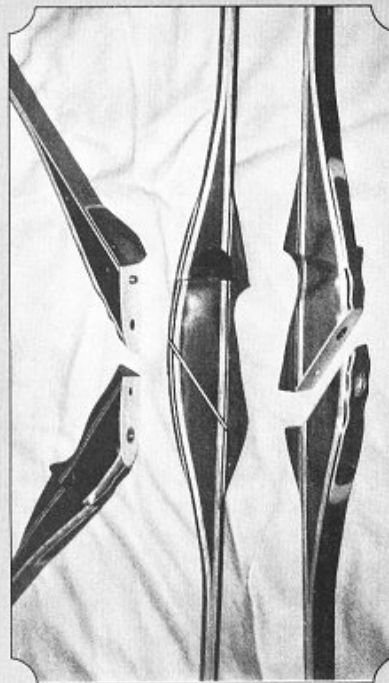
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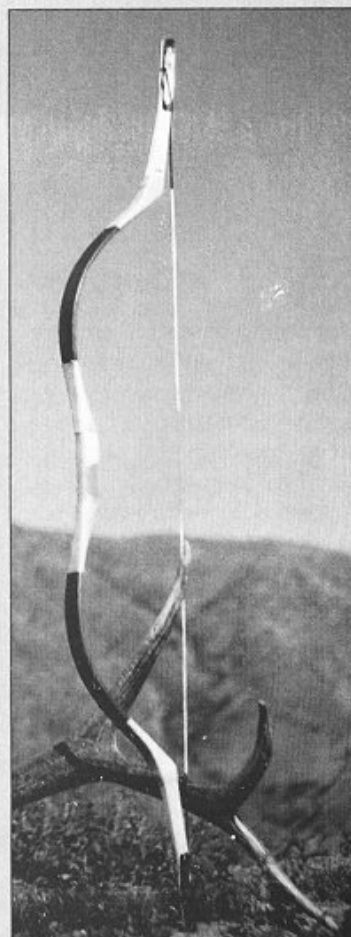
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The Competitive Edge

by Gary Sentman

Through the years of shooting the traditional bow, I have seen many archers rise to the top in competition. I've also seen many fall. I believe it takes a special individual to stay on top. This person must be capable of controlling the deepest anxieties or emotions.

A top competitor must be able to focus on the event, even though other worries may be plaguing him: such as losing a job or making next month's house payment. The top competitor must be very secure in the knowledge that he or she has the ability to perform with the bow. Some individuals are handicapped because they don't have the ability to relax under pressure. When the competitive event comes down to the last few pressure shots that will determine winning or losing anxiety sets in; heartbeat rates may increase, breathing may get heavier and somewhat sporadic and hands may begin to perspire. This type of individual will find it almost impossible to relax and maintain their composure. When top competitors go to a shoot, they may feel that they do not want to socialize a great deal. Everyone at the event will be looking at the champions expecting great scores from them, or asking more questions than they may want to answer.

I know I have often been in competitive archery events when someone is talking to me and nothing is staying between my ears. Two minutes after the conversation I would not remember a thing. When I find myself talking a lot, trying to help other archers with shooting problems, my shooting will not be as good. Consequently I try to avoid a lot of talk till after the shoot. This doesn't mean I don't say anything, but I try to avoid conversations that take away from my concentration. There are two kinds of shooters; those who shoot for fun and those who shoot to win. If you are a "for fun" shooter, try to get in a group that feels the same way.

I feel that if you are competitive you should make an effort to shoot with your competition, instead of shooting with family or friends that you always shoot with and then turn in a winning score. I can shoot like a dream when not under the pressure of competition. So it can be a great advantage.

My brother told me a story many years ago that defines what I'm saying about serious competition. He was playing pool with an individual who was supposed to be very good at the game. While my brother and this guy were shooting they were laughing and having fun and my brother was



shooting as good as him. Consequently my brother bet \$25.00 on the next game. Almost instantly the attitude towards the game changed. The opponent's eyes became cold and there was no more laughter. He concentrated on every shot and won my brother's \$25.00 easily. There is a lot of attitude in archery also.

I've known many shooters who were capable of performing beautifully in a relaxed environment of say "stump shooting" or perhaps shooting a few targets with some friends. At a competitive event this same individual may go home shaking his head frustrated and looking for answers as to why he or she shot so very poorly.

I'm not a doctor but I suspect there are certain chemical reactions that may take place in the blood or the brain of an individual actually shutting down the ability to perform under certain stressful situations. I have through the years received numerous phone calls from individuals who would back up my assumptions. In the past when I have performed in some athletic events such as boxing or track and particularly events that require a degree of strength, I would get a rush of adrenaline and perform even beyond my expectations. The physical strength to draw a heavy bow of 80 or 90 pounds was never a problem in an environment where there was no pressure. Yet I remember one time during the middle of a competitive archery event where I was shooting a 70 pound bow and became so mentally frustrated half way through that I was not only incapable of shooting the arrow accurately but even became incapable of drawing the bow for lack of

strength and was unable to finish the event. The physical center is controlled by the nervous center. For instance, many of you may have known someone in your life who has had a mental breakdown. For the individual with a mental breakdown it may become unbearable to open an envelope or even get up out of bed. The physical exertion is just too much. After analyzing and looking at different types of individuals one might conclude that champions are born and not made. It is not my intention to make this article sound defeative in presentation, but to point out that for some individuals it's going to be much harder to perform with the bow and arrow and maintain a competitive edge when the pressure is really on.

I have tried myself to be competitive with the bow and arrow, at times with some success. However that success only led to anxiety in the event that followed. Once again I would find that my very success led to my biggest failure. If you consider yourself to be a very strong person with the mental and physical abilities to be a champion shooter you must learn how to control and channel these attributes or you may find your very strengths compounding to defeat you.

Now let's try to look on the bright side of shooting. I don't know of a shooting champion who hasn't had to work very hard to maintain the competitive edge against opponents. They've had

to practice relaxing. This can be done by deep breathing, visualization, and removing all negative thoughts of losing from their mind. They've had to develop their form to such a point of perfection that there is never a doubt in their ability to shoot a perfect arrow. They must believe in their equipment having not the slightest doubt that it is the best.

This would include their bow, arrows, shooting glove and even the clothes they wear. A shirt pocket that catches the string or a baggy sleeve that causes the string to strike it on release is sure to cause some irritation. I have seen shooters get rattled because they had cowboy boots on and slipped several times on the range.

Yes, being a top competitor takes more than just long hours of practice shooting the bow. Never

allow yourself to arrive late to the event. Always allow yourself time to maintain a normal, relaxed composure. Avoid discussing subjects that are inclined to upset you or subjects that completely capture your concentration. Think of only events or actions that amplify your confidence.

After reading all of this you may realize that top competitive shooting may not be your cup of tea. Going out every weekend to shoot for blood and try to stay in the top three places may only succeed in zapping the pleasure that is derived from shooting the bow and arrow.

My personal recommendation for those of you who do not care about competing or that competitiveness does not come easy is to leave the score cards for those who do have the will to compete. Just spend the time to enjoy the simplicity of shooting a traditional bow and watching the flight of the arrow.

Good Shooting.



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1996 bull elk taken by Tracy Hinton with a 47-pound longbow and a Ribtek Broadhead.



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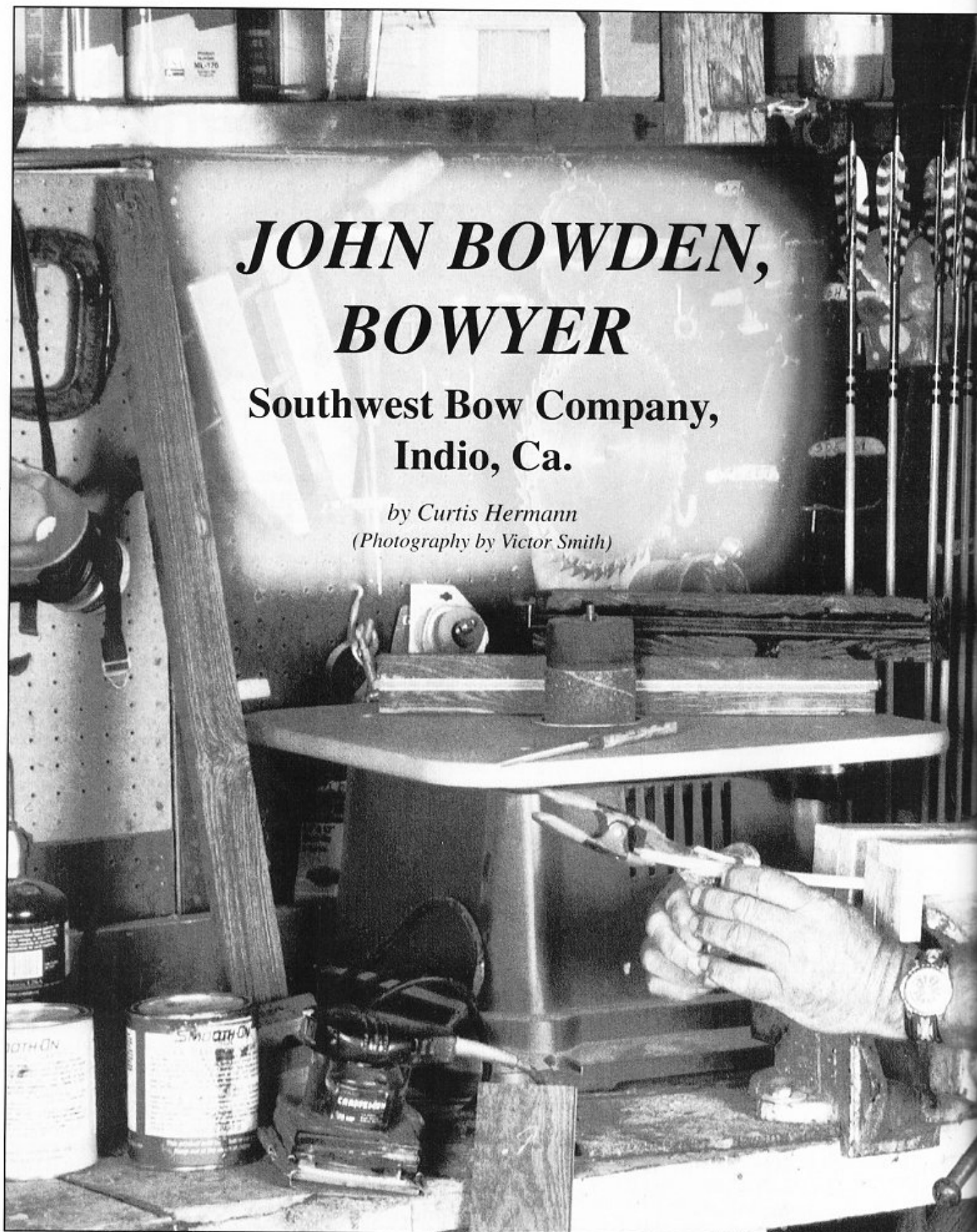
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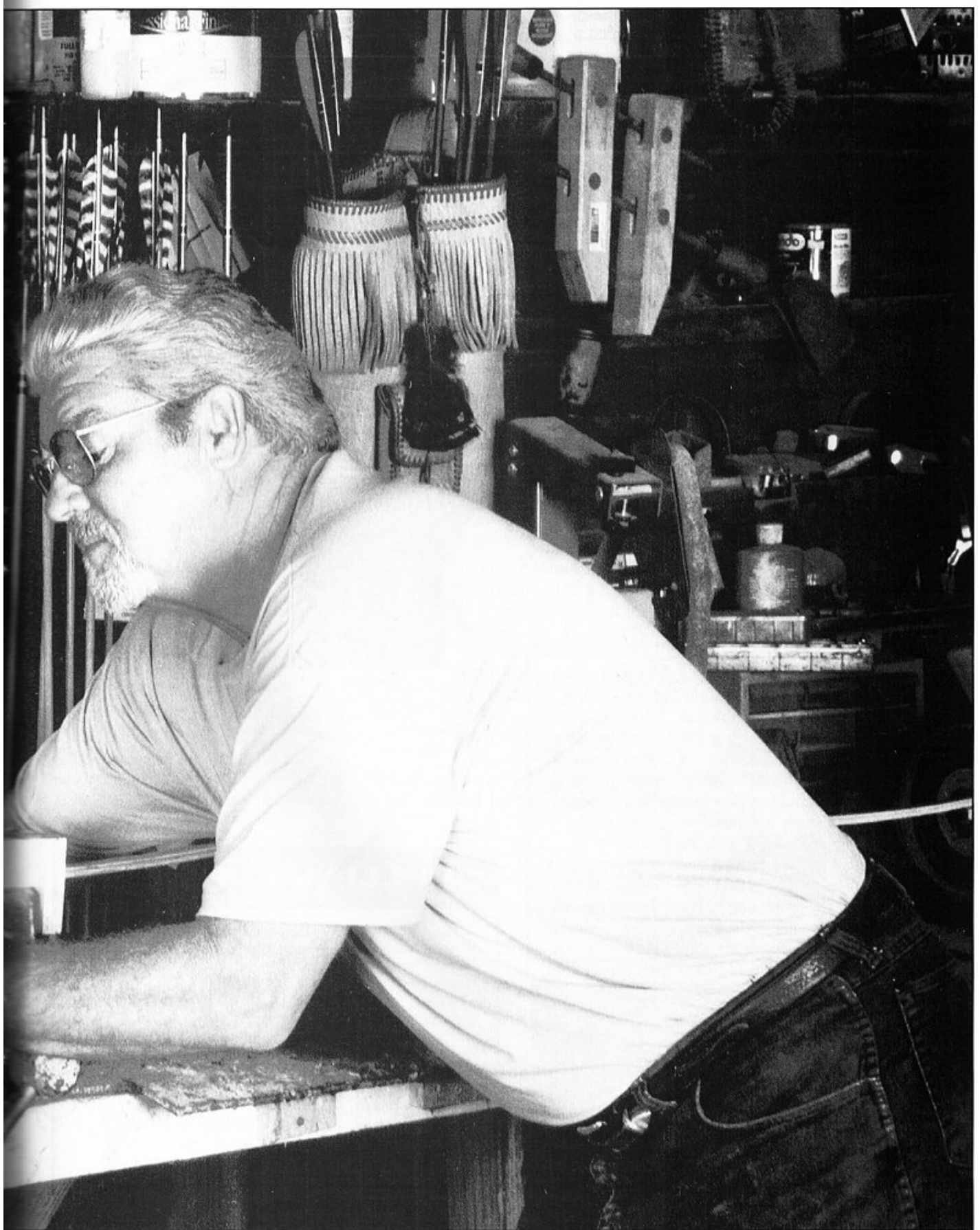
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JOHN BOWDEN, BOWYER

**Southwest Bow Company,
Indio, Ca.**

*by Curtis Hermann
(Photography by Victor Smith)*



John Bowden is a personal friend of mine! It feels really good to say it in this manner, if you become acquainted with John, I think you will share this feeling and make the same statement.

When John Bowden discusses archery and good times, he does so with what I call *John'isms*. John often states that "in archery, it's not the sport, but the people you meet and the friends you make that keep you in it." It is through the "truth" in this *John'ism* that I want to bring to you, the archer, the bowyer, the friend. When you have finished this article, I want you to feel that you know John, that John is your friend and that you both go back a long way. If I can do that, I know you will have gained from this acquaintance as I have, and when you actually meet John, it will be to shake the hand of a good friend.

Like most of us, John played with bows and arrows as a young kid and the fun never really went away. Stockton, California, was pretty important in archery in the early sixties and was home to the Stockton Bowman Hunters. Doc Smalley (the first inductee to the California Archery Hall of Fame) was the club President, and a young archer with a 52" Kodiak recurve bow, named John Bowden, was a new member. When John joined the Stockton Bowman Hunters, I don't think he knew that this was going to lead to a life-long love of archery, bowhunting and friends. Yet in six years with the Stockton Bowman Hunters, John had spent two terms as President, became acquainted with the likes of Roy Hoff and Hugh Rich and also became a competitive barebow shooter.

In those days, to become a champion, you had to qualify each step of the way. First you must become the regional "champ" just to make it to the sectionals. You then must qualify in the "top ten" in your sectional to go on to the state championships. There, grouping was with your peers, by handicap. The higher your placement, the closer you were to a starting position at the state shoot. In the late sixties there were four names assigned to target number one, Roy Baron, Chuck Long, Ben Rogers (later to become NFAA President) and

John Bowden. These were the four top archers in California. By the end of that competitive weekend those same four men had dominated the tournament the entire time. Roy Baron took 1st, Ben Rogers 2nd, Chuck Long 3rd, and John Bowden 4th. John stayed competitive in the barebow field for another five years, always learning something from each acquaintance along the way. One of those acquaintances was Ed Thompson who was the current National Field Champion and a bowyer. John learned a lot about bow-making by watching Ed Thompson's technique and learning from it. The idea of making his own bow now set solidly in his mind, it was only a matter of when he would begin. John, after all, was a furniture craftsman and a home builder and once the bow building seed had been set, you know it had to blossom in time.

The arrival of the 1970s found John in Billings, Montana. With the energy boom on, home building was a very busy way to make a good living for a man and his family. Now a member of the Billings Rod & Gun Club, John enjoyed the two, fifty-six target field ranges, but had little time for competitive archery. However, he was not about to pass up hunting in Montana. Having only moderate success hunting was very good for a man with very little free time to spend in pursuit of game. But the "good" years were all to soon to be over.

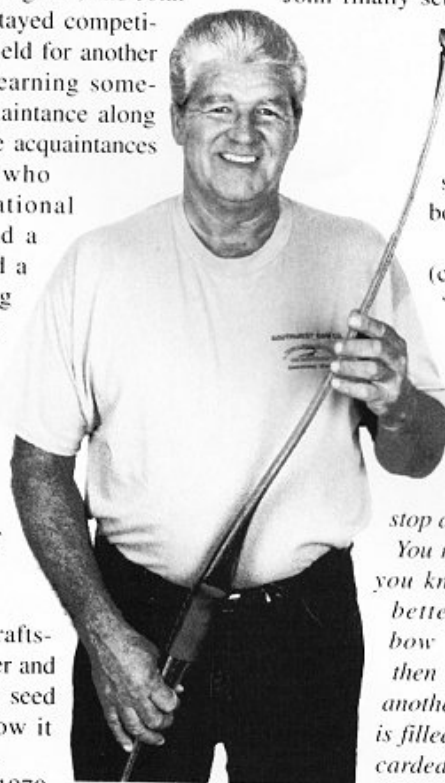
When the bottom dropped out in Montana, John had to return to California where the economy was once again on a roll. Finding himself in the southwest desert area of Palm Springs,

John finally settled in the town of

Indio and decided it was time to take another turn in archery. It was time for the seed to sprout forth a bowyer.

"You know Curtis," (came the John'ism) "you just can't make one bow and quit. Twenty-Five thousand years ago when man made the first bow, he couldn't stop and you can't today. You make that first one, you know you can do it better next time. One bow leads to another, then to a new idea and another, until your shop is filled with old and discarded molds. Each one reminds you that each new idea only leads you to the next one."

I think that John's ideas are very good and as the owner of a "Classic Hunter" you might think, I'm a bit prejudiced. So I'm



Bowyer, John Bowden holding a "Roadrunner" model longbow.

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John Bowden (left) and the author (right) in the Southwest Bow Co. display, telling a few "big ones."

going to let a few others speak of owning and shooting a John Bowden bow.

I always tell Jerry Greninger that "today, I'm going to beat him." Jerry never finds me to be much of a threat, someday I hope to change that. Jerry owns eight John Bowden longbows. Jerry told me, "I've used a Recurve for 25 years in hunting and competition and I've had a good deal of success at both. Two years ago, I picked up one of John Bowden's Longbows and have shot nothing else since. The stability and balance are unmatched."

During the past two years I have won both state and local tournaments with a Bowden Longbow and I look forward to many more years of success shooting them."

I asked a few other archers about Southwest Bows, here's what they had to say: "John Bowden's bows are smooth to draw, fast to shoot and are works of art....true collectibles. Put one in your hand and see for yourself. I currently own nine of them!"—Bobby Bass - Hollywood Stuntman, Archer and Bowhunter.

"I've been competing in archery for 12 years. I have owned and used many different makes of bows. Since receiving my Bowden Recurve about 18 months ago, I can honestly say that its as good as any that I have ever shot and better than most. I have had good success at tournaments here in California and I expect to win many more tournaments with a John Bowden recurve."—Leroy Cambell, competitive archer.

"In July of 1994 using a Bowden Longbow I shot a Moreno Sheep on Santa Cruz Island, CA. The sheep trav-

eled less than 30 ft. after the shot. The bow performed beautifully, the stability, ease of handling and its ability to cast a heavy hunting arrow with speed and accuracy makes this Longbow an excellent choice for any bowhunter. I love mine and have since purchased two more."—Jerry Pederson - 3D competitor and Bowhunter.

"You know Curtis," said John, "In this fast moving, ultra competitive world we're living in, it is really refreshing to be involved in this business, where so many of the guys in it are willing to share their secrets and knowledge. In my case, when I was first getting started, I literally spent hours on the phone with Dick Robertson. He was patient and extremely helpful in sharing his knowledge. Randy Dehnel of "Saxon Archery" and Ted Fry of Raptor Archery, all were extremely helpful to this budding bowyer. To this day I still spend a lot of time with Jerry Barr (bowyer of Thunder Mountain Flatbows) of Valley Traditional Archery. We share ideas and experiences, problems and successes. All of these guys and many more too numerous to mention, have been helpful to me and are a part of my bows. With the friends I've made and experiences I've shared, I feel confident that today's bowyer's are as good or better than the generations before them."

"The time spent in making bows is minimally profitable in the terms of money, it does how-



Bow tips: Left is a side view of the "Roadrunner" model, Right side is a "Signature" model.

ever, make one wealthy in the terms of satisfaction. The creation of the bow as art and of the connection between bowyer and the new owner and the bond of that archer and his bow. Well, it just makes you want to build the next one."

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John currently makes three models of longbow, the "Classic Hunter," the "Roadrunner," and the "John Bowden Signature."

The "Classic Hunter" is of the classic "Howard Hill" design with a straight riser and the outer 75% of each limb with some reflex or pre-load, as some like to call it. This bow, like all of John's bows, consists of four laminates in the limb core with clear Gordon glass on the back and the belly. The Classic Hunter's riser is 16 inches in length with very thin fade outs. John says that he likes "to be able to almost see light through that last inch of fade out," as this is where the most stress is in the entire bow. The riser also has a slot or tunnel for the arrow's hen feather to pass through.

The "Roadrunner" is a reflex-deflex style that is preferred by many of today's traditional shooters, who feel that this style is a little bit smoother and faster with less hand shock. That being said "I personally feel that a smooth shooting bow is more a matter of exacting limb balance or tiller than design." The "Roadrunner" has an 18" riser with three tapered and one parallel laminate. One tapered laminate is reversed to prevent "whippy" ends. The "Roadrunner" (as well as his Signature model) have John's custom limb-tip overlays. These are both a beautiful piece of artwork as well as being practical. The tip overlays add strength, beauty, and if you "are still one of those who string bows with the push/pull method," it will give your left foot a better grip and a little extra leverage. These beautiful overlays have concerned some archers as to whether the extra weight would cause a slower arrow. Our studies, and those of Mr. C.

N. Hickman, engineer (see notes at end of article) show that it does not have any detrimental effect. Actually it can enhance the performance of a perfectly tuned, balanced and matched bow and arrow, especially when shot with a good consistent release. Check the advertisements on today's modern compounds, they now add weights near the ends or on the cams to enhance bow speed.

The John Bowden "Signature" model is of the "Roadrunner" design with three tapered (one reversed) bamboo laminations and a parallel maple lamination and one bias-ply interior glass lamination in red.

John's absolute favorite bow wood is bamboo. He says, that as far as he can determine, bamboo is an almost perfect bow making product. The fibers run con-



Alejandro Ahumada, winner of the 1998 California Southern Sectional Traditional Tournament in Los Olivos, California, Charmerlain Ranch, shooting a Southwest "Signature" bamboo Longbow and Victor Smith Arrows.

tinuous for the full length of the bow, making it about as tough as you can get.

John spent two years developing the "Roadrunner" and "Signature" models. "I started with a more radical design, it



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shot real fast and smooth, however it was sensitive like a recurve. So I began to modify the design. Four bow forms later, I felt, I had a bow of better than average speed that was smooth to shoot and still had the forgiving nature of a longbow. This is a bow that is easy to maneuver, draw, and shoot, and it will become a part of your soul."

Each bow from Southwest Traditional Bow Company comes with a two-year warranty against defects and workmanship. In the rare occasion that a bow develops a problem, "I make it a top priority to repair or replace that bow" and get the archer back into the business of shooting arrows again.

John is a compilation of thirty years of friends that have made the sport what it is, he has taken the best of each of them, and passes them on to you at each meeting. He does this with a warm greeting, a firm handshake and a true love for archers and their sport.

John brings his wares to many of the traditional tournaments in the southern California area. He also spends a great deal of time getting to know and sharing

knowledge with each archer that stops by to look over his bows. On top of sharing his wisdom of archery and bow-making, John has donated many a bow to shoot raffles, to help support archery and local clubs.

I have come to realize that one cannot spend 30 to 40 years in archery without having a tremendous impact on the outcome of this sport. You will be impacting the personal lives of those involved just as John has and continues to do. Look him up, shake his hand, give him a call, you'll be glad you did! And do shoot one of his bows, it can add real enjoyment to an archer's world!





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NOTES:

* The "Sylvan Archer" 1931, *EFFECT OF WEIGHT AND AIR RESISTANCE OF BOW TIPS ON THE CAST OF A BOW*. Pg. 47-49. Chronograph tests were made that included up to 400 grains on the bow tips and up to 8" square (2 x 4"sq.) plates to measure air resistance at the bow tips. Maximum effect was not noticeable on the added weight. Only 1.5 percent loss of speed (about 1/2 of 1 foot per second) was detected with 8 square inches of wind resistance on the bow tips.

This same weight (400 grains) added to the arrow weight (center of the bow string) however, reduced speed by 42 fps or 25%. Conclusion: enjoy your beautiful hand crafted tips and shoot a great arrow!

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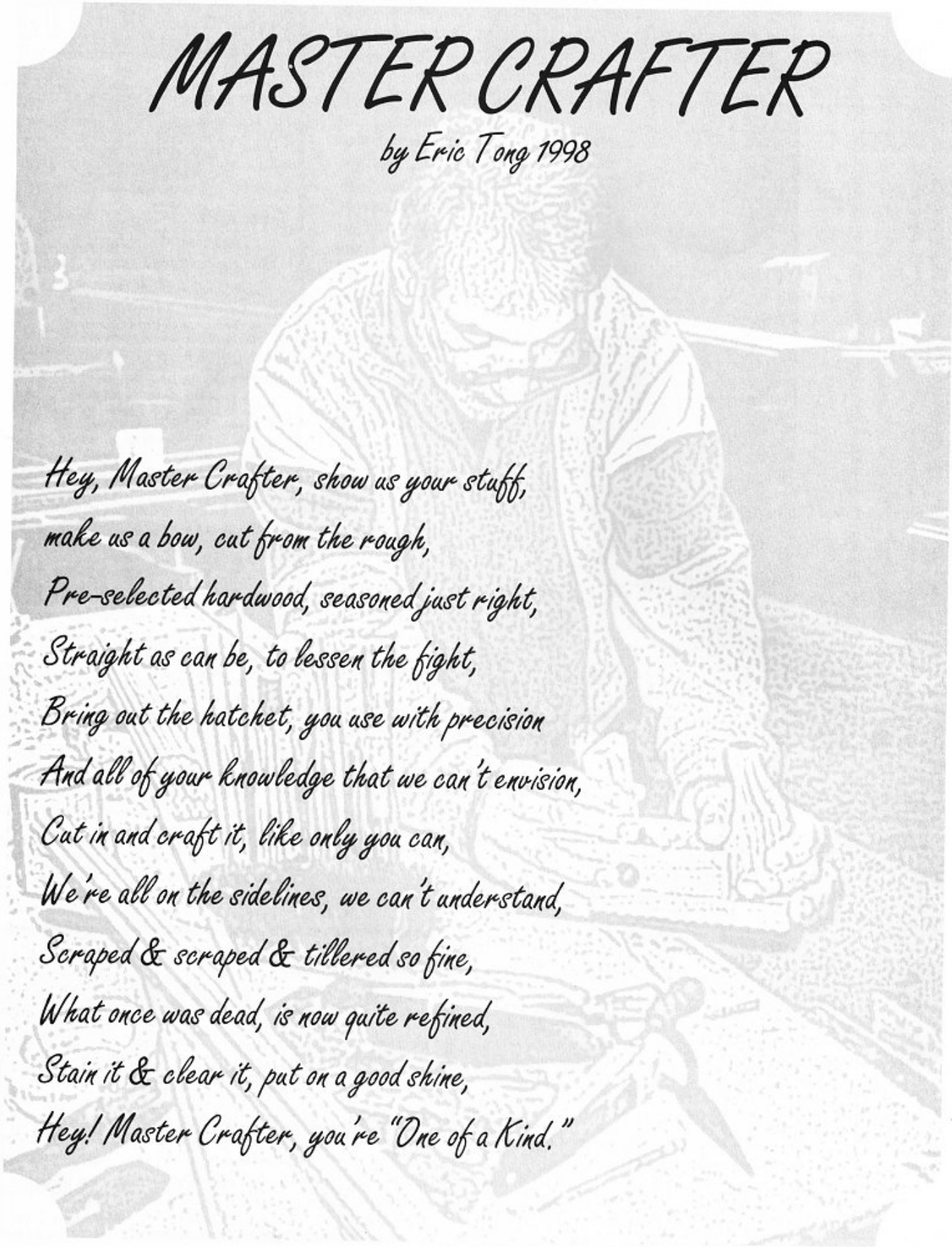
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Genesis 1:1
John 3:16
Matthew 5:16

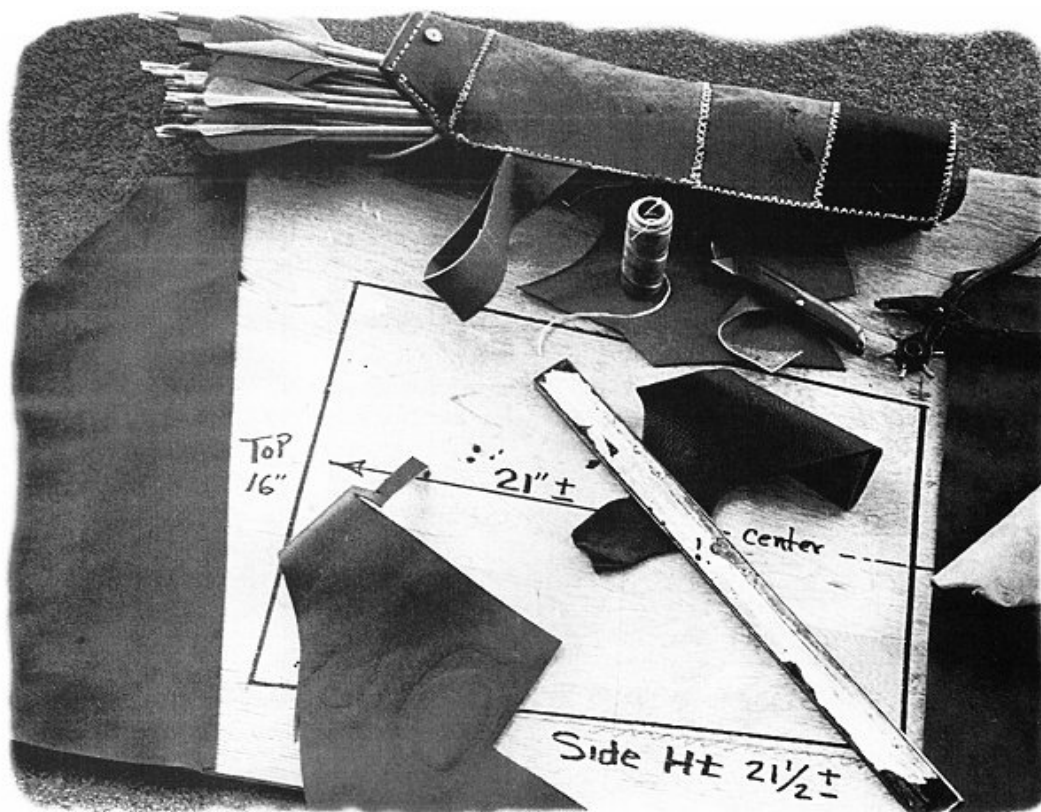


MASTER CRAFTER

by Eric Tong 1998



*Hey, Master Crafter, show us your stuff,
make us a bow, cut from the rough,
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Cut in and craft it, like only you can,
We're all on the sidelines, we can't understand,
Scraped & scraped & tillered so fine,
What once was dead, is now quite refined,
Stain it & clear it, put on a good shine,
Hey! Master Crafter, you're "One of a Kind."*



THE PATCHWORK HIP QUIVER

by Jack Jeffers

Most quivers that you see look as if they came out of a leather shop specializing in uniformity. There is little or no character. Each looks essentially the same with clear commercial overtones and standardized features. I wanted something different, so I decided to make a quiver that would be functional, but uniquely my own.

Before beginning my project, I was chatting about my new patchwork concept while out on the roving range. I told the fellows that I had an idea of how to make a new quiver unlike any they had ever seen. It was going to be made from cuts and scraps of leather that most saddle makers or shoe repairmen would toss into the refuse barrel. Those statements drew strange looks of doubt, so that was my last mention of what was to show up on the range a week or so later.

If you are strictly a back-quiver person you can still apply the same patchwork technique to make your own personal design. I prefer the hip/belt concept because I can see the arrows and slip them out of the side area with little visible motion. You can be quick, quiet, and efficient, and that's probably one of the reasons that hip quivers of one sort or another have been around for thousands of years. None of this awkwardly sneaking your arm over the shoulder stuff, hoping your fingers will find the exact arrow you want for that critical survival shot.

The quiver shown in the illustration is my finished project and is what I now dub the "Patchwork Quiver." Achieving perfect fit for a quiver is one thing. Adding some real character, your personal style, is part of what traditional

archery is all about. You have the freedom to experiment and to incorporate those little extra creative touches that make your end product unique and different from all the rest.

To begin my project, I visited two businesses that use a variety of tanned hides: a saddle and chap shop and our local shoe-repair shop here in Lander, Wyoming. Either of these establishments could have provided the material I needed for my project. A leather store or a vendor at an arts/crafts fair, a Renaissance festival, or a re-enactment also could supply the necessary components.

I selected the saddle shop because of the wide variety of scrap material they had on hand. The charge was \$1.50 per pound and for \$10.00 I walked out of there with enough leather cuttings for three or four nice quivers, plus leftovers for a number of arm guards and a small belt pack for nocks, points, strings, and other assorted spare parts. I felt that I had made a real haul.

The leather I bought ranged from light tan to dark brown and I used several different shades. Those are personal choices you make when you see the pieces laid out before you. What really caught my eye and my imagination were several scraps with striking cattle brands still embedded in the hide. I used those pieces and was able to stitch different brands in to my overall design. That gave me the idea to burn my own brand into a bare spot as my final signature to a job well done. All I needed for that was a small soldering iron.

To lay out a quiver, you need a piece of plywood or a tough piece of cardboard large enough on which to sketch the

overall form. The first step, however, is to cut the quiver out of a large piece of paper or thin flexible cardboard so you can shape it and size it to suit your personal taste. Taking some time with this step will make a better, more satisfying end product. Then with a marker, you trace that flat template on to the board. The plywood serves as your cutting board.

My quiver dimensions are 21 inches deep with a 13-inch bottom circumference and a sixteen-inch top circumference. I like my arrows to stick out so they are plainly visible and readily accessible. In addition, I worked in an open, V-shaped slot at the top, which enables me to reach down and easily extract an arrow at a comfortable angle. Remember that I experimented with these dimensions while working with my paper model quiver first. When you are sizing your quiver, keep in mind that I use 29 to 30-inch arrows. You may have to increase or shorten the overall measurements a bit to suit your reach and your shaft length. Also, some archers I know prefer to keep their arrows totally within the quiver shell.

To prepare the main body of the quiver, I took the scraps of leather I wanted to use and cut them so they

would make an exact fit with one another. Then I stitched those individual hides together to make the equivalent of one continuous piece of leather sized and shaped to fit my template drawn on my plywood board. When the body of the quiver was ready, I punched the holes along the sides and bottom to prepare for the final stitching.

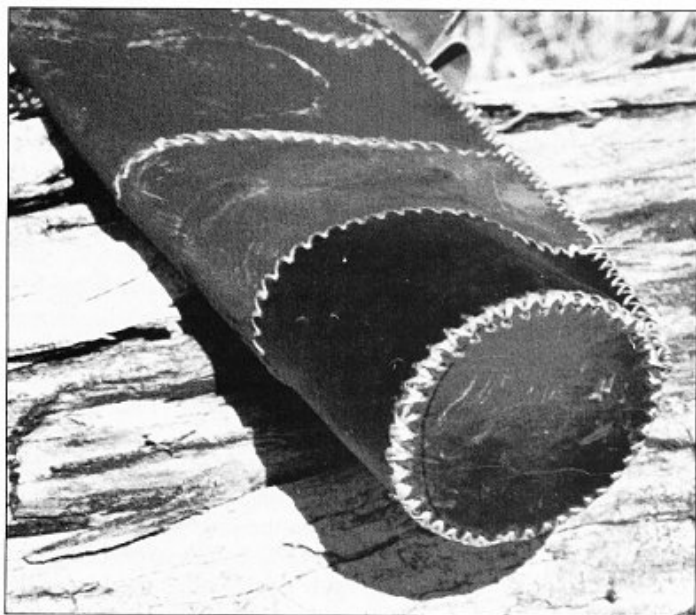
Having a stiff bottom is important for me, so I laminated two thick leather cuts together with contact cement before punching any holes for lacing the pieces together. An easy way to form the bottom is to cut a piece of string that is the same dimension as the circumference you've chosen and then lay it out into the circular shape you prefer. I like a bit of an oval. Be sure to cut the leather slightly larger than the actual circumference so you can allow for exact sizing.

After trimming the bottom to the size and shape you desire, you punch the holes. Then you begin stitching that piece to the main body and you work your way up the side to the top. Some may do it in one long continuous stitch. I actually prefer to take it in two separate steps. First I double-stitch the bottom,

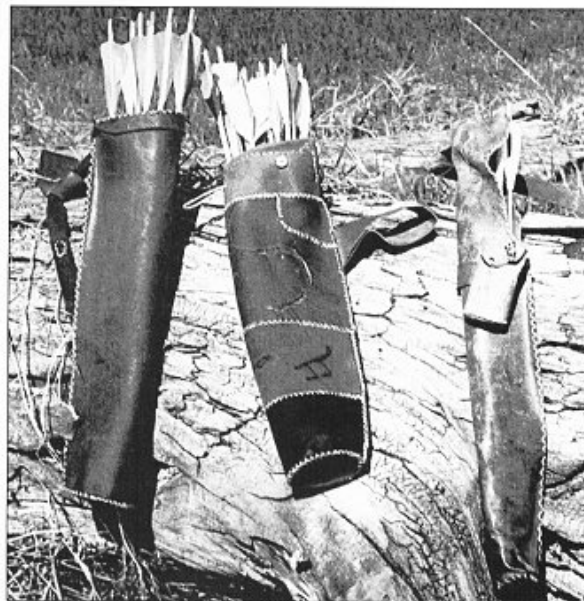
which receives the most wear and tear, and then I do a long full seam up the side.

Before finishing the side seam, fill your quiver with 15 to 20 arrows. That weight and feel will help you select a balance point near the upper third of the quiver for your belt loop. The angle and location of the loop will vary depending on the individual, so you need to study this for a while until you are satisfied with the exact hanging position. Then, you can sew the two ends to the loop into the main seam as you finish the side lacing.

At the top of the quiver, I rolled the edge of the leather over and punched and then stitched it firmly in place. That significantly stiffened the upper edge, which helps the quiver retain its shape. As a final added feature, I worked in a divider made from a short, broken piece



The bottom is always the most difficult for me, but a picture is worth a thousand words. I used a double bottom, making it very stiff so it will retain its shape. I use plenty of stitching because this is the area that receives maximum wear. Pull the stitches up tight and double them if possible.



Hip quivers come in a variety of shapes and sizes. The most common, perhaps, is the plain, medium-sized one shown at the left. It is one of my more recent designs and is best suited for target shooting and limited roving when only about a dozen arrows are used. The new design (center) is larger than it appears and holds from 18 to 24 shafts. This includes at least four rubber blunts and several modified flight arrows. The divided compartment enables me to keep the filed points separated from the mixed breeds. On the far right is an early design dating back to the late fifties. It is a partially closed model, which I never cared much for; however, historically the concept goes back hundreds of years. I find it cumbersome because of its added length, but it works fine if used in flat open fields.



The new design rests comfortably on the hip suspended by one double strap that becomes a belt loop. Some might say that a hip quiver is difficult to get through brush and thick forests. On the contrary, I find it to be quite easy to navigate through rough terrain. It's a lot easier to guide this design through a thicket than it is to continually shift a back quiver to prevent the arrows from hanging on vines or low limbs. Note the little loop of rawhide near the top of the quiver. This is for hanging the quiver on a peg when you retire for the day. It hangs vertically and enables the arrows to spread apart, thus preventing the weight of the shafts from pressing any of the feathers out of shape. Today's feathers are not nearly as tough as those we used years ago. This illustration shows the top of the quiver with the divider shaft. You can see how conveniently it separates the arrows.

of 11/32-inch shaft. The divider enables me to keep my arrows in two separate compartments, and inserting it was actually a fairly simple task.

First, I drilled a hole through each end of the arrow shaft perpendicular to the grain. That became my stitch hole. Then, I wrapped my divider shaft with artificial sinew to add a bit of strength and color to the finished work. I just happened to have a couple of antelope-horn buttons that were gathering

dust on the shelf, so I used them to anchor the outside stitching. Rather than having a constant pulling on the body of the quiver, the buttons absorb some of the stress.

Starting from scratch, it took me only four hours to make this piece of equipment. That included fitting and sizing, the board layout, punching and stitching. Everything! As you are making your own quiver, you may think of little decorative, but functional, extras

too. Mine are just some of hundreds of little additions that make traditional archery both an art and a craft. To me, it's as much fun and satisfaction to make my equipment as it is to use it. When you see that arrow arc across the open sky or flit between a few tree limbs en route to a distant target, you have the thrill of knowing that you are the archer and the craftsman that made it all come to life.



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Cardio-Fitness for Bowhunters

By Price Ebert

If you live in the mountains, you may want to skip my article. If you play and hunt in the mountains on a part-time basis, this article is a must read. It has long been my observation that almost everyone has a misconception about what cardio-vascular fitness is. Cardio-vascular fitness to a bowhunter is LUNG CAPACITY. I'm sorry, but you're not going to gain any lung capacity jogging. I don't care if you can jog ten miles. Now don't get me wrong, if you can jog ten miles your not going to have a real hard time hiking around looking for game and sign, until you get an old bull to answer your call. You haven't seen him yet, but you just know he's the cock o' the walk. Now he wants to see if you're really are an elk, and off he goes.

A jog isn't going to do you much good. You're going to have to run your buns off to stay close. Plus your going to have to keep calling. Okay, now you've convinced him your a little pest, and he's coming back to kick your rag-horn butt. Are you going to be able to control your breath and pull your bow to anchor? If you live and work in a place under 5,000 ft. above sea level that's pretty tough. Imagine again, hunting sheep or mountain goat. That's even harder. To train for a hunt in the high country takes iron will and guts. This is the hardest training I do, so, if you are over forty I highly recommend you

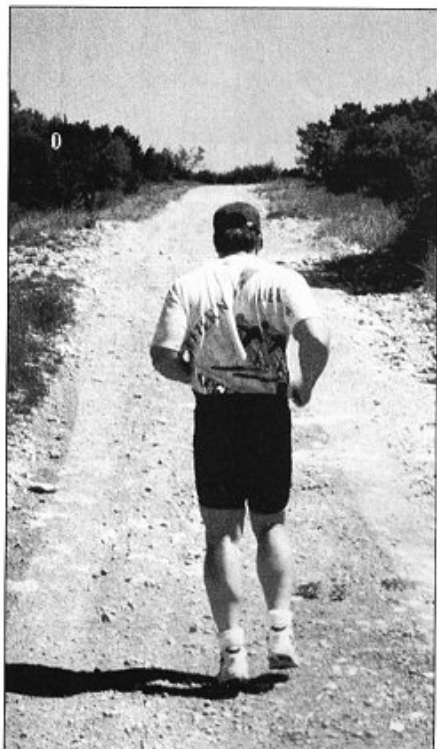
consult your doctor before you plan a trip to the mountains, or attempt this program.

This type of training is referred to as "interval training." Basically, the effect we are looking for is lung burning and suckin' air like your life depends on it. Obviously, you need to be in pretty good shape before you start. You should at least be able to run four miles in 44 minutes just to start interval training.

While you are in the jogging phase you should also be doing some "transitional weight training" to begin expanding your rib cage, and hence your lung capacity. Start by doing "breathing squats." Just writing that hurts. The good news is you only do one set. And because they are so hard, save them for last. Take your back squat ten-rep maximum, and do it twenty times. After the tenth rep, take three super long deep breaths (through your mouth, through your nose, I don't care) do a rep, and repeat this for the remaining nine reps. You should always do your breathing squats in a cage, or, with some kind of support to catch the weight if you collapse. Don't trust someone to catch that kind of weight, when you're in that position and condition. Once a week is enough. You will be amazed at what happens to your chest measurement. You should be doing about eight to ten sets of two different calf raises at this time.

Interval training should take the same amount of time as a normal aerobic workout (30 minutes minimum). The twist is the way we pump up the intensity. Let's use running as an example.

Run hard for one minute, then power walk for one minute. (Power walking is where you stretch out your



"Sprinting the hill." Sprint up the hill for all your worth, then carefully walk down and do it again.

stride and really pump your arms—speed walking.) The object is to get where you can sprint for three minutes, power walk for one minute, sprint for three minutes, etc., for 30 minutes. Drink all the water you can in the process and lots of "real" fruit juice afterward.

There are some natural Interval Training sports, boxing, for example. Specifically, working the heavy bag for 10 to 15 three-minute rounds. It's great for the shoulder muscles, and eye-hand coordination. It's not bad for the lungs and feet either. When doing rounds on the heavy bag, always wrap your hands. Use the long "Mexican Wraps." Be sure to interlace the fingers, and wrap the wrist well. Never, try to kill the bag. Don't hit it as hard as you can. Instead, work on form and speed. The power will

take care of itself. If worked improperly, the heavy bag can eat up your shoulders, and stress fracture your hands.

Jumping Rope lends itself nicely to Interval Training. Jumping Rope gives you a good all-body workout, especially your calves and shoulders. Try to work up to 30 minutes of alternating five minutes of brisk rope jumping and one minute of Power Walking.

In my opinion, rowing is one of the best archery exercises. Try to work up to 30 minutes of alternating five minutes of sprint rowing (over 30 strokes per minute), and one minute of easy rowing (under 20 strokes per minute).

I don't like stepping machines, with one exception. The "Gauntlet" by Stair Master. This machine is actually a mini escalator. You set the pace and the

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Working the bag is one of the few "high-energy" workouts that is as fun as it is effective—great exercise for the heart, lungs, legs, and especially the shoulders. Don't hit it as hard as you can. Instead, work on form, speed, and endurance. The power will take care of itself.

duration. The new ones probably have a program for interval training. This machine has no conscience. If you fall behind, you fall off! Wear the kill switch, if you don't it might eat your face. Not for the meek, this is the hardest machine I ever tangled with. Try to work

up to 30 minutes of alternating three minutes on the machine (work your way up to at least 60ft. per minute), and one minute of 30ft. per minute.

I like climbing machines. The "Versa Climber" may very well be the best cardio machine around. The Versa

Climber is a treadmill ladder. Your whole body is involved. It burns more calories than anything I've ever seen. If you are lucky enough to have access to a Versa Climber, set your goal at 30 minutes of alternating 90-plus ft. per minute for three minutes, then one minute at 60ft per minute.

1996

The hunting in Nevada was tougher than any year I could remember. When it came time for the one and only shot of a long, difficult season, my Wilderness longbow put the arrow right where I was looking!

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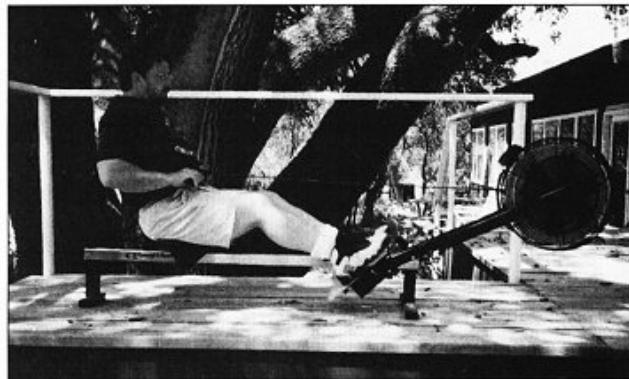
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ROWING: The "catch"



ROWING: The "stroke"

These are only a few of my favorite cardio exercises. Stationary bikes, treadmills, health riders, and mountain bikes are also great for interval training. All these will help prepare you for a mountain hunt. But, if you want to be in peak shape for your mountain hunt, you have to sprint hills. Stadium bleachers are a great alternative. Walter Payton considered this his secret training weapon. He was so fanatic about sprinting hills, that he bought a home with a steep hill in back of the property. Sprint up the hill for all your worth then carefully walk down. The actual sprinting up the hill has very little impact on the knees. However, coming down really bangs up the knees if you're not careful. My standard practice is make as many trips as possible. I stop just short of getting dizzy. For me that's when I start to retch (gross but very effective). I'll run that number of sprints twice a week. The next week I'll add one sprint, etc., for six weeks.

During my six-week mountain training regime I work five days a week and take Saturday off. On Sunday I shoot a round of what I call "Ultimate 3D." Not everyone is going to have access to the large amount of property needed for an Ultimate 3D course. If you are dedicated you will find a way. Set up a 3D course with the targets at least 100 yards apart. They don't have to be 3Ds, any target will do. The entire course should be at least a mile. There should be obstacles to hurdle and climb over if possible. The point is to simulate real mountain hunting situations. You not only shoot for score, but for time.

Let me show you what one week's training looks like:

MONDAY MORNING:

30 minutes Interval Running
EVENING, Archery practice followed by "Pulling Big Bows" workout.

TUESDAY MORNING:

30 minute Interval Jump Rope
EVENING, 30 minute Interval Rowing

WEDNESDAY MORNING:

Sprint Hill (Bleachers)
EVENING, Archery practice followed by "Pulling Big Bows" workout.

THURSDAY MORNING:

30 minutes Interval Cycling
EVENING, 10 rounds Heavy Bag

FRIDAY MORNING:

Sprint Hill (Bleachers)
EVENING, Archery practice followed by "Pulling Big Bows" workout.

SATURDAY:

Rest all day

SUNDAY:

Ultimate 3D

Water. You can't drink enough. You should be in the habit of having water with you at all times before you go on your mountain hunt. Cramps are caused by dehydration. Getting a cramp miles from camp by yourself is pretty scary.

You could sprint hills or bleachers every morning if you're really serious. Do this for six weeks prior to your mountain hunt, and you'll be a hunting

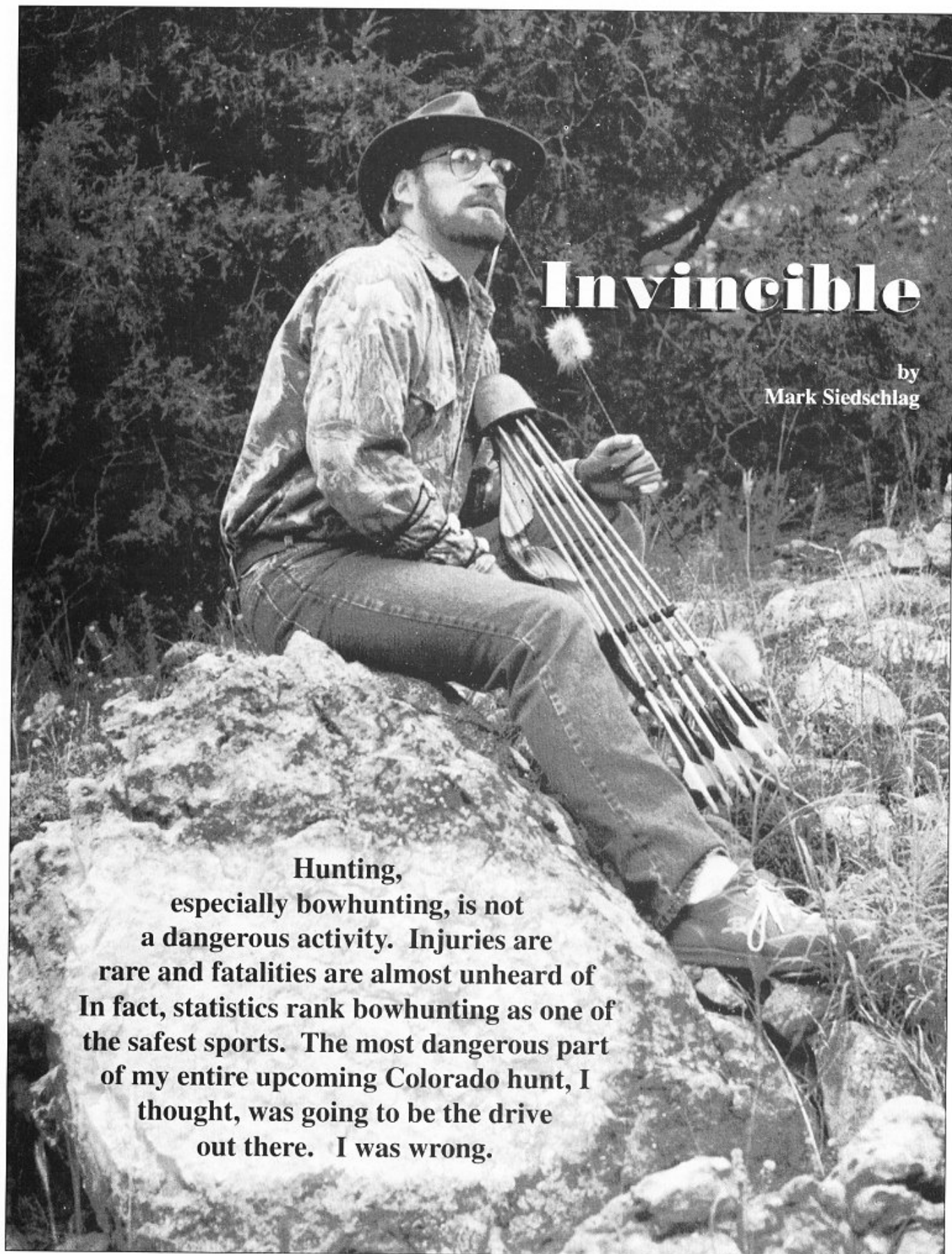
machine. Try to get to camp, or the mountains you'll be hunting a couple of days early, and walk around a couple of hours in the morning and afternoon. If your lucky, you might get some action the first day. Don't be surprised if you wake up very sore the next morning. Get up and hunt it out. This will give you confidence and toughness you'll need to pack out that honkin' rack, cape, and that neck quarter!



Authors Note:

In my last article I described an exercise, "Power Clean and Press." In that description I told you to return the bar back the way it came, stopping it just below the knees. Well, recently I worked up to a poundage exceeding my body weight. In the process of returning the bar in the prescribed method I injured my hip, back, and elbow. I recovered in a week, but that was a most uncomfortable week.

Therefore, I highly suggest you begin dumping the bar from the clean position. In other words, after returning the bar from the press position to the shoulders, push the bar away from you and allow it to fall to the ground, under control. By that I mean hold on to the bar to keep it level, and keep it from bouncing back against you. You will need an adequate lifting platform or bumper plates. Start using this technique when you get over 135 pounds.



Invincible

by
Mark Siedschlag

**Hunting,
especially bowhunting, is not
a dangerous activity. Injuries are
rare and fatalities are almost unheard of
In fact, statistics rank bowhunting as one of
the safest sports. The most dangerous part
of my entire upcoming Colorado hunt, I
thought, was going to be the drive
out there. I was wrong.**

It was my second trip from my home state of Arkansas after the mule deer in Colorado, but this year my best friend Ralph was going to accompany me, making his first hunt in Colorado. We were going to team up with my uncle Chuck and his friend Steve, both from Wisconsin. The anticipation of this hunt built to the point that it was impossible to concentrate on my job, causing the last few weeks of summer to drag by. I had a feeling this hunt was going to be special right from the start.

The first two days at our alpine camp lived up to all expectations. The weather could not have been better with clear skies and temperatures in the 60s by day and 30s by night. Everybody was seeing deer and nobody was complaining. Day three again broke clear like the rest, with no sign that things were soon to change. Day three also brought visitors to our camp. Two elk hunters passing through about noon thrilled us with stories of the huge bucks they had seen near a small park just a few miles from camp. I knew the spot and decided to take a look. Ralph and Chuck also wanted to give it a try and plans were made for the evening hunt. Ralph and I decided to walk down to the park taking separate routes and hunting as we went. Chuck, with his arthritis, decided to drive Ralph's truck down to the park, that way we could hunt right up till dark and all ride back in the truck.

We departed right after lunch. I remember a couple of small bucks I encountered early in the hike, but my attempt to stalk into bow range was unsuccessful. The terrain was much steeper than I anticipated and I soon began to work up a sweat as I struggled up and down and then back up each brush choked drainage. I was moving at a hurried pace, wanting to reach the park in time for that prime last two hours of daylight. As the afternoon wore on, I continued working my way to my destination, crossing more drainages that were choked with more deadfalls. Exhaustion dragged me down and I found it difficult to concentrate fully on hunting anymore. I just wanted to reach the park and the waiting truck. I was sure it was just over the next mountain.

Overhead the skies were darkening, but I paid them little notice. By late afternoon they opened up, pouring down rain and soaking my thin cotton jacket and shirt. I was wet to the bone and found little relief under the branches of a large spruce tree. Exhausted and cold as the temperature dropped, as well as soaked completely through, I began to shiver uncontrollably. I was shaking so hard that I found it difficult to even walk. I pressed on in the rain hoping that my exertion would warm me back up.

As I continued I noticed an occasional white flake mixed in with the rain. After I crossed one more ridge, it turned completely to snow. Heavy wet flakes dropped from the sky turning the ground a slushy white. My wet feet ached from the cold. Fatigue and slippery footing slowed me down as the thickening darkness added an urgency to reaching my destination. I had one more steep ridge to climb and then it would be downhill to the warm truck. That last climb would turn out to be the most difficult of all.

Darkness, fallen trees, and slippery footing turned the steep ridge into an obstacle course. Halfway up the ridge I lost my footing and slid back down about twenty feet on my right side wedging both my legs under a fallen spruce log. I was stuck tight, scratched, and bruised, but nothing was broken. It took several minutes to work my legs free, during that time I began to shake hard again and had a difficult time coordinating my muscles. I never stopped shivering the rest of the way up that ridge, my body refusing to warm up. I could no longer even feel my feet.

It was at this point that I hit what marathon runners refer to as the wall. My energy was drained, I had little left. Several more times I fell, losing my bow at some point, but I would not realize it until the next day. All I could think about was reaching the top. Doubts crept in and for the first time I realized how serious the situation had become. Death was a real possibility. I was so cold I was losing any feeling I had in my extremities. Any movement was difficult.

I finally clawed my way to the top, flopping on my back into the wet

snow. I laid there on my back for some time looking up at the blackness, just relieved to have reached my goal at last. I remember seeing the large snow flakes, instantly appearing out of the darkness just before they hit my face. I was just going to catch my breath for a minute before I continued on. I had made it, I thought. It was then that I realized that I was no longer cold, in fact, I felt warm and calm. The pain and the panic had left as well as the shivering. I felt sleepy and just wanted to lie there staring up into the night at the falling snowflakes.

I was a trained park ranger and knew about hypothermia. I was aware of what was happening. I had to act immediately, knowing that my ability to be reasonable was already slipping away. Death was close now and I knew it. Still, it was almost impossible to make myself get back on my feet. Getting up was even harder than climbing that last ridge. It was the thought of my wife and family that finally gave me the determination to get back up and continue.

Meanwhile, Ralph and Chuck were at the truck waiting my return. My tardiness and the accumulating snow was causing a concern. They were running through their options and couldn't decide if they should continue waiting or if one of them should go back to camp for the lantern and start the search. It was now over an hour past dark. They were passing the time telling stories, trying to take their minds off the rising concern that was tightening in their stomachs, that helpless feeling of knowing in your gut that a friend is in trouble and there is nothing you can do to help.

I don't remember much of what happened next. I was close, maybe only a hundred yards from the truck. I don't remember stumbling into the fence, but the noise it created caused Ralph and Chuck to investigate. Ralph is a fellow park ranger and trained as a first responder. His quick actions, no doubt, were the reason that I am able to tell this story now. I was slipping in and out of consciousness and once, in the truck, I passed out and did a nose dive into the dashboard causing my nose to bleed. It was the only part that suffered any lingering pain from my ordeal. The nearest hospital was an hour away in ideal driv-

ing conditions. Snow covered mountain roads in the dark were not ideal. Camp was only fifteen minutes away and they decided to take me there. With wet clothes stripped off and lanterns as well as a Coleman heater aimed at me, I slowly began to come around. Hot liquids were poured into me, but I was shaking so bad that I spilled as much as went in. All night they worked on getting me warm. Besides the heater and the lanterns, plastic bags filled with warm water were placed on my chest. As my body warmed, the pain and the shivering came back. The entire tent shook because of my violent shivering. Sometime near morning I finally warmed, stopped shivering, and drifted off to sleep. I slept till almost noon next day, and besides feeling a little weak and having a sore nose, recovered completely. I even managed to fill my tag on this hunt, after back tracking to find my bow.

I still wonder how something like this happens, or even if it could happen again. I was an experienced outdoorsman, trained in first aid, knew the symptoms of hypothermia, and was familiar with the changeable weather in the mountains. In my pack at the time I carried material to start a fire as well as an emergency space blanket. I wasn't unprepared, at least not physically. My problem was not knowing what to do, it was recognizing my situation and acknowledging my vulnerability. I overestimated my strength and refused to believe my own symptoms. I thought I could just keep pushing until I reached the truck. I almost pushed it over the edge. Once my condition became critical, there was little I could do anymore to help myself. Like many other people, I would never have guessed that something like this could have happened to me.

Learning from our mistakes is a sign of intelligence, and even though it's been a few years since my ordeal on that Colorado mountain, the lessons I learned that day are still with me. I have a new healthy respect for mother nature. Nobody is invincible.



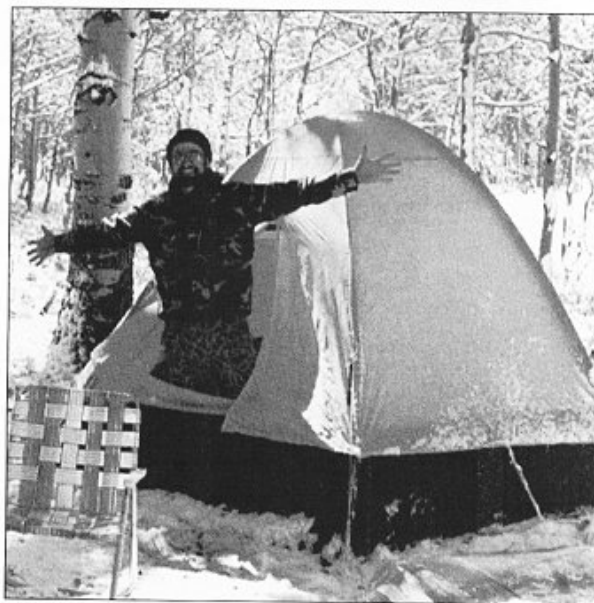
EDITOR'S NOTE: Never leave camp in the Rocky Mountains without at least a wool jacket or wool vest in your daypack. Cotton is worthless in snow storms, which strike the Rockies with little warning, even in July and August.

Hypothermia

Hypothermia is a condition brought on by the cooling of the entire body. Eventually the inner core of the body is chilled so the victim is no longer able to generate heat and stay warm. Exposure to extreme cold can result in the condition, but most cases occur in more moderate temperatures of between 50 degrees and 30 degrees Fahrenheit. Most often, temperature alone is not the major factor. Fatigue, dampness, hunger, wind, and poor physical condition, all contribute greatly to hypothermia.

Hypothermia begins when your body is losing heat faster than it can be produced. Your initial response might be to add clothing or to exercise to warm up. If the body continues to cool, the victim will experience involuntary bouts of shivering in attempts to warm vital organs. These responses quickly drain energy reserves. As the brain cools, judgment and reason decrease. The victim may experience feelings of apathy, indifference, or confusion. They may feel sleepy and want to lie down, muscle coordination is lost and they may no longer be able to produce their own heat. They may also stop shivering. The body slips into a coma and if cooling continues, death can follow.

Most victims do not realize what is happening and will often refuse attention. It is important to rely on the symptoms and not on what the victim is saying. Although it is vital to get them warm, do not warm too quickly. Any wet clothing should be removed and the person should be brought out of the elements as best as possible. Often they are unable to produce enough heat by themselves and need more than to be just wrapped in blankets or warm clothing. External heat from a fire, hot water bottle, etc., as well as warm liquids to warm the inside should be provided. Keep the victim awake. In extreme cases, CPR may be needed. Handle the victim gently. In severe cases, rough handling has resulted in death.



The day after—just letting everyone know I'm still alive.



Krista showing why she didn't want to stay in camp.

Never Teach a Woman to Hunt! Fact verges Fantasy.

By Sterling Holbrook

It all started one evening while I was sitting in my treestand waiting for dusk and contemplating what to cook when I got back to camp. Wouldn't it be great if my wife was waiting back at camp with a big pot of her home-made venison stew and a warm fire? I started fantasizing about having her along and the possibilities just seemed endless—she would be waiting at camp eager to hear my hunting stories. Having cut plenty of fire wood earlier in the day, she would have a warm fire in the camp and a fresh pot of coffee awaiting my return.

The more I thought about it, the better the idea sounded. She had camped with me a few times, and shot her recurve, but not being a hunter, she didn't come often enough to suit me. So I theorized, the best way to get her to come along was to teach her to hunt.

Now mind you, I didn't want her to hunt too hard, she would need to have plenty of time around camp. I could

imagine her lighting the lanterns and tidying up before dark, then cooking mouth-watering meals.

The plan definitely had merit, so I set about gradually easing her into hunting. Since she was an avid spear fisher, it was pretty easy to introduce the correlation between bowhunting and spear fishing. She agreed to go sit in a treestand one afternoon and promptly missed three shots at a deer while suffering an acute case of "buck fever." Little did I know that she was hooked at that point, as I continued to coax her along.

Women love to shop so I immediately bought her a new Robertson Stykbow. It was for a good cause, I reminded myself, as I ordered her heavy hunting arrows. After all, she would probably only hunt a couple hours a day, then have plenty of time to cook and make camp. We men know that women can't tolerate physical discomfort, so she wouldn't want to go before dawn and shiver in her treestand, one or



The huntress strikes again. (Nice boar, Krista!)

two trips and she would probably just stay in camp and have biscuits and gravy ready when I returned around mid morning.

Now here I sit, shivering in my tree stand, wondering where it had all gone wrong. She had shaken me awake about three thirty this morning and told me to light the fire. I had tried to tell her it was too cold to go, as the coffee was frozen in the pot. And besides, we had been up early 14 days straight.

This was beginning to be like work. She finally shoved me out of the sleeping bag at four saying she was going whether I did or not. I know I never should have let her order that fleece hunting parka, and matching bib bottom. She had declared that she was impervious to the weather now and we could go hunting every morning.

The worst thing had come when we finished pre-season scouting. I had slogged through the swamps for miles and finally found the "perfect place." What a hog heaven!

This area was by a swamp

which had been heavily cut, then allowed to grow up thick. There were dense briars and tree tops, and still left standing were a few large chestnut oaks scattered about. It was loaded with sign, both from deer and hogs. Old buck rubs from last year were everywhere. There was even a perfect tree where I planned to put my stand.

Knowing how remote this spot was, I found a place for Krista much nearer camp. Of course, there wasn't as much sign but she would have a much easier time finding the area in the dark.

When we returned to camp, I remember her unbuttoning my shirt and saying we had better check for ticks after all that scouting. She must have taken shameless advantage of me, because the next thing I knew I was promising to let her hunt my new hog spot opening day. Now, three weeks into the season having bagged both a hog and a deer, she still awakens me at dawn most every morning.

When she left in the dark this morning, I had promised to fix her a nice



(Sterling says rabbits are harder to hit anyway.)

lunch and join her at our hunting area around noon if only she would let me sleep in peace. She enjoyed the lunch.

Where had it all gone wrong? Next she will be wanting me to brain tan her deer skins.

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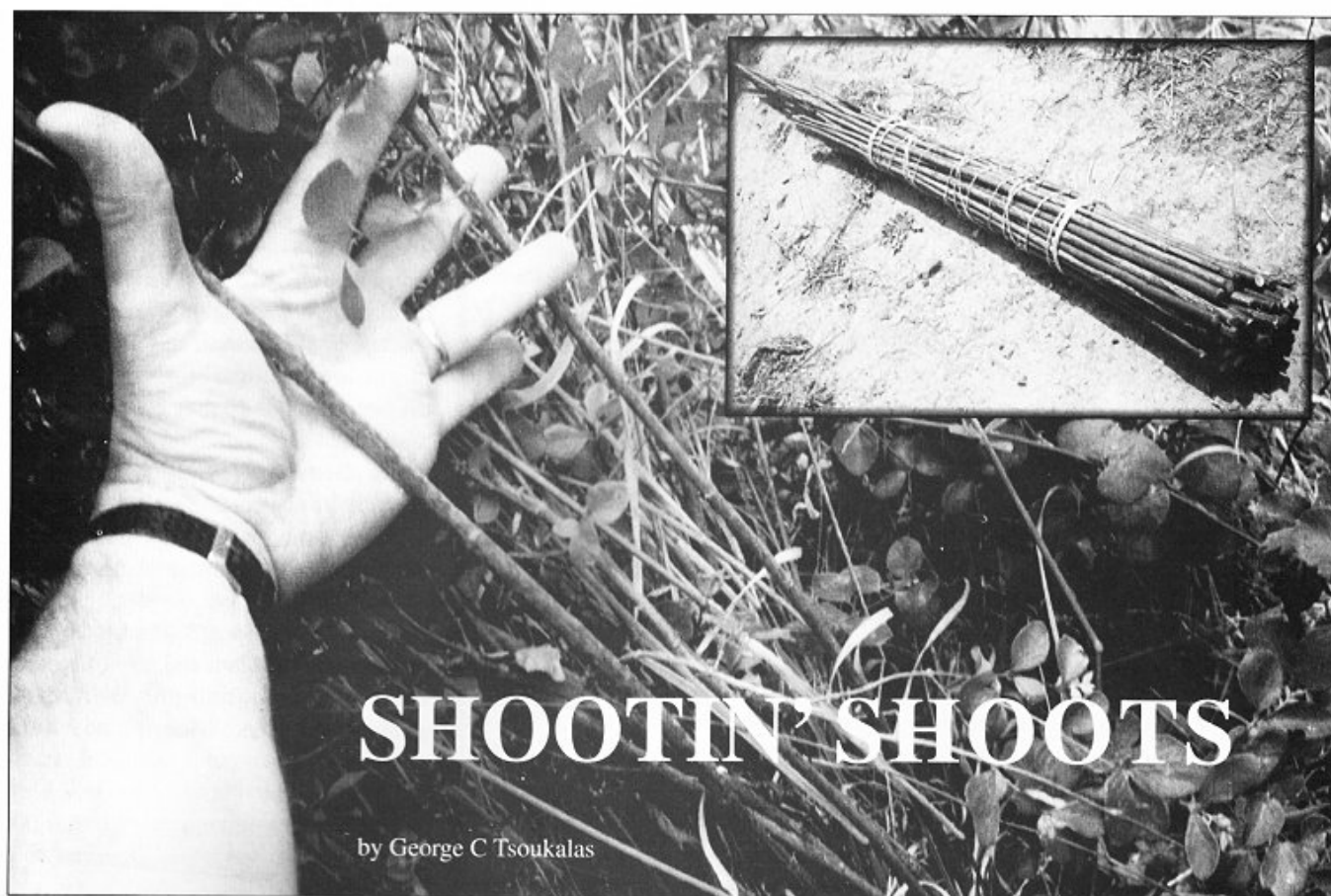
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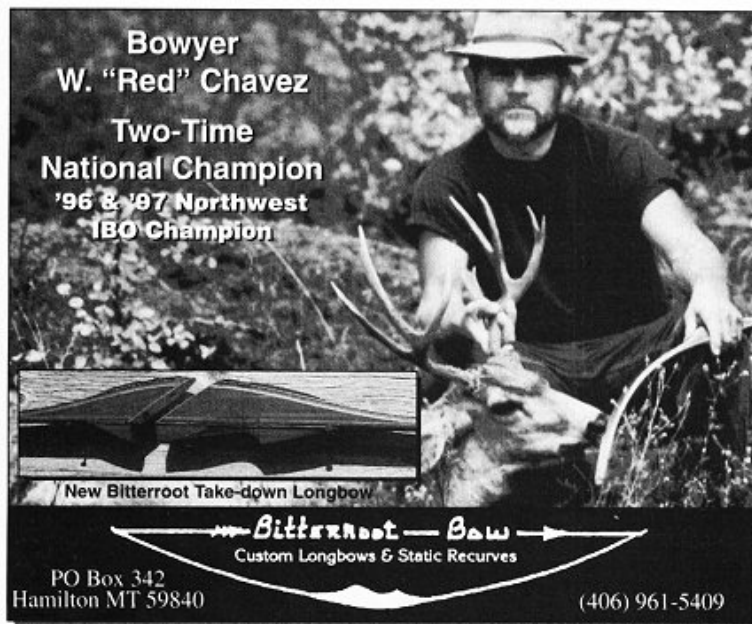
by George C Tsoukalas

The shadows lengthened over the river as the setting sun created brilliant, firelike clouds. A meal of boiled venison and roasted corn had just proved quite succulent. As he rested by the fire, the young Indian boy's eyes began to grow quite heavy. Shadows danced in the light of the flickering fire. To a young man with a very active imagination, the weaving shadows were transformed into black bear, moose and white-tail deer which abounded in the forest surrounding the village. His father's hunting stories as well as the new black locust bow his father had just made for him fueled his imagination. "Let's go! It's time to make some arrows," his father announced. The boy's spirit soared. Finally the birch, dogwood, oak, maple, and wild cherry shoots his father and he had cut were now seasoned and ready to be made into deadly accurate weapons. The shafts were tied together in small bundles of six each. Each week the boy would lovingly straighten each shaft by hand and retie the bundle. Patience was important for the shafts had to be just right. Now, they were ready to be transformed. He watched as his father scraped the bark from one of the shafts with his flint knife. The young brave took a shoot and did just as his father had done. Soon all the shafts had been scraped. They were coated with grease and held over the fire to be straightened by hand while some really crooked ones had to be straightened with a deer antler. They were then sized with the flint knife and sandstone blocks and flexed by hand to make certain the

stiffness of each was adequate. One end was left larger than the other and carved into a large, bulbous blunt for small game. The nock for the string was cut into the other end. Black crow feathers were attached with hide glue and sinew. The boy eagerly participated in this process, for this was part of his education. When the glue had dried, stumps in the forest surrounding the village would be hunted relentlessly while the best arrows would be saved for hunting.

Today, very serviceable arrows can be made from assorted hardwood shoots. Shooting these arrows from a selfbow really adds to the romance for me. As a matter of fact, I have come to prefer these arrows for stump shooting and small game hunting because of their durability. I lose more than I break. I have made countless shoot arrows and an excellent arrow can be created in 1-2 hours using modern materials and tools.

New England is a veritable paradise for the primitive archer who enjoys making his own tackle. Black locust, oak, hickory, maple, and other hardwoods abound for bow woods. Black locust is my favorite and is an excellent bow wood and makes hard shooting self bows. Oak, wild cherry, birch, and maple shoots make fine arrows but almost any wood will do. Be discriminating. Look for the straightest "little finger" size shoots that you can find. Cut them when you need them but cutting them when the leaves are off makes seeing the straightest easier. Snip them about 36 inches long with a



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pruning tool to allow you to find the straightest and most defect free part of the shoot. Cut more than you think you will need to allow for culling later on. Remove all the leaves, imperfections and scars with a pen knife. Now is the time to do some preliminary hand straightening. Next, tie or tape the shoots in bundles of six or so and allow them to dry for about a month. Shoots held longer than 2 months for me become very brittle and break easily. While they are drying, straightening by hand every week is the key to achieving the straightest shafts. I must confess that sometimes I forget to do this. However, all is not lost because straightening with heat can be quite successful. I work one or 2 shafts at a time through the entire arrow making process. More would probably be more efficient but this is the way I enjoy doing it!

When you feel they are dry enough, remove the bark with a sharp pocket knife held at right angles to the shoot. Be sure to scrape away from you. Unless you have a handy campfire, straighten the shoots over your kitchen range or a very stable propane torch. My torch is one that has an extra wide tank so I do not upend it on my work space. Before you begin, be sure you have a fire extinguisher, a cup of water

and a very understanding wife if you are using the kitchen stove. Grease them with butter or margarine if you want, but I do not bother. While wearing some gloves or using a pot holder, slowly rotate the shoot over your heat source for 1-2 minutes until it is hot. I often use an arrow straightening tool to help with the really crooked bends at the end of the shaft. Make one from scrap wood by drilling a 1/2 inch hole near the top. Simply slip the tool over the shaft and apply pressure. Sighting down the end of the shaft allows you to evaluate its straightness. At this point, do not aim for perfection as the straightening process will continue later. I like to cut my shoots about 3-4 inches longer than my draw length using a hack saw. Cut all the way around the shoot before cutting it all the way to prevent splitting.

Your initial straightening will make sizing the shaft easier. Obtain a scrap piece of wood and drill a hole corresponding to the size point you prefer. I use 125 grain, 11/32 inch blunt points for my arrows so I drilled an 11/32" hole. Also, drill a 5/16" and 11/32" hole in your scrap wood. For my stumpin' arrows, the blunt end is the end closest to the ground as the shoot is growing. The nock end is, of course, the other end. This makes for a naturally tapered arrow

that is extremely strong. Since we will be making self nocks, be sure the nock end is at least 5/16" in diameter. Slip the 5/16" hole over the shoot if you must. Be sure to discard your shoot if it is not wide enough at the nock end. The maximum width that I prefer for my self nocks is 23/64. The sizing process will bring your really large shafts to that diameter. Now is the time to discard any shafts that appear to be unsafe. Reasons might include cracking, too small a diameter or bends that are too sharp. Take some time now and evaluate your shafts. Better to be safe!

I use a small 3 inch block plane to size the shoots. Hold the nock end in your left hand, and the plane in your right hand. The plane should be placed on top of the shoot. Beginning about 6 inches from the blunt end, remove wood rotating the shaft slightly with each stroke of the plane. Check it with your



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11/32" sizing hole until the point end fits snugly in the hole. Also, check the nock end so that it is less than 23/64". If you prefer, you may use a pen knife held at right angles to the shaft to scrape away the wood. This is a good time to flex the arrows by hand as you sight down the end. If the arrow does not snap back to its original position, then it is not dry enough. Also, check the spine with a spine tester. Check all the way around until you find the point of greatest spine. Make a vertical line on the nock end of the shaft at the point of greatest spine. If you do not own a spine tester, then check the stiffness by hand. Compare your shoot with an arrow that you normally shoot from your bow. Aim for a spine 5-10 pounds above what you normally shoot. Remove wood from your shaft until you have reached the proper spine. Keep in mind that removing wood from the middle of the shaft has a greater effect on spine than removing it from the ends. Grain weight may be controlled by removing wood near the ends and will have very little effect on spine.

To cut the nocks tape three hack saw blades together. Place the shaft in a vise in a vertical position. Be sure you cut the nock at right angles to the point off greatest spine. That is at right angles to the line you made while spining your shaft. Cut down about 3/8 of an inch. Widen the cut with your 3 hack saw blades taped together. The initial cut you made makes this easier and allows for a straighter cut. Be sure you have the same amount of wood on both ends of the nock remaining. Using a small round file, slightly widen the top of your nock. Use sandpaper to blend everything together. Folding the sandpaper once or twice will make this easier. Try to fit the arrow on your bow string. Widen the nock with the sandpaper if necessary. Remember, if it is too tight, the serving on your string might fray. As matter of fact, when making hunting arrows, my preference is to have the nock fit snugly enough for the arrow to remain on the string with no pressure from my left hand. For roving, I like the

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nocks loose on the string. Remove the shaft from the vise. Hold it vertically and inspect the nock that you cut. Be sure it has no ragged edges. If it does, then sand them. While still holding the shaft vertically, rotate it a quarter turn and look at the remaining wood at the nock end. Compare it to an arrow that shoots well from your bow. Sand it until it is the same width. If it is not, then the arrow might porpoise (where the nock end moves up and down) as it travels toward the target.

Now is the time to fine tune your arrow with heat to get it as straight as possible. The straighter the arrow the better it will shoot. However, removing all the bends is pretty impossible. The arrow should still shoot properly, anyway, as long as it is reasonably straight and has no side to side movement. Here is how I check for straightness. First, sight down the arrow and be sure there is no side to side bending. Slowly rotate

the arrow. Next, hold the arrow in a horizontal position across your body and turn it slowly. You might see some spiral bends. If the nock and the point end move in unison the arrow should shoot well. Taper the point end to a 5 degree taper with your tapering tool of choice and attach your blunt with hot melt glue especially if you are fresh out of pine pitch. Tapering tools are available from most dealers. I do not like the plastic ones. Remember you get what you pay for so buy a good quality tool. I clamp a piece of scrap, set at the proper angle, onto the fence of my belt sander. Turn on the sander and rotate the shaft and your taper is perfect! I suppose you could use a pen knife in a pinch. Be sure you heat the point slightly. I usually put on a field point so I can break in my arrows on my targets. Use a pair of insulated pliers to hold it. I like to heat the stick of glue in an old pot and dip the tapered shaft in the glue. Follow the safety procedures discussed earlier and have your safety equipment handy when using torches. Rotate the shaft to be sure the point is on straight, dip it in water and remove the excess glue. I just use my fingers but you can use your knife if you wish.

To fletch the arrow, I use artificial sinew and household cement. If this offends you, then use hide glue and sinew. Hide glue is not very good in the rain and I shoot and hunt in all types of weather. Hence my preference for artificial glues. If no artificial sinew is available, any nylon thread will work quite well and will be quite durable. Cut your feathers to 5.5" lengths. Trim off 1/8" of feather material on each side leaving the vane intact. I prefer bright colors such as red, yellow, and chartreuse for my feathers. Your shoot arrows should prove to be very durable and you worked very hard to create them. You will probably lose more than you break so do yourself a favor and use bright colored feathers to help you locate your errant shots.

Cut off a 24" piece of thread. I like to pull apart the sinew into thinner strands. You will need four strands for

each arrow. One is needed for each feather and one is needed to reinforce the nocks. Tie the end of the sinew on to the protruding piece of vane that you trimmed earlier. Hold the arrow nock end out under your left arm and position the cock feather at right angles to the nock about 1 inch down from the nock end. Wind the thread around the shaft a few times and secure it with 2 half hitches. Apply your glue to the feather all the way down its length. Wind the sinew around the feather and shaft at about 1/2 inch intervals. Tie it off at the other end. Offset the feather to the left slightly for left wing feathers and to the right for right wing feathers. A spinning arrow stabilizes quickly and forgives minor bends in the shaft. Tie on the first hen feather in the same fashion winding the sinew through the cock feather. Winding the sinew on the preexisting windings of the cock feather makes the process easier. Repeat with the last hen feather. Winding through the cock feather and the first hen feather is difficult. Be patient and take your time. Adjust your feathers until you are satisfied with their positioning. Apply glue to all the exposed sinew on all three sides of the fetching. Wind a few turns of thread just below the nock to reinforce it. Tie off the thread and add a drop of glue. When the glue is dry, trim the front of your fetching to remove rough and jagged edges that might cut your hand or bow shelf. These jagged edges might also cause erratic arrow flight. Trim your feathers to your favorite shape. I trim them right there on the arrow with scissors.

String your bow and go outside and test your arrows. Bring your knife and sandpaper with you. Test shoot your arrow. If your arrow fishtails in a left to right movement, then the spine is probably too stiff. Either sand the middle of the arrow by folding the sandpaper over the shaft or scrape the wood by holding the knife at right angles to the wood. Remember you left the spine of the arrow 5-10 lbs. heavier. I like to go through this process because I find much variation in allowable spine weights

between shafts. I feel that I achieve better arrow flight this way. If the arrow porpoises, check the nock end as mentioned previously and trim it slightly making it rest somewhat higher on the bow string. One final note regarding spine weights is that if you go through this process and find your arrows continuing to fishtail, since you left them 3-4 inches longer than your draw length, consider cutting a half inch from the end and reapplying the point. If the flight of your arrow improves, then repeat this step. A shorter arrow has a stiffer spine. When you are satisfied with the flight of your arrow, then sand your arrow with fine sandpaper and apply the finish. I do not

crest my stumpin' and small game arrows but now is the time if you so desire. If you missed your bear last fall and have no bear grease handy, then do what I do and apply one or two coats of water based polyurethane. Shoot arrows have a tendency to warp over time. Periodic hand straightening should keep them zipping towards those stumps, rabbits, and squirrels.

The young brave awoke as the sun rose above the lodge. He ran outside with the eager anticipation of youth. "Let's go, Son!" his Father announced. "It's time to go hunting. Get your bow and those arrows you made last night." Time to make some memories.



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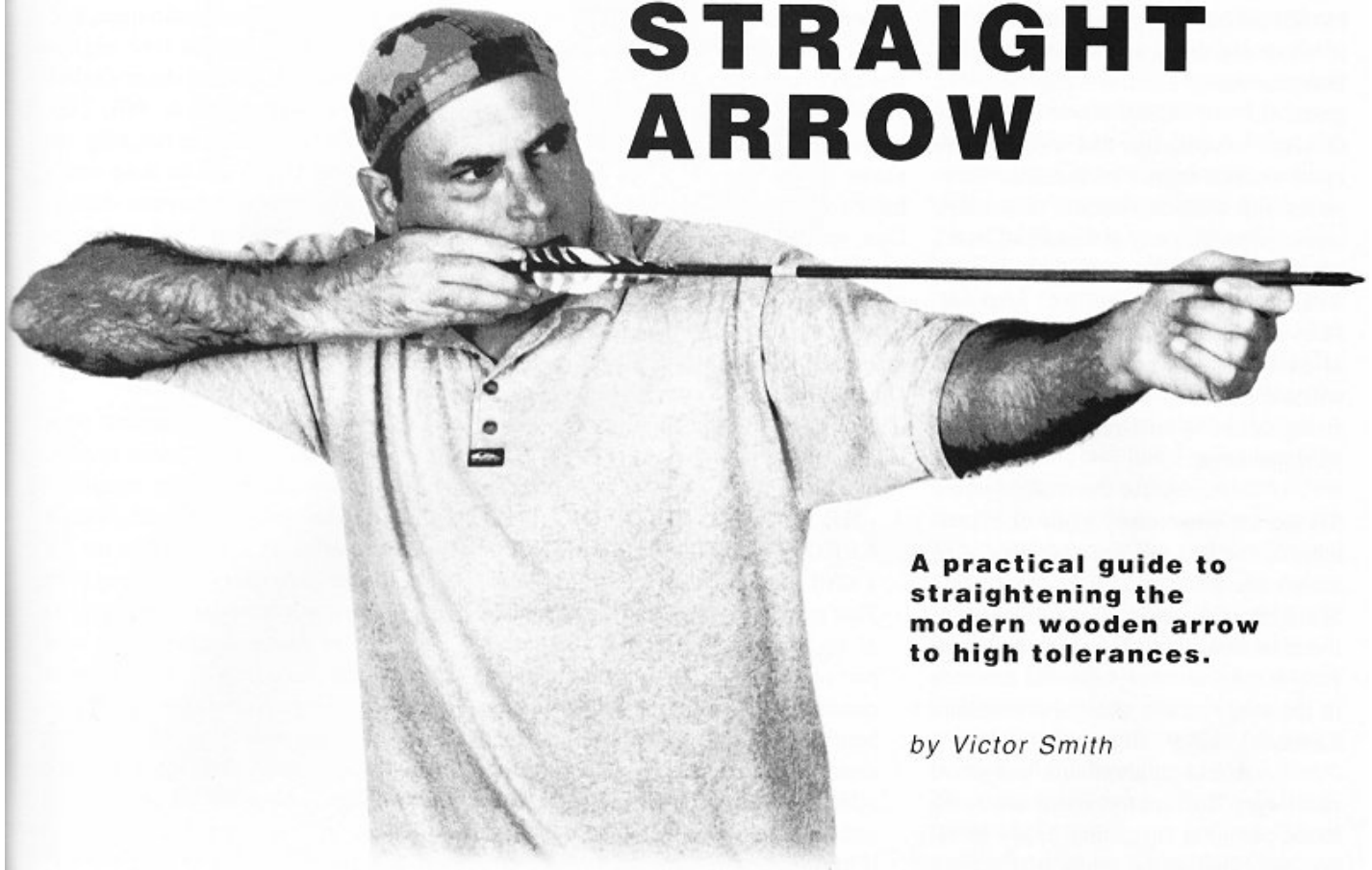
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The STRAIGHT ARROW

**A practical guide to
straightening the
modern wooden arrow
to high tolerances.**

by Victor Smith



I am most certainly not a great archer! I am plagued by the usual assortment of bad habits and poor form. Be that as it may—amongst failing releases and thrown bow arms, my arrow's flight is true and with great grace—for my arrow is most certainly straight!

There are those who will argue that wooden arrows do not need to be at the same exacting tolerances as aluminum or carbon arrows in order to fly straight. And there is much truth in this statement. A wooden arrow's solid mass, as well as its unique grain structure, may allow it to fly true when it is not perfectly straight. When aluminum arrows bend, they most often bend at an given point, creating a harsh angle. A wooden arrow's bend is generally more gradual, over a longer distance. Compare the difference between hitting a speed bump and a long gradual hill. A bend of six or seven thousandths in an aluminum arrow will most often be a catastrophe. The same amount in a wooden arrow may still fly reasonably straight. Additionally, wood's excellent dampening factor and cellular memory assist in good flight. However, most will agree that straight aluminum's will fly straighter

than a good set of woods—of course they haven't tried a set of my wooden arrows.

There are traditional archers who refuse to shoot wooden arrows, claiming that they will not let them be the best they can be. And there are champion archers whose wooden arrow flight is less than perfect. (You would have a hard time convincing me that their scores wouldn't improve with better flight.)

On first look, it is no wonder why so many have had a hard time accepting the viability of the wooden shaft. A given spine weight varies in five pound increments and up to a hundred grains in weight difference. Another common complaint among shooters is the time factor in building a wooden arrow. Others complain that they don't trust wooden arrows to stay straight. One veteran archer told me that he would have to check his wooden arrows every day and restraighten them. "*When hunting, I don't want to have to worry about whether my arrow is straight or not.*"

With all this negative talk about the inconsistencies of the wooden shaft, one might think that there can be no

comparison. No way! Just as aluminum shafting has some very distinct advantages, I have also found some very credible advantages in the wooden shaft. Yet it is not my intent to say one is better than the other. I believe that both are great. It is my intent, however, to pass on some valuable tips that will help you build wooden arrows to excellent tolerances and sound structure. A wooden arrow, when properly straightened, and I stress the words *Properly Straightened*, will not bend when shot into hard surfaces such as rocky terrain. It may break, or the tip make break off, but the arrow will not generally bend. When properly straightened it will remain straight... almost always.

My quest for the straight arrow has led me down many paths of experimentation. But my greatest pieces of knowledge have come from the masters of the straight arrow: Easton, makers of the Easton aluminum arrow. No company has spent more time and research in the study of the straight arrow than Easton.

Although aluminum and wood react very differently, there are some basic physical rules that apply to all arrows. Heading up many of Easton's scientific studies is my good friend Don Rabska, chief Technical Adviser and Special Projects Manager. Now serving his twenty second year with Easton, he is also an Olympic coach and a big-time fan of traditional archery. He owns and shoots English and American style longbows and has studied Kyudo with a master instructor for two years. And he is currently marketing a modern Hungarian recurve of ancient Mongolian design. He is the perpetual twelve-year-old always bright eyed and enthusiastic when it comes to archery. At the early age of two he was a fan of cowboy and Indian movies—but always favored the Indians. He bugged his mother for six months until she finally gave in and bought him a rubber-tipped archery set. That wasn't good enough for little Don though, for he had never seen Indians with round rubber ends on their arrows. So while

visiting with his dad, who worked in the local sheriff's department, he snuck in and climbed to the top of a desk, removed the rubber tips, and sharpened the arrow in a pencil sharpener. Between five and six he was making his own bows from his backyard willow tree and shoestrings. By twelve he was in serious archery competition. At the age of 22 his career with Easton began. I tell you this little bio on Don, so that you might begin to understand his determination in unfolding the mysteries of the straight arrow. Using Easton's vast resources of bow-shooting machines and high-speed photography, Don has loaded me with two simple conclusions that aid the flight of the wood shaft,

1. THE LAST SIXTH OF THE ARROW IS THE MOST IMPORTANT FOR STRAIGHTNESS.

That's right! The last four to six inches of an arrow should be the straightest part of your shaft. In fact Easton's test concluded that arrows could be slightly bent anywhere from center, and forward of center, barely affecting the accuracy of the shot. However the very end tip has some affect upon accuracy, if bent.

2. NOCK ALIGNMENT WILL HAVE A CRITICAL EFFECT UPON THE ARROW'S ACCURACY.

Once again Easton's tests concluded that as little as .004 to .008 of an inch misalignment of nock will affect the accuracy of an arrow—up to six inches at forty yards. Six inches effectively represents the radius of a circle, or half it's diameter. This means that your arrow's misaligned nock might never hit a twelve inch circle at forty yards, if your aim and release were dead perfect.

Combining Easton's conclusions, my own basic wood working knowledge, much experimentation, and good old fashion common sense, let us begin to describe one procedure for straightening the wooden arrow to a sound structure of high tolerances.

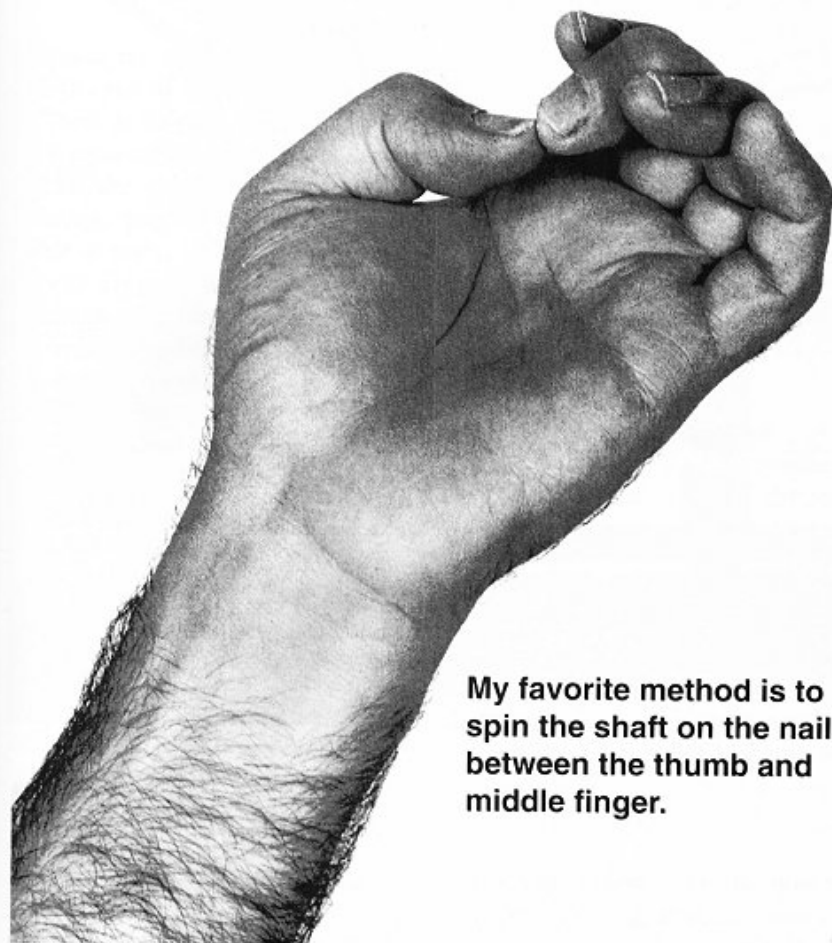
For those of you who insist they don't have the time to build wood arrows... Once you have become proficient with a few of these techniques, one hour or less a night, for five nights should yield you twenty-four sealed shafts, to tolerances close to .001. This does not include cresting or fletching. At least one third of this can be done while watching your favorite television show.

Let's start out with common sense. *You must have good wood from a consistent manufacturer.* No matter how much time is spent on straightening, if the wood is not stable, your arrows won't be either.

The Japanese infatuation with Port Orford Cedar caused prices to soar. This left little choice for the manufacturer but to use all of the wood, instead of select parts. As explained to me by Dave Doran of *Archery Past*, long time wooden arrow connoisseur, *"Previous practices of using downed trees and splitting the tree along its nutrient path became too expensive for many manufacturers. This may have forced some manufacturers to get their wood from the lumber yard where the wood may not have been fully seasoned."*

The good news is there are several arrow manufacturers with practical experience, and they are manufacturing woods to a higher standard. Rose City Archery, which changed hands four years ago, faced the cedar crisis by using helicopters to retrieve better grades of the wood from deep in the forest. This complied with the Forestry's strict environmental issues of road usage and entry. Rose City then hired several consulting experts to advise them in new metals and sharpening techniques for their cutting and planing blades. The end result is a fifty percent increase of premium shafts as compared with their first year and a half of production. Rose City is currently marketing 2.5 million shafts a year, with a two-year supply of raw Port Orford Cedar on hand.

This type of production is allowing many distributors to sell premium matched shafts, in both weight



My favorite method is to spin the shaft on the nail between the thumb and middle finger.

and spine. Port Orford Cedar has proven to me its ability to stay straight when properly straightened.

The majority of my testing has been done with Port Orford Cedar. But I have also had some good results with Yellow Cedar and Spruce. And there are many woods that I have yet to try. There is no doubt in my mind, that as time progresses, we will see new concepts and even tighter control standards.

Dave Doran has just released a great book called *HANDCRAFTED WOODEN ARROWS*. Good advice from Dave is to let the wood stabilize after

shipment. Wood can be affected by temperature and humidity changes. Ramone Ocegüera of *Sagittarius Archery*, concluded the unfinished shaft could pick up

A little extra time and loving care is a small price to pay for greater accuracy.

5 to 8 grains in moisture content from humidity alone. Waiting a couple days after shipment for the wood to stabilize will sometimes make straightening easier.

There are many natural techniques to tell if an arrow is straight.

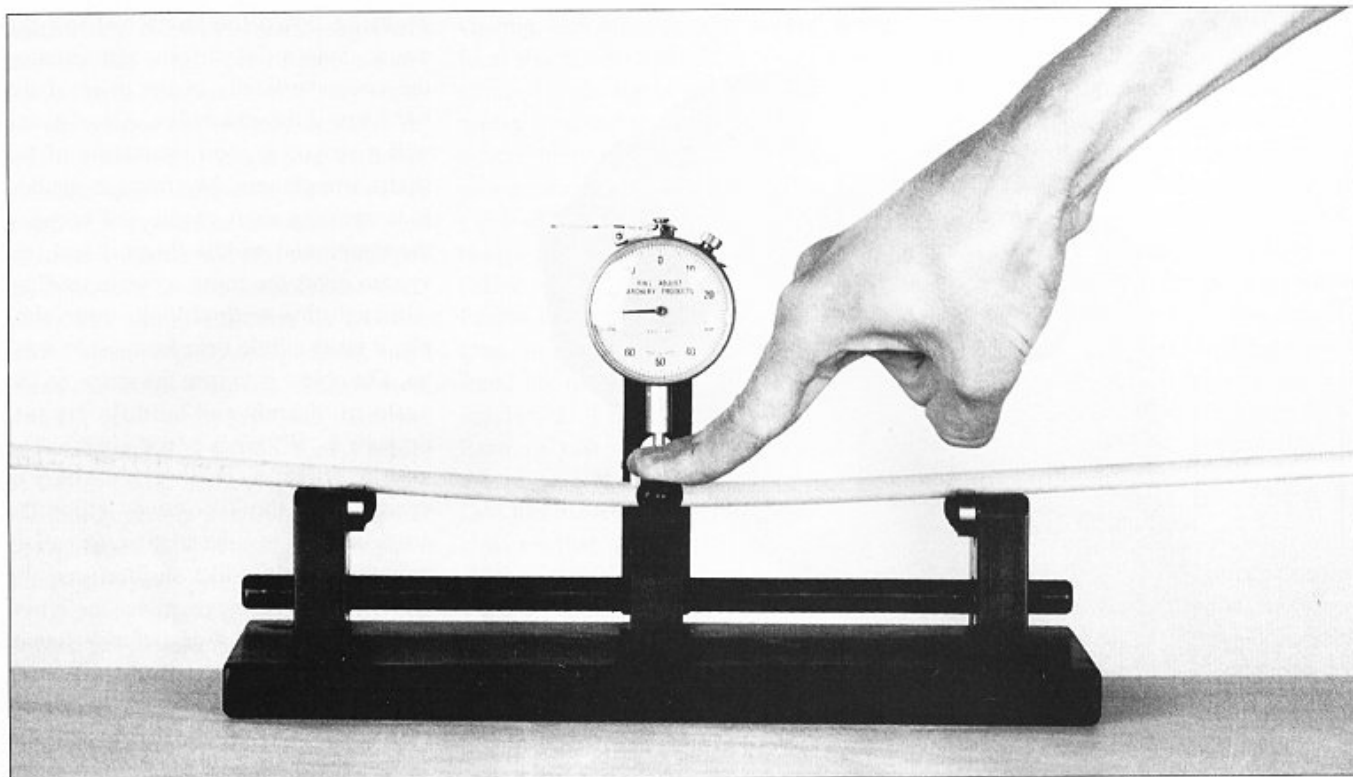
Sighting down the shaft, rolling the arrow along a flat surface, and spinning the arrow vertically in the palm of the hand are three examples. All of these will give you a good estimation of the shaft's straightness. My favorite method is to spin the shaft on the nail between the thumb and middle finger. I feel this system gives the most accurate reading. Although this method looks quite simple, it takes a little time for most to master. The object is to spin the arrow on the nails of thumb and middle finger, through a "V" groove (see photo). The middle finger nail is raised slightly upward from the V position, letting the arrow spin against the edge of the nail. A thumbnail's glass-like surface, and the middle fingernail edge, allow the arrow to spin freely until a deviation is found. When this happens the arrow will jump slightly out of the V groove. As a general rule, the straighter the arrow, the quieter it will roll between the nails.

Think of how most arrow straighteners work. They have a set of rollers for the arrow to spin on, and a pointed shaft connecting to a dial gauge. The only difference is that the dial indicator shaft can move up and down, unlike the edge of your middle finger, so that the arrow doesn't jump out of the V groove. Arrows with deep grain crevices, like Ash, are much harder to judge with this technique.

I try to make 24 arrows at a time. Because of set up time, it only takes about 50 percent longer to make 24 arrows than it does 12.

The first step is to hand straighten the arrow using the palm of the hand. There are several variations of this techniques, but they

all amount to the same basic procedure. Look down the shaft, see where it is bent, and take the palm of your hand and push outward in the opposite direction. Sometimes you will be confused by the grain, as it eventually starts to stray or



The **Full Adjust Arrow Straightener** has been manufactured since 1971, and was the very first commercial straightener on the market.

cross over the shaft. Holding the shaft up against a blank wall, or holding it so that a light will reflect down the shaft, may help you to see a straight line. Learning just how much pressure to exert on the shaft will take lots of practice.

Some problem shafts will require a rapid succession of bending throughout the length of the shaft. This may have the effect of loosening up the shaft's grain rigidity. Then I will go back to the troubled spot and restrain.

Since wood is inconsistent, you will run into shafts that will not want to immediately straighten up. I place the problem shafts into a separate pile. These trouble shafts can be straightened, for the most part, to almost the same tolerances and sound structure, as the easily straightened shafts. Of course these shafts require a little more work.

Soft spots are the wooden arrow's biggest trouble. You will try straightening it to no avail, as it simply bends out in the opposite direction. An arrow with a large soft spot of .008 or

.009 or more should be broken. Better to break it now than have it break while in the bow. Generally 10 percent or more of your arrows may contain excessive soft spots, even from the best suppliers. Smaller soft spots of .004 to .005 can usually be cured, which I will discuss a little later. I can get most shafts with in a .003 to .005 tolerance from hand straightening alone. Many traditionalist have successfully learned hand straightening and can get their arrows to good tolerances.

For those of us who would like to take it one step further, or have a hard time with total control in hand straightening, I recommend using a **Full Adjust Arrow Straightener**. This arrow straightener has been manufactured since 1971, and was the very first commercial straightener on the market. It seems to work a little bit differently than all the others. Although most arrow straighteners look similar, and work on the same basic principal, the Full Adjust Arrow straightener's slight differences of pres-

sure alignment allow for quick and easy straightening of wooden arrows. It was originally designed for aluminum shafts. I have tried many other dial-indicator type straighteners on wooden arrows. Some will work, but require much more effort and time. This straightener will, however, put little creases into the wood. These creases are created by the roller wheels. Not to worry, though. With a little light sanding they come out.


The trick to using this straightener on the wood shaft is in the attack time. Push down firmly, but not as abruptly as you have to with aluminum arrows. Sometimes you need to hold down the handle at the correctional peak for a split second, in order for the correction to take set. Unfortunately, as with hand straightening, no amount of verbal instruction can teach you like hands on. I am sure you will break a few arrows while learning. Once learned, most arrows will take you between 30 seconds to one minute for straightening.

Here are a few helpful hints to aid you on the machine.

1. Spread the rollers out to within one half inch of the ends of the rails. (There is no need to move them any closer as required for aluminum.)
2. Roll the shaft with your fingers directly over one of the rollers...either left or right. (Putting pressure with your fingers anywhere else but directly over the rollers may cause a misreading because you will be deflecting the shaft.)
3. Roll the shaft quickly back and forth. If rolled slowly the grain of the shaft will register. (On occasion the grain will give a misreading. This can easily be detected from the needles erratic movement.)
4. Start at one end, and move down the entire length of the arrow, checking every couple of inches. Then go back in the other direction and correct the shaft again. Sometimes it will take two or three times in succession before the shaft will conform.



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5. The diameter of a given wooden shaft is inconsistent and will throw your zero point off on the dial indicator. You will have to either move the zero point constantly, or simply look for the highs and the lows, and apply pressure until the needle movement from rotation of the arrow is gone.
6. Mark the end of the arrow that took the least amount of correction or is free of soft spots with an X. This end will become your nock end. For this end

should be the straightest and most stable.

7. I straighten all my shafts on this straightener. Even the ones that hand straightened easily. I will usually find that the very ends are a little out. As the ends are the hardest to correct with the hand technique. I will also find other sections out, too small in area to be caught by my eye or by "V groove" inspection. This process of straightening seems to make shafts adhere to staying straight.

After a little practice the arrow straightener will stabilize many of those trouble arrows. Yes, you will put many little creases in the arrow from the roller wheels, especially from the trouble shafts, but they will mostly come out with one minute of sanding.

The biggest advantage of using the arrow straightener, may be in identifying the soft spots of a shaft. Depending on where the soft spot is located, you may be able to strengthen the shaft by cutting off the troubled end. I find very little difference in these shafts in the finished state.

However, for those of us who would like to go one step further and try to stabilize those soft spots, with no more than .005 to .006 deflection, try this. Mark all shafts at the troubled point, with a pencil while on the arrow straightener. Using a low heat alcohol burner (gas stove will not do), heat the shafts troubled points three or four inches on both sides of the marked point. Keep the shaft constantly moving and

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LONGBOWS
and FLATBOWS**



heat for a good minute or two, until the shaft is very hot to touch in that area. Then lay the shaft on a flat surface and let it cool for one hour. If you scorch the wood, though, you will have weakened the shaft. Therefore you must break the shaft. After one hour, restraighten the shaft on the arrow straightener. In many cases, you will be surprised to find the soft spot has hardened and can now hold a correction. My experimentation with heat tempering is young, so I have not reached a conclusion as to a heat-treated shafts reliability to stay straight. Thus far, the results are very encouraging.

Next, lightly sand the arrows with 120-grit paper. Finer sandpaper may not let certain types of stains, sealers, and oil type finishes fully penetrate on softer shafts such as cedar, spruce, and pine. A rougher grade of sand paper may leave scratch marks on the arrow. Take a small section of sandpaper, approximately 2 to 4 inches, fold it over for rigidity, and wrap it around the shaft. Sand the entire shaft briskly for about 30 to 45 seconds. Blow away the dust and look for big creases made from the straightener. Using direct pressure from one finger, lightly sand the crease. This will not cause flat spots on the shaft due to the natural curvature of the finger. Just don't over-sand. I don't try to remove all of the crease. In the end you will barely notice any small crease left.

Hand-straightening a set of twelve arrows will take from 20 to 30 minutes. The second straightening, on the arrow straightener will take 15 to 25 minutes. A light sanding of one dozen arrows will take 15 to 20 minutes.

Next, cut and taper the shaft. Remember the X end will become your nock end. As we learned earlier, the most important part of the shaft for straightness is the nock end. Automatically the end that was the least straight will be cut off. I take great care in tapering the shaft. How you taper a shaft will make a difference when trying to put the nock on straight. For instance, when using a hand-type taper tool, try to use uniform pressure when turning the shaft. This is harder than it sounds. The

inability of the hand to turn freely in a 360 degree motion will automatically cause different pressures at given points in each turn.

Tapering with a sanding disc usually offers greater accuracy and speed. But it is not without its problems too. Never shove the shaft through the sanding disc too quickly. This may also cause uneven pressure. More importantly, it will clog the sandpaper with resin rings. These resin rings in the sanding disc will not allow a uniform taper.

After the shaft has been sanded, cut, and tapered you are ready for sealing. But first restraighten the shaft on the arrow straightener. Temperature, humidity, and slight pressures from sanding will affect an unsealed arrow. Remember that aniline and leather dyes are not sealers. Always check for straightness just before applying your sealing finish. Or if applying a stain with a sealer, check for straightness first. Most of my shafts need a minor adjustment on the arrow straightener just before sealing. This last straightening only takes twenty to thirty seconds per arrow. Once sealed they will generally stay straight.

With a reasonable amount of care, the point will usually go on straight. The nock, on the other hand, is much more likely to go on a little crooked. Although you might not think so, the nock's deviation is hard to detect with the naked eye.

Some years ago, a good friend of mine came over insisting that I try his simple nock-alignment checking device. I quickly told him that my nocks always went on straight. *"That's what I thought about my arrows too, until I checked them on this inexpensive tool!"* he said. He then took the arrows from my quiver and proceeded to show me that only 20% of my nocks were on straight. I couldn't believe my eyes. But the truth was right there in front of me. There are several good nock-checking devices. Each one has a slightly different advantage over the other. I advise you to include one or

more of these nock checking devices as one of your basic arrow-making tools.

When applying nocks, it is very important to wait for the glue to set before relaxing hand pressure on the nock. Air pocket pressure and glue viscosity will often cause the nock to ride up on the taper. Slowly twist the nock until you feel the glue take set, then check for nock alignment. I will spend one to two minutes gluing on the nock and checking for alignment. A little extra time and loving care is a small price to pay for greater accuracy.

Between straightening, sanding, and tapering stages I will often keep my unfinished shafts in plastic tubes. This helps in stabilizing the shaft by keeping moisture out. I also avoid quick temperature changes like going from a warm house to the cold outdoors.

I will leave cresting, type of finish, and fletching to your satisfaction, since this has little to do with the straightness of the shaft.

Very little care is needed once the shaft has been finished. I am careful to store my arrows in heat-deflecting plastic containers, while being transported in cars on 90+ degree days.

Pay close attention to the way you pull your arrows from the target. I try to stand directly behind the arrow and used my body weight to help remove the arrow. This helps to eliminate side pressure.

There are many good ways to straighten wooden arrows. This is simply one method that has worked very well for me. I have shown this method to arrow manufacturers, bowyers, and good archers. They have adapted all, or parts of this arrow-straightening system for their own personal arrows—all claiming to see some difference. However, this should not be conceived as an end all method, but rather a beginning of discovery in the never-ending quest for truth of the STRAIGHT ARROW!

Now, if I could only shoot half as straight as my arrows are. . .



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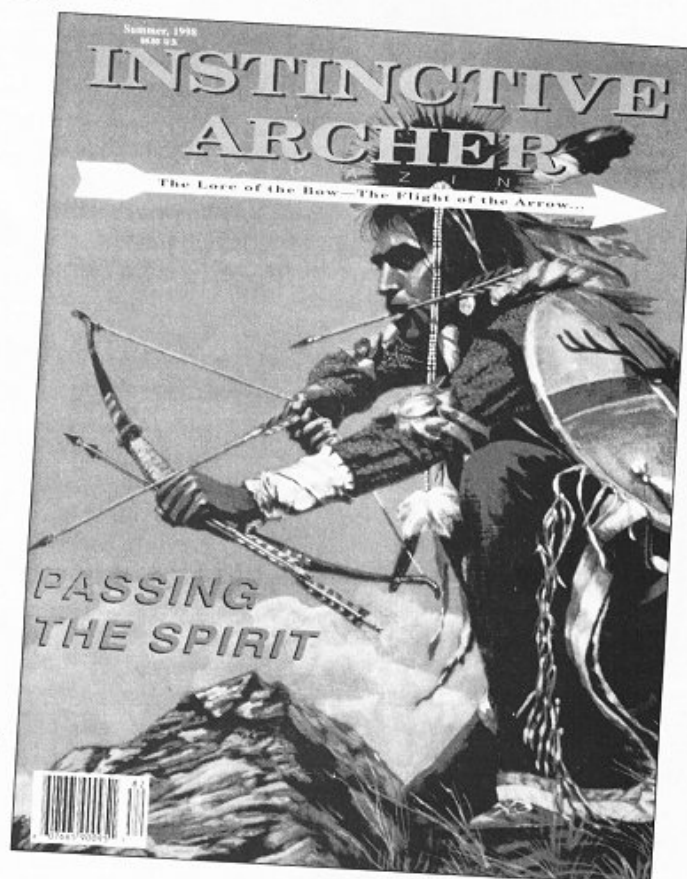
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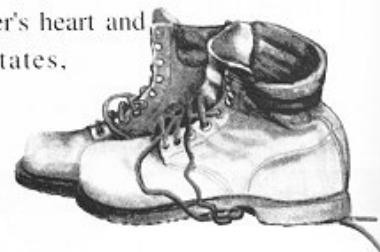
In the West this is the time of year when bowhunters become serious in preparation for September's elk season (it is July as I write this). Few events capture the heart of the western hunter like the rutting season of the mighty Wapiti in the Rocky Mountains!

The pursuit of the majestic bulls has had a great impact on my life as a hunter, as it has on many who find themselves smitten with the same malady, having been infected with a chronic case of "Elk Huntin' " syndrome. I first contracted this malady 25 years ago as I sat in the moonlight on a high and lofty ridge in the Gospel Hump country, north of the fabled "River of No Return," in central Idaho. I was just a young buck then, working as a wrangler and guide for an outfitter. The old outfitter had taken myself and the other wrangler out on the ridge above camp in the pale moonlight to show us how to call elk. I'll never forget that moment as we sat hunkered on the edge of the blackness beneath a full moon which illuminated the ridge top in its grey light. After having sat there for awhile just listening to the sound of the river in the canyon far below, the old outfitter pulled out his metal conduit elk whistle (we didn't have latex diaphragm elk bugles back then!). The notes rose and drifted off the edge of the canyon like they had wings. Far below a herd bull pointed his nose to the moon and hurled his reply back to the canyon rim. I was a "gonner" right then and there.

That's what happens to you. You get "ruined," it becomes an itch that you just have to scratch. You just end up having to go hunt elk, no matter what! The malady has continued over the years and one would think the more success one experiences the less the urge. But such has not been the case with me. The times I have had everything click and called a nice bull into bow range and managed to bag it with "stick and string" (or not), have only served to push me further over the edge! I've finally just accepted the fact that it's hopeless and I may as well make the best of it.

As the days are now starting to get shorter, those afflicted may be experiencing urges to roll in mud wallows and rub the bark off trees. You'll begin practicing elk calls and day dreaming of distant bugles. Come September you'll be out in some vast mountain range, bow in hand, clawing your way up some rocky trail that winds into a vertically sided canyon where the sun seldom shines. The sweat will roll down your dust caked face and you'll flop beneath some mighty ponderosa pine to let your throbbing feet rest awhile, and love every miserable minute of it! Because you know he's out there. . . the Wapiti, the big bull, son of Mega Horn!

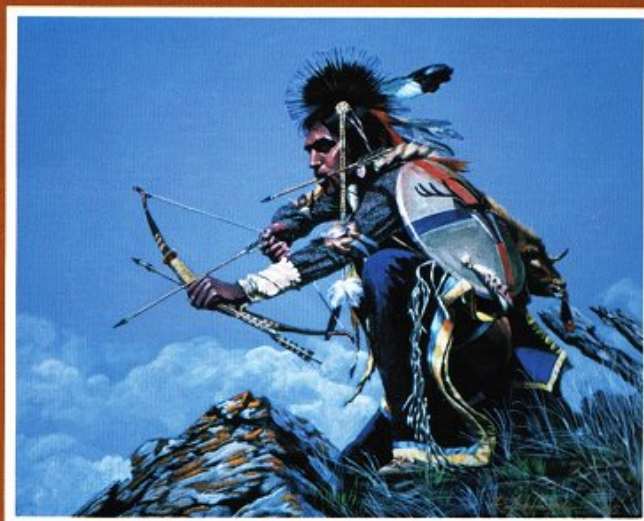
Fred Bear's video "The Restless Spirit" best portrays the bowhunter's heart and soul, and my copy is nearly worn out. In it the narrator states, "A bowhunter is a funny guy. . ."



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ARCHERY STAMPS AND PRINTS

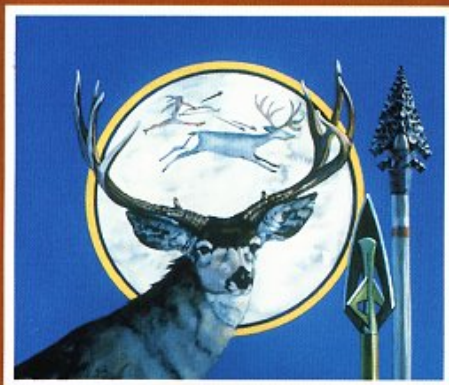
This series of stamps was created from 1982 until 1995 for the Idaho Department of Fish and Game as permits for archery hunters. An exclusively limited edition of high quality prints remains for the discriminating collector. Collect the series or collect a favorite design.



1995 Idaho Archery Stamp

Each numbered print includes a certificate of authenticity as well as variations with mat and frame, full color remarque, additional autographed stamp and Idaho State silver commemorative coin. Call or write to Rocky Mountain Creations for details and prices.

Ralph Harris has created eleven stamp designs for the Idaho Department of Fish & Game since 1982. For the past 34 years his creations can be seen in many national publications, which to name a few include, Ski and Skiing magazines, the U. S. Air Force, The Professional Rod and Reel Association, Ducks Unlimited, The Sawtooth National Recreation Area as well as extensive private collections. He is also a professional ski instructor and lives near Sun Valley, Idaho.



1983 Idaho Archery Stamp

These limited edition prints are the end of a great series. Due to the Idaho Department of Fish and Game fiscal cut backs and computerization of license sales these artistic creations will no longer be reproduced. Thus, you have the opportunity of owning a very rare collectable that will certainly be cherished.



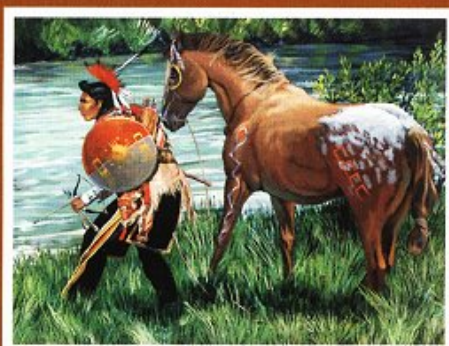
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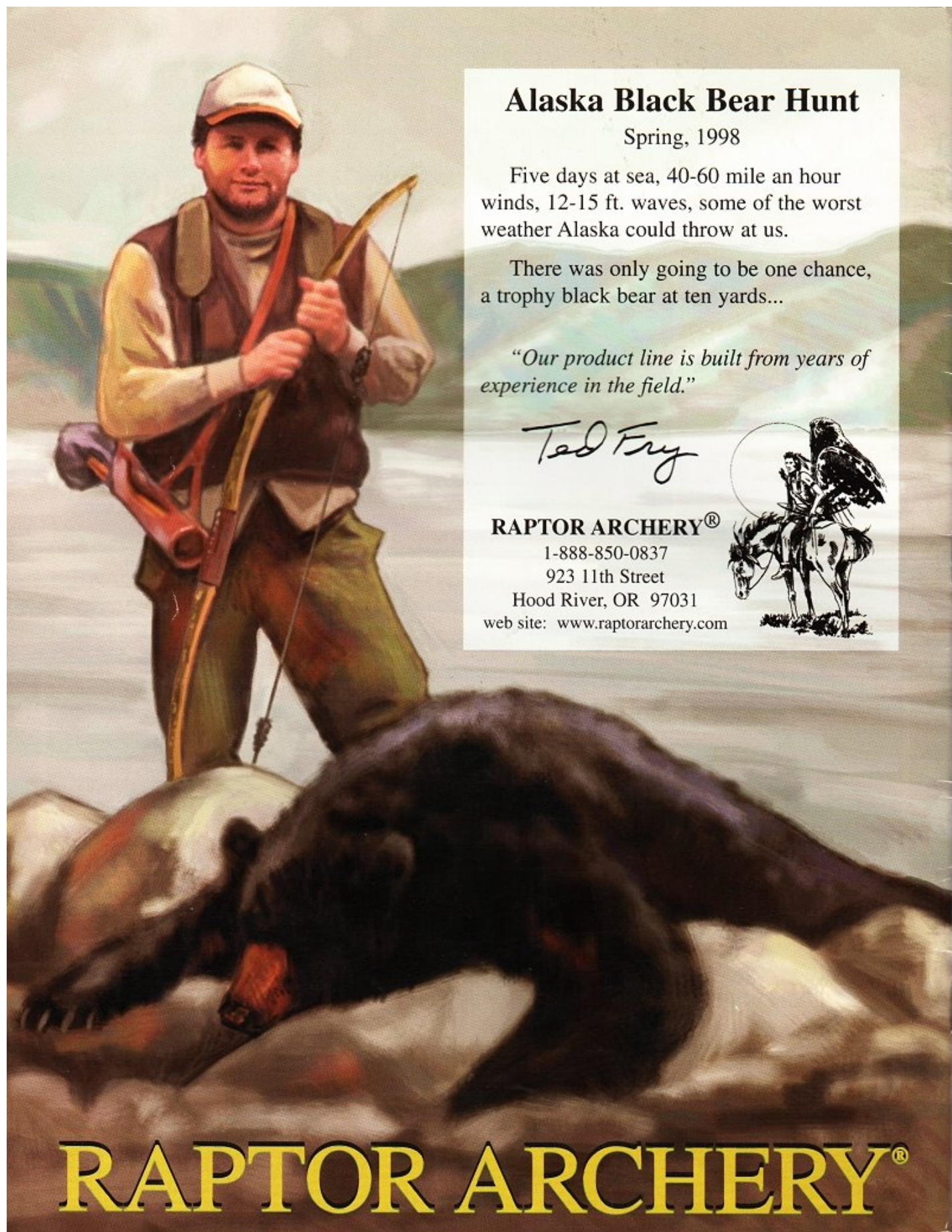
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